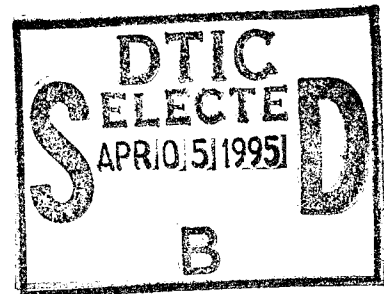


NAVAL POSTGRADUATE SCHOOL Monterey, California



THESIS

**MULTIMEDIA APPLICATIONS IN
MANAGEMENT AND ITM CURRICULUM**

by

George H. Pappas

December, 1994

Thesis Co-Advisors:

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Gail Fann Thomas

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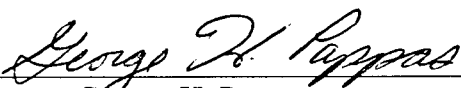
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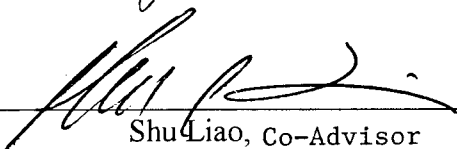
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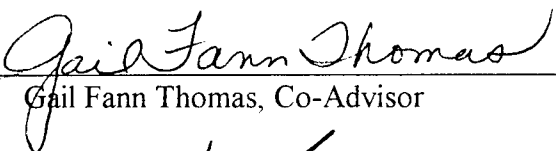
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ABSTRACT

This thesis documents the design, development, and implementation of a sample multimedia instructional program for the Systems Management Department of NPS. The program is designed as a demonstration of potential application of multimedia technology in instruction in the hope that it would serve as the catalyst for stimulating further exploration of multimedia use at NPS. It was constructed with Asymetrix's Multimedia Toolbook authoring system. The program illustrates use of text, graphics, animation, sound, and photo image in an institutional setting. Material for the demo centers around the discipline areas of Economics, Financial Management, General Management, and Information Technology Management.

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I. INTRODUCTION

This thesis is a study of multimedia desktop computer technology and its application to graduate level management education in the Systems Management Department at the Naval Postgraduate School (NPS). Chapter I illustrates multimedia applications at other institutions of higher education. Chapter II provides a description of multimedia technology. Chapter III discusses multimedia as an effective pedagogical tool. Chapter IV describes the design and development issues involved with implementation of a multimedia program application for the Systems Management Department at NPS. The multimedia program focuses on four discipline areas in the Systems Management Department: Economics, Financial Management, General Management, and Information Technology Management. Chapter V includes conclusions and recommendations.

A. MULTIMEDIA APPLICATIONS IN HIGHER EDUCATION

In the last few years, more and more institutions are turning to multimedia as a vehicle for improving learning. As opposed to the traditional textbook and chalkboard instructional format, multimedia incorporates two or more media such as, text, sound, graphics, and full-motion video for instruction, typically within a desktop computer system. Faculty throughout the country are experimenting with multimedia technology in numerous disciplines such as medicine, biology, and chemistry. However, its application in the management discipline seems to lag behind and is just beginning to attract the attention of management educators. This section discusses a few such applications.

At Pennsylvania State University, Professor Thomas G. Fox designed and developed interactive, computer-based material for his Introductory Microeconomics Analysis and Policy class. The material is projected on a screen for the entire class to easily view. His presentation incorporates dynamic graphical models full of color, text and animation. This enables Professor Fox to more effectively teach than his previous attempts using the

traditional chalkboard. He can vividly demonstrate movement of supply and demand curves to ensure students clearly understand these concepts. Use of this technology to enhance his lectures have been more successful than he imagined. Student feedback indicate an overwhelmingly positive response to the presentation. In fact, this presentation earned him first place in the business category of Zenith Data Systems' 1992 Masters of Innovation IV competition.

At the Massachusetts Institute of Technology, a multimedia project called "Hypercase" was developed. This project allows management students to interact with video excerpts during case studies, assisting them in decision-making processes. Videodisc playback allow students to review verbal and nonverbal cues essential to the decision-making process.

A Columbia University project involves an interactive self-paced tutorial for dental students. It allows students to learn correct angular placement of teeth and provides remedial practice. Results of this system indicate considerable student performance improvement compared to traditional methods of training.

Since 1991, the Ronald McNair School in Queens, NY, has been using 30 networked multimedia computers with educational software from Jostens Learning Corp. They use the computers to teach *mathematics* and *grammar*. The programs include *graphics*, *music* and *narration*. They also use the computer to administer unit tests to the students. Reports from teachers indicate that students are more focused when using the computers verses traditional methods of classroom instruction. (Eng, 1994)

James Madison University (JMU) of Harrisonburg Virginia, has a classroom called "The 21st Century Lecture Classroom." Seating 104 students, it has the capability for multimedia lectures *and* features student interaction through use of automated response keypads at each seat. *With* interaction, the multimedia approach helps students hold and focus *their* attention. The room can provide information using text, graphics, audio, photo images and full-motion video. Professor Harris has obtained interesting results where he was able to explain and illustrate concepts in enough different ways to insure improved

student learning. In a Fall 1992 survey of JMU Psychology students, 90% said multimedia was better than traditional lecture methods and 85% said the 21st Century Lecture Classroom was better than other lecture classrooms. (Harris, 1993)

Bakersfield College in California uses computer and multimedia technology for instruction extensively. Results of equipment configurations at Bakersfield has been a tremendous growth in faculty's use of multimedia for teaching. Most of the faculty who tried the new methods never returned to the traditional methods of teaching. Results of the multimedia presentations has been a high degree of positive response among the students.

At the University of Delaware, the Instructional Technology Center supports the faculty by providing them multimedia training and assistance. The university has constructed a unique facility of six classrooms and one auditorium arranged in a semi-circle around a central "media core" for sharing resources.

The above application examples represent the adoption of multimedia instructional technology in different educational institutions. Besides these unique applications, there are many off-the-shelf educational multimedia application programs available to the public in CD ROM format. However, the majority of them are fascinating only due to the effects they display, not necessarily to their educational value. The challenge to all producers of educational multimedia applications is to develop material that will in fact improve and enhance the learning task. This thesis is an attempt to demonstrate that disciplines such as management that deal with abstract concepts can take advantage of multimedia's multisensory learning.

B. PURPOSE

The purpose of this thesis is to explore the use of multimedia in institutions of higher education and then develop a multimedia program demonstration to illustrate potential applications for the Department of Systems Management at the NPS. Currently multimedia is not used in the classrooms within the Department of Systems Management

at NPS. This demonstration of potential application should be a first step toward faculty's future exploration of the feasibility of using multimedia at NPS.

C. RESEARCH QUESTIONS

The following research questions are the basis for this thesis:

1. How is multimedia technology used in higher education?
2. What hardware and software is required to develop multimedia instruction?
3. How is multimedia used as an effective pedagogical tool?
4. What are some limitations of multimedia?
5. What are some requirements for successful integration of multimedia in higher education?
6. How can the faculty of Systems Management Department transform their instructional material into multimedia format?

D. LIMITATIONS

The scope of this study is limited to exploring potential application of multimedia technology to enhance instructional effectiveness in the area of management education. The use of equipment was limited to Commercial-Off-The-Shelf (COTS) standard personal computer hardware and software available to the Systems Management Department and the demonstration program focuses on the features that can be accommodated by computers with widely available hardware setup. Features such as audio and full motion video are not emphasized due to their special requirements for hardware such as sound card, CD-ROM, optical disk, or large-capacity hard disk.

E. POTENTIAL MILITARY APPLICATIONS

Multimedia has been used extensively by both industry and the military within simulators. The software within simulators is sophisticated enough to simulate realistic conditions. Some of the benefits of multimedia simulated learning include:

- cost effectiveness - simulators are used to enhance military training. Training on highly expensive weapons systems, for example, save time and money, especially in times of budgetary cut-backs.
- safety - simulators allow users to make mistakes without the risk of injury or death that is associated with real world situations.
- standardization - for fundamental training, simulators insure the same standards for all users which plays an important factor in unit readiness.
- realistic training - with the use of graphics, video and sound, military training can be more realistic, thus accomplishing the task of adequate training in less time than traditional training methods.

Multimedia applications for DON/DOD students should incorporate the learning from military training technology and learning from other institutions of higher education across the country. Innovations in delivering higher education using multimedia have these possible benefits:

- Decrease time on-site - multimedia software could be sent to military personnel bound for NPS to complete independently before they are admitted to NPS. There is an expense to pulling military personnel off their jobs for participation in refresher courses at NPS.
- Increase standardization of material - instruction can be standardized so that quality is not instructor dependent.
- Enhance decision making capability - multimedia can simulate real management situations so that students can practice decision making in a risk free environment.

This chapter introduced applications of multimedia in institutions of higher education. Also, the scope of the study is described. The next chapter provides an overview of multimedia hardware and software needed to develop multimedia programs.

II. MULTIMEDIA TECHNOLOGY

A. OVERVIEW

Multimedia can provide a stimulating environment for teaching and learning, making it engaging. It incorporates two or more media within a desktop computer system. Multimedia can be defined as organized access to text (words, and numbers), aural (sound effects, music, and speech), and visual (graphics, video, and animation) elements, all combined into one presentation controlled by a computer. (Lamb, 1992)

Organized access to text is called "Hypertext". Hypertext provides an electronic form of learning which allows users with different backgrounds to pick their own strategy for navigating a multimedia presentation.

What makes multimedia interesting is the use of hypermedia, an extension of hypertext with the use of multiple forms of computer media. Hypermedia refers to the many dimensional connections that are available by use of non-linear navigation within a multimedia presentation. (Perelman, 1992)

The use of hypermedia and hypertext enable viewing multimedia presentations in a non-linear fashion, unlike the sequential page turning of a book. The term Hypernavigation is used to define the movement capabilities of multimedia use. Besides the navigation capabilities, multimedia presentations allow the user to be actively involved with the presentation by providing input.

The development of a multimedia presentation requires developers to use a software application called an "**authoring system**." Through the use of a multimedia authoring system, a developer can create a properly designed, assembled, and applied application for users to take advantage of interactive multimedia.

B. HARDWARE

Industry has categorized the use of multimedia by hardware components of varying capabilities. In order to standardize computer capability for multimedia, the MPC (Multimedia Personal Computer) Marketing Council has used the term "MPC levels" to describe this. *Multimedia* manufacturers develop their software to operate on minimum standards and often refer to MPC levels. The first level, MPC 1, was published in 1990, and MPC 2 in 1993. Both levels must support Microsoft Windows version 3.0 with Multimedia Extensions or Windows version 3.1. MPC 1 consists of the following components:

- 16MHz 80386SX or compatible microprocessor
- 2 MB of RAM
- VGA-compatible display adapter and color VGA compatible monitor
- 30-MB hard disk
- single-speed CD-ROM drive with a 150 KB-per-second data transfer rate
- 3.5-inch high-density diskette drive
- an eight-bit sound board
- a 101-key keyboard
- a two-button mouse
- standard serial and parallel ports
- a MIDI port and a joystick port

MPC level 2 consists of all the components of MPC 1, with additional capability as follows:

(Spanbauer, 1994)

- 25-MHz 80486SX microprocessor
- 4 MB of RAM
- 65,000-color graphics at 640 by 480 pixels
- 160-MB hard disk
- double speed CD-ROM (300 KB/sec transfer rate, avg seek time of 400 ms)
- 16-bit, 44-kHz MIDI(musical instrument digital interface)-compatible audio board

MPC 3 has not been established yet. However, New Media magazine predicts that it will include MPC 2 capabilities plus a 66-MHz 486 processor, 8 MB of RAM, and 240-MB hard disk. Additionally, it may include a local bus motherboard (VL-Bus or PCI), a local-bus graphic accelerator, and a set of speakers. These different levels reflect the advance of multimedia software capability, which necessitate the use of more powerful hardware for processing. For purposes of operating the NPS demo developed in the thesis, MPC 1 capability is the minimum standard, but MPC 2 is recommended for better response time.

C. MULTIMEDIA FILE FORMATS

Multimedia can be stored on secondary storage computer devices such as hard disks, floppy disks, optical disks, CD-ROMs, video tapes, laser disks, and video tapes. Along with the effects multimedia has to offer is an association of the media types (text, graphics, animation, audio, and video) with common file formats.

Text is usually produced with some type of word processor or text editor. The text font style, point size, attribute, and color can be affected to produced the desired effects on a computer screen. Use of scaleable fonts allow more flexibility in changing fonts without loss of definition. Most application software for Microsoft Windows allow easy cut and paste transfer of text to multimedia authoring systems.

Graphics can be produced by many graphic programs in several proprietary raster or vector formats such as paint, draw, and presentation. They can also be copied from a paper to digital format using a scanner or captured from video sources such as camera. Each graphic format usually has methods of file transfer capability to commonly used file format such as TIF, GIF, JPEG (Joint Photographic Expert Group), BMP, DIB, WMF. Some formats are better at compressing the graphic file size but may also take longer to display than other formats. Choosing the format depends on several factors. Depending on the user required presentation clarity and sharpness of images, various levels of quality can be used. To conserve disk space, instead of using 24-bit color images, one should use 256-color, or 16-color resolution images if detailed gray scale image is not necessary.

Animation is usually produced with an application which specializes in capturing graphic frames for sequential playback, or in programming a sequence of instruction to control objects. Animation can enhance a presentation by allowing objects to move in a specified path or change object characteristics. The standard file formats are FLC, FLI, and MMM.

Audio is produced with the aid of a sound card which is embedded in a computer and a set of speakers. Two common sound file types are WAVE (.WAV) and MIDI (.MID). The quality of sound can be improved by using 16-bits per sample size instead of 8-bit, and using a higher frequency sampling rate such as 44.1 kHz instead of 22.05 or 11.025. The higher the quality, the higher the file size. Sound can be recorded digitally by the sound board to create WAVE files, usually allowing analog (traditional stereo systems and microphones) or digital inputs (latest digital stereo such as CD players). The WAVE files can store the digitized voice and/or music instrumentation, whereas MIDI strictly allows only simulated instrumentation sounds. If human voice is not necessary in a sound, savings in file size can be achieved using the MIDI format instead of the WAV.

Video sources come from various industry standards such as Hi-8, S-VHS, VHS, Betamax, Betacam and are usually recorded with a video camera. A video capture board can be used to avoid the conversion of video tape format to digital format, whereby the

video camera is directly connected to the computer's video board via cables. Another method of displaying video is using video overlay, where the video format is played back on its original form at the time of need and transferred into the presentation without converting to digital format. Video comes in two common file format extensions, one is the AVI (Audio-Video Interleaved), and the other is DVI. Digital video file sizes, in bytes, can be estimated using this formula: (image size X bytes/pixel X frames/sec X seconds of video). As an example, a 320 by 240 pixel image size, at 24-bit color, at 16 frame/sec, for 60 seconds would result in a file size of about 211 MB. Video files are often compressed to reduce disk space consumption. While there is an industry standard for digital compression-decompression (codec) called MPEG (Motion Picture Expert Group), there are several more mature established codec methodologies to choose from such as Motion-JPEG (set by Joint Photographic Experts Group) and DVI (Digital Video Interleaved).

D. MULTIMEDIA AUTHORING SOFTWARE

There are a multitude of software applications such as spreadsheets, word-processors, and graphic presentations, which can develop screens for multimedia use, however, as an authoring system, they often lack the capability for controlling the objects and different media. Authoring systems provide these same features with the additional capability to integrate and control other media within a presentation.

Some of the important features of an authoring system include:

- **script language** - allows the use of a specialized programming language for detailed control of a presentation and its interfaces
- **ability to call external programs** - allows the multimedia presentation to execute programs which are external to itself such as a spreadsheet or graphical application, without exiting the presentation
- **video editing** - allows the developer to work with individual frames of a video clip such as adding, deleting, or modifying individual frames
- **path-based animation** - allows the developer to designate a specified path for the animation to follow when activated

- **support of various video formats** - allows the multimedia presentation to interface with many different types of video formats
- **support of various file formats** - allows the developer to input various different types of file formats such TIF, GIF, AVI, and MPEG
- **support of various linking standards** - allows the developer to implement linking options between the presentation and other applications (a common one is called OLE-object linking and embedding)
- **MIDI & WAVE editor** - allows the developer to alter (change temp, note, or volume) or compose sound files for use in the presentation
- **synchronization control of objects** - allows the developer to control objects in a presentation by synchronizing them by time

There are many authoring systems to choose from. Appendix A lists examples of packages available which have varying degrees of capability.

E. CONSIDERATIONS FOR DESIGN

When one develops a multimedia presentation, it is imperative that considerations be made of the hardware and software capabilities available before deciding which media to use. As an example, the use of video files take an exuberant amount of disk space, therefore, limited use is recommended if the files are stored on hard disk, otherwise, CD-ROM is the preferred storage media. If storage media is a constraining factor, when instrumentation sounds are desired, it is better to use the MIDI file format instead of the larger WAVE file format. Also, the higher resolution scanned images and complex graphics can consume a sizable chunk of disk space.

Another important factor is knowing the kind of equipment on which the multimedia presentation will be made. If the presentation is developed using a SVGA resolution setting and monitor, the presentation may not display effectively on equipment configured for VGA resolution. That is, the screen may not display the full size or quality picture. Also, certain high resolution images may create system errors if they are not able to be displayed. If sound files are used, the presentation program needs to detect equipment

lacking that capability or it may fail to operate at all. Additionally, even though equipment may be configured with a sound board, the sound drivers may not be properly loaded and/or configured to play sound files. Some authoring systems allow internal function calls to detect and account for such inconsistencies or to inform the users. Therefore, the choice of an authoring software plays an important role in the success or failure of a multimedia development project.

When designing a multimedia presentation there are several roles and responsibilities that are inherent in the process. While multiple roles can be performed by the same individual, in the professional world it is not common practice. Here is a sample of the major roles:

(Asymetrix, 1994)

- Producer
- Writer/Content expert
- Editor/Proofreader
- Interface designer
- Illustrator/Animator
- Audio technician
- Video technician
- Programmer
- Tester

This chapter has offered a description of multimedia hardware and software which is needed to develop a multimedia program. Chapter III will discuss multimedia as an effective pedagogical tool.

III. MULTIMEDIA AS AN EFFECTIVE PEDAGOGICAL TOOL

Effective application of multimedia in education requires an understanding of learning theory and the acquisition of knowledge. This chapter explains a few of the basic elements of learning theory that are most relevant to the use of multimedia in the classroom. Technological features are described that take advantage of the learning process. Limitations of multimedia as a pedagogical tool are discussed and suggestions for overcoming the drawbacks are provided.

A. LEARNING THEORY & MULTIMEDIA TECHNOLOGY

Learning theory informs the understanding of individuals' acquisition and retention of knowledge. While the field of knowledge acquisition is widespread and continues to evolve, this chapter addresses three relevant aspects of learning theory: levels of learning, multisensory presentation and interactive learning.

1. Levels of Learning

The model shown in Figure 1 depicts the **Continuum of Knowledge Acquisition**. (Jonassen and Grabinger, 1993) These levels explain four different types of learning that occur. As a generalization, individuals usually proceed through these levels in successive stages. (Watson, 1979) When a learner has little prior knowledge or experience on a topic being learned, the user is said to be engaged in **Introductory Learning**. The next phase of learning is called "**Advanced Knowledge Acquisition**", where the user builds upon information gained during Introductory Learning. The final phase of learning is called "**Expertise Learning**". Here the user combines previous knowledge structures and experiences to assimilate new understand.

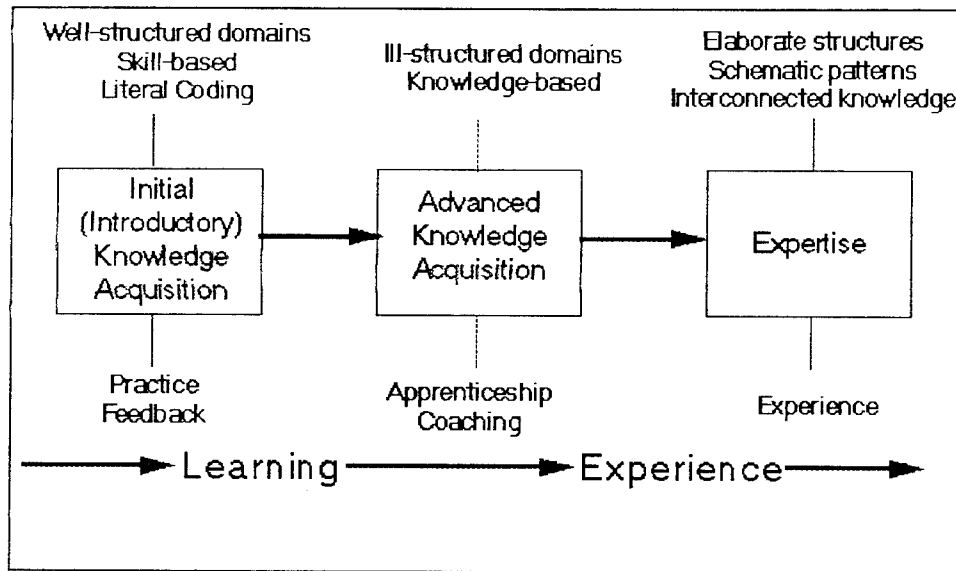


Figure 1. Continuum of Knowledge Acquisition

This continuum of knowledge acquisition can be used to inform the design of pedagogical tools such as multimedia. For instance, students at the introductory level generally have little or no prior knowledge about a particular topic. Effective design of introductory instruction requires an analysis of learners at this stage and then a design to meet the needs for that level of learning.

2. Learning Processes

Hypertext can be used to support these different learning processes: Accretion, Restructuring, and Tuning. Figure 2 depicts a Continuum of Hypertext for learning. (Jonassen and Grabinger, 1993). It describes four classes of learning applications of hypertext. Accretion, which occurs in the first two classes, involves acquiring information to fill existing memory schematas. As the accretion occurs, learners begin to restructure their schematas or develop new ones, class three and four. This restructuring allows learners to interpret or access their knowledge in new ways. Through use of new knowledge structures, a tuning process occurs which enhance their use in new situations.

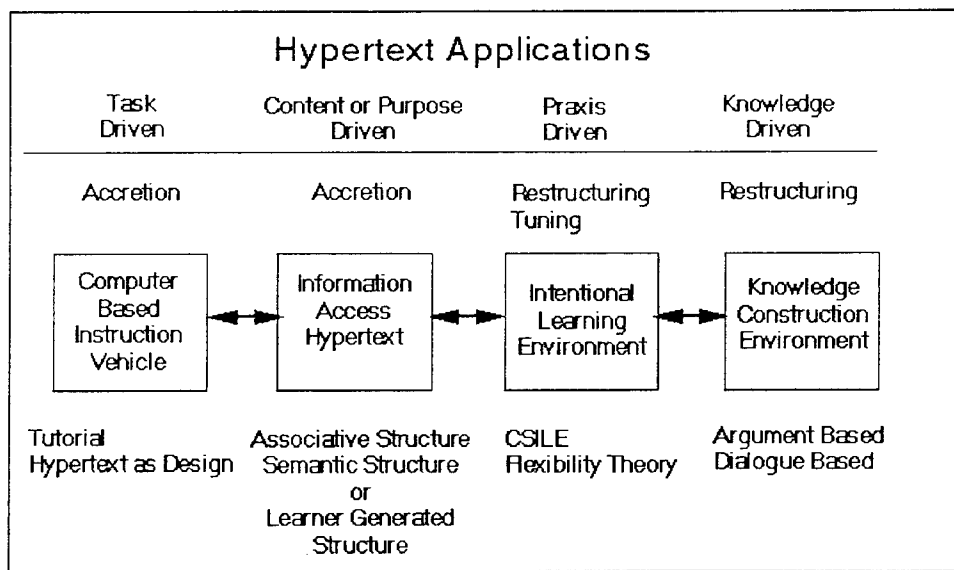


Figure 2. Continuum of Hypertext

The first class describes applications such as Computer Based Instruction (CBI), where the learner uses it as an information retrieval system. This type of applications has other names: Computer Based Training (CBT) or Computer Aided Instruction (CAI).

The second class describes applications of information Access Hypertext, where learners are required to actively engage in materials and construct personal knowledge from them.

Class three, Intentional Learning Environment, engage learners deeper, requiring them to control attributes of their learning. At this class the learner must have a clear learning goal.

The fourth class, Knowledge Construction Environment, enables the learner to interact with the learning task in a participative capacity. When used with hypertext knowledge bases this is called Collaborative Knowledge Construction. It was determined that meaningful learning will result only if it supports active knowledge construction by the learners in order to fulfill a meaningful purpose.

3. Multisensory Learning

There is reality to the cliché, "A picture is worth a thousand words." We've all heard and experienced the realities of viewing a picture which reveals more than words could adequately depict. In fact, it is said that as much as 60 percent of the brain may be involved in seeing. (Perelman, 1992) Therefore, the ability to present information visually becomes an asset in knowledge acquisition. Numerous studies (Bationo, 1991; Nasser and McEwen, 1976) have indicated that use of multiple sensory channels is more effective than using each channel alone.

4. Learning As An Active Process

Learning is more penetrating and long lasting when individuals are actually involved. A number of research studies which have investigated the relative effectiveness of various instructional methods provide further evidence that active learning is more impactful than passive learning. (Watson, 1979)

In particular, Miller (1990), has shown that technologies involving user participation, through use of multimedia materials, provide benefits to the task of learning. These interactive technologies reduce the learning time since learners actively participate while receiving instant feedback. The use of interactive systems increase the information retention rate. It also provides the learner with greater control of their learning process since they can vary the speed and intensity of material coverage. (Miller, 1990)

A highly interactive form of multimedia is called "Collaborative knowledge construction" which involves a group of students who can contribute their interpretations and perspectives. Collaborative hypertext is designed with the intention to force learners to interrelate content within domain and to take personal positions to the issues at hand. (Jonassen and Grabinger, 1993)

5. Advantages of Multimedia Instruction

Learning through use of computer desktop multimedia technology offers advantages over conventional learning methods. Besides the usual textual formats available in books, learning by multiple forms of computerized media allows the use of more of the senses. As a result, retention is higher.

The evolution of computer technology has introduced many capabilities including high resolution full-motion video, high-fidelity sound, photo quality scanned images, graphics, and animation. Now with the use of sophisticated authoring programs, there is the ability to interact with the computer using these capabilities. Use of these capabilities has unleashed a potential explosion of learning techniques for the educational institution.

6. Classroom Arrangements

In fulfilling the different learning requirements by use of multimedia, Lamb (1992) identified five levels of classroom arrangements. The levels range in magnitude by order of technology sophistication. Minimal technology is contained in the first two levels, the seminar room and the traditional classroom. Level three, the media enhanced classroom, contains a permanent overhead projection system and a videotape playback system. Level four, the technology classroom, contains all the video equipment plus a podium which controls a multimedia presentation station. It contains a computer, video-data projector, videodisk, CD-ROM players, desktop video camera system and other resources. At level five, the technology enhanced learning environment, networked workstations are added. As the classroom levels increase, there is less traditional teaching by the teacher. The teacher acts more like a facilitator to assist and inspire the learner in achieving the learning task at hand. The teacher will spend more time authoring multimedia material. The higher

level classrooms also involve interaction by the user which allows the learner to create their own learning environment.

B. LIMITATIONS/BARRIERS TO IMPLEMENTING MULTIMEDIA

Although there are excellent uses for multimedia in a learning environment, it is not widely used in *higher* education for various reasons which are elaborated below. A brief look at the evolution of technology in higher education *and* some of the current realities of academia sheds light on some of the problems.

Higher education has seen three different revolutions in the past 20 years which were to change the methodology of education:

- Films & video tapes
- Microcomputer
- Multimedia

Even though millions were spent on films and video tapes and billions spent on microcomputers, none of these three revolutions proliferated our educational systems. Although multimedia with computer-based instruction has been around for many years, it has failed to gain its roots into higher education for the following reasons:

(Solomon, 1994)

- There are no incentives set-up for faculty members to develop multimedia materials, unlike incentives for writing a successful textbook which can net \$50,000.
- There is not enough credit given towards tenure and promotion for multimedia development.
- The typical faculty member is not sufficiently trained in graphics, computer programming, directing, producing, animation, and other areas necessary for effective multimedia.
- In many cases it requires institutions to invest in rather expensive equipment. Departments have not been convinced that multimedia will reduce the cost of education, thus they spend funds on other projects.

- Multimedia development is time consuming.
- There are still too many different equipment configurations and techniques for this field.

From economics' point of view, lack of the essential standards also discourages professors, publishers, and others involved with distribution of educational multimedia. With technology changing every 18 months or sooner, many are skeptical to make large investments that may quickly become obsolete.

C. REQUIREMENTS FOR SUCCESSFUL INTEGRATION OF MULTIMEDIA

Despite the institutional constraints, economic barriers and technological changes, there are many successful cases of multimedia instruction application in higher education institutions, and the number is rapidly increasing.

The literature on the development of multimedia in the classroom offers many "lessons learned". These lessons include the requirements for administrative support and specific technical suggestions for designing effective multimedia instruction.

1. Administrative Support

A high degree of support must come from top management for multimedia to be successful. When leadership supports a project, it is easier for faculty to become innovative in developing multimedia assisted instruction.

For successful implementation of multimedia instruction, administrators can support faculty in these ways:

- Incentives - sabbatical leaves and consideration of multimedia curricula development in tenure and promotion.
- Technical Support Staff - full-time committed technical support staff with multimedia technical development teams for both hardware and software.
- Formalized Training - scheduled formal training in multimedia development skills and techniques such as authoring system, peripheral, and use of full-motion video.
- Multimedia Equipment - availability of dedicated multimedia labs and classrooms for both development and presentation.

2. Development Techniques

It is not enough to have support from management in implementing multimedia training. Effective multimedia development is critical in attracting and maintaining learner attention and participation.

Professor Fred Hofstetter of the University of Delaware teaches using multimedia and offers the following principles for developing presentations:

(Hofstetter, 1993)

- flow any text onto the screen in your favorite color, font and style
- link text to other text
- use graphic art, images or video
- create hot spots which trigger other objects
- treat text, pictures, videos, and animation as objects for linking
- link any object with other objects to include sound files
- use easy to understand metaphors
- adopt standards in order to maximize use of your investment

When multimedia presentations are developed properly, students will get actively involved with learning by interacting with hypertext presentations. Passive learning, where learners merely observe faculty, is not as effective as active learning.

A well designed multimedia presentation allows learners to control the pace and activity they are engaged in, as well as the purpose and outcomes of their learning. (Jonassen and Grabinger, 1993) Prior to use of a presentation designed for a single learner, it is important that the learner master fundamentals of the topic at hand. In a classroom environment, where the presentation may be designed with more rigid navigational options, the professor has the responsibility to control the navigational path of the presentation.

D. DESIGNING A DEMO FOR NPS SYSTEMS MANAGEMENT DEPARTMENT FACULTY

To spread the interest of multimedia in higher education among the faculty at NPS, the author developed a multimedia presentation program using an authoring system for demonstration purposes. In developing the demo, the author considered the various levels of multimedia learning processes. For example: the **Introductory Knowledge Acquisition** phase multimedia presentation contains well-structured domains. The learner has little prior knowledge or experience in the topic. For these learners, the presentation must be guided and use of learner controlled navigational capability will have to be somewhat constrained. Whereas, learners who have mastered basic fundamentals, such as those of the **Advanced Knowledge Acquisition** phase, can use that knowledge and multimedia navigation to create a learning environment, such as in full-scale simulators.

The primary audience of this demo is the faculty who do not currently use multimedia presentations. Therefore, material was prepared for the **Introductory Knowledge Acquisition** phase. Faculty would view the demo as a computer based instruction vehicle. The navigational capability is limited, however, there are selectable options through use of buttons and hot words.

To illustrate some material of the **Advanced Knowledge Acquisition** phase, the demo provides the capability for learner interactivity within the Financial Management portion of the demo. As an example, results of the accounting statements is affected by user input to the simulated accounting cycle.

The demo is composed of multimedia illustrations from four discipline areas of **Economics, Financial Management, General Management, and Information Technology Management.**

IV. ILLUSTRATIVE EXAMPLES OF MULTIMEDIA INSTRUCTIONAL MATERIAL IN SYSTEMS MANAGEMENT

A. DEVELOPMENT

An authoring system is a computer software application which is used to develop a multimedia computer presentation. To develop a multimedia presentation program suitable for demonstrating the capabilities of multimedia instruction for this thesis, a capable authoring system was needed. For the author's purposes, the kind of application itself was not as critical as the inherent features needed for producing the demonstration program. An authoring system was required with the capability of including text, illustration, graphics, animation, photo image, audio and video features.

To fulfill this requirement, an authoring system from Asymetrix Corporation, Multimedia Toolbook version 3.0, was selected. It was found to be competitive with other major commercially available authoring systems. Compared to others, it does require more programming skills by the developer, however it allows more control of the presentation. An advantage of this system is its capability for exporting finished presentations via a runtime program that can be distributed to end users with the presentation. This feature eliminates the need for each end-user to own the authoring system software. While the initial intent of this demo is to make it available to the faculty and staff in the Systems Management Department, the potential exists for interdepartmental or inter-university export.

Along with the software is the need for appropriate hardware. Asymetrix recommends the following minimum configuration for the authoring system: 80386 processor, six MB of RAM, 15-30 MB hard drive, CD-ROM drive, a monitor and graphics card capable of VGA or Super VGA resolution or better, and a mouse or pointing device. For audio and full-motion video capability, the system should be equipped with a sound card, two external speakers, and a video capture card. The video

capture card is not necessary for systems requiring playback mode only. The playback systems do not require a CD-ROM drive. Hardware was available for the author's use in the Systems Management multimedia lab which consisted of the following components:

- 80486 CPU 66MHz CPU
- 8 MBytes RAM
- MS-DOS version 6.2
- 335 MB hard disk
- double speed CD-ROM
- 3.5 inch high density floppy drive
- 16 bit sound board with speakers
- video capture board
- SVGA monitor and SVGA video board

In creating the demo program, the author followed a seven-step process to carefully design, develop and implement a demonstration program:

(Howles, 1993)

1. Select Potential Lessons

Selecting potential lessons required the author to first decide on the academic discipline areas upon which to base the content of the demo effort. In meeting with the author's thesis advisors, it was determined that the disciplines within the Systems Management Department which could best demonstrate multimedia features were: Economics, Financial Management, General Management, and Information Technology Management (ITM).

Professors knowledgeable in the above discipline areas were contacted by the author. An initial meeting with the professors was held to inform them of this thesis and to demonstrate a brief example of what multimedia could offer in an educational setting.

One-on-one follow-on meetings with the professors resulted in selection of potential course material for content of the demo.

Reference material that was recommended by the professor in each discipline area follows:

Economics (Gates, 1994)

Financial Management (Moses, 1994)

General Management (Thomas, 1977) (Kilmann and Thomas, 1974)

Information Management Technology (Stallings, 1994)

2. Describe Specific Learning Objectives

The author captured the learning objectives of each of the lessons which he planned to convert into electronic format and incorporate into the demo. Each objective required varying multimedia techniques. For example, the Financial Management portion required interactive participation with animation to understand the accounting cycle.

3. Create a Scope and Sequence Outline

The knowledge each professor had of multimedia varied, therefore, the author supplemented their knowledge of multimedia technology in order to design a scope and outline for the lesson content with intended effects. For example, the General Management portion of the demo required careful event timing sequencing to produce the desired effects.

4. Identify Specific Graphic or Audio Material to be Used

In planning the demo, the author and professor of each discipline area choose appropriate lesson material training aids to be used in the automated presentation. Use of graphic and audio material was identified for each lesson as needed by the professors. Video was discussed as an option. However, due to disk space consumption and playback requirements, use of video for the discipline areas was avoided.

5. Explore Multimedia Techniques

In order to create the effects required by the professors, this step required heavy research in Toolbook's programming reference manual. Since each lesson was diverse in

its intended objective, the author planned a variety of different multimedia techniques. Some ideas for techniques were obtained through analysis of Toolbook's sample programs. While others were provided by the professors. For example, the Financial Management discipline required the use of user interaction to explain the accounting cycle.

6. Develop a Storyboard

With assistance from the professors, the author planned and developed simplified storyboards sketched on plain paper to simulate screens of the computer presentation. In some cases, multiple storyboard pages represented a single computer screen due to the complexity of animation involved. In planning the screens, some basic factors affecting computer screen appearance were kept in mind:

- restrict text charts to 7 or 8 bullet points to prevent clutter
- use fonts that are large enough and clear enough to view
- use coordinating colors that attract attention
- use graphics to enhance, not distract
- use sound for appropriate effects but not in excess
- provide logical progression of movement from big picture to fine detail
- provide enough information to support major concepts

7. Produce the Lesson Using the Authoring Software

For ease of program transportability, the overall demo file size was intentionally held down to use of one to three high density three and a half inch format floppy disks. Use of video, graphic files, and sound files was scrutinized to achieve this goal.

Use of the authoring system required a substantial knowledge of Asymetrix Corporation's Open Script language. There is a steep initial learning curve which must be overcome before effective production can be accomplished. While there exists a method for automatically generating Open Script language by use of dialogue screens, its usefulness was found to be very limited. This step required the most diligence and

concentration since it involved learning the capabilities and limitations of Toolbook continuously. Careful planning was necessary to synchronize the actions of a typical animation screen.

B. IMPLEMENTATION

After the screens were developed, each of the professors viewed their portion of the demo to provide constructive feedback. Their recommended changes were then applied to the screens. This process continued until they were satisfied with the demo. The same type of review process was performed with the thesis advisors for additional input and refinement.

The next step involved testing the software to ensure it was free of software errors. The author did this by performing an exhaustive execution of every possible option available in the demo.

The last step involved creating a set of installation disks. Toolbook has a utility designed to combine all necessary files onto disk for ease of installation on a computer. By loading the runtime files onto disk, users are able to operate the demo without the need for the entire Toolbook software package.

Appendix B describes the demo in detail and the procedures to use the program. Appendix C lists the detailed Open Script language source of the program.

V. CONCLUSIONS

A. LESSONS LEARNED

Based on development of the demonstrative multimedia program for the Systems Management Department, these were the lessons learned:

1. Choosing Appropriate Multimedia Types For Instructional Material

Effective instruction using multimedia depends on matching the various types of multimedia (text, graphics, photo image, animation, sound, and video) with the instructional material.

Text should be used sparingly. It can be used to explain terminology, describe simple processes, or amplify conceptual ideas. For example, the General Management portion of the demo contained many text screens defining management terminology.

Graphics can provide pictorial representations of complex or detailed concepts. Graphics can be used to show relationships and representations. For example in the Economics portion of the demo, is represent the classical interaction between supply and demand curves.

Photo images can provide the effect of simulating reality as a static rendition. For example, in the ITM portion of the demo, a bitmap photo image was used as a backdrop to simulate communications within a city. This provided the user with familiarity to real life experiences.

Animation provides dynamic movement of graphics, simulating realistic processes in action. For example, in the ITM portion of the demo, animation was used to visually depict the computer data traveling through various hardware components during data communications.

Sound can provide enhancements to graphics, animation, text, and photo image as voice, music or for special effects. Sound is an inherited component of video providing

accompaniment to the visual component of video. Sound was used in the Main Menu of the demo as background music as well as in the Economics portion of the demo as special effects.

Video can provide real-time playback of full-motion clips which is especially useful in demonstrating realistic sequential situations and actions. Due to the need to conserve hard disk space, video was used sparingly in the demo only to illustrate a short clip.

2. Designing Multimedia Screens

The following techniques of screen development were found most effective:

a. Limit Each Screen To One Main Idea

Too many points clutters the screen, creates confusion, and distracts from learning.

b. Limit Text Font Types and Sizes

Restricting text fonts and sizes enhance user readability and appearance of information. Caution must be used in selecting the font. For example, italics or script fonts are usually hard to read on the screen.

c. Use Color Appropriately

Coordinating colors are more appealing and do not distract the learner from the purpose of the screen. For example, use of a color for highlighting key words should blend in with the screen and not distract users from the purpose of the screen. Also, colors should coordinate well together to prevent distraction.

d. Standardize Graphical User Interface

Strategically place control objects for ease of location and use. For example, the placement of the quit button should always be in the same area, away from other functional buttons. Also, use of standard object types ensure learners understand their purpose with little or no instruction.

e. Provide Ample Explanations of Terminology

Users should have access to additional resources, such as hypertext or hot words, if terminology requires clarification. For example, in the ITM portion of the demo,

explanations were given for data communications terminology, in the form of hidden text, which is unfamiliar to the layman.

f. Provide Enough Directions For Operation of the Demo

Users should be able to understand how to manipulate the graphical user interface to view the demo. For example, explain the functionality of object buttons by use of labels or hot words.

3. Interactions With Content Experts

While interacting with the professors, their most difficult task was conceptualizing the transfer of their material into a multimedia demo. The goal was to get professors in the producer role, similar to film making, so that they could influence the demo's intended multimedia effects. One professor in the General Management discipline was able to document his classroom chalkboard teaching methods for inclusion in the multimedia demo screens.

Implementation of the demo required several iterations of development and review with the professors. It was important to receive feedback from the content experts regarding their portion of the demo. This provided assurance of accurately transferring their instructional material into the desired multimedia effects. In fact, as the professors incrementally tested the demo for accuracy, logic, and clarity, they generated valuable feedback for improvements.

B. SUGGESTIONS FOR IMPLEMENTING MULTIMEDIA AT NPS

Review of literature provides several suggestions for implementing multimedia at NPS. The faculty should have more exposure to the potentials of multimedia through use of the multimedia demo resulting from this thesis, as well as external sources.

Next, upper management must be convinced for support of concept and funding. Once upper management approves the concept, a dedicated lab should be arranged for the faculty to develop their presentations. For classroom presentation, use of multimedia equipped computers can be shared on a cart, until such time classrooms can be upgraded with the needed computer and projection systems.

As a first step towards development of multimedia presentations, there should be a transformation of traditional teaching methods to multimedia by converting all paper and/or transparency material into static electronic presentations. The electronic form of instructional material can then be expanded to incorporate multimedia features when appropriate.

If a determination is made for the faculty at NPS to develop their own multimedia presentations, then an authoring system which requires little or no programming will be required. Toolbook is too programming-oriented and has more capability than needed by faculty. It is preferred that the system have a graphical user interface for ease of operation (point and click). Otherwise, faculty will probably be intimidated by the time intense process and fail to adopt it.

It is imperative that the faculty developed presentations contain quality up-to-date material. Otherwise, the students will not gain from multimedia presentations. In fact, it may become a distraction to learning. Faculty and upper management will have to rely on student feedback to evaluate the effectiveness of the multimedia presentations.

If it is decided that faculty not develop their presentation, then a support staff will need to be established. A dedicated technical staff would have the advantage of having the time to acquire the needed skill and apply that skill to all faculty who need the assistance. The support staff may provide multimedia courses for the faculty to become proficient in the skills necessary for multimedia development, such as the process required in developing a multimedia presentation.

C. RECOMMENDATIONS FOR FURTHER DEVELOPMENTS

Potential projects to further explore the use of multimedia at NPS:

- research easy to use authoring systems for use in academia
- develop a standalone tutorial for current students who require remedial training outside of normal classroom instruction

- develop a standalone tutorial for use to replace NPS's refresher courses for new students. This would reduce the amount of time the military student would normally spend in refresher training by three to six months, thereby reducing educational costs to the military and returning the service member to duty sooner.
- develop multimedia presentation for one course having multiple classes, then conduct study group analysis of those using the multimedia presentation verses those who use traditional methods of instruction.

APPENDIX A: EXAMPLES OF HYPERTEXT AND HYPERMEDIA SOFTWARE OPTIONS





Hypertext/ Hypermedia	Operating System/ Platforms	Royalty/ Runtime Fee	Vendor and Software Name (Phone Number)
Yes/Yes	Mac	No	Adventure's Click D Mouse (205-592-4900)
No/Yes	Windows/OS/2	Yes	Aim Tech's Icon Author (800-289-2884)
No/Yes	Unix/Motif	Yes	Aim Tech's Icon Author (800-289-2884)
Yes/Yes	Mac,Windows	No	Allegiant Technologies' SuperCard (619-587-0500)
Yes/Yes	DOS	No	Allen Communication's Quest (800-325-7850)
Yes/Yes	Windows	No	American Training Int'l's TourGuide (800-955-5284)
Yes/Yes	Mac	Yes	Apple Corp.'s HyperCard (408-987-7000)
Yes/Yes	Mac,Windows	Yes	Apple Corp.'s Apple Media Kit (408-987-7000)
Yes/Yes	DOS	Opt'nl	Ask Me's Ask Me Multimedia (612-531-0603)
Yes/Yes	Windows	Opt'nl	Ask Me's Super Show (612-531-0603)
Yes/Yes	Windows	No	Asymetrix's ToolBook (800-624-8999)
No/Yes	Mac	No	AVCA's Media Squares (512-346-1919)
Yes/Yes	Windows,OS/2	No	Brightbill-Roberts' HyperPAD (800-444-3490)
No/Yes	DOS/Windows	No	CAL's LessonBuilder (312-906-5307) See Appendix 5.
No/Yes	DOS	No	Cognetics' Hyperties (609-799-5005)
Yes/Yes	Amiga	No	Commodore's Amiga Vision (215-431-9100)
Yes/Yes	DOS	Yes	Computer Teaching 's Tencore Producer (217-352-6363)
Yes/Yes	Unix	No	Digital Equipment's DEC MediaImpact (800-332-4636)
No/Yes	Windows	No	Digital Video Art's NewWorld Develop. Kit (215-576-7920)
Yes/Yes	Mac	No	Discovery System's Course Builder (615-690-8829)
No/No	Photo CD	No	Eastman Kodak's Build-It (800-235-6325)
Yes/Yes	Mac/Windows	Yes	Educational Multimedia's Presents (612-379-3842)
Yes/Yes	DOS	No	EduQuest's LinkWay Live (404-238-2000)
No/Yes	Windows	No	Emerging Tech's CBE Multimedia Sequencert (612-639-3973)
Yes/Yes	Windows	No	HSC Software's HSC Interactive (800-363-3400)
No/Yes	Windows/Unix	Yes	Global Information System's TIE (217-352-1165)
Yes/Yes	Windows	No	Goal System's PHOENEX (614-888-1775)
Yes/Yes	Windows	No	Goedecke's Electronic Textbook (800-392-1818)
No/Yes	Windows	No	HSC Software's HSC Interactive (310-392-8441)
No/No	DOS/Windows	Yes	HyperGraphics Corp's tbt Author (800-369-0002)
Yes/Yes	DOS/Windows	No	IBM's Storyboard & Ultimedia Builder (800-426-0402)
Yes/Yes	Mac,DOS	Yes	InfoAccess OWL's GUIDE (800-344-9737)
No/Yes	Windows	No	Informatics Group's ACT II (203-953-4-4-)
No/Yes	DOS	No	Instant Replay's Instant Replay (800-388-8086)
Yes/No	Mac	No	Intellimation's InterText (805-968-1911)
No/Yes	Windows	No	Interactive Image Tech's Authority (416-361-0333)
Yes/Yes	Mac	No	Interactive Media's Special Delivery (415-948-0745)
No/Yes	Windows	No	Interactive Solution's MovieWorks (415-377-0136)
Yes/Yes	Windows	No	InterSystem Concept's Summit (410-730-2840)
Yes/Yes	Various	Yes	Kaleida Labs Inc.'s ScriptX (415-966-0400)
Yes/No	Windows	No	Laser Learning Tech's Report Generator (800-722-3505)
Yes/Yes	Windows	No	Lenel Systems' Multimedia Works (716-248-9720)
Yes/Yes	Windows	No	Looking Glass Software's MediaVerse (310-348-8240)
Yes/Yes	Windows	No	Looking Glass Software's ViperWrite (310-348-8240).
Yes/Yes	Mac,Windows	Yes	Macromedia's Authorware and Director (800-822-2527)
No/Yes	Mac,Windows	Yes	Nacrrimedia's MacroMind Director (800-822-2527)

Yes/Yes	Mac	No	Major Education Resource's Peak (410-628-9200)
Yes/Yes	DOS,Win,OS/2	No	Mathematica's Tempra Media (800-852-6284)
Yes/No	DOS	No	MaxThink's HyperBBS (510-540-5508)
Yes/No	DOS	No	MaxThink's HyperLAN (510-540-5508)
Yes /No	DOS	No	MaxThink's HyperRez (510-540-5508)
No/No	Mac	No	Meyer Software's On-the-Air
Yes/Yes	Mac,Windows	No	Microsoft Corporation's Visual Basic (800-426-9400)
Yes/Yes	Windows	No	Microsoft Corporation's Multimedia Viewer (800-426-9400)
Yes/Yes	OS/2	No	Microsoft Corporation's MEDIAscript (800-426-9400)
Yes/Yes	Windows	No	Microsoft Corp.'s Multimedia Viewer (800-426-9400)
No/Yes	Windows	No	Modern's MPG (800-237-8388)
No/Yes	Mac	No	Motion Works' PRoMotion (800-800-8476)
Yes/Yes	Windows	No	Multi-Media Tech's Picture Link Authoring (800-866-8584)
Yes/Yes	DOS,OS/2	Yes	Network Technology's MEDIAscript (914-478-4500, Ext. 100)
No/Yes	Windows	No	North Technologies' ImageQ (519-570-9111)
Yes/No	Mac	No	Northwest Multimedia's Textbook Toolbox (503-399-8390)
Yes/Yes	DOS	No	Ntergaid'S HyperWriter Professional (203-380-1465)
Yes/No	DOS	No	Ntergaid's BlackMagic (203-380-1280)
Yes/No	Mac, Windows	No	ObjectPlus Corp's Plus (800-323-8088)
No/Yes	Windows	No	OEC System's Computer Magic (800-444-2424)
No/Yes	Mac for CD-I	No	OptImage's CD-iT ALL & MediaMogul (800-234-5848)
Yes/No	Mac	No	Passport's Producer Pro (800-443-3210)
No/Yes	DOS	No	Paul Mace Software's Grasp (800-523-0258)
Yes/No	DOS	No	Protobyte's Overtex Pro (404-623-1111)
Yes/No	Mac	No	Pierian Spring's The Digital Chisel (503-222-2044)
No/Yes	Windows	No	Quality Computer's How To Multimedia (800-777-3642)
No/Yes	Windows	No	Q-Media's Q/Media for Windows (604-879-1190)
Yes/No	DOS	No	Ridgewood Software's Ridgewood Authoring (800-243-4724)
Yes/Yes	Amiga	No	Scala's Scala MM 200 (703-709-8043)
No/Yes	Mac for CD-I	No	Scipt Media's Designers Work Bench (315-451-1662)
No/Yes	Various	No	Scipt Media's CD Media (315-451-1662)
Yes/No	DOS	No	Seaside's askSam (800--800-1997)
No/Yes	Windows	No	Software Mart's CD-ROM Developer's Lab (512-346-7887)
No/Yes	Windows	No	Sparrowhawk Solution's Troubadour (800-779-5166)
Yes/Yes	Mac,Windows	Yes	Spinnaker's MediaText (800-321-7511)
Yes/No	Windows	No	StoryVision's StoryVision (310-392-5090)
No/Yes	Unix	No	StrayLight's Virtual Reality Engine (315-451-1662)
Yes/Yes	Mac	No	Sunburst/WINGs' MediaText (800-321-7511)
Yes/Yes	Windows	No	Technology Application Group's SAM (800-659-5214)
Yes/Yes	Windows	No	Tempra's Tempra Media Author (800-852-6284)
No/Yes	Windows	No	Total MultiMedia's TMM Producer (805-371-0500)
No/Yes	Windows	No	Videodiscovery's MediaMAX (800-548-3472)
No/Yes	Windows	No	V_Graph's VirtualVideo (215-339-1521)
Yes/Yes	Windows	Yes	VIS Development's Avenue (617-890-7777)
No/Yes	Windows	No	Vision Imaging's Media Master (714-965-7122)
Yes/Yes	Mac	Yes	Voyager's Expanded Book Toolkit (310 451-1383)
Yes/Yes	Mac,Windows	No	Warren-Forthought's LINX Test (409-849-1239)
Yes/Yes	NeXTstep	No	Xanthus' CraftMan (+46-8-6353062)
No/Yes	Windows	No	Ztek's VideoJuggler (800-247-1603)

*Runtime or royalty fees are charged by some software vendors in contracts with authors for runtime (delivery, viewing) versions of the software that allows users (students, readers, customers) to run the authored versions without having to purchase full authoring licenses. Sometimes, however, runtime versions will not run every aspect of authored learning materials.

Source: Jensen and Sandlin, 1994

APPENDIX B: USER MANUAL

This User Manual describes the computer screens generated by the multimedia demo. All screens have been captured as figures and are defined below. Navigational buttons appear as a hand pointing finger  or as a button with words on it . Other navigational buttons are the previous page  and next page . Hot words are indicated as red words and are activated when the user places a pointing device, such as a mouse or trackball, over it. The hot words are de-activated when the pointing device is removed from the hot word.

A. INTRODUCTION

1. Purpose

The first screen, Figure 3, informs the user of the demo's purpose. It lists the four academic disciplines that will be demonstrated and then describes six types of multimedia effects that are used. There is a button "Exit this Demo", which is also a hot word and allows the user to exit the demo to Microsoft Windows.

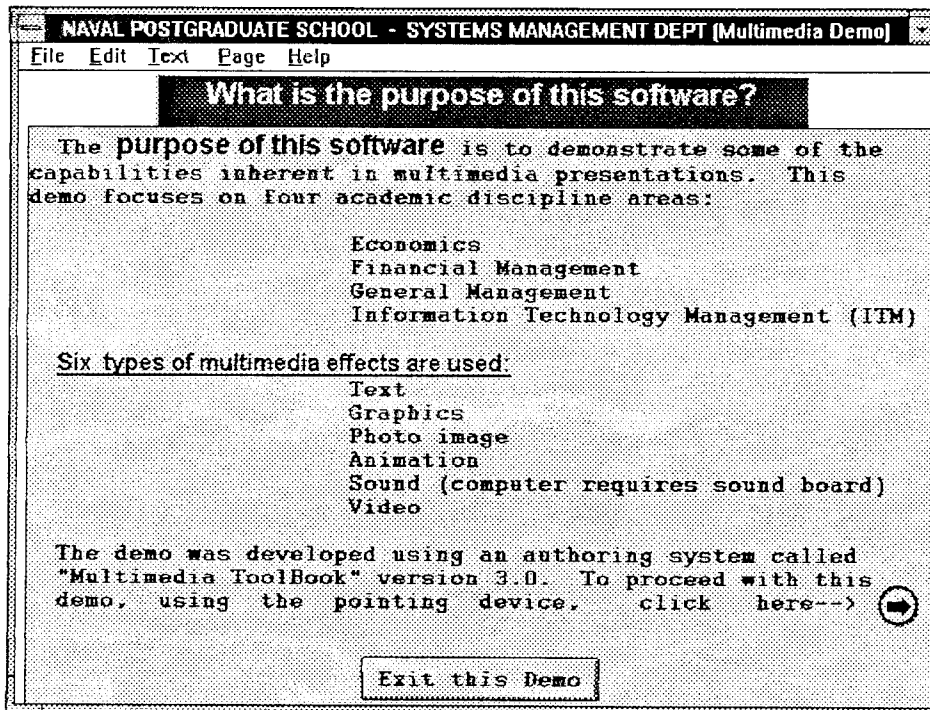


Figure 3. Purpose of this software

2. What is Multimedia?

Figure 4 describes the capabilities of multimedia. The screen has six hot words - one associated with each type of media. As the user points to each hot word, an example appears in the screen. For example, by pointing to the hot word associated with "Animation", the user will observe a white ball moving around the screen, then returning to its starting point. This screen demonstrates multimedia **Text**, **Graphics**, **Animation**, **Sound**, and **Video**.

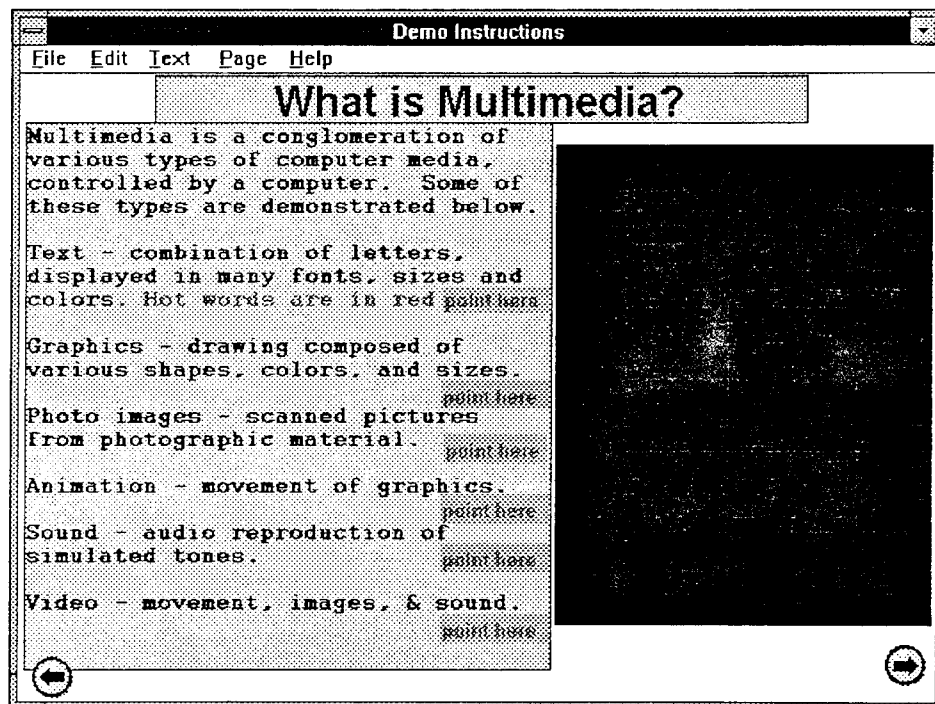


Figure 4. What is Multimedia?

3. Demo Instructions

The screen in Figure 5 provides the user with navigational instructions for operating the demo.

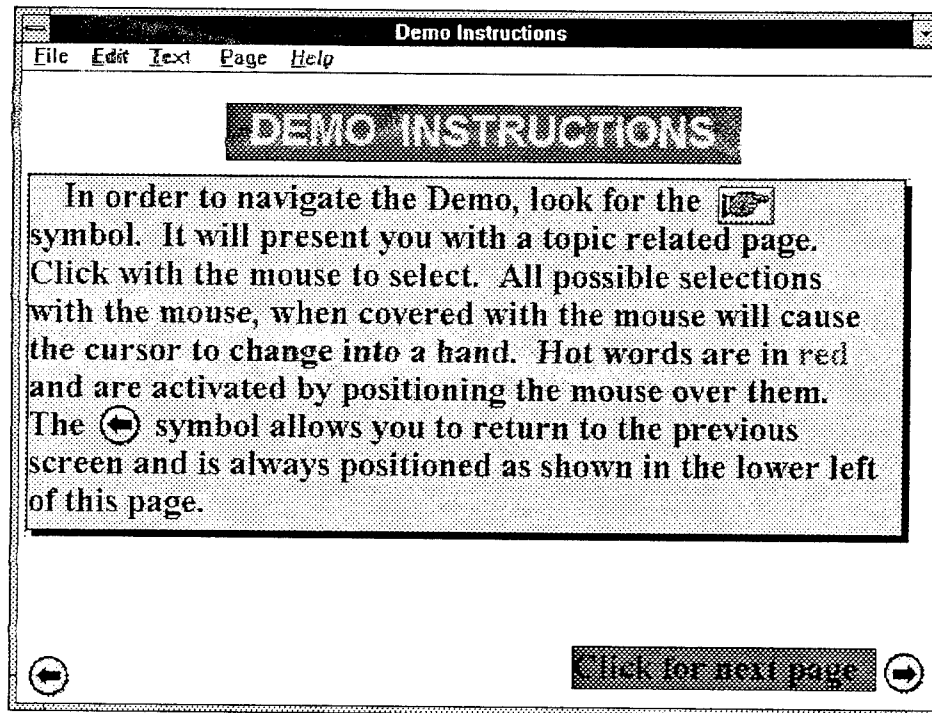


Figure 5. Instructions

4. Countdown Timer

This screen, Figure 6, simulates the countdown timer sometimes seen at the beginning of a film reel. It is another demonstration of animation and sound in action.

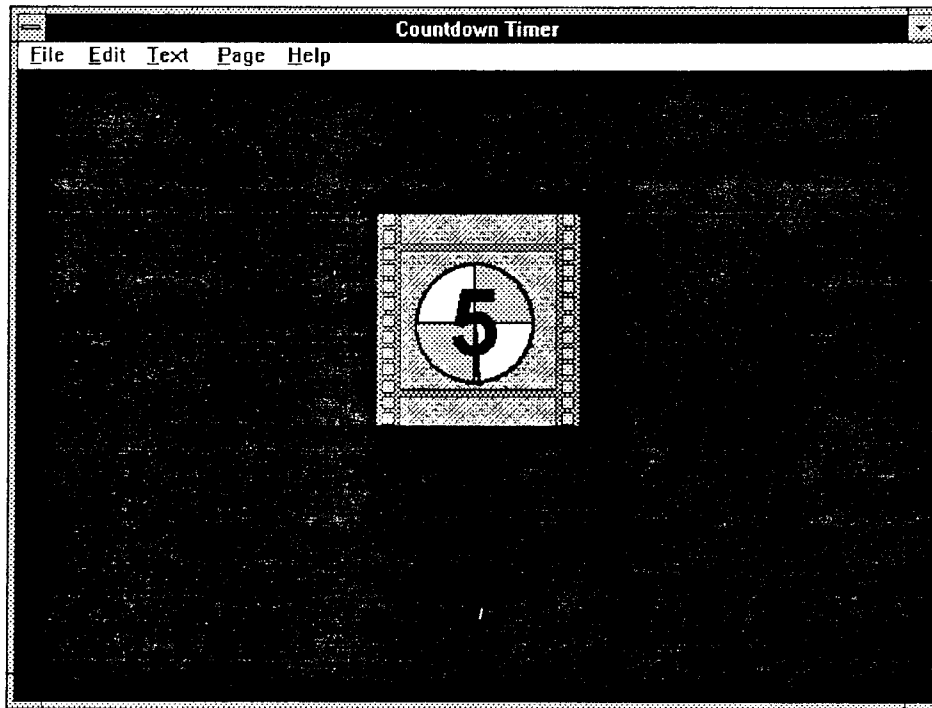


Figure 6. Countdown Screen

5. Main Menu

The **Main Menu** is shown in Figure 7 and consists of four major divisions: Economics, Financial Management, General Management, and ITM. Using the pointing device, the user clicks on the yellow pointing finger adjacent to the desired topic. This screen demonstrates animation in the upper right portion of the screen, where a disk appears to be spinning. It also demonstrates sound where a series of music files are played. There is a button "**Exit this Demo**", which is also a hot word and allows the user to exit the demo to Microsoft Windows.

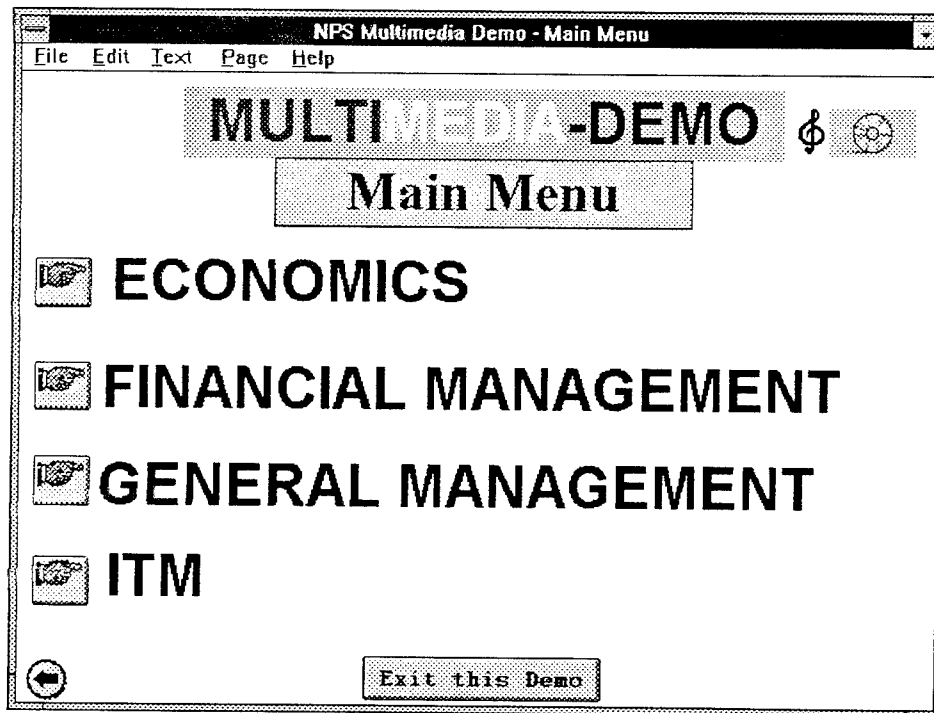


Figure 7. Main Menu

B. ECONOMICS DEMO

1. Demand

This screen, Figure 8, introduces the concept of **Demand**, with hot word definitions for **Substitution Effect** and **Income Effect**. There are two buttons for selecting two demonstrations, one on the **Demand Curve**, and one on the **Elasticity of Demand**.

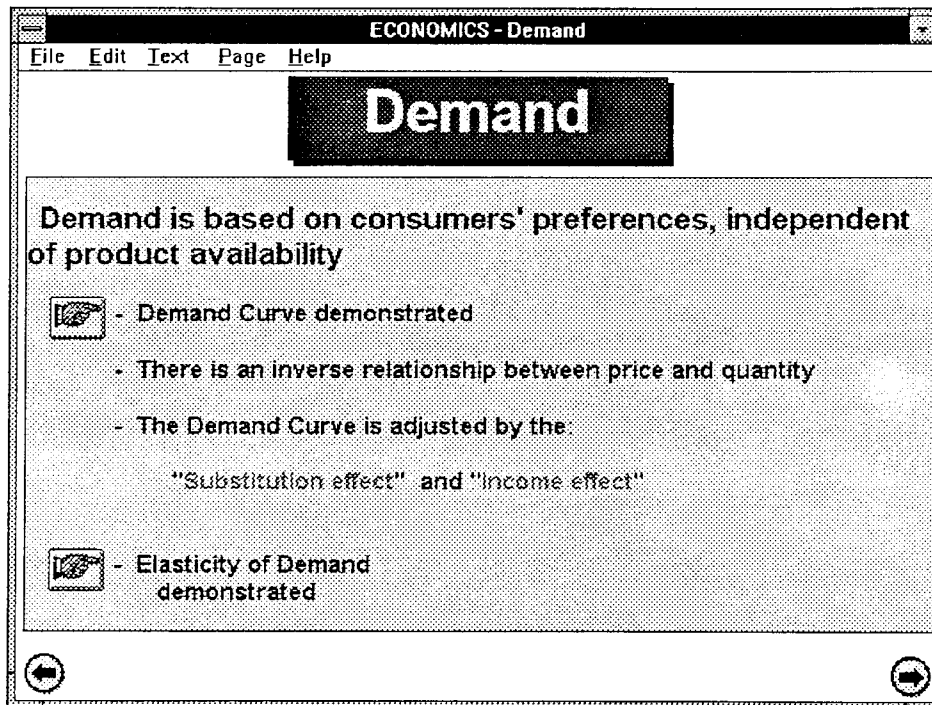


Figure 8. Demand Concept Defined

2. Demand Curve Demonstrated

This screen, Figure 9, gives the user an animated demonstration of **Demand Points**, the **Demand Line**, and shifting of the demand line. A demand point represents the quantity of an item that a customer demands from a supplier at a given price. A market survey will reveal all the quantities demanded at various prices. The "**Demand Points**" button plots the demand points, one-by-one. The "**Demand Line**" button connects the demand points as a line. After the "**Demand Line**" button is activated by clicking, a set of directional buttons appear for shifting the demand line. The user should note how shifting the line creates a new quantity demanded. There are also hot words for the Demand Points and Demand Line. A "**Reset**" button is provided to restore the screen for repeating the demonstration.

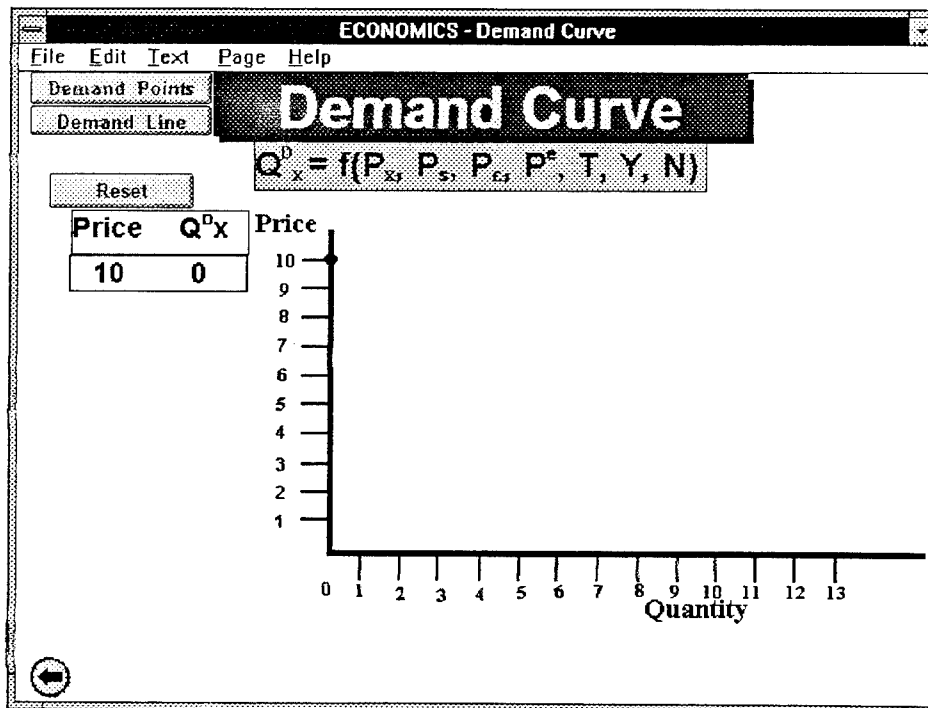


Figure 9. Demand Curve Demonstrated

3. Elasticity of Demand Demonstrated

The screen of Figure 10 provides an animation which explains the concept of Elasticity of demand. This concept describes the slope of the demand line for an item. As an example, unit elastic means that the demand line is such that dropping the item price one unit will increase the demand for the item by one unit. Inelastic means that changes in the item price will have a lesser effect on the quantity demanded. Using the buttons, the users can see **Unit Elastic** and **Inelastic** demonstrated. A "**Reset**" button is provided to restore the screen for repeating the demonstration.

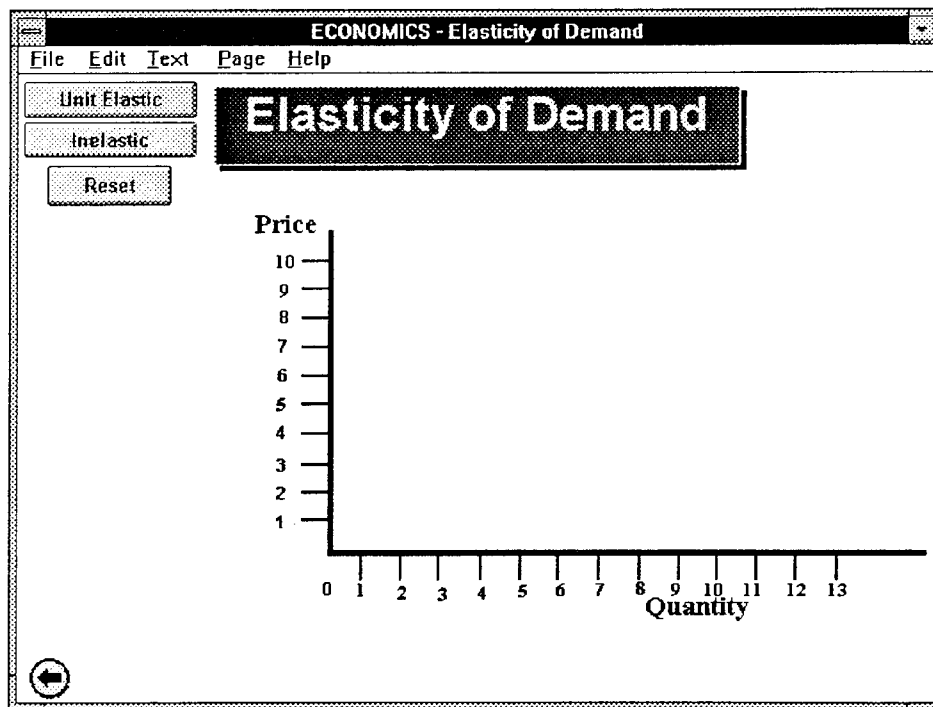


Figure 10. Elasticity of Demand Demonstrated

4. Price Restrictions

The screen in Figure 11 describes the concept of **Price Restrictions**. Hot words exists for **Price Floors**, **Effects of Inflation**, and **Effects of Taxes**. A button exists for a **Price Ceilings Demonstration** by clicking.

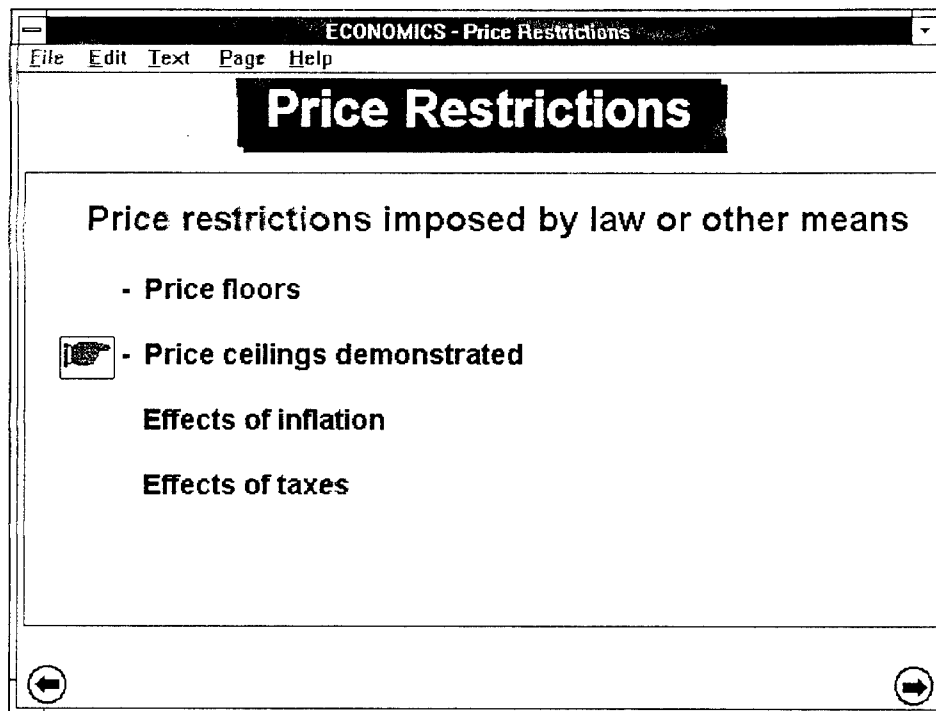


Figure 11. Price Restrictions

5. Price Ceilings Demonstrated

This screen in Figure 12 gives an animated demonstration of components involved with Price Ceilings, Price at equilibrium, price at the law imposed ceiling, and results of the price ceiling. When the user clicks on the "P*" button, the screen will shade the price and quantity which results at the point the supply and demand line cross each other. When the user clicks on the "P'" button, the screen will show a horizontal line representing the ceiling price imposed by law. When the user clicks on the "PD" button, the screen will shade a new area representing the new demand as a result of the price ceiling. Hot words are available for those buttons. A "Reset" button is provided to restore the screen for repeating the demonstration.

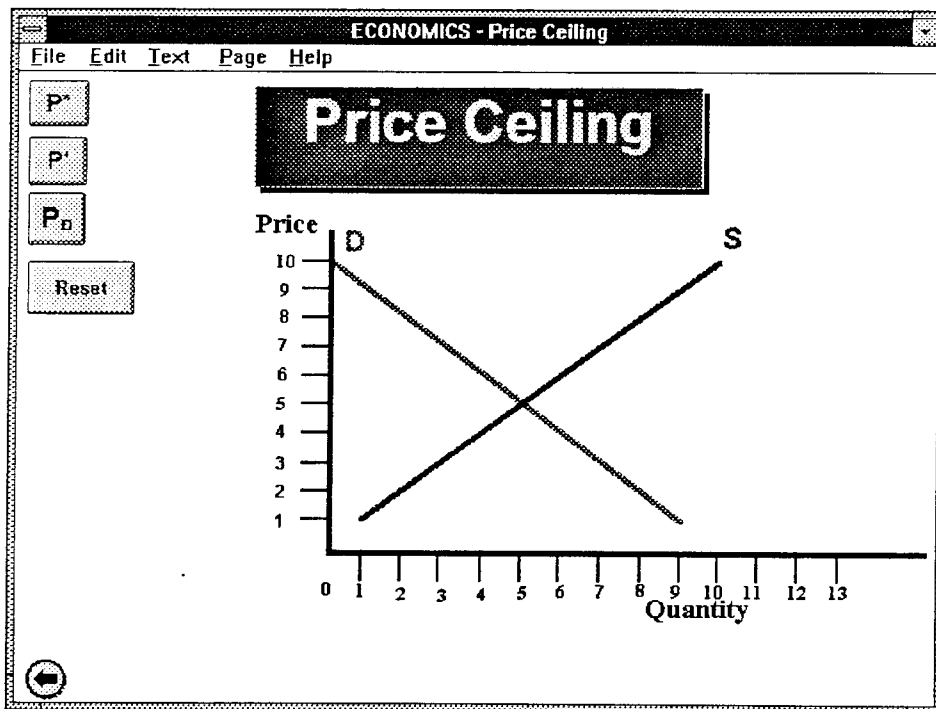


Figure 12. Price Ceilings Demonstrated

6. Supply

The Supply screen, Figure 13, defines the concept of Supply. There is a button for viewing a demonstration of the Supply Curve. There are two hot words: **Quantity Supplied** and **Supply Function**.

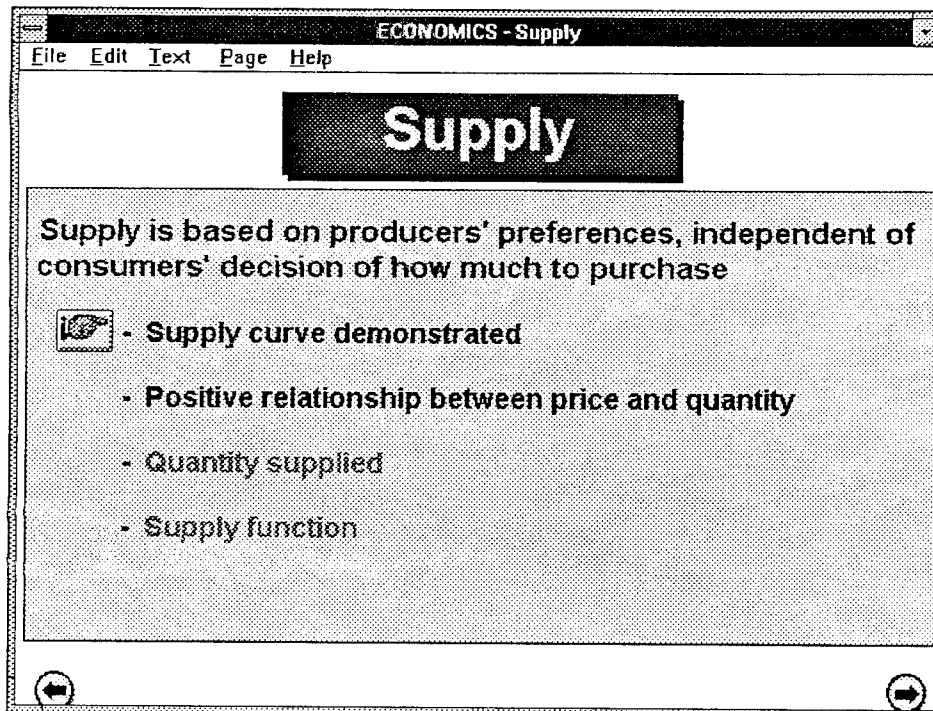


Figure 13. Supply

7. Supply Curve Demonstrated

This screen, Figure 14, gives the user an animated demonstration of Supply Points, the Supply Line, and shifting of the supply line. A supply point represents the quantity of an item that a producer is willing to sell at a given price. A market survey will reveal all the quantities supplied at various prices. The "Supply Points" button plots the supply points, one-by-one. The "Supply Line" button connects the supply points as a line. After the "Supply Line" button is activated by clicking, a set of directional buttons appear for shifting the supply line. The user should note how shifting the line creates a new quantity supplied. There are also hot words for the Supply Points and Supply Line. A "Reset" button is provided to restore the screen for repeating the demonstration.

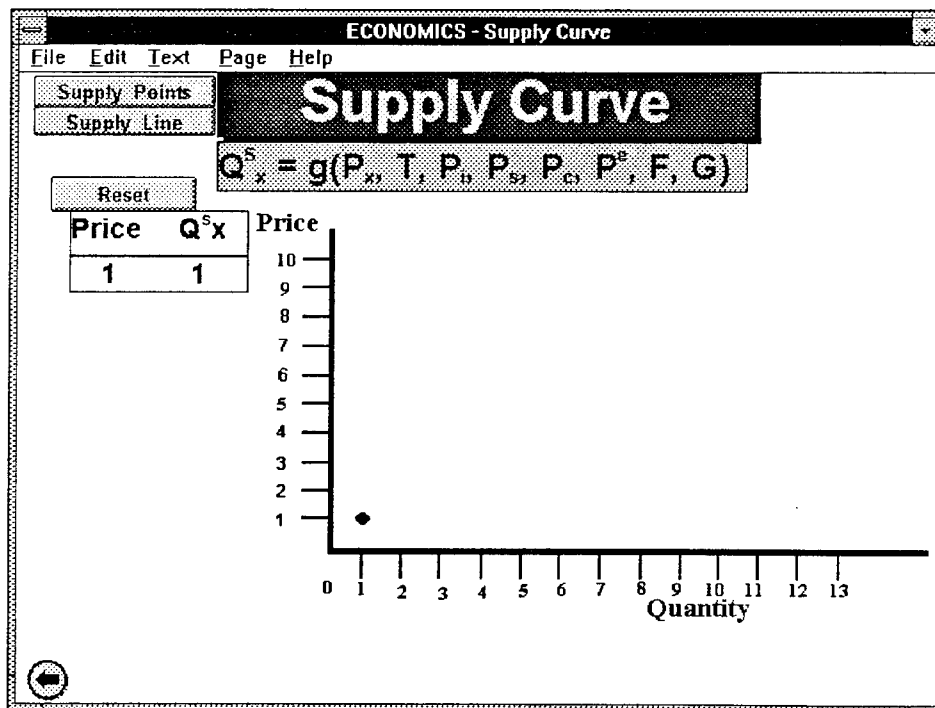


Figure 14. Supply Curve Demonstrated

8. Supply and Demand

The screen in Figure 15 describes the relationship between **Supply and Demand**. Two buttons are available for the user, by clicking, to see demonstrations of the **Principle of Scarcity** and the **Effects of Curve Shifts**. A button is provided to return the user to the "Main Menu".

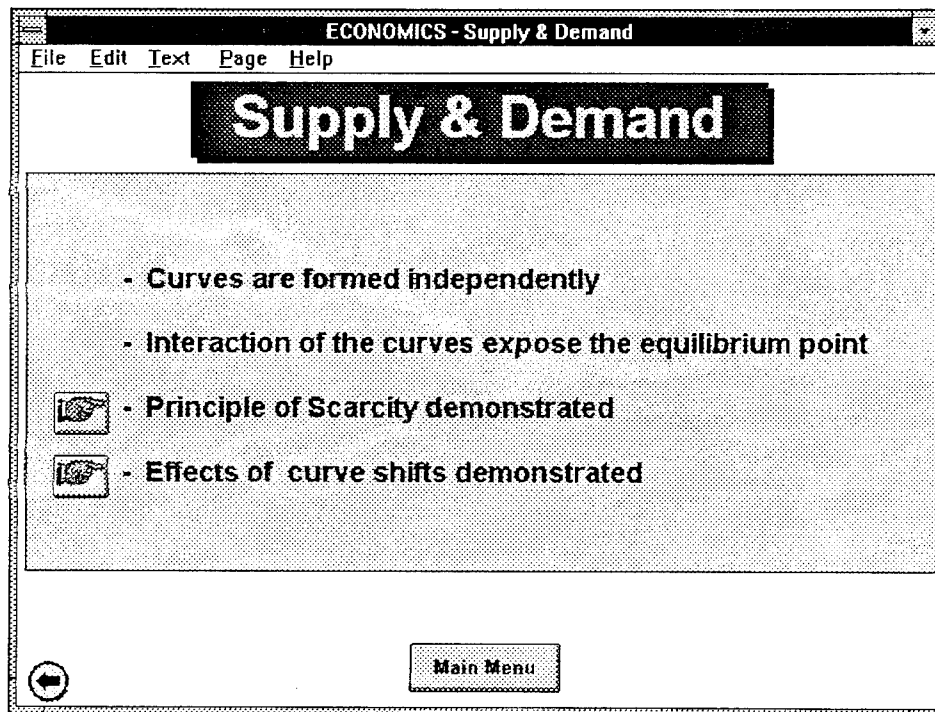


Figure 15. Supply and Demand

9. Principle of Scarcity Demonstrated

The screen in Figure 16 provides an animation describing the Principle of Scarcity. When "A scarce good" button is clicked, a supply line is drawn which crosses the existing demand line. This means that there exists few substitutes for that good, therefore buyers will continue to demand the good. When "A non-scarce Good" button is clicked, the screen will draw a supply line which will never cross the existing demand line. This means that buyers will not demand the good since there are many other substitutes available. Hot word are also provided for each of these buttons. A "Reset" button is provided to restore the screen for repeating the demonstration.

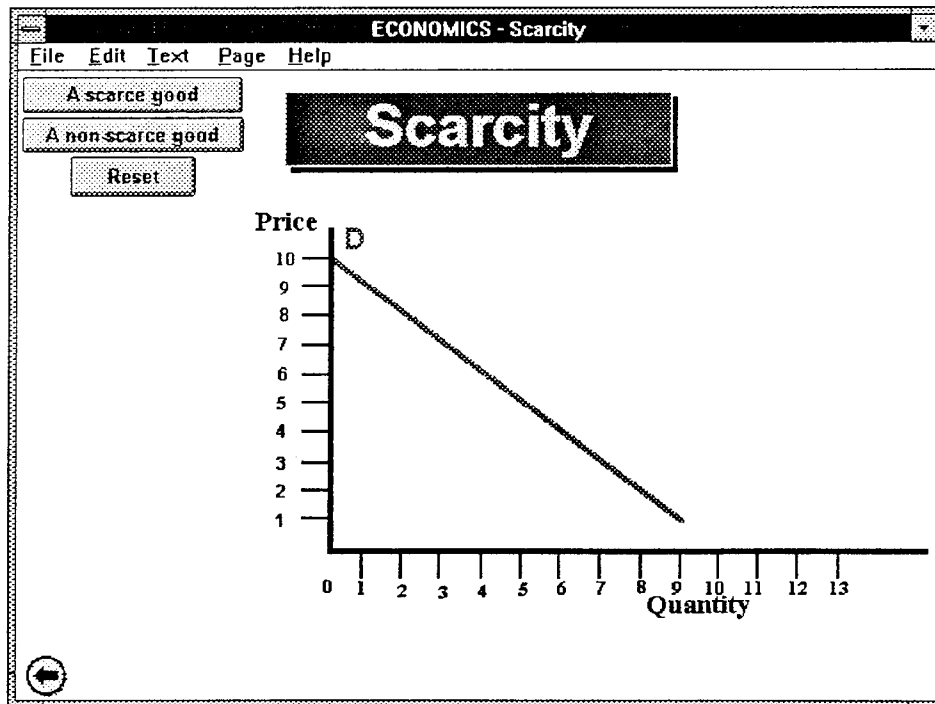


Figure 16. Principle of Scarcity Demonstrated

10. Effects of Curve Shifts Demonstrated

The screen in Figure 17 provides an animation which demonstrates the effects of interacting components to the shifts in Supply and Demand curves. The supply and demand line cross each other at the equilibrium point as shown. It is at this point that the the buyers (demand curve) and the suppliers (supply line) will both agree to do business. The price and quantity at this point are indicated in the upper right part of the screen. Two directional buttons are provided for activating the shifts. As an example, if the "S->" button is clicked, the supply line will shift right and the new equilibrium point will be established as a display in the upper right screen. Hot words are provided for these directional buttons.

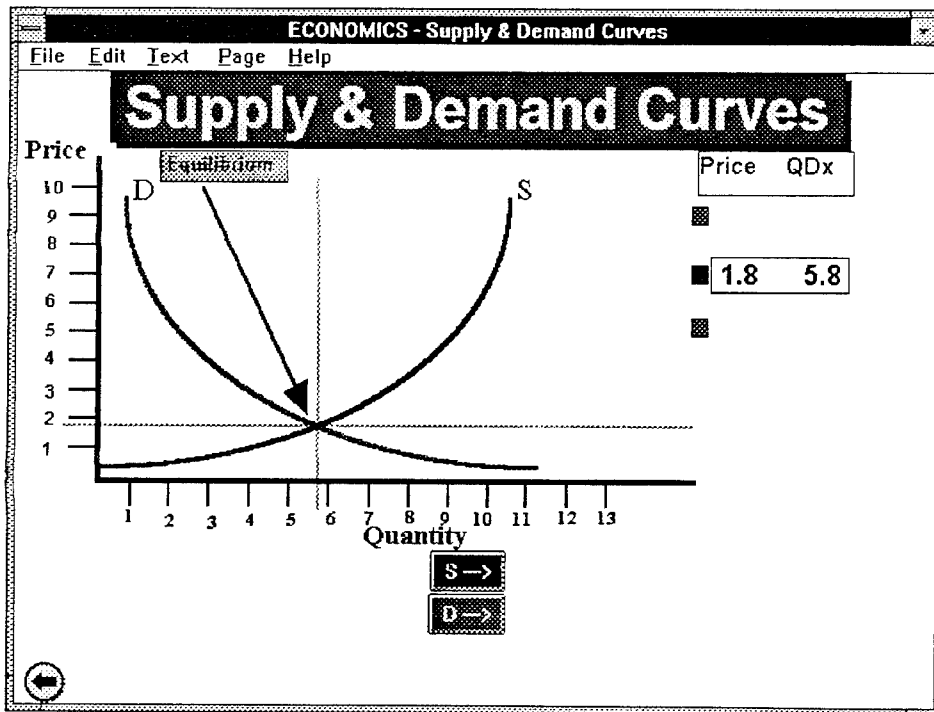


Figure 17. Effects of Curve Shifts Demonstrated

C. FINANCIAL MANAGEMENT DEMO

1. Background of the Accounting Cycle

This screen, as shown in Figure 18, lists information pertaining to the **Background of the Accounting Cycle**. Three buttons are provided which allow the user to navigate to the "Impact to the Financial Statements" (Figure 19) , "Ratio Analysis" (Figure 20), and "Events, transactions, and accounting demonstration" (Figure 21) screens by clicking with the pointing device.

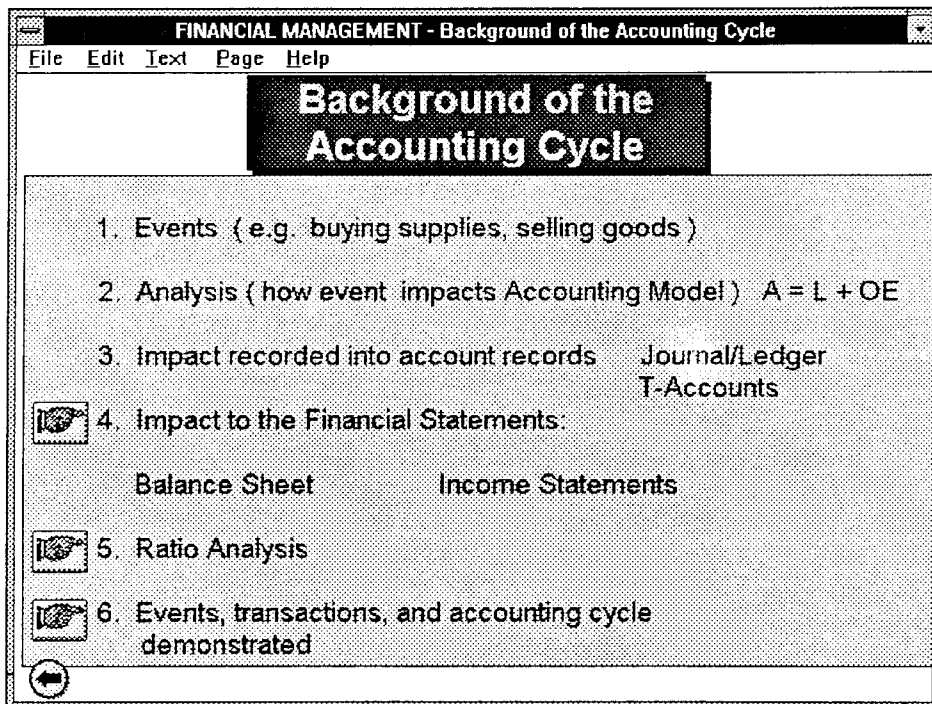


Figure 18. Background of Accounting Cycle

2. Impact to the Financial Statements

Figure 19 describes the **Impact to the Financial Statements** by supplying the user with an example event, and amount, with corresponding impact to the financial statements.

The screenshot shows a software window titled "FINANCIAL MANAGEMENT - Background of the Accounting Cycle". The menu bar includes "File", "Edit", "Text", "Page", and "Help". A prominent message box states: "If the event were: purchase inventory on account for \$200, the balance sheet would appear as below:". Below this, the "BALANCE SHEET" is displayed, split into "ASSETS" and "LIABILITIES".

ASSETS		LIABILITIES	
Current:		Current:	
Cash		A/P	200
A/R		Wages / P	
INV	200	Bonds	
Total Current		Total	
Non-Current:		<u>STOCKHOLDERS EQUITY</u>	
Equip		Capital Stock	
Total Assets		Retained Earnings	
		Total	

Below the balance sheet is the "INCOME STATEMENT":

INCOME STATEMENT	
REVENUE:	
Sales	
EXPENSES	
Cost of Good Sold	
Wage Exp.	
Depreciation Exp.	
Total Expenses	
(NET LOSS)	

Figure 19. Impact to the Financial Statements

3. Ratio Analysis

This screen, shown in Figure 20, explains the Ratio Analysis concept as it impacts the financial statements. The phrases "Ratio Analysis" and "Current Ratio" are hot words with additional information.

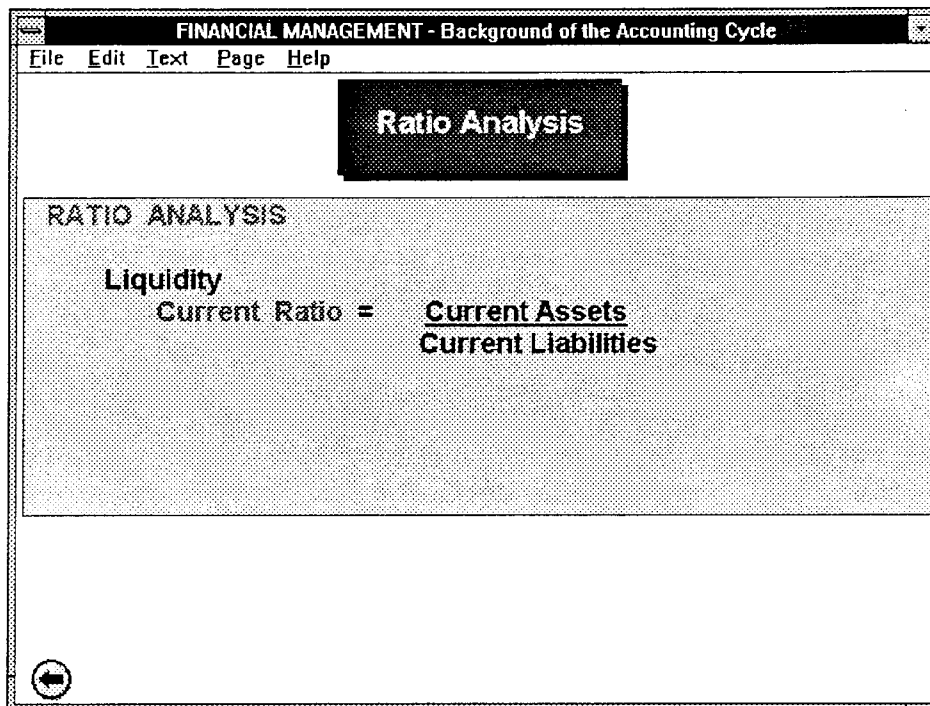


Figure 20. Ratio Analysis

4. Events, Transactions, and Accounting Cycle Instructions

This screen, as shown in Figure 21, provides the user with instructions for interacting with the **Events, Transaction and Accounting Cycle** demonstration.

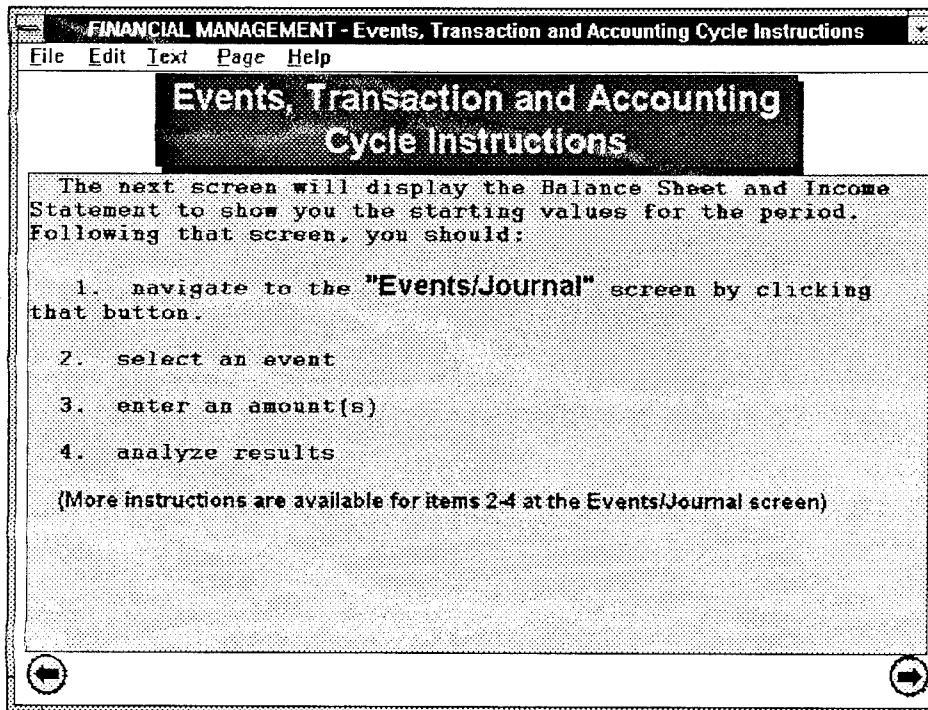


Figure 21. Events, Transactions, and Accounting Cycle Instructions

5. Events, Transactions, and Accounting Cycle Demonstration

The screen in Figure 22 incorporates interactive animation. The user is prompted by a field with yellow border and accompanying instructions to input data. First the user is to select an event from the upper left rectangular events object, whose border is highlighted in yellow. The selection can be made by clicking or using the arrow keys to highlight the selection, then pressing the enter key. The next input is the Amount field. Here the user inputs a numeric whole number value followed by the enter key. If the event requires two amounts, the next amount field will be highlighted for similar input. The "**Analysis results**" button is then highlighted for the user to click. This action will analyze the event with respect to the $A = L + SE$ model, indicating positive or negative impact and dollar amounts. The user can start with the first step to select another event. When satisfied, the user may proceed with the "**Apply transaction**" button by clicking it. This will take the event selected and associated amount(s), then apply them to the **Journal**, **T-Accounts**, and **Balance Sheet**. The demo will simulate the **Journal** book turning pages, then post entries to the Journal. The last five buttons will be highlighted for the user to select from. The "**To "T" Accounts**" button navigates the user to the T-Accounts screen as shown in Figure 23. The "**To Balance Sheet**" button returns the user to the Balance Sheet screen as shown in Figure 24. The "**To background of Acct. Cycle**" button navigates the user to the Background of Accounting Cycle screen as shown in Figure 18. The "**To MAIN Menu**" button navigates the user to the **MAIN MENU** as shown in Figure 7. The "**Reset all entries**" button resets all event, journal, T-Account, and Balance Sheet entries to their starting values prior to user input, for a new round of simulation.

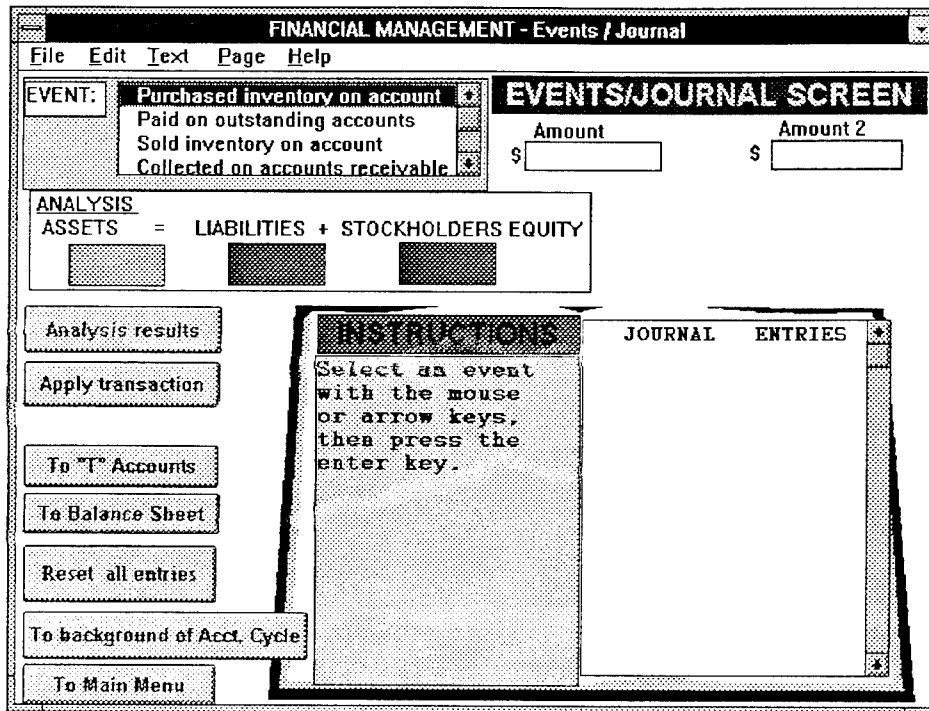


Figure 22. Events, Transactions and Accounting Cycle
Demonstration

6. T-Accounts

The screen in Figure 23 simulates the **T-Accounts** recordings. As the user inputs transactions in the **Events, Transactions, and Accounting Cycle Demonstration** screen, this screen will reflect that input. Additionally, the most recent input will be highlighted by a blinking red arrow above the affected accounts. As a transaction affects an account, a dotted line will be drawn in the account table with balances updated. As the account gets filled with data, the user may activate the scroll bars along the right side of the account to view more data.

FINANCIAL MANAGEMENT - T-Accounts		
File Edit Text Page Help		
CASH BB 500	A/R BB 300	INV BB 700
EQUIP BB 1000	WAGES PAYABLE	A/P BB 100
CAPITAL STOCK BB 2000	RE BB 200	CGS
SALES REV	WAGE EXP	DEPREC EXP
To Events/Journal	To Balance Sheet	To background of acct. cycle
To MAIN Menu		

Figure 23. T-Accounts

7. Balance Sheet

The screen of Figure 24 provides the user with an update of the **Balance Sheet**. Any transactions input by the user in the **Events, Transactions, and Accounting Cycle Demonstration** will be reflected on this screen. After viewing the impact of selected events on the balance sheet, there are four buttons for the user to choose from. The "To Events/Journal" will navigate the user to the **Events, Transactions, and Accounting Cycle Demonstration** screen to repeat demonstration. The "To T Accounts" button will navigate the user to the **T-Accounts** screen as shown in Figure 23. The "To background of acct. cycle" button will navigate the user to the **Background of Accounting Cycle** screen as shown in Figure 18. The "To MAIN Menu" button will return the user to the **MAIN Menu** as shown in Figure 7.

Assets		Liabilities	
Current:		Current:	
Cash	500	A/P	300
A/R	300	Wages/P	0
INV	700	Bonds	0
Total Current	1500	Total Liabilities	300
Non-Current:		Stockers' Equity	
Equip	1000	Capital Stock	2000
Total Assets	2500	Retained Earnings	200
		Total SE	2200
		Total	2500

Income Statement	
REVENUE:	
Sales	0
EXPENSES	
Cost of Goods Sold	0
Wage Exp.	0
Depreciation Exp.	0
Total Expenses	0
NET INCOME	0

To Events/Journal
To T Accounts
To Background of acct. cycle
To Main Menu

Figure 24. Balance Sheet

D. GENERAL MANAGEMENT DEMO

1. Title Screen

This screen, shown in Figure 25, introduces the user to the General Management demo called "**Dealing with Conflict.**"

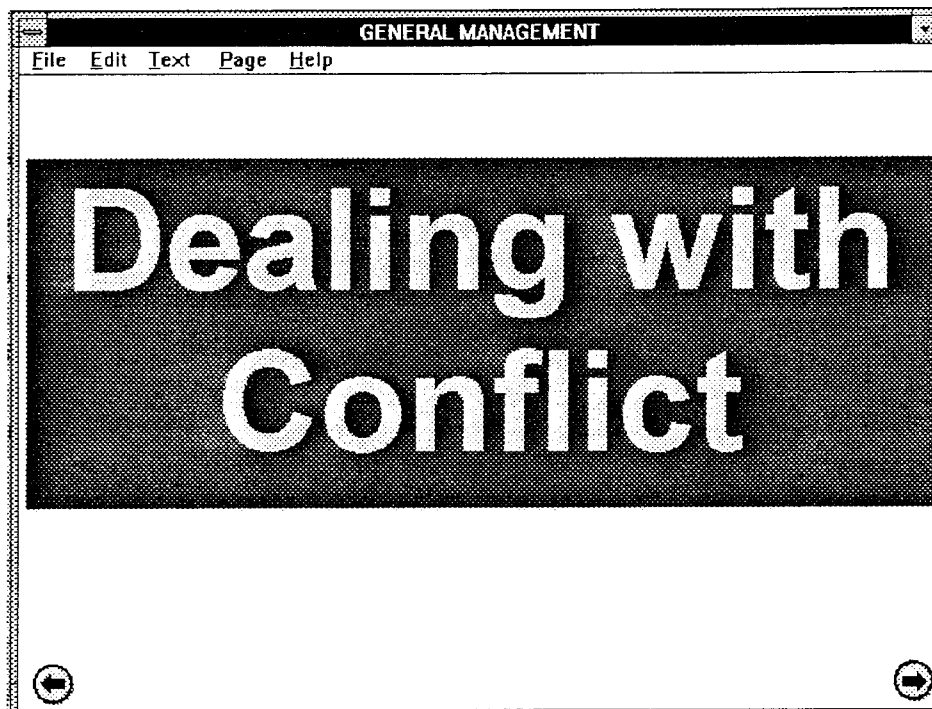


Figure 25. Title Screen

2. Conflict Defined

The screen in Figure 26 gives the user a brief definition of the word: "**conflict**". There are four hot words within the definition of "**conflict**", they are "**conditions**", "**concerns**", "**people**", and "**appear**".

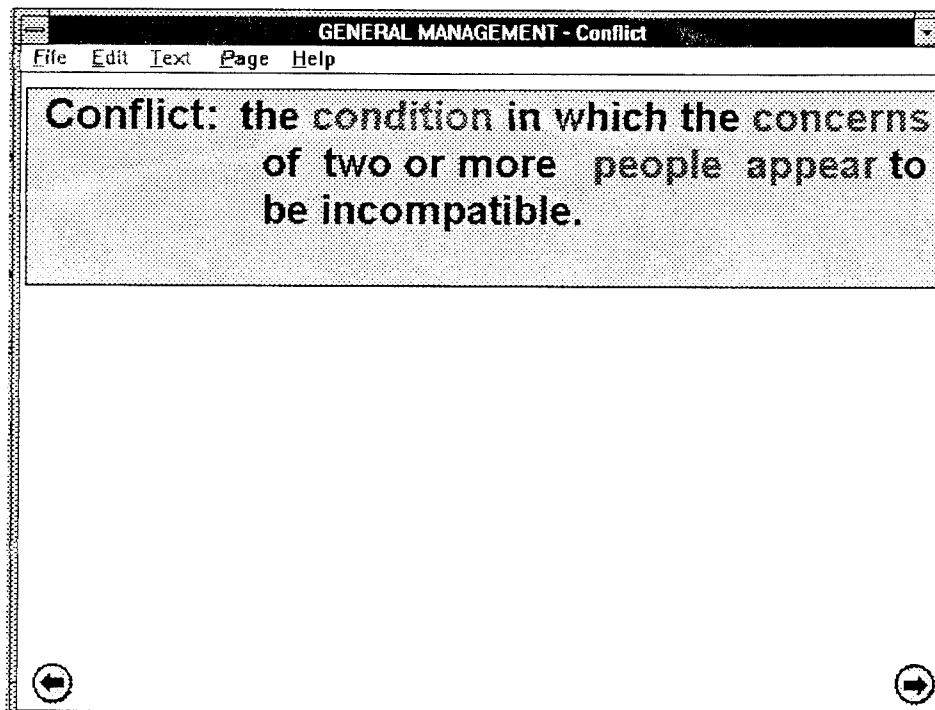


Figure 26. Conflict Defined

3. Dimensions of Conflict

The screen in Figure 27 gives the user information about the two dimensions of conflict. There are two hot words, "assertiveness" and "cooperativeness", which when activated, pop-out axis labels and change the appropriate arrow color to red.

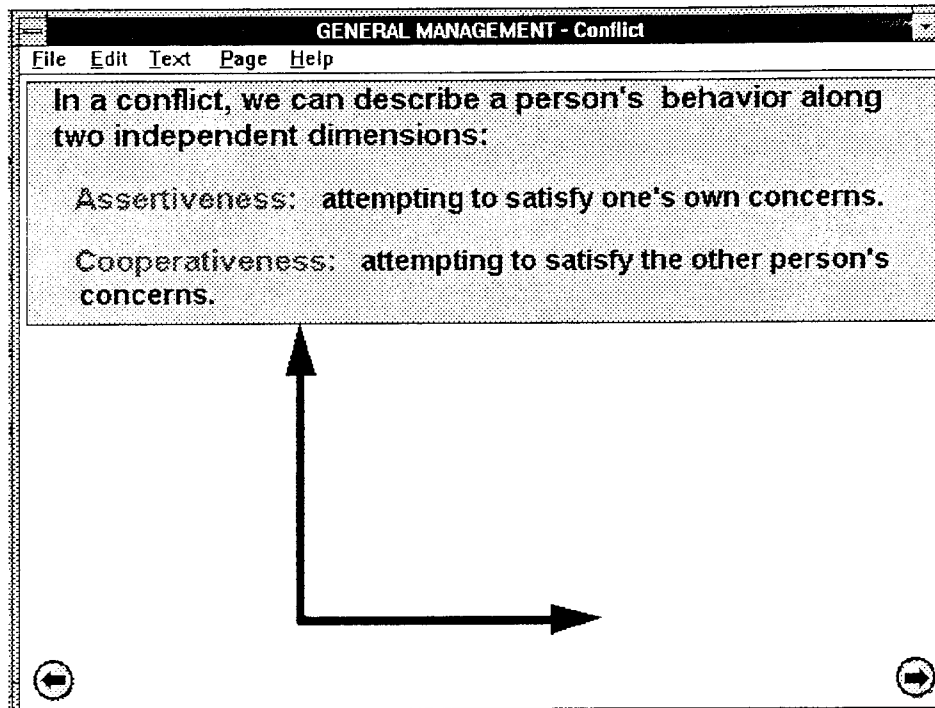


Figure 27. Dimensions of Conflict

4. Conflict Handling Modes

This screen, shown in Figure 28, presents the user with an animated depiction of the Conflict Handling Modes of conflict. Each of the rectangles labeled: "competing", "collaborating", "compromising", "avoiding", and "accommodating" are Conflict Handling Modes. Since they are hot words, when covered with the pointing device, they provide a brief definition. The squares to the right of each of these are also hot words. When they are covered with the pointing device, they provide example phrases which support each Conflict Handling Mode.

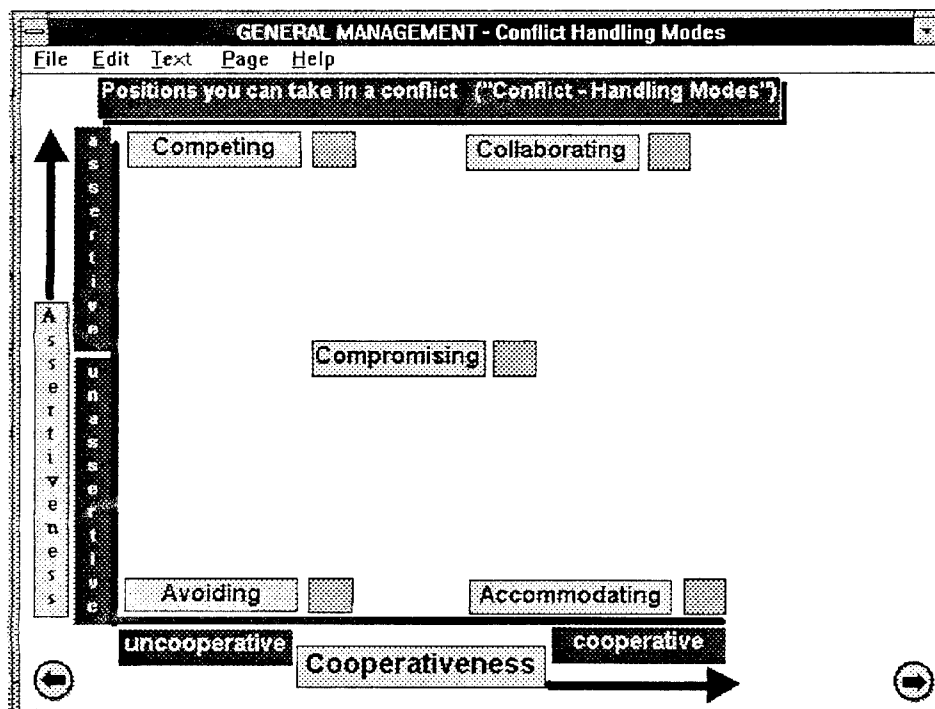


Figure 28. Conflict Handling Modes

5. Splitting Up the Pie

This screen, shown in Figure 29, provides an animation sequence controlled by a series of buttons which are activated by clicking. It provides the user with a phased presentation of portions of interests that are gained by two parties during conflict. The "**Lose/lose**" button displays a small dot representing a tiny fraction of interests gained. The "**Lose/win**" button displays three small circles: "**competing**", "**compromising**", and "**accommodating**", shaded with colors representing interests gained by each of the two parties. The "**Win/win**" button shows a large circle, "**collaborating**", split equally between the two parties. The "**Distributive**" button, when activated, draws a line along the "**competing**", "**compromising**" and "**accommodating**" circles. At this point, those Conflict Handling Modes become hot words to describe portions of interest claimed by each party. The "**Integrative**" button, when activated, draws a line along the "**avoiding**",

"compromising", and "collaborating" circles. The Conflict Handling Modes now contain new hot words.

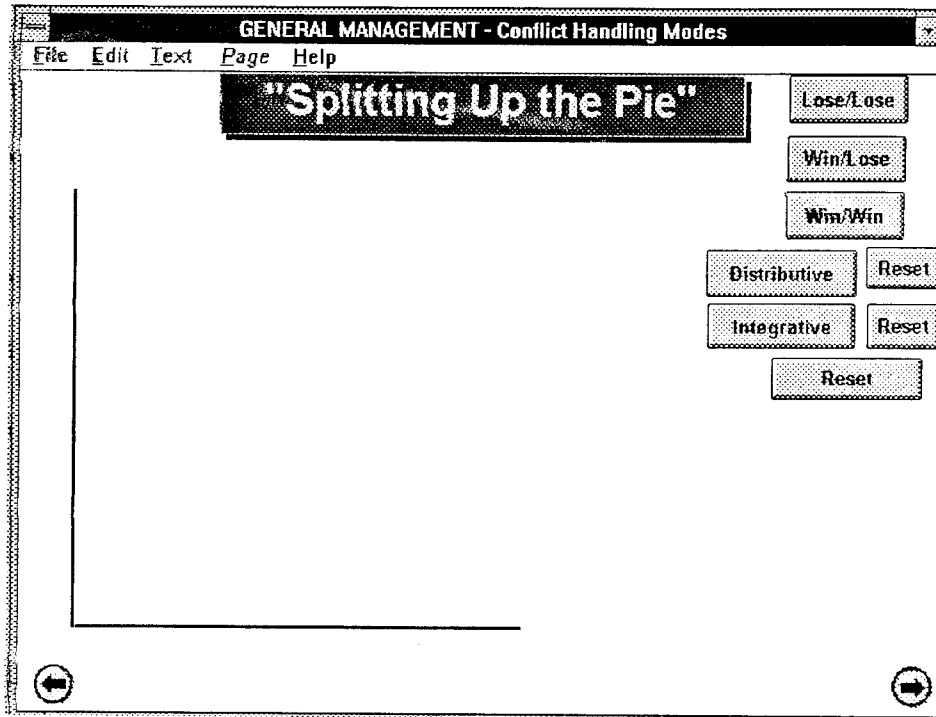


Figure 29. Splitting Up the Pie

6. Steps in Collaborating

This screen, as shown in Figure 30, provides the user with five steps involved in the Collaborating process. Initially, the user is presented with the first step. When the user clicks on the "next" button, the next step is shown until all steps are displayed.

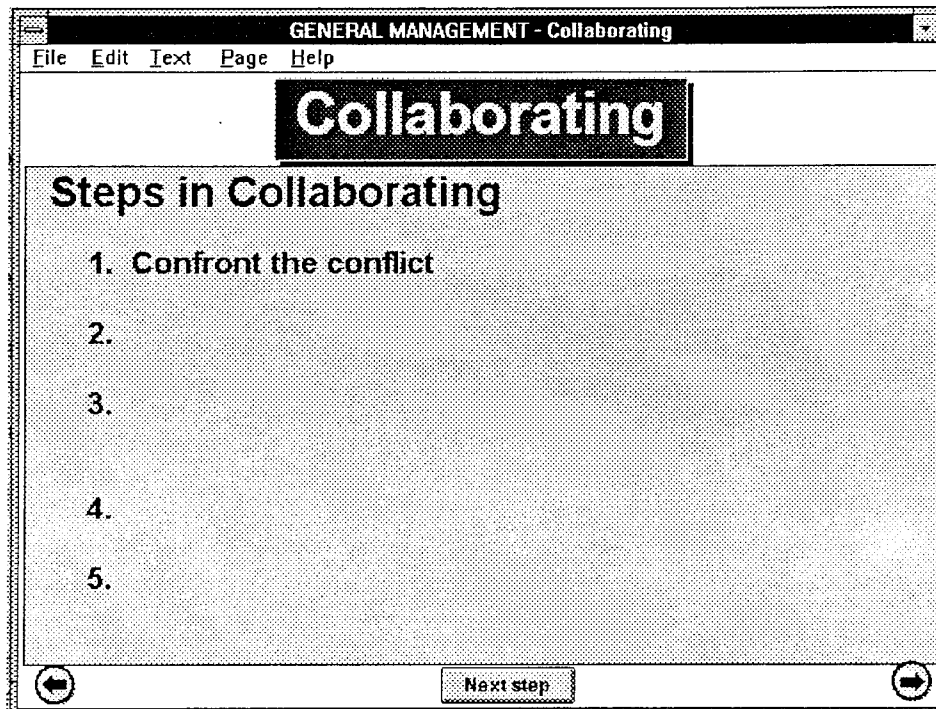


Figure 30. Steps in Collaborating

E. INFORMATION TECHNOLOGY MANAGEMENT DEMO

1. Computer Communications Architecture

This screen, shown in Figure 32, gives the user a brief overview of **Computer Communications Architecture** terminology. The user is presented with four navigational buttons. The first one allows the user to view a **Schematic Representation of the OSI Model**. The second button allows the user to gain more information about the **TCP/IP Protocol Suite**. The third button allows the user to learn more about **Basic Computer Communications**. The last one labeled "**Main Menu**", navigates the user to the MAIN Menu as shown in Figure 7.

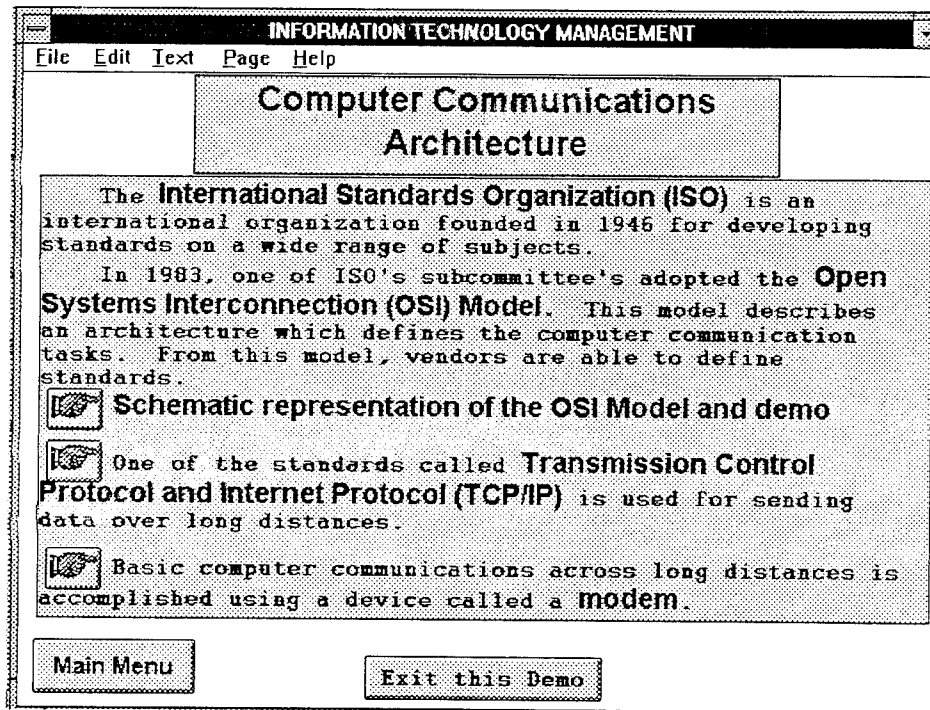


Figure 32. Computer Communications Architecture

2. Schematic Representation of the OSI Model and Demo

This screen is shown in Figure 33. It gives the user a **Schematic Representation of the OSI Model**. On the left stack of the model are hot words for each of the layers which provide descriptions of their purposes. The "**communications path**" object is a hot word which provides additional information about paths. The two "**SEND**" buttons when activated by clicking, demonstrate the logical path taken within the seven layer model for successful communication.

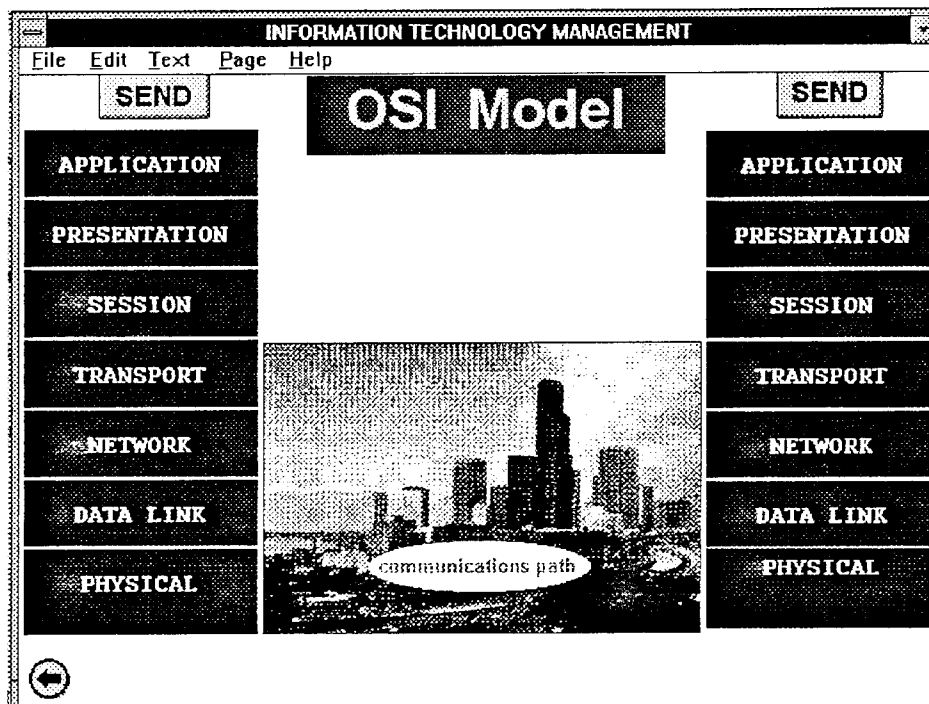


Figure 33. Schematic Representation of the OSI Model

3. The TCP/IP Protocol Suite

This screen, shown in Figure 34, provides information describing the principles and organization of the **TCP/IP Protocol Suite**. A navigational button is available for the user to see a **Diagram of Protocol Dependencies**.

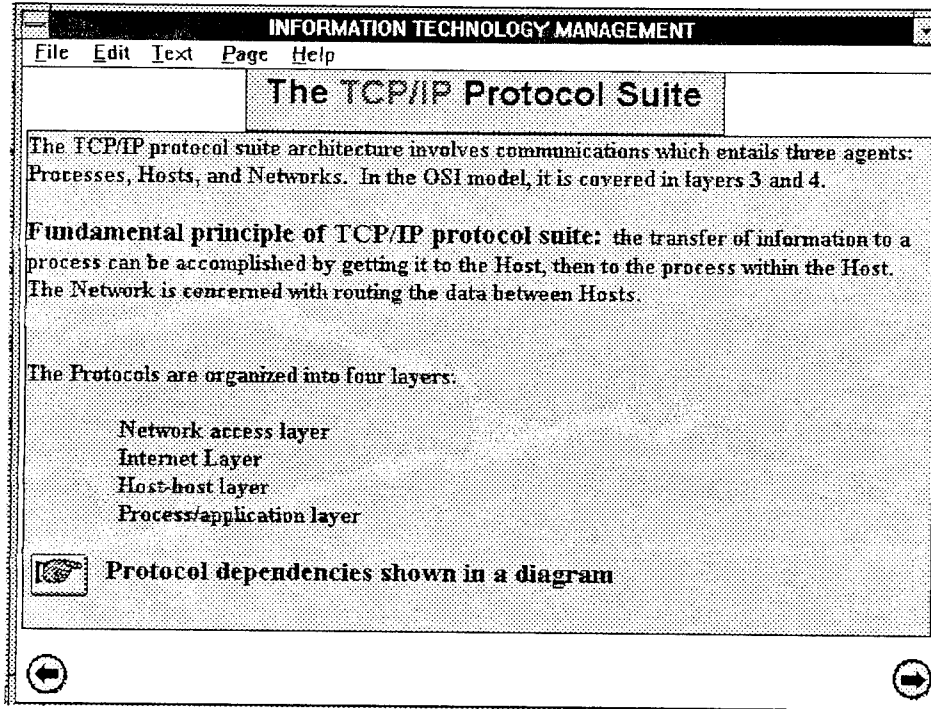


Figure 34. The TCP/IP Protocol Suite

4. Diagram of Protocol Dependencies

This screen, shown in Figure 35, provides the user with a diagram of **Protocol Dependencies**. Each of the Protocol acronyms are hot words which explain their meaning.

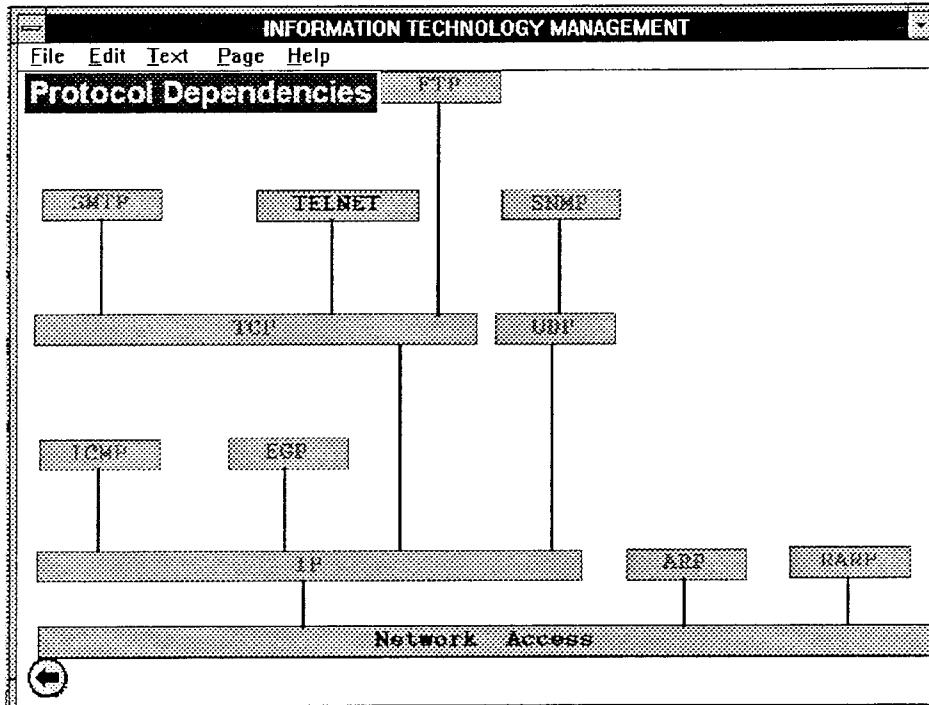


Figure 35. Diagram of Protocol Dependencies

5. Basic Computer Communications

This screen, shown in Figure 36, provides the user with some definitions of **Basic Computer Communications** terminology. The word "**modem**" is a hot word which explains its meaning. There is a navigational button which, when clicked, allows the user to view a **Demo of Computer Transmission over the Telephone Exchange System**.

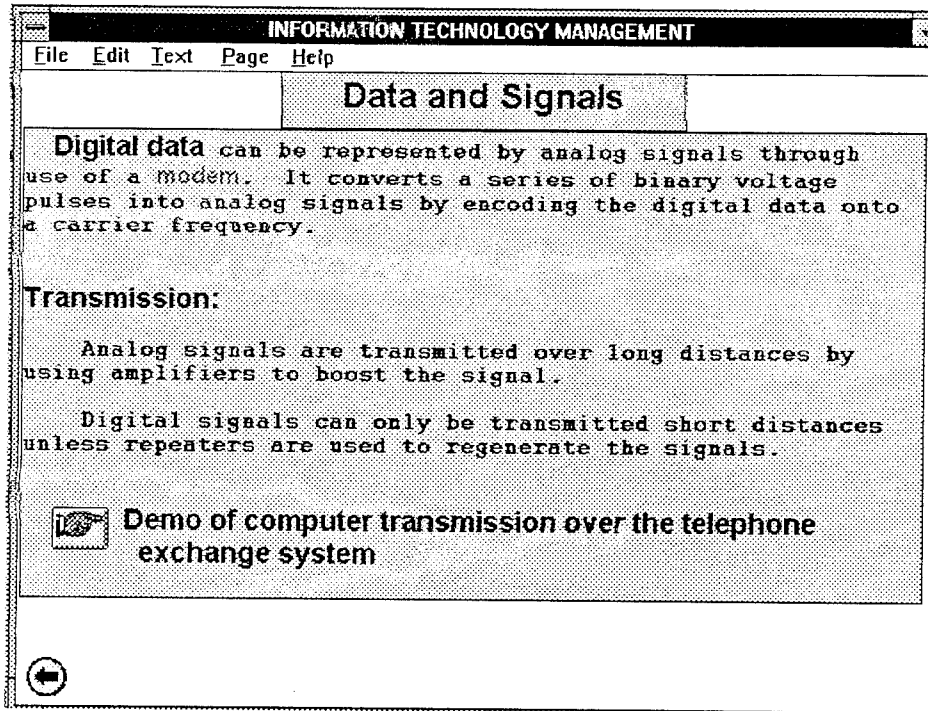


Figure 36. Basic Computer Communications

6. **Demo of Computer Transmission Over the Telephone Exchange System**

This screen, shown in Figure 37, provides the user with animation demonstrating the physical components of **Computer Transmission over the Telephone Exchange System**. There is a button labeled "SEND", when activated by clicking provides an animated demonstration of sending a computer signal from one computer to another. There is a button labeled "Exit this Demo" which allows the user to exit the demo to Microsoft Windows.

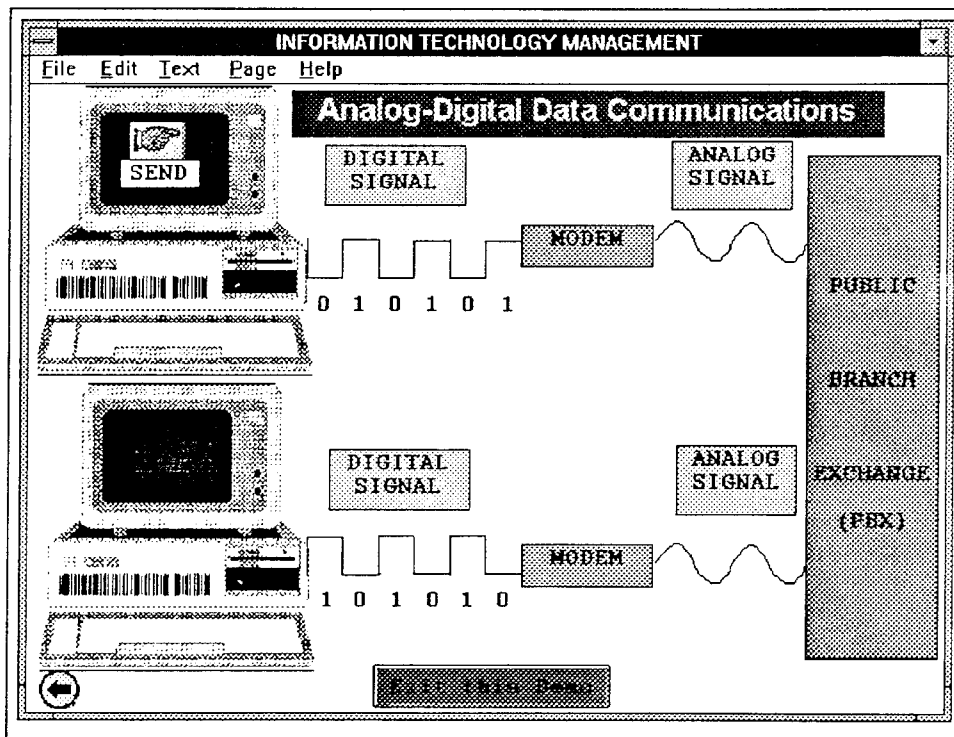


Figure 37. Demo of Computer Transmission Over the Telephone Exchange System

APPENDIX C: SOURCE CODE

This appendix contains the source code of the NPS Multimedia Demo.

```
---- START OF SCRIPT FOR OBJECT Page id 0 of Book "D:\NPSDEMO\TEST.TBK"
```

```
-----
```

```
to handle enterPage
```

```
  system vSong
```

```
  SysHotwordsShown = true
```

```
  set caption of this book to "NAVAL POSTGRADUATE SCHOOL\  
  &" - SYSTEMS MANAGEMENT DEPT (Multimedia Demo)"
```

```
  vSong = 0
```

```
  bounds of mainWindow = 0,0,640,480
```

```
  SysFontFace = "Courier"
```

```
  SysFontSize = "12"
```

```
  SysFontStyle = "bold"
```

```
end
```

```
---- END OF SCRIPT FOR OBJECT Page id 0 of Book "D:\NPSDEMO\TEST.TBK"
```

```
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 280 of Page id 0 -----
```

```
to handle buttonDown
```

```
  hide field "caution"
```

```
  send exit
```

```
end
```

```
to handle mouseEnter
```

```
  show field "caution"
```

```
  set sysCursor to 44
```

```
end mouseEnter
```

```
--Handles Mouse leave
```

```
to handle mouseLeave
```

```
  hide field "caution"
```

```
  set sysCursor to 2
```

```
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 280 of Page id 0 -----
```

---- START OF SCRIPT FOR OBJECT Button id 274 of Page id 0 -----

```
to handle buttonDown
--{Go to next page}
  send next
end
```

```
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 274 of Page id 0 -----

---- START OF SCRIPT FOR OBJECT Hotword id 145 of Page id 65 -----

```
to handle mouseEnter
  show stage "video"
  mmPlay clip "windsurf" in stage "video" autoclose
  hide stage "video"
end
```

```
--Handles Mouse leave
to handle mouseLeave
  if mmStatus of clip "windsurf" = "playing"
    mmStop clip "windsurf"
  end
  hide stage "video"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 145 of Page id 65 -----

---- START OF SCRIPT FOR OBJECT Button id 143 of Page id 65 -----

```
to handle buttonDown
  go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
```

```
end mouseEnter
```

```
--Handles Mouse leave
```

```
to handle mouseLeave
```

```
    set sysCursor to 2
```

```
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 143 of Page id 65 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 136 of Page id 65 -----
```

```
to handle mouseEnter
```

```
    show button "sound1"
```

```
    show button "sound2"
```

```
    show button "sound3"
```

```
    system vsMusic
```

```
    vsMusic = true
```

```
--Checks to see if playing device is active
```

```
clear sysError
```

```
sysSuspend = false
```

```
mmPlay clip "min" wait
```

```
if sysError = null
```

```
    vsMusic = true
```

```
else
```

```
    vsMusic = false
```

```
end
```

```
sysSuspend = true
```

```
mmPlay clip "canyon" autoclose
```

```
end
```

```
--Handles Mouse leave
```

```
to handle mouseLeave
```

```
    mmStop clip "canyon"
```

```
    hide button "sound1"
```

```
    hide button "sound2"
```

```
    hide button "sound3"
```

```
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Hotword id 136 of Page id 65 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 134 of Page id 65 -----
```

```
to handle mouseEnter
```

```
show Ellipse "ball"
```

select Ellipse "ball"
move the selection to 5910, 3705
pause 20
move the selection to 6060, 3375
pause 20
move the selection to 6210, 3075
pause 20
move the selection to 6420, 2820
pause 20
move the selection to 6630, 2730
pause 20
move the selection to 6885, 2730
pause 20
move the selection to 7110, 2805
pause 20
move the selection to 7260, 2835
pause 20
move the selection to 7545, 3015
pause 20
move the selection to 7890, 3300
pause 20
move the selection to 8040, 3510
pause 20
move the selection to 8265, 3750
pause 20
move the selection to 8460, 4050
pause 20
move the selection to 8625, 4380
pause 20
move the selection to 8730, 4605
pause 20
move the selection to 8595, 4905
pause 20
move the selection to 8415, 5040
pause 20
move the selection to 8205, 5145
pause 20
move the selection to 7860, 5070
pause 20
move the selection to 7530, 4905
pause 20
move the selection to 7200, 4725
pause 20

```
move the selection to 6870, 4515
pause 20
move the selection to 6585, 4320
pause 20
move the selection to 6315, 4155
pause 20
move the selection to 6015, 4005
pause 20
move the selection to 5805, 3855
pause 20
move the selection to 5685, 3750
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide Ellipse "ball"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 134 of Page id 65 -----

```
---- START OF SCRIPT FOR OBJECT Hotword id 132 of Page id 65 -----
to handle mouseEnter
  show paintobject "seattle"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide paintobject "seattle"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 132 of Page id 65 -----

```
---- START OF SCRIPT FOR OBJECT Hotword id 130 of Page id 65 -----
to handle mouseEnter
  show group "graphic"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide group "graphic"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 130 of Page id 65 -----

```
---- START OF SCRIPT FOR OBJECT Hotword id 128 of Page id 65 -----  
to handle mouseEnter  
    show field "text"  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    hide field "text"  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Hotword id 128 of Page id 65 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 9 of Page id 65 -----
```

```
--Handles Mouse enter  
to handle buttonDown  
--{Go to next page}  
    send next  
end
```

```
to handle mouseEnter  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 9 of Page id 65 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 40 of Book  
"D:\NPSDEMO\TEST.TBK" -----
```

```
to handle enterPage  
    set caption of this book to "Demo Instructions"  
end
```

```
---- END OF SCRIPT FOR OBJECT Page id 40 of Book "D:\NPSDEMO\TEST.TBK"  
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 30 of Page id 40 -----
```

```
--Handles Mouse enter  
to handle buttonDown
```

```
--{Go to next page}
  send next
end
```

```
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 30 of Page id 40 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 28 of Page id 40 -----
```

```
to handle buttonDown
  go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 28 of Page id 40 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 41 of Book
"D:\NPSDEMO\TEST.TBK" -----
```

```
to handle enterPage
  set caption of this book to "Countdown Timer"
end
```

```
---- END OF SCRIPT FOR OBJECT Page id 41 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Group id 43 of Page id 41 -----
```

```
-- sets sweep hand to angle/360. At 0, the sweep hand points up.
```

```

-- rotation is clockwise
to set sweep to angle
  fullRev = 360 -- constant for number of degrees in full revolution.
  -- get current angle from stored property
  set myAngle of self to angle
  -- find center of dial
  coords = bounds of self
  ctr = (first item of coords + third item of coords)/2,\
        (second item of coords + fourth item of coords)/2
  -- find radius of dial
  radius = ((third item of coords) - (first item of coords))/2
  -- find out current angle, in radians. (2*PI radians is 1 revolution.)
  -- Note: PI/2 is subtracted so 0 at top rather than at right.
  minutesAngle = (angle/fullRev) * (2 * PI) - (PI / 2)
  -- set the vertices of the line.
  set vertices of line "minute" of self to \
    first item of ctr,\
    last item of ctr,\
    first item of ctr + (radius * cos(minutesAngle)), \
    last item of ctr + (radius * sin(minutesAngle))
end

```

```

-- moves sweep hand one step around dial.
-- it should take 1 second to complete the revolution.
notifybefore idle
  steps = 10 -- number of steps for complete revolution
  fullRev = 360 -- constant for number of degrees in full revolution.
  millsecs = 1000 -- number of milliseconds in a second
  maxDisplay = 3 -- highest number displayed

  curTime = timeGetTime()
  syslockscreen = true

  -- get new angle
  newAngle = (curTime mod millSecs)/millSecs * fullRev
  -- check if we need to change the displayed number
  if newAngle < myAngle of self
    fref = field "counter" of self
    t = text of fref
    if t is 0
      go to next page
    -- t = maxDisplay
  else

```

```

        decrement t
        if t <3
            beep 1
        end
    end
    set text of fref to t
end
-- update the sweep hand
set my sweep to newAngle
syslockscreen = false
end
-- links the dll and initializes widget
to handle init
    fullRev = 360 -- constant for number of degrees in full revolution.
    millsecs = 1000 -- number of milliseconds in a second
    maxDisplay = 5 -- highest number displayed
    linkdll mmsystem
        dword timeGetTime()
    end
    set sweep of self to (timeGetTime() mod millSecs)/millSecs * fullRev
    set text of field "counter" of self to 5
end
-- initialize when entering a page
notifybefore enterpage
    send init
end
---- END OF SCRIPT FOR OBJECT Group id 43 of Page id 41 -----

---- START OF SCRIPT FOR OBJECT Page id 1 of Book "D:\NPSDEMO\TEST.TBK"
-----
to handle enterPage
    system vSong, vsMusic
    set caption of this book to "NPS Multimedia Demo - Main Menu"
    vsMusic = true
    --Increments song number
    vSong = vSong + 1
    if vSong > 5
        vSong = 1
    end
    --Checks to see if playing device is active
    clear sysError
    sysSuspend = false

```

```

mmPlay clip "min" wait
if sysError = null
    vsMusic = true
else
    vsMusic = false
end
sysSuspend = true
send idle
end

to handle idle
    system vSong, vsMusic

    if vsMusic = true
        vPlay = "false"

        vSong = vSong + 1

        if vSong > 5
            vSong = 1
        end
        if mmStatus of clip "canyon" = "playing" or \
            mmStatus of clip "dcanon" = "playing" or \
            mmStatus of clip "min-g" = "playing" or \
            mmStatus of clip "musicbox" = "playing" or \
            mmStatus of clip "twelvrag" = "playing" then
            vPlay = "true"
        else
            vPlay = "false"
        end
        conditions
            when vPlay = "true"
                break
            when vSong = 1
                mmPlay clip "canyon" autoclose
            when vSong = 2
                mmPlay clip "dcanon" autoclose
            when vSong = 3
                mmPlay clip "min-g" autoclose
            when vSong = 4
                mmPlay clip "musicbox" autoclose
            when vSong = 5
                mmPlay clip "twelvrag" autoclose
    end

```

```
    end
end
end
```

```
to handle leavePage
    system vsMusic
```

```
    if vsMusic = false
        break leavePage
    end
```

```
    conditions
```

```
        when mmStatus of clip "canyon" = "playing"
            mmStop clip "canyon"
```

```
        when mmStatus of clip "dcanon" = "playing"
            mmStop clip "dcanon"
```

```
        when mmStatus of clip "min-g" = "playing"
            mmStop clip "min-g"
```

```
        when mmStatus of clip "musicbox" = "playing"
            mmStop clip "musicbox"
```

```
        when mmStatus of clip "twelvrag" = "playing"
            mmStop clip "twelvrag"
```

```
        when mmStatus of clip "min" = "playing"
            mmStop clip "min"
```

```
    end
```

```
-- forward
```

```
end
```

```
---- END OF SCRIPT FOR OBJECT Page id 1 of Book "D:\NPSDEMO\TEST.TBK"
```

```
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 28 of Page id 1 -----
```

```
to handle buttonDown
```

```
    hide field "caution"
```

```
    send exit
```

```
end
```

```
to handle mouseEnter
```

```
    show field "caution"
```

```
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "caution"
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 28 of Page id 1 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 18 of Page id 1 -----
to handle buttonDown
    go to page 2
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 18 of Page id 1 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 17 of Page id 1 -----
to handle buttonDown
    go to page "demand"
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 17 of Page id 1 -----

---- START OF SCRIPT FOR OBJECT Field id 16 of Page id 1 -----

```
-- cycles the colors of letters in a field
notifyBefore Idle
  system int rainbowCount
  increment rainbowCount
  set sObj to self
    total=charcount(text of sObj)
  if (rainbowCount mod 10 = 0)
    set sysLockScreen to true
  -- set sObj to self
  -- total=charcount(text of sObj)
  set saveCol to strokeColor of char total of text of sObj
  step i from total to 2 by -1
    set strokecolor of char i of text of sObj to strokeColor of char i - 1 of text of
sObj
  end
  set strokeColor of first character of text of sObj to saveCol
  set sysLockScreen to false
  end if
end idle
-- make idle still work while mouse button is held down
notifyBefore buttonStillDown
  sendnotifyBefore idle to self
end
---- END OF SCRIPT FOR OBJECT Field id 16 of Page id 1 -----
```

---- START OF SCRIPT FOR OBJECT Button id 15 of Page id 1 -----

```
notifyBefore idle
  get last char of name of normalgraphic of self
  set it to it mod 4 + 1
  set normalgraphic of self to bitmap ("cd"&it)
end
notifyBefore copy
  if selection contains self
    bookref of self = name of this book
  end
end
notifyAfter make
  if selection contains self
```

```

    bref = bookref of self
    if bref is not null and bref <> name of this book
        rl = resourceList("bitmap",this book)
        step i from 1 to 4
            found = false
            step j from 1 to itemcount(rl)
                if name of (item j of rl) = "cd"&i
                    found = true
                    break step -- j
                end
            end
            if not found
                copy resource bitmap ("cd"&i) of book bref to this book
            end
        end
    end
    clear bookref of self
end
end
---- END OF SCRIPT FOR OBJECT Button id 15 of Page id 1 -----

```

```

---- START OF SCRIPT FOR OBJECT Button id 9 of Page id 1 -----
to handle buttonDown
    go to page "computer comm architecture"
end

```

```

--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter

```

```

--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave

```

```

to handle buttonClick
    go to Page "computer comm architecture"
end

```

```

---- END OF SCRIPT FOR OBJECT Button id 9 of Page id 1 -----

```

```
---- START OF SCRIPT FOR OBJECT Button id 8 of Page id 1 -----  
to handle buttonDown  
    go to page "general management"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 8 of Page id 1 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 7 of Page id 1 -----  
to handle buttonDown  
    go to page "acct background"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 7 of Page id 1 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 43 of Book  
"D:\NPSDEMO\TEST.TBK" -----  
to handle enterPage  
    set caption of this book to "ECONOMICS - Demand"  
end
```

```
---- END OF SCRIPT FOR OBJECT Page id 43 of Book "D:\NPSDEMO\TEST.TBK"  
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 15 of Page id 43 -----  
to handle buttonClick  
  go to Page "demand curve"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 15 of Page id 43 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 14 of Page id 43 -----  
to handle buttonClick  
  go to Page "elasticity of demand"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 14 of Page id 43 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 18 of Page id 43 -----  
to handle mouseEnter  
  text of field "display" = " As income increases,\n    &" or the price of an item decreases, consumers"\n    &" will buy more of all goods."  
  show field "display"  
  set sysCursor to 44
```

```
end mouseEnter
```

```
--Handles Mouse leave
```

```
to handle mouseLeave
```

```
  hide field "display"
```

```
  set sysCursor to 2
```

```
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Hotword id 18 of Page id 43 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 16 of Page id 43 -----
```

```
to handle mouseEnter
```

```
  text of field "display" = " As the price of an"&\
```

```
    " item increases, it becomes more expensive"\
```

```
    &" relative to other goods. Consumers will"\
```

```
    &" start buying more of the other goods."
```

```
  show field "display"
```

```
  set sysCursor to 44
```

```
end mouseEnter
```

```
--Handles Mouse leave
```

```
to handle mouseLeave
```

```
  hide field "display"
```

```
  set sysCursor to 2
```

```
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Hotword id 16 of Page id 43 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 13 of Page id 43 -----
```

```
--Handles Mouse enter
```

```
to handle buttonDown
```

```
--{Go to next page}
```

```
  send next
```

```
end
```

```
to handle mouseEnter
```

```
  set sysCursor to 44
```

```
end mouseEnter
```

```
--Handles Mouse leave
```

```
to handle mouseLeave
```

```
  set sysCursor to 2
```

```
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 13 of Page id 43 -----

---- START OF SCRIPT FOR OBJECT Button id 12 of Page id 43 -----

to handle buttonDown
 go to previous page
end

--Handles Mouse enter
to handle mouseEnter
 set sysCursor to 44
end mouseEnter

--Handles Mouse leave
to handle mouseLeave
 set sysCursor to 2
end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 12 of Page id 43 -----

---- START OF SCRIPT FOR OBJECT Page id 44 of Book
"D:\NPSDEMO\TEST.TBK" -----

to handle enterPage
 set caption of this book to "ECONOMICS - Price Restrictions"
end

---- END OF SCRIPT FOR OBJECT Page id 44 of Book "D:\NPSDEMO\TEST.TBK"

---- START OF SCRIPT FOR OBJECT Button id 10 of Page id 44 -----

to handle buttonClick
 go to Page "price ceiling"
end

--Handles Mouse enter
to handle mouseEnter
 set sysCursor to 44
end mouseEnter

--Handles Mouse leave
to handle mouseLeave
 set sysCursor to 2
end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 10 of Page id 44 -----

---- START OF SCRIPT FOR OBJECT Hotword id 11 of Page id 44 -----

```
to handle mouseEnter
  text of field "display" = " As taxes increase, the" \
    &" steepness of the supply and demand curves will" \
    &" dictate whether the consumer bears most of the" \
    &" tax or the supplier, or both equally."
  show field "display"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "display"
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 11 of Page id 44 -----

---- START OF SCRIPT FOR OBJECT Hotword id 14 of Page id 44 -----

```
to handle mouseEnter
  text of field "display" = " Inflation creates little or" \
    &" no effect, since most other goods and services" \
    &" are also adjusted to the inflation factor."
  show field "display"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "display"
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 14 of Page id 44 -----

---- START OF SCRIPT FOR OBJECT Hotword id 13 of Page id 44 -----

```
to handle mouseEnter
  text of field "display" = " Price floors limit prices" \
    &" to values above the equilibrium level, causing" \
    &" an imbalance."
```

```
    show field "display"  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    hide field "display"  
    set sysCursor to 2  
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 13 of Page id 44 -----

---- START OF SCRIPT FOR OBJECT Button id 9 of Page id 44 -----

```
--Handles Mouse enter  
to handle buttonDown  
--{Go to next page}  
    send next  
end
```

```
to handle mouseEnter  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    set sysCursor to 2  
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 9 of Page id 44 -----

---- START OF SCRIPT FOR OBJECT Button id 8 of Page id 44 -----

```
to handle buttonDown  
    go to previous page  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    set sysCursor to 2
```

```
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 8 of Page id 44 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 45 of Book
"D:\NPSDEMO\TEST.TBK" -----
```

```
to handle enterPage
    set caption of this book to "ECONOMICS - Supply"
end
```

```
---- END OF SCRIPT FOR OBJECT Page id 45 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 14 of Page id 45 -----
```

```
--Handles Mouse enter
to handle buttonDown
--{Go to next page}
    send next
end
```

```
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 14 of Page id 45 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 13 of Page id 45 -----
```

```
to handle buttonDown
    go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
```

```
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 13 of Page id 45 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 15 of Page id 45 -----
to handle buttonClick
    go to Page "supply"
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 15 of Page id 45 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 3 of Page id 45 -----
to handle mouseEnter
    show field "qs"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "qs"
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Hotword id 3 of Page id 45 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 2 of Page id 45 -----
to handle mouseEnter
    show field "supply curve"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
```

```
to handle mouseLeave
  hide field "supply curve"
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Hotword id 2 of Page id 45 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 46 of Book
"D:\NPSDEMO\TEST.TBK" -----
to handle enterPage
  set caption of this book to "ECONOMICS - Supply & Demand"
end
---- END OF SCRIPT FOR OBJECT Page id 46 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 13 of Page id 46 -----
to handle buttonClick
  go to Page "scarcity"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 13 of Page id 46 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 12 of Page id 46 -----
to handle buttonClick
  go to page "supply & demand curves"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 12 of Page id 46 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 11 of Page id 46 -----
to handle buttonDown
  go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 11 of Page id 46 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 5 of Page id 46 -----
to handle buttonClick
  go to Page id 1
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 5 of Page id 46 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 2 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
to handle enterPage
  set caption of this book to "ECONOMICS - Demand Curve"
end
```

```
to handle leavePage
  hide Line "hor-line"
  hide Line "ver-line"
  hide Group "d-line"
  hide Group "d1-line"
  hide Group "arrow-2"
  hide rectangle "d1"
  hide rectangle "d2"
  hide rectangle "d3"
  hide button "<--- D"
  hide button "D --->"
  show field "price title"
  show field "10"
  show Ellipse "10"
  step i from 9 to 1 by -1
    conditions
      when i=9
        hide field "9"
        hide Ellipse "9"
      when i=8
        hide field "8"
        hide Ellipse "8"
      when i=7
        hide field "7"
        hide Ellipse "7"
      when i=6
        hide field "6"
        hide Ellipse "6"
      when i=5
        hide field "5"
        hide Ellipse "5"
      when i=4
        hide field "4"
        hide Ellipse "4"
      when i=3
        hide field "3"
        hide Ellipse "3"
      when i=2
        hide field "2"
```

```

        hide Ellipse "2"
    when i=1
        hide field "1"
        hide Ellipse "1"
    end conditions
end
end
---- END OF SCRIPT FOR OBJECT Page id 2 of Book "D:\NPSDEMO\TEST.TBK"
-----

```

```

---- START OF SCRIPT FOR OBJECT Button id 365 of Page id 2 -----
to handle buttonClick
    go to Page id 43
end

```

```

--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter

```

```

--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave

```

```

---- END OF SCRIPT FOR OBJECT Button id 365 of Page id 2 -----

```

```

---- START OF SCRIPT FOR OBJECT Button id 332 of Page id 2 -----
to handle buttonDown
    hide Rectangle "d1"
    show Group "arrow-2"
    show Rectangle "d2"
    move Group "d-line" to 3195,1524
    pause 40
    move Group "d-line" to 3435,1284
    pause 40
    move Group "d-line" to 3675,1004
    show Rectangle "d3"
    hide button "D --->"
    show button "<--- D"
end

```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 332 of Page id 2 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 325 of Page id 2 -----
```

```
to handle buttonDown
  hide Line "hor-line"
  hide Line "ver-line"
  hide Group "d-line"
  hide Group "d1-line"
  hide Group "arrow-2"
  hide rectangle "d1"
  hide rectangle "d2"
  hide rectangle "d3"
  hide button "<--- D"
  hide button "D --->"
  show field "price title"
  show field "10"
  show Ellipse "10"
  step i from 9 to 1 by -1
    conditions
      when i=9
        hide field "9"
        hide Ellipse "9"
      when i=8
        hide field "8"
        hide Ellipse "8"
      when i=7
        hide field "7"
        hide Ellipse "7"
      when i=6
        hide field "6"
        hide Ellipse "6"
      when i=5
        hide field "5"
```

```

        hide Ellipse "5"
    when i=4
        hide field "4"
        hide Ellipse "4"
    when i=3
        hide field "3"
        hide Ellipse "3"
    when i=2
        hide field "2"
        hide Ellipse "2"
    when i=1
        hide field "1"
        hide Ellipse "1"
    end conditions
end
end
end

```

```

--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter

```

```

--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave

```

---- END OF SCRIPT FOR OBJECT Button id 325 of Page id 2 -----

---- START OF SCRIPT FOR OBJECT Button id 320 of Page id 2 -----

```

to handle buttonDown
    hide Line "hor-line"
    hide Line "ver-line"
    step i from 10 to 1 by -1
    conditions
        when i=10
            hide Ellipse "10"
        when i=9
            hide field "9"
            hide Ellipse "9"
        when i=8
            hide field "8"

```

```

        hide Ellipse "8"
    when i=7
        hide field "7"

        hide Ellipse "7"
    when i=6
        hide field "6"

        hide Ellipse "6"
    when i=5
        hide field "5"

        hide Ellipse "5"
    when i=4
        hide field "4"

        hide Ellipse "4"
    when i=3
        hide field "3"

        hide Ellipse "3"
    when i=2
        hide field "2"

        hide Ellipse "2"
    when i=1
        hide field "1"

        hide Ellipse "1"
    end conditions
end
move Group "d-line" to 3195,1524
show Group "d-line"
show Group "d1-line"
hide field "price title"
hide field "10"
show button "<--- D"
show button "D --->"
end

--Handles Mouse enter
to handle mouseEnter
    set text of field "display" to " The demand line is\"

```

```
        &" created by connecting the demand points."
    show field "display"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "display"
    set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 320 of Page id 2 -----

---- START OF SCRIPT FOR OBJECT Button id 319 of Page id 2 -----

```
to handle buttonDown
    move Line "ver-line" to 3207,1824
    move Line "hor-line" to 2910,1908
    show Line "ver-line"
    show Line "hor-line"
    step i from 9 to 1 by -1
    conditions
        when i=9
            move Line "ver-line" to 3531,1824
            move Line "hor-line" to 2910,2196
            show field "9"
            pause 60
            show Ellipse "9"
        when i=8
            move Line "ver-line" to 3939,1824
            move Line "hor-line" to 2910,2496
            show field "8"
            pause 60
            show Ellipse "8"
        when i=7
            move Line "ver-line" to 4323,1824
            move Line "hor-line" to 2910,2796
            show field "7"
            pause 60
            show Ellipse "7"
        when i=6
            move Line "ver-line" to 4755,1824
            move Line "hor-line" to 2910,3096
            show field "6"
```

```

    pause 60
    show Ellipse "6"
  when i=5
    move Line "ver-line" to 5163,1824
    move Line "hor-line" to 2910,3384
    show field "5"
    pause 60
    show Ellipse "5"
  when i=4
    move Line "ver-line" to 5559,1824
    move Line "hor-line" to 2910,3684
    show field "4"
    pause 60
    show Ellipse "4"
  when i=3
    move Line "ver-line" to 5979,1824
    move Line "hor-line" to 2910,3996
    show field "3"
    pause 60
    show Ellipse "3"
  when i=2
    move Line "ver-line" to 6387,1824
    move Line "hor-line" to 2910,4272
    show field "2"
    pause 60
    show Ellipse "2"
  when i=1
    move Line "ver-line" to 6795,1824
    move Line "hor-line" to 2910,4560
    show field "1"
    pause 60
    show Ellipse "1"
  end conditions
  pause 50
end
end

```

```

--Handles Mouse enter
to handle mouseEnter
  set text of field "display" to " Indicates the quantity of\"
    &" an item that consumers are willing to buy at a\"
    &" certain price."
  show field "display"

```

```
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "display"
    set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 319 of Page id 2 -----

---- START OF SCRIPT FOR OBJECT Button id 89 of Page id 2 -----

```
to handle buttonDown
    hide Rectangle "d3"
    show Group "arrow-2"
    show Rectangle "d2"
    move Group "d-line" to 3195,1524
    pause 40
    move Group "d-line" to 2955,1764
    pause 40
    move Group "d-line" to 2715,2004
    show Rectangle "d1"
    hide button "<--- D"
    show button "D --->"
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 89 of Page id 2 -----

---- START OF SCRIPT FOR OBJECT Page id 42 of Book
"D:\NPSDEMO\TEST.TBK" -----

```
to handle enterPage
    set caption of this book to "ECONOMICS - Elasticity of Demand"
end
```

```

to handle leavePage
  hide Group "d-line"
  hide field "elasticity"
  hide field "unit elastic"
  hide field "inelastic"
  hide Rectangle "elas-1"
  hide Rectangle "elas-2"
  hide Group "arrow-1"
  hide Group "arrow-2"
  hide field "inelastic"
  hide Group "d1-line"
  hide Rectangle "elas-11"
  hide Rectangle "elas-22"
end
---- END OF SCRIPT FOR OBJECT Page id 42 of Book "D:\NPSDEMO\TEST.TBK"
-----

```

```

---- START OF SCRIPT FOR OBJECT Button id 8 of Page id 42 -----

```

```

to handle buttonDown
  hide Group "d-line"
  hide field "elasticity"
  hide field "unit elastic"
  hide field "inelastic"
  hide Rectangle "elas-1"
  hide Rectangle "elas-2"
  hide Group "arrow-1"
  hide Group "arrow-2"
  hide field "inelastic"
  hide Group "d1-line"
  hide Rectangle "elas-11"
  hide Rectangle "elas-22"
end

```

```

--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter

```

```

--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2

```

```
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 8 of Page id 42 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 7 of Page id 42 -----
```

```
to handle buttonDown
  show Group "d1-line"
  show field "elasticity"
  pause 70
  show Rectangle "elas-11"
  pause 70
  show Group "arrow-1"
  pause 70
  show Rectangle "elas-22"
  pause 70
  show Group "arrow-2"
  show field "inelastic"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 7 of Page id 42 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 5 of Page id 42 -----
```

```
to handle buttonDown
  show Group "d-line"
  show field "elasticity"
  pause 70
  show Rectangle "elas-1"
  pause 70
  show Group "arrow-1"
  pause 70
  show Rectangle "elas-2"
  pause 70
  show Group "arrow-2"
```

```
    show field "unit elastic"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 5 of Page id 42 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 2 of Page id 42 -----  
to handle buttonClick  
    go to Page id 43  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 2 of Page id 42 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 50 of Book  
"D:\NPSDEMO\TEST.TBK" -----
```

```
to handle enterPage  
    set caption of this book to "ECONOMICS - Price Ceiling"  
end
```

```
to handle leavePage  
    hide field "pd"  
    hide field "p*"  
    hide field "p"  
    hide field "q"
```

```
hide field "q*"
hide field "price ceiling"
hide rectangle "s1"
hide rectangle "s2"
hide line "p-line"
end
---- END OF SCRIPT FOR OBJECT Page id 50 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 85 of Page id 50 -----
to handle buttonClick
  go to Page id 44
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 85 of Page id 50 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 79 of Page id 50 -----
to handle buttonDown
  hide field "pd"
  hide field "p*"
  hide field "p"
  hide field "q"
  hide field "q*"
  hide field "price ceiling"
  hide rectangle "s1"
  hide rectangle "s2"
  hide line "p-line"
  hide field "display"
end
```

```
--Handles Mouse enter
to handle mouseEnter
```

```
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 79 of Page id 50 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 78 of Page id 50 -----
```

```
to handle buttonDown
    show field "pd"
    show rectangle "s1"
    show field "q"
    text of field "display" = " As a consequence of" \
        &" the ceiling price, the supply will be reduced" \
        &" faster than if the price were set by" \
        &" the market."
    show field "display"
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 78 of Page id 50 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 77 of Page id 50 -----
```

```
to handle buttonDown
    show line "p-line"
    show field "price ceiling"
    show field "p"
    text of field "display" = " Price at the ceiling" \
        &" rate emposed by law."
    show field "display"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 77 of Page id 50 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 76 of Page id 50 -----
```

```
to handle buttonDown
  show field "p*"
  show rectangle "s2"
  show field "q*"
  text of field "display" = " Price at the equilibrium" \
    &" point."
  show field "display"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 76 of Page id 50 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 3 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
to handle enterPage
  set caption of this book to "ECONOMICS - Supply Curve"
end
```

```
to handle leavePage
  hide Group "s-line"
```

```
hide Group "s1-line"
hide Group "arrow-2"
hide rectangle "s1"
hide rectangle "s2"
hide rectangle "s3"
hide button "<--- S"
hide button "S --->"
show field "price title"
show field "1"
show Ellipse "1"
hide Line "hor-line"
hide Line "ver-line"
step i from 10 to 2 by -1
  conditions
    when i=10
      hide field "10"
      hide Ellipse "10"
    when i=9
      hide field "9"
      hide Ellipse "9"
    when i=8
      hide field "8"
      hide Ellipse "8"
    when i=7
      hide field "7"
      hide Ellipse "7"
    when i=6
      hide field "6"
      hide Ellipse "6"
    when i=5
      hide field "5"
      hide Ellipse "5"
    when i=4
      hide field "4"
      hide Ellipse "4"
    when i=3
      hide field "3"
      hide Ellipse "3"
    when i=2
      hide field "2"
      hide Ellipse "2"
  end conditions
end
```

```
end
---- END OF SCRIPT FOR OBJECT Page id 3 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 398 of Page id 3 -----
to handle buttonClick
  go to Page id 45
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 398 of Page id 3 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 382 of Page id 3 -----
to handle buttonDown
  hide Rectangle "s3"
  show Group "arrow-2"
  show Rectangle "s2"
  move Group "s-line" to 3525,1500
  pause 40
  move Group "s-line" to 3225,1200
  pause 40
  move Group "s-line" to 2925,900
  show Rectangle "s1"
  hide button "<--- S"
  show button "S --->"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 382 of Page id 3 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 381 of Page id 3 -----
to handle buttonDown
  hide Rectangle "s1"
  show Group "arrow-2"
  show Rectangle "s2"
  move Group "s-line" to 3525,1500
  pause 40
  move Group "s-line" to 3825,1800
  pause 40
  move Group "s-line" to 4125,2100
  show Rectangle "s3"
  hide button "S --->"
  show button "<--- S"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 381 of Page id 3 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 379 of Page id 3 -----
to handle buttonDown
  hide Group "s-line"
  hide Group "s1-line"
  hide Group "arrow-2"
  hide rectangle "s1"
  hide rectangle "s2"
  hide rectangle "s3"
  hide button "<--- S"
```

```

hide button "S --->"
show field "price title"
show field "1"
show Ellipse "1"
hide Line "hor-line"
hide Line "ver-line"
step i from 10 to 2 by -1
  conditions
    when i=10
      hide field "10"
      hide Ellipse "10"
    when i=9
      hide field "9"
      hide Ellipse "9"
    when i=8
      hide field "8"
      hide Ellipse "8"
    when i=7
      hide field "7"
      hide Ellipse "7"
    when i=6
      hide field "6"
      hide Ellipse "6"
    when i=5
      hide field "5"
      hide Ellipse "5"
    when i=4
      hide field "4"
      hide Ellipse "4"
    when i=3
      hide field "3"
      hide Ellipse "3"
    when i=2
      hide field "2"
      hide Ellipse "2"
  end conditions
end
end

```

```

--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter

```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 379 of Page id 3 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 378 of Page id 3 -----
```

```
to handle buttonDown
  hide Line "hor-line"
  hide Line "ver-line"
  step i from 10 to 1 by -1
  conditions
    when i=10
      hide field "10"
      hide Ellipse "10"
    when i=9
      hide field "9"
      hide Ellipse "9"
    when i=8
      hide field "8"
      hide Ellipse "8"
    when i=7
      hide field "7"
      hide Ellipse "7"
    when i=6
      hide field "6"
      hide Ellipse "6"
    when i=5
      hide field "5"
      hide Ellipse "5"
    when i=4
      hide field "4"
      hide Ellipse "4"
    when i=3
      hide field "3"
      hide Ellipse "3"
    when i=2
      hide field "2"
      hide Ellipse "2"
    when i=1
      hide field "1"
```

```

        hide Ellipse "1"
    end conditions
end
move Group "s-line" to 3525,1500
show Group "s-line"
show Group "s1-line"
hide field "price title"
hide field "1"
show button "<--- S"
show button "S --->"
end

```

--Handles Mouse enter

to handle mouseEnter

```

    set text of field "display" to " The supply line is"\
    &" created by connecting the supply points."&crlf\
    &" A right shift in the line can be caused by a surplus"\
    &" such as in a crop growth during a properous"\
    &" season. A left shift can be caused by a shortage"\
    &" such as in a season which produces bad crops."

```

```

    show field "display"

```

```

    set sysCursor to 44

```

end mouseEnter

--Handles Mouse leave

to handle mouseLeave

```

    hide field "display"

```

```

    set sysCursor to 2

```

end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 378 of Page id 3 -----

---- START OF SCRIPT FOR OBJECT Button id 377 of Page id 3 -----

to handle buttonDown

```

    move Line "ver-line" to 3531,1824

```

```

    move Line "hor-line" to 2910,4563

```

```

    show Line "ver-line"

```

```

    show Line "hor-line"

```

```

    pause 60

```

```

    step i from 2 to 10 by 1

```

```

        conditions

```

```

            when i=10

```

```

                move Line "ver-line" to 7191,1824

```

```
    move Line "hor-line" to 2910,1911
    show field "10"
    pause 60
    show Ellipse "10"
when i=9
    move Line "ver-line" to 6795,1824
    move Line "hor-line" to 2910,2199
    show field "9"
    pause 60
    show Ellipse "9"
when i=8
    move Line "ver-line" to 6387,1824
    move Line "hor-line" to 2910,2487
    show field "8"
    pause 60
    show Ellipse "8"
when i=7
    move Line "ver-line" to 5979,1824
    move Line "hor-line" to 2910,2787
    show field "7"
    pause 60
    show Ellipse "7"
when i=6
    move Line "ver-line" to 5559,1824
    move Line "hor-line" to 2910,3099
    show field "6"
    pause 60
    show Ellipse "6"
when i=5
    move Line "ver-line" to 5163,1824
    move Line "hor-line" to 2910,3387
    show field "5"
    pause 60
    show Ellipse "5"
when i=4
    move Line "ver-line" to 4755,1824
    move Line "hor-line" to 2910,3687
    show field "4"
    pause 60
    show Ellipse "4"
when i=3
    move Line "ver-line" to 4323,1824
    move Line "hor-line" to 2910,3987
```

```

        show field "3"
        pause 60
        show Ellipse "3"
    when i=2
        move Line "ver-line" to 3939,1824
        move Line "hor-line" to 2910,4275
        show field "2"
        pause 60
        show Ellipse "2"
    end conditions
    pause 50
end
end
end

```

```

--Handles Mouse enter
to handle mouseEnter
    set text of field "display" to " Indicates the quantity of\
        &" an item that suppliers are willing to sell at a\
        &" certain price."
    show field "display"
    set sysCursor to 44
end mouseEnter

```

```

--Handles Mouse leave
to handle mouseLeave
    hide field "display"
    set sysCursor to 2
end mouseLeave

```

---- END OF SCRIPT FOR OBJECT Button id 377 of Page id 3 -----

---- START OF SCRIPT FOR OBJECT Page id 49 of Book
"D:\NPSDEMO\TEST.TBK" -----

```

to handle enterPage
    set caption of this book to "ECONOMICS - Scarcity"
end

```

```

to handle leavePage
    hide group "scarce"
    hide group "non-scarce"
end

```

---- END OF SCRIPT FOR OBJECT Page id 49 of Book "D:\NPSDEMO\TEST.TBK"

```
---- START OF SCRIPT FOR OBJECT Button id 75 of Page id 49 -----  
to handle buttonClick  
  go to Page id 46  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 75 of Page id 49 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 63 of Page id 49 -----  
to handle buttonDown  
  hide group "scarce"  
  hide group "non-scarce"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 63 of Page id 49 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 62 of Page id 49 -----  
to handle buttonDown  
  show group "non-scarce"  
end
```

```
--Handles Mouse enter
```

```
to handle mouseEnter
  set sysCursor to 44
  text of field "display" = " A non-scarce good\"
    &" has many other competing substitutes."
  show field "display"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
  hide field "display"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 62 of Page id 49 -----

---- START OF SCRIPT FOR OBJECT Button id 61 of Page id 49 -----

```
to handle buttonDown
  show group "scarce"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
  text of field "display" = " A scarce good is one\"
    &" which does not have many good substitutes."
  show field "display"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
  hide field "display"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 61 of Page id 49 -----

---- START OF SCRIPT FOR OBJECT Page id 4 of Book "D:\NPSDEMO\TEST.TBK"

```
to handle enterPage
  set caption of this book to "ECONOMICS - Supply & Demand Curves"
end
```

```
to handle leavePage
```

```
hide button "<--- S"
hide button "<--- D"
show button "S --->"
show button "D --->"
set text of field "answer" to " 1.8    5.8"
move field "answer" to 7104,1860
move Line "hor-line" to 450,3600
move Line "ver-line" to 3087,1080
move Group "supply-group" to -3400,-1485
move Group "demand-group" to 1100,-1485
```

end

---- END OF SCRIPT FOR OBJECT Page id 4 of Book "D:\NPSDEMO\TEST.TBK"

---- START OF SCRIPT FOR OBJECT Button id 217 of Page id 4 -----

to handle buttonClick

go to Page id 46

end

--Handles Mouse enter

to handle mouseEnter

set sysCursor to 44

end mouseEnter

--Handles Mouse leave

to handle mouseLeave

set sysCursor to 2

end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 217 of Page id 4 -----

---- START OF SCRIPT FOR OBJECT Button id 167 of Page id 4 -----

to handle buttonDown

mmopen clip "applause"

hide field "D ---> instructions"

show Group "demand-grey"

set sysCursor to 4

step i from 1300 to 2900 by 300

move Group "demand-group" to i, -1485

show button "up"

pause 30

```

        hide button "up"
    end
    set sysCursor to 2
    clear sysError
    sysSuspend = false
    mmplay clip "applause" autoclose
    sysSuspend = true
    move Line "hor-line" to 450,3150
    move Line "ver-line" to 3930,1080
    hide Button "D --->"
    show Button "<--- D"
    hide Button "S --->"
    set text of field "answer" to " 3.3    7.8"
    move field "answer" to 7104,1284
end buttonDown

```

```

--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
    show field "D ---> instructions"
end mouseEnter

```

```

--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
    hide field "D ---> instructions"
end mouseLeave

```

---- END OF SCRIPT FOR OBJECT Button id 167 of Page id 4 -----

---- START OF SCRIPT FOR OBJECT Button id 166 of Page id 4 -----

```

to handle buttonDown
    mmopen clip "boo"
    hide field "S ---> instructions"
    show group "supply-grey"
    set sysCursor to 4
    step i from -3300 to -1600 by 300
        move group "supply-group" to i, -1485
        show button "down"
        pause 30
        hide button "down"
    end
end

```

```

set sysCursor to 2
  move Line "hor-line" to 450,3850
  move Line "ver-line" to 3900,1080

set text of field "answer" to ".9 7.7"
move field "answer" to 7104,2400
clear sysError
sysSuspend = false
mmplay clip "boo" autoclose
sysSuspend = true
hide Button "S --->"
hide Button "D --->"
show Button "<--- S"
end buttonDown

--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
  show field "S ---> instructions"
end mouseEnter

--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
  hide field "S ---> instructions"
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 166 of Page id 4 -----

```

```

---- START OF SCRIPT FOR OBJECT Button id 104 of Page id 4 -----
to handle buttonDown
  hide field "<--- D instructions"
  set sysCursor to 4
  step i from 2600 to 1000 by -300
    move Group "demand-group" to i, -1485
    pause 30
  end
  set sysCursor to 2
  hide Group "demand-grey"
  move Line "hor-line" to 450,3600
  move Line "ver-line" to 3087,1080
  hide Button "<--- D"
  show Button "D --->"

```

```
    show Button "S --->"
    set text of field "answer" to " 1.8    5.8"
    move field "answer" to 7104,1860
end buttonDown
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
    show field "<--- D instructions"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
    hide field "<--- D instructions"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 104 of Page id 4 -----

---- START OF SCRIPT FOR OBJECT Button id 103 of Page id 4 -----

```
to handle buttonDown
    hide field "<--- S instructions"
    set sysCursor to 4
    step i from -1900 to -3600 by -300
        move Group "supply-group" to i, -1485
        pause 30
    end
    set sysCursor to 2
    hide Group "supply-grey"
    move Line "hor-line" to 450,3600
    move Line "ver-line" to 3087,1080
    hide Button "<--- S"
    show Button "S --->"
    show Button "D --->"
    set text of field "answer" to " 1.8    5.8"
    move field "answer" to 7104,1860
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
    show field "<--- S instructions"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
  hide field "<--- S instructions"
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 103 of Page id 4 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 9 of Book "D:\NPSDEMO\TEST.TBK"
-----
to handle enterPage
  set caption of this book to "FINANCIAL MANAGEMENT - "\
  &"Background of the Accounting Cycle"
end
---- END OF SCRIPT FOR OBJECT Page id 9 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 29 of Page id 9 -----
to handle buttonClick
  go to page "events instructions"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 29 of Page id 9 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 28 of Page id 9 -----
to handle buttonClick
  go to page "ratio"
end
```

```
--Handles Mouse enter
to handle mouseEnter
```

```
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 28 of Page id 9 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 27 of Page id 9 -----
```

```
to handle buttonClick
    go to next page
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 27 of Page id 9 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 22 of Page id 9 -----
```

```
to handle buttonClick
    go to Page id 1
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 22 of Page id 9 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 11 of Page id 10 -----  
to handle buttonDown  
  go to previous page  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 11 of Page id 10 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 7 of Page id 11 -----  
to handle buttonDown  
  go to page "acct background"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 7 of Page id 11 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 11 of Page id 11 -----  
to handle mouseEnter  
  show field "current ratio"  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave
```

```
hide field "current ratio"
set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Hotword id 11 of Page id 11 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 9 of Page id 11 -----
to handle mouseEnter
show field "ratio analysis"
set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
hide field "ratio analysis"
set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Hotword id 9 of Page id 11 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 76 of Book
"D:\NPSDEMO\TEST.TBK" -----
to handle enterPage
set caption of this book to "FINANCIAL MANAGEMENT - "\
&"Events, Transaction and Accounting Cycle Instructions"
end
---- END OF SCRIPT FOR OBJECT Page id 76 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 2 of Page id 76 -----
--Handles Mouse enter
to handle buttonDown
go to page "balance sheet"
end

to handle mouseEnter
set sysCursor to 44
end mouseEnter

--Handles Mouse leave
to handle mouseLeave
set sysCursor to 2
```

```
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 2 of Page id 76 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 1 of Page id 76 -----
to handle buttonDown
  go to page "acct background"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 1 of Page id 76 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 12 of Book
"D:\NPSDEMO\TEST.TBK" -----
to handle enterPage
  set caption of this book to "FINANCIAL MANAGEMENT - "\
    &"Events / Journal"
  system svHighlightedText
  selectedTextlines of field "itemString" = 1
  show rectangle "event cue"
  text of field "display" = "Select an event with the"\
    &" mouse or arrow keys, then press the enter key."
  fillColor of button id 3 = gray
  fillColor of button id 22 = gray
  fillColor of button id 60 = gray
  fillColor of button id 61 = gray
  fillColor of button id 62 = gray
  fillColor of button id 63 = gray
  fillColor of button id 27 = gray
end
---- END OF SCRIPT FOR OBJECT Page id 12 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 63 of Page id 12 -----  
to handle buttonDown  
  go to page "main menu"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 63 of Page id 12 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 62 of Page id 12 -----  
to handle buttonDown  
  go to page "acct background"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 62 of Page id 12 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 61 of Page id 12 -----  
to handle buttonDown  
  go to page "balance sheet"  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 61 of Page id 12 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 60 of Page id 12 -----
to handle buttonDown
  go to page "t accounts"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 60 of Page id 12 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 27 of Page id 12 -----
to handle buttonDown
  text of field "journal" = " JOURNAL ENTRIES"&crLf
  text of field "cash" of page "t accounts" = "BB 500"
  text of field "a/r" of page "t accounts" = "BB 300"
  text of field "a/p" of page "t accounts" = "BB      300"
  text of field "wages payable" of page "t accounts" = ""
  text of field "inv" of page "t accounts" = "BB 700"
  text of field "equip" of page "t accounts" = "BB 1000"
  text of field "capital stock" of page "t accounts" = "BB      2000"
  text of field "re" of page "t accounts" = "BB      200"
  text of field "depreciation exp" of page "t accounts" = ""
  text of field "wage exp" of page "t accounts" = ""
  text of field "cgs" of page "t accounts" = ""
  text of field "sales rev" of page "t accounts" = ""
  text of field "cash" of page "balance sheet" = " 500"
  text of field "a/r" of page "balance sheet" = " 300"
  text of field "inv" of page "balance sheet" = " 700"
```

```

text of field "total-ca" of page "balance sheet" = " 1500"
text of field "equip" of page "balance sheet" = " 1000"
text of field "total-a" of page "balance sheet" = " 2500"
text of field "a/p" of page "balance sheet" = " 300"
text of field "wages /p" of page "balance sheet" = " 0"
text of field "bonds" of page "balance sheet" = " 0"
text of field "total-l" of page "balance sheet" = " 300"
text of field "cs" of page "balance sheet" = " 2000"
text of field "retained earnings" of page "balance sheet" = " 200"
text of field "total se" of page "balance sheet" = " 2200"
text of field "total" of page "balance sheet" = " 2500"
text of field "sales" of page "balance sheet" = " 0"
text of field "cgs" of page "balance sheet" = " 0"
text of field "wage exp" of page "balance sheet" = " 0"
text of field "depreciation exp" of page "balance sheet" = " 0"
text of field "total expenses" of page "balance sheet" = " 0"
text of field "net income" of page "balance sheet" = " 0"
text of field "amount" = ""
text of field "amount2" = ""
text of field "assets" = ""
text of field "liabilities" = ""
text of field "stockholders equity" = ""
hide button "up1"
hide button "down1"
hide button "up2"
hide button "down2"
hide button "up3"
hide button "down3"
--reset all button colors to grey and next to yellow
fillColor of button id 3 = gray
fillColor of button id 22 = gray
fillColor of button id 60 = gray
fillColor of button id 61 = gray
fillColor of button id 62 = gray
fillColor of button id 63 = gray
fillColor of button id 27 = gray
show rectangle "event cue"
end

--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter

```

```

--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 27 of Page id 12 -----

```

```

---- START OF SCRIPT FOR OBJECT Button id 22 of Page id 12 -----

```

```

to handle buttonDown
  system svHighlightedText
  hide field "journal"
  --buffers the dollar value for better display
  amt = text of field "amount"
  sysSuspend = false
  sysErrorNumber = 0
  if amt < 1 as number or amt is null
    request "You must enter a numeric value for 'Amount'."
    break
  end
  sysSuspend = true
  if sysErrorNumber is 8144
    request "You must enter numeric values."
    break
  end
  format amt as "#####"
```



```

  --calls page function to determine user selected event
-- svHighlightedText = eventChoice()
-- forward
  send clearCue
  conditions
    when svHighlightedText contains "Purchased inventory"
      text of field "journal" = text of field "journal"&crf&\
        " INV   "&amt&crf&\
        "  A/P   "&amt&crf&\
        "-----"
      text of field "INV" of page "t accounts" = text of field "INV" of page "t accounts"
&crf&\
        " "&amt&crf&"-----"
      text of field "A/P" of page "t accounts" = text of field "A/P" of page "t accounts"
&crf&\

```

```

"      "&amt&crlf&"-----"

text of field "inv" of page "balance sheet" = text of field "inv" of page "balance
sheet"\
    + amt
text of field "a/p" of page "balance sheet" = text of field "a/p" of page "balance
sheet"\
    + amt
if text of field "inv" of page "balance sheet" = 0 then
    text of field "inv" of page "balance sheet" = "    0"

else
    format text of field "inv" of page "balance sheet" as "#####"
end
if text of field "a/p" of page "balance sheet" = 0 then
    text of field "a/p" of page "balance sheet" = "    0"
else
    format text of field "a/p" of page "balance sheet" as "#####"
end
if text of field "inv" of page "balance sheet" > 0 then
    text of field "inv" of page "t accounts" = text of field "inv" of page "t
accounts"\
        & text of field "inv" of page "balance sheet"

else
    text of field "inv" of page "t accounts" = text of field "inv" of page "t
accounts"\
        & "      "&((text of field "inv" of page "balance sheet")*-1)
end
if text of field "a/p" of page "balance sheet" < 0 then
    text of field "a/p" of page "t accounts" = text of field "a/p" of page "t
accounts"\
        & "      "&((text of field "a/p" of page "balance sheet")*-1)
else
    text of field "a/p" of page "t accounts" = text of field "a/p" of page "t
accounts"\
        & "      "&text of field "a/p" of page "balance sheet"
end
fillColor of field "inv cue" of page "t accounts" = yellow
fillColor of field "a/p cue" of page "t accounts" = yellow
when svHighlightedText contains "Paid on outstanding"
    text of field "journal" = text of field "journal"&crlf&\
        " A/P    "&amt&crlf&\

```

```

    " CASH "&amt&crlf&\
    "-----"
text of field "A/P" of page "t accounts" = text of field "A/P" of page "t accounts"
&crlf&\
    " "&amt&crlf&"-----"
text of field "CASH" of page "t accounts" = text of field "CASH" of page "t
accounts" &crlf&\
    " "&amt&crlf&"-----"
text of field "a/p" of page "balance sheet" = text of field "a/p" of page "balance
sheet"
- amt
text of field "cash" of page "balance sheet" = text of field "cash" of page "balance
sheet"
- amt

if text of field "a/p" of page "balance sheet" = 0 then
    text of field "a/p" of page "balance sheet" = " 0"
end
if text of field "cash" of page "balance sheet" = 0 then
    text of field "cash" of page "balance sheet" = " 0"
else
    format text of field "cash" of page "balance sheet" as "#####"
end
if text of field "a/p" of page "balance sheet" = 0 then
    text of field "a/p" of page "balance sheet" = " 0"
else
    format text of field "a/p" of page "balance sheet" as "#####"
end
if text of field "a/p" of page "balance sheet" < 0 then
    text of field "a/p" of page "t accounts" = text of field "a/p" of page "t
accounts"
    & " "&((text of field "a/p" of page "balance sheet")*-1)
else
    text of field "a/p" of page "t accounts" = text of field "a/p" of page "t
accounts"
    & " "&text of field "a/p" of page "balance sheet"
end
if text of field "cash" of page "balance sheet" > 0 then
    text of field "cash" of page "t accounts" = text of field "cash" of page "t
accounts"
    & text of field "cash" of page "balance sheet"
else

```

```

    text of field "cash" of page "t accounts" = text of field "cash" of page "t
accounts"\  

    & "      "&((text of field "cash" of page "balance sheet")*-1)  

end  

fillColor of field "a/p cue" of page "t accounts" = yellow  

fillColor of field "cash cue" of page "t accounts" = yellow  
  

when svHighlightedText contains "Collected on accounts"  

text of field "journal" = text of field "journal"&crlf&\  

" CASH  "&amt&crlf&\  

"   A/R  "&amt&crlf&\  

"-----"  

text of field "CASH" of page "t accounts" = text of field "CASH" of page "t
accounts" &crlf&\  

" "&amt&crlf&"-----"  

text of field "A/R" of page "t accounts" = text of field "A/R" of page "t accounts"
&crlf&\  

"      "&amt&crlf&"-----"  

text of field "cash" of page "balance sheet" = text of field "cash" of page "balance
sheet"\  

+ amt  

text of field "a/r" of page "balance sheet" = text of field "a/r" of page "balance
sheet"\  

- amt  

if text of field "cash" of page "balance sheet" = 0 then  

text of field "cash" of page "balance sheet" = "    0"  

else  

format text of field "cash" of page "balance sheet" as "#####"  

end  

if text of field "a/r" of page "balance sheet" = 0 then  

text of field "a/r" of page "balance sheet" = "    0"  

else  

format text of field "a/r" of page "balance sheet" as "#####"  

end  

if text of field "cash" of page "balance sheet" > 0 then  

text of field "cash" of page "t accounts" = text of field "cash" of page "t
accounts"\  

& text of field "cash" of page "balance sheet"  

else  

text of field "cash" of page "t accounts" = text of field "cash" of page "t
accounts"\  

& "      "&((text of field "cash" of page "balance sheet")*-1)  

end

```

```

if text of field "a/r" of page "balance sheet" > 0 then
  text of field "a/r" of page "t accounts" = text of field "a/r" of page "t accounts" \
    & text of field "a/r" of page "balance sheet"
else
  text of field "a/r" of page "t accounts" = text of field "a/r" of page "t accounts" \
    & "      "&((text of field "a/r" of page "balance sheet")*-1)
end
fillColor of field "cash cue" of page "t accounts" = yellow
fillColor of field "a/r cue" of page "t accounts" = yellow
when svHighlightedText contains "Accrual of wage"
  text of field "journal" = text of field "journal"&crlf&\
    " WAGE EXP"&amt&crlf&\
    "  WAGE/P "&amt&crlf&\
    "-----"
  text of field "WAGE EXP" of page "t accounts" = text of field "WAGE EXP" of
page "t accounts" &crlf&\
  " "&amt&crlf&"-----"
  text of field "WAGES PAYABLE" of page "t accounts" = text of field "WAGES
PAYABLE" of page "t accounts" &crlf&\
  " "&amt&crlf&"-----"
  text of field "wage exp" of page "balance sheet" = text of field "wage exp" of page
"balance sheet" \
  + amt
  text of field "wages /p" of page "balance sheet" = text of field "wages /p" of page
"balance sheet" \
  + amt
  text of field "retained earnings" of page "balance sheet" = text of field "retained
earnings" of page "balance sheet" \
  -amt
if text of field "wage exp" of page "balance sheet" = 0 then
  text of field "wage exp" of page "balance sheet" = "  0"
else
  format text of field "wage exp" of page "balance sheet" as "#####"
end
if text of field "wages /p" of page "balance sheet" = 0 then
  text of field "wages /p" of page "balance sheet" = "  0"
else
  format text of field "wages /p" of page "balance sheet" as "#####"
end
if text of field "retained earnings" of page "balance sheet" = 0 then
  text of field "retained earnings" of page "balance sheet" = "  0"
else
  format text of field "retained earnings" of page "balance sheet" as "#####"

```

```

end
if text of field "wage exp" of page "balance sheet" > 0 then
    text of field "wage exp" of page "t accounts" = text of field "wage exp" of page
    "t accounts"\
        & text of field "wage exp" of page "balance sheet"
else
    text of field "wage exp" of page "t accounts" = text of field "wage exp" of page
    "t accounts"\
        & "          "&((text of field "wage exp" of page "balance sheet")*-1)
end
if text of field "wages /p" of page "balance sheet" < 0 then
    text of field "wages payable" of page "t accounts" = text of field "wages
    payable" of page "t accounts"\
        & "          "&((text of field "wages /p" of page "balance sheet")*-1)
else
    text of field "wages payable" of page "t accounts" = text of field "wages
    payable" of page "t accounts"\
        & "          "&text of field "wages /p" of page "balance sheet"
end
fillColor of field "wage exp cue" of page "t accounts" = yellow
fillColor of field "wages payable cue" of page "t accounts" = yellow
when svHighlightedText contains "Depreciation of equipment"
text of field "journal" = text of field "journal"&crf&\
    " DEP EXP "&amt&crf&\
    "   EQUIP  "&amt&crf&\
    "-----"
text of field "DEPRECIATION EXP" of page "t accounts" = text of field
"DEPRECIATION EXP" of page "t accounts" &crf&\
    " "&amt&crf&"-----"
text of field "EQUIP" of page "t accounts" = text of field "EQUIP" of page "t
accounts" &crf&\
    "          "&amt&crf&"-----"
text of field "depreciation exp" of page "balance sheet" = text of field "depreciation
exp" of page "balance sheet"\
    + amt
text of field "equip" of page "balance sheet" = text of field "equip" of page
"balance sheet"\
    - amt
text of field "retained earnings" of page "balance sheet" = text of field "retained
earnings" of page "balance sheet"\
    -amt
if text of field "depreciation exp" of page "balance sheet" = 0 then
    text of field "depreciation exp" of page "balance sheet" = "    0"

```

```

else
    format text of field "depreciation exp" of page "balance sheet" as "#####"
end
if text of field "equip" of page "balance sheet" = 0 then
    text of field "equip" of page "balance sheet" = "    0"
else
    format text of field "equip" of page "balance sheet" as "#####"
end
if text of field "retained earnings" of page "balance sheet" = 0 then
    text of field "retained earnings" of page "balance sheet" = "    0"
else
    format text of field "retained earnings" of page "balance sheet" as "#####"
end
if text of field "depreciation exp" of page "balance sheet" > 0 then
    text of field "depreciation exp" of page "t accounts" = text of field
"depreciation exp" of page "t accounts"\
    & text of field "depreciation exp" of page "balance sheet"
else
    text of field "depreciation exp" of page "t accounts" = text of field
"depreciation exp" of page "t accounts"\
    & "                "&((text of field "depreciation exp" of page "balance
sheet")*-1)
end
if text of field "equip" of page "balance sheet" > 0 then
    text of field "equip" of page "t accounts" = text of field "equip" of page "t
accounts"\
    & text of field "equip" of page "balance sheet"
else
    text of field "equip" of page "t accounts" = text of field "equip" of page "t
accounts"\
    & "                "&((text of field "equip" of page "balance sheet")*-1)
end
fillColor of field "depreciation exp cue" of page "t accounts" = yellow
fillColor of field "equip cue" of page "t accounts" = yellow
when svHighlightedText contains "Sold inventory on account"
    sysSuspend = false
    sysErrorNumber = 0
    amt2 = text of field "amount2"
    if amt2 < 1 as number or amt2 is null
        request "You must enter a numeric value for 'Amount 2'."
        break
    end
    sysSuspend = true

```

```

if sysErrorNumber is 8144
    request "You must enter numeric values."
    break
end
format amt2 as "#####"
text of field "journal" = text of field "journal"&crf&\
    " A/R    "&amt2&crf&\
    "  SALES "&amt2&crf&\
    " CGS    "&amt&crf&\
    "   INV   "&amt&crf&\
    "-----"
text of field "A/R" of page "t accounts" = text of field "A/R" of page "t accounts"
&crf&\
    " "&amt2&crf&"-----"
text of field "SALES REV" of page "t accounts" = text of field "SALES REV" of
page "t accounts" &crf&\
    " "&amt2&crf&"-----"
text of field "CGS" of page "t accounts" = text of field "CGS" of page "t accounts"
&crf&\
    " "&amt&crf&"-----"
text of field "INV" of page "t accounts" = text of field "INV" of page "t accounts"
&crf&\
    " "&amt&crf&"-----"
text of field "a/r" of page "balance sheet" = text of field "a/r" of page "balance
sheet"\  

    + amt2
text of field "sales" of page "balance sheet" = text of field "sales" of page "balance
sheet"\  

    + amt2
text of field "cgs" of page "balance sheet" = text of field "cgs" of page "balance
sheet"\  

    + amt
text of field "inv" of page "balance sheet" = text of field "inv" of page "balance
sheet"\  

    - amt
text of field "retained earnings" of page "balance sheet" = text of field "retained
earnings" of page "balance sheet"\  

    - amt
text of field "retained earnings" of page "balance sheet" = text of field "retained
earnings" of page "balance sheet"\  

    + amt2
if text of field "a/r" of page "balance sheet" = 0 then
    text of field "a/r" of page "balance sheet" = "    0"

```

```

else
    format text of field "a/r" of page "balance sheet" as "#####"
end
if text of field "sales" of page "balance sheet" = 0 then
    text of field "sales" of page "balance sheet" = " 0"
else
    format text of field "sales" of page "balance sheet" as "#####"
end
if text of field "cgs" of page "balance sheet" = 0 then
    text of field "cgs" of page "balance sheet" = " 0"
else
    format text of field "cgs" of page "balance sheet" as "#####"
end
if text of field "inv" of page "balance sheet" = 0 then
    text of field "inv" of page "balance sheet" = " 0"
else
    format text of field "inv" of page "balance sheet" as "#####"
end
if text of field "retained earnings" of page "balance sheet" = 0 then
    text of field "retained earnings" of page "balance sheet" = " 0"
else
    format text of field "retained earnings" of page "balance sheet" as "#####"
end
if text of field "a/r" of page "balance sheet" > 0 then
    text of field "a/r" of page "t accounts" = text of field "a/r" of page "t accounts" \
        & text of field "a/r" of page "balance sheet"
else
    text of field "a/r" of page "t accounts" = text of field "a/r" of page "t accounts" \
        & " "&((text of field "a/r" of page "balance sheet")*-1)
end
if text of field "sales" of page "balance sheet" < 0 then
    text of field "sales rev" of page "t accounts" = text of field "sales rev" of page
"t accounts" \
        & " "&((text of field "sales" of page "balance sheet")*-1)
else
    text of field "sales rev" of page "t accounts" = text of field "sales rev" of page
"t accounts" \
        & " "&text of field "sales" of page "balance sheet"

end
if text of field "cgs" of page "balance sheet" > 0 then
    text of field "cgs" of page "t accounts" = text of field "cgs" of page "t
accounts" \

```

```

        & text of field "cgs" of page "balance sheet"
    else
        text of field "cgs" of page "t accounts" = text of field "cgs" of page "t
accounts" \
        & "          "&((text of field "cgs" of page "balance sheet")*-1)
    end
    if text of field "inv" of page "balance sheet" > 0 then
        text of field "inv" of page "t accounts" = text of field "inv" of page "t
accounts" \
        & text of field "inv" of page "balance sheet"
    else
        text of field "inv" of page "t accounts" = text of field "inv" of page "t
accounts" \
        & "          "&((text of field "inv" of page "balance sheet")*-1)
    end
    fillColor of field "a/r cue" of page "t accounts" = yellow
    fillColor of field "sales rev cue" of page "t accounts" = yellow
    fillColor of field "cgs cue" of page "t accounts" = yellow
    fillColor of field "inv cue" of page "t accounts" = yellow
    when svHighlightedText = null
        request "You must select an event."
    end conditions

```

```

--Sum up total blocks of balance sheet
text of field "total-ca" of page "balance sheet" = text of field "cash" of page "balance
sheet" + \
        text of field "a/r" of page "balance sheet" + \
        text of field "inv" of page "balance sheet"
if text of field "total-ca" of page "balance sheet" = 0 then
    text of field "total-ca" of page "balance sheet" = "    0"
else
    format text of field "total-ca" of page "balance sheet" as "#####"
end
text of field "total-a" of page "balance sheet" = text of field "total-ca" of page "balance
sheet" + \
        text of field "equip" of page "balance sheet"
if text of field "total-a" of page "balance sheet" = 0 then
    text of field "total-a" of page "balance sheet" = "    0"
else
    format text of field "total-a" of page "balance sheet" as "#####"

```

```

    end
    text of field "total-l" of page "balance sheet" = text of field "a/p" of page "balance
sheet" +\
        text of field "wages /p" of page "balance sheet" +\
        text of field "bonds" of page "balance sheet"
    if text of field "total-l" of page "balance sheet" = 0 then
        text of field "total-l" of page "balance sheet" = "    0"
    else
        format text of field "total-l" of page "balance sheet" as "#####"
    end
    text of field "total se" of page "balance sheet" = text of field "cs" of page "balance
sheet" +\
        text of field "retained earnings" of page "balance sheet"

    if text of field "total se" of page "balance sheet" = 0 then
        text of field "total se" of page "balance sheet" = "    0"
    else
        format text of field "total se" of page "balance sheet" as "#####"
    end
    text of field "total" of page "balance sheet" = text of field "total-l" of page "balance
sheet" +\
        text of field "total se" of page "balance sheet"
    if text of field "total" of page "balance sheet" = 0 then
        text of field "total" of page "balance sheet" = "    0"
    else
        format text of field "total" of page "balance sheet" as "#####"
    end
    text of field "total expenses" of page "balance sheet" = text of field "cgs" of page
"balance sheet" +\
        text of field "wage exp" of page "balance sheet" +\
        text of field "depreciation exp" of page "balance sheet"

    if text of field "total expenses" of page "balance sheet" = 0 then
        text of field "total expenses" of page "balance sheet" = "    0"
    else
        format text of field "total expenses" of page "balance sheet" as "#####"
    end
    text of field "net income" of page "balance sheet" = text of field "sales" of page
"balance sheet" -\
        text of field "total expenses" of page "balance sheet"
    if text of field "net income" of page "balance sheet" = 0 then
        text of field "net income" of page "balance sheet" = "    0"
    else

```

```

        format text of field "net income" of page "balance sheet" as "#####"  

    end  

    send rightTurn  

    send leftTurn  

    send final  

    send leftTurn  

    send final  

    show field "journal"  
  

    --reset selection buttons to yellow fill  

    fillColor of button id 3 = gray  

    fillColor of button id 22 = gray  

    fillColor of button id 60 = yellow  

    fillColor of button id 61 = yellow  

    fillColor of button id 62 = yellow  

    fillColor of button id 63 = yellow  

    fillColor of button id 27 = yellow  

    fillColor of field "display" = red  

    pause 60  

    fillColor of field "display" = cyan  

    text of field "display" = "Click on 'To 'T' Accounts' or\  

        &" 'To Balance Sheet' buttons to view results\  

        &" of the application of your inputs."&crLf\  

        &"'Reset all entries' clears your inputs."&crLf\  

        &"The last two buttons allow navigation as\  

        &" indicated."  

end  
  

to handle rightTurn  

    show group "page1"  

    step i from 2 to 4  

        hide group (page&i-1)  

        show group (page&i)  

    mmYield  

end  

end rightTurn  
  

to handle leftTurn  

    hide group "page4"  

    show irregularPolygon "page5"  

    step i from 6 to 7  

        hide irregularPolygon ("page" & i-1)

```

```
        show irregularPolygon ("page" & i)
        mmYield
    end
end leftTurn
```

```
to handle final
    hide irregularPolygon "page7"
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
--Handles clearing cue fills of t account page
to handle clearCue
    fillColor of field "cash cue" of page "t accounts" = white
    hide group "cash" of page "t accounts"
    fillColor of field "a/r cue" of page "t accounts" = white
    hide group "a/r" of page "t accounts"
    fillColor of field "inv cue" of page "t accounts" = white
    hide group "inv" of page "t accounts"
    fillColor of field "equip cue" of page "t accounts" = white
    hide group "equip" of page "t accounts"
    fillColor of field "wages payable cue" of page "t accounts" = white
    hide group "wages payable" of page "t accounts"
    fillColor of field "a/p cue" of page "t accounts" = white
    hide group "a/p" of page "t accounts"
    fillColor of field "capital stock cue" of page "t accounts" = white
    hide group "capital stock" of page "t accounts"
    fillColor of field "re cue" of page "t accounts" = white
    hide group "re" of page "t accounts"
    fillColor of field "cgs cue" of page "t accounts" = white
    hide group "cgs" of page "t accounts"
    fillColor of field "sales rev cue" of page "t accounts" = white
    hide group "sales rev" of page "t accounts"
    fillColor of field "wage exp cue" of page "t accounts" = white
    hide group "wage exp" of page "t accounts"
```

```

fillColor of field "depreciation exp cue" of page "t accounts" = white
hide group "depreciation exp" of page "t accounts"
end
---- END OF SCRIPT FOR OBJECT Button id 22 of Page id 12 -----

```

```

---- START OF SCRIPT FOR OBJECT Button id 3 of Page id 12 -----

```

```

to handle buttonDown

```

```

  system svHighlightedText
  --calls page function to determine user selected event
  -- vHighlightedText = eventChoice()
  -- forward
  conditions
    when svHighlightedText contains "Purchased inventory"
      show button "up1"
      hide button "down1"
      show button "up2"
      hide button "down2"
      hide button "up3"
      hide button "down3"
      text of field "assets" = text of field "amount"
      text of field "liabilities" = text of field "amount"
      text of field "stockholders equity" = ""
    when svHighlightedText contains "Paid on outstanding"
      hide button "up1"
      show button "down1"
      hide button "up2"
      show button "down2"
      hide button "up3"
      hide button "down3"
      text of field "assets" = text of field "amount"
      text of field "liabilities" = text of field "amount"
      text of field "stockholders equity" = ""
    when svHighlightedText contains "Collected on accounts"
      show button "up1"
      show button "down1"
      hide button "up2"
      hide button "down2"
      hide button "up3"
      hide button "down3"
      text of field "assets" = text of field "amount"
      text of field "liabilities" = ""
      text of field "stockholders equity" = ""

```

```

when svHighlightedText contains "Accrual of wage"
    hide button "up1"
    hide button "down1"
    show button "up2"
    show button "down2"
    hide button "up3"
    hide button "down3"
    text of field "assets" = ""
    text of field "liabilities" = text of field "amount"
    text of field "stockholders equity" = ""
when svHighlightedText contains "Depreciation of equipment"
    show button "up1"
    show button "down1"
    hide button "up2"
    hide button "down2"
    hide button "up3"
    hide button "down3"
    text of field "assets" = text of field "amount"
    text of field "liabilities" = ""
    text of field "stockholders equity" = ""
when svHighlightedText contains "Sold inventory on account"
    show button "up1"
    show button "down1"
    hide button "up2"
    hide button "down2"
    show button "up3"
    show button "down3"
    text of field "assets" = text of field "amount2"&crlf\
        &text of field "amount"
    text of field "liabilities" = ""
    text of field "stockholders equity" = text of field "amount2"\
        &crlf&text of field "amount"
end conditions
--reset button color fill to gray and next button to yellow
fillColor of button id 3 = gray
fillColor of button id 22 = yellow
fillColor of field "display" = red
    pause 60
    fillColor of field "display" = cyan
text of field "display" = "Click on 'Apply transaction' button\"
    &" to apply your inputed values to the accounting\"
    &" cycle Journal, T-accounts, and Balance sheets."
end

```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 3 of Page id 12 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 25 of Page id 12 -----
```

```
to handle keyChar key
  system svFocus
  if key = 13
    hide rectangle "amount2 cue"
    fillColor of field "display" = red
    pause 60
    fillColor of field "display" = cyan
    text of field "display" = "Click on 'Analysis results' button\
      &" to analyze effect of event to the A=L+SE model."
    fillColor of button id 3 = yellow
    focus = button id 3
  else
    forward
  end
end
```

```
---- END OF SCRIPT FOR OBJECT Field id 25 of Page id 12 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 2 of Page id 12 -----
```

```
to handle keyChar key
  system svFocus, svHighlightedText
  if key = 13
    fillColor of field "display" = red
    pause 60
    fillColor of field "display" = cyan
    if svHighlightedText contains "Sold inventory on account"
      show field "amount2"
    end
  end
end
```

```

    show field "amount2 cue"
    show rectangle "amount2 cue"
    text of field "display" = "Enter a numeric amount for \"
        &"funds received on account, for sold inventory,\"
        &" then press the enter key."
    select text of field "amount2"
else
    text of field "amount2" = ""
    fillColor of button id 3 = yellow
    text of field "display" = "Click on 'Analysis results' button\"
        &" to analyze effect of event to the A=L+SE model."
    focus = button id 3
end
hide rectangle "amount cue"
else
    forward
end
end
---- END OF SCRIPT FOR OBJECT Field id 2 of Page id 12 -----

```

```

---- START OF SCRIPT FOR OBJECT Field id 0 of Page id 12 -----
--looks for cr key press from user
to handle keyChar key
    system svHighlightedText
    choice = selectedTextlines of field "itemString"
    svHighlightedText = textline choice of text of field "itemString"
    if key = 13
        choice = selectedTextlines of field "itemString"
        svHighlightedText = textline choice of text of field "itemString"
        hide rectangle "event cue"
        show rectangle "amount cue"
        fillColor of field "display" = red
        pause 60
        fillColor of field "display" = cyan
        if svHighlightedText contains "Sold inventory on account"
            text of field "display" = "Enter a numeric amount for\"
                &" value of inventory sold, then press the enter key."
        else
            text of field "display" = "Enter a numeric amount, i.e. 200\"
                &" then press the enter key."
        end
    end
    select text of field "amount"

```

```

else
    forward
end
end

to handle buttonDown
    show rectangle "event cue"
    fillColor of field "display" = red
    pause 60
    fillColor of field "display" = cyan
    text of field "display" = "Select an event with the\"
        &" mouse or arrow keys, then press the enter key."
    hide rectangle "amount cue"
    hide rectangle "amount2 cue"
    fillColor of button id 3 = gray
    fillColor of button id 22 = gray
end
---- END OF SCRIPT FOR OBJECT Field id 0 of Page id 12 -----

```

```

---- START OF SCRIPT FOR OBJECT Group id 14 of Page id 12 -----
to get eventChoice
    --Determines which line is selected in the single select list box
    choice = selectedTextlines of field "itemString"
    --Gets the text of the selected line
    vPickedText = textline choice of text of field "itemString"
    request vPickedText
    return vPickedText
end
---- END OF SCRIPT FOR OBJECT Group id 14 of Page id 12 -----

```

```

---- START OF SCRIPT FOR OBJECT Page id 13 of Book
"D:\NPSDEMO\TEST.TBK" -----
to handle enterPage
    set caption of this book to "FINANCIAL MANAGEMENT - \"
        &"T-Accounts"
end

to handle idle
    if fillColor of field "cash cue" = yellow
        hide group "cash"
    end
end

```

```
    pause 30
    show group "cash"
end
if fillColor of field "a/r cue" = yellow
    hide group "a/r"
    pause 30
    show group "a/r"
end
if fillColor of field "inv cue" = yellow
    hide group "inv"
    pause 30
    show group "inv"
end
if fillColor of field "equip cue" = yellow
    hide group "equip"
    pause 30
    show group "equip"
end
if fillColor of field "wages payable cue" = yellow
    hide group "wages payable"
    pause 30
    show group "wages payable"
end
if fillColor of field "a/p cue" = yellow
    hide group "a/p"
    pause 30
    show group "a/p"
end
if fillColor of field "capital stock cue" = yellow
    hide group "capital stock"
    pause 30
    show group "capital stock"
end
if fillColor of field "re cue" = yellow
    hide group "re"
    pause 30
    show group "re"
end
if fillColor of field "cgs cue" = yellow
    hide group "cgs"
    pause 30
    show group "cgs"
end
```

```

if fillColor of field "sales rev cue" = yellow
    hide group "sales rev"
    pause 30
    show group "sales rev"
end
if fillColor of field "wage exp cue" = yellow
    hide group "wage exp"
    pause 30
    show group "wage exp"
end
if fillColor of field "depreciation exp cue" = yellow
    hide group "depreciation exp"
    pause 30
    show group "depreciation exp"
end
end

```

---- END OF SCRIPT FOR OBJECT Page id 13 of Book "D:\NPSDEMO\TEST.TBK"

---- START OF SCRIPT FOR OBJECT Button id 168 of Page id 13 -----

```

to handle buttonDown
    go to page "main menu"
end

```

```

--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter

```

```

--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave

```

---- END OF SCRIPT FOR OBJECT Button id 168 of Page id 13 -----

---- START OF SCRIPT FOR OBJECT Button id 167 of Page id 13 -----

```

to handle buttonDown
    go to page "acct background"
end

```

```

--Handles Mouse enter

```

```
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 167 of Page id 13 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 166 of Page id 13 -----
```

```
to handle buttonDown
  go to page "events"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 166 of Page id 13 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 165 of Page id 13 -----
```

```
to handle buttonDown
  go to page "balance sheet"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 165 of Page id 13 -----
```

---- START OF SCRIPT FOR OBJECT Page id 14 of Book
"D:\NPSDEMO\TEST.TBK" -----

to handle enterPage

set caption of this book to "FINANCIAL MANAGEMENT - \"
&"Balance Sheet"

end

---- END OF SCRIPT FOR OBJECT Page id 14 of Book "D:\NPSDEMO\TEST.TBK"

---- START OF SCRIPT FOR OBJECT Button id 104 of Page id 14 -----

to handle buttonDown

go to page "main menu"

end

--Handles Mouse enter

to handle mouseEnter

set sysCursor to 44

end mouseEnter

--Handles Mouse leave

to handle mouseLeave

set sysCursor to 2

end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 104 of Page id 14 -----

---- START OF SCRIPT FOR OBJECT Button id 103 of Page id 14 -----

to handle buttonDown

go to page "acct background"

end

--Handles Mouse enter

to handle mouseEnter

set sysCursor to 44

end mouseEnter

--Handles Mouse leave

to handle mouseLeave

set sysCursor to 2

end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 103 of Page id 14 -----

---- START OF SCRIPT FOR OBJECT Button id 102 of Page id 14 -----

```
to handle buttonDown
  go to page "events"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 102 of Page id 14 -----

---- START OF SCRIPT FOR OBJECT Button id 101 of Page id 14 -----

```
to handle buttonDown
  go to page "t accounts"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 101 of Page id 14 -----

---- START OF SCRIPT FOR OBJECT Page id 55 of Book
"D:\NPSDEMO\TEST.TBK" -----

```
to handle enterPage
  set caption of this book to "GENERAL MANAGEMENT"
end
```

---- END OF SCRIPT FOR OBJECT Page id 55 of Book "D:\NPSDEMO\TEST.TBK"

---- START OF SCRIPT FOR OBJECT Button id 9 of Page id 55 -----

--Handles Mouse enter
to handle buttonDown
--{Go to next page}
 send next
end

to handle mouseEnter
 set sysCursor to 44
end mouseEnter

--Handles Mouse leave
to handle mouseLeave
 set sysCursor to 2
end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 9 of Page id 55 -----

---- START OF SCRIPT FOR OBJECT Button id 8 of Page id 55 -----

to handle buttonDown
 go to Page id 1
end

--Handles Mouse enter
to handle mouseEnter
 set sysCursor to 44
end mouseEnter

--Handles Mouse leave
to handle mouseLeave
 set sysCursor to 2
end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 8 of Page id 55 -----

---- START OF SCRIPT FOR OBJECT Page id 19 of Book
"D:\NPSDEMO\TEST.TBK" -----

to handle enterPage
 set caption of this book to "GENERAL MANAGEMENT - \"

```
        &"Conflict"
end
---- END OF SCRIPT FOR OBJECT Page id 19 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 27 of Page id 19 -----
```

```
--Handles Mouse enter
to handle buttonDown
--{Go to next page}
  send next
end
```

```
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 27 of Page id 19 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 26 of Page id 19 -----
```

```
to handle buttonDown
  go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 26 of Page id 19 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 18 of Page id 19 -----
```

```
to handle mouseEnter
```

```
    show field "appear"  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    hide field "appear"  
    set sysCursor to 2  
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 18 of Page id 19 ----

```
---- START OF SCRIPT FOR OBJECT Hotword id 29 of Page id 19 ----  
to handle mouseEnter  
    show field "people"  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    hide field "people"  
    set sysCursor to 2  
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 29 of Page id 19 ----

```
---- START OF SCRIPT FOR OBJECT Hotword id 28 of Page id 19 ----  
to handle mouseEnter  
    show field "concerns"  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    hide field "concerns"  
    set sysCursor to 2  
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Hotword id 28 of Page id 19 ----

```
---- START OF SCRIPT FOR OBJECT Hotword id 8 of Page id 19 ----  
to handle mouseEnter  
    show field "condition"
```

```
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "condition"
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Hotword id 8 of Page id 19 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 54 of Book
"D:\NPSDEMO\TEST.TBK" -----
```

```
to handle enterPage
    set caption of this book to "GENERAL MANAGEMENT - \"
        &"Conflict"
end
```

```
---- END OF SCRIPT FOR OBJECT Page id 54 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 29 of Page id 54 -----
```

```
--Handles Mouse enter
to handle buttonDown
--{Go to next page}
    send next
end
```

```
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 29 of Page id 54 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 28 of Page id 54 -----
```

```
to handle buttonDown
    go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 28 of Page id 54 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 3 of Page id 54 -----
```

```
--Handles Mouse enter
to handle mouseEnter
  show field "cooperativeness"
  --Make the arrow red
  set fillColor of group "arrow-right" to 0,50,100
  set strokeColor of group "arrow-right" to 0,50,100
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "cooperativeness"
  --Restore the arrow to black
  set fillColor of group "arrow-right" to 0, 0, 0
  set strokeColor of group "arrow-right" to 0, 0, 0
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Hotword id 3 of Page id 54 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 2 of Page id 54 -----
```

```
--Handles Mouse enter
to handle mouseEnter
  show field "assertiveness"
  --Make the arrow red
  set fillColor of group "arrow-up" to 0, 50, 100
  set strokeColor of group "arrow-up" to 0, 50, 100
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "assertiveness"
  --Restore the arrow to black
  set fillColor of group "arrow-up" to 0, 0, 0
  set strokeColor of group "arrow-up" to 0, 0, 0
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Hotword id 2 of Page id 54 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 22 of Book
"D:\NPSDEMO\TEST.TBK" -----
to handle enterPage
  set caption of this book to "GENERAL MANAGEMENT - "\
  &"Conflict Handling Modes"
end
---- END OF SCRIPT FOR OBJECT Page id 22 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 79 of Page id 22 -----
to handle buttonDown
  go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 79 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 78 of Page id 22 -----
--Handles Mouse enter
to handle buttonDown
--{Go to next page}
```

```
send next
end
```

```
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 78 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 77 of Page id 22 -----
```

```
to handle buttonDown
  go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 77 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 38 of Page id 22 -----
```

```
to handle mouseEnter
  set fillColor of Field id 31 to 60, 50, 100
  show field "ex-accommodating"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set fillColor of Field id 31 to 180, 50, 100
  hide field "ex-accommodating"
  set sysCursor to 2
```

```
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 38 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 37 of Page id 22 -----
to handle mouseEnter
  set fillColor of Field id 6 to 60, 50, 100
  show field "ex-avoiding"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set fillColor of Field id 6 to 180, 50, 100
  hide field "ex-avoiding"
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 37 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 35 of Page id 22 -----
to handle mouseEnter
  set fillColor of Field id 0 to 60, 50, 100
  show field "ex-compromising"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set fillColor of Field id 0 to 180, 50, 100
  hide field "ex-compromising"
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 35 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 34 of Page id 22 -----
to handle mouseEnter
  set fillColor of Field id 4 to 60, 50, 100
  show field "ex-collaborating"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set fillColor of Field id 4 to 180, 50, 100
    hide field "ex-collaborating"
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 34 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 33 of Page id 22 -----
to handle mouseEnter
    set fillColor of Field id 2 to 60, 50, 100
    show field "ex-competing"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set fillColor of Field id 2 to 180, 50, 100
    hide field "ex-competing"
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 33 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 31 of Page id 22 -----
to handle mouseEnter
    set fillColor of Field id 31 to 0, 75.3125, 0
    set strokeColor of Field id 31 to 240, 50, 100
    show field "accommodating"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set fillColor of Field id 31 to 180, 50, 100
    set strokeColor of Field id 31 to 0, 0, 0
    hide field "accommodating"
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 31 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 6 of Page id 22 -----  
to handle mouseEnter  
  set fillColor of Field id 6 to 0, 75.3125, 0  
  set strokeColor of Field id 6 to 240, 50, 100  
  show field "avoiding"  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set fillColor of Field id 6 to 180, 50, 100  
  set strokeColor of Field id 6 to 0, 0, 0  
  hide field "avoiding"  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 6 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 4 of Page id 22 -----  
to handle mouseEnter  
  set fillColor of Field id 4 to 0, 75.3125, 0  
  set strokeColor of Field id 4 to 240, 50, 100  
  show field "collaborating"  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set fillColor of Field id 4 to 180, 50, 100  
  set strokeColor of Field id 4 to 0, 0, 0  
  hide field "collaborating"  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 4 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 2 of Page id 22 -----  
to handle mouseEnter  
  set fillColor of Field id 2 to 0, 75.3125, 0  
  set strokeColor of Field id 2 to 240, 50, 100  
  show field "competing"  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set fillColor of Field id 2 to 180, 50, 100
  set strokeColor of Field id 2 to 0, 0, 0
  hide field "competing"
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 2 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 0 of Page id 22 -----
to handle mouseEnter
  set fillColor of Field id 0 to 0, 75.3125, 0
  set strokeColor of Field id 0 to 240, 50, 100
  show field "compromising"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set fillColor of Field id 0 to 180, 50, 100
  set strokeColor of Field id 0 to 0, 0, 0
  hide field "compromising"
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 0 of Page id 22 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 52 of Book
"D:\NPSDEMO\TEST.TBK" -----
```

```
to handle enterPage
  set caption of this book to "GENERAL MANAGEMENT - "\
  &"Conflict Handling Modes"
end
```

```
to handle leavePage
  hide Ellipse "avoiding"
  hide Field "Avoiding"
  hide Ellipse "competing"
  hide field "competing"
  hide Field "competing-"
  hide Ellipse "compromising"
```

```
hide Field "compromising"
hide Field "compromising-"
hide IrregularPolygon "compromising"
hide Ellipse "accommodating"
hide Field "accommodating"
hide Field "accommodating-"
hide Ellipse "collaborating"
hide IrregularPolygon "collaborating"
hide Field "collaborating"
hide Group "left arrow"
hide Group "right arrow"
hide Field "distributive"
hide Field "integrative"
end
---- END OF SCRIPT FOR OBJECT Page id 52 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 115 of Page id 52 -----
--Handles Mouse enter
to handle buttonDown
--{Go to next page}
send next
end
```

```
to handle mouseEnter
set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 115 of Page id 52 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 114 of Page id 52 -----
to handle buttonDown
go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
```

```
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 114 of Page id 52 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 110 of Page id 52 -----
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
    show field "avoiding-h"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
    hide field "avoiding-h"
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 110 of Page id 52 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 109 of Page id 52 -----
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
    show field "collaborating-h"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
    hide field "collaborating-h"
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 109 of Page id 52 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 108 of Page id 52 -----
```

```
--Handles Mouse enter
to handle mouseEnter
```

```
    set sysCursor to 44
    show field "accommodating-h"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
    hide field "accommodating-h"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 108 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Field id 107 of Page id 52 -----

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
    show field "compromising-h"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
    hide field "compromising-h"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 107 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Field id 106 of Page id 52 -----

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
    show field "competing-h"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
    hide field "competing-h"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 106 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Field id 105 of Page id 52 -----

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
  show field "accommodating-"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
  hide field "accommodating-"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 105 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Field id 104 of Page id 52 -----

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
  show field "compromising-"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
  hide field "compromising-"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 104 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Field id 101 of Page id 52 -----

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
  show field "competing-"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
  hide field "competing-"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 101 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Button id 100 of Page id 52 -----

```
to handle buttonDown
  hide Group "right arrow"
  hide Field "integrative"
  hide Field "competing-sdii"
  hide Field "collaborating-sdii"
  hide Field "compromising-sdii"
  hide Field "avoiding-sdii"
  hide Field "accommodating-sdii"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 100 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Button id 99 of Page id 52 -----

```
to handle buttonDown
  hide Group "left arrow"
  hide Field "competing-sdi"
  hide Field "compromising-sdi"
  hide Field "accommodating-sdi"
  hide Field "distributive"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 99 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Button id 78 of Page id 52 -----

```
to handle buttonDown
  show Group "left arrow"
  show Field "competing-sdi"
  show Field "compromising-sdi"
  show Field "accommodating-sdi"
  show Field "distributive"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 78 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Button id 77 of Page id 52 -----

```
to handle buttonDown
  show Group "right arrow"
  show Field "integrative"
  show Field "competing-sdii"
  show Field "collaborating-sdii"
  show Field "compromising-sdii"
  show Field "avoiding-sdii"
  show Field "accommodating-sdii"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 77 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Button id 75 of Page id 52 -----

```
to handle buttonDown
  hide rectangle "shield"
  show Ellipse "collaborating"
  show IrregularPolygon "collaborating"
  show Field "collaborating"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Button id 75 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Button id 74 of Page id 52 -----

```
to handle buttonDown
  hide rectangle "shield"
  show Ellipse "competing"
  show Field "competing"
  show Ellipse "compromising"
  show IrregularPolygon "compromising"
  show Field "compromising"
  show Ellipse "accommodating"
  show Field "accommodating"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
```

```
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 74 of Page id 52 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 73 of Page id 52 -----
to handle buttonDown
  show Ellipse "avoiding"
  show field "avoiding"
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 73 of Page id 52 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 69 of Page id 52 -----
to handle buttonDown
  show rectangle "shield"
  hide Ellipse "avoiding"
  hide Field "Avoiding"
  hide Field "avoiding-sdii"
  hide Ellipse "competing"
  hide field "competing"
  hide Field "competing-sdi"
  hide Field "competing-sdii"
  hide Ellipse "compromising"
  hide Field "compromising"
  hide Field "compromising-sdi"
  hide Field "compromising-sdii"
  hide IrregularPolygon "compromising"
  hide Ellipse "accommodating"
  hide Field "accommodating"
  hide Field "accommodating-sdi"
  hide Field "accommodating-sdii"
  hide Ellipse "collaborating"
  hide Field "collaborating-sdii"
```

```
hide IrregularPolygon "collaborating"  
hide Field "collaborating"  
hide Group "left arrow"  
hide Group "right arrow"  
hide Field "integrative"  
hide Field "distributive"
```

```
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 69 of Page id 52 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 0 of Page id 52 -----
```

```
to handle buttonDown  
    hide field "previous-page"  
    go to previous page  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
    show field "previous-page"  
    set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
    hide field "previous-page"  
    set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 0 of Page id 52 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 79 of Page id 52 -----
```

```
--Handles Mouse enter
```

```
to handle mouseEnter
    set sysCursor to 44
    show field "instructions"
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
    hide field "instructions"
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 79 of Page id 52 -----

---- START OF SCRIPT FOR OBJECT Page id 23 of Book
"D:\NPSDEMO\TEST.TBK" -----

```
to handle enterPage
    set caption of this book to "GENERAL MANAGEMENT - "\
        &"Collaborating"
    system vsPoint
    vsPoint = 0
end
```

--When leaving page resets page to cover-up steps 2-5

```
to handle leavePage
    show rectangle "2"
    show rectangle "3"
    show rectangle "4"
    show rectangle "5"
end
```

---- END OF SCRIPT FOR OBJECT Page id 23 of Book "D:\NPSDEMO\TEST.TBK"

---- START OF SCRIPT FOR OBJECT Button id 16 of Page id 23 -----

```
--Handles Mouse enter
to handle buttonDown
--{Go to next page}
    send next
end
```

```
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 16 of Page id 23 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 15 of Page id 23 -----
to handle buttonDown
  go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 15 of Page id 23 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 3 of Page id 23 -----
to handle buttonDown
  system vsPoint
  vsPoint = vsPoint + 1
  if vsPoint >5 or vsPoint <2 then
    vsPoint = 2
  end
  hide rectangle vsPoint
end
```

```
--Handles Mouse enter
to handle mouseEnter
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  set sysCursor to 2
```

```
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 3 of Page id 23 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 24 of Book
"D:\NPSDEMO\TEST.TBK" -----
```

```
to handle enterPage
    set caption of this book to "GENERAL MANAGEMENT - "\
        &"Collaborating"
end
```

```
---- END OF SCRIPT FOR OBJECT Page id 24 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 11 of Page id 24 -----
```

```
to handle buttonDown
    go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 11 of Page id 24 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 8 of Page id 24 -----
```

```
to handle buttonDown
    go to Page "main menu"
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
```

```
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 8 of Page id 24 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 2 of Page id 24 -----
to handle mouseEnter
    show field "position"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "position"
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Hotword id 2 of Page id 24 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 1 of Page id 24 -----
to handle mouseEnter
    show field "concern"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "concern"
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Hotword id 1 of Page id 24 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 77 of Book
"D:\NPSDEMO\TEST.TBK" -----
to handle enterPage
    set caption of this book to "INFORMATION TECHNOLOGY\
    &" MANAGEMENT"
end
---- END OF SCRIPT FOR OBJECT Page id 77 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 16 of Page id 77 -----  
to handle buttonDown  
    hide field "caution"  
    send exit  
end  
  
to handle mouseEnter  
    show field "caution"  
    set sysCursor to 44  
end mouseEnter  
  
--Handles Mouse leave  
to handle mouseLeave  
    hide field "caution"  
    set sysCursor to 2  
end mouseLeave  
---- END OF SCRIPT FOR OBJECT Button id 16 of Page id 77 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 11 of Page id 77 -----  
to handle buttonDown  
    go to Page "main menu"  
end  
  
--Handles Mouse enter  
to handle mouseEnter  
    set sysCursor to 44  
end mouseEnter  
  
--Handles Mouse leave  
to handle mouseLeave  
    set sysCursor to 2  
end mouseLeave  
---- END OF SCRIPT FOR OBJECT Button id 11 of Page id 77 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 7 of Page id 77 -----  
to handle buttonDown  
    go to page "data and signals"  
end  
  
--Handles Mouse enter  
to handle mouseEnter
```

```
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 7 of Page id 77 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 6 of Page id 77 -----
```

```
to handle buttonDown
    go to page "tcp/ip protocol suite"
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 6 of Page id 77 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 5 of Page id 77 -----
```

```
to handle buttonDown
    go to page "osi model schematic"
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 5 of Page id 77 -----
```

---- START OF SCRIPT FOR OBJECT Page id 74 of Book
"D:\NPSDEMO\TEST.TBK" -----

to handle enterPage

set caption of this book to "INFORMATION TECHNOLOGY\
&" MANAGEMENT"

end

---- END OF SCRIPT FOR OBJECT Page id 74 of Book "D:\NPSDEMO\TEST.TBK"

---- START OF SCRIPT FOR OBJECT Hotword id 228 of Page id 74 -----

--Handles Mouse enter

to handle mouseEnter

show field "communications path"

set sysCursor to 44

end mouseEnter

to handle mouseLeave

hide field "communications path"

set sysCursor to 2

end

---- END OF SCRIPT FOR OBJECT Hotword id 228 of Page id 74 -----

---- START OF SCRIPT FOR OBJECT Button id 218 of Page id 74 -----

to handle buttonDown

go to previous page

end

--Handles Mouse enter

to handle mouseEnter

set sysCursor to 44

end mouseEnter

--Handles Mouse leave

to handle mouseLeave

set sysCursor to 2

end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 218 of Page id 74 -----

---- START OF SCRIPT FOR OBJECT Field id 6 of Page id 74 -----

```
--Handles Mouse enter
to handle mouseEnter
  text of field "definition" = " Concerned with transmission of unstructured "&\
    "bit stream over physical medium."
  show field "definition"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "definition"
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 6 of Page id 74 -----

---- START OF SCRIPT FOR OBJECT Field id 5 of Page id 74 -----

```
--Handles Mouse enter
to handle mouseEnter
  text of field "definition" = " Provides for the reliable transfer of information "&\
    "across the physical link."
  show field "definition"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "definition"
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 5 of Page id 74 -----

---- START OF SCRIPT FOR OBJECT Field id 4 of Page id 74 -----

```
--Handles Mouse enter
to handle mouseEnter
  text of field "definition" = " Provides upper layers with independence from "&\
    "the data transmission and switching technologies used to connect systems."
  show field "definition"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
```

```
to handle mouseLeave
  hide field "definition"
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 4 of Page id 74 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 3 of Page id 74 -----
--Handles Mouse enter
to handle mouseEnter
  text of field "definition" = " Provides reliable, transparent transfer of data "&\
  "between end points; end-to-end error recovery and flow control."
  show field "definition"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "definition"
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 3 of Page id 74 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 2 of Page id 74 -----
--Handles Mouse enter
to handle mouseEnter
  text of field "definition" = " Provides the control structure for communication "&\
  "between applications; establishes, manages, and terminates connections."
  show field "definition"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "definition"
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 2 of Page id 74 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 1 of Page id 74 -----
--Handles Mouse enter
```

```
to handle mouseEnter
  text of field "definition" = " Provides the independence to the application "&\
    "processes from differences in data representation."
  show field "definition"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "definition"
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 1 of Page id 74 -----

---- START OF SCRIPT FOR OBJECT Field id 0 of Page id 74 -----

```
--Handles Mouse enter
to handle mouseEnter
  text of field "definition" = " Provides access to the OSI environment for "&\
    "users and also provides distributed information services."
  show field "definition"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "definition"
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Field id 0 of Page id 74 -----

---- START OF SCRIPT FOR OBJECT Button id 150 of Page id 74 -----

```
to handle buttonDown
  show Group "a2-r"
  pause 5
  show Group "pr2-r"
  pause 5
  hide Group "a2-r"
  pause 5
  show Group "s2-r"
  pause 5
  hide Group "pr2-r"
```

pause 5
show Group "t2-r"
pause 5
hide Group "s2-r"
pause 5
show Group "n2-r"
pause 5
hide Group "t2-r"
pause 5
show Group "d2-r"
pause 5
hide Group "n2-r"
pause 5
show Group "ph2-r"
pause 5
hide Group "d2-r"
pause 5
show Group "l2"
pause 5
hide Group "ph2-r"
pause 5
show Group "l14"
pause 5
hide Group "l2"
pause 5
show Group "l13"
pause 5
hide Group "l14"
pause 5
show Group "l12"
pause 5
hide Group "l13"
pause 5
show Group "l11"
pause 5
hide Group "l12"
pause 5
show Group "l1 "
pause 5
hide Group "l11"
pause 5
show Group "ph1-r"
pause 5

```
hide Group "l1"
pause 5
show Group "d1-r"
pause 5
hide Group "ph1-r"
pause 5
show Group "n1-r"
pause 5
hide Group "d1-r"
pause 5
show Group "t1-r"
pause 5
hide Group "n1-r"
pause 5
show Group "s1-r"
pause 5
hide Group "t1-r"
pause 5
show Group "pr1-r"
pause 5
hide Group "s1-r"
pause 5
show Group "a1-r"
pause 5
hide Group "pr1-r"
pause 5
hide Group "a1-r"
end
---- END OF SCRIPT FOR OBJECT Button id 150 of Page id 74 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 149 of Page id 74 -----
to handle buttonDown
  show Group "a1-l"
  pause 5
  show Group "pr1-l"
  pause 5
  hide Group "a1-l"
  pause 5
  show Group "s1-l"
  pause 5
  hide Group "pr1-l"
  pause 5
```

show Group "t1-l"
pause 5
hide Group "s1-l"
pause 5
show Group "n1-l"
pause 5
hide Group "t1-l"
pause 5
show Group "d1-l"
pause 5
hide Group "n1-l"
pause 5
show Group "ph1-l"
pause 5
hide Group "d1-l"
pause 5
show Group "r1"
pause 5
hide Group "ph1-l"
pause 5
show Group "r11"
pause 5
hide Group "r1"
pause 5
show Group "r12"
pause 5
hide Group "r11"
pause 5
show Group "r13"
pause 5
hide Group "r12"
pause 5
show Group "r14"
pause 5
hide Group "r13"
pause 5
show Group "r2"
pause 5
hide Group "r14"
pause 5
show Group "ph2-l"
pause 5
hide Group "r2"

```
pause 5
show Group "d2-1"
pause 5
hide Group "ph2-1"
pause 5
show Group "n2-1"
pause 5
hide Group "d2-1"
pause 5
show Group "t2-1"
pause 5
hide Group "n2-1"
pause 5
show Group "s2-1"
pause 5
hide Group "t2-1"
pause 5
show Group "pr2-1"
pause 5
hide Group "s2-1"
pause 5
show Group "a2-1"
pause 5
hide Group "pr2-1"
pause 5
hide Group "a2-1"
```

end

---- END OF SCRIPT FOR OBJECT Button id 149 of Page id 74 -----

---- START OF SCRIPT FOR OBJECT Ellipse id 151 of Page id 74 -----

```
--Handles Mouse enter
to handle mouseEnter
  show field "communications path"
  set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
  hide field "communications path"
  set sysCursor to 2
end mouseLeave
```

---- END OF SCRIPT FOR OBJECT Ellipse id 151 of Page id 74 -----

---- START OF SCRIPT FOR OBJECT Page id 73 of Book
"D:\NPSDEMO\TEST.TBK" -----

to handle enterPage

 set caption of this book to "INFORMATION TECHNOLOGY\
 &" MANAGEMENT"

end

---- END OF SCRIPT FOR OBJECT Page id 73 of Book "D:\NPSDEMO\TEST.TBK"

---- START OF SCRIPT FOR OBJECT Button id 13 of Page id 73 -----

--Handles Mouse enter

to handle buttonDown

--{Go to next page}

 go to page "data and signals"

end

to handle mouseEnter

 set sysCursor to 44

end mouseEnter

--Handles Mouse leave

to handle mouseLeave

 set sysCursor to 2

end mouseLeave

---- END OF SCRIPT FOR OBJECT Button id 13 of Page id 73 -----

---- START OF SCRIPT FOR OBJECT Button id 11 of Page id 73 -----

to handle buttonDown

 go to page "protocol dependencies"

end

--Handles Mouse enter

to handle mouseEnter

 set sysCursor to 44

end mouseEnter

--Handles Mouse leave

to handle mouseLeave

```
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 11 of Page id 73 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 10 of Page id 73 -----
to handle buttonDown
    go to page "computer comm architecture"
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 10 of Page id 73 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 5 of Page id 73 -----
to handle mouseEnter
    show field "tcp/ip"
end
```

```
to handle mouseLeave
    hide field "tcp/ip"
end
---- END OF SCRIPT FOR OBJECT Hotword id 5 of Page id 73 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 29 of Book
"D:\NPSDEMO\TEST.TBK" -----
to handle enterPage
    set caption of this book to "INFORMATION TECHNOLOGY\"
    &" MANAGEMENT"
end
---- END OF SCRIPT FOR OBJECT Page id 29 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 38 of Page id 29 -----  
to handle buttonDown  
  go to previous page  
end
```

```
--Handles Mouse enter  
to handle mouseEnter  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 38 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 19 of Page id 29 -----
```

```
--Handles Mouse enter  
to handle mouseEnter  
  text of field "definition" = " File Transfer Protocol"  
  show field "definition"  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  hide field "definition"  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 19 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 17 of Page id 29 -----
```

```
--Handles Mouse enter  
to handle mouseEnter  
  text of field "definition" = " Simple Mail Transfer Protocol"  
  show field "definition"  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave
```

```
    hide field "definition"
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 17 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 16 of Page id 29 -----
--Handles Mouse enter
to handle mouseEnter
    text of field "definition" = " Simple Network Management Protocol"
    show field "definition"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "definition"
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 16 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 15 of Page id 29 -----
--Handles Mouse enter
to handle mouseEnter
    text of field "definition" = " User Datagram Protocol"
    show field "definition"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "definition"
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 15 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 14 of Page id 29 -----
--Handles Mouse enter
to handle mouseEnter
    text of field "definition" = " External Gateway Protocol"
    show field "definition"
```

```
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "definition"
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 14 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 13 of Page id 29 -----
```

```
--Handles Mouse enter
to handle mouseEnter
    text of field "definition" = " Internet Control Message Protocol"
    show field "definition"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "definition"
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 13 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 12 of Page id 29 -----
```

```
--Handles Mouse enter
to handle mouseEnter
    text of field "definition" = " Reverse Address Resolution Protocol"
    show field "definition"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "definition"
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 12 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 11 of Page id 29 -----  
--Handles Mouse enter  
to handle mouseEnter  
  text of field "definition" = " Address Resolution Protocol"  
  show field "definition"  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  hide field "definition"  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 11 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 10 of Page id 29 -----  
--Handles Mouse enter  
to handle mouseEnter  
  text of field "definition" = " Transport Control Protocol"  
  show field "definition"  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  hide field "definition"  
  set sysCursor to 2  
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Field id 10 of Page id 29 -----
```

```
---- START OF SCRIPT FOR OBJECT Field id 9 of Page id 29 -----  
--Handles Mouse enter  
to handle mouseEnter  
  text of field "definition" = " Internet Protocol"  
  show field "definition"  
  set sysCursor to 44  
end mouseEnter
```

```
--Handles Mouse leave  
to handle mouseLeave  
  hide field "definition"
```

```

    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Field id 9 of Page id 29 -----

---- START OF SCRIPT FOR OBJECT Page id 68 of Book
"D:\NPSDEMO\TEST.TBK" -----
to handle enterPage
    set caption of this book to "INFORMATION TECHNOLOGY"\
    &" MANAGEMENT"
end
---- END OF SCRIPT FOR OBJECT Page id 68 of Book "D:\NPSDEMO\TEST.TBK"
-----

---- START OF SCRIPT FOR OBJECT Button id 11 of Page id 68 -----
to handle buttonDown
    go to page "computer comm architecture"
end

--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter

--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 11 of Page id 68 -----

---- START OF SCRIPT FOR OBJECT Button id 9 of Page id 68 -----
to handle buttonDown
    go to page "analog/digital demo"
end

--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter

--Handles Mouse leave

```

```
to handle mouseLeave
  set sysCursor to 2
end mouseLeave
---- END OF SCRIPT FOR OBJECT Button id 9 of Page id 68 -----
```

```
---- START OF SCRIPT FOR OBJECT Hotword id 7 of Page id 68 -----
to handle mouseEnter
  show field "modem"
end
```

```
to handle mouseLeave
  hide field "modem"
end
---- END OF SCRIPT FOR OBJECT Hotword id 7 of Page id 68 -----
```

```
---- START OF SCRIPT FOR OBJECT Page id 31 of Book
"D:\NPSDEMO\TEST.TBK" -----
to handle enterPage
  set caption of this book to "INFORMATION TECHNOLOGY"\
  &" MANAGEMENT"
end
---- END OF SCRIPT FOR OBJECT Page id 31 of Book "D:\NPSDEMO\TEST.TBK"
-----
```

```
---- START OF SCRIPT FOR OBJECT Button id 122 of Page id 31 -----
to handle buttonDown
  select Angledline "1"
  send Color
  pause 10
  select Angledline "2"
  send Color
  pause 10
  select Angledline "1"
  send Uncolor
  pause 10
  select Angledline "3"
  send Color
  pause 10
  select Angledline "2"
  send Uncolor
```

pause 10
select Angledline "3"
send Uncolor
pause 20
set bounds of Field "modem1" to 5049, 1116, 6402, 1866
pause 10
set bounds of Field "modem1" to 5049, 1446, 6402, 1866
pause 10
select Curve "1"
extend select Curve "2"
send Color
pause 10
send Uncolor
select Curve "3"
extend select Curve "4"
send Color
pause 10
send Uncolor
pause 5

show Group "1"
pause 7
hide Group "1"
pause 7
show Group "2"
pause 7
hide Group "2"
pause 7
show Group "3"
pause 7
hide Group "3"

pause 5
select Curve "9"
extend select Curve "10"
send Color
pause 10
send Uncolor
select Curve "11"
extend select Curve "12"
send Color
pause 10
send Uncolor

```
pause 10
set bounds of Field "modem2" to 5073, 4398, 6426, 5142
pause 10
set bounds of Field "modem2" to 5073, 4710, 6426, 5142
pause 20
select Angledline "6"
send Color
pause 10
select Angledline "7"
send Color
pause 10
select Angledline "6"
send Uncolor
pause 10
select Angledline "8"
send Color
pause 10
select Angledline "7"
send Uncolor
pause 10
select Angledline "8"
send Uncolor
show field "recieved"
pause 80
hide field "recieved"
pause 20
show field "recieved"
pause 80
hide field "recieved"
end
```

```
to handle Color
    set strokeColor of selection to 60, 50, 100
    set linestyle of selection to 3
end
```

```
to handle Uncolor
    set linestyle of selection to 1
    set strokeColor of selection to 0, 0, 0
end
```

```
--Handles Mouse enter
to handle mouseEnter
```

```
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 122 of Page id 31 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 101 of Page id 31 -----
```

```
to handle buttonDown
    go to previous page
end
```

```
--Handles Mouse enter
to handle mouseEnter
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 101 of Page id 31 -----
```

```
---- START OF SCRIPT FOR OBJECT Button id 135 of Page id 31 -----
```

```
to handle buttonDown
    hide field "caution"
    send exit
end
```

```
to handle mouseEnter
    show field "caution"
    set sysCursor to 44
end mouseEnter
```

```
--Handles Mouse leave
to handle mouseLeave
    hide field "caution"
    set sysCursor to 2
end mouseLeave
```

```
---- END OF SCRIPT FOR OBJECT Button id 135 of Page id 31 -----
```

LIST OF REFERENCES

- Bationo, B. D. "The Effects of Three Forms of Immediate Feedback on Learning Intellectual Skills in a Foreign Language Computer-Based Tutorial." Unpublished doctoral dissertation, Department of Curriculum and Educational Technology, University of Toledo, 1991.
- Chepetsky, Susan M. "Despite Obstacles, Multimedia is Gathering Adherents," *Digital News & Review*, 11(1), 38, Cahners Publishing Associates LP, 1994.
- Eng, Paul M. "High-tech Teaching, Higher Test Scores," *Business Week*, n3360, 86, 1994.
- Gates, Bill. "Notes from IS 3170 Economics," Naval Postgraduate School, 1994.
- Harris, Charles. "James Madison University: 21st Century Multimedia Lecture Hall", *Technological Horizons in Education*, 20(11), 33-38, 1993.
- Howles, Les and Connie Pettengill. "Designing Instructional Multimedia Presentations: A Seven-Step Process," *Technological Horizons in Education*, 20(11), 58-61, 1993.
- Jensen, Robert, E. and Petra K. Sandlin, "Electronic Teaching and Learning: Trends in Adapting to Hypertext, Hypermedia, and Networks in Higher Education," *Working Paper 215*, Trinity University, San Antonio, Texas, 1994.
- Jonassen, David H. and R. Scott Grabinger. "Applications of Hypertext: Technologies for Higher Education," *Journal of Computing in Higher Education*, 4(2), 12-42, 1993.
- Kilmann, Ralph H. and Kenneth W. Thomas. Thomas-Kilmann Conflict Mode Instrument, pp. 9-11, XICOM, Inc., 1974.
- Lamb, Annette C. "Multimedia and the Teaching-Learning Process in Higher Education," *New Directions For Teaching And Learning*, Jossey-Bass Publishers, 1992.
- Miller, R. L. "Learning Benefits of Interactive Technologies," *Videodisk Monitor*, 8 (2), 14-15, 1990.

- Moses, Doug. "Notes from MN 2155 Accounting for Management," Naval Postgraduate School, 1994.
- Nasser, L. D. and J.W. McEwen. "The Impact of Alternative Media Channels: Recall and Involvement with Messages," *AV Communication Review*, 24 (3), 263-272, 1976.
- Schank, Roger C. "Learning Via Multimedia Computers," *Communications of the ACM*, 36(5), 54, 1993.
- Solomon, Martin B. "What's Wrong with Multimedia in Higher Education?" *Technological Horizons in Education*, 21(7), 81, 1994.
- Spanbauer, Scott. "MPC Level III Multimedia Dream PCs," *New Media*, 4(3), 36-38, 1994.
- Stallings, William. "Data and Computer Communications," Fourth Edition, pp. 438-440, 461, Macmillan Publishing Co., 1994.
- Thomas, Kenneth W. "Toward Multi-Dimensional Values in Teaching: The Example of Conflict Behaviors," *Academy of Management Review*, 1977.
- Tropea, Gregory, and Dennis Rothermel. "Proposal: Scalability in Multimedia Architecture", *Technological Horizons in Education*, 21(7), 84-85, 1994.
- Watson, Charles E. *Management Development Through Training*, Addison-Wesley Publishing Company, Reading, Mass., 1979.

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