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BLISS: A COMPUTER PROGRAM FOR THE PROTECTION OF BLOOD DONORS*

by

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A BASIC program has been developed for the Hewlett-Packard Model 9845 desk-top computer which allows the creation of blood donor files for subsequent retrieval, update, and correction. A similar modified version was developed for the HP 9835 Model. This software system has been called BLISS which stands for Blood Information and Security System. In addition to its function as a file management system, BLISS provides warnings before a donation is performed to protect the donor from excessive exposure to

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radioactivity and DMSO levels, from too frequent of donations of blood, and from adverse reactions. The program can also be used to select donors who have participated in specific studies and to list the experimental details which have been stored in the file. The BLISS system has been actively utilized at the Naval Blood Research Laboratory in Boston and contains the files of over 750 donors.

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ABSTRACT

A BASIC program has been developed for the Hewlett-Packard Model 9845 desk-top computer which allows the creation of blood donor files for subsequent retrieval, update, and correction. A similar modified version was developed for the HP 9835 Model. This software system has been called BLISS which stands for Blood Information and Security System. In addition to its function as a file management system, BLISS provides warnings before a donation is performed to protect the donor from excessive exposure to radioactivity and DMSO levels, from too frequent of donations of blood, and from adverse reactions. The program can also be used to select donors who have participated in specific studies and to list the experimental details which have been stored in the file. The BLISS system has been actively utilized at the Naval Blood Research Laboratory in Boston and contains the files of over 750 donors.

INTRODUCTION

A need existed at the Naval Blood Research Laboratory in Boston to have easy and quick access to information files on blood donors, so that they can be better protected from excessive exposure to radiation from too frequent donation/transfusions.

To this purpose, the computer software system was developed for use on the Models 9845 and 9835 Hewlett-Packard desk-top computers. The programming language was BASIC. The system has been called BLOOD INFORMATION AND SECURITY SYSTEM, now known as BLISS in its abbreviated form.

BLISS consists of six main programs and four peripheral programs as follows:

MAIN PROGRAMS

DONOR	Generates and updates an information file for each donor.
SOCIAL	Lists donor's social security and storage disk numbers.
LIST	Lists information from all or selected donations for each number.
WRONG	Makes corrections on previously entered data.
ALERT	Lists DMSO and radioactivity levels previously received and warns if the imminent transfusion would exceed the safety limit for the donor.
SELECT	Lists the name, social security number and donation dates of all donors having a user-given combination of experimental conditions.

PERIPHERAL PROGRAMS

HOW-TO — Provides information and instructions about the BLISS system.

BACKUP — Copies all data from main disks to a second set of disks stored elsewhere for emergency backup.

NUMBER — Creates a file on data storage disks which prevents the user from adding data to the wrong disk or mixing up main disks with back-up disks.

FILE — Creates a file, similar to REGIS, which can be used to store social security and storage disk numbers. This allows the user to test programming changes without risk to existing data, or to use BLISS to keep a separate set of data not related to the main security system.

OPERATION

To start operation of the BLISS system a user is instructed to do the following:

TO OPERATE A PROGRAM DO THE FOLLOWING:

1. INSERT PROGRAM DISK INTO THE TOP FLEXIBLE DISK DRIVE AND OTHER DISKS INTO THE LOWER DISK DRIVES AS CALLED FOR BY THE PROGRAMS.

2. TYPE THE COMMAND: GET `"BLISS:F8"',10,10 (USING REGULAR QUOTE MARKS). PRESS KEYBOARD KEY `EXECUTE'.

3. PROGRAM BEGINS. PLACE BLISS OVERLAY ON THE UPPER RIGHT HAND KEYS. ALL RESPONSES EXCEPT YES & NO MUST BE FOLLOWED BY `CONT'.

5. BE SURE TO ANSWER ALL QUESTIONS WITHIN THE PROGRAM. IF NOT APPLICABLE, ENTER `0' AND PRESS `CONT'.

6. IF YOU ENCOUNTER PROBLEMS AND WANT TO START OVER, PRESS KEYBOARD KEYS `STOP' AND THEN `RUN'.

OTHER INFORMATION YOU MAY NEED:

1. THE QUESTION `COMPUTER 9835 OR 9845?' REFERS TO THE MODEL NUMBER SHOWN ON THE FACE OF THE MACHINE. BLISS WILL OPERATE ON EITHER MACHINE, HOWEVER, FOR MODEL 9835, VARIABLE NAMES ARE PRESENTED ON A TYPED SHEET STORED IN THE PROGRAM DISK ENVELOPE AND PRINTED OUTPUT APPEARS IN HIGHLY ABBREVIATED FORM. IT IS RECOMMENDED THAT YOU BECOME FAMILIAR WITH BLISS ON MODEL 9845.

2. EACH PROGRAM WILL GIVE YOU THE STORAGE DISK NUMBER OF THE DONOR. BECAUSE THE PROGRAM DISK CONTAINS THIS INFORMATION BE SURE THAT IT IS ALWAYS INSERTED INTO THE TOP DISK DRIVE. INSERT OTHER DISKS AS CALLED FOR IN THE LOWER DISK DRIVES.

3. PLEASE WRITE DOWN YOUR PROBLEMS AND IDEAS FOR IMPROVEMENTS AND GIVE THEM TO STINA COOKE (MON & FRI AFTERNOONS).

END

THE DONOR PROGRAM

Upon loading the BLISS system (see example 1 below) and subsequently the DONOR program, the following questions are asked on the CRT screen.

a. DONATION PERFORMED (Y/N) ?
b. SOCIAL SECURITY NO.?
c. DONATION DATE?
d. METHOD OF (BLOOD) COLLECTION?
e. TYPES OF CELLS AND STUDY?
f. BLOOD VOLUME DRAWN (ML)?
g. KIND OF STORAGE AND CELL AGE?
h. REJUVENATION SOLUTION?
i. 51-CR RADIATION (MICROCURIES)?
j. 125-I RADIATION (MICROCURIES)?
k. 111-INDIUM RADIATION (MICROCURIES)?
l. DMSO CONCENTRATION (%)?
m. RESIDUAL DMSO INFUSED (MG)?
n. AUTOTRANSFUSION NUMBER?
o. SPECIAL CODE NUMBER?
p. ANY REACTIONS?
q. WASH SOLUTION?
r. COMMENTS?
s. MORE COMMENTS?

It should be noted that a donation file will be created only if the donation has been performed i.e. answering YES in question (a). When the social security number is given the program searches to see if the donor already has a file in which case the number of the appropiate disk is printed. The disk is inserted and the program continues with the rest of the questions. When all questions are answered, a printout is produced with all the information accepted for user confirmation.

Examples of the questionnaire and the confirmation are shown below (examples 2 and 3).

EXAMPLE 1

LOADING BLISS

```
GET "BLISS:F8",10,10
Computer Number? (9835 OR 9845)
9845
Is BLISS overlay placed on keys? (Y/N)
Y
SELECT ANY PROGRAM
```

EXAMPLE 2

RUNNING "DONOR"

```
LOAD "DONOR4:F8",10
DONATION PERFORMED (Y/N)
Y
SOCIAL SECURITY NO.?
111-11-1111
PLEASE WAIT
INSERT DISK NO.: 1   PRESS `CONT'
DONATION DATE IN THE FORM MM-DD-YY
11-17-81
METHOD OF COLLECTION?
CPD
TYPES OF CELLS AND STUDY?
RBCTX
BLOOD VOLUME DRAWN? (MLS)
80
KIND OF STORAGE AND CELL AGE?
FZNINM
REJUVENATION SOLUTION?
NR
51-CR RADIATION (MICROCURIES)?
5.0
125-I RADIATION (MICROCURIES)?
0.5
111-INDIUM RADIATION (MICROCURIES)?
0
DMSO CONCENTRATION (%)?
0
RESIDUAL DMSO INFUSED (MG)?
0
AUTOTRANSFUSION NUMBER?
1106
SPECIAL CODE NO.?
0
ANY REACTIONS?
0
WASH SOLUTION?
9/2-6.8-40
COMMENTS?
0
MORE COMMENTS?
0
```

EXAMPLE 3

CONFIRMING ANSWERS

```
HERE IS THE INFORMATION YOU ENTERED

     SOCIAL SECURITY NUMBER.=  111-11-1111
            DATE OF DONATION=  11-17-81
        METHOD OF COLLECTION=  CPD
    TYPES OF CELLS AND STUDY=  RBCTX
          BLOOD VOLUME DRAWN=  80 MLS
KIND OF STORAGE AND CELL AGE=  FZNINM
       REJUVENATION SOLUTION=  NR
             51-CR RADIATION=  5.0 MICROCURIES
             125-I RADIATION=  0.5 MICROCURIES
         111-INDIUM RADIATION=  0 MICROCURIES
           DMSO CONCENTRATION=  0%
       RESIDUAL DMSO INFUSED=  0 MG
         AUTOTRANSFUSION NO =  1106
            SPECIAL CODE ! .=  0
                  REACT ONS=  0
               WASH SOLUTION=  9/2-6.8-40
                    COMMENTS=  0
               MORE COMMENTS=  0

IS THE CORRECT INFORMATION? (Y/N)
Y
PLEASE WAIT
ANOTHER DONOR? (Y/N)
N
SELECT ANY PROGRAM
```

If the information is not correct, no record is created and the questionnaire reappears on the screen.

THE LIST PROGRAM

This program lists selected, or all donations of a donor by using his social security number

EXAMPLE 4

RUNNING "LIST"

```
LOAD "LIST4:F8",10
SOCIAL SECURITY NO.?
111-11-1111
PLEASE WAIT
INSERT DISK NO.: 1   PRESS `CONT'
DO YOU WANT A PRINTED COPY? (Y/N)
Y
DO YOU WANT ALL DONATIONS LISTED? (Y/N)
Y
```

EXAMPLE 5

LIST OUTPUT

SOCIAL SECURITY NO.:	111-11-1111
NAME:	ALFRED RENTA
NO. OF DONATIONS:	4
DISK:	1

DONATION NO.:	1
DATE:	01-13-81
METHOD OF COLLECTION:	CPD
TYPES OF CELLS AND STUDY:	RBCTX
BLOOD VOLUME DRAWN:	80 MLS
KIND OF STORAGE AND CELL AGE:	FZNINM
REJUVENATION SOLUTION:	NR
51-CR:	5.0 MICROCURIES
125-I:	0.5 MICROCURIES
111-INDIUM:	0 MICROCURIES
DMSO CONCENTRATION:	0%
RESIDUAL DMSO INFUSED:	0 MG
AUTOTRANSFUSION NO.:	1076
SPECIAL CODE NO.:	004691
REACTIONS:	0
WASH SOLUTION:	9/2-6.8-40
COMMENTS:	POOR FTW
MORE COMMENTS:	FZN ERR

DONATION NO.:	2
DATE:	04-23-81
METHOD OF COLLECTION:	CPD
TYPES OF CELLS AND STUDY:	RBCTX
BLOOD VOLUME DRAWN:	80 MLS
KIND OF STORAGE AND CELL AGE:	FZNOUM
REJUVENATION SOLUTION:	PIPAC
51-CR:	5.0 MICROCURIES
125-I:	0.5 MICROCURIES
111-INDIUM:	0 MICROCURIES
DMSO CONCENTRATION:	0%
RESIDUAL DMSO INFUSED:	0 MG
AUTOTRANSFUSION NO.:	1095
SPECIAL CODE NO.:	004718
REACTIONS:	I-125
WASH SOLUTION:	9/2-5-40
COMMENTS:	0
MORE COMMENTS:	0

THE SOCIAL PROGRAM

This program lists the social security number and storage disk number of a specified number of donors.

EXAMPLE 6

SOCIAL QUESTIONNAIRE AND OUTPUT

```
LOAD "SOCIA4:F8",10
DO YOU WANT A PRINTED COPY? (Y/N)
Y
NO. OF DONORS:     9

SOC. SEC. NO.:

111-11-1111       DISK   1
222-22-2222       DISK   1
333-33-3333       DISK   1
444-44-4444       DISK   1
001-23-4567       DISK   1
777-77-7777       DISK   1
888-88-8888       DISK   1
125-14-1270       DISK   1
025-25-2567       DISK   1


END
SELECT ANY PROGRAM
```

THE SELECT PROGRAM

This program lists the name, social security number and donation date of all donors subjected to a specified treatment. With this information, the user may retrieve the experimental details by using the LIST program.

EXAMPLE 7

SELECT QUESTIONNAIRE

```
LOAD "SELEC4:F8",10
METHOD OF COLLECTION (0 IF NOT INTERESTED)
CPD
TYPES OF CELLS & STUDY? (0 IF NOT INTERESTED)
0
KIND OF CELLS & STORAGE AGE? (0 IF NOT INTERESTED)
0
REJUVENATION SOLUTION? (0 IF NOT INTERESTED)
PIPAC
DO YOU WANT A PRINTED COPY? (Y/N)
Y
```

EXAMPLE 8

SELECT OUTPUT

```
------------
COMBINATION:
------------

CPD
0
0
PIPAC


INSERT ANY MAIN DISK, PRESS `CONT'.
PLEASE WAIT

DONATIONS MEETING ABOVE COMBINATION
ON DISK #  1
-----------------------------------




SOCIAL SECURITY NO.:  111-11-1111
                NAME:  ALFRED RENTA
       DONATION DATE:  04-23-81


SOCIAL SECURITY NO.:  222-22-2222
                NAME:  MILO BENDER
       DONATION DATE:  07-11-81


SOCIAL SECURITY NO.:  333-33-3333
                NAME:  CHERI SOBEL
       DONATION DATE:  01-09-81
       DONATION DATE:  01-12-81


SOCIAL SECURITY NO.:  888-88-8888
                NAME:  STEVE JONES
       DONATION DATE:  10-12-81


END
SAME COMBINATION ON ANOTHER DISK? (Y/N)
N
ANOTHER COMBINATION? (Y/N)
N
SELECT ANY PROGRAM
```

THE ALERT PROGRAM

This program searches a donors file and provides Warning Conditions of radioactivity, DMSO levels, blood volume withdrawn, and frequency of donation exceed certain limits set by the Naval Blood Research Laboratory

EXAMPLE 9

ALERT QUESTIONNAIRE

```
LOAD "ALERT4:F8",10
DO YOU WANT A PRINTED COPY? (Y/N)
Y
SOCIAL SECURITY NO.?
222-22-2222
PLEASE WAIT
INSERT DISK NO.: 1   PRESS `CONT`
TODAY'S DATE (MM-DD-YY)
09-25-81
WHAT TYPE OF STUDY DO YOU INTEND TO DO?
RBCDR
VOLUME OF BLOOD YOU INTEND TO DRAW?
450
```

EXAMPLE 10

ALERT OUTPUT

```
            DONOR NAME:  MILO BENDER
  SOCIAL SECURITY NO.:  222-22-2222
         TODAY'S DATE:  09-25-81
       STUDY PLANNED:  RBCDR
   VOLUME TO BE DRAWN:  450 ML


------------------------------------------------------------
RADIOACTIVITY AND DMSO DATA
------------------------------------------------------------

                   DATE:  04-03-81
   DMSO CONCENTRATION:  0%
RESIDUAL DMSO INFUSED:  0 MG
                 51-CR:  5.0 MICROCURIES
                 125-I:  0.5 MICROCURIES
           111-INDIUM:  0 MICROCURIES

                   DATE:  07-11-81
   DMSO CONCENTRATION:  0%
RESIDUAL DMSO INFUSED:  0 MG
                 51-CR:  5.0 MICROCURIES
                 125-I:  0.5 MICROCURIES
           111-INDIUM:  0 MICROCURIES

------------------------------------------------------------
REACTIONS ALERT
------------------------------------------------------------

     NONE

PLEASE WAIT
------------------------------------------------------------
RADIOACTIVITY ALERT
------------------------------------------------------------

     STOP--DO NOT USE THIS DONOR
     RBCTX--PERFORMED WITHIN THE LAST 90 DAYS


------------------------------------------------------------
BLOOD VOLUME ALERT
------------------------------------------------------------

     STOP--DO NOT USE THIS DONOR
     450 ML/60 DAYS PLUS 450 WILL EXCEED LIMIT


------------------------------------------------------------
DRAW ALERT
------------------------------------------------------------

     NONE
```

THE HOW-TO PROGRAM

This program provides a copy of instructions for operating the BLISS program

EXAMPLE 11

HOW-TO OUTPUT

```
LOAD "HOW-TO:F8",10
DO YOU WANT A PRINTED COPY OF THESE INSTRUCTIONS? (Y/N)
Y
     WELCOME TO THE  BLOOD INFORMATION AND SECURITY SYSTEM  KNOWN AS:
                     ---------------------------------------

                                B L I S S
                                ---------

          THIS SET OF SIX MAIN AND FOUR PERIPHERAL PROGRAMS WAS DESIGNED BY
DR. NICHOLAS CATSIMPOOLAS AND ADAPTED FOR USE ON THE MODELS 9835 AND 9845
HEWLETT-PACKARD DESK-TOP COMPUTERS BY STINA COOKE FOR THE NAVAL BLOOD RESEARCH
LABORATORY IN BOSTON.

          THESE PROGRAMS STORE INFORMATION ON BLOOD DONORS, PROVIDE EASY ACCESS
TO DATA, WARN PERSONNEL OF EXCEEDED SAFETY LIMITS AND ALLOW THE USER TO SEARCH
FOR DONORS MEETING CERTAIN EXPERIMENTAL CONDITIONS.


BLISS CONSISTS OF SIX MAIN PROGRAMS:

     DONOR      GENERATES AND UPDATES AN INFORMATION FILE FOR EACH DONOR.

     SOCIAL     LISTS DONOR'S SOCIAL SECURITY AND STORAGE DISK NUMBER.

     LIST       LISTS DATA FROM ALL OR SELECTED DONATIONS.

     WRONG      MAKES CORRECTIONS ON PREVIOUSLY ENTERED DATA.

     ALERT      LISTS DMSO AND RADIOACTIVITY LEVELS PREVIOUSLY RECEIVED,
                AND WARNS IF DONOR SAFTEY LEVELS HAVE BEEN EXCEEDED.

     SELECT     LISTS THE NAME, SOCIAL SECURITY NUMBER, AND DONATION
                DATES OF ALL DONORS HAVING A USER-GIVEN COMBINATION OF
                E.PERIMENTAL CONDITIONS.
```

HOW-TO OUTPUT (continued)

AND FOUR PERIPHERAL PROGRAMS:

HOW-TO — PROVIDES INFORMATION AND INSTRUCTIONS ABOUT THE SYSTEM. HOW-TO OPERATES ONLY ON MODEL 9845 AND DISPLAYS ON SCREEN OR WITH OPTIONAL PAPER PRINT-OUT.

BACKUP — COPIES ALL DATA FROM MAIN DISKS TO A SECOND SET OF DISKS STORED ELSEWHERE FOR EMERGENCY PURPOSES.

NUMBER — CREATES A FILE CALLED `Number' ON NEW STORAGE DISKS WHICH PREVENTS ADDING DATA TO THE WRONG DISK OR MIXING UP MAIN DISKS WITH BACKUP DISKS.

FILE — CREATES A FILE WHICH CAN BE USED TO STORE SOCIAL SECURITY AND STORAGE DISK NUMBERS. THIS ALLOWS THE USER TO TEST PROGRAMMING CHANGES WITHOUT RISK TO ESTABLISHED DATA, OR TO USE `BLISS' TO KEEP A SEPARATE SET OF DATA NOT RELATED TO THE MAIN SECURITY SYSTEM.

TO OPERATE A PROGRAM DO THE FOLLOWING:

1. INSERT PROGRAM DISK INTO THE TOP FLEXIBLE DISK DRIVE AND OTHER DISKS INTO THE LOWER DISK DRIVES AS CALLED FOR BY THE PROGRAMS.

2. TYPE THE COMMAND: GET ``BLISS:F8'',10,10 (USING REGULAR QUOTE MARKS). PRESS KEYBOARD KEY `EXECUTE'.

3. PROGRAM BEGINS. PLACE BLISS OVERLAY ON THE UPPER RIGHT HAND KEYS. ALL RESPONSES EXCEPT YES & NO MUST BE FOLLOWED BY `CONT'.

5. BE SURE TO ANSWER ALL QUESTIONS WITHIN THE PROGRAM. IF NOT APPLICABLE, ENTER `0' AND PRESS `CONT'.

6. IF YOU ENCOUNTER PROBLEMS AND WANT TO START OVER, PRESS KEYBOARD KEYS `STOP' AND THEN `RUN'.

OTHER INFORMATION YOU MAY NEED:

1. THE QUESTION `COMPUTER 9835 OR 9845?' REFERS TO THE MODEL NUMBER SHOWN ON THE FACE OF THE MACHINE. BLISS WILL OPERATE ON EITHER MACHINE, HOWEVER, FOR MODEL 9835, VARIABLE NAMES ARE PRESENTED ON A TYPED SHEET STORED IN THE PROGRAM DISK ENVELOPE AND PRINTED OUTPUT APPEARS IN HIGHLY ABBREVIATED FORM. IT IS RECOMMENDED THAT YOU BECOME FAMILIAR WITH BLISS ON MODEL 9845.

2. EACH PROGRAM WILL GIVE YOU THE STORAGE DISK NUMBER OF THE DONOR. BECAUSE THE PROGRAM DISK CONTAINS THIS INFORMATION BE SURE THAT IT IS ALWAYS INSERTED INTO THE TOP DISK DRIVE. INSERT OTHER DISKS AS CALLED FOR IN THE LOWER DISK DRIVES.

3. PLEASE WRITE DOWN YOUR PROBLEMS AND IDEAS FOR IMPROVEMENTS AND GIVE THEM TO STINA COOKE (MON & FRI AFTERNOONS).

END
SELECT ANY PROGRAM

THE WRONG PROGRAM

This program makes corrections on previously entered data on a particular donors file.

EXAMPLE 12

WRONG QUESTIONNAIRE

```
BLISS

PROGRAM WRONG



 1  SOCIAL SECURITY NO.                    2  DONOR'S FIRST NAME
 3  DONOR'S LAST NAME                      4  DATE OF DONATION
 5  METHOD OF COLLECTION                   6  TYPES OF CELLS AND STUDY
 7  KIND OF STORAGE AND CELL AGE           8  REJUVENATION SOLUTION
 9  51-CR RADIATION                       10  125-I RADIATION
11  111-INDIUM RADIATION                  12  DMSO CONCENTRATION
13  RESIDUAL DMSO INFUSED                 14  AUTOTRANSFUSION NO.
15  SPECIAL CODE NO.                      16  REACTIONS
17  ENTIRE DONATION                       18  WASH SOLUTION
19  COMMENTS                              20  MORE COMMENTS
21  BLOOD VOLUME


WHAT IS WRONG? (ITEM NUMBER)
21
DONOR'S SOCIAL SECURITY NO.?
111-11-1111
PLEASE WAIT
INSERT DISK NO.: 1  PRESS `CONT'
DONATION DATES:

# 1    01-13-81
# 2    04-23-81
# 3    05-15-81
# 4    11-17-81
DONATION NO.?
1
BLOOD VOLUME DRAWN (MLS)?
80
```

THE BACKUP PROGRAM

This program provides a series of instructions which the user has to perform correctly in order to copy the contents of a disk to a duplicate (back-up) disk.

THE NUMBER PROGRAM

This program provides a series of instructions to create a file on additional data disks which prevents the user from inadvertently adding data to the wrong disk or mixing main with back-up disks.

THE FILE PROGRAM

This program provides steps to create a file similar to REGIS (the social security number phone book) which allows the user to test programming changes without risking existind data, or to keep a separate set of data not related to the main security system.

COMPUTER PROGRAMS

1. PROGRAM DONOR

DONOR

```
10  PRINTER IS 16
20  PRINT PAGE
30  PRINT "BLISS"
40  PRINT
50  PRINT "PROGRAM DONOR"
60  PRINT
70  PRINT
80  MASS STORAGE IS ":F8,1"
90  LINPUT "DONATION PERFORMED (Y/N)",Performed$
100 IF Performed$="Y" THEN 130
110 PRINT "SORRY, WRONG PROGRAM"
120 GOTO 2640
130 LINPUT "SOCIAL SECURITY NO.?",Ss$
140 IF Ss$[4;1]<>"-" THEN 180
150 IF Ss$[7;1]<>"-" THEN 180
160 IF LEN(Ss$)>11 THEN 180
170 GOTO 210
180 DISP "INCORRECT SS#--TO TRY AGAIN PRESS `CONT'"
190 PAUSE
200 GOTO 130
210 DISP "PLEASE WAIT"
220 O$=Ss$[5,6]
230 P$=Ss$[8,11]
240 File$=O$&P$
250 ASSIGN #5 TO "REGIS:F8"
260 READ #5,1;P
270 FOR I=P+1 TO 2 STEP -1
280   READ #5,I;Ss1$,Disk
290   IF Ss1$=Ss$ THEN 380
300   NEXT I
310 Newdonor$="Y"
320 P8=P+1
330 Q=P8/50
340 Q1=INT(Q)
350 IF Q=Q1 THEN Disk=Q1
360 IF Q>Q1 THEN Disk=Q1+1
370 GOTO 390
380 Newdonor$="N"
390 DISP "INSERT DISK NO.:";Disk;"  PRESS `CONT'"
400 PAUSE
410 ASSIGN #3 TO "Number"
420 READ #3;Disknumber,Disktype$
430 IF Disktype$<>"M" THEN 450
440 IF Disk=Disknumber THEN 480
450 DISP "WRONG DISK, INSERT NO.:";Disk;"  PRESS `CONT'"
460 PAUSE
470 GOTO 410
480 IF Newdonor$="N" THEN 510
490 LINPUT "LAST NAME OF DONOR (<13 LETTERS)",Lastname$
500 LINPUT "FIRST NAME OF DONOR (<13 LETTERS)",Firstname$
510 LINPUT "DONATION DATE IN THE FORM MM-DD-YY",Date$
520 PRINT
530 PRINT "V776";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE--NEW PLASTIC V776)"
540 PRINT "A772";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE--NEW PLASTIC A772)"
550 PRINT "V1035";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE--NEW PLASTIC V1035)"
560 PRINT "CPD";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE--STANDARD COLLECTION BAG)"
570 PRINT "ACD";TAB(10);"(ACID CITRATE DEXTROSE)"
580 PRINT "CPDA1";TAB(10);"(CITRATE-PHOSPHATE-DEXTROSE-ADENINE 1)"
```

```
590 PRINT "CPDA2";TAB(10);"(CITRATE-PHOSPHATE-DEXTROSE-ADENINE 2)"
600 PRINT "CPDA3";TAB(10);"(CITRATE-PHOSPHATE-DEXTROSE-ADENINE 3)"
610 PRINT "HEP";TAB(10);"(HEPARIN)"
620 PRINT "RCPD";TAB(10);"(1 UNIT RBC RETURNED; CPD)"
630 PRINT "RACD";TAB(10);"(1 UNIT RBC RETURNED; ACD)"
640 PRINT "2 RCPD";TAB(10);"(2 UNITS RBC RETURNED; CPD)"
650 PRINT "2 RACD";TAB(10);"(2 UNITS RBC RETURNED; ACD)"
660 PRINT "RCPDA1";TAB(10);"(RBC RETURNED CPDA1)"
670 PRINT "RCPDA2";TAB(10);"(RBC RETURNED CPDA2)"
680 PRINT "RCPDA3";TAB(10);"(RBC RETURNED; CPDA3)"
690 PRINT "ADL";TAB(10);"(PHERESIS)"
700 PRINT "IBM";TAB(10);"(PHERESIS)"
710 PRINT "FENWAL";TAB(10);"(PHERESIS)"
720 PRINT "OTHER";TAB(10);"(MISCELLANEOUS)"
730 LINPUT "METHOD OF COLLECTION?",Method$
740 PRINT PAGE
750 PRINT
760 PRINT "RBCTX";TAB(13);"(RED CELL TRANSFUSION)"
770 PRINT "RBCDR";TAB(13);"(RED CELL UNIT DRAW)"
780 PRINT "PLTTX";TAB(13);"(PLATELET TRANSFUSION)"
790 PRINT "PLTDR";TAB(13);"(PLATELET DRAW-WHOLE BLOOD)"
800 PRINT "PLTDRPRP";TAB(13);"(PLATELET DRAW-PLATELET RICH PLASMA)"
810 PRINT "PLTDRPPP";TAB(13);"(PLATELET DRAW-PLATELET POOR PLASMA)"
820 PRINT "WBCTX";TAB(13);"(WHITE BLOOD CELL TRANSFUSION)"
830 PRINT "WBCDR";TAB(13);"(WHITE BLOOD CELL DRAW)"
840 PRINT "SSAMP";TAB(13);"(1-50 ML SAMPLE)"
850 PRINT "LSAMP";TAB(13);"(GREATER THAN 50 ML SAMPLE)"
860 PRINT "EYE";TAB(13);"(EYE EXAM)"
870 PRINT "BONEM";TAB(13);"(BONE MARROW)"
880 PRINT "PBSTEM";TAB(13);"(PERIPHERAL BLOOD STEM CELLS)"
890 PRINT "NEOCTX";TAB(13);"(NEOCYTES TRANSFUSION)"
900 PRINT "NEOCDR";TAB(13);"(NEOCYTE DRAW)"
910 PRINT
920 PRINT
930 LINPUT "TYPES OF CELLS AND STUDY?",Types$
940 PRINT PAGE
950 LINPUT "BLOOD VOLUME DRAWN? (MLS)",Volume$
960 PRINT
970 PRINT "LIQOU";TAB(10);"(LIQUID OUTDATED)"
980 PRINT "LIQIN";TAB(10);"(LIQUID INDATED)"
990 PRINT "FZNOUM";TAB(10);"(FROZEN, OUTDATED, MECHANICAL)"
1000 PRINT "FZNINM";TAB(10);"(FROZEN, INDATED, MECHANICAL)"
1010 PRINT "FZNOUL";TAB(10);"(FROZEN, OUTDATED, LIQUID NITROGEN)"
1020 PRINT "FZNINL";TAB(10);"(FROZEN, INDATED, LIQUID NITROGEN)"
1030 PRINT "NOT FZN";TAB(10);"(NOT FROZEN)"
1040 PRINT
1050 PRINT
1060 LINPUT "KIND OF STORAGE AND CELL AGE?",Kind$
1070 PRINT PAGE
1080 PRINT
1090 PRINT "PIGPAA";TAB(10);"(PIGPA SOLUTION A)"
1100 PRINT "PIGPAB";TAB(10);"(PIGPA SOLUTION B)"
1110 PRINT "PIGPAC";TAB(10);"(PIGPAC SOLUTION C)"
1120 PRINT "PIPAA";TAB(10);"(PIPA (NO GLUCOSE) SOLUTION A)"
1130 PRINT "PIPAB";TAB(10);"(PIPA (NO GLUCOSE) SOLUTION B)"
1140 PRINT "PIPAC";TAB(10);"(PIPA (NO GLUCOSE) SOLUTION C)"
1150 PRINT "FPES";TAB(10);"(FENWAL REJUVENATION SOLUTION)"
1160 PRINT "NP";TAB(10);"(NON-REJUVENATED)"
```

DONOR

```
1170 LINPUT "REJUVENATION SOLUTION?",Rejuvsoln$
1180 PRINT PAGE
1190 LINPUT "51-CR RADIATION (MICROCURIES)?",Cr51$
1200 LINPUT "125-I RADIATION (MICROCURIES)?",I125$
1210 LINPUT "111-INDIUM RADIATION (MICROCURIES)?",Indium111$
1220 LINPUT "DMSO CONCENTRATION (%)?",Dmsoconc$
1230 LINPUT "RESIDUAL DMSO INFUSED (MG)?",Dmsoinfused$
1240 LINPUT "AUTOTRANSFUSION NUMBER?",Autotrans$
1250 LINPUT "SPECIAL CODE NO.?",Code$
1260 PRINT
1270 PRINT "I-125"
1280 PRINT "PLT-REA"
1290 PRINT "RBC-REA"
1300 PRINT "WBC-REA"
1310 PRINT "IF NONE, ENTER 0"
1320 LINPUT "ANY REACTIONS?",Reactions$
1330 PRINT PAGE
1340 PRINT
1350 PRINT "8/2-7-40";TAB(15);"(0.8/0.2 pH 7 with PHOSPHATES (40mg%))"
1360 PRINT "9/2-5-00";TAB(15);"(0.9/0.2 pH 5 without PHOSPHATES)"
1370 PRINT "9/2-5-40";TAB(15);"(0.9/0.2 pH 5 with PHOSPHATES (40mg%))"
1380 PRINT "9/2-5-80";TAB(15);"(0.9/0.2 pH 5 with PHOSPHATES (80mg%))"
1390 PRINT "9/2-6-80";TAB(15);"(0.9/0.2 pH 6 with PHOSPHATES (80mg%))"
1400 PRINT "9/2-6.5-40";TAB(15);"(0.9/0.2 pH 6.5 with PHOSPHATES (40mg%))"
1410 PRINT "9/2-6.8-40";TAB(15);"(0.9/0.2 pH 6.8 with PHOSPHATES (40mg%))"
1420 PRINT
1430 PRINT
1440 LINPUT "WASH SOLUTION?",Washsoln$
1450 PRINT PAGE
1460 PRINT "PROC ERR (PROCESSING ERROR)";TAB(40);"CONT UNIT  (CONTAMINATED UNIT)
"
1470 PRINT "REFZN    (UNIT WAS REFROZEN)";TAB(40);"PED        (PEDIATRIC UNIT)"
1480 PRINT "FZN ERR  (FREEZING ERROR)";TAB(40);"CARD       (CARDIOPLEGIA UNIT)"
1490 PRINT "LOW HCT  (HEMATOCRIT TOO LOW)";TAB(40);"TRANS      (UNIT SUBJECTED T
O TRANSPORT)"
1500 PRINT "HIGH HCT (HEMATOCRIT TOO HIGH)";TAB(40);"SHORT DR   (SHORT DRAW)"
1510 PRINT "LOW PUL  (PULSE RATE TOO LOW)";TAB(40);"LIQ WSH    (UNIT WAS LIQUID
WASHED)"
1520 PRINT "HIGH PUL (PULSE RATE TOO HIGH)";TAB(40);"LOW TEMP   (TEMP TOO LOW)"
1530 PRINT "IRR PUL  (PULSE RATE IRREGULAR)";TAB(40);"HIGH TEMP  (TEMP TOO HIGH)
"
1540 PRINT "LOW BP   (BLOOD PRESSURE TOO LOW)";TAB(40);"PLT ISO    (PLATELETS IS
OLATED FROM UNIT)"
1550 PRINT "HIGH BP  (BLOOD PRESSURE TOO HIGH)";TAB(40);"VITRO WASH (UNIT WASHED
 FOR VITRO USE)"
1560 PRINT "WTHDRW   (DONOR VOLUNTARILY WITHDREW)";TAB(40);"RJTDR      (DONOR RE
JECTED FOR UNIT DRAW)"
1570 PRINT "ILL      (DONOR WAS ILL)";TAB(40);"ALC IN     (DONOR HAD INGESTED AL
COHOL)"
1580 PRINT "NO SHOW  (DONOR DID NOT APPEAR)";TAB(40);"----------------------------
--------------"
1590 PRINT "V776     (UNIT DRAWN IN NEW PLASTIC BAG V776)"
1600 PRINT "A772     (UNIT DRAWN IN NEW PLASTIC BAG A772)"
1610 PRINT "21 LIQ   (LIQUID STORED FOR 21 DAYS @ 4degC)"
1620 PRINT "35 LIQ   (LIQUID STORED FOR 35 DAYS @ 4degC)"
1630 PRINT "POOR FTW (POOR FREEZE-THAW-WASH RECOVERY)"
1640 PRINT "72 HR    (UNIT STORED @ 4degC FOR 72 HOURS POST WASH)"
```

```
1650 PRINT "NO.(Xhr) (NO SAMPLES OBTAINED AFTER TIME INDICATED)"
1660 LINPUT "COMMENTS?",Comments$
1670 IF LEN(Comments$)>12 THEN 1690
1680 GOTO 1720
1690 DISP "COMMENT TOO LONG--TO TRY AGAIN, PRESS `CONT'"
1700 PAUSE
1710 GOTO 1660
1720 LINPUT "MORE COMMENTS?",Comments2$
1730 IF LEN(Comments2$)>12 THEN 1750
1740 GOTO 1770
1750 DISP "COMMENT TOO LONG--TO TRY AGAIN, PRESS `CONT'"
1760 GOTO 1720
1770 PRINT PAGE
1780 PRINTER IS 0
1790 PRINT
1800 PRINT
1810 PRINT "HERE IS THE INFORMATION YOU ENTERED"
1820 PRINT
1830 IF Newdonor$="N" THEN 1850
1840 PRINT SPA(15);"NAME OF DONOR=  ";Firstname$;SPA(1);Lastname$
1850 PRINT SPA(5);"SOCIAL SECURITY NUMBER.=  ";Ss$
1860 PRINT SPA(12);"DATE OF DONATION=  ";Date$
1870 PRINT SPA(8);"METHOD OF COLLECTION=  ";Method$
1880 PRINT SPA(4);"TYPES OF CELLS AND STUDY=  ";Types$
1890 PRINT SPA(10);"BLOOD VOLUME DRAWN=  ";Volume$;" MLS"
1900 PRINT "KIND OF STORAGE AND CELL AGE=  ";Kind$
1910 PRINT SPA(7);"REJUVENATION SOLUTION=  ";Rejuvsoln$
1920 PRINT SPA(13);"51-CR RADIATION=  ";Cr51$;SPA(1);"MICROCURIES"
1930 PRINT SPA(13);"125-I RADIATION=  ";I125$;SPA(1);"MICROCURIES"
1940 PRINT SPA(8);"111-INDIUM RADIATION=  ";Indium111$;SPA(1);"MICROCURIES"
1950 PRINT SPA(10);"DMSO CONCENTRATION=  ";Dmsoconc$;"%"
1960 PRINT SPA(7);"RESIDUAL DMSO INFUSED=  ";Dmsoinfused$;SPA(1);"MG"
1970 PRINT SPA(9);"AUTOTRANSFUSION NO.=  ";Autotrans$
1980 PRINT SPA(12);"SPECIAL CODE NO.=  ";Code$
1990 PRINT SPA(19);"REACTIONS=  ";Reactions$
2000 PRINT SPA(15);"WASH SOLUTION=  ";Washsoln$
2010 PRINT SPA(20);"COMMENTS=  ";Comments$
2020 PRINT SPA(15);"MORE COMMENTS=  ";Comments2$
2030 PRINT
2040 PRINT
2050 PRINTER IS 16
2060 LINPUT "IS THE CORRECT INFORMATION? (Y/N)",Correct$
2070 DISP "PLEASE WAIT"
2080 IF Correct$="Y" THEN 2100
2090 IF Correct$="N" THEN 130
2100 IF Newdonor$="N" THEN 2160
2110 IF Newdonor$="Y" THEN 2120
2120 E=1
2130 CREATE File$,200,15
2140 ASSIGN #1 TO File$
2150 GOTO 2200
2160 ASSIGN #1 TO File$
2170 ON END #1 GOSUB 2750
2180 READ #1,5;E
2190 E=E+1
2200 REM CREATE A VIRTUAL DONOR FILE
2210 IF Newdonor$="N" THEN 2280
2220 IF Newdonor$="Y" THEN 2230
```

```
2230 PRINT #1,1;S:t
2240 PRINT #1,2;""
2250 IF Newdonor$="N" THEN 2280
2260 PRINT #1,3;Firstname$
2270 PRINT #1,4;Lastname$
2280 PRINT #1,5;E
2290 PRINT #1,6;""
2300 PRINT #1,7;""
2310 PRINT #1,8;""
2320 PRINT #1,9;""
2330 PRINT #1,E*20;Date$
2340 PRINT #1,E*20+1;Dmsoinfused$
2350 PRINT #1,E*20+2;Cr51$
2360 PRINT #1,E*20+3;I125$
2370 PRINT #1,E*20+4;Indium111$
2380 PRINT #1,E*20+5;Method$
2390 PRINT #1,E*20+6;Types$
2400 PRINT #1,E*20+7;Kind$
2410 PRINT #1,E*20+8;Rejuvsoln$
2420 PRINT #1,E*20+9;Reactions$
2430 PRINT #1,E*20+10;Autotrans$
2440 PRINT #1,E*20+11;Code$
2450 PRINT #1,E*20+12;Dmsoconc$
2460 PRINT #1,E*20+13;Washsoln$
2470 PRINT #1,E*20+14;Comments$
2480 PRINT #1,E*20+15;Volume$
2490 PRINT #1,E*20+16;Comments2$
2500 PRINT #1,E*20+17;""
2510 PRINT #1,E*20+18;""
2520 PRINT #1,E*20+19;""
2530 REM LIST DONOR IF NEW IN REGIS
2540 IF Newdonor$="N" THEN 2630
2550 IF Newdonor$="Y" THEN 2560
2560 ASSIGN #5 TO "REGIS:F8"
2570 READ #5,1;P
2580 P=P+1
2590 PRINT #5,1;P
2600 PRINT #5,P+1;S$,Disk
2610 PRINT
2620 PRINT
2630 PRINT "END"
2640 PRINT
2650 PRINT
2660 LINPUT "ANOTHER DONOR? (Y/N)",Another$
2670 IF Another$="Y" THEN 90
2680 PRINT
2690 PRINT PAGE
2700 DISP "SELECT ANY PROGRAM"
2710 MASS STORAGE IS ":F8"
2720 END
2730 PRINT
2740 PRINT
2750 Records=E*30+400
2760 CREATE "TEMP",Records,15
2770 ASSIGN #1 TO File$
2780 ASSIGN #2 TO "TEMP"
2790 READ #1,1;Aa$
2800 READ #1,3;Dd$
```

```
2810 READ #1,4;Dd1$
2820 READ #1,5;Ee
2830 PRINT #2,1;Aa$
2840 PRINT #2,2;""
2850 PRINT #2,3;Dd$
2860 PRINT #2,4;Dd1$
2870 PRINT #2,5;Ee-1
2880 PRINT #2,6;""
2890 PRINT #2,7;""
2900 PRINT #2,8;""
2910 PRINT #2,9;""
2920 FOR I=1 TO Ee-1
2930   E1=20*I
2940   READ #1,E1;Mm$
2950   READ #1,E1+1;Ww$
2960   READ #1,E1+2;Xx$
2970   READ #1,E1+3;Yy$
2980   READ #1,E1+4;Zz$
2990   READ #1,E1+5;Ff$
3000   READ #1,E1+6;Gg$
3010   READ #1,E1+7;Hh$
3020   READ #1,E1+8;Ii$
3030   READ #1,E1+9;Pp5$
3040   READ #1,E1+10;Bb$
3050   READ #1,E1+11;Cc$
3060   READ #1,E1+12;Ww1$
3070   READ #1,E1+13;Wwashsoln$
3080   READ #1,E1+14;Ccomments$
3090   READ #1,E1+15;Vvolume$
3100   READ #1,E1+16;Ccomments2$
3110   PRINT #2,E1;Mm$
3120   PRINT #2,E1+1;Ww$
3130   PRINT #2,E1+2;Xx$
3140   PRINT #2,E1+3;Yy$
3150   PRINT #2,E1+4;Zz$
3160   PRINT #2,E1+5;Ff$
3170   PRINT #2,E1+6;Gg$
3180   PRINT #2,E1+7;Hh$
3190   PRINT #2,E1+8;Ii$
3200   PRINT #2,E1+9;Pp5$
3210   PRINT #2,E1+10;Bb$
3220   PRINT #2,E1+11;Cc$
3230   PRINT #2,E1+12;Ww1$
3240   PRINT #2,E1+13;Wwashsoln$
3250   PRINT #2,E1+14;Ccomments$
3260   PRINT #2,E1+15;Vvolume$
3270   PRINT #2,E1+16;Ccomments2$
3280   PRINT #2,E1+17;""
3290   PRINT #2,E1+18;""
3300   PRINT #2,E1+19;""
3310   NEXT I
3320 PRINT #2,5;E
3330 PRINT #2,E*20;Date$
3340 PRINT #2,E*20+1;Dmsoinfused$
3350 PRINT #2,E*20+2;Cr51$
3360 PRINT #2,E*20+3;I125$
3370 PRINT #2,E*20+4;Indium111$
3380 PRINT #2,E*20+5;Method$
```

```
3390 PRINT #2,E*20+6;Types$
3400 PRINT #2,E*20+7;Kind$
3410 PRINT #2,E*20+8;Rejuvsoln$
3420 PRINT #2,E*20+9;Reactions$
3430 PRINT #2,E*20+10;Autotrans$
3440 PRINT #2,E*20+11;Code$
3450 PRINT #2,E*20+12;Dmsoconc$
3460 PRINT #2,E*20+13;Washsoln$
3470 PRINT #2,E*20+14;Comments$
3480 PRINT #2,E*20+15;Volume$
3490 PRINT #2,E*20+16;Comments2$
3500 PRINT #2,E*20+17;""
3510 PRINT #2,E*20+18;""
3520 PRINT #2,E*20+19;""
3530 PURGE File$
3540 RENAME "TEMP" TO File$
3550 GOTO 2610
```

2. PROGRAM LIST

LIST

```
10  PRINTER IS 16
20  PRINT PAGE
30  PRINT "BLISS"
40  PRINT
50  PRINT "PROGRAM LIST"
60  PRINT
70  PRINT
80  MASS STORAGE IS ":F8,1"
90  LINPUT "SOCIAL SECURITY NO.?",Ss$
100 IF Ss$[4;1]<>"-" THEN 140
110 IF Ss$[7;1]<>"-" THEN 140
120 IF LEN(Ss$)>11 THEN 140
130 GOTO 170
140 DISP "INCORRECT SS#--TO TRY AGAIN PRESS `CONT'"
150 PAUSE
160 GOTO 90
170 DISP "PLEASE WAIT"
180 O$=Ss$[5,6]
190 P$=Ss$[8,11]
200 File$=O$&P$
210 ASSIGN #5 TO "REGIS:F8"
220 READ #5,1;P
230 FOR I=P+1 TO 2 STEP -1
240   READ #5,I;Ss1$,Disk
250   IF Ss1$=Ss$ THEN 290
260   NEXT I
270 IF Ss1$<>Ss$ THEN PRINT "DONOR NOT FOUND"
280 GOTO 1670
290 DISP "INSERT DISK NO.:";Disk;"  PRESS `CONT'"
300 PAUSE
310 ASSIGN #3 TO "Number"
320 READ #3,1;Number,Disktype$
330 IF Disktype$<>"M" THEN 350
340 IF Disk=Number THEN 380
350 DISP "WRONG DISK, INSERT NO.:";Disk;"  PRESS `CONT'"
360 PAUSE
370 GOTO 310
380 ASSIGN #1 TO File$
390 READ #1,5;E
400 LINPUT "DO YOU WANT A PRINTED COPY? (Y/N)",Hardcopy$
410 IF Hardcopy$="N" THEN 450
420 IF Hardcopy$="Y" THEN 440
430 IF (Hardcopy$<>"N") AND (Hardcopy$<>"Y") THEN 400
440 PRINTER IS 0
450 LINPUT "DO YOU WANT ALL DONATIONS LISTED? (Y/N)",All$
460 GOTO 480
470 LINPUT "ALL DONATIONS LISTED? (Y/N)",All$
480 IF All$="Y" THEN 650
490 IF All$="N" THEN 500
500 PRINT
510 PRINT
520 PRINT "DONATION DATES:"
530 PRINT
540 FOR I=1 TO E
550   E2=20*I
560   READ #1,E2;Date$
570   PRINT
580   PRINT Date$,"DONATION NO.";I
```

LIST

```
590   NEXT I
600 PRINT
610 PRINT
620 INPUT "WHICH DONATION NUMBER DO YOU WANT FIRST?",T
630 T1=T+20
640 GOTO 1180
650 PRINT
660 PRINT
670 READ #1,1;Ss$
680 READ #1,3;Firstname$
690 READ #1,4;Lastname$
700 READ #1,5;E
710 PRINT SPA(9);"SOCIAL SECURITY NO.:  ";Ss$
720 PRINT SPA(24);"NAME:  ";Firstname$;SPA(1);Lastname$
730 PRINT SPA(12);"NO. OF DONATIONS: ";E
740 PRINT SPA(24);"DISK: ";Disk
750 PRINT
760 PRINT
770 FOR J=1 TO E
780   E1=20*J
790   READ #1,E1;Date$
800   READ #1,E1+10;Autotrans$
810   READ #1,E1+11;Code$
820   READ #1,E1+12;Dmsoconc$
830   READ #1,E1+1;Dmsoinfused$
840   READ #1,E1+2;Cr51$
850   READ #1,E1+3;I125$
860   READ #1,E1+4;Indium111$
870   READ #1,E1+5;Method$
880   READ #1,E1+6;Type$
890   READ #1,E1+7;Kind$
900   READ #1,E1+8;Rejuvsoln$
910   READ #1,E1+9;Reactions$
920   READ #1,E1+13;Washsoln$
930   READ #1,E1+14;Comments$
940   READ #1,E1+15;Volume$
950   READ #1,E1+16;Comments2$
960   PRINT
970   PRINT
980    PRINT SPA(16);"DONATION NO.: ";J
990    PRINT SPA(24);"DATE:  ";Date$
1000   PRINT SPA(8);"METHOD OF COLLECTION:  ";Method$
1010   PRINT SPA(4);"TYPES OF CELLS AND STUDY:  ";Type$
1020   PRINT SPA(10);"BLOOD VOLUME DRAWN:  ";Volume$;" MLS"
1030   PRINT "KIND OF STORAGE AND CELL AGE:  ";Kind$
1040   PRINT SPA(7);"REJUVENATION SOLUTION:  ";Rejuvsoln$
1050   PRINT SPA(23);"51-CR:  ";Cr51$;" MICROCURIES"
1060   PRINT SPA(23);"125-I:  ";I125$;" MICROCURIES"
1070   PRINT SPA(18);"111-INDIUM:  ";Indium111$;" MICROCURIES"
1080   PRINT SPA(10);"DMSO CONCENTRATION:  ";Dmsoconc$;"%"
1090   PRINT SPA(7);"RESIDUAL DMSO INFUSED:  ";Dmsoinfused$;" MG"
1100   PRINT SPA(9);"AUTOTRANSFUSION NO.:  ";Autotrans$
1110   PRINT SPA(12);"SPECIAL CODE NO.:  ";Code$
1120   PRINT SPA(19);"REACTIONS:  ";Reactions$
1130   PRINT SPA(15);"WASH SOLUTION:  ";Washsoln$
1140   PRINT SPA(20);"COMMENTS:  ";Comments$
1150   PRINT SPA(15);"MORE COMMENTS:  ";Comments2$
1160   NEXT J
```

LIST

```
1170 GOTO 1670
1180 PRINT
1190 PRINT
1200 READ #1,1;Ss$
1210 READ #1,3;Firstname$
1220 READ #1,4;Lastname$
1230 READ #1,T1;Date$
1240 READ #1,T1+10;Autotrans$
1250 READ #1,T1+11;Code$
1260 READ #1,T1+12;Dmsoconc$
1270 READ #1,T1+1;Dmsoinfused$
1280 READ #1,T1+2;Cr51$
1290 READ #1,T1+3;I125$
1300 READ #1,T1+4;Indium111$
1310 READ #1,T1+5;Method$
1320 READ #1,T1+6;Type$
1330 READ #1,T1+7;Kind$
1340 READ #1,T1+8;Rejuvsoln$
1350 READ #1,T1+9;Reactions$
1360 READ #1,T1+13;Washsoln$
1370 READ #1,T1+14;Comments$
1380 READ #1,T1+15;Volume$
1390 READ #1,T1+16;Comments2$
1400 PRINT SPA(24);"NAME:  ";Firstname$;SPA(1);Lastname$
1410 PRINT SPA(9);"SOCIAL SECURITY NO.:  ";Ss$
1420 PRINT SPA(24);"DISK: ";Disk
1430 PRINT SPA(24);"DATE:  ";Date$
1440 PRINT SPA(16);"DONATION NO.: ";T
1450 PRINT SPA(8);"METHOD OF COLLECTION:  ";Method$
1460 PRINT SPA(4);"TYPES OF CELLS AND STUDY:  ";Type$
1470 PRINT SPA(10);"BLOOD VOLUME DRAWN:  ";Volume$;" MLS"
1480 PRINT "KIND OF STORAGE AND CELL AGE:  ";Kind$
1490 PRINT SPA(7);"REJUVENATION SOLUTION:  ";Rejuvsoln$
1500 PRINT SPA(23);"51-CR:  ";Cr51$;" MICROCURIES"
1510 PRINT SPA(23);"125-I:  ";I125$;" MICROCURIES"
1520 PRINT SPA(18);"111-INDIUM:  ";Indium111$;" MICROCURIES"
1530 PRINT SPA(10);"DMSO CONCENTRATION:  ";Dmsoconc$;"%"
1540 PRINT SPA(7);"RESIDUAL DMSO INFUSED:  ";Dmsoinfused$;" MG"
1550 PRINT SPA(9);"AUTOTRANSFUSION NO.:  ";Autotrans$
1560 PRINT SPA(12);"SPECIAL CODE NO.:  ";Code$
1570 PRINT SPA(19);"REACTIONS:  ";Reactions$
1580 PRINT SPA(15);"WASH SOLUTION:  ";Washsoln$
1590 PRINT SPA(20);"COMMENTS:  ";Comments$
1600 PRINT SPA(15);"MORE COMMENTS:  ";Comments2$
1610 PRINT
1620 PRINT
1630 INPUT "WHICH DONATION NEXT? 0 FOR NONE",T
1640 IF T=0 THEN 1670
1650 T1=T*20
1660 GOTO 1180
1670 PRINT
1680 PRINT
1690 PRINT "END"
1700 LINPUT "ANOTHER DONOR? (Y N)",Another$
```

LIST

```
1710 PRINTER IS 16
1720 IF Another$="Y" THEN 80
1730 MASS STORAGE IS ":F8"
1740 PRINTER IS 16
1750 PRINT
1760 PRINT PAGE
1770 DISP "SELECT ANY PROGRAM"
1780 PRINT
1790 PRINT
1800 END
```

3. PROGRAM SOCIAL

SOCIAL

```
10     PRINTER IS 16
20     PRINT PAGE
30     PRINT "BLISS"
40     PRINT
50     PRINT "PROGRAM SOCIAL"
60     PRINT
70     PRINT
80     MASS STORAGE IS ":F8"
90     PRINT
100    PRINT
110    INPUT "DO YOU WANT A PRINTED COPY? (Y/N)",Hardcopy$
120    IF Hardcopy$="N" THEN 140
130    IF Hardcopy$="Y" THEN PRINTER IS 0
140    ASSIGN #5 TO "REGIS"
150    READ #5,1;P
160    PRINT "NO. OF DONORS:    ";P
170    PRINT
171    INPUT "START WITH WHICH DISK?",Diskk
180    PRINT "SOC. SEC. NO.:"
190    PRINT
200    FOR I=(Diskk-1)*50+2 TO P+1
210      READ #5,I;Ss$,Disk
220      PRINT Ss$;SPA(5);"DISK";SPA(1);Disk
230      NEXT I
240    PRINT
250    PRINT
260    PRINT
270    PRINT "END"
280    PRINTER IS 16
290    PRINT PAGE
300    DISP "SELECT ANY PROGRAM"
310    END
```

4. PROGRAM SELECT

SELECT

```
10 PRINTER IS 16
20 PRINT PAGE
30 PRINT "BLISS"
40 PRINT
50 PRINT "PROGRAM SELECT"
60 PRINT
70 PRINT
80 PRINT
90 DIM Z$[24],R8$[24]
100 Q$="0"
110 PRINT "V776";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE--NEW PLASTIC V776)"
120 PRINT "A772";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE--NEW PLASTIC A772)"
130 PRINT "V1035";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE--NEW PLASTIC V1035)"
140 PRINT "CPD";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE--STANDARD COLLECTION BAG)"
150 PRINT "ACD";TAB(10);"(ACID CITRATE DEXTROSE)"
160 PRINT "CPDA1";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE-ADENINE 1)"
170 PRINT "CPDA2";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE-ADENINE 2)"
180 PRINT "CPDA3";TAB(10);"(CITRATE-PHOSPHATE DEXTROSE-ADENINE 3)"
190 PRINT "HEP";TAB(10);"(HEPARIN)"
200 PRINT "RCPD";TAB(10);"(1 UNIT RBC RETURNED; CPD)"
210 PRINT "RACD";TAB(10);"(1 UNIT RBC RETURNED; ACD)"
220 PRINT "2 RCPD";TAB(10);"(2 UNITS RBC RETURNED; CPD)"
230 PRINT "2 RACD";TAB(10);"(2 UNITS RBC RETURNED; ACD)"
240 PRINT "RCPDA1";TAB(10);"(RBC RETURNED CPDA1)"
250 PRINT "RCPDA2";TAB(10);"(RBC RETURNED CPDA2)"
260 PRINT "RCPDA3";TAB(10);"(RBC RETURNED CPDA3)"
270 PRINT "ADL";TAB(10);"(PHERESIS)"
280 PRINT "IBM";TAB(10);"(PHERESIS)"
290 PRINT "FENWAL";TAB(10);"(PHERESIS)"
300 PRINT "OTHER";TAB(10);"(MISCELLANEOUS)"
310 LINPUT "METHOD OF COLLECTION (0 IF NOT INTERESTED)",F3$
320 IF F3$="0" THEN 350
330 Z$=F3$
340 GOTO 370
350 Z$=Q$
360 P4$=Q$
370 PRINT PAGE
380 PRINT "RBCTX";TAB(10);"(RED CELL TRANSFUSION - 80 ML)"
390 PRINT "RBCDR";TAB(10);"(RED CELL UNIT DRAW - 450 ML)"
400 PRINT "PLTTX";TAB(10);"(PLATELET TRANSFUSION - 80 ML)"
410 PRINT "PLTDR";TAB(10);"(PLATELET DRAW - 12 ML)"
420 PRINT "WBCTX";TAB(10);"(WHITE BLOOD CELL TRANSFUSION - 80 ML)"
430 PRINT "WBCDR";TAB(10);"(WHITE BLOOD CELL DRAW - 12 ML)"
440 PRINT "SSAMP";TAB(10);"(1-50 ML SAMPLE - 50)"
450 PRINT "LSAMP";TAB(10);"(GREATER THAN 50 ML SAMPLE - 100)"
460 PRINT "EYE";TAB(10);"(EYE EXAM)"
470 PRINT "BONEM";TAB(10);"(BONE MARROW - 75 ML)"
480 PRINT "PBSTEM";TAB(10);"(PERIPHERAL BLOOD STEM CELLS - 50 ML)"
490 PRINT "NEOCTX";TAB(10);"(NEOCYTES TRANSFUSION - 120 ML)"
500 PRINT "NEOCDR";TAB(10);"(NEOCYTE DRAW - 450 ML)"
510 LINPUT "TYPES OF CELLS & STUDY? (0 IF NOT INTERESTED)",G3$
520 IF G3$="0" THEN 550
530 Z$=Z$&G3$
540 GOTO 570
550 Z$=Z$&0$
560 P5$=0$
570 PRINT PAGE
580 PRINT "LIQOU";TAB(10);"(LIQUID OUTDATED)"
```

SELECT

```
590 PRINT "LIQIN";TAB(10);"(LIQUID INDATED)"
600 PRINT "FZNOUM";TAB(10);"(FROZEN, OUTDATED, MECHANICAL)"
610 PRINT "FZNINM";TAB(10);"(FROZEN, INDATED, MECHANICAL)"
620 PRINT "FZNOUL";TAB(10);"(FROZEN, OUTDATED, LIQUID NITROGEN)"
630 PRINT "FZNINL";TAB(10);"(FROZEN, INDATED, LIQUID NITROGEN)"
640 PRINT "NOT FZN";TAB(10);"(NOT FROZEN)"
650 LINPUT "KIND OF CELLS & STORAGE AGE? (0 IF NOT INTERESTED)",H3$
660 IF H3$="0" THEN 690
670 Z$=Z$&H3$
680 GOTO 710
690 Z$=Z$&Q$
700 P6$=Q$
710 PRINT PAGE
720 PRINT "PIGPAA";TAB(10);"(PIGPA SOLUTION A)"
730 PRINT "PIGPAB";TAB(10);"(PIGPA SOLUTION B)"
740 PRINT "PIGPAC";TAB(10);"(PIGPAC SOLUTION C)"
750 PRINT "PIPAA";TAB(10);"(PIPA (NO GLUCOSE) SOLUTION A)"
760 PRINT "PIPAB";TAB(10);"(PIPA (NO GLUCOSE) SOLUTION B)"
770 PRINT "PIPAC";TAB(10);"(PIPA (NO GLUCOSE) SOLUTION C)"
780 PRINT "FRES";TAB(10);"(FENWAL REJUVENATION SOLUTION)"
790 PRINT "NR";TAB(10);"(NON-REJUVENATED)"
800 LINPUT "REJUVENATION SOLUTION? (0 IF NOT INTERESTED)",I3$
810 IF I3$="0" THEN 840
820 Z$=Z$&I3$
830 GOTO 890
840 Z$=Z$&Q$
850 P7$=Q$
860 PRINT
870 PRINT
880 PRINT
890 LINPUT "DO YOU WANT A PRINTED COPY? (Y/N)",Hardcopy$
900 IF Hardcopy$="N" THEN PRINT PAGE
910 IF Hardcopy$="N" THEN 930
920 PRINTER IS 0
930 PRINT LIN(3);"------------"
940 PRINT "COMBINATION:"
950 PRINT "------------"
960 PRINT
970 PRINT F3$
980 PRINT G3$
990 PRINT H3$
1000 PRINT I3$
1010 PRINT
1020 PRINT
1030 DISP "INSERT ANY MAIN DISK, PRESS `CONT'."
1040 PAUSE
1050 C=0
1060 ASSIGN #3 TO "Number:F8,1"
1070 READ #3,1;Number
1080 PRINT
1090 PRINT "DONATIONS MEETING ABOVE COMBINATION"
1100 PRINT "ON DISK # ";Number
1110 PRINT "-----------------------------------"
1120 PRINT
1130 PRINT
1140 MASS STORAGE IS ":F8,1"
1150 ASSIGN #5 TO "REGIS:F8"
1160 ON END #5 GOTO 1250
```

SELECT

```
1170 FOR R=(Number-1)*50+2 TO Number*50+1
1180   READ #5,R;Ss$
1190   O$=Ss$[5,6]
1200   P$=Ss$[8,11]
1210   File$=O$&P$
1220   ASSIGN #1 TO File$
1230   GOSUB 1470
1240   NEXT R
1250 OFF END #5
1260 IF C>0 THEN 1320
1270 PRINT
1280 PRINT "NONE"
1290 PRINT
1300 PRINT
1310 PRINT "END"
1320 LINPUT "SAME COMBINATION ON ANOTHER DISK? (Y/N)",Samecombo$
1330 IF Samecombo$="Y" THEN 1030
1340 LINPUT "ANOTHER COMBINATION? (Y/N)",Another$
1350 PRINT
1360 PRINT
1370 PRINT "END"
1380 PRINTER IS 16
1390 PRINT PAGE
1400 IF Another$="Y" THEN 100
1410 PRINT
1420 MASS STORAGE IS ":F8"
1430 PRINT
1440 PRINT PAGE
1450 DISP "SELECT ANY COMBINATION"
1460 END
1470 READ #1,5;E
1480 FOR R2=1 TO E
1490   R3=R2*20
1500   READ #1,R3+5;Method$
1510   IF Method$<>F3$ THEN Method$="0"
1520   P4$=TRIM$(Method$)
1530   READ #1,R3+6;Types$
1540   IF Types$<>G3$ THEN Types$="0"
1550   P5$=TRIM$(Types$)
1560   READ #1,R3+7;Kind$
1570   IF Kind$<>H3$ THEN Kind$="0"
1580   P6$=TRIM$(Kind$)
1590   READ #1,R3+8;Rejuvsoln$
1600   IF Rejuvsoln$<>I3$ THEN Rejuvsoln$="0"
1610   P7$=TRIM$(Rejuvsoln$)
1620   R8$=P4$&P5$&P6$&P7$
1630   IF R8$=Z$ THEN 1660
1640   NEXT R2
1650 RETURN
1660 READ #1,1;Ss$
1670 READ #1,3;Firstname$
1680 READ #1,4;Lastname$
1690 READ #1,R3;Date$
1700 IF Ss$=Ss1$ THEN 1760
1710 PRINT
1720 PRINT
```

SELECT

```
1730 PRINT
1740 PRINT "SOCIAL SECURITY NO.:   ";Ss$
1750 PRINT SPA(15);"NAME:   ";Firstname$;SPA(1);Lastname$
1760 PRINT SPA(6);"DONATION DATE:   ";Date$
1770 Ss1$=Ss$
1780 C=C+1
1790 GOTO 1640
```

5. PROGRAM ALERT

ALERT

```
10 PRINTER IS 16
20 PRINT PAGE
30 PRINT "BLISS"
40 PRINT
50 PRINT "PROGRAM ALERT"
60 PRINT
70 PRINT
80 PRINT
90 MASS STORAGE IS ":F8,1"
100 PRINTER IS 16
110 PRINT
120 LINPUT "DO YOU WANT A PRINTED COPY? (Y/N)",Hardcopy$
130 LINPUT "SOCIAL SECURITY NO.?",Ss$
140 DISP "PLEASE WAIT"
150 O$=Ss$[5,6]
160 P$=Ss$[8,11]
170 File$=O$&P$
180 ASSIGN #5 TO "REGIS:F8"
190 READ #5,1;P
200 FOR I=P+1 TO 2 STEP -1
210   READ #5,I;Ss1$,Disk
220   IF Ss1$=Ss$ THEN 260
230   NEXT I
240 IF Ss1$<>Ss$ THEN PRINT "DONOR NOT FOUND"
250 GOTO 2170
260 DISP "INSERT DISK NO.:";Disk;"  PRESS `CONT'"
270 PAUSE
280 ASSIGN #3 TO "Number"
290 READ #3,1;Number,Disktype$
300 IF Disktype$<>"M" THEN 330
310 IF Disk=Number THEN 360
320 PRINT
330 DISP "WRONG DISK, INSERT NO.:";Disk;"PRESS `CONT'"
340 PAUSE
350 GOTO 280
360 PRINT
370 PRINT
380 GOTO 410
390 DISP "DATE IS INVALID--PRESS `STOP' AND `RUN' TO START OVER"
400 PAUSE
410 LINPUT "TODAY'S DATE (MM-DD-YY)",Todaysdate$
420 PRINT
430 PRINT "RBCTX";TAB(10);"(RED CELL TRANSFUSION)"
440 PRINT "RBCDR";TAB(10);"(RED CELL UNIT DRAW)"
450 PRINT "PLTTX";TAB(10);"(PLATELET TRANSFUSION)"
460 PRINT "PLTDR";TAB(10);"(PLATELET DRAW)"
470 PRINT "PLTDRPRP";TAB(10);"(PLATELET DRAW-PLATELET RICH PLASMA)"
480 PRINT "PLTDRPPP";TAB(10);"(PLATELET DRAW-PLATELET POOR PLASMA)"
490 PRINT "WBCTX";TAB(10);"(WHITE BLOOD CELL TRANSFUSION)"
500 PRINT "WBCDR";TAB(10);"(WHITE BLOOD CELL DRAW)"
510 PRINT "SSAMP";TAB(10);"(1-50 ML SAMPLE)"
520 PRINT "LSAMP";TAB(10);"(GREATER THAN 50 ML SAMPLE)"
530 PRINT "EYE";TAB(10);"(EYE EXAM)"
540 PRINT "BONEM";TAB(10);"(BONE MARROW)"
550 PRINT "PBSTEM";TAB(10);"(PERIPHERAL BLOOD STEM CELLS)"
560 PRINT "NEOCTX";TAB(10);"(NEOCYTES TRANSFUSION)"
570 PRINT "NEOCDR";TAB(10);"(NEOCYTE DRAW)"
580 PRINT
```

ALERT

```
590 LINPUT "WHAT TYPE OF STUDY DO YOU INTEND TO DO?",Studytype$
600 INPUT "VOLUME OF BLOOD YOU INTEND TO DRAW?",Studyvolume
610 IF Hardcopy$="N" THEN 630
620 PRINTER IS 0
630 ASSIGN #1 TO File$
640 PRINT
650 READ #1,3;Firstname$ -
660 READ #1,4;Lastname$
670 PRINT SPA(11);"DONOR NAME:  ";Firstname$;SPA(1);Lastname$
680 PRINT SPA(2);"SOCIAL SECURITY NO.:  ";Ss$
690 PRINT SPA(9);"TODAY'S DATE:  ";Todaysdate$
700 PRINT SPA(8);"STUDY PLANNED:  ";Studytype$
710 PRINT SPA(3);"VOLUME TO BE DRAWN: ";Studyvolume;"ML"
720 PRINT LIN(2);"-------------------------------------------------------"
730 PRINT "RADIOACTIVITY AND DMSO DATA"
740 PRINT "-------------------------------------------------------"
750 PRINT
760 READ #1,5;E
770 Pass=0
780 FOR B4=1 TO E
790   E1=20*B4
800   READ #1,E1;Date$
810   READ #1,E1+12;Dmsoconc$
820   READ #1,E1+1;Dmsoinfused$
830   READ #1,E1+2;Cr51$
840   READ #1,E1+3;I125$
850   READ #1,E1+4;Indium111$
860   IF Dmsoconc$<>"0" THEN 920
870   IF Dmsoinfused$<>"0" THEN 920
880   IF Cr51$<>"0" THEN 920
890   IF I125$<>"0" THEN 920
900   IF Indium111$<>"0" THEN 920
910   GOTO 1000
920   PRINT SPA(17);"DATE:  ";Date$
930   PRINT SPA(3);"DMSO CONCENTRATION:  ";Dmsoconc$;"%"
940   PRINT "RESIDUAL DMSO INFUSED:  ";Dmsoinfused$;SPA(1);"MG"
950   PRINT SPA(16);"51-CR:  ";Cr51$;SPA(1);"MICROCURIES"
960   PRINT SPA(16);"125-I:  ";I125$;SPA(1);"MICROCURIES"
970   PRINT SPA(11);"111-INDIUM:  ";Indium111$;SPA(1);"MICROCURIES"
980   Pass=Pass+1
990   PRINT
1000  NEXT B4
1010  IF Pass=0 THEN PRINT SPA(5);"NONE"
1020  IF Pass=0 THEN PRINT LIN(2)
1030 PRINT "-------------------------------------------------------"
1040 PRINT "REACTIONS ALERT"
1050 PRINT "-------------------------------------------------------"
1060 PRINT
1070 R=0
1080 FOR B5=1 TO E
1090   E2=20*B5
1100   READ #1,E2+9;Reactions$
1110   IF Reactions$="0" THEN 1170
1120   R=R+1
1130   PRINT SPA(13);"REACTION:  ";Reactions$
1140   READ #1,E2;Date$
1150   PRINT SPA(17);"DATE:  ";Date$
1160   PRINT
```

```
1170    NEXT B5
1180  IF R=0 THEN PRINT SPA(5);"NONE"
1190  IF R=0 THEN PRINT
1200  DISP "PLEASE WAIT"
1210  REM TODAYS DATE IS TERM. DATE
1220  GOSUB 2250
1230  Lifetime=0
1240   F3=0
1250  FOR B6=1 TO E
1260    E3=B6*20
1270    READ #1,E3+6;Types$
1280    IF Types$="RBCTX" THEN 1320
1290    IF Types$="PLTTX" THEN 1320
1300    IF Types$="WBCTX" THEN 1320
1310    GOTO 1450
1320    Lifetime=Lifetime+1
1330    READ #1,E3;Date$
1340    GOSUB 2320
1350    GOSUB 2390
1360    IF Z>90 THEN 1450
1370    IF Z<=90 THEN 1380
1380    PRINT "-------------------------------------------------------------"
1390    PRINT "RADIOACTIVITY ALERT"
1400    PRINT "-------------------------------------------------------------"
1410    PRINT
1420    PRINT SPA(5);"STOP--DO NOT USE THIS DONOR"
1430    PRINT SPA(5);Types$;"--PERFORMED WITHIN THE LAST 90 DAYS"
1440    PRINT
1450    NEXT B6
1460  IF Lifetime<=4 THEN 1530
1470  PRINT "-------------------------------------------------------------"
1480  PRINT "LIFETIME RADIOACTIVITY ALERT"
1490  PRINT "-------------------------------------------------------------"
1500   PRINT
1510  PRINT SPA(5);"STOP--DO NOT USE THIS DONOR"
1520  PRINT SPA(5);"DONOR WILL EXCEED 5 STUDIES INVOLVING RADIATION"
1530  REM BLOOD VOLUME ALERT
1540  F3=0
1550  F2=0
1560  PRINT LIN(1);"-------------------------------------------------------------"
1570  PRINT "BLOOD VOLUME ALERT"
1580  PRINT "-------------------------------------------------------------"
1590   Volumealert=0
1600   Volume$="0"
1610  FOR B7=1 TO E
1620    E4=20*B7
1630    READ #1,E4;Date$
1640    READ #1,E4+15;Volume$
1650    READ #1,E4+6;Types$
1660    IF Types$="PLTDRPRP" THEN 1750
1670    IF Types$="PLTDRPPP" THEN 1750
1680    GOSUB 2320
1690    GOSUB 2390
1700    IF Z>=31 THEN 1730
1710    IF Types$="PLTDR" THEN F3=F3+1
1720    IF Types$="WBCDR" THEN F3=F3+1
1730    IF Z>60 THEN 1750
1740    IF Z<=60 THEN Volumealert=Volumealert+VAL(Volume$)
```

ALERT

```
1750   NEXT B7
1760 IF Volumealert+Studyvolume>500 THEN 1840
1770 IF Volumealert+Studyvolume<=500 THEN 2020
1780 PRINT LIN(1);"-------------------------------------------------------------"
1790 PRINT "DRAW ALERT"
1800 PRINT "-------------------------------------------------------------"
1810 PRINT
1820 IF F3>=12 THEN 1890
1830 IF F3<12 THEN 2090
1840 PRINT
1850 PRINT SPA(5);"STOP--DO NOT USE THIS DONOR"
1860 PRINT SPA(4);Volumealert;"ML/60 DAYS PLUS";Studyvolume;"WILL EXCEED LIMIT"
1870 PRINT
1880 GOTO 1780
1890 PRINT
1900 PRINT SPA(5);"STOP--DO NOT USE THIS DONOR"
1910 PRINT SPA(4);F3;"DRAWS IN 30 DAYS WILL EXCEED LIMIT"
1920 PRINT
1930 PRINT
1940 PRINT "END"
1950 PRINT
1960 PRINT
1970 LINPUT "ANOTHER DONOR? (Y/N)",Another$
1980 IF Another$="Y" THEN 110
1990 DISP "SELECT ANY PROGRAM"
2000 MASS STORAGE IS ":F8"
2010 END
2020 PRINT
2030 PRINT
2040 PRINT SPA(5);"NONE"
2050 PRINT
2060 GOTO 1780
2070 PRINT
2080 PRINT
2090 PRINT SPA(5);"NONE"
2100 PRINT
2110 PRINT
2120 PRINT
2130 PRINT
2140 PRINT "END"
2150 PRINT
2160 PRINTER IS 16
2170 PRINT
2180 LINPUT "ANOTHER DONOR? (Y/N)",Another$
2190 IF Another$="Y" THEN 110
2200 PRINT "END"
2210 MASS STORAGE IS ":F8"
2220 PRINT PAGE
2230 DISP "SELECT ANY PROGRAM"
2240 END
2250 G1$=Todaysdate$[1,2]
2260 L1=VAL(G1$)
2270 G2$=Todaysdate$[4,5]
2280 C1=VAL(G2$)
2290 G3$=Todaysdate$[7,8]
2300 V1=VAL(G3$)
2310 RETURN
2320 G4$=Date$[1,2]
```

```
2330 M1=VAL(G4$)
2340 G5$=Date$[4,5]
2350 D1=VAL(G5$)
2360 G6$=Date$[7,8]
2370 Y1=VAL(G6$)
2380 RETURN
2390 Z=0
2400 B=Y1
2410 F=V1
2420 IF M1*100+D1<229 THEN 2440
2430 B=Y1+1
2440 IF L1*100+C1>228 THEN 2460
2450 F=V1-1
2460 B=INT((B+3)/4)
2470 IF 4*B<=F THEN 2500
2480 B=0
2490 GOTO 2510
2500 B=INT(F/4)-B+1
2510 IF L1>=M1 THEN 2540
2520 L1=12+L1
2530 V1=V1-1
2540 FOR I=M1 TO M1-1
2550   J=I-INT((I-1)/12)*12
2560   IF J=4 THEN 2620
2570   IF J=6 THEN 2620
2580   IF J=9 THEN 2620
2590   IF J=11 THEN 2620
2600   IF J=2 THEN 2640
2610   GOTO 2650
2620   B=B-1
2630   GOTO 2650
2640   B=B-3
2650   NEXT I
2660 REM Z IS NUMBER OF DAYS
2670 Z=365*(V1-Y1)+31*(L1-M1)+C1-D1+B
2680 IF Z<0 THEN 390
2690 RETURN
```

6. PROGRAM HOW-TO

```
10    PRINTER IS 16
20    PRINT PAGE
30    INPUT "DO YOU WANT A PRINTED COPY OF THESE INSTRUCTIONS? (Y/N)",Hardcopy$
40    IF Hardcopy$="Y" THEN PRINTER IS 0
50    PRINT "     WELCOME TO THE  BLOOD INFORMATION AND SECURITY SYSTEM  (KNOWN A
S:"
60    PRINT "              -        ------------------------------------"
70    PRINT
80    PRINT "                                        B L I S S "
90    PRINT "                                        --------- "
100   PRINT
110   PRINT
120   PRINT
130   PRINT TAB(10);"THIS SET OF SIX MAIN AND FOUR PERIPHERAL PROGRAMS WAS DESIG
NED BY"
140   PRINT "DR. NICHOLAS CATSIMPOOLAS AND ADAPTED FOR USE ON THE MODELS 9835 AN
D 9845"
150   PRINT "HEWLETT-PACKARD DESK-TOP COMPUTERS BY STINA COOKE FOR THE NAVAL BLO
OD RESEARCH"
160   PRINT "LABORATORY IN BOSTON."
170   PRINT
180   PRINT TAB(10);"THESE PROGRAMS STORE INFORMATION ON BLOOD DONORS, PROVIDE E
ASY ACCESS"
190   PRINT "TO DATA, WARN PERSONNEL OF EXCEEDED SAFETY LIMITS AND ALLOW THE USE
R TO SEARCH"
200   PRINT "FOR DONORS MEETING CERTAIN EXPERIMENTAL CONDITIONS."
210   PRINT
220   PRINT
230   PRINT
240   IF Hardcopy$="Y" THEN 280
250   PRINT "PRESS `CONT' TO GO ON"
260   PAUSE
270   PRINT PAGE
280   PRINT "BLISS CONSISTS OF SIX MAIN PROGRAMS:"
290   PRINT
300   PRINT TAB(5);"DONOR";TAB(15);"GENERATES AND UPDATES AN INFORMATION FILE FO
R EACH DONOR."
310   PRINT
320   PRINT TAB(5);"SOCIAL";TAB(15);"LISTS DONOR'S SOCIAL SECURITY AND STORAGE D
ISK NUMBER."
330   PRINT
340   PRINT TAB(5);"LIST";TAB(15);"LISTS DATA FROM ALL OR SELECTED DONATIONS."
350   PRINT
360   PRINT TAB(5);"WRONG";TAB(15);"MAKES CORRECTIONS ON PREVIOUSLY ENTERED DATA
."
370   PRINT
380   PRINT TAB(5);"ALERT";TAB(15);"LISTS DMSO AND RADIOACTIVITY LEVELS PREVIOU
LY RECEIVED,"
390   PRINT TAB(15);"AND WARNS IF DONOR SAFTEY LEVELS HAVE BEEN EXCEEDED."
400   PRINT
410   PRINT TAB(5);"SELECT";TAB(15);"LISTS THE NAME, SOCIAL SECURITY NUMBER, AND
 DONATION"
420   PRINT TAB(15);"DATES OF ALL DONORS HAVING A USER-GIVEN COMBINATION OF"
430   PRINT TAB(15);"EXPERIMENTAL CONDITIONS."
440   PRINT
450   PRINT
460   IF Hardcopy$="Y" THEN GOTO 500
470   PRINT "PRESS `CONT' TO GO ON"
480   PAUSE
```

```
490   PRINT PAGE
500   PRINT "AND FOUR PERIPHERAL PROGRAMS:"
510   PRINT
520   PRINT TAB(5);"HOW-TO";TAB(15);"PROVIDES INFORMATION AND INSTRUCTIONS ABOUT
 THE SYSTEM."
530   PRINT TAB(15);"HOW-TO OPERATES ONLY ON MODEL 9845 AND DISPLAYS ON SCREEN"
540   PRINT TAB(15);"OR WITH OPTIONAL PAPER PRINT-OUT."
550   PRINT
560   PRINT TAB(5);"BACKUP";TAB(15);"COPIES ALL DATA FROM MAIN DISKS TO A SECOND
 SET OF DISKS"
570   PRINT TAB(15);"STORED ELSEWHERE FOR EMERGENCY PURPOSES."
580   PRINT
590   PRINT TAB(5);"NUMBER";TAB(15);"CREATES A FILE CALLED 'Number' ON NEW STORA
GE DISKS WHICH"
600   PRINT TAB(15);"PREVENTS ADDING DATA TO THE WRONG DISK OR MIXING UP MAIN"
610   PRINT TAB(15);"DISKS WITH BACKUP DISKS."
620   PRINT
630   PRINT TAB(5);"FILE";TAB(15);"CREATES A FILE WHICH CAN BE USED TO STORE SOC
IAL SECURITY"
640   PRINT TAB(15);"AND STORAGE DISK NUMBERS.  THIS ALLOWS THE USER TO TEST"
650   PRINT TAB(15);"PROGRAMMING CHANGES WITHOUT RISK TO ESTABLISHED DATA, OR"
660   PRINT TAB(15);"TO USE 'BLISS' TO KEEP A SEPARATE SET OF DATA NOT RELATED"
670   PRINT TAB(15);"TO THE MAIN SECURITY SYSTEM."
680   PRINT
690   IF Hardcopy$="Y" THEN GOTO 730
700   PRINT "PRESS 'CONT' TO GO ON"
710   PAUSE
720   PRINT PAGE
730   PRINT
740   PRINT
750   PRINT "TO OPERATE A PROGRAM DO THE FOLLOWING:"
760   PRINT
770   PRINT TAB(5);"1.  INSERT PROGRAM DISK INTO THE TOP FLEXIBLE DISK DRIVE AND
 OTHER"
780   PRINT TAB(9);"DISKS INTO THE LOWER DISK DRIVES AS CALLED FOR BY THE PROGRA
MS."
790   PRINT
800   PRINT TAB(5);"2.  TYPE THE COMMAND:  GET ''BLISS:F8'',10,10  (USING REGULA
R"
810   PRINT TAB(9);"QUOTE MARKS).  PRESS KEYBOARD KEY 'EXECUTE'."
820   PRINT
830   PRINT TAB(5);"3.  PROGRAM BEGINS.  PLACE BLISS OVERLAY ON THE UPPER RIGHT
HAND"
840   PRINT TAB(9);"KEYS. ALL RESPONSES EXCEPT YES & NO MUST BE FOLLOWED BY 'CON
T'."
850   PRINT
860   PRINT TAB(5);"5.  BE SURE TO ANSWER ALL QUESTIONS WITHIN THE PROGRAM.  IF
NOT"
870   PRINT TAB(9);"APPLICABLE, ENTER '0' AND PRESS 'CONT'."
880   PRINT
890   PRINT TAB(5);"6.  IF YOU ENCOUNTER PROBLEMS AND WANT TO START OVER, PRESS"
900   PRINT TAB(9);"KEYBOARD KEYS 'STOP' AND THEN 'RUN'."
910   PRINT
920   IF Hardcopy$="Y" THEN 980
930   PRINT "PRESS 'CONT' TO GO ON"
940   PAUSE
950   PRINT PAGE
960   PRINT
970   PRINT
```

```
980   PRINT
990   PRINT "OTHER INFORMATION YOU MAY NEED:"
1000  PRINT
1010  PRINT TAB(5);"1.  THE QUESTION  COMPUTER 9835 OR 9845?" REFERS TO THE MODE
L"
1020  PRINT TAB(9);"NUMBER SHOWN ON THE FACE OF THE MACHINE.  BLISS WILL OPERATE
"
1030  PRINT TAB(9);"ON EITHER MACHINE, HOWEVER, FOR MODEL 9835, VARIABLE NAMES"
1040  PRINT TAB(9);"ARE PRESENTED ON A TYPED SHEET STORED IN THE PROGRAM DISK"
1050  PRINT TAB(9);"ENVELOPE AND PRINTED OUTPUT APPEARS IN HIGHLY ABBREVIATED"
1060  PRINT TAB(9);"FORM.  IT IS RECOMMENDED THAT YOU BECOME FAMILIAR WITH BLISS
"
1070  PRINT TAB(9);"ON MODEL 9845."
1080  PRINT
1090  PRINT TAB(5);"2.  EACH PROGRAM WILL GIVE YOU THE STORAGE DISK NUMBER OF TH
E"
1100  PRINT TAB(9);"DONOR.  BECAUSE THE PROGRAM DISK CONTAINS THIS INFORMATION"
1110  PRINT TAB(9);"BE SURE THAT IT IS ALWAYS INSERTED INTO THE TOP DISK DRIVE."
1120  PRINT TAB(9);"INSERT OTHER DISKS AS CALLED FOR IN THE LOWER DISK DRIVES."
1130  PRINT
1140  PRINT TAB(5);"3.  PLEASE WRITE DOWN YOUR PROBLEMS AND IDEAS FOR IMPROVEMEN
TS"
1150  PRINT TAB(9);"AND GIVE THEM TO STINA COOKE (MON & FRI AFTERNOONS)."
1160  PRINT
1170  PRINT "END"
1180  DISP "SELECT ANY PROGRAM"
1190  PRINTER IS 16
1200  END
```

7. PROGRAM WRONG

WRONG

```
10    PRINTER IS 16
20    PRINT PAGE
30    PRINT "BLISS"
40    PRINT
50    PRINT "PROGRAM WRONG"
60    PRINT
70    PRINT
80    PRINT
90    PRINT
100   PRINT " 1  SOCIAL SECURITY NO.";TAB(41);"2  DONOR'S FIRST NAME"
110   PRINT " 3  DONOR'S LAST NAME";TAB(41);"4  DATE OF DONATION"
120   PRINT " 5  METHOD OF COLLECTION";TAB(41);"6  TYPES OF CELLS AND STUDY"
130   PRINT " 7  KIND OF STORAGE AND CELL AGE";TAB(41);"8  REJUVENATION SOLUTION
"
140   PRINT " 9  51-CR RADIATION";TAB(40);"10  125-I RADIATION"
150   PRINT "11  111-INDIUM RADIATION";TAB(40);"12  DMSO CONCENTRATION"
160   PRINT "13  RESIDUAL DMSO INFUSED";TAB(40);"14  AUTOTRANSFUSION NO."
170   PRINT "15  SPECIAL CODE NO.";TAB(40);"16  REACTIONS"
180   PRINT "17  ENTIRE DONATION";TAB(40);"18  WASH SOLUTION"
190   PRINT "19  COMMENTS";TAB(40);"20  MORE COMMENTS"
200   PRINT "21  BLOOD VOLUME"
210   PRINT
220   PRINT
230   INPUT "WHAT IS WRONG? (ITEM NUMBER)",Wrong
240   PRINT PAGE
250   IF Wrong=1 THEN 880
260   IF Same$="Y" THEN 590
270   LINPUT "DONOR'S SOCIAL SECURITY NO.?",Ss$
280   IF Ss$[4;1]<>"-" THEN 320
290   IF Ss$[7;1]<>"-" THEN 320
300   IF LEN(Ss$)>11 THEN 320
310   GOTO 350
320   DISP "INCORRECT SS#--TO TRY AGAIN PRESS 'CONT'"
330   PAUSE
340   GOTO 270
350   DISP "PLEASE WAIT"
360   O$=Ss$[5,6]
370   P$=Ss$[8,11]
380   File$=O$&P$
390   MASS STORAGE IS ":F8,1"
400   ASSIGN #5 TO "REGIS:F8"
410   READ #5,1;P
420   FOR I=P+1 TO 2 STEP -1
430     READ #5,I;Ss1$,Disk
440     IF Ss1$=Ss$ THEN 480
450     NEXT I
460   IF Ss1$<>Ss$ THEN PRINT "DONOR NOT FOUND"
470   GOTO 3520
480   DISP "INSERT DISK NO.:";Disk;" PRESS 'CONT'"
490   PAUSE
500   ASSIGN #3 TO "Number"
510   READ #3,1;Number,Disktype$
520   IF Disktype$<>"M" THEN 550
530   IF Disk=Number THEN 580
540   PRINT
550   PRINT "WRONG DISK, INSEPT MAIN DISK NO.:";Disk;"  PRESS 'CONT'"
560   PAUSE
570   GOTO 500
```

```
580   ASSIGN #1 TO File$
590   IF Wrong=2 THEN 1360
600   IF Wrong=3 THEN 1320
610   READ #1,5;E
620   PRINT "DONATION DATES:"
630   PRINT
640   FOR I=1 TO E
650     E2=20*I
660     READ #1,E2;Date$
670     PRINT "#";I;SPA(2);Date$
680     NEXT I
690   INPUT "DONATION NO.?",E
700   IF Wrong=4 THEN 1400
710   IF Wrong=5 THEN 1440
720   IF Wrong=6 THEN 1680
730   IF Wrong=7 THEN 1860
740   IF Wrong=8 THEN 1980
750   IF Wrong=9 THEN 2110
760   IF Wrong=10 THEN 2160
770   IF Wrong=11 THEN 2200
780   IF Wrong=12 THEN 2280
790   IF Wrong=13 THEN 2320
800   IF Wrong=14 THEN 2360
810   IF Wrong=15 THEN 2400
820   IF Wrong=16 THEN 2440
830   IF Wrong=17 THEN 1320
840   IF Wrong=18 THEN 2530
850   IF Wrong=19 THEN 2650
860   IF Wrong=20 THEN 2950
870   IF Wrong=21 THEN 2240
880   LINPUT "INCORRECT SOCIAL SECURITY NO.?",Bad$
890   DISP "PLEASE WAIT"
900   Oo$=Bad$[5,6]
910   Pp$=Bad$[8,11]
920   Wrong$=Oo$&Pp$
930   MASS STORAGE IS ":F8,1"
940   ASSIGN #5 TO "REGIS:F8"
950   READ #5,1;P
960   FOR I=P+1 TO 2 STEP -1
970     READ #5,I;Ss1$,Disk
980     Ooo$=Ss1$[5,6]
990     Ppp$=Ss1$[8,11]
1000    Ss2$=Ooo$&Ppp$
1010    IF Ss2$=Wrong$ THEN 1060
1020    NEXT I
1030  IF Ss2$<>Wrong$ THEN 1040
1040  PRINT "INCORRECT SS# NOT FOUND"
1050  GOTO 270
1060  DISP "INSERT DISK NO.";Disk;"  PRESS 'CONT'"
1070  PAUSE
1080  ASSIGN #3 TO "Number"
1090  READ #3,1;Number
1100  IF Disk=Number THEN 1150
1110  PRINT
1120  DISP "WRONG DISK, INSERT NO.:";Disk;"  PRESS 'CONT'"
1130  PAUSE
1140  GOTO 1080
1150  LINPUT "CORRECT SOCIAL SECURITY NO.?",Ss$
```

WRONG

```
1160  IF Ss$[4;1]<>"-" THEN 1200
1170  IF Ss$[7;1]<>"-" THEN 1200
1180  IF LEN(Ss$)>11 THEN 1200
1190  GOTO 1230
1200  DISP "INCORRECT SS#--TO TRY AGAIN PRESS `CONT'"
1210  PAUSE
1220  GOTO 1150
1230  O$=Ss$[5,6]
1240  P$=Ss$[8,11]
1250  File$=O$&P$
1260  PRINT #5,I;Ss$,Disk
1270  ASSIGN #1 TO Wrong$
1280  RENAME Wrong$ TO File$
1290  ASSIGN #1 TO File$
1300  PRINT #1,1;Ss$
1310  GOTO 3520
1320  LINPUT "LAST NAME OF DONOR",Lastname$
1330  IF Wrong=17 THEN 1360
1340  PRINT #1,4;Lastname$
1350  GOTO 3520
1360  LINPUT "FIRST NAME OF DONOR",Firstname$
1370  IF Wrong=17 THEN 1400
1380  PRINT #1,3;Firstname$
1390  GOTO 3520
1400  LINPUT "DONATION DATE IN THE FORM MM-DD-YY",Date$
1410  IF Wrong=17 THEN 1440
1420  PRINT #1,E*20;Date$
1430  GOTO 3520
1440  PRINT "V776    (CITRATE-PHOSPHATE DEXTROSE--NEW PLASTIC V776)"
1450  PRINT "A772    (CITRATE-PHOSPHATE DEXTROSE--NEW PLASTIC A772)"
1460  PRINT "V1035   (CITRATE-PHOSPHATE DEXTROSE--NEW PLASTIC V1035)"
1470  PRINT "CPD     (CITRATE-PHOSPHATE DEXTROSE--STANDARD COLLECTION BAG)"
1480  PRINT "ACD     (ACID CITRATE DEXTROSE)"
1490  PRINT "CPDA1   (CITRATE-PHOSPHATE-DEXTROSE-ADENINE 1)"
1500  PRINT "CPDA2   (CITRATE-PHOSPHATE-DEXTROSE-ADENINE 2)"
1510  PRINT "CPDA3   (CITRATE-PHOSPHATE-DEXTROSE-ADENINE 3)"
1520  PRINT "HEP     (HEPARIN)"
1530  PRINT "RCPD    (1 UNIT RBC RETURNED; CPD)"
1540  PRINT "RACD    (1 UNIT RBC RETURNED; ACD)"
1550  PRINT "2 RCPD  (2 UNITS RBC RETURNED; CPD)"
1560  PRINT "2 RACD  (2 UNITS RBC RETURNED; ACD)"
1570  PRINT "RCPDA1  (RBC RETURNED CPDA1)"
1580  PRINT "RCPDA2  (RBC RETURNED CPDA2)"
1590  PRINT "RCPDA3  (RBC RETURNED; CPDA3)"
1600  PRINT "ADL     (PHERESIS)"
1610  PRINT "IBM     (PHERESIS)"
1620  PRINT "FENWAL  (PHERESIS)"
1630  PRINT "OTHER   (MISCELLANEOUS)"
1640  LINPUT "METHOD OF COLLECTION?",Method$
1650  IF Wrong=17 THEN 1680
1660  PRINT #1,E*20+5;Method$
1670  GOTO 3520
1680  PRINT PAGE
1690  PRINT "RBCTX      (RED CELL TRANSFUSION)"
1700  PRINT "RBCDR      (RED CELL UNIT DRAW)"
1710  PRINT "PLTTX      (PLATELET TRANSFUSION)"
1720  PRINT "PLTDR      (PLATELET DRAW-WHOLE BLOOD)"
1721  PRINT "PLTDRPRP   (PLATELET DRAW-PLATELET RICH PLASMA)"
1722  PRINT "PLTDRPPP   (PLATELET DRAW-PLATELET POOR PLASMA)"
1730  PRINT "WBCTX      (WHITE BLOOD CELL TRANSFUSION)"
```

```
1740  PRINT "WBCDR      (WHITE BLOOD CELL DRAW)"
1750  PRINT "SSAMP      (1-50 ML SAMPLE)"
1760  PRINT "LSAMP      (GREATER THAN 50 ML SAMPLE)"
1770  PRINT "EYE        (EYE EXAM)"
1780  PRINT "BONEM      (BONE MARROW)"
1790  PRINT "PBSTEM     (PERIPHERAL BLOOD STEM CELLS)"
1800  PRINT "NEOCTX     (NEOCYTES TRANSFUSION)"
1810  PRINT "NEOCDR     (NEOCYTE DRAW)"
1820  LINPUT "TYPES OF CELLS & STUDY?",Types$
1830  IF Wrong=17 THEN 1860
1840  PRINT #1,E*20+6;Types$
1850  GOTO 3520
1860  PRINT PAGE
1870  PRINT "LIQOU    (LIQUID OUTDATED)"
1880  PRINT "LIQIN    (LIQUID INDATED)"
1890  PRINT "FZNOUM   (FROZEN, OUTDATED, MECHANICAL)"
1900  PRINT "FZNINM   (FROZEN, INDATED, MECHANICAL)"
1910  PRINT "FZNOUL   (FROZEN, OUTDATED, LIQUID NITROGEN)"
1920  PRINT "FZNINL   (FROZEN, INDATED, LIQUID NITROGEN)"
1930  PRINT "NOT FZN (NOT FROZEN)"
1940  LINPUT "KIND OF STORAGE AND CELL AGE?",Kind$
1950  IF Wrong=17 THEN 1980
1960  PRINT #1,E*20+7;Kind$
1970  GOTO 3520
1980  PRINT PAGE
1990  PRINT "PIGPAA (PIGPA SOLUTION A)"
2000  PRINT "PIGPAB (PIGPA SOLUTION B)"
2010  PRINT "PIGPAC (PIGPAC SOLUTION C)"
2020  PRINT "PIPAA   (PIPA (NO GLUCOSE) SOLUTION A)"
2030  PRINT "PIPAB   (PIPA (NO GLUCOSE) SOLUTION B)"
2040  PRINT "PIPAC   (PIPA (NO GLUCOSE) SOLUTION C)"
2050  PRINT "FRES    (FENWAL REJUVENATION SOLUTION SOLUTION)"
2060  PRINT "NR      (NON-REJUVENATED)"
2070  LINPUT "REJUVENATION SOLUTION?",Rejuvsoln$
2080  IF Wrong=17 THEN 2110
2090  PRINT #1,E*20+8;Rejuvsoln$
2100  GOTO 3520
2110  PRINT PAGE
2120  LINPUT "51-CR RADIATION (MICROCURIES)?",Cr51$
2130  IF Wrong=17 THEN 2160
2140  PRINT #1,E*20+2;Cr51$
2150  GOTO 3520
2160  LINPUT "125-I RADIATION (MICROCURIES)?",I125$
2170  IF Wrong=17 THEN 2200
2180  PRINT #1,E*20+3;I125$
2190  GOTO 3520
2200  LINPUT "111-INDIUM RADIATION (MICROCURIES)?",Indium111$
2210  IF Wrong=17 THEN 2240
2220  PRINT #1,E*20+4;Indium111$
2230  GOTO 3520
2240  LINPUT "BLOOD VOLUME DRAWN (MLS)?",Volume$
2250  IF Wrong=17 THEN 2280
2260  PRINT #1,E*20+15;Volume$
2270  GOTO 3520
2280  LINPUT "DMSO CONCENTRATION (%)?",Dmsoconc$
2290  IF Wrong=17 THEN 2320
2300  PRINT #1,E*20+12;Dmsoconc$
```

```
2310  GOTO 3520
2320  LINPUT "RESIDUAL DMSO INFUSED (MG)?",Dmsoinfused$
2330  IF Wrong=17 THEN 2360
2340  PRINT #1,E*20+1;Dmsoinfused$
2350  GOTO 3520
2360  LINPUT "AUTOTRANSFUSION NUMBER?",Autotrans$
2370  IF Wrong=17 THEN 2400
2380  PRINT #1,E*20+10;Autotrans$
2390  GOTO 3520
2400  LINPUT "SPECIAL CODE NO.?",Code$
2410  IF Wrong=17 THEN 2440
2420  PRINT #1,E*20+11;Code$
2430  GOTO 3520
2440  PRINT "I-125"
2450  PRINT "PLT-REA"
2460  PRINT "RBC-REA"
2470  PRINT "WBC-REA"
2480  PRINT "IF NONE, ENTER 0"
2490  LINPUT "ANY REACTIONS?",Reactions$
2500  IF Wrong=17 THEN 2530
2510  PRINT #1,E*20+9;Reactions$
2520  GOTO 3520
2530  PRINT PAGE
2540  PRINT "8/2-7-40";TAB(15);"(0.8/0.2 pH 7 with PHOSPHATES (40mg%))"
2550  PRINT "9/2-5-00";TAB(15);"(0.9/0.2 pH 5 without PHOSPHATES)"
2560  PRINT "9/2-5-40";TAB(15);"(0.9/0.2 pH 5 with PHOSPHATES (40mg%))"
2570  PRINT "9/2-5-80";TAB(15);"(0.9/0.2 pH 5 with PHOSPHATES (80mg%))"
2580  PRINT "9/2-6-80";TAB(15);"(0.9/0.2 pH 6 with PHOSPHATES (80mg%))"
2590  PRINT "9/2-6.5-40";TAB(15);"(0.9/0.2 pH 6.5 with PHOSPHATES (40mg%))"
2600  PRINT "9/2-6.8-40";TAB(15);"(0.9/0.2 pH 6.8 with PHOSPHATES (40mg%))"
2610  LINPUT "WASH SOLUTION?",Washsoln$
2620  IF Wrong=17 THEN 2650
2630  PRINT #1,E*20+13;Washsoln$
2640  GOTO 3520
2650  PRINT PAGE
2660  PRINT "PROC ERR (PROCESSING ERROR)";TAB(40);"CONT UNIT  (CONTAMINATED UNIT
)"
2670  PRINT "REFZN    (UNIT WAS REFROZEN)";TAB(40);"PED         (PEDIATRIC UNIT)"
2680  PRINT "FZN ERR  (FREEZING ERROR)";TAB(40);"CARD       (CARDIOPLEGIA UNIT)"
2690  PRINT "LOW HCT  (HEMATOCRIT TOO LOW)";TAB(40);"TRANS      (UNIT SUBJECTED
TO TRANSPORT)"
2700  PRINT "HIGH HCT (HEMATOCRIT TOO HIGH)";TAB(40);"SHORT DR   (SHORT DRAW)"
2710  PRINT "LOW PUL  (PULSE RATE TOO LOW)";TAB(40);"LIQ WSH    (UNIT WAS LIQUID
 WASHED)"
2720  PRINT "HIGH PUL (PULSE RATE TOO HIGH)";TAB(40);"LOW TEMP   (TEMP TOO LOW)"
2730  PRINT "IRR PUL  (PULSE RATE IRREGULAR)";TAB(40);"HIGH TEMP  (TEMP TOO HIGH
)"
2740  PRINT "LOW BP   (BLOOD PRESSURE TOO LOW)";TAB(40);"PLT ISO    (PLATELETS I
SOLATED FROM UNIT)"
2750  PRINT "HIGH BP  (BLOOD PRESSURE TOO HIGH)";TAB(40);"VITRO WASH (UNIT WASHE
D FOR VITRO USE)"
2760  PRINT "WTHDRW   (DONOR VOLUNTARILY WITHDREW)";TAB(40);"RJTDR      (DONOR R
EJECED FOR UNIT DRAW)"
2770  PRINT "ILL      (DONOR WAS ILL)";TAB(40);"ALC IN     (DONOR HAD INGESTED A
LOCHOL)"
2780  PRINT "NO SHOW  (DONOR DID NOT APPEAR)";TAB(40);"----------------------
---------------"
```

```
2790  PRINT "V776      (UNIT DRAWN IN NEW PLASTIC BAG V776)"
2800  PRINT "A772      (UNIT DRAWN IN NEW PLASTIC BAG A772)"
2810  PRINT "21 LIQ    (LIQUID STORED FOR 21 DAYS @ 4degC)"
2820  PRINT "35 LIQ    (LIQUID STORED FOR 35 DAYS @ 4degC)"
2830  PRINT "POOR FTW (POOR FREEZE-THAW-WASH RECOVERY)"
2840  PRINT "72 HR     (UNIT STORED @ 4degC FOR 72 HOURS POST WASH)"
2850  PRINT "NO>(Xhr) (NO SAMPLES OBTAINED AFTER TIME INDICATED)"
2860  LINPUT "COMMENTS?",Comments$
2870  IF LEN(Comments$)>12 THEN 2890
2880  GOTO 2920
2890  DISP "COMMENT TOO LONG-TOO TRY AGAIN PRESS `CONT'"
2900  PAUSE
2910  GOTO 2860
2920  IF Wrong=17 THEN 2950
2930  PRINT #1,E*20+14;Comments$
2940  GOTO 3520
2950  LINPUT "MORE COMMENTS?",Comments2$
2960  IF LEN(Comments$)>12 THEN 2980
2970  GOTO 3010
2980  DISP "COMMENT TOO LONG--TO TRY AGAIN PRESS `CONT'"
2990  PAUSE
3000  GOTO 2950
3010  IF Wrong=17 THEN 3040
3020  PRINT #1,E*20+16;Comments2$
3030  GOTO 3520
3040  PRINT PAGE
3050  PRINT "HERE IS THE INFORMATION YOU ENTERED"
3060  PRINT
3070  PRINT "NAME OF DONOR=  ";Firstname$;SPA(1);Lastname$
3080  PRINT "SOCIAL SECURITY NUMBER.=  ";Ss$
3090  PRINT "DATE OF DONATION=  ";Date$
3100  PRINT "METHOD OF COLLECTION=  ";Method$
3110  PRINT "TYPES OF CELLS AND STUDY=  ";Types$
3120  PRINT "BLOOD VOLUME DRAWN=  ";Volume$;" MLS"
3130  PRINT "KIND OF STORAGE AND CELL AGE=  ";Kind$
3140  PRINT "REJUVENATION SOLUTION=  ";Rejuvsoln$
3150  PRINT "51-CR RADIATION=  ";Cr51$;" MICROCURIES"
3160  PRINT "125-I RADIATION=  ";I125$;" MICROCURIES"
3170  PRINT "111-INDIUM RADIATION=  ";Indium111$;" MICROCURIES"
3180  PRINT "DMSO CONCENTRATION=  ";Dmsoconc$;"%"
3190  PRINT "RESIDUAL DMSO INFUSED=  ";Dmsoinfused$;" MG"
3200  PRINT "AUTOTRANSFUSION NO.=  ";Autotrans$
3210  PRINT "SPECIAL CODE NO.=  ";Code$
3220  PRINT "REACTIONS=  ";Reactions$
3230  PRINT "WASH SOLUTION=  ";Washsoln$
3240  PRINT "COMMENTS=  ";Comments$
3250  PRINT "MORE COMMENTS=  ";Comments2$
3260  LINPUT "IS THE INFORMATION CORRECT (Y/N)?",Correct$
3270  IF Correct$="Y" THEN 3290
3280  IF Correct$="N" THEN 100
3290  PRINT #1,1;Ss$
3300  PRINT #1,3;Firstname$
3310  PRINT #1,4;Lastname$
3320  PRINT #1,E*20;Date$
3330  PRINT #1,E*20+1;Dmsoinfused$
3340  PRINT #1,E*20+2;Cr51$
3350  PRINT #1,E*20+3;I125$
3360  PRINT #1,E*20+4;Indium111$
```

```
3370  PRINT #1,E*20+5;Method$
3380  PRINT #1,E*20+6;Types$
3390  PRINT #1,E*20+7;Kind$
3400  PRINT #1,E*20+8;Rejuvsoln$
3410  PRINT #1,E*20+9;Reactions$
3420  PRINT #1,E*20+10;Autotrans$
3430  PRINT #1,E*20+11;Code$
3440  PRINT #1,E*20+12;Dmsoconc$
3450  PRINT #1,E*20+13;Washsoln$
3460  PRINT #1,E*20+14;Comments$
3470  PRINT #1,E*20+15;Volume$
3480  PRINT #1,E*20+16;Comments2$
3490  PRINT
3500  PRINT
3510  PRINT "END"
3520  PRINT
3530  PRINT
3540  PRINT PAGE
3550  LINPUT "IS THERE ANOTHER ERROR? (Y/N)",Another$
3560  IF Another$="N" THEN 3590
3570  LINPUT "SAME DONOR?",Same$
3580  GOTO 100
3590  MASS STORAGE IS ":F8"
3600  PRINT PAGE
3610  DISP "SELECT ANY PROGRAM"
3620  END
```

8. PROGRAM BACKUP

BACKUP

```
10    PRINTER IS 16
20    PRINT PAGE
30    PRINT "BLISS"
40    PRINT
50    PRINT "PROGRAM BACKUP"
60    PRINT
70    MASS STORAGE IS ":F8"
80    DISP "INSERT MAIN PROGRAM DISK IN F8 AND BACKUP PROGRAM DISK IN F8,1.  PRE
SS 'CONT'"
90    PAUSE
100   DISP "PLEASE WAIT"
110   ASSIGN #3 TO "Number:F8"
120   ASSIGN #4 TO "Number:F8,1"
130   READ #3;Number,Disktype$
140   READ #4;Number1,Disktype1$
150   IF (Number<>0) OR (Number1<>0) THEN 180
160   IF (Disktype$<>"M") OR (Disktype1$<>"B") THEN 180
170   GOTO 210
180   DISP "WRONG DISKS, TRY AGAIN"
190   PAUSE
200   GOTO 100
210   PURGE "REGIS:F8,1"
220   COPY "REGIS:F8" TO "REGIS:F8,1"
230   DISP "INSERT MAIN DISK #N IN F8,1 AND BACKUP DISK #N IN F8,2. PRESS 'CONT'
."
240   PAUSE
250   DISP "PLEASE WAIT"
260   ASSIGN #3 TO "Number:F8,1"
270   ASSIGN #4 TO "Number:F8,2"
280   READ #3;Number1,Disktype1$
290   READ #4;Number2,Disktype2$
300   IF Number1<>Number2 THEN 330
310   IF (Disktype1$<>"M") OR (Disktype2$<>"B") THEN 330
320   GOTO 360
330   DISP "WRONG DISKS, TRY AGAIN"
340   PAUSE
350   GOTO 250
360   ASSIGN #3 TO "Number:F8,1"
370   READ #3;Number
380   End=Number*50+1
390   Start=End-49
400   ASSIGN #5 TO "REGIS"
410   ON END #5 GOTO 500
420   FOR I=Start TO End
430     READ #5,I;A$
440     O$=A$[5,6]
450     P$=A$[8,11]
460     File$=O$&P$
470     Oldfile$=File$&":F8,2"
480     PURGE Oldfile$
490     NEXT I
500   ASSIGN #3 TO "Number:F8,1"
510   READ #3;Number
520   End=Number*50+1
530   Start=End-49
540   ASSIGN #5 TO "REGIS"
550   ON END #5 GOTO 640
560   FOR I=Start TO End
```

```
570      READ #5,I;S$
580      O$=S$[5,6]
590      P$=S$[8,11]
600      File$=O$&P$&":F8,1"
610      Newfile$=O$&P$&":F8,2"
620      COPY File$ TO Newfile$
630      NEXT I
640    INPUT "ANOTHER SET OF DISKS? (Y/N)",Another$
650    IF Another$="Y" THEN 230
660    DISP "END"
670    END
```

9. PROGRAM NUMBER

NUMBER

```
10   PRINTER IS 16
20   PRINT PAGE
30   PRINT "BLISS"
40   PRINT
50   PRINT "PROGRAM NUMBER"
60   PRINT
70   DISP "INSERT AN INITIALIZED DISK IN F8,1"
80   PAUSE
90   INPUT "DISK NO.?",Number
100  INPUT "MAIN DISK OR BACKUP DISK? (M OR B)",Disktype$
110  MASS STORAGE IS ":F8,1"
120  CREATE "Number",1,15
130  ASSIGN #3 TO "Number"
140  PRINT #3;Number,Disktype$
150  DISP "REMEMBER TO LABEL DISK"
160  MASS STORAGE IS ":F8"
170  END
```

10. PROGRAM FILE

FILE

```
10      PRINTER IS 16
20      PRINT PAGE
30      PRINT "BLISS"
40      PRINT
50      PRINT "PROGRAM FILE"
60      PRINT
70      LINPUT "STORAGE DEVICE TO BE USED? <:T15, :F8, :F8,1>?",Device$
80      Filename$="REGIS"&Device$
90      CREATE Filename$,1000,25
100     ASSIGN #5 TO Filename$
110     PRINT #5,1;0,0
120     END
```