

Modifying Work Habits Through Training

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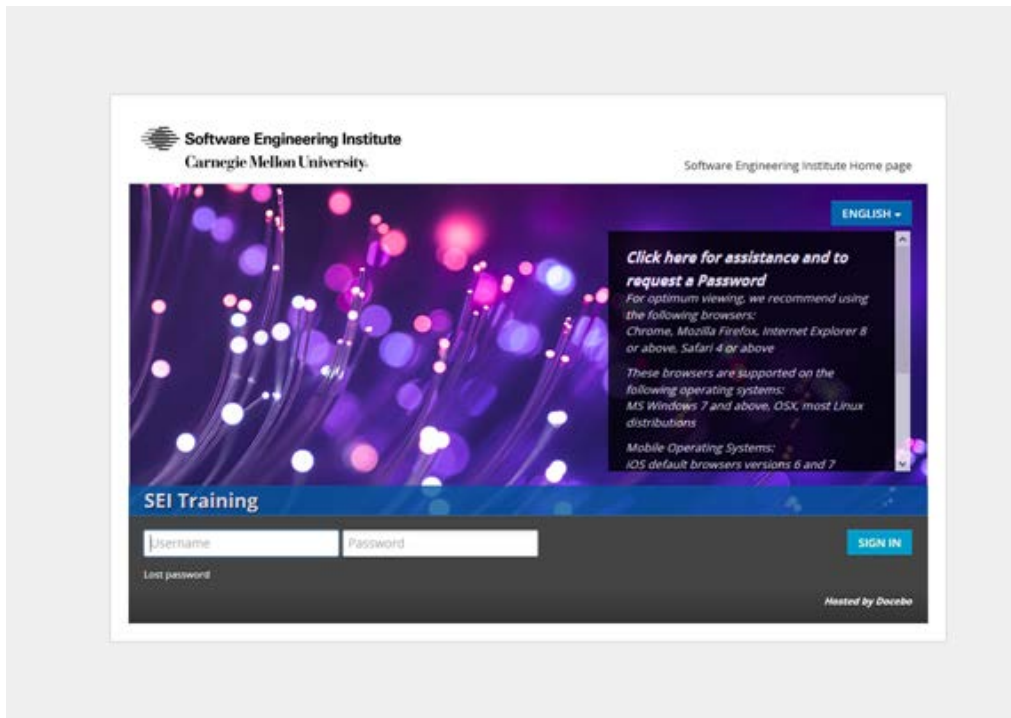
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DM17-0634

The Software Engineering Institute Carnegie Mellon University

The Software Engineering Institute (SEI) is a Federally Funded Research Center which has been helping government and industry organizations to acquire, develop, operate, and sustain software systems that are innovative, affordable, enduring, and trustworthy.

The SEI transitions mature technologies for widespread use.



Training is one means of transition

- Classroom
- eLearning
- Blended

The Training

Training Content

- Developed internally
- Taught by SEI research scientists
- Multiple learning platforms
- Highly technical content
- Variety of technical focus areas



Audience

- Software professionals
- Cybersecurity professionals

The Need – Training to Encourage Consistency



Big projects

**Teams of
creative
people**

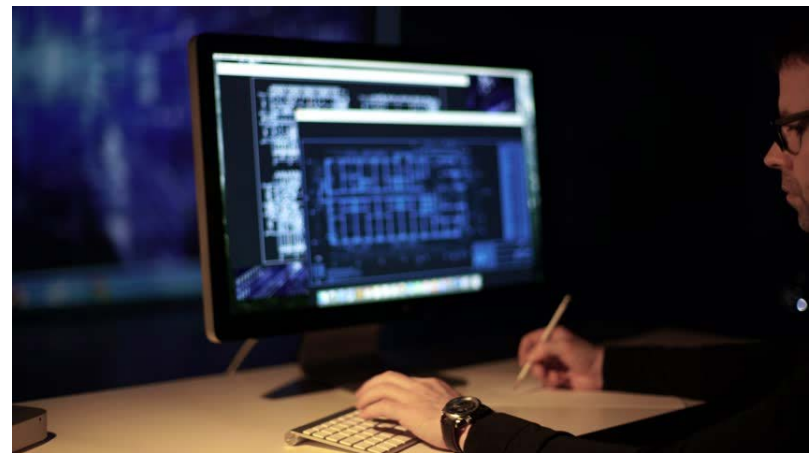
**Working
independently**

**Unified work
product**

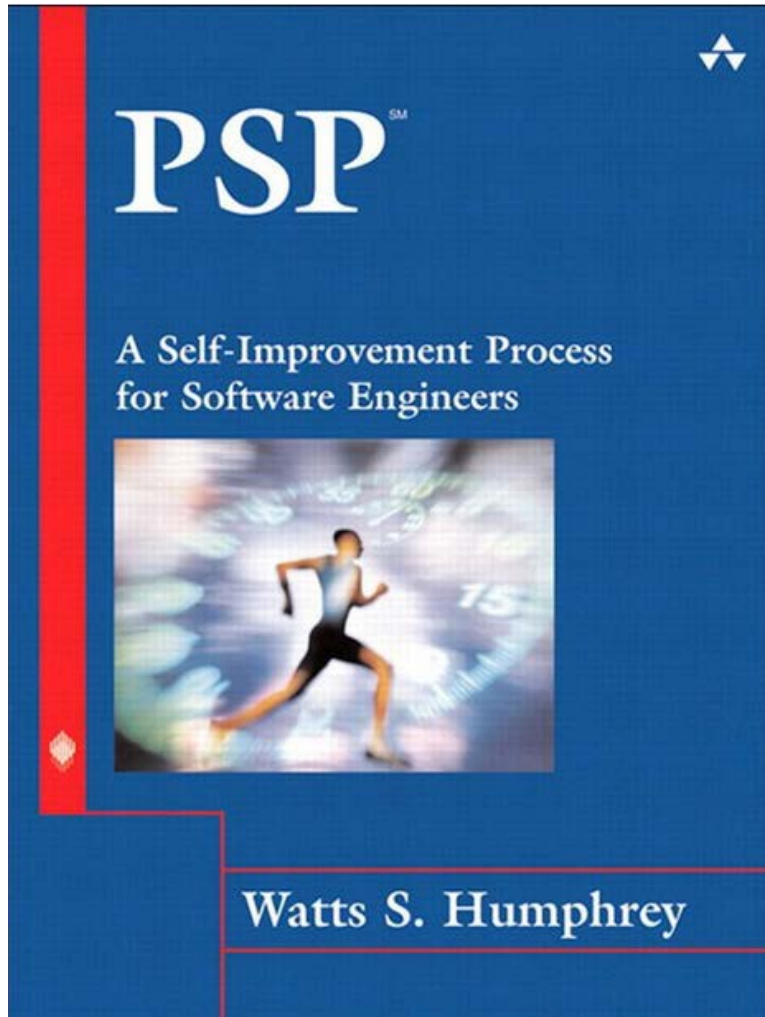
Challenge!

Modify Work Habits

How to encourage consistency without impairing creativity?

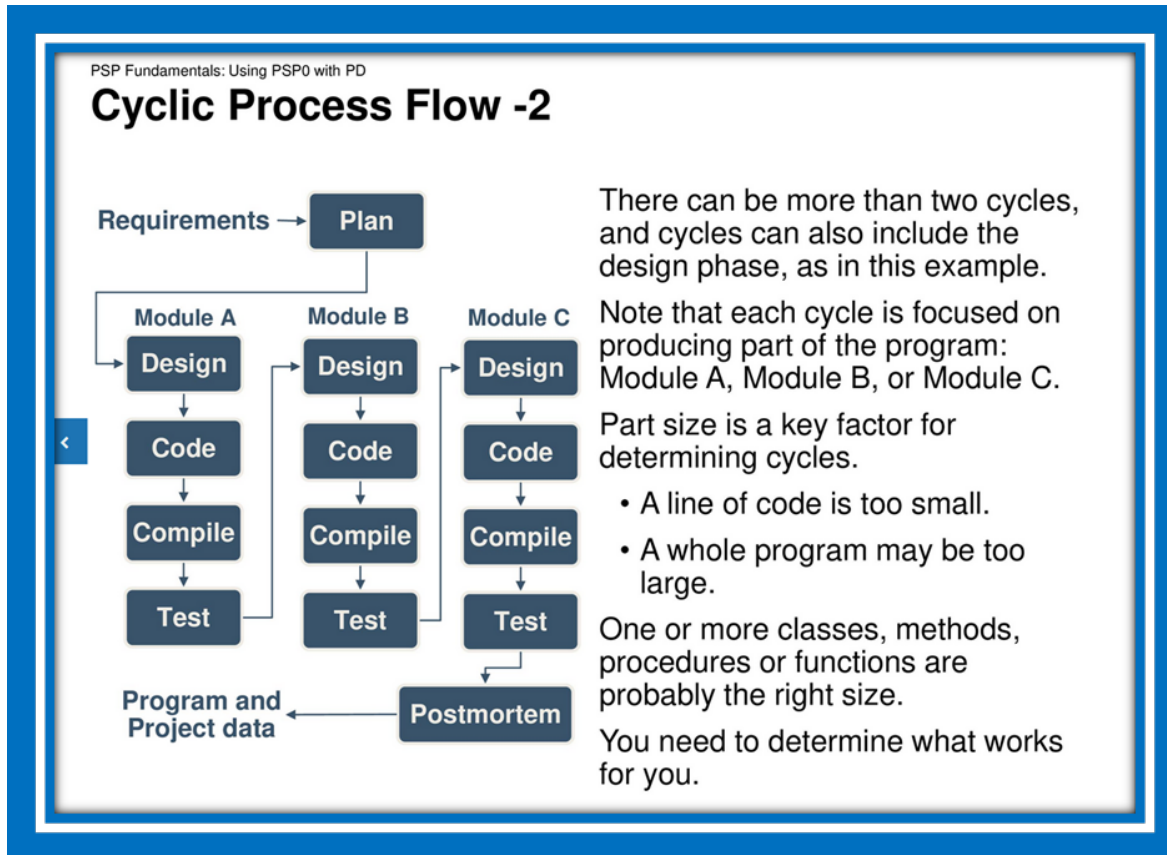


The Personal Software Process© (PSP) curriculum



- Teaches process improvement to encourage effective and efficient software development
- Seeks to understand and reduce defects as a means to improve software quality
- Two required courses taught in a blended format
 - PSP Fundamentals
 - PSP Advanced

SEI Personal Software Process (PSP)© Curriculum



Graduated learning validated through application

Multiple assignments per course

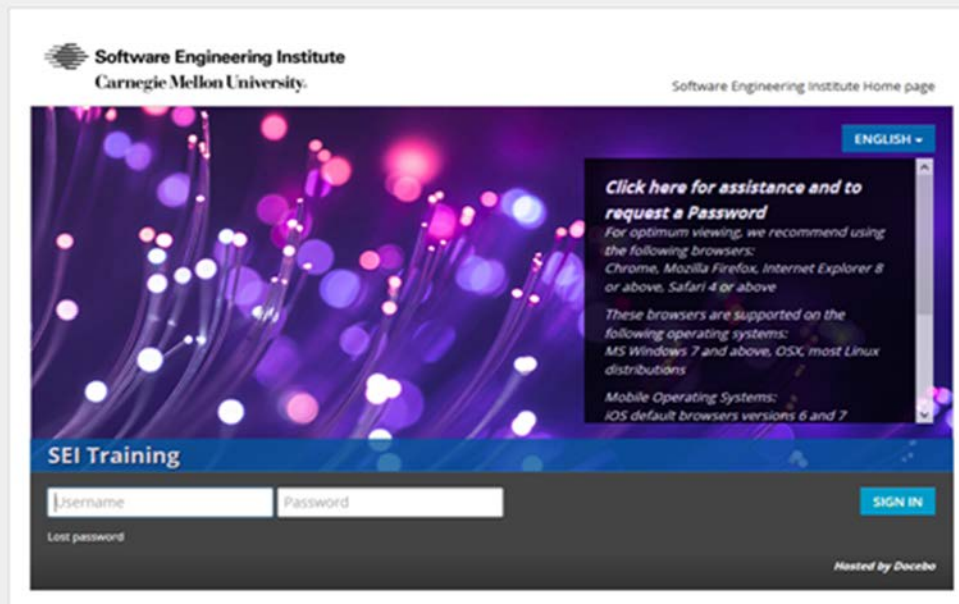
Instructor evaluation and feedback

Encourages new work habits

How It Has Been Taught

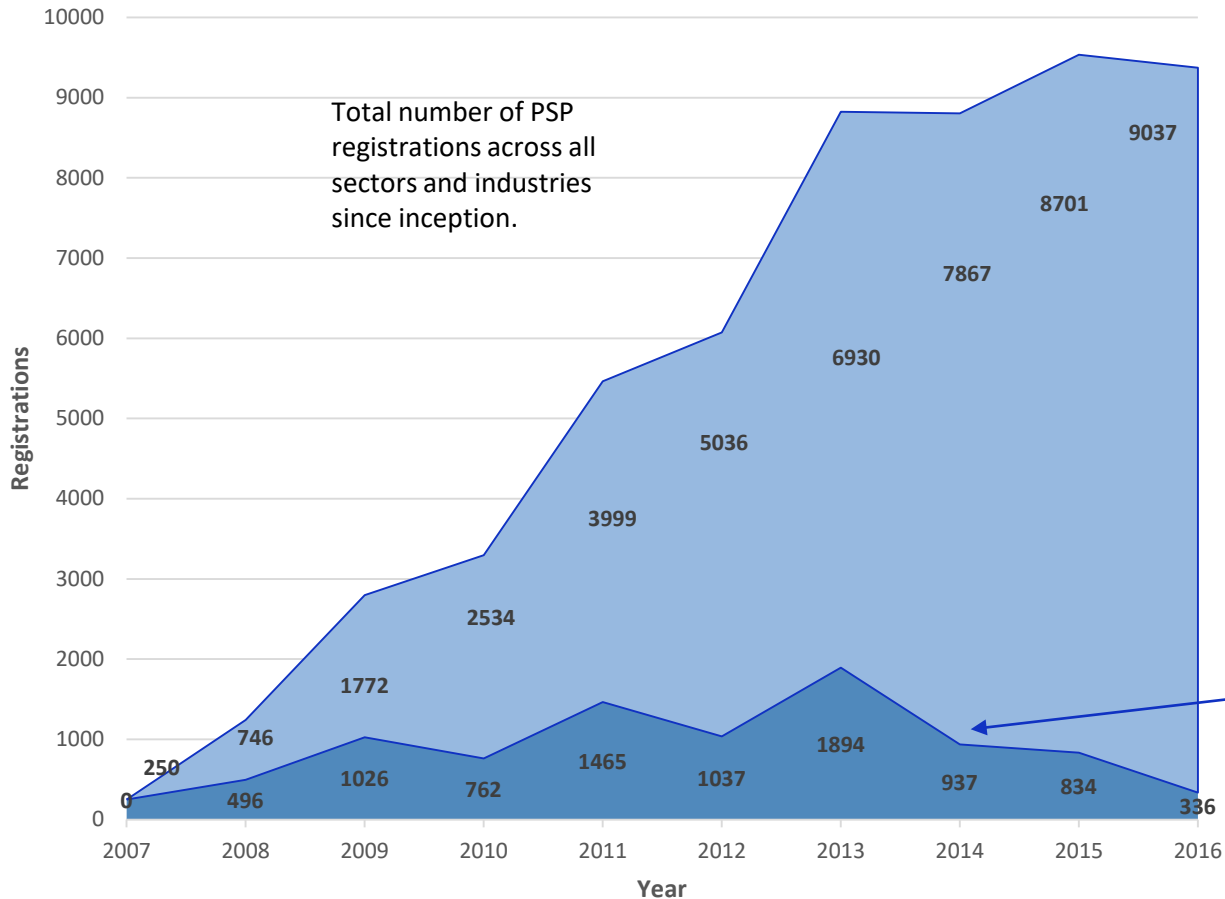
2005 Classroom Instruction

2007 to Present....Blended Instruction



Cumulative Results – Staying Power

SEI PSP® Fundamentals and Advanced Courses



Improved project cost & schedule variance

Improved productivity

Significant quality improvements

Per year

Results data published at www.sei.cmu.edu

Developing Skill

Instruction

Application

Instruction

Application

Software Engineering Institute
Carnegie Mellon University

Active users Contact us Get more users Sign Out

Admin > Courses > PSP Fundamentals - Instructor Only > Training material

PSP Fundamentals

LEARNER VIEW ADMIN VIEW

Overview
Overview of PSP Fundamentals

Introduction
Introduction to the Personal Software Process

PSP Student Workbook

PSP0 with Process Dashboard
Using PSP0 with Process Dashboard

Assignment: Program 1

Agenda-Day 2
Day 2 Agenda

Fundamental Planning Concepts
PSP Fundamental Planning Concepts

Assignment: Coding and Counting Standard

PSP1 with Process Dashboard
Using PSP1 with the Process Dashboard

Assignment: Program 2

Capstone Exercise, Part 1

Capstone Exercise, Part 2

Capstone Exercise, Part 2a

Capstone Exercise, Part 3

TSP Overview
What's Next? TSP Overview

Instructor Evaluation

Please Confirm Your Educational Privacy Rights

ADD COURSE WIDGETS

File repository area

PSPF Assignment Kits
Active by on 9/6/2017 2:01:18 pm

Instructor(s)

6 topic exercises
+
A cumulative
capstone exercise

Application through Assignments



PSP Fundamentals

LEARNER VIEW ADMIN VIEW

Assignment: Program 1

Close



Description Prerequisite

Please read Chapters 1 and 2 before attempting the assignment.

Assignment Kit

Please download and review the assignment file, from the File repository area below. Complete the tasks as instructed in the Assignment Kit.

Submitting Your Assignment

Create a zip file containing:

- process data (mdb export file from SEI Student Workbook or zip data backup file from Process Dashboard)
- source program listing
- test results

Submit your assignment zip file

Please retain a copy of your file, for your own course archives.

Directions for
submitting
completed work

Documents upload

or

Name *

Comments

My assignments list

You haven't uploaded any assignment yet

◀ PREVIOUS

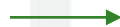


NOW PLAYING
Assignment: Program 1

NEXT ▶

Assignment Kit

Zip File



File repository area

PSPF Assignment Kits
Active by on 9/6/2017 2:01:18 pm



PSP_Fundamentals_Assignment_Files

Name	Type	Compressed size	Password ...	Size	Ratio	Date modified
ASGKIT Coding Std	Microsoft Word 97 - 2003 ...	17 KB	No	73 KB	78%	2/5/2016 12:00:00
ASGKIT PROG1	Microsoft Word 97 - 2003 ...	39 KB	No	182 KB	80%	2/5/2016 12:00:00
ASGKIT PROG2	Microsoft Word 97 - 2003 ...	34 KB	No	190 KB	83%	2/5/2016 12:00:00
ASGKIT PROG3	Microsoft Word 97 - 2003 ...	75 KB	No	403 KB	82%	2/5/2016 12:00:00
ASGKIT PROG4	Microsoft Word 97 - 2003 ...	82 KB	No	439 KB	82%	2/5/2016 12:00:00
ASGKIT Review Checklists	Microsoft Word 97 - 2003 ...	26 KB	No	150 KB	83%	2/5/2016 12:00:00

Evaluation by Instructor

ITEMS: DEMO - (Start & End Dates and Location) > Reports

Evaluate a file

Submitted file:

File 1

File submitted by: **lrt@sei.cmu.edu**
Submitted on 1/24/2017 3:14:22 pm

User comments: Hello Instructor, this is my second comment entered at the file upload screen.

Comments:

Score *: /100

Attachment **UPLOAD FILE(S)**

Allow the user to re-upload the assignment if marked as FAILED

MARK AS PASSED **MARK AS FAILED** **CANCEL**

Assignment submission is evaluated

Score and feedback submitted through Docebo LMS

Instructor Tools

User statistics

Training material statistics

Learner assignments

Export as

Excel



USERNAME	SUBSCRIPTION DATE	FIRST ACCESS DATE	COMPLETION DATE	LAST ACCESS DATE	PROGRESS	SESSION TIME	STATUS	SCORE
Carol								
testuser3	5/11/2017 4:07:12 pm	5/11/2017 4:07:30 pm	-	5/12/2017 10:25:08 am	0%	0h 42m	In progress	0.00
test.user.5	1/24/2017 3:04:43 pm	1/24/2017 3:10:50 pm	-	1/25/2017 10:31:52 am	17%	0h 6m	In progress	0.00
Lucille.Instructor	1/24/2017 3:06:26 pm	1/24/2017 3:20:12 pm	-	2/1/2017 11:26:10 am	0%	0h 29m	In progress	0.00
test.user.6	1/24/2017 3:05:09 pm	1/24/2017 3:16:27 pm	-	1/31/2017 1:02:11 pm	13%	0h 7m	In progress	0.00
test.user.7	1/24/2017 3:05:41 pm	-	-	-	0%	-	Not yet started	0.00

Monitor Activity

Hosted by Docebo

Instructor Tools

User statistics
Training material statistics
Learner assignments

Export as

USERNAME	SUBSCRIPTION DATE	FIRST ACCESS DATE	COMPLETION DATE	LAST ACCESS DATE	PROGRESS	SESSION TIME	STATUS	SCORE
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User statistics
Training material statistics
Learner assignments

Export as

TITLE	STATUS	AVERAGE
Authoring - Overview	<div style="width: 75%;"><div style="background-color: green; width: 75%;"></div><div style="background-color: orange; width: 25%;"></div></div>	
Authoring - Introduction		
File - PSP Student Workbook	<div style="width: 50%;"><div style="background-color: green; width: 50%;"></div><div style="background-color: orange; width: 50%;"></div></div>	
Authoring - PSP0 with Student Workbook	<div style="width: 25%;"><div style="background-color: orange; width: 25%;"></div></div>	
Authoring - PSP0 with Process Dashboard	<div style="width: 0%;"><div style="background-color: orange; width: 0%;"></div></div>	
Assignment - Assignment: Program 1	<div style="width: 50%;"><div style="background-color: green; width: 50%;"></div></div>	0.00
Authoring - Agenda-Day 2	<div style="width: 0%;"><div style="background-color: orange; width: 0%;"></div></div>	

Monitor Content Status

Instructor Tools

The screenshot shows the 'Learner assignments' tab selected. At the top, there are three tabs: 'User statistics', 'Training material statistics', and 'Learner assignments'. Below the tabs is a filter section with three radio buttons: 'All' (selected), 'Waiting for evaluation', and 'This has already been evaluated'. A search bar is located to the right of the filters. The main content is a table with the following columns: USERNAME, FIRST NAME, LAST NAME, ASSIGNMENT, SUBMITTED ON, STATUS, SCORE, and VIEW/ EVALUATE. The table contains five rows of data. The fourth row has a status of 'Waiting for evaluation' and a score of '-'. A blue callout box with the text 'Call to action' points to a green 'EVALUATE' button in the 'VIEW/ EVALUATE' column of this row. At the bottom right of the interface, it says 'Hosted by Docebo'.

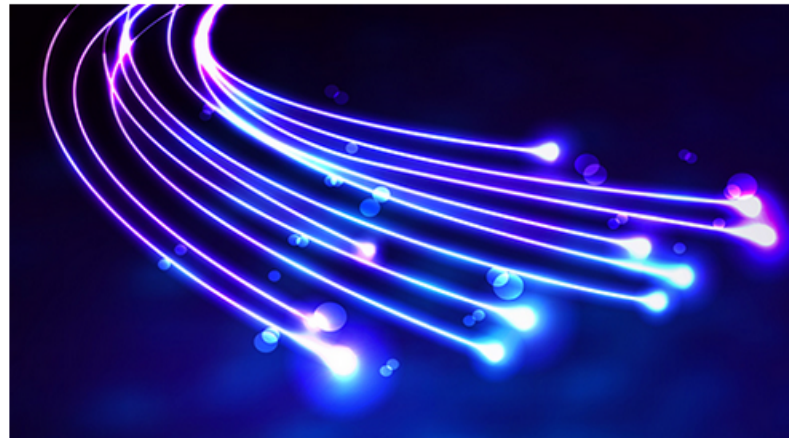
USERNAME	FIRST NAME	LAST NAME	ASSIGNMENT	SUBMITTED ON	STATUS	SCORE	VIEW/ EVALUATE
test.user.6			Assignment: Coding and Counting Standard	1/24/2017 3:19:44 pm	❌	0/100	🔍
test.user.6			Assignment: Program 1	1/24/2017 3:18:29 pm	✅	0/100	🔍
test.user.5			Assignment: Program 2	1/24/2017 3:15:27 pm	✅	0/100	🔍
test.user.5			Assignment: Coding and Counting S		⌚	-	EVALUATE 🔍
test.user.5			Assignment: Program 1	1/24/2017 3:13:22 pm	✅	0/100	🔍

Training Effectiveness

Improved work performance

- Post-release errors per KLOC
- Schedule variances



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