CS599: PPMP + PSP + Project
Personal Project Management Process
Project Personal Software Process
Project using PPMP/PSP

PPMP Spreadsheet Exercise 6S and Report R4

Goals of Presentation

Spreadsheet 6S Assignment & Exercise Details
• Reading Plus
• Spreadsheet 6S

Report R4 Assignment & Exercise Detail
• Reading Plus
• Report R4 Assignment Kit
• Report R4 Exit Criteria
Assignment & Exercise Details

Reading Plus

Reading
• Chapter 7
• Multiple Regression
  – Appendix A9, pg. 552-557, Multiple Regression
  – Appendix A10, pg. 557-560, Multiple Regression
Prediction Interval

Review process specifications in Appendices C
• PSP1.1 Process: Appendix C4, pgs. 623-627
• PSP1.1 Process Scripts – Tables C41..C44, pgs. 686..689
• PSP1.1 Project Plan Summary and Instructions – Tables C45 & C46, pgs. 690-692
• Task Planning Template & Instructions – Tables C47 & C48, pgs. 693-4
• Schedule Planning Template & Instructions – Tables C49 & C50, pgs. 695-6

Process Exercises

Review exercise description
• Separate Handout
• Based on DSE Program 10A, pg. 760

Assignment Kit #6

Exercise Evaluation and Grading Process
• Specific Items to be Checked per form or Process — Defect Recording Log
• PSP1.1 Exercise Reports – Exit Criteria
Assignment Kit #6S

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<td>PSSP1.1 Project Plan Summary</td>
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<tr>
<td>C41 PSP1.1 Script</td>
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<td>C42 PSP1.1 Planning Script</td>
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<td>Forms, Templates, and Standards</td>
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<td>C16 Time Recording Log</td>
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<tr>
<td>C18 Defect Recording Log</td>
<td>C19</td>
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<tr>
<td>C20 Defect Type Standard</td>
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6S. Multiple Regression

Generate a spreadsheet to calculate 3-parameter multiple regression coefficients and the prediction interval. This exercise is based on Program 10A's requirements.

1. Spreadsheet 6S Prerequisites and References:
   A. DSE Appendix A9, A10 and A11, and spreadsheets 1S, 2S and 3S
   B. DSE Sect. 6.4 and 6.5: How Multiple Regression is used in estimating

2. Exercise 6S Instructions/Requirements
   Use 5S spreadsheets to estimate time resources; and plan and track schedule for this assignment using 2S.
6S. Multiple Regression (cont.)

3. Spreadsheet 6S Requirements

Use spreadsheets 3S techniques to validate and condition your data. This may be done as a separate step or integrated with the second part of this exercise.

Write a spreadsheet to calculate the three-variable multiple regression estimating parameters, to make an estimate from user-supplied inputs, and to determine the 70 percent and 90 percent prediction intervals. The formulas and methods for doing such calculations using a 3GL are described in Sections A9, A10 and A11. Further enhance spreadsheet 3S as a base.

4. Spreadsheet 6S Testing

Thoroughly test the spreadsheet(s). As one test, use the data in Table D16 (page 763). For the estimated values, use 185 LOC of new code, 150 LOC of reused code, and 45 LOC of modified code. The projected hours should be 20.76 hours, the 90 percent UPI is 33.67 hours, and the 90 percent LPI is 7.84 hours. The 70 percent prediction interval is from 14.63 to 26.89 hours. The values of the beta parameters are $\beta_0 = 0.56645$, $\beta_1 = 0.06533$, $\beta_2 = 0.008719$, $\beta_3 = 0.15105$. These are equivalent to productivities of 15.3 new and changed LOC per hour, reuse of 114.7 LOC per hour, and modification of 6.6 LOC per hour. As a further test case you should also verify that your program produces the same results given in the examples in Sections A9 and A10 of DSE. Submit a test report giving your results in the format in Table D17.
Assignment 6 Details
PSSP1.1 Exercise Reports – Exit Criteria

0. The following five items (per paragraphs one and three of C4.5)
   • Complete process data
   • Accurate and self-consistent data
   • Process Report in proper order and format
   • Historical data used planning
   • Neat and legible; need not be typed
   • NO cover sheets, binders, or written reports other than those requested

1. PSSP1.1 Proj. Plan Summary (per Tables C45 & C46, pgs 690-692)
2. Test Report (per Tables C37..C38, pages 681..682)
3. PIP forms, at least lessons learned (per Tables C27&C28, pgs 668-9)
4. Size Estimate (per Tables C39..C40, pgs. 683..685)
5. Task Plan (per Tables C47&C48, pages 693..694)
6. Schedule (per Tables C49&C50, pages 695..696)

7. Time Recording Log (per Table C17, page 658).
8. Defect Recording Log (per Tables C19 and C20, pages 660-661).
9. Source Spreadsheet Listing (per personal coding standard - Exercise R2 updated)

10. Other Requested Material
   • Test Results - Program 6A (per Table D11, pg. 758)
   • PSSPStu1.XLS with data to date
      (on diskette, IBM format; all data per instructions through exercise 6A)
Assignment & Exercise Details

Report R4 – Reading Plus

Review D4 Report Exercise description R4

- R4: the PSP Midterm Analysis Report, pgs. 771-772
- Data Formats – Tables D22..D24, pgs. 771 & 773
  - "similar to"
  - "using the format"

Review Examples of PSP design and code review checklists

- C++ PSP2 DESIGN REVIEW CHECKLIST – Table C57, pg. 705
- C++ CODE REVIEW CHECKLIST – Table C58, pg. 706

Read/Review Chapter 13.

Assignment & Exercise Details - Process Exercises

Assignment Kit #6R

PPMP + PSP Lecture Number: 6

Assignment:

- Report R4: Write report R4, a midterm analysis report based on your spreadsheet programming exercises.

Before starting to write report R4, finish PSSP Programming exercise 6S, and read the process and exercise specifications (for R4) in Appendices C and D.

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<td>PWP Test Report</td>
<td>Task Plan Spreadsheet</td>
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<td>PSP/PWP TRL</td>
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<td>PWP DRL</td>
<td>Report R4</td>
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<td>Task Plan</td>
<td>(PSSP) PIP form</td>
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Assignment & Exercise Details

Report 4 – Exit Criteria

1. A defined process for analyzing the data and creating a report including all the data under "Task 3" page 772. (Compliant with Section 13.2, pgs. 442-444.)
   a) Including a process script.
      (SfA: Use any PSP/PWP/PSSP script as a "go by"; otherwise, cite the source of definition method and provide a standard. Must include Planning, Task Performance for all tasks, and Postmortem phases.)
   b) Including EV planning forms for enacting this process.
      (SfA: Must include "the planned time for this work", and tracking and recording "the actual time spent". Task Planning Template/Spreadsheet, per Tables C47&C48, pages 693..694. Schedule Planning Template (Spreadsheet), per Tables C49&C50, pages 695..696.)
   c) Including a PIP for process being enacted.

   a) Planned and actual process data. (Per defined process)
   b) Analysis report. (Include all the data under "Task 3" page 772; "Spreadsheet analysis are suggested"; "Graphical summaries and presentation are encouraged.")
   c) Design review checklist. (For your most-frequent design defects. Use Table C57 for format.)
   d) Code-review checklist. (For your most-frequent coding defects. Use Table C58 for format.)
   e) Conclusions. (Drawn from the use of the GQM method.)
   f) Personal improvement goals. (Set using GQM method.)
Assignment & Exercise Details

Report 4 – Exit Criteria

3. PIP forms for PR4P (Personal Report 4 Process), including lessons learned (per Tables C27&C28, pgs 668-9)

Process Definition & Development: Process

Start with a simplified process definition

Define, Test, and Adjust

Follow the abstraction paradigm
• first define the total process as a single step
• second define each subprocess step
• then continue until the process is appropriately refined
• use a standard format

A process captures knowledge;
• only generally define the steps you know well and that do not cause current problems
• study and measure the steps you do not understand before attempting to define them
• on steps you generally understand, define a little more than you know and revise the definition as your knowledge improves
How To Define A Process

Process Definition Guidelines

Start with your current process.

• make minimal initial enhancements
• only define things you know reasonably well how to do
• if you know a step well, focus elsewhere
• if a step is confusing, experiment or talk to someone who knows how to do it
• expect to get it wrong the first time
• plan to prototype and test
• plan for perpetual enhancement
• make improvements in small steps

Need: A defined process for analyzing the data and creating a report …

d) Including a process script: Use … PWP script as a "go by".

Start with PWP Process0.1 & rename as PR4P01prcSv0.doc

Add/Modify steps: cover new tasks (in PR4P01prcsSv1.doc)

• Analyze Stu1 Data
• Analyze Defect Data
• Writing of Analysis Text
• Develop Review Checklists
• Writing of Conclusions
• Writing of Improvement Goals
• Compile and Check the report

Walk through Process; Update Script