The Baseline Personal Process

Outline

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Introduction

Ways in which a Defined Process can Help (cf. Humphrey, 1995, p. 29)

- Identifies principal job activities
- Separates job's routine from its complex elements
- Establishes precise phase entry and exit criteria (thus allowing you to know when a task is complete)
- Helps understand performance
- Helps estimate when tasks will be completed
- Historical data helps judge accuracy of predictions
- Historical process data helps identify "trouble" phases
- Facilitates focused improvement efforts

The Baseline Process

PSP0: The Baseline Process

(Humphrey, 1995, p. 30)

- The PSP0 process provides:
  - A convenient structure for doing small-scale tasks.
    - What I do, when, what order.
  - A framework for measuring those tasks.
    - Help analyze, understand, and improve your process.
    - Defined steps -> explicit measures
  - A foundation for process improvement.
    - "If you don't know what you're doing, it is hard to improve it."
- cf. fig. 2.1, p. 21 (PSP0 Process Flow)

Forms

Why Use Forms? (cf. Humphrey, 1995, p. 32)

- Any reasonably complex job involves:
  - Determining what must be done.
  - Deciding how to do it.
  - Doing it.
  - Checking to be sure it is correct.
  - Fixing problems.
  - Delivering the final product.
- Standardized forms help in almost every step of this process.

The PSP0 Process

PSP0 Process Elements

(Humphrey, 1995, p. 34, & Lecture 1, slide 24)

- Planning Phase - estimate development time
- Development Phase - develop the product using your current methods
- Postmortem Phase - complete the project plan summary, with the time spent and defects found and injected in each phase.
- cf. Fig. 2.2, PSP0 Process
- cf. Table 2.1, PSP0 Process Script
- Notes:
  - Phase = process element with definition and structure
  - Step / Task = undefined / unstructured process element

Fuzzy vs. Clear Phase Distinctions (cf. Humphrey, 1995, p. 35)

- Design, code, compile, & test are difficult to distinguish
- Explicit entry / exit criteria distinguish
- Ex: code / compile
  - Writing code from design is code time.
  - Fixing compile defects is compile time.
  - Fixing test defects is test time (even though compilation is performed).

Four PSP0 Scripts (cf. Humphrey, 1995, p. 38)

- Process Script
  - Guides in developing module-level programs
- Planning Script
  - Guides in PSP planning process
- Development Script
  - Guides in the development of small programs
- Post Mortem Script
  - Guides in PSP postmortem process
- Look at details on pp. 36-38.

PSP0 Measures, Logs, & Project Plan Summary

Two PSP0 Measures

(cf. Humphrey, 1995, p. 37, 38)

- Time spent / phase
  - Actual clock time
  - Use natural units (minutes, vs. 0.x hours, etc.)
- Defects found / phase
  - Defect = one program change during compile or test
  - One change may be a single character or multiple statements, etc.
  - As long as the changes all pertain to the same compile or test problem they are part of one defect.
- Collecting PSP0 data gives you a baseline from which to plan future projects.

Time Recording Log

(cf. Humphrey, 1995, p. 39-44)

- Look over Time Recording Log, Instructions, and Example (p. 40-2)
- Use stop watch
- If actual time not recorded, estimate as soon after you realize it as possible
- "Design on the fly" is counted as coding
- Time in compile phase = time to compile correctly first time
- Compilation while testing is counted as time in test phase

Defect Recording Log

(cf. Humphrey, 1995, p. 44-48)

- Look over Defect Recording Log, Instructions, Defect Type Std, and Example (p. 45-8)
- Use standard defect types - don't create your own defect types until after you gain plenty of experience and know you need additional types.
- Indicate the phase where you believe the defect was injected. If uncertain, make best estimate.
- Indicate the phase in which you found & removed the defect. Sometimes (though rarely) you will remove a defect in a different phase from where you found it. If so, specify this.
- Indicate fix time - using a stop watch to help.

The Multiple Defect Problem

(cf. Humphrey, 1995, p. 48-51)

- Problems:
  - While fixing one defect you encounter and fix another.
  - While fixing one defect you inject another.
- Solution:
  - Separately record the time spent on each.
  - If you divert to fix a different defect, subtract its fix time from the one you originally were working on.
  - A defect injected while fixing another is still a unique defect of its own.

cf. Example, p. 48-9, 51

Value of Finding & Fixing Defects Early (cf. Humphrey, 1995, p. 50)

- Defects found and fixed in test take 5-10 times as long as than those found earlier.

Project Plan Summary

(cf. Humphrey, 1995, p. 50-54)

- Summarizes estimated & actual project data in convenient form.
- Look over Project Plan Summary, Instructions, & Example on pp. 52-4.
- Note “To Date” and “To Date %”.

On (Not) Customizing the Initial Process

Don’t Customize for INSY 560

- Don’t customize the PSP process or forms for work in INSY 560.
- This would involve revising all the forms, scripts, etc. for the whole book!

Customization Guidelines

(cf. Humphrey, 1995, p. 54, 55)

- Later, when you customize the PSP:
  - Write down the process and give it a number.
  - Keep it simple!
  - Include planning and postmortem phases in every process (to aid process improvement).
  - Always gather basic PSP0 data - you can gather more, but use this as a minimum.
  - Create and use forms.
  - Make form formats convenient to use.
  - Make sure the whole process stays consistent as you update it.

Homework 1A

- Calculate the Mean & SD of a list of numbers which are stored in a Linked List.
- See appendix D for details.
- Use appendix C and master form disk (available at CSIS office) for submission information.