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.*