



This tutorial will cover PSP 2.1 with Process Dashboard

PSP Advanced: Tutorial: PSP2.1 with Process Dashboard

Lecture Topics

Understand the new elements of PSP2.1 and how to use the PSP2.1 scripts and forms.

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We will go over the PSP 2.1 tool changes.

It may be a good idea to have the students bring up their student tool.

Engaging the class to look at their tool will also help keep the focus on the tutorial and eliminate internet surfing and email correspondence during the lecture.



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New Process Elements

PSP2.1 adds the following process elements:

- PSP2.1 design review script
- PSP2.1 design review checklist
- operational specification template
- functional specification template
- state specification template
- logic specification template

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We covered these process elements yesterday when we prepared for Program 5. Today our focus will be on the new PSP tool elements used with PSP 2.1



Project Plan Summary Example

We will walk through an example of a PSP2.1 project plan summary.

Only the new items on this form are discussed.



Program Size Prediction Intervals

Program size prediction intervals are automatically calculated using the method described in the text.

1. UPI – upper prediction interval
2. LPI – lower prediction interval

These values are calculated only if PROBE method A or B is used.

	Plan	Actual	To Date
Base (B)	345	345	0
Deleted (D)	0	5	0
Modified (M)	0	4	0
Added (A)	202	218	1082
Removed (R)	0	0	0
Added and Modified (A+M)	202	222	1082
Total Size (T)	547	558	1082
Total New Removable	0	0	0
Estimated Proxy Size (E)	164	218	844
Upper Prediction Interval (75%)	239		
Lower Prediction Interval (75%)	165		

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Further Prediction Interval discussion will follow as we discuss PROBE Methods A & B



Development Time Prediction Intervals

Development time prediction intervals are automatically calculated using the method described in the text.

1. UPI – upper prediction interval
2. LPI – lower prediction interval

These values are calculated only if PROBE method A or B is used.

Time in Phase	Plan	Actual	To Date	To Date %
Planning	0:48	0:01	19:40	18.9%
Design	1:26	0:11	7:25	6.9%
Design Review	0:12	0:31	1:00	0.94%
Code	0:06	6:01	41:50	98.3%
Code Review	0:48	2:00	4:10	13.92%
Compile	1:20	0:37	6:55	6.5%
Test	0:30	0:21	16:00	17.2%
Postmortem	1:21	0:23	7:00	6.58%
Total	20:36	19:05	196:25	
Total Time UPI (78%)	24:44			
Total Time LPI (78%)	16:25			

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Further Prediction Interval discussion will follow as we discuss PROBE Methods A & B



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Summary: Percent Appraisal COQ

1. % Appraisal Cost of Quality is the percentage of development time spent in design review and code review.

Summary	Plan	Actual	To Date
Size Hour	0.02	11.8	10.2
Planned Time	70.36		94.00
Actual Time		19.05	106.20
CPI (Cost-Performance Index)		1.08	0.89
% Error	0%	0%	0%
% New Retainable	0%	0%	0%
Test Defects/KLOC or equivalent	11.7	0.01	11.7
Total Defects/KLOC or equivalent	79.8	0.04	79.8
Yield %	100.1%	100.7%	100.1%
Code Review Rate	251	111	260
% Appraisal COQ	0.00%	18.4%	0.00%
% Failure COQ	23.7%	36.0%	23.7%
COQ & F Ratio	0.0	0.0	0.0
PQI	0.0	0.24	0.0

$$\% \text{ Appraisal COQ} = 100 \cdot \frac{\text{Design Review Time} + \text{Code Review Time}}{\text{Total Development Time}}$$

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We are only pointing out the existence of data in the tool. It will be discussed this topic in more detail when we cover quality.

Summary: Percent Failure COQ

1. % Failure Cost of Quality is the percentage of development time spent in compile and test.

Summary	Plan	Actual	To Date
Size Hour	9.82	11.6	10.2
Planned Time	20.36		18.50
Actual Time		19.25	19.25
CPI (Cost-Performance Index)		1.08	0.89
% Rework	0%	0%	0%
% New Runnable	0%	0%	0%
Total Defects/KLOC or equivalent	15.7	9.01	15.7
Total Defects/KLOC or equivalent	79.3	47.6	79.3
Yield%	32.1%	50.7%	32.1%
Code Review Rate	251	111	260
% Approved COQ	4.96%	16.4%	4.96%
% Failure COQ	23.7%	26.8%	23.7%
COQ:VF Ratio	0.2	0.88	0.2
PQI	0.9	0.24	0.9

$$\% \text{ Failure COQ} = 100 \cdot \frac{\text{Compile Time} + \text{Test Time}}{\text{Total Development Time}}$$

We are only pointing out the existence of data in the tool. It will be discussed this topic in more detail when we cover quality.



COQ A/F Ratio

1. COQ A/F Ratio is the ratio of appraisal costs to failure costs.

Summary	Plan	Actual	To Date
Size Hour	9.82	11.6	10.2
Planned Time	20.36		184.50
Actual Time		19.25	106.20
CPI (Cost-Performance Index)		1.08	0.89
% Rework	0%	0%	0%
% New Runnable	0%	0%	0%
Total Defects/KLOC or equivalent	15.7	9.01	15.7
Total Defects/KLOC or equivalent	79.3	67.6	79.3
Yield%	32.1%	30.7%	32.1%
Code Review Rate	251	111	260
% Appraisal COQ	4.96%	16.4%	4.96%
% Failure COQ	23.7%	20.8%	23.7%
COQ A/F Ratio	0.2	0.89	0.2
PQM	0.0	0.28	0.0

$$\% \text{ COQ A/F Ratio} = \frac{\% \text{ Appraisal COQ}}{\% \text{ Failure COQ}}$$

We are only pointing out the existence of data in the tool. It will be discussed this topic in more detail when we cover quality.



Messages to Remember



PSP2.1 provides data that allows you to manage the cost of improving the quality of the programs you write.



