



Software Engineering Institute | Carnegie Mellon

PSP Advanced

Tutorial: Process Definition Tool with Process Dashboard

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Overview

For the programming assignments in this course, you have used defined processes for PSP0, PSP1, PSP2, and PSP2.1.

The Process Dashboard allows you to create processes for other, non-programming tasks.

In this tutorial, we will enter the process you just created for producing the Analysis Report as a lightweight structured process in Process Dashboard.

The Process Dashboard provides various tools for creating custom processes. For this tutorial, we will use the Generic Process Template.

Basic Steps for Entering Your Report Process

Find the process you just created for the Analysis Report, then:

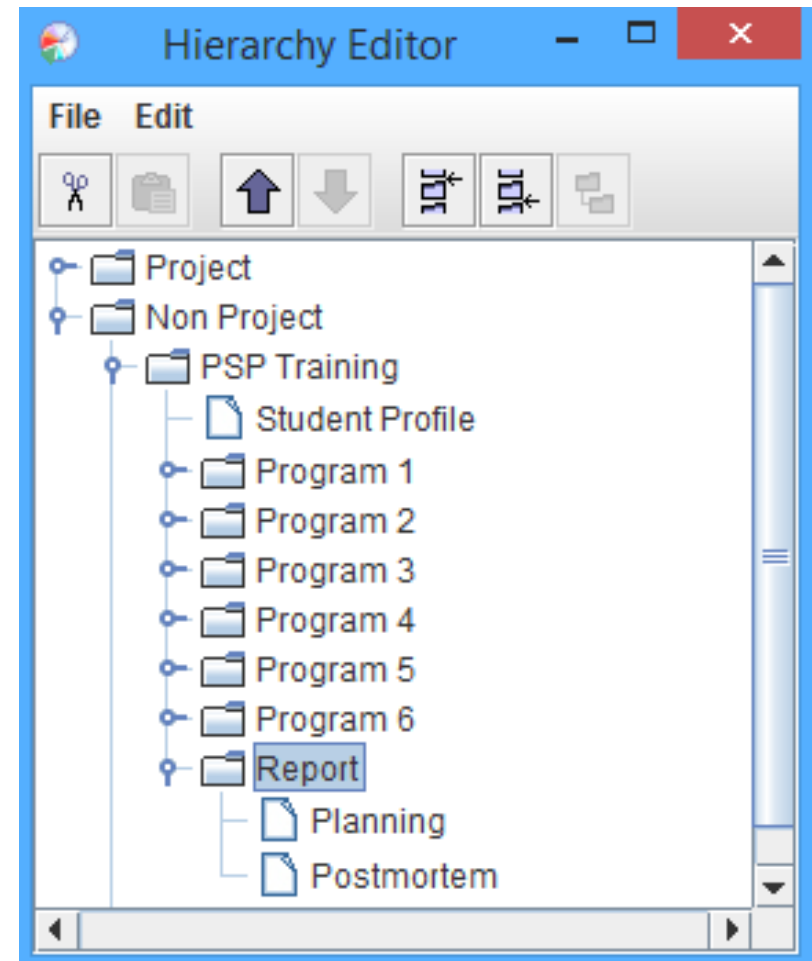
- Open the Process Dashboard
- Enter the phases in the Analysis Report project
- Define a size measure for the project
- Do a conceptual design for the new project
- Estimate size
- Estimate effort

Entering Your Process - 1

An “Analysis Report” task has already been created for you within your dashboard hierarchy.

To customize it, we will open the Hierarchy Editor.

To open this editor, choose “Hierarchy” from the “C” menu.



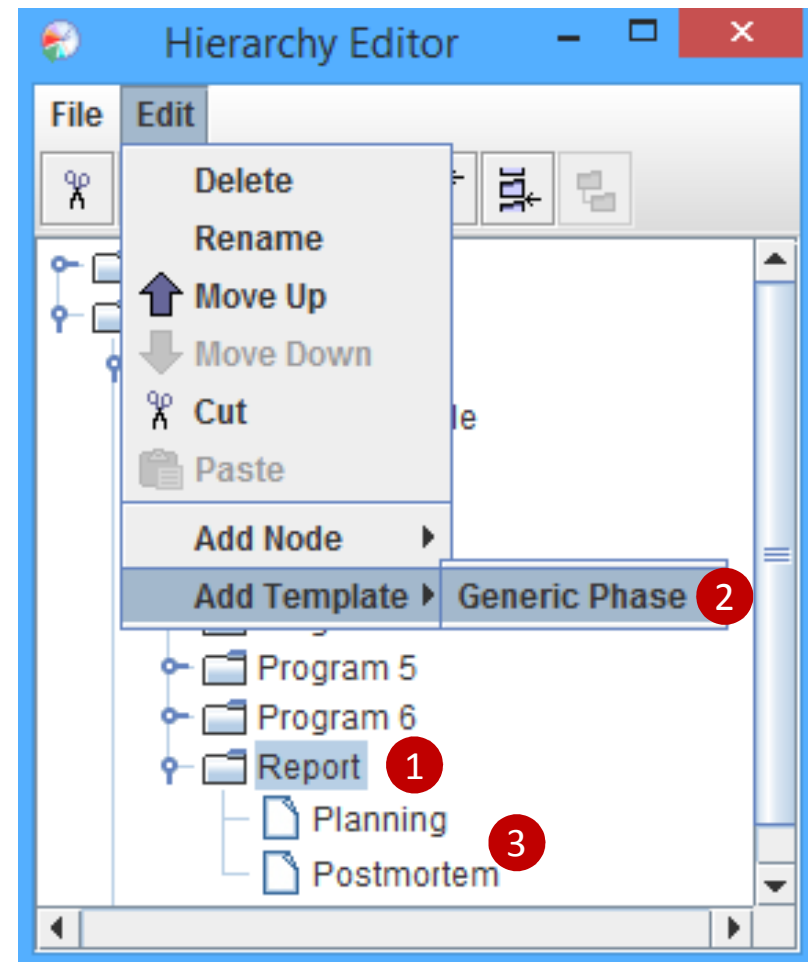
Entering Your Process - 2

Expand nodes in the hierarchy to find the “Analysis Report” task.

Then, for each of the phases in your process:

1. Click on the “Analysis Report” task
2. On the menu bar, choose “Edit → Add Template → Generic Phase”
3. Enter the name for the phase
4. Return to step 1

When you are done, choose “File → Save.” Then close the editor window.



Open Project Plan Summary



1. Back on the main dashboard toolbar, use the task selector to choose the Analysis Report task.
2. Then use the script button to open the Project Plan Summary for your custom process.

Project Planning Summary

Project Owner: J.D. Veloper

Start Date:

Completion Date: Completed: ☐

[Customize...](#)

Summary	Plan	Actual	Est.Err.%
Productivity (Units/Hr)	#VALUE!	#VALUE!	
Time	0.00	0.00	#DIV/0!

Size (Units)	Plan	Actual	
Base (B)	0	0	
Deleted (D)	0	0	
Modified (M)	0	0	
Added (A)	#VALUE!	#VALUE!	
Reused (R)	0	0	Est.Err.%
Added & Modified (A + M)	????	#VALUE!	#VALUE!
Total Size (T)	#VALUE!	????	
Total New Reusable	0	0	
Estimated Proxy Size (E)	0	0	
Size UPI (70%)	0		
Size LPI (70%)	0		

Time in Phase (min.)	Plan	Actual	Actual %
Planning	0.00	0.00	#DIV/0!
Analyze	0.00	0.00	#DIV/0!
Write	0.00	0.00	#DIV/0!

Customize Size Metric

The screenshot shows the 'Project Planning Summary' web form. The 'Customize...' button is circled in red. A dialog box titled 'Customize Project: /Non Project/PSP Fundamentals & Advanced/Analysis Report' is open, showing options to 'Display defect metrics' (unchecked) and 'Display size metrics' (checked). The 'Size unit of measurement' is set to 'LOT'. The background form includes fields for Project Owner, Start Date, Completion Date, and a table of metrics.

Summary			
Productivity (Units/Hr)			
Time			
Size (Units)			
Base (B)			
Deleted (D)			
Modified (M)			
Added (A)	#VALUE!	#VALUE!	
Reused (R)	0	0	Est.Err.%
Added & Modified (A + M)	?????	#VALUE!	#VALUE!
Total Size (T)	#VALUE!	?????	
Total New Reusable	0	0	

On the Project Plan Summary form, click the Customize button.

You can choose a custom unit of size measurement here.

For this report, we will use “LOT” for “Lines of Text.”

Press the OK button to apply your changes.

Create the Conceptual Design – 1

Next, we will create a conceptual design to help estimate the size of the report and the effort that will be required. On the script menu, choose Size Estimating Template.

The screenshot shows the 'Process Dashboard' application window. A menu is open, and 'Size Estimating Template' is selected, indicated by a red circle and an arrow. The main window displays the 'Size Estimating Template' form.

Size Estimating Template [\(instructions...\)](#)

Project Name: /Non Project/PSP Fundamentals & Advanced/Analysis R
 Project Owner: J.D. Veloper
 Size Measure: LOT

BASE PARTS	Estimated				Actual			
	BASE	DELETED	MODIFIED	ADDED	BASE	DELETED	MODIFIED	ADDED
	0	0	0	0	0	0	0	0
add more rows for base parts...	Total: 0				0			

PARTS ADDITIONS	Estimated				Actual			
	TYPE	ITEMS	REL. SIZE	SIZE	NR.	SIZE	ITEMS	NR.
add more rows for parts additions...	Total: 0				0			

Create the Conceptual Design – 2

Look at the report requirements in the assignment kit, and think about the sections of the report that you plan to write. Enter these in the Parts Additions section of the Size Estimating Template, one per line.

Size Estimating Template

localhost:2468/Non+Project/PSP+Fundamentals+%26+Advanced/Analysis+Report//generic/si

Size Measure: LOT

BASE PARTS	Estimated				Actual			
	BASE	DELETED	MODIFIED	ADDED	BASE	DELETED	MODIFIED	ADDED
	0	0	0	0	0	0	0	0
add more rows for base parts...	Total:				Total:			
	0	0	0	0	0	0	0	0

PARTS ADDITIONS	Estimated				Actual			
	TYPE	ITEMS	REL. SIZE	SIZE	Nr.	SIZE	ITEMS	Nr.
Size Analysis								
Time Analysis								
add more rows for parts additions...	Total:				Total:			
		0				0		

Create the Conceptual Design – 3

To estimate the sizes of these report sections, we need to assign them types and relative sizes. Unfortunately, we do not have any historical data on writing reports – so we will need to use our engineering judgment. To begin, click on the “Type” hyperlink.

Size Estimating Template

localhost:2468/Non+Project/PSP+Fundamentals+%26+Advanced/Analysis+Report//generic/si

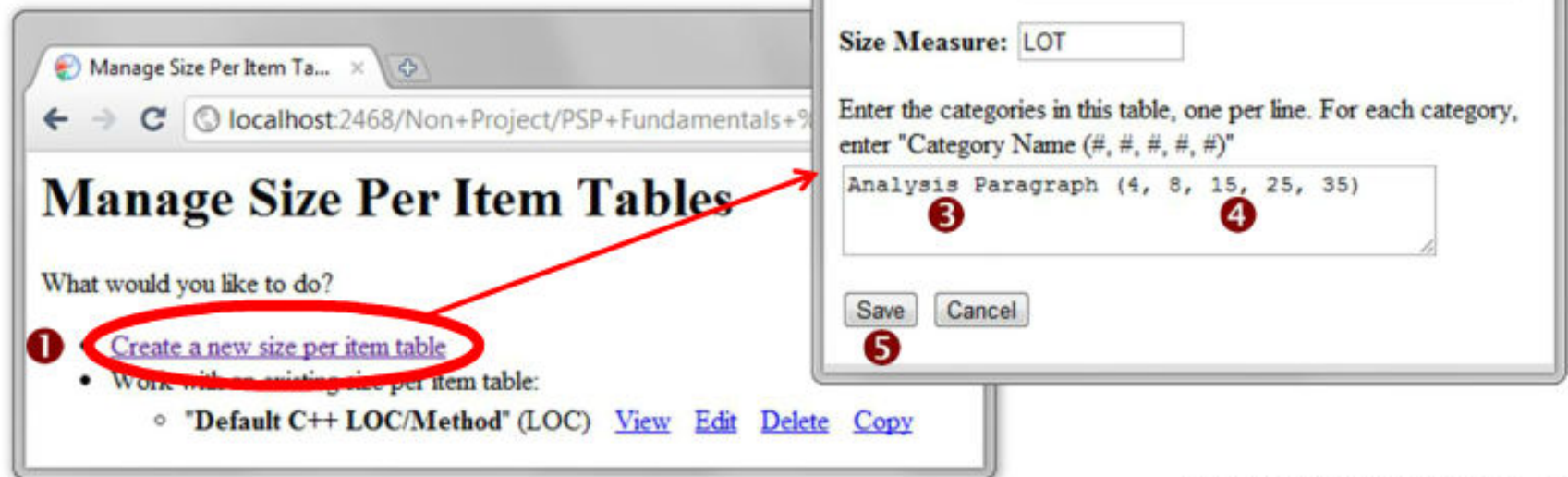
Size Measure: LOT

BASE PARTS	Estimated				Actual			
	BASE	DELETED	MODIFIED	ADDED	BASE	DELETED	MODIFIED	ADDED
	0	0	0	0	0	0	0	0
add more rows for base parts...	Total:				Total:			

PARTS ADDITIONS	Estimated					Actual		
	TYPE	ITEMS	REL. SIZE	SIZE	NR.	SIZE	ITEMS	NR.
Size Analysis								
Time Analysis								
add more rows for parts additions...	Total:					Total:		

Create Estimated Proxy Size Table

1. Click the link to create a new proxy size table.
2. Enter a name for the proxy table.
3. Enter the name of a size proxy type.
4. Use your best judgment to estimate the sizes of very-small, small, medium, large, and very-large items.
5. Save your new custom size table.



Estimate Conceptual Design Sizes

Back on the Size Estimating Template:

1. Select the new proxy type for each added part.
2. Estimate the number of items (paragraphs) and their relative size.
3. The “Lines of Text” estimate will be drawn from your custom proxy size table.

Size Estimating Template

localhost:2468/Non+Project/PSP+Fundamentals+%26+Advanced/Analysis+Report//generic/si

PARTS ADDITIONS	Estimated					Actual		
	TYPE	ITEMS	REL. SIZE	SIZE	NR.	SIZE	ITEMS	NR.
Size Analysis	Analysis Paragraph	4	Large	100	<input type="checkbox"/>			<input type="checkbox"/>
Time Analysis	Analysis Paragraph	5	Medium	75	<input type="checkbox"/>			<input type="checkbox"/>
Total:					175		0	

[add more rows for parts additions...](#)

Estimate Size and Effort

Once you are satisfied with your conceptual design, click the link for the PROBE Wizard.

For this report, the PROBE Wizard will instruct you to use:

- Method D for Size (accepting the size of your conceptual design)
- Method D for Time (making your best estimate of the time needed)

In the future, when you create documents measured in LOT (Lines of Text), the PROBE Wizard will analyze your history of completed documents and potentially offer Methods A, B, and C, which will:

- Adjust for historical estimating biases
- Make projections based on your historical productivity

Plan Summary

1. Your size and time estimates will be copied into the Project Plan Summary automatically.
2. Estimate the amount of time that you expect to spend in each phase of the process. Enter those numbers in the Plan Time column.

The screenshot shows a web browser window titled "Project Planning Summary" with the URL "localhost:2468/Non+Project/PSP+Fundamenta". The window displays two tables for project planning data.

Size (LOT) Table:

	Plan	Actual	
Base (B)	0	0	
Deleted (D)	0	0	
Modified (M)	0	0	
Added (A)	175	#VALUE!	
Reused (R)	0	0	Est.Err. %
Added & Modified (A + M)	175	#VALUE!	#VALUE!
Total Size (T)	175	?????	
Total New Reusable	0	0	
Estimated Proxy Size (E)	175	0	
Size UPI (70%)	N/A		
Size LPI (70%)	N/A		

Time in Phase (min.) Table:

	Plan	Actual	Actual %
Planning	0:15	0:00	#DIV/0!
Analyze	2:00	0:00	#DIV/0!
Write	2:00	0:00	#DIV/0!
Review	0:40	0:00	#DIV/0!
Postmortem	0:05	0:00	#DIV/0!
Total	5:00	0:00	

Red circles with numbers 1 and 2 are placed over the "Added & Modified (A + M)" row in the Size table and the "Write" row in the Time table, respectively.

Enacting the Process

While writing the report, use the play/pause buttons to log time to the phases in your custom process.

During postmortem, measure the size of your final report. Enter the actual size on the Size Estimating Template and the Project Plan Summary.

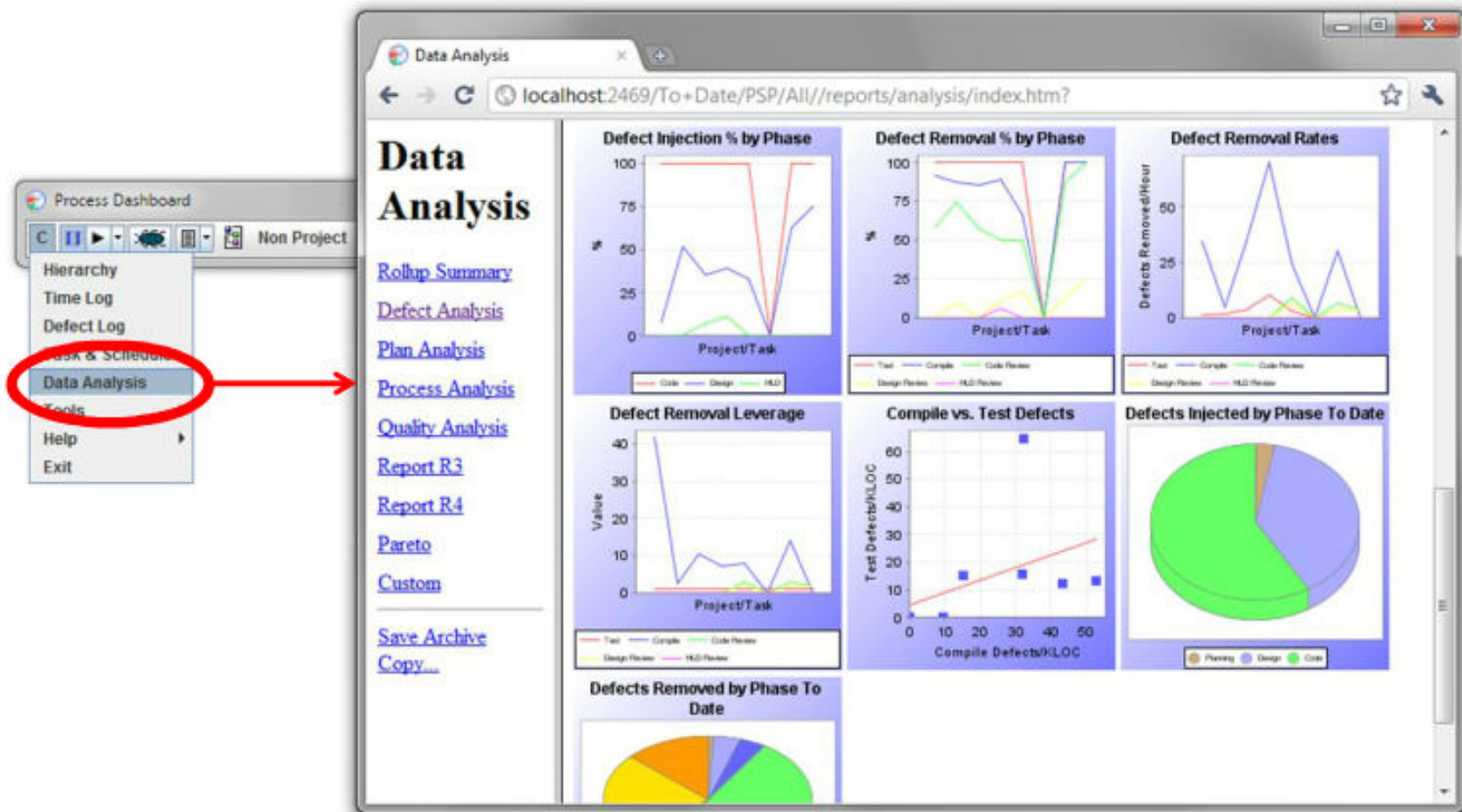
The screenshot shows a web browser window titled "Project Planning Summary" with the URL "localhost:2468/Non+Project/PSP+Fundamenta". The page displays two tables. The first table, "Size (LOT)", compares planned and actual sizes for various categories. The second table, "Time in Phase (min.)", compares planned and actual times for different project phases. A red circle highlights the "Actual" value of 223 for the "Total Size (T)" row in the first table.

Size (LOT)	Plan	Actual	Est.Err. %
Base (B)	0	0	
Deleted (D)	0	0	
Modified (M)	0	0	
Added (A)	175	223	
Reused (R)	0	0	
Added & Modified (A + M)	175	223	27.4%
Total Size (T)	175	223	
Total New Reusable	0	0	
Estimated Proxy Size (E)	175	0	
Size UPI (70%)	N/A		
Size LPI (70%)	N/A		

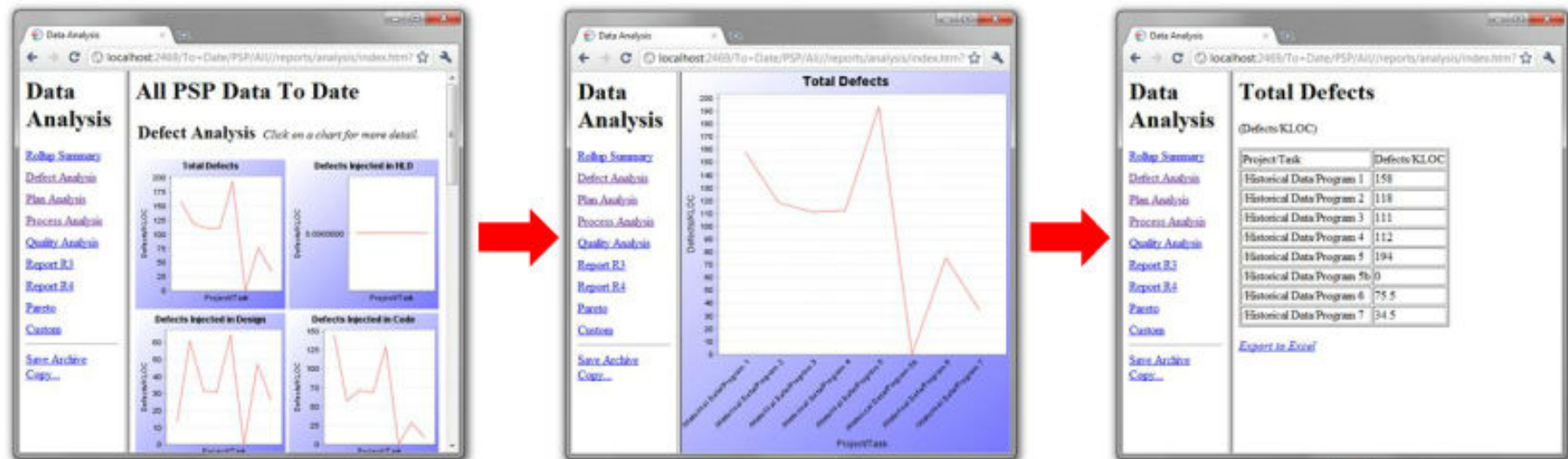
Time in Phase (min.)	Plan	Actual	Actual %
Planning	0:15	0:10	3.22%
Analyze	2:00	2:13	42.8%
Write	2:00	2:10	41.8%
Review	0:40	0:26	8.36%
Postmortem	0:05	0:12	3.86%
Total	5:00	5:11	

Analysis Report – Helpful Tips – 1

The Process Dashboard “C” Menu contains a “Data Analysis” option. This option will display charts and reports summarizing your metrics.



Analysis Report – Helpful Tips – 2



- Click on a small chart to see a larger view.
- Resize your browser window as desired to adjust the size of the enlarged chart. Then copy the chart into your report.
- Click on a large chart, and the underlying data will be displayed.
- This data can be exported to Excel if you wish to perform additional custom analyses.

The data from the 'Total Defects' table is shown in the following Excel spreadsheet:

Project/Task	Defects/KLOC
/Historical Data/Program 1	158
/Historical Data/Program 2	118
/Historical Data/Program 3	111
/Historical Data/Program 4	112
/Historical Data/Program 5	194
/Historical Data/Program 5b	0
/Historical Data/Program 6	75.5
/Historical Data/Program 7	34.5

Analysis Report – Helpful Tips – 3

The Data Analysis center is designed to help analyze data from real-world projects. As a result:

- It will only display data from projects that have been marked complete
- Trend charts will show data in chronological order, based on the completion date for each project.

Before you begin your report, click on a chart to view the underlying data. If some of your PSP assignments are missing from the list, or if they appear in the wrong order, you should immediately:

- Open the Project Plan Summary for the affected projects
- Edit the completion dates as necessary

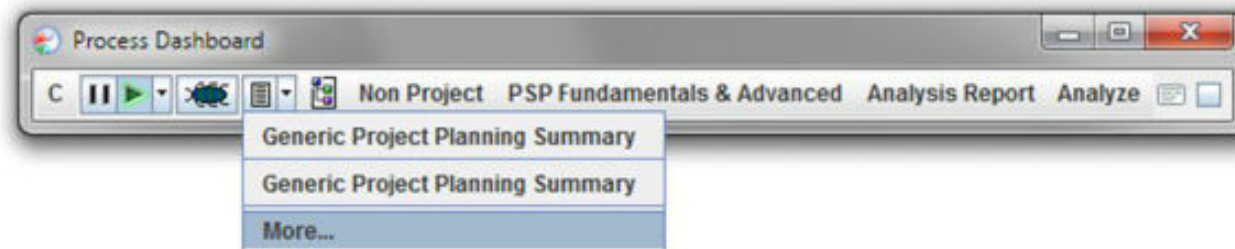
Analysis Report – Helpful Tips – 4

You will be using the dashboard to track the amount of time that you spend on the various phases in the Analysis Report. Thus, your timer will be running while you write the report.

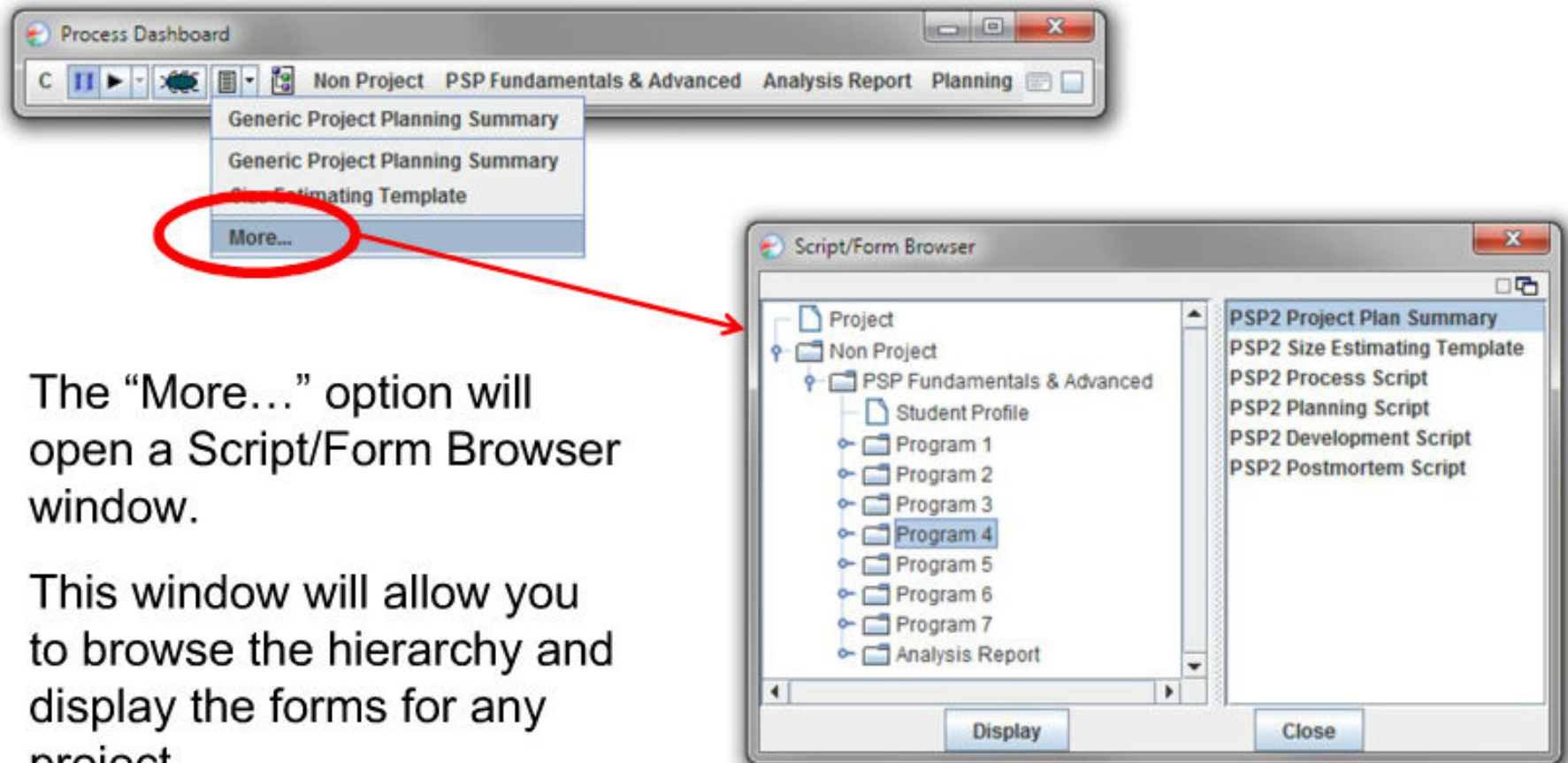
During your analysis, you may wish to open the forms for your past programs to view the data.

Do not use the active task selector to change back to the past program, as you might accidentally start logging time to the completed program!

Instead, open the script menu and click “More...”



Analysis Report – Helpful Tips – 5



The “More...” option will open a Script/Form Browser window.

This window will allow you to browse the hierarchy and display the forms for any project.



Messages to Remember

The Process Dashboard can be used to:

- Define a non-software process
- Define a non-software size measure
- Create a non-software project
- Plan a non-software project
- Analyze your historical data