IBM WEBSPHERE 6.0 - LAB EXERCISE

Simulating a Process with WebSphere Business Modeler V6

What this exercise is about

The objective of this lab is to provide you with hands-on experience in Simulation and Analysis functionality in the WebSphere Business Modeler V6.

Lab Requirements

List of system and software required for the student to complete the lab.

- WebSphere Business Modeler V6 installed
- Sample code in the directory C:\Labfiles60 (Windows)

What you should be able to do

At the end of this lab you should be able to:

- Static Analysis
- Simulation
- Dynamic Analysis

• Generate and Export Reports

Introduction

In this lab you will learn how to perform static analysis for the process created in previous labs. This lab will show you how to take a simulation snapshot and then run the simulation. After the simulation, you will learn how to generate and export reports of dynamic analysis.

Exercise Instructions

This lab walks you through the steps to analyze and simulate the process and then generate and export reports of the performed analysis.

Part 1: Initialize Workspace

- 1. Start WebSphere Business Modeler.
 - ____i. To start the Modeler, click Start > Programs > WebSphere Business Modeler > WebSphere Business Modeler.
 - ____j. The Modeler workspace window will appear. Click the Browse button and select
<LAB_FILES>\SimulateProcess\workspace as your workspace directory.

WebSphere Business Modeler	
WebSphere Business Modeler stores your work in a directory called a workspace. You can change the worksp each time you start the application. Specify the directory to use for this session:	bace
C:\Labfiles60\SimulateProcess\workspace Browse	·
Use this as the default workspace, and do not show this dialog box again.	
Show Details OK Cance	el

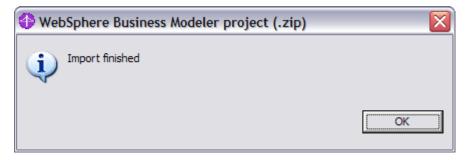
- ___ k. Click **OK**.
- ___I. When WebSphere Business Modeler starts, close the Quickstart wizard by clicking Cancel.
- ____m. Close the Welcome view by clicking the **X** at the top of the view.

Business Modeling - IBM WebSphere							
<u>F</u> ile	Edit	Navigate	Se <u>a</u> rch	Project	Modeling		
	Welco	me 🛛					
	WebS	iphere. E	Busine	ss Mo	deler		
100							

- _____2. Import the process into the workspace.
 - ____i. Click File > Import.
 - ____j. Select WebSphere Business Modeler Import from the list.
 - ___ k. Click Next.
 - ___I. Ensure WebSphere Business Modeler project (.zip) is selected and click Next.
 - ___ m. Click Browse... and navigate to <LAB_FILES>\SimulateProcess\import\.
 - ___n. Select ProcessScenario_Start.zip.
 - ____ o. To the right of the Target project field, click **New**.
 - ____ p. Change the New project name to **ProjectScenario**.

Create a new business modeling project
Create a new business modeling project
Click Finish to create the new element.
New project name
ProjectScenario
Default process catalog name
Processes
Create process.
Name
< <u>Back</u> <u>Next</u> > <u>Finish</u> Cancel

- ____i. Click **Finish**. The Target project field should be filled in with the ProjectScenario value.
- ___ j. Click Finish.
- ____k. Click **OK** to the Import finished message.



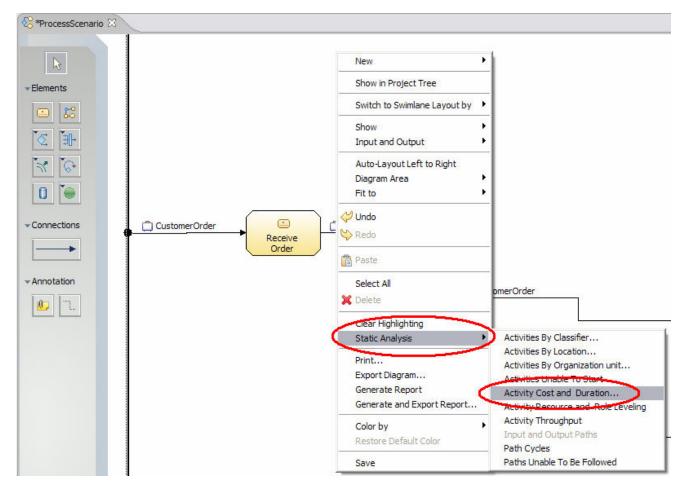
Part 2: Static Analysis

There are many static analysis reports available:

- Resource Model Analysis allows you to extract information on resources, roles and timetables that you have defined in your project.
- Organization Model Analysis allows you to identify the usage and position of organization model elements within structures and structure definitions.
- General Analysis allows you to determine the relationships of model elements with each other.

In this exercise, you will only reference a subset of these reports.

- 1. In the Project Tree view, expand ProjectScenario\Processes and open the process by double clicking the **ProcessScenario** process.
- 2. Perform the Activity Cost and Duration analysis from the process diagram:
 - ____ a. Right click the empty area of your process diagram and select Static Analysis > Activity Cost and Duration.



____b. Click **Finish** to accept the default start and end time.

🚯 Activity (Cost And Duration	
Start Time a	nd End Time	
Select start ti	me and end time	
Start time	Saturday, January 1, 2005 12:00:00 AM CST	Select Time
End time	Sunday, January 1, 2006 12:00:00 AM CST	Select Time
	Einish	Cancel

____ c. The Activity Cost and Duration view will be displayed:

Attributes - ProcessScena	ario Simula	tion Control Panel Errors (Filter matched 0 of	0 items) DStatic Analysis 🛛 Dyn	iamic Ana
Activity Cost and Duration	n Analysis	ProcessScenario 12:14:57 PM CST		
Activity Cost and Durat	ion Analysi	s ProcessScenario 12:14 PM		
Activity	Cost	Allocated Resources Total Working Duration	Activity Minimum Working Duration	Notes
Approve Order	\$300.00	2 hours	2 hours	
Package and Ship	\$100.00	30 minutes	30 minutes	
Receive Order	\$100.00	1 hour	1 hour	

Note that these values were assigned in process already.

The Activity Cost and Duration analysis returns the cost of each activity as a sum of the average costs of the allocated resources. It also computes the total working duration of the allocated resources of each activity, and the minimum working duration of the activity.

- 3. Perform Static Analysis from the **Project Tree** view.
 - ____a. Right-click anywhere in the Project Tree view and select Static Analysis > Resource Analysis > Resource Costs Summary.

- Resources Costs Summary Analysis

 Resource Catalogs

 Select Resource Catalogs

 Resources

 Resources

 Resources

 Resources

 Resources

 Resources

 Resource Catalog

 Select all

 Deselect all

 Cancel
- ____b. Select ProcessScenario Resource Catalog and click Next.

___ c. Click **Finish** to accept the default start and end time.

Resources Costs Summ	nary Analysis	\mathbf{X}
Start Time and End Time		
Select start time and end time	1	
Start time	Saturday, January 1, 2005 12:00:00 AM CST	Select Time
End time	Sunday, January 1, 2006 12:00:00 AM CST	Select Time
Consider Availability		
[< <u>Back</u> Mext > Einish	Cancel

The Resource Costs Summary Analysis results will be displayed in the Analysis View in the bottom righthand pane:

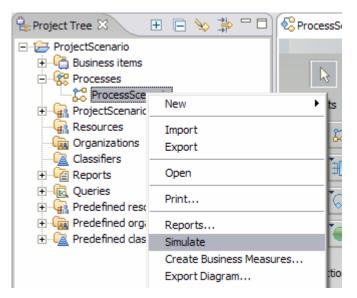
Resources Costs S	ummary Analysis I	ProcessScenario	12:23:57 PM CST					
Activity Cost and	d Duration Analysis	ProcessScenario	12:14 PM	Resources Costs Summary A	Analysis Process	Scenario 12:23 PM	a.	
Resource Name	Average One	Average Cost	Average Cost Pe	Average Cost Per Time Unit	Total Duration	Total Cost Per Time Unit	Annual Working Hours	Annual Per Time Unit Cost
Mike	\$0.00			\$6.83 / Hour	2904 hours	\$19,834.32	2,911	\$19,882.13
Jim	\$0.00			\$10.92875 / Hour	2904 hours	\$31,737.09	2,911	\$31,813.59125
John	\$0.00			\$5.465 / Hour	2904 hours	\$15,870.36	2,911	\$15,908.615

The Resource Costs Summary analysis determines the costs of multiple resources for all periods during which the resources are available between a specified start and end time.

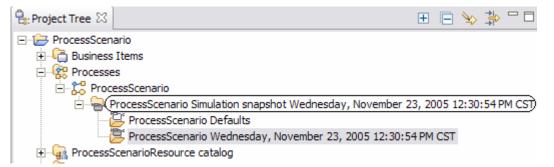
Part 3: Run a Process Simulation

Simulating processes assists in identifying issues and potential improvements. You can create one or more simulation profiles for each process and then use the Simulation Editor to specify attributes of the profile, such as the quantity of available resources, number, rate and composition of inputs to the process. You can also set specific conditions such as cumulative costs for the process.

- ___1. Create a Simulation Snapshot.
 - ____a. Right-click the ProcessScenario process in the Project Tree and select Simulate.



A new simulation snapshot will be created in the Project Tree and the ProcessScenario simulation profile opens in the Simulation editor.



- ____2. Specify simulation settings for the overall process.
 - ____a. Click in an open area in the Process Editor. The ProcessScenario Attribute View opens.
 - ____b. Click the **Inputs** tab in the **Attributes** view.
 - ____ c. Click the row that contains the CustomerOrder in the Associated Data input in the Token creation settings table.
 - ____ d. Click the scroll down arrow on the bottom-right of the Attributes View panel to review Token creation settings.

🗈 Attributes - ProcessScenario Friday, November 25, 2005 6:19:53 PM CST 🔀 🦉
General Inputs Input Logic Resource Pool
Remove Token Creation Settings
Number of tokens per bundle
1 Edit
Total number of tokens
One-time cost per token
0 Edit USD 🖵
⊙ Time trigger

____e. Click Edit next to the Total number of tokens data field.

____f. The Edit simulation attributes window opens. Under Literal value, enter 5.

	X
Edit simulation attribute	
Click OK to add or modify the value.	
⊙ Literal value	
5	
O Distribution	

This will cause the process to simulate 5 instances of the business process.

- ___g. Click **OK**.
- ___h. Save your project (Ctrl+S).
- 3. Check the complete simulation setup.

____a. In the simulation view of the process diagram, select the **Simulation attributes** tab.

Hide task/process attribut	tes 🔲 Hide decision,	loop attributes										
Name	Processing time	Resource wait time	Proc	Proces	Startup cost	Startup	Wait	Wait-ti	Time unit	Reve		Criterion
Receive Order	00:01:00:00.000	365:00:00:00.000	100.0	USD	0.0	USD	0.0	USD	Second	0.0	USD	
Approve Order	00:02:00:00.000	365:00:00:00.000	300.0	USD	0.0	USD	0.0	USD	Second	0.0	USD	
Package and Ship Order	00:00:30:00.000	365:00:00:00.000	100.0	USD	0.0	USD	0.0	USD	Second	1000.0	USD	
+ Is Order less than \$500?												

This summarized view is new in Modeler V6, and can be used for editing as well. The simulation attributes panel provides a full overview of simulation setup. This view is editable, and any values modified and saved will be used in the simulation.

Note: If the Simulation attributes view is blank, enlarge the window by double-clicking on the top tab. The table should appear. Double-click on the top tab again to restore it to the original size.

____b. Click the **Diagram** tab to switch back to the process diagram.

- ____4. Simulate the ProcessScenario process.
 - ____a. Click the **Simulation Control Panel** tab (located at the bottom of pane and at the top of the Attributes View).
 - ___b. Click the Run ⊵ icon on the upper-right of the Control Panel toolbar.



The simulation starts and runs until completion, based on the default attributes. During the simulation, you will see the ProcessScenario process in action, and each token will flow through the process. You can control the simulation by clicking the various icons in the Control Panel toolbar. To pause the simulation,

click the Pause 🛄 icon. To stop the simulation, click the Stop 💻 icon.

As the simulation runs the simulation statistics are displayed in the Control Panel.

imulation complete						
ocesses Tasks Connections						
	Process start time	Process end time	Total revenue	Total cost	Total profit	
ProcessScenario Wednesday, November 23,	November 23, 2005 12:	November 23, 2005 2:0	1,000 USD	200 USD	800 USD	
ProcessScenario Wednesday, November 23,	November 23, 2005 12:	November 23, 2005 4:0	1,000 USD	505.556 USD	494.444 USD	
ProcessScenario Wednesday, November 23,	November 23, 2005 12:	November 23, 2005 4:0	1,000 USD	529.167 USD	470.833 USD	
ProcessScenario Wednesday, November 23,	November 23, 2005 12:	November 23, 2005 2:0	1,000 USD	202.778 USD	797.222 USD	
ProcessScenario Wednesday, November 23,	November 23, 2005 12:	November 23, 2005 4:0	1,000 USD	500 USD	500 USD	

____ c. Check the **Collect and display statistics** across process instances box at the bottom to view generated statistics as averages for all process instances.

Simulation complete						
Processes Tasks Connections	<u></u>					
	Simulation start time	Current simulation time	Instances created	Instances completed	Average duration	Avera
ProcessScenario Wednesday, November 23,	November 23, 2005 12:	November 23, 2005 4:0	5	5	2 hours 42 minutes	1,000
<						>

Collect and display statistics across process instances

- 5. You may experiment with turning off the animation, which makes simulation faster.
 - ____a. Click on the simulation **control panel** tab, and then select the drop down arrow at the upper right corner of the panel. Select **Setting**.

Attributes - ProcessScenario Wednesday, November 23	, 2 🐼 Simulation Contro	l Panel - ProcessScenario We	dnesday, No 🛛 E	rrors (Filter matched 0 of 0 items)	Static Analysis	Dynamic Analysis	
						00 🔲 👁 🕻	> 📀
Simulation complete						Setting	
Processes Tasks Connections					Stop		
	Simulation start time	Current simulation time	Instances created	Instances completed	Average dura	🔿 Step	3
ProcessScenario Wednesday, November 23,	November 23, 2005 12:	November 23, 2005 4:0	5	5	2 hours 42 m	i ⊳ Run	2

____b. Under Animation settings, uncheck the Display animation during simulation. Then click OK and run (>>) the simulation again if desired.

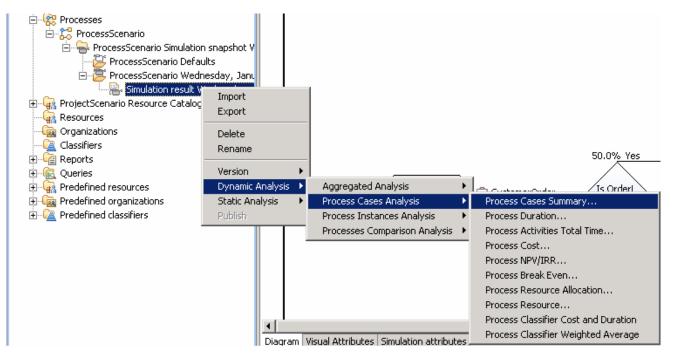
Simulation Settings	
Step settings Number of tasks per step 1	
Animation settings	
Speed Slow Fas	t

Part 4: Dynamic Analysis

You can perform detailed analysis on the results of your simulations to extract information regarding scheduling, costs, output, and other statistics pertaining to your processes.

You can perform the following types of dynamic analysis with WebSphere Business Modeler:

- Aggregated Determines information about activities and resources used in all process instances generated during a simulation.
- Process Cases and Process Instances Performs a process instances summary analysis to list the process cases and process instances generated in process simulation run and to show the probability of occurrence for each process case.
- Process Comparison Compares the weighted average analysis results for two simulated processes that use the same input parameters.
- 1. Review dynamic analysis reports.
 - ____a. From Project Tree view, select and expand ProcessScenario process.
 - b. Right-click the simulation results of ProcessScenario in the Project Tree and select Dynamic Analysis > Process Cases Analysis > Process Cases Summary.



___ c. Click **OK**.

____d. Select All process instances.

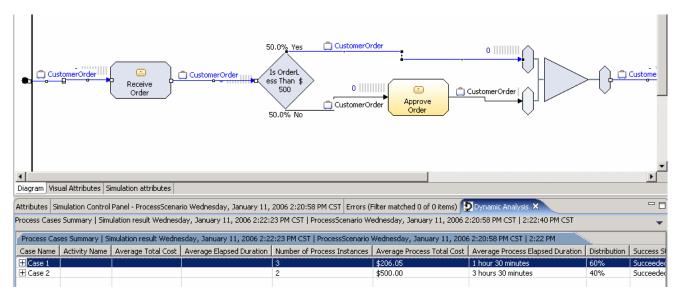
Process Cases Summary	$\overline{\mathbf{X}}$
Which process instances you want to use ?	
 O Succeeded process instances only O Failed process instances only O All process instances 	
	Finish Cancel

- ___e. Click Finish.
- _____f. If you are doing for the first time, you will see the Path Signatures window. Uncheck the **Always** show this dialog? radio button and click **Yes**.

🚯 Path Signatures 🛛 🔀
Path signatures doesn't exist. Generating it may take a while, do you want to continue?
Always show this dialog?
Yes No

____g. The Process Cases Summary Analysis results will be displayed in the Analysis View in the bottom right-hand pane. The result list provides a summary of all cases executed in this simulation, the number of instances, cost, duration and distribution.

h. Click the **Case 1** cell on the Analysis results, and note that the path of **Case 1** is highlighted in blue.



Part 5: Generate and Export Reports

This section of the exercise demonstrates how to generate and export the results of any analysis that you have run and have not closed in the Analysis View.

- 1. The Process Case Summary results are displayed in the Analysis view in the bottom right-hand pane. Export these results.
 - ____a. Right-click from analysis view and select Generate and Export Report.

Process Cases Summary Simulation result Saturday, November 26,					
Case Name	Activity Name		Average Total Cost A		
+ Case 1					
+ Case 2		Rerun			
		🦑 Refresh			
		🖹 Print			
		Generate and Ex	(port Report D		
		Expand All			
		Expand Whole S	ubtree		

____b. Select **ProcessCasesSummary** from the Report Template window. The **Standard report templates** options should already be selected.

•	
Report template	
(i) Select a report template	
ProcessCasesSummary	
• Standard report templates	
O Customized report templates	
	/
	OK Cancel

- ___ c. Click **OK**.
- ____d. An Export Format window opens. Select the PDF File (pdf) option from the Export Format.

- ____e. Click **Browse** button to select the **C:**\ drive.
- ____f. Type ProcessCaseReport.pdf as the file name.
- ___g. Click **Save**.
- ___h. Select the Show preview dialog after export option.

Export Report	
Export Report Specifications	
(i) Click finish.	
Emeral Emeral	
Select the format for report exporting:	
PDF File (pdf)	
Export Destination	
Select the destination for report exporting:	
C:\temp\ProcessCaseReport.pdf Browse	
✓ Show preview dialog after export	
	/
	Grand
Einish	Cancel

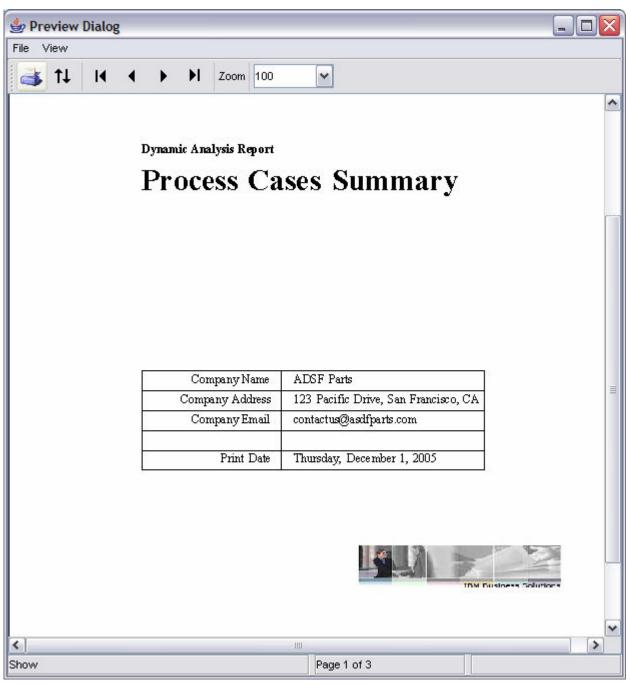
___ i. Click Finish.

____j. The report can be customized with company information. The Enter Parameters Values dialog box will be displayed. Select **Company Name** and enter **ASDF Parts** in the Enter Parameter Value field.

Enter Parameter Values	
Enter Parameter Values	
Parameter Fields	
Company Name	
Company Addresss Company Email	
Jeonparty Entail	
Parameter Description	
Enter company name	
Parameter Value	
Enter Parameter Value: ADSF Parts	
	/
	OK Cancel

- ____k. Select **Company Address** and enter **123 Pacific Drive, San Francisco, CA** in the Enter Parameter Value field.
- ____I. Select **Company E-mail** and enter <u>contactus@asdfparts.com</u> in the Enter Parameter Value field.

___ m. Click OK.

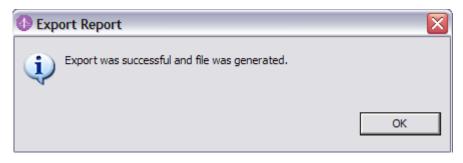


____n. A **Preview Dialog** window will be displayed with the Process Case Summary:

____o. Review all the pages in this document.

____p. Close the **Preview Dialog** when finished.

____q. Click **OK** from the **Export Report** window:



What you did in this exercise

In this lab, you performed static analysis for the process ProcessScenario. You then developed a simulation snapshot, from where you ran a simulation with the input settings. You completed the exercise by performing a dynamic analysis for which you generated and exported a report in pdf format.

Solution Instructions

There are no solution instructions since this exercise is a sequence of steps to be completed on existing artifacts.

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