WebSphere Education

Summary of simulation and analysis

Unit 24

Unit objectives

After completing this unit, you should be able to:

- Describe process simulation
- Conduct dynamic analysis
- Apply process improvement methodologies
- Create custom queries and reports
- Define business measures
- Export models from WebSphere Business Modeler

Simulation terminology

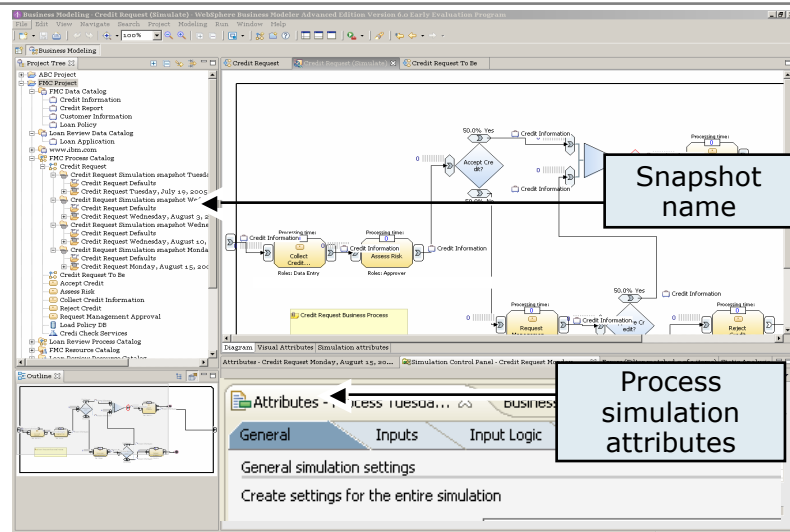
- Simulation snapshot
  - A record of the model that will be simulated
- Simulation profile
  - A record of the model plus the simulation attributes
- Statistics and results
  - The information that comes out of the simulation
- Probabilities or expressions
  - The way decisions are handled during simulation
- Tokens
  - Represent units of work passing through the process
- Process instances
  - Each execution of a process in a simulation
- Process cases
  - Each path through a process
- Random number generation
  - The introduction of real-life variability into a simulation

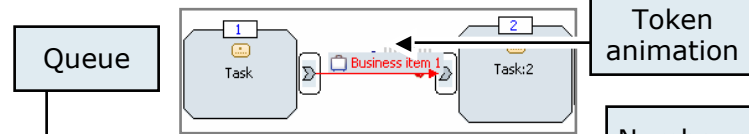
Element behavior in simulation

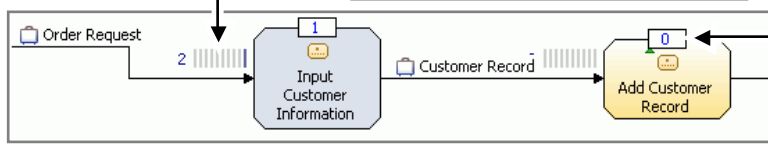
- Process time and cost
  - Accumulates the attributes of all the included element attributes
  - Uses the process attributes if there are no elements inside
- Service time and cost
  - Uses the service attributes to determine how it performs work
- Task and map
  - Uses its attributes to determine the time and cost of its work
- Timer, broadcaster, receiver, repository, timetable
  - Uses the attributes to affect the behavior of the process
- Decisions, merges, forks and joins
  - Uses attributes to affect the flow of the process through probabilities or expressions
- Roles and resources
  - Determines time and cost based on specified allocations
  - Resource attributes take precedence over role attributes

Simulation snapshot

- The simulation snapshot opens in a tab over the process editor
  - Snapshot name
    - Rename to document settings
  - Simulation attributes
    - Define the simulation behavior
  - Token animation
    - Watch the movement of tokens
    - Look for bottlenecks
  - Activity color
    - Changes color when active
  - Instances
    - Displays number of instances
  - Queue
    - Number of tokens waiting
    - Each bar represents two tokens
  - Animation is not necessary
    - Turning off shortens execution time







Where are distributions used?

- In WebSphere Business Modeler, probability distributions can be assigned to:
  - Token creation
  - Task completion times
  - Task costs
  - Task revenue

- Applying distribution settings to a model in the appropriate places enables greater accuracy in the representation of the process.

Dynamic analysis

- Profile analysis
  - Profile specification
  - Cases summary

- Dynamic analysis
  - Aggregated
  - Process instance
  - Process cases
  - Processes comparison

Process goal analysis

- Process goals are derived from specific organization goals and customer requirements
  - Organizations achieve their goals through the operations of their processes

- Process goal analysis is used to analyze a process to determine how well it supports the organization's goals
  - The performance of the process is analyzed and evaluated against its goals
  - Allows the focus to be set on increasing the probabilities of process cases that support organizational goals
    - Therefore, it reduces the probabilities of cases that do not support goals

Redesign analysis

- Shows the effects of adding tasks to, or deleting tasks from, a process during the redesign phase

- Use redesign analysis when you need to:
  - Identify improvement opportunities within a process
  - Measure the effects of redesigning a process

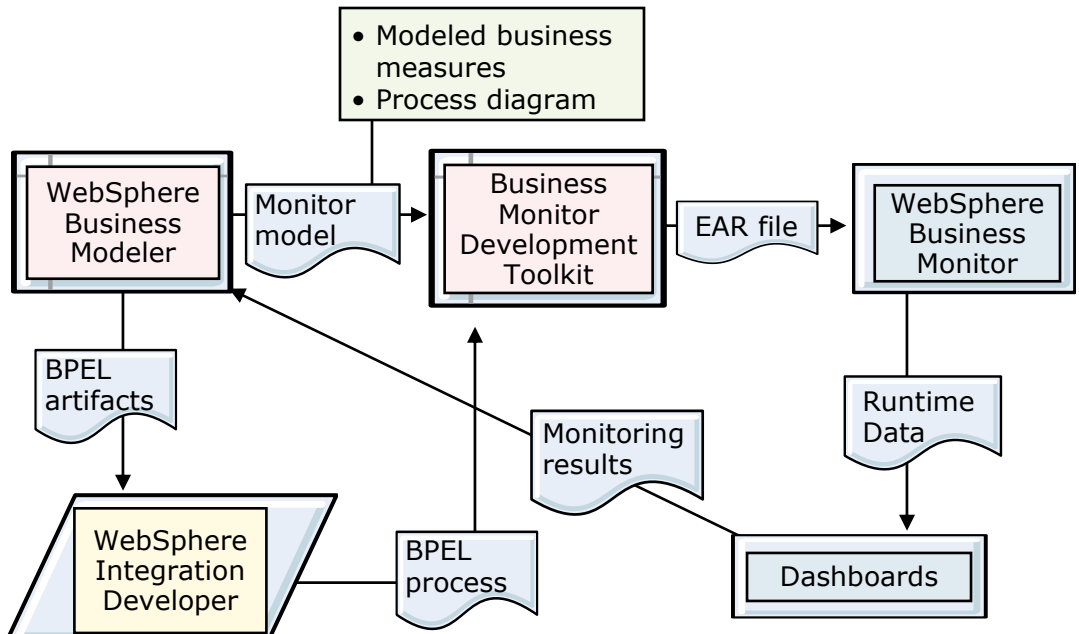
Custom reports

- Reports are a formatted presentation of information relating to a model or to the results of analyzing a process simulation
  - Predefined report details
    - Numerous predefined reports available in the product
  - Custom reports — report designer
    - Report catalogs
      - Organize report templates for different projects or uses
    - Report templates
      - Produce detailed reports with specific content in a specified format
    - Report style masters
      - Reuse header and footer content for multiple report templates
- Crystal Reports
  - Alternative way of creating and generating report templates

Why measure business performance?

- Monitor and control business operations
- Drive improvement of process efficiency
- Maximize the effectiveness of the improvement effort
- Achieve organizational goals and objectives

Life cycle of performance measurement



Basic monitor model elements

- Metric
  - Represents the value of a monitored item and helps in assessing performance in a particular business area
    - Example: Order processing time
  - Can have numeric values such as the number of items shipped, or non-numeric values such as the delivery dates of shipments

- Key performance indicator (KPI)
  - A quantifiable measure designed to track critical success factors of a business process
  - Example: Orders must be processed within three days (Order processing time < 3 days)

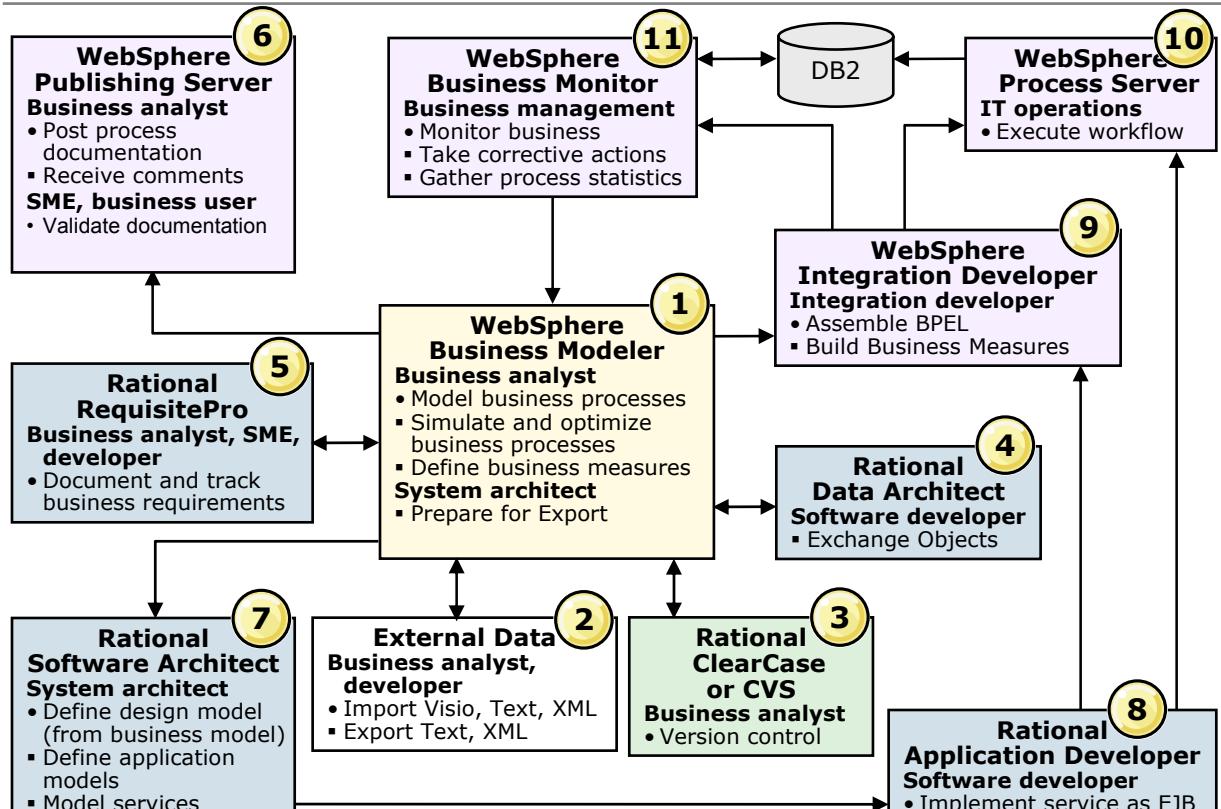
Exporting models to different formats (1 of 2)

- WebSphere Business Modeler project
  - Exports the selected project or elements into a MAR file
- WebSphere Integration Developer
  - Exports Service Component Architecture (SCA) artifacts and Business Process Execution Language (BPEL), Web Services Description Language (WSDL), and XML Schema Definition (XSD) files that can be imported into WebSphere Integration Developer to create an implementation for WebSphere Process Server
- WebSphere MQ Workflow Buildtime
  - Exports the selected project or element into a FlowMark Definition Language (FDL) file
- WebSphere Business Monitor Development Toolkit
  - Exports to an MM (monitor model) file and to two or more SVG files
- WebSphere Business Modeler XML
  - Exports the selected project or element into an XML file

Exporting models to different formats (2 of 2)

- WebSphere Studio Application Developer Integration Edition
  - Exports the selected project or elements into BPEL, WSDL, and XSD files. These files can then be imported into IBM WebSphere Studio Application Developer Integration Edition.
- FileNet Business Process Manager
  - Exports the selected process or process catalog as XPDL files. These files can then be opened with the Process Designer of FileNet P8 to create implementations for the FileNet P8 runtime environment.
- Rational Data Architect
  - Exports the selected business objects into XSD files. These files can then be imported into Rational Data Architect through the use of an XML to LDM transform.
- UML Business Modeling Profile
  - Exports the selected project or elements into a UML 1.4 XMI 1.1 file.
- Delimited text
  - Exports the selected project or element into a text file.

Modeler's relationship with other products



Course evaluation

- Complete the electronic course evaluation:
  http://qualsat.atlanta.ibm.com

- Your instructor will provide you with the course number and course code for your evaluation.

- If the classroom does not have Internet access, you will receive a link to the evaluation via e-mail after the course has ended.