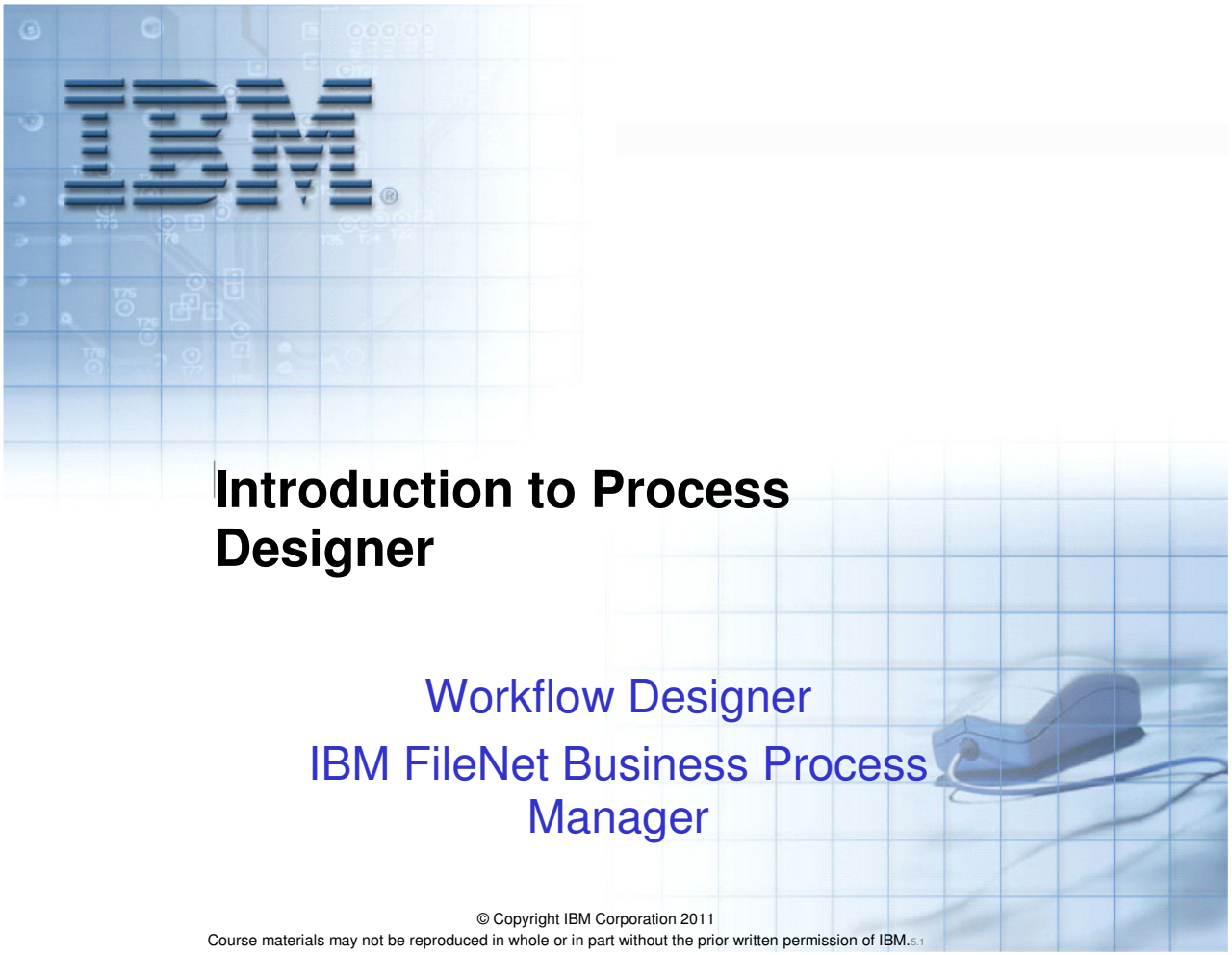


Introduction to Process Designer

Workflow Designer

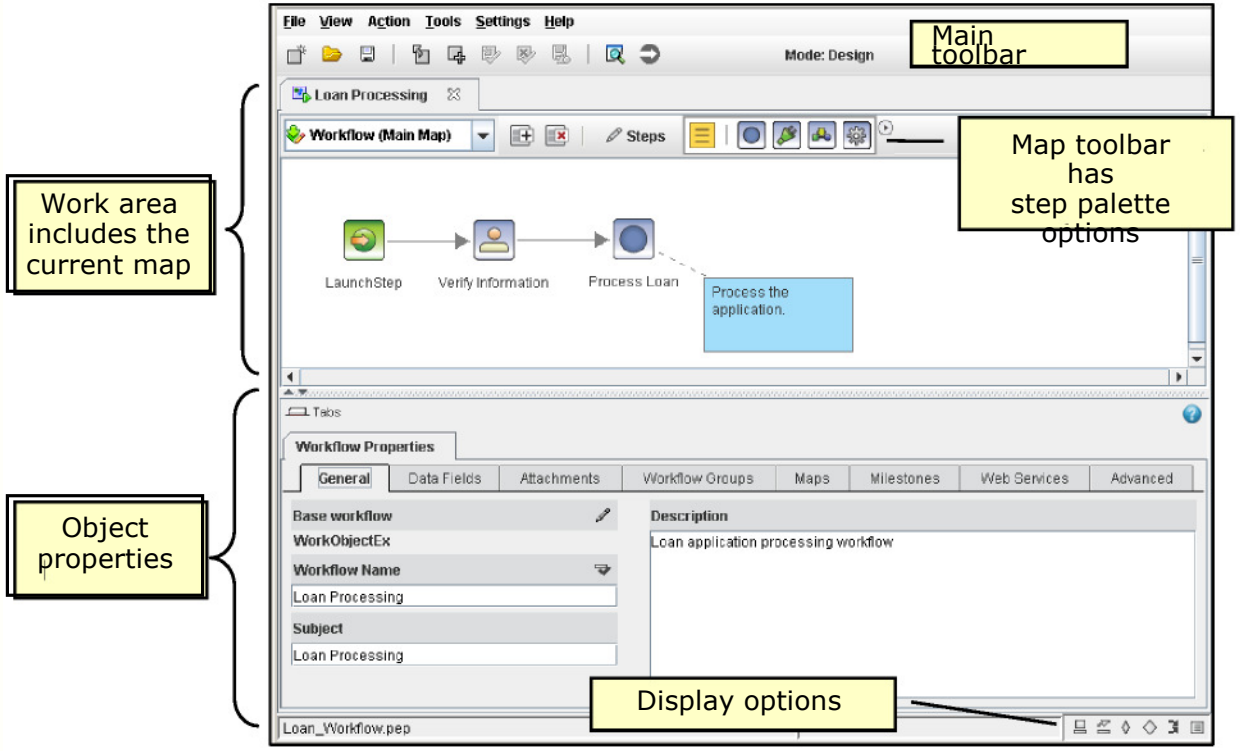
IBM FileNet Business Process Manager

Process Designer

- Application used by workflow designers to create and modify workflow definitions
- Opened through FileNet Workplace XT
- Works on one workflow definition file at a time
- Has two modes of operation:
  - Diagram mode
  - Design mode

Getting started with IBM FileNet Process Designer

The Process Designer Design mode interface

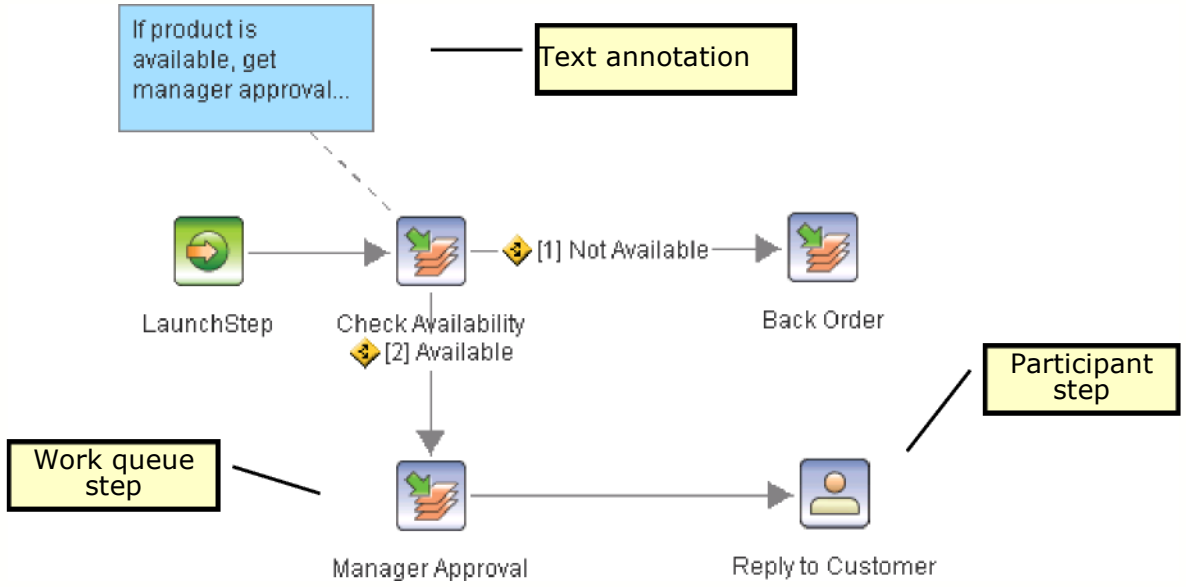


Workflow maps

- Graphical representation of the sequence of steps and routes necessary to complete a business process
- Each step represents an activity that is performed by one of the following:
  - One or more workflow participants
  - An automated system or process
  - A system function under control of the Process Engine
- Various step types are available to build a workflow map.
- Build and edit a workflow map in the map area of the Process Designer.

Example workflow map

- You add and position step and route symbols on the map.
- Multiple selection of elements, cut, copy, paste, and delete are available to edit the map.

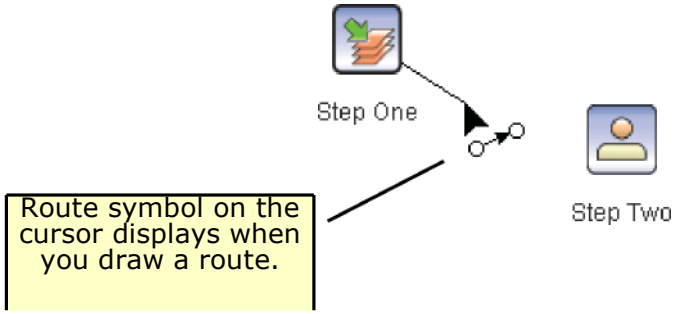


Add an activity step to a map

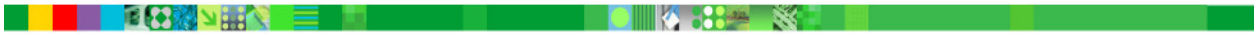
- Activity step is used for tasks that are assigned to a specific participant or group of participants or to a work queue
- Some general properties of an activity step:
  - Step name used for identification
  - Activity type specifies who performs the step
  - Instructions for the participant that are displayed in the step processor
  - Which step processor is used to process the step

Draw a route

- Routes connect the steps on a workflow map and indicate the path or flow of processing.
- Each step on a map has one or more routes leading from it.
- You can specify route properties:
  - Route name used for identification on the map
  - Route conditions, responses, and expressions
- Learn more about routing in later lessons.



Workflow definition file



- Is an electronic representation of a process that includes the following:
  - Workflow maps
  - Steps (tasks and properties)
  - Routes (routing logic and properties) - Information (data and resources)
- For a single-process workflow definition file, the file is saved in PEP format.
- The file type for a multiprocess workflow is discussed in another unit.

Save a workflow definition

- Save and Save As menu options
  - Saves a workflow definition to the local file system
  - The file can be used to launch the workflow only from Process Designer.
  - Good practice is to save interim changes locally as you design a workflow.
- FileNet Add New menu option
  - Saves a major version in the Content Platform Engine (CE) object store
  - Uses the Workflow Definition document class
  - Use this option if you want to launch the workflow outside of Process Designer

Workflow definitions on the Content Engine

- Workflow definition versions are maintained in the Content Platform Engine object store.
  - Managed using the Workflow Definition document class
- FileNet Checkin menu option
  - Saves changes to a workflow definition file that you have checked out of the object store
- FileNet Save menu option
  - Saves working content of checked out file temporarily to the object store
  - Must use FileNet Checkin to permanently save changes

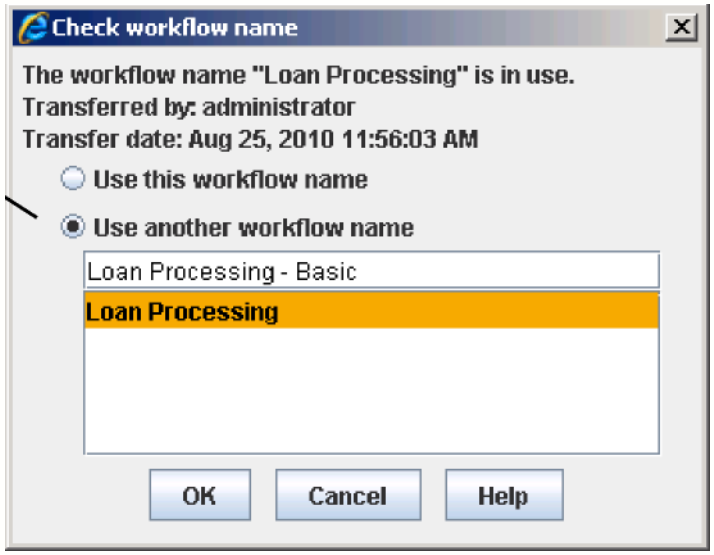
Workflow properties

- General properties that apply to the entire workflow definition and might be used at any step in the workflow
- Workflow properties used in this lesson:
  - Workflow name
  - Subject
  - Data fields
- Other categories of workflow properties are discussed in other lessons.

Check workflow name

- Use the Check Workflow Name option to verify that the name is unique.

If the name is in use, you have the option to enter another workflow name.



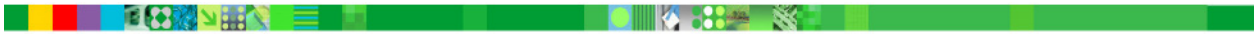
Workflow properties – data fields

- Hold values used in a step or for conditional tests or decisions
  - Data field values available in subsequent steps
- For each data field, you specify the following
  - Name
  - Data type
  - Initial field value
  - Merge behavior in an AND-split
  - Description (optional)
- Simple data types supported by the Process Engine
  - Boolean, Float, Integer, String, Time
  - Arrays of the simple data types are supported.

Activity step parameters

- After defining workflow data fields, you can use the data fields as parameters at steps in the workflow.
- Use Parameters tab for each step to specify the following:
  - The data fields available to be used as parameters at a step
  - Access rights to each parameter (Read, Write, or Read/Write)
  - Prompt for each parameter

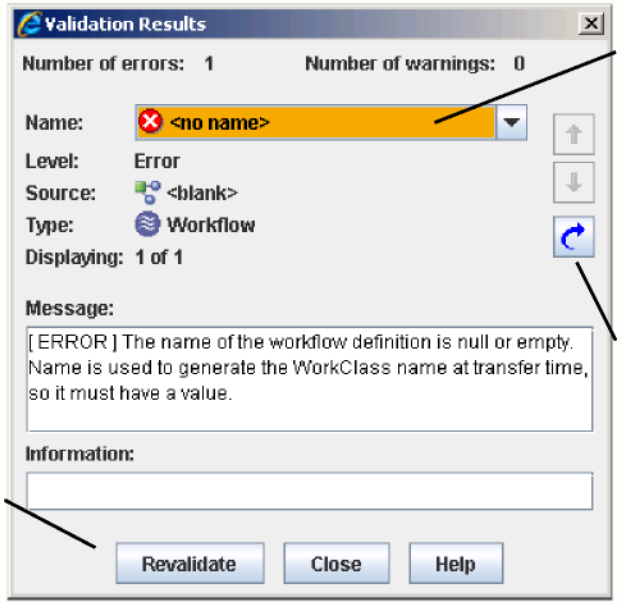
Activity type



- Assign to one or more participants or groups
  - Use Participant Selection window to assign the step to one or more users, groups, or workflow groups.
- Assign to a work queue
  - Work queue holds work to be completed by one of a number of users or by an automated system or process

Validate a workflow definition

- Use the Validate button on the main toolbar or File > Validate Workflow Collection.
- Manage validation errors and warnings in a separate window.



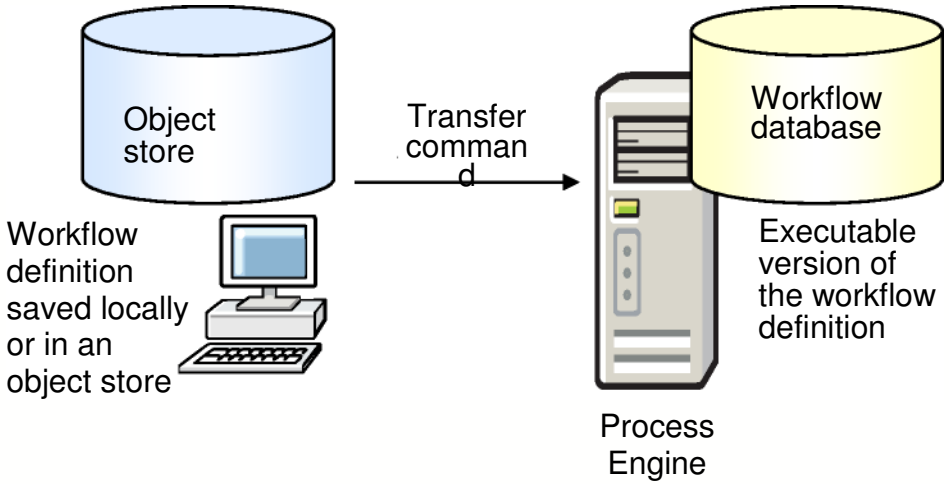
1. Select an error from the list and view information about it.

1. Click the Go To button to take you to the error location in the workflow.

3. After correcting errors, you can revalidate.

Transfer a workflow

- File > Transfer Workflow Collection command writes an executable version of the workflow definition to the Process Engine workflow database.
  - After this action, the workflow is available for launching.
  - The workflow is identified in the Process Engine by the workflow name.

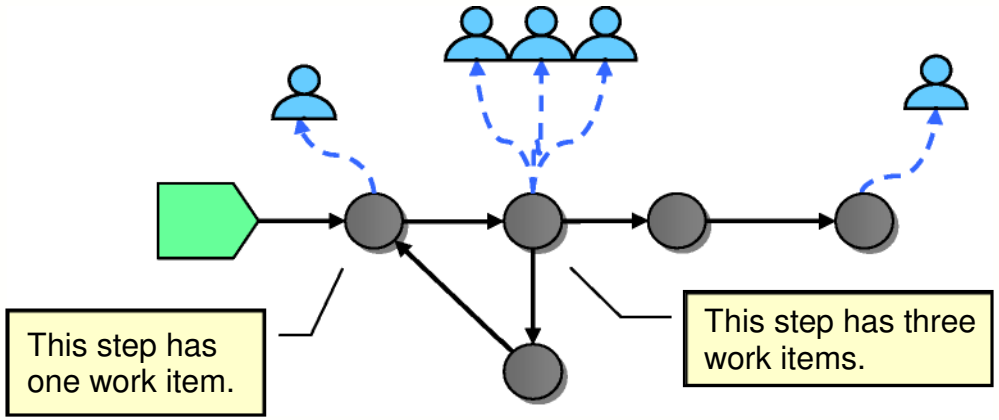


Launch a workflow

- In this lesson, you launch a workflow from Process Designer by using the Launch Workflow command.
  - Used to test a workflow definition during design and development
  - Prompts you to check in the workflow definition, unless you have disabled the automatic Add/Checkin feature in Workflow Preferences
  - Validates and transfers before launching
  - Displays the launch step processor so that you can complete the launch step
- Other lessons introduce ways of launching a workflow manually or automatically outside of Process Designer.
  - For example, a workflow subscription automatically launches a workflow based on the creation of a certain type of document.

Work items and workflows

- A workflow is a single, runtime instance of a workflow definition.
- A work item is an electronic package of work in a running workflow.
- One or more work items are associated with each step being processed.
  - If multiple participants are assigned to a step, then a work item is maintained for each participant.

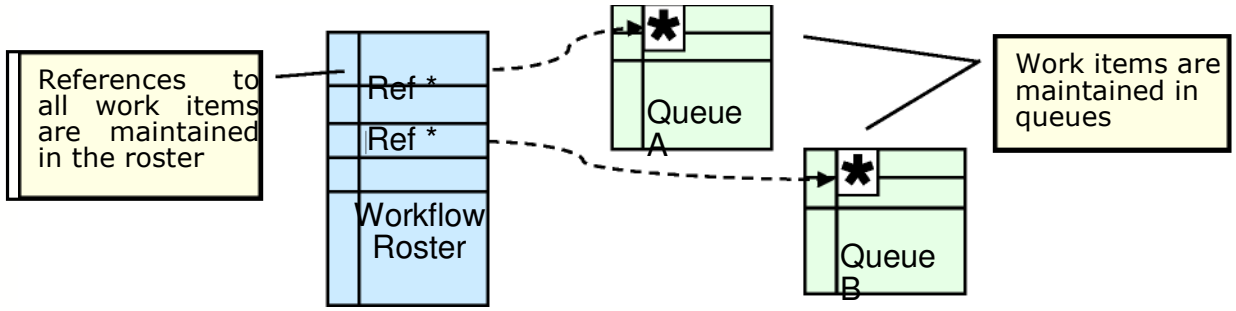


Queues

- A queue is a database structure on the Process Engine.
  - Work items are maintained there while they await processing.
- Queues are created and configured by the workflow administrator and used in Process Designer.
- Queues hold work items for processing by the following:
  - Users
  - Applications
  - The system
- Types of queues:
  - User queues for individuals
  - Work queues that are public inboxes
  - Component queues
  - System queues

Workflow roster

- Is a workflow database structure on the Process Engine
- Is created and configured by the workflow administrator and used in Process Designer
- Provides an efficient way to search for specific work items
- Each workflow definition uses one workflow roster.



Workflow history

- Event logs keep a record of workflow history.
  - Contain a record of specific system- or workflow-related events useful for tracking workflow activity
- Examples
  - Process Tracker uses event logs to provide workflow history.
  - Process Analyzer uses event logs to provide analysis and reports on workflow history.
- Event logging options are configured by the workflow administrator.
- Event logs can be queried directly using tools, such as Process Administrator.

Workflow processing and testing

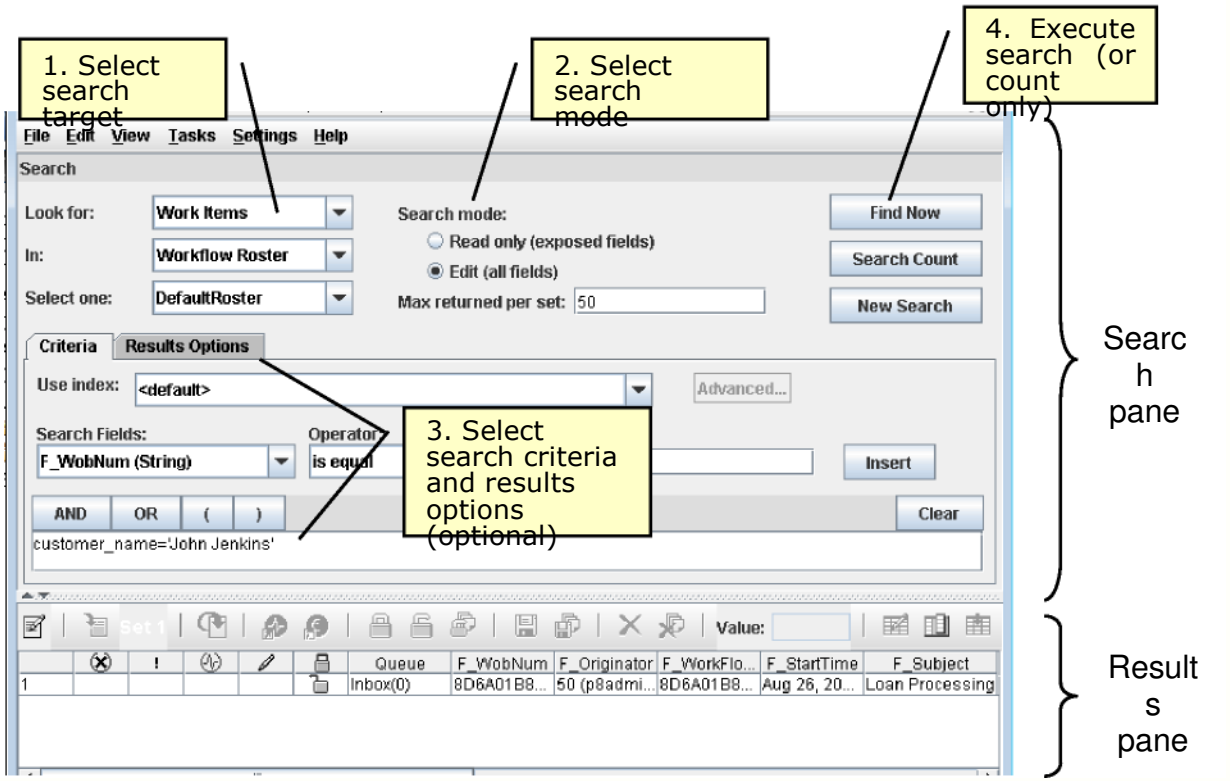
- Workflow launch
  - The transferred workflow definition is used as a template.
  - The launch step is processed, initial values for workflow fields are assigned, and a work item is created and placed in the first queue.
  - Reference to the workflow is maintained in a workflow roster.
- Workflow execution
  - Work items move from queue to queue as defined by the workflow definition.
  - The workflow roster is updated as work items are processed.
  - Process events are recorded in an event log.
- Workflow termination
  - All work items are removed from all queues in the system.
  - History of work item processing remains as records in the event log.

Tracking tools for the designer

- Process Administrator
  - Provides a view of all workflows and work items in progress with extensive search capability
  - Provides the ability to modify properties of a work item, complete work, and delete an item
  - Provides a view of the event log where historical information is maintained about work items
- Process Tracker
  - Provides a graphical representation of a specific work item in progress
  - Provides status and value of data elements

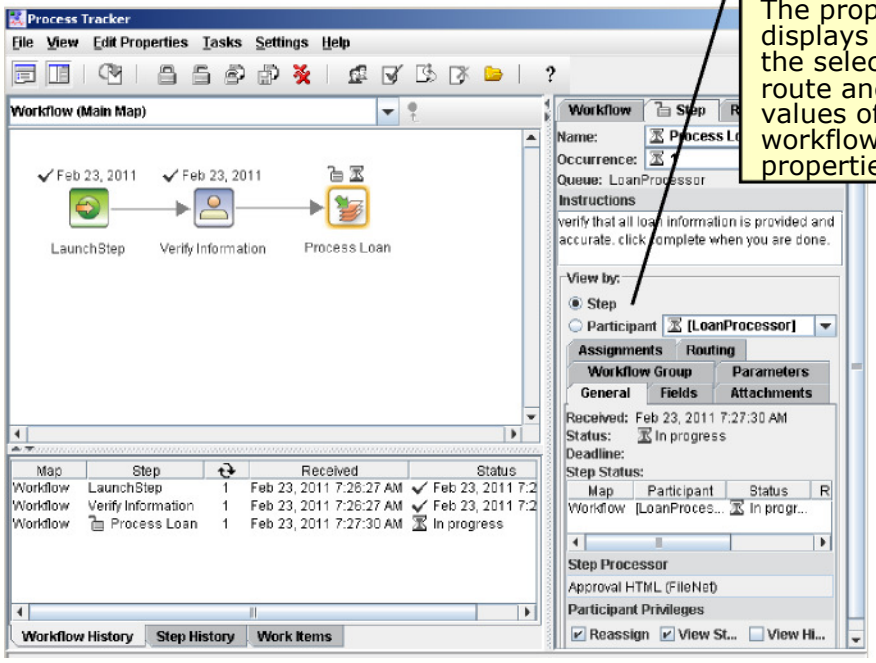
Testing a workflow

Using Process Administrator



Using Process Tracker

- From Process Administrator, you can view a workflow in the management view of Process Tracker.

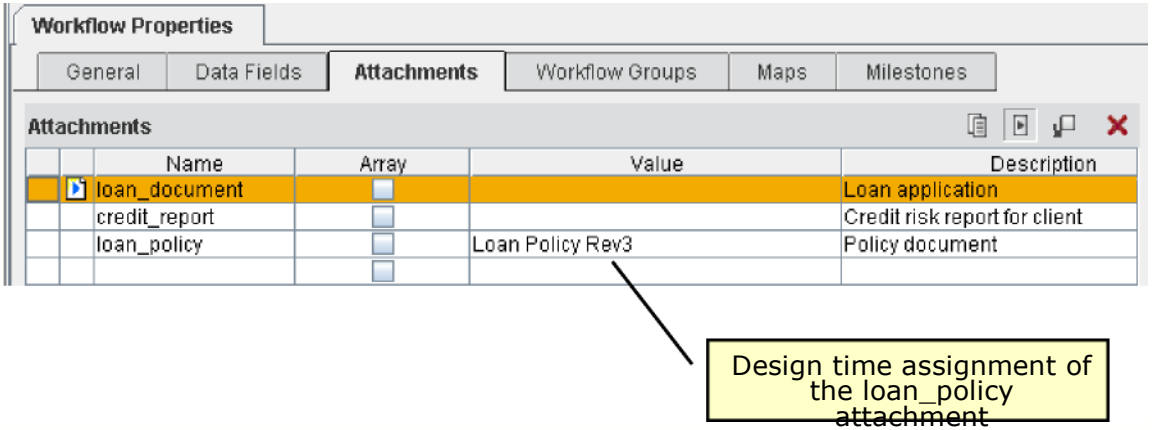


Methods of launching a workflow

- Manual launch
  - From the Process Designer program, used only for design and development
  - In Workplace, from a workflow definition file
  - In Workplace, from a document associated with a workflow subscription that is configured for manual launch
- Automatic launch
  - Based on a workflow subscription and a Content Engine event occuring on a document, folder, or custom object
  - From a custom solution using Content Java and Process Java APIs

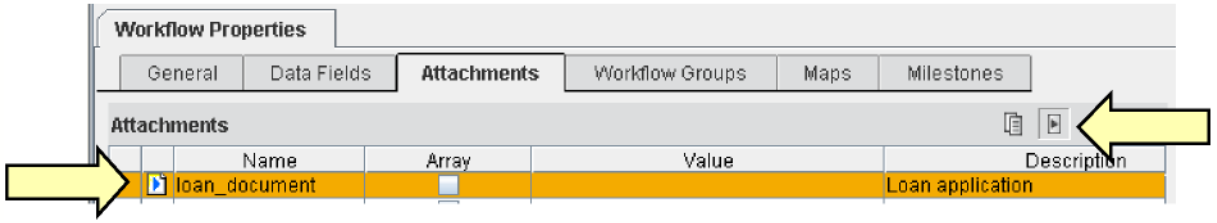
Attachments

- An attachment is a link to information outside the workflow
  - Can be a document, folder, or custom object in an object store, stored search, Web address, file on a shared disk, or attachment array.
- Defined in Workflow Properties tab
  - Design time or runtime assignment



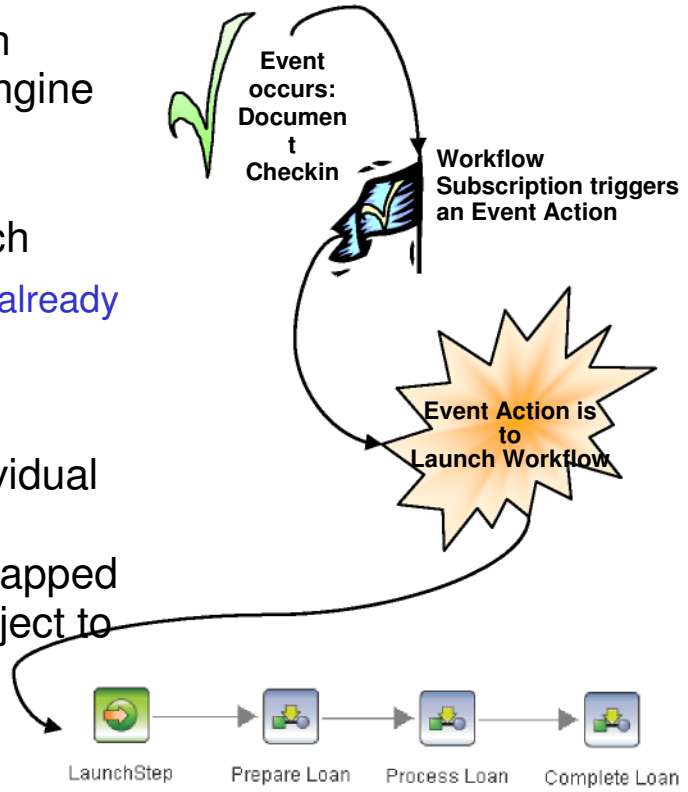
Initiating attachment

- The attachment used to launch the workflow is assigned to the designated initiating attachment at launch time.
  - Only one attachment in a workflow definition can be designated as initiating.
- This attachment is generally a Content Engine object that launches the workflow.



Overview of a workflow subscription

- Launches a workflow in response to a Content Engine trigger event
- Can use manual or automatic workflow launch
  - Workflow definition must already be transferred
- Can be assigned to an object class or to an individual object
- Can have properties mapped in the Content Engine object to workflow data fields



Create a workflow subscription

- Use the Add Workflow Subscription wizard – Located on the Advanced Tools page
- Steps to create a new workflow subscription

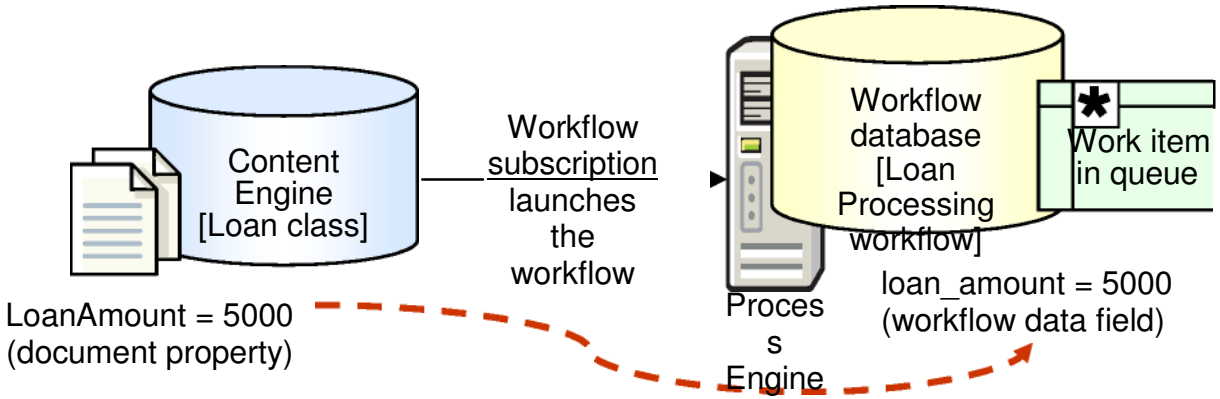
1. Select target class – class to which the subscription applies.
2. Select workflow to launch – only transferred workflows allowed.
3. Set subscription properties – assign a name, set for manual or automatic launch, and select the subscribed events.
4. Set trigger conditions for launch – a property-based condition for launching the workflow .
5. Set property mapping – Content Engine object properties can be assigned to workflow data fields.
6. Set subscription security.

Example subscribed events

Event	Applies to	Description
Creation Event	All class objects	Add an item to the object store
Update Event	All class objects	Update property values or content of an item
Deletion Event	All class objects	Delete an item
Checkin Event	Documents only	Check in a new version of a document
Checkout Event	Documents only	Check out a document
Promote Version	Documents only	Promote a document version
Demote Version	Documents only	Demote a document version
Update Security Event	All class objects	Update the security setting for an item
Classify Complete Event	Documents only	Add a document using an entry template with the Auto-Classify option set

Property mapping in a workflow subscription

- You set property maps for Content Engine properties and Process Engine data fields.
  - [Workflow data field] = [Content Engine object property]
  - When the workflow is launched the [Workflow data field value] is set using the [Content Engine property value].
- Example
  - Workflow subscription property mapping: loan_amount = LoanAmount



Business roles in the process development cycle

- Process Designer is used by all users involved in the process development cycle:
  - Diagram mode for the business user
  - Design mode for the workflow designer and IT developer

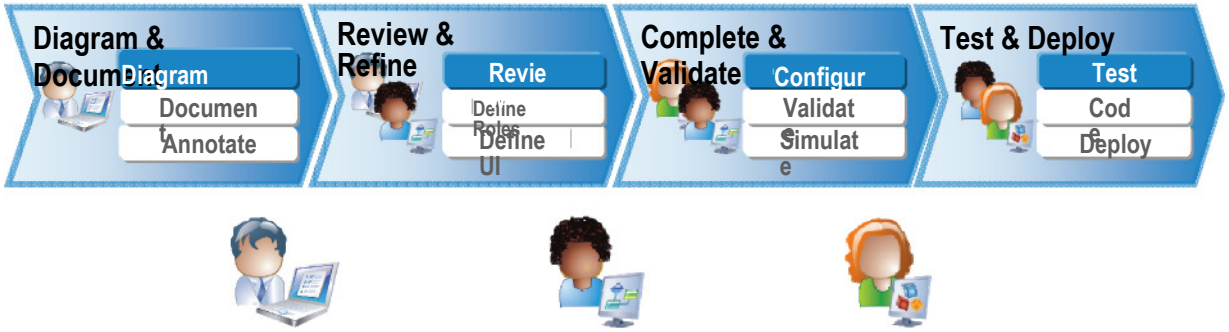
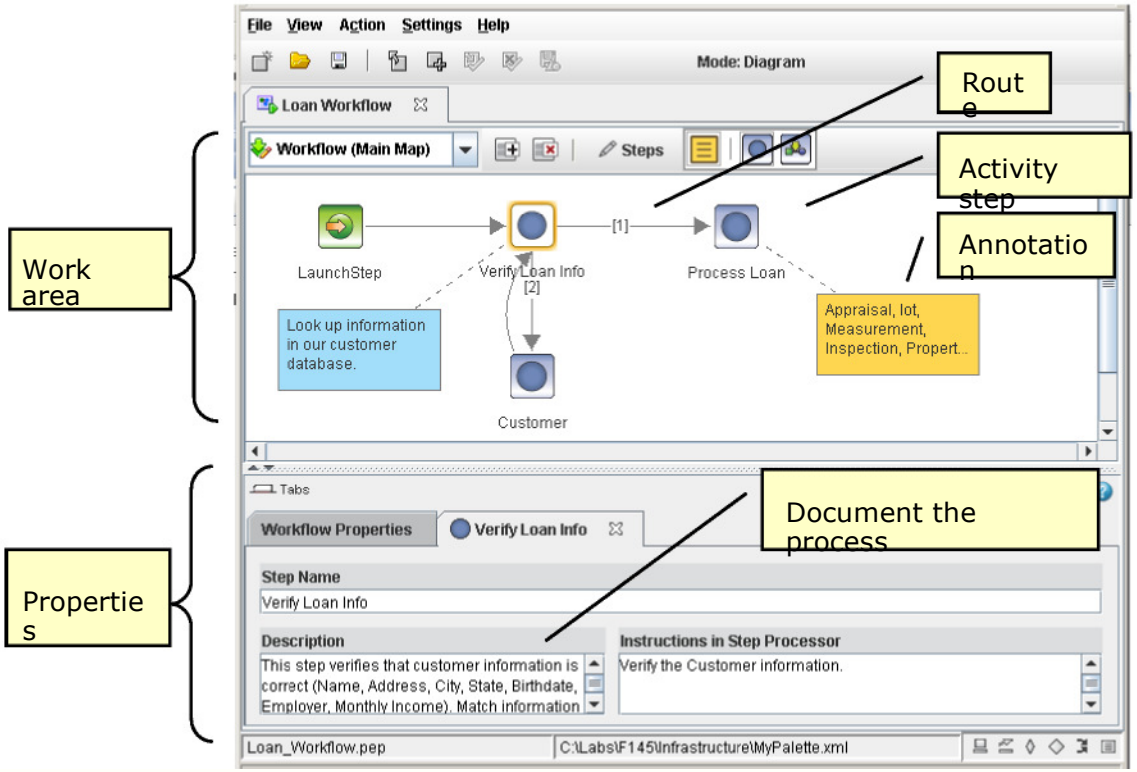


Diagram mode user interface



When to use Diagram mode

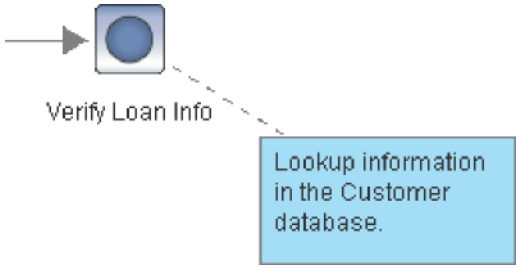
- Use as a starting point for creating functional workflow
- Use Diagram mode when you need to do the following:
  - Create a visual picture of a business process.
  - Translate business requirements into simple, discrete activities and transitions between activities.
  - Communicate a business process to other individuals for further study and modification.
- Diagram mode can allow the business user to do the following:
  - Create a new workflow.
  - Open an existing workflow definition .
  - Save the diagram locally or to the IBM FileNet repository.
- Supports two file formats:
  - PEP (native format for Process Designer)
  - XPDL 2.0 format (standard format for Business Process Modeling Notation)

Functions of Diagram mode

- Allows a business user to easily draw a diagram to represent a business process
  - Mode is controlled by user access rights (PWDiagram).
  - Members of PWDesigner also have access to Diagram mode in Process Designer.
- Creates a visual map of business processes at a high level
  - Uses only activity and submap steps
  - Includes description and instruction information on steps
- Defines the flow of the work from step to step using routes
- Allows naming of all step and route components used
  - Allows the use of annotations to document steps and routes

Text annotations to document a workflow

- Used to emphasize information associated with a particular step or route
- Can be associated with an object on a workflow map
- Display option is available to Hide or Show annotations.
- Annotations do not appear in a running workflow.
- You specify background colors for text annotation boxes.
- Text box is a fixed size.



Elements that must be completed in Design mode

- Use the Configuration tool to create necessary workflow database structures to support the workflow definition.
- Define the workflow properties.
- Configure the properties of all steps and routes.
- Save the workflow definition to a local file system or to the IBM FileNet repository.
- Optional: Print the workflow definition.
- Optional: Use the Simulation Console tool to create simulations of the workflow for refinement purposes.
- Define procedures and methods for launching the workflow.

The process design cycle

1. Understand and analyze the business process problem

- Define the business problem and the required results
- Identify roles and tasks
- Describe the data and resources required
- Diagram the business logic
- Determine the processing interfaces

2. Design workflows

- Define the processing configuration and security
- Design workflow maps and process flow
- Assign participant roles, data, and resources to steps
- Define workflow subscriptions, components, and Web Services usage

3. Prototype, test, and refine the solution

Identify information in the business problem

- Sample business problem

Verification of all customer loan information is performed by a Loan Officer, returned to the customer for corrections, and then routed to the Loan Processor to process the loan. A credit check is made using an outside company during processing. Give status to the customer during processing.

- Role – a character or part performed in a process - Identify nouns in the description.
  - Roles: Loan Processor, customer, Loan Officer, outside company
- Task – a piece of work to be finished in a period of time - Identify verbs or actions in the description.
  - Tasks: Verification, correction, routing, processing, credit checking
- Data – information that must be processed
  - Identify meaningful facts and information used in processing. - Data: Customer loan information, credit report information

Elements used in planning a process design

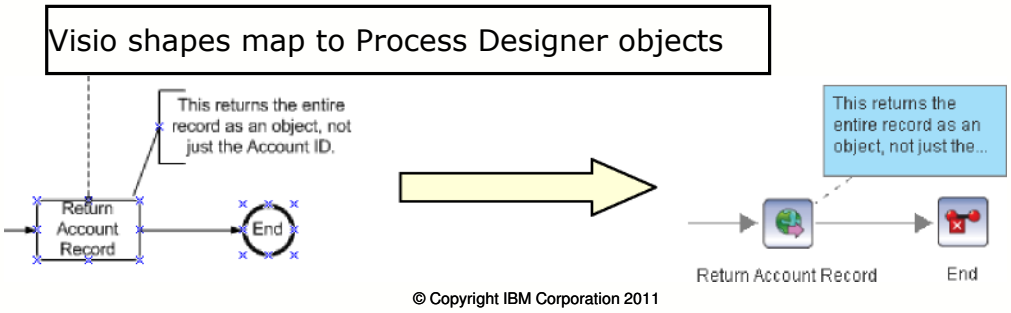
- Tasks or steps - Also called actions or activities in some modeling tools
- Participants - Who or what entities perform the work
- Data - Information needed to process the work or for conditions or tests
- Integration of process, content, and external components
- Flow control
  - Parallel processing, conditional routing based on data or participant responses, suspend processing while waiting for condition to occur
- Time control
  - Timers, step and workflow deadlines, milestone reporting, escalation for missed deadlines
- Launch conditions - When and how the workflow is initiated

Content Engine and Process Engine interaction

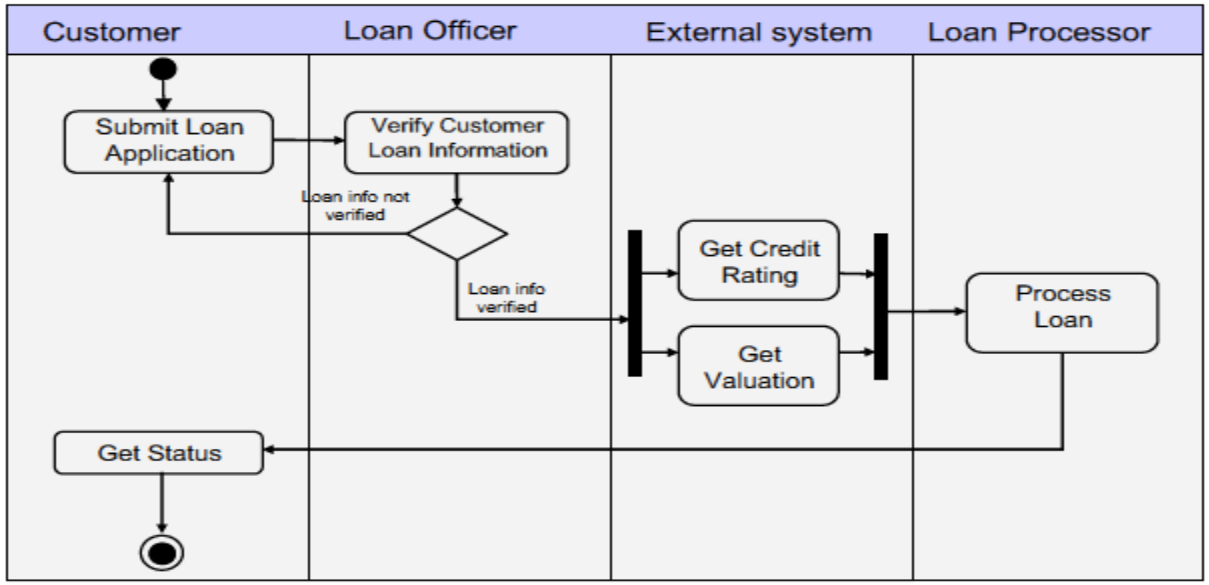
- For IBM FileNet BPM solutions, Content Engine objects can be integrated with workflows managed by the Process Engine.
- Examples
  - Assign a Content Engine document as an initiating attachment to a workflow.
  - Map Content Engine object properties to workflow data field in a workflow subscription.
  - Update Content Engine object properties within a workflow step.

IBM FileNet Connector for Microsoft Visio

- Feature of Process Designer
  - Ability to import Microsoft Visio diagrams into Process Designer
  - BPMN template and stencil is provided
- Add-on to Visio that supports BPMN and XPDL standards
  - Model a process using the IBM-provided BPMN stencil or other Visio stencils
    - Map Visio drawing shapes in Process Designer to define a workflow
- A wizard analyzes shapes and text to assist in mapping
- You are **not** required to redraw existing process maps
- You can import single or multiple process diagrams as collections



Swimlanes and Activity Diagrams



Analyze an example process: Loan processing

- Business problems
  - Loans are not always processed in a timely manner.
  - The customer's credit is often not verified early enough in the loan process.
  - Supplemental documents such as bank statements and employment verification are often, misfiled, lost, or not submitted, which delays the loan approval process.
  - Customers are not promptly notified if there is a problem in their loan application.
- Business goals
  - Increase operational efficiency in processing loans.
  - Improve control of the loan process.
  - Remove the likelihood of documents being lost.
  - Provide automated customer notification and secure Web access to keep customers updated.