Lesson: Parallel processing

Overview

Why is this lesson important to you?

You are designing an IBM FileNet BPM solution. Your process has several steps that are executed in parallel to save time. You must model parallel execution in your workflow definition including handling of data field merging. You must test the workflow to verify the changes.

Activities

- Define a parallel process in a workflow: Challenge
- Define a parallel process in a workflow: Walkthrough

Requirements

The activities in this unit assume that you have access to the student system configured for these activities.

Virtual student system

Connect to your student system to complete these lab activities. See the Readme First file on the Materials tab if you need instructions to connect to the student system.

System startup and system check

IBM FileNet P8 software services on your student system must be started. If you have not already started the IBM FileNet P8 software on your system, do the procedures in *Appendix A: System startup and system check* before proceeding with the lessons in this unit.

Perform a system check whenever you start up an IBM FileNet P8 system or start working on a system that is in an unknown state. These activities assume that you have performed a system check when you begin an activity session.

Read this first

Before attempting these unit activities, you must successfully complete all procedures in Unit 2 *Workflow Infrastructure*, Lesson 2.1 Region structures. All remaining lessons in this course require specific region data structures to already be configured.

User accounts

Type	User ID	Password
FileNet Workplace XT	filenetadmin	IBMFileNetP8

Note

Passwords are always case-sensitive. User names are not case-senitive. Many user names use only lowercase letters on the student system.

Define a parallel process in a workflow: Challenge

Challenge

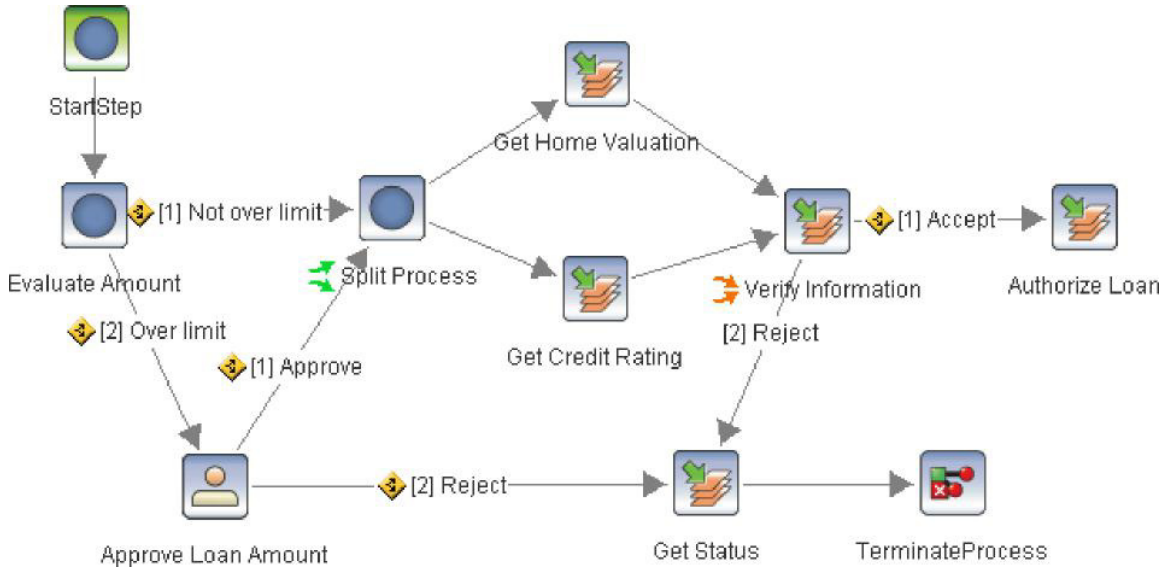
In a prepared workflow definition file, add routes on the Process Loan Map submap as needed so that the Get Home Valuation and Get Credit Rating steps are processed in parallel before the Verify Information step. Add a new workflow data field and set the field merge type. Assign the new data field as a parameter in the Get Home Valuation, Get Credit Rating, and Authorize Loan steps. Use the data in the table to complete the following activities.

Data

Item	Value
Prepared workflow definition file	C:\Labs\F145\FlowControl\Loan Processing - Parallel Start.pep
File name in the Object Store	LoanProcess > Workflows > Loan Processing Workflow - Parallel Process
Workflow Data Field	• Name: `loan_comment` • Type: String[ ] • Merge Type: Append • Expression: `{"New Loan"}` • Description: `Loan processing comments`
Submap	Process Loan Map
Get Home Valuation step	Add to Selected Parameters: • loan_comment [Read/Write]
Get Credit Rating step	Add to Selected Parameters: • loan_comment [Read/Write]
Verify Information step	Add to Selected Parameters: • loan_comment [Read/Write]

Verification

- You must launch and process the workflow through to completion.
- At the Verify Information step, the value of the loan_comment array must include the comments entered in both the Get Valuation and the Get Credit Rating steps.
- Your Process Loan Map submap must look similar to the following diagram. This diagram shows the Get Home Valuation and Get Credit Rating steps in a parallel process.



Define a parallel process in a workflow: Walkthrough

Introduction

This exercise gives you practice in using parallel processing and setting data field merge types in a workflow definition.

Procedure 1: Add steps to define a parallel process

1. On your student Image, log in to FileNet Workplace XT using the filenetadmin user account listed in the "Lesson Overview" section.
2. Open a prepared workflow definition file.

   To save time in class, a workflow definition file has been prepared for you that contains the Loan Processing workflow. This workflow is similar to the one that you worked with in previous units in this course. In this activity, you modify and test the Process Loan Map submap.

   a. In Workplace XT, click Tools > Advanced Tools > Process Designer.

   b. Click File > Open.

   c. Locate and open the following file:

      C:\Labs\F145\FlowControl\Loan Processing - Parallel Start.pep

   d. Explore the workflow definition to familiarize yourself with the process flow and notice the following items:

      - This workflow is for loan processing and is similar to the one that you worked with in the previous unit, *Data Control in Workflow*. However, the workflow was modified to save time in class.
      - The workflow name property has the value Loan Processing - Flow Control.
      - The Workflow map contains three submap steps. However, the Prepare Loan and Complete Loan submap steps are assigned to the EMPTY MAP submap, which contains no steps. Therefore, the Prepare Loan Map and Complete Loan Map submaps are not executed. This technique is used to save time when you are testing the workflow.
      - The Process Loan Map submap was modified and contains three new steps: Get Home Valuation, Get Credit Rating, and Verify Information. Notice that some routes are missing for these steps. In this activity, you define and test a parallel process that uses these steps.
      - New data fields were added to be used with the new steps: credit_rating and home_value.
      - At the Verify Information step, a loan officer reviews the credit rating and home valuation and selects a response: Verified or Not Verified. Depending on the response, the loan follows the Accept or Reject route.

3. Modify the workflow definition to add an AND-split.

You modify the Process Loan Map submap to process the Get Home Valuation and Get Credit Rating steps in parallel.

a. Click Maps and select the Process Loan Map submap to display it.

b. Click the Start here step and replace the Step Name property with the following:

```
Split Process
```

c. For the Split Process step, define the following step property in the Routing tab:

Outgoing Routing Information
Take Routes Of All true conditions

d. Draw a new route from the Split Process step to the Get Home Valuation step and accept the default route condition as "Always true."

e. Draw a new route from the Split Process step to the Get Credit Rating step and and accept the default route condition as "Always true."

f. Draw a new route from the Get Home Valuation step to the Verify Information step and accept the default route condition as "Always true."

Tip: Reposition the Get Home Valuation and Get Credit Rating steps as needed in order to more easily see the parallel routes.

g. Draw a new route from the Get Credit Rating step to the Verify Information step and accept the default route condition as "Always true."

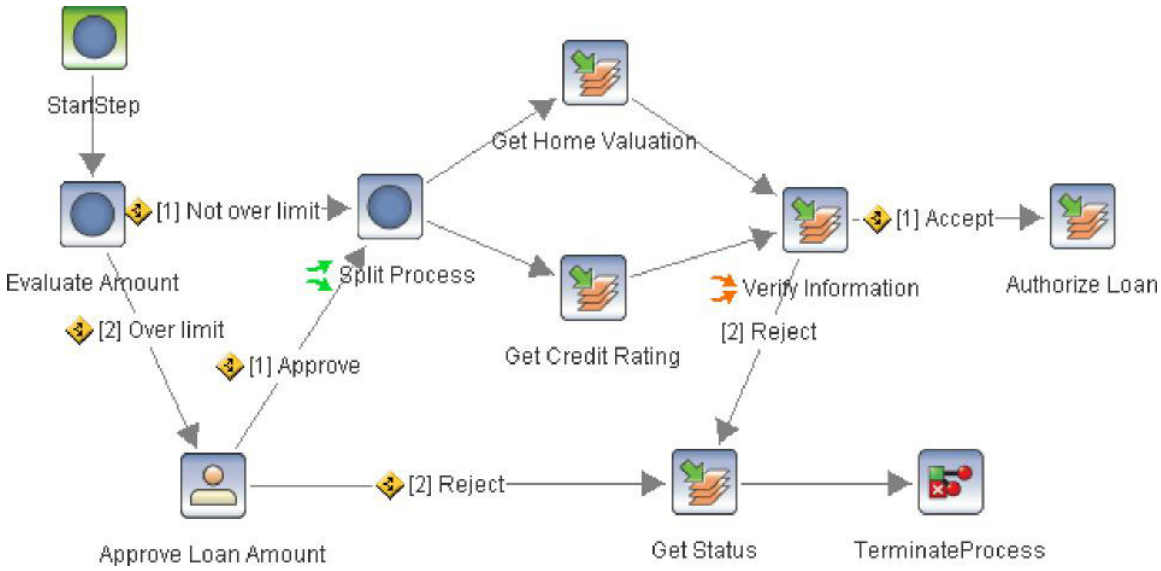
4. Define a collector step.

a. Select the Verify Information step.

b. In the Routing tab of the step properties pane, select the Collector Step check box.

Notice that the split icon is displayed next to the Verify Information step name.

5. Verify that your Process Loan Map submap looks similar to the following diagram. This diagram shows the Get Home Valuation and Get Credit Rating steps in a parallel process.



Procedure 2: Set a data field merge type

In this procedure, you add a string array workflow data field, loan_comment, which is used to maintain comments made by workflow participants during processing. You assign the Append field merge type, so that the system appends new entries to the array at the collector step. The comments are displayed in the Verify Information step. Unlike the status field, loan_comment is only used by company employees and is not shared with the customer.

1. Add a new workflow data field and set the merge type.
   a. In Workflow Properties, click the Data Fields tab.
   b. Add a new data field using the following information:
      - Name: `loan_comment`
      - Type: String[ ]
      - Merge Type: Append
      - Expression: `{"New Loan"}`
      - Description: `Loan processing comments`
2. Assign loan_comment as a parameter in three steps.
   a. Verify that the loan_comment field is selected in the list of Data Fields.
   b. Click the Field Usage icon.
   c. Select the Process Loan Map submap.

d. In the list of Available Steps, select the following three steps on the Process Loan Map submap:

- Get Credit Rating
- Get Home Valuation
- Verify Information

e. Click the Add icon (right arrow) to move the three steps to the list of Selected Steps.

f. Verify that Read/Write access rights are assigned for each of the selected steps.

g. Click Close to close the Field Usage window.

Note

In step 2, you add the loan_comment data field as a parameter to the steps used in the split. Because of the assigned field merge type (Append), new entries made to the array in the steps executed during the split are appended to the end of the original array.

Procedure 3: Test the workflow definition

1. Launch and save the workflow definition to the object store.

a. Validate the workflow and correct validation errors, if any.

b. Click File > Launch Main Workflow.

c. Complete the "Save the workflow definition to an object store" wizard using the following information:

- Object store: `LoanProcess > Workflows`
- Document Title: `Loan Processing Workflow – Parallel Process`
- Security: <Accept default values.>

2. Complete the Launch Step processor.

a. In the Launch Step window, click Data Fields.

b. In the Data Fields view, type the following values in the fields:

- customer_name: `John Wilson`
- down_payment: `19500.`
- loan_date: <a future date and time>
- loan_id: `W987`
- loan_term: `15`
- purchase_price: `155000.`

c. In the Attachments tab, assign an attachment of your choice to loan_document.

d. Click Launch.

e. Minimize Process Designer.

3. Verify that the split took place.

   a. In FileNet Workplace XT, click Tasks > Public Inboxes > LoanOfficer.

   b. Verify that there are two tasks: one waiting at the Get Home Valuation step and one waiting at the Get Credit Rating step.

4. Use Process Administrator to locate the work items.

   a. In Process Designer, click Tools > Process Administrator.

   b. Construct and execute a filtered search of LoanRoster by using the loan_id exposed field and the data in the following table.

Search criteria	**Value**
Look for	Work Items
In	Workflow Roster
Select one	LoanRoster
Search mode	Edit (all fields)
Criteria	`loan_id = 'W987'`

   c. Notice the three work items, which are located in the following queues:

   - One item in the Delay(0) queue
   - Two items in the LoanOfficer queue

5. Complete the Get Home Valuation step.

   a. In the results pane, select the row containing the work item in the LoanOfficer queue waiting at the Get Home Valuation step.

   Tip: The F_StepName field contains the name of the current step for the work item. On the results pane toolbar, click Show/Hide Columns. Move F_StepName from the list of Available Columns to the list of Selected Columns and click OK.

   b. Click Open Step Processor on the results pane toolbar.

   c. Type a value of your choice in the home_value field.

   d. Click loan_comment to open the Task-Modify Data Field window.

   e. Replace the existing field value with the following: `Home value is confirmed.`

   f. Click Accept.

   g. Click Complete.

   h. In Process Administrator, click Find Now to reexecute the roster search.

   i. Notice the two work items remaining: one in the Delay(0) queue and one in the LoanOfficer queue.

Note

Notice that the values of the home_value and loan _comment fields for the work item in the Delay(0) queue contain the values that you entered in steps 5c through 5e. The Get Home Valuation step was executed, and the parent work item waiting in the Delay(0) queue was updated.

6. Complete the Get Credit Rating step.
   a. In the results pane, select the row containing the work item in the LoanOfficer queue.
   b. Click Open Step Processor.
   c. Type a value of your choice in the credit_rating field.
   d. Click loan_comment to open the Task-Modify Data Field window.
   e. Replace the existing field value with the following: `Credit rating is confirmed.`
   f. Click Accept.
   g. Click Complete.
7. Process the Verify Information step and verify data field merging for the loan_comment field.
   a. In Process Administrator, click Find Now to reexecute the roster search.
   b. Notice the one work item in the results pane, which is in the LoanOfficer queue. A work item is no longer in the Delay system queue.

Note

Notice that the values of the credit_rating and loan_comment fields for the work item contain the values that you entered in steps 6c through 6e. You defined the loan_comment data field merge type as Append. Therefore, the values of loan_comment from both the Get Home Valuation and the Get Credit Rating steps were collected and appended to the parent work item at the collector step. The data was appended to the string array in the order that the steps were executed.

   c. In the results pane, select the row containing the work item in the LoanOfficer queue.
   d. Click Open Step Processor.

e. Verify that the loan_comment field contains three entries including the text that you entered in both the Get Home Valuation and the Get Credit Rating steps and that the text is appended to the end of the original array.

f. In the status field, type the following: `Processing is complete and information is verified`.

g. Select the Verified response.

h. Click Complete.

8. Complete the Authorize Loan step from the Process Loan Map submap.

a. In Process Administrator, click Find Now to re-execute the roster search.

b. In the results pane, select the row containing the work item in the Loan Manager queue.

c. Click Open Step Processor.

d. Click Complete.

9. Complete the Set Loan Document Status step from the Terminate submap.

a. In Process Administrator, click Find Now to re-execute the roster search.

b. In the results pane, select the row containing the work item in the Loan Underwriter queue.

c. Click Open Step Processor on the results pane toolbar.

d. Click Complete.

e. In Process Administrator, click Find Now to re-execute the roster search.

f. Verify that the work item is no longer listed in the results pane.

10. Close all applications.

a. Close Process Administrator.

b. Return to Process Designer.

c. If you have not already done so, check in your final version of the workflow definition.

d. Close Process Designer.

e. Log out of Workplace XT and close the browser.