

Generate Yearly Report

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1. Overview

For this exercise, we will use the producer-consumer model. This means we will build two projects:

- A Dispatcher – using the REF without Queue Items design.
- A Performer – using the REF with Queue Items design.

We encourage you to use the two checklists and to identify reusable components.

2. The Dispatcher process

2.1. Prerequisites

We will adapt the template to work as a REF project without Queue Items. Each transaction will represent extracting a page on the Work Items Section in System 1, filtering the data for items of type WI4, and adding resulting Datatable rows to an Orchestrator Queue.

2.2. Configuration in UiPath Studio

2.2.1. Create a new project

1. Create new project using the Robotic Enterprise Framework template.
2. Set a proper name for the project.
3. Provide a proper description.

2.2.2. Whiteboard your workflows

Module Name	Description	Pre-condition	Post-action	Arguments
System1_Login	Login into Acme with the desired account	N/A	Browser opened to the required URL Logged in with the credentials provided	in_System1URL - String in_System1Credential - String
System1_Close	Close browser	Browser open to ACME page	Browser is closed	N/A
System1_NavigateTo_WI	Navigate to the Work Items Page	Be logged into the ACME website	Navigated successfully to the desired URL	in_URL - String
System1_ScrapeDataTable	Extract data from the Work Items DataTable	Data exists and the Work Items Page is opened	All Work Items are extracted as a DataTable	out_DataTable - DataTable
System1_FilterWIDatatable	Filters the input DataTable	DataTable exists	The filtered datatable is passed to the	in_Type - String in_DataTable - DataTable

Module Name	Description	Pre-condition	Post-action	Arguments
	for rows with the desired Work Item		PopulateQueue workflow.	out_FilteredDataTable - DataTable in_Status - String
SendEmail	Sends Exception Email using Outlook and the Input Arguments	None	None	in_To - String in_Subject - String in_Body - String

2.2.3. Develop your workflows

Create two new folders in the Project folder. Name them as System1 and Common. Inside the folders, develop sequence-based workflows for each entry in the whiteboard.

2.2.4. Edit the Configuration file

In the Settings sheet of Config.xlsx, store the important settings for your project:

- The target Queue name
- The URL for ACME System1
- The System1 credentials stored in Orchestrator or Windows Credential Manager
- The URL for the Work Items page in ACME System1
- The Business Process Name

In the Constants sheet, set the MaxRetryNumber to 2.

2.3. Applications Used: open/close/kill

2.3.1. Edit the *InitiAllApplications.xaml* workflow

Invoke the workflow used to log into System1. Pass the URLs and credential values to the workflows.

2.3.2. Edit the *Framework/CloseAllApplication.xaml* workflow

Invoke the workflow used to close System1.

2.3.3. Edit the *Framework/KillAllProcesses.xaml* workflow

Use a Kill Process activity here to indicate the browser you want to force-close.

2.4. Business Process: Transaction Data and Process

2.4.1. Edit GetTransactionData.xaml workflow

Delete the Retry Get Transaction Item activity. Use an Element Exists activity to determine if there is a page number UI element on the Work Items page equivalent to the current TransactionNumber value. If so, assign the TransactionNumber value to out_TransactionItem. Else, assign 0 to out_TransactionItem.

For the following IF activity, set the condition to `out_TransactionItem > 0`.

2.4.2. Edit Process.xaml workflow

Determine if the browser is on the Work Items page indicated by the TransactionItem. If so, scrape the data, filter it by type and add the corresponding Queue Items.

3. The Performer process

3.1. Prerequisites

Make sure the queue indicated in the previous section is available in Orchestrator. Set the Retry value to 2.

3.2. Configuration in UiPath Studio

3.2.1. Create a new project

1. Create a new project using the Robotic Enterprise Framework template.
2. Set a proper name for the project.
3. Provide a proper description.

3.2.2. Whiteboard your workflows

Module Name	Description	Pre-condition	Post-action	Arguments
System1_Login	same as in Dispatcher			
System1_Close	same as in Dispatcher			
System1_NavigateTo	Navigate to the ACME System1 page using the in_URL argument	Logged into the ACME website	Navigated successfully to the desired URL	in_URL - String
System1_GetClientDetails	Get the Client Information: Tax ID from the Work Items Details Page	Logged in and the Work Items Details Page is opened	Tax ID is obtained from the Client Information	out_TaxID - String
System1_DownloadMonthlyReports	Enter tax ID, enter year and for each month download report if exists (treat exceptions)	Logged in and on the Download Monthly Report Page, report directory exists	Downloaded all available reports for a given TaxID and a given year into a given location	in_TaxID - String in_Year - String in_ReportDirPath - String

Module Name	Description	Pre-condition	Post-action	Arguments
System1_MergeMonthlyReports	Merge the downloaded csv files from a given TaxID and a year, located into a certain folder, into one Excel file - yearly report	Monthly reports exist in the certain folder	Construct the merged excel file and save it with name format "Yearly-Report-[year]-[taxid].xlsx"	in_TaxID - String in_Year - String in_ReportDirPath - String out_YearlyReportPath - String
System1_UploadYearlyReport	Upload a given yearly report to the Upload Yearly Report Page for a given Tax ID and a given year	Yearly report exists in the specified folder and the Update Yearly Report Page is opened	Report successfully uploaded and the Confirmation ID is retrieved	in_TaxID - String in_Year - String in_YearlyReportPath - String out_Confirmation - String
System1_UpdateWorkItems	Add hash into the comment section and change status to "Completed"	Update Work Item Page is opened	Work Item is update with the hash and the status along with closing the popup.	in_Comment - String in_Status - String
SendEmail	Sends Exception Email using Outlook and the Input Arguments	None	None	in_To - String in_Subject - String in_Body - String

3.2.3. Develop your workflows

Create two new folders in the Project folder. Name them as System1 and Common. Use them to organize the new workflows.

3.2.4. Edit the Configuration file

In the Settings sheet of Config.xlsx, store the important settings for your project:

- The Orchestrator Queue name.
- The Business Process name.
- The Directory used to save the Report.
- The System1 credentials stored in Orchestrator or Windows Credential Manager.
- The URL for ACME System 1.
- The URL for the ACME Work Items page.
- The URL for the ACME Download Monthly Reports page.

- The URL for the Upload Yearly Report page.
- The URL for updating ACME Work Items.
- An entry for Status with the value Completed.

In the Constants sheet, make sure the MaxRetryNumber to 0.

3.3. Applications Used: open/close/kill

3.3.1. *Edit the InitAllApplications.xaml workflow*

Invoke the workflow used to log into System1. Pass the URLs and credential values to the workflows.

3.3.2. *Edit the Framework/CloseAllApplication.xaml workflow*

Invoke the workflow used to close System1.

3.3.3. *Edit the Framework/KillAllProcesses.xaml workflow*

Use a Kill Process activity here to indicate the browser you want to force-close.

3.4. Business Process: Transaction Data and Process

3.4.1. *Edit the GetTransactionData.xaml workflow*

No changes are needed in this workflow.

3.4.2. *Edit the Process.xaml workflow*

Here, you can invoke the NavigateTo workflow several times with different values for the in arguments to navigate to all pages of the process: Work Items, Work Item Details, Download Monthly Reports, Upload Yearly Report and Update Work Item. In between, invoke the workflows which perform the processing steps: GetClientDetails, DownloadMonthlyReports, MergeMonthlyReports, UploadYearlyReport and UpdateWorkItems. Pay special attention to the target app states throughout the execution of the Process workflow.