UiPath Reboot Work.™ | Complete Exercise Walkthrough

Calculate Client Security Hash

Contents

1. Prerequisites

1. The automation will need to process DataRows for each transaction so the data type for TransactionItem will be DataRow.

2. Configuration in UiPath Studio

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. Whiteboard your workflows

Module Name	Description	Pre-condition	Post-action	Arguments
System1_Login	Opens a IE browser to the input URL	N/A	Opens IE System 1 Dashboard if credentials are correct.	in_System1URL - string in_System1Credential - string
System1_Close	Closes System1 IE Browser	System 1 Opened, Log Out button accessible	Logs Out and Closes IE	N/A
System1_NavigateTo_Dashboard	Navigates to Dashboard from ANY page in System1	Any page opened in System 1	Navigates to the Dashboard	N/A
System1_NavigateTo_WIDetails	Navigates to the WI Details Page using the WIID input argument	System 1 open at any page	WI Details open	in_WIID - string in_System1_URL - string
System1_NavigateTo_WorkItems	Navigates to WorkItems Page	System 1 Dashboard Open	Work Items Page open	N/A
System1_ExtractWIsDataTable	Extracts the entire Table of all Work Items in the output argument	WorkItems page Open	None	out_TransactionData - DataTable
System1_ExtractClientInformation	Extracts the ClientID, ClientName and ClientCountry and writes to the output arguments	WorkItem Details Page open	None	out_ClientID - string out_ClientName - string out_ClientCountry - string
System1_UpdateWorkItem	Updates the Work Item to the Status and Comment input arguments. Status can be "Open", "Completed" or "Rejected"	System 1 WI Details Page open	None	in_Comment - string in_Status - string
SHA1Online_Open	Opens SHA1Online from the URL argument	None	Opens IE SHA1Online	in_SHA1OnlineURL - string
SHA1Online_Close	Closes SHA1Online	SHA1Online Main Page open	Closes IE SHA1Online	N/A

Module Name	Description	Pre-condition	Post-action	Arguments
SHA1Online_ProcessHash	Retrieves the HashResult based on the input HashFormula	SHA1Online open	None	in_HashFormula - string out_HashResult - string
SendEmail	Sends Exception Email using Outlook and the Input Arguments	None	None	in_To - string in_Subject - string in_Body - string

2.3. Develop your workflows

1. Create three new folders in the project folder. Name them System1, SHA1Online and Common.

2.3.1. System1_Login.xaml

1. Inside the System1 folder, create a new Sequence type workflow called System1Login.
2. Provide a description to the workflow.
3. Open the Arguments panel and create two In arguments of type string:
    a. in_System1URL
    b. in_System1Credential
4. Add a Log message activity to mark the start of the workflow execution.
5. Add a Get Credential activity. Configure the following properties:
    a. Asset Name – Provide the in_System1Credential argument.
    b. Password – Create a new variable called Password of type SecureString.
    c. Username – Create a new variable called Username of type String.
6. Add an Open Browser activity. Configure the following properties:
    a. BrowserType – Set it to the desired browser.
    b. URL – Provide the in_System1URL argument.
7. Inside the Do Container of the Open Browser activity add:
    a. A Type Into activity where you indicate the email field in the browser and provide the Username variable for the Text property.
    b. A Type Secure Text activity where you indicate the password field in the browser and provide the Password variable for the SecureText property.
    c. A Click activity where you indicate the Login button in the browser as target.
8. Log into ACME in your browser.
9. After the Open Browser activity, add an Element Exists activity.
    a. Indicate the Dashboard header in the browser as a target.
    b. Create a new Boolean variable for the Exists property called LogInSuccessful.
10. Add an If activity.
    a. Set the condition to Not LogInSuccessful.
11. Go to ACME, return to the login page, try to log in with the wrong credentials. Leave the error pop-up window open.
12. Return to Studio. Inside the Then block of the If activity:
    a. Add a Click activity and indicate the OK button of the error pop-up window.

   b. Add a Throw activity with the Exception property set to: new Exception("Incorrect Credentials supplied to System1")
   c. Note that later during development, we will invoke a workflow here to send an email to the process owner.
13. After the If activity, add a Log Message to mark the end of the workflow.

2.3.2. System1_Close.xaml

1. Make sure you are logged into ACME System1 in your browser.
2. In Studio, add a Log Message activity to mark the start of the workflow.
3. Add an Attach Browser activity and indicate the browser logged into ACME.
4. Inside the Do container of the Attach Browser activity:
   a. Add a Click activity and indicate the Log Out button
   b. Add a Close tab activity
5. Add a Log Message activity to mark the end of the workflow.

2.3.3. System1_NavigateToDashboard.xaml

1. Make sure you are logged into ACME System 1 in your browser
2. In Studio, add a Log Message activity to mark the start of the workflow.
3. Add a Click activity and indicate the Home button.
4. Add a Log Message activity to mark the end of the workflow.

2.3.4. System1_ NavigateTo_WIDetails.xaml

1. Open the Arguments panel and create two in arguments of type string:
   a. in_WIID
   b. in_System1URL
2. Add a Log Message activity to mark the start of the workflow.
3. Add an Attach Browser activity and indicate ACME System 1.
4. Inside the Do container of the Attach Browser activity:
   a. Add a Navigate To activity and for the URL property, provide the expression: in_System1_URL+"work-items/"+in_WIID
5. Add a Log Message activity to mark the end of the workflow.

2.3.5. System1_ NavigateTo_WorkItems.xaml

1. Add a Log Message activity to mark the start of the workflow.
2. Make sure the ACME System 1 Dashboard page is open in your browser.
3. In Studio, add a Click activity and indicate the Work Items button.
4. Add a Log Message activity to mark the end of the workflow.

2.3.6. System1_ ExtractWIsDataTable.xaml

1. Open the Arguments panel and create a new out argument of DataTable type called out_TransactionData.
2. In your browser, navigate to the Work Items page on ACME System1.
3. In Studio, use the Data Scraping wizard to extract the work items data. Configure its properties as follows:
    a. For the Output DataTable property, enter out_TransactionData
4. Add a Log Message activity to mark the end of the workflow.

2.3.7. System1_ ExtractClientInformation.xaml

1. Add a Log Message activity to mark the start of the workflow.
2. Open the Arguments panel and create three out arguments of String type:
    a. out_ClientID
    b. out_ClientName
    c. out_ClientCountry
3. Navigate to the Work Items page in your browser.
4. In Studio, add an Attach Browser activity and indicate the Work Items page.
5. Inside the Do container of the Attach Browser activity, add a Get Text activity, indicate the Client Information Details text box of a WI5 details page and configure the following properties:
    a. Selector - "<webctrl tag='P' aaname='Client ID*' />"
    b. Value – Create a new String type variable called ClientInformation
6. After the Attach Browser activity, add a Multiple Assign activity with the following rows:
    a. out_ClientID = ClientInformation.Substring(ClientInformation.IndexOf("Client ID: ") + "Client ID: ".Length).Split(Environment.NewLine.ToCharArray)(0)
    b. out_ClientName = ClientInformation.Substring(ClientInformation.IndexOf("Client Name: ") + "Client Name: ".Length).Split(Environment.NewLine.ToCharArray)(0)
    c. out_ClientCountry = ClientInformation.Substring(ClientInformation.IndexOf("Client Country: ")+"Client Country: ".Length).Split(Environment.NewLine.ToCharArray)(0)
7. Add a Log Message activity to mark the end of the workflow.

2.3.8. System1_ UpdateWorkItem.xaml

1. Add a Log Message activity to mark the start of the workflow.
2. Open the Arguments panel and create two in arguments of type string:
    a. in_Comment
    b. in_Status
3. In your browser, navigate to a WI5 Details page.
4. In Studio, add a click activity and indicate the Update Work Items button.
5. In your browser, click Update Work Item.

6. In Studio, add a Type Into activity, indicate the Comments field and provide in_Comment for the Text property.
7. Add a Click activity and indicate the status drop-down. Configure the following properties:
    a. Selector - "<html htmlwindowname='WI-Update' title='ACME System 1 - Work Items' /><webctrl aaname='"+in_Status+"' tag='A' />"
8. Add a Click activity and indicate the Update Work Item button.
9. In your browser, click Update Work Item.
10. In Studio, add a Click activity and indicate the OK button.
11. In your browser, close the Work Item update message window.
12. In Studio, add a Click activity and indicate the button to close the Work Item Update window.
13. Add a Log Message activity to mark the end of the workflow.

2.3.9. SHA1Online_ Open.xaml

1. In the SHA1Online folder in the project panel, create a new sequence type workflow called SHA1Online_Open.
2. In the Arguments panel, create a new in argument of type string called in_SHA1OnlineURL.
3. Add a Log Message activity to mark the start of the workflow.
4. Add an Open Browser activity and provide in_SHA1OnlineURL for the input argument.
5. Add a Log Message activity to mark the end of the workflow.

2.3.10. SHA1Online_ Close.xaml

1. Open the SHA1 page in your browser.
2. In Studio, add a Log Message activity to mark the start of the workflow.
3. Add an Attach Browser activity and indicate the SHA1 page.
4. Inside the Do container of the Attach Browser activity, add a Close Tab activity.
5. After the Attach Browser activity, add a Log Message activity to mark the end of the workflow.

2.3.11. SHA1Online_ ProcessHash.xaml

1. Open the Arguments panel and create an out and an in argument of type string:
    a. out_HashResult
    b. in_HashFormula
2. Add a Log Message activity to mark the start of the workflow.
3. Add an Attach Browser activity and indicate the SHA1 page.
4. Inside the Do Container of the Attach Browser activity:
    a. Add a Type Into activity and indicate the text input field on the SHA1 page. Provide in_HashFormula for the Text property.
    b. Add a Click activity and indicate the Hash button.

   c. Perform this action in your browser.
   d. In Studio, add a Get Full Text activity and indicate the Hash result. Store it in the out_HashResult argument.
   e. Add a Go Back activity.
5. After the Attach Browser activity, add a Log Message activity to mark the end of the workflow.

2.3.12. SendEmail.xaml

1. Inside the Common folder, create a new workflow file called SendEmail.xaml.
2. Open the Arguments panel and create three in arguments of type String.
   a. in_To
   b. in_Subject
   c. in_Body
3. Add a Log Message activity to mark the start of the workflow.
4. Add a Send Outlook Mail Message activity with the following properties:
   a. To = in_To
   b. Subject = in_Subject
   c. Body = in_Body
5. Add a Log Message activity to mark the end of the workflow.
6. Go to System1_Login.xaml.
7. Invoke SendEmail.xaml as the first activity inside the Then block of the If activity.
8. Click Import Arguments and map the following values:
   a. in_To = “exceptions@acme-test.com”
   b. in_Subject = "Incorrect Credentials"
   c. in_Body = "Hello,"+Environment.NewLine+"The email or the password is incorrect. Please check and restart"+Environment.NewLine+"Thank you"

2.4. Edit the Configuration file

1. Provide the following values in the Settings sheet:

Name	Value
System1_URL	http://www.acme-test.com/
System1_Credential	System1_Credential
SHA1_Online_URL	http://www.sha1-online.com/
logF_BusinessProcessName	ACME - Calculate Client Security Hash

2. In the Constants sheet, set the MaxRetryNumber to 2.
3. In Orchestrator, create a Credential type Asset for ACME System 1 with the name System1_Credential.

3. Change the TransactionItem Data Type

1. Locate the TransactionItem variable in the Variables panel; change the Variable type to the DataRow type.
2. The TransactionData variable does not need to be changed as by default it is of type DataTable.
3. In the Get Transaction Data state:
    a. Locate the End Process (Stop process requested) activity and set the value to Nothing
    b. Locate the Invoke GetTransactionData workflow activity and open the Arguments list; change the data type for the out_TransactionItem argument from QueueItem to DataRow. Click OK to save the changes and close the dialog.
    c. Expand the Exception section in the Try GetTransactionData section and locate the End Process (Could not get new transaction) activity; the change here is like the one performed at the beginning of this list.
4. In the Process Transaction state:
    a. Locate the Invoke Process workflow activity and open the Arguments list; change the data type for the in_TransactionItem argument from QueueItem to DataRow. Click OK to save the changes and close the dialog;
    b. Locate the Invoke SetTransactionStatus workflow activity and open the Arguments list; locate the entry for the in_TransactionItem argument and change the value not the data type!) from TransactionItem to Nothing.

4. Applications Used: open/close/kill

4.1. Edit the InitiAllApplications.xaml workflow

1. Add a Log Message activity to mark the start of the workflow.
2. Invoke the System1\System1_Login.xaml workflow.
    a. Click Import Arguments and make the following changes:

Name	Direction	Type	Value
in_System1URL	In	String	in_Config("System1_URL").ToString
in_System1Credential	In	String	in_Config("System1_Credential").ToString

3. Invoke the SHA1Online\SHA1Online_Open.xaml workflow.
    a. Click Import Arguments and make the following changes:

Name	Direction	Type	Value
in_SHA1OnlineURL	In	String	in_Config("SHA1_Online_URL").ToString

4. Add a Log Message activity to mark the end of the workflow.

4.2. Edit the Framework/CloseAllApplication.xaml workflow

1. Add a Log Message activity to mark the start of the workflow.
2. Invoke the System1\System1_Close.xaml workflow.
3. Invoke the Invoke the System1\SHA1Online_Close.xaml workflow.
4. Add a Log Message activity to mark the end of the workflow.

4.3. Edit the Framework/KillAllProcesses.xaml workflow

1. Add a Log Message activity to mark the start of the workflow.
2. Add a Kill Process activity.
    a. For the ProcessName property, enter the process name for your browser (for example, “iexplore” for Internet Explorer).
3. Add a Log Message activity to mark the end of the workflow.

5. Business Process: Transaction Data and Process

5.1. Edit GetTransactionData.xaml workflow

1. Change the data type for the out_TransactionItem argument from QueueItem to DataRow.
2. Delete the Get transaction item activity
3. Add an If activity at the start of the workflow.
    a. Name it “If first execution”
    b. Set the Condition to: io_TransactionData Is Nothing
4. Inside the Then Branch of the If activity:
    a. Invoke System1_NavigateTo_WorkItems.xaml
    b. Invoke System1_ExtractWIsDataTable.xaml
        i. Click Import Arguments and map the out_TransactionData argument to io_TransactionData
    c. Add a Filter DataTable activity.
        i. Set the input and output DataTable to io_TransactionData
        ii. Set the Filtering Mode to keep
        iii. Set “Type” = “WI5”
        iv. Add another row and set “Status” = “Open”
5. Add an Info level Log Message activity with the message: "No. of Transactions: "+ io_TransactionData.Rows.Count.
6. Add another If activity
    a. Name it: “If rows to process”

   b. Set the Condition to: in_TransactionNumber <= io_TransactionData.Rows.Count
7. Inside the Then Branch of the If activity, add an Assign activity:
   a. To = OutTransactionItem
   b. Value = io_TransactionData(in_TransactionNumber - 1)
8. Inside the Else Branch add another Assign activity:
   a. To = out_TransactionItem
   b. Value = Nothing

5.2. Edit Process.xaml workflow

1. Change the data type for the in_TransactionItem argument from QueueItem to DataRow.
2. Create four string type variables:
   a. ClientID
   b. ClientName
   c. ClientCountry
   d. HashResult
3. Invoke System1_NavigateTo_WIDetails.xaml.
   a. Click Import Arguments and make the following changes:

Name	Direction	Type	Value
in_WIID	In	String	in_TransactionItem("WIID").ToString
in_System1_URL	In	String	in_Config("System1_URL").ToString

4. Invoke System1_ExtractClientInformation.xaml.
   a. Click Import Arguments and make the following changes:

Name	Direction	Type	Value
out_ClientID	Out	String	ClientID
out_ClientName	Out	String	ClientName
out_ClientCountry	Out	String	ClientCountry

5. Invoke SHA1Online_ProcessHash.xaml
   a. Click Import Arguments and make the following changes:

Name	Direction	Type	Value
out_HashRestult	Out	String	HashResult
in_HashFormula	In	String	ClientID+"-"+ClientName+"-"+ClientCountry

6. Invoke System1_UpdateWorkItem.xaml
   a. Click Import Arguments and make the following changes:

Name	Direction	Type	Value
in_Comment	In	String	HashResult
in_Status	In	String	“Completed”

7. Invoke System1_NavigateTo_Dashboard.xaml