Insert badge request data from Excel to queue

Lab 2.1 □60-90 min

Lab Objectives

In this lab you will work in RPA Desktop Design Studio to automate the following tasks:

- Read data from an Excel file
- Insert data into a queue

> ***Lab Dependency:*** Requires installing RPA Desktop Design Studio (Windows only)

Scenario

Data is available in an Excel file. Users are faced with the highly repetitive task of manually reading data from an Excel file and inserting it into an application. This process is tedious, repetitive, and error-prone, so we want to automate it to save time and effort.

Requirements Summary

User Stories

A. Create a new robot in your ServiceNow instance

B. Create a new bot process in your ServiceNow instance

C. Prepare Robot User

D. Launch Unattended Robot

E. Create a new queue in your ServiceNow instance

F. Read data from an excel

G. Insert data to a queue

Insert badge request data from Excel to queue

A. Create a new robot in your ServiceNow instance

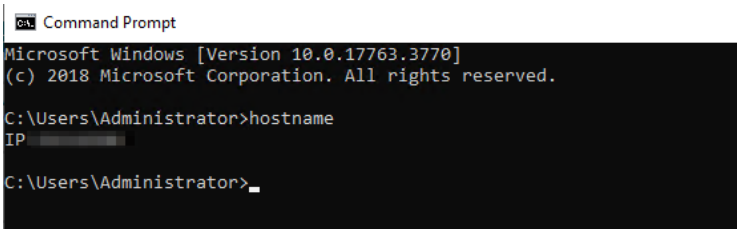
> **Note:** *A robot is a software agent that runs a bot process that is built in the RPA Desktop Design Studio. The record is required to allow the ServiceNow instance to monitor and manage the robot machine.*

1. Log into your ServiceNow instance.
2. Navigate to **All > Robotic Process Automation > RPA Hub**.
3. Create a robot by doing one of the following actions.

Option	Action
From the list icon	**a.** Click the list icon ( ). **b.** On the **Lists** tab, under **Administration**, click **Robots**. **c.** Click **New**.
From the plus icon	**a.** Click the plus icon ( ). **b.** Select **New Robot**.

4. On the form, fill in the fields.
5. To verify the Machine Name, go to the Command Prompt *on the robot machine* (MS Windows) and enter **hostname.**

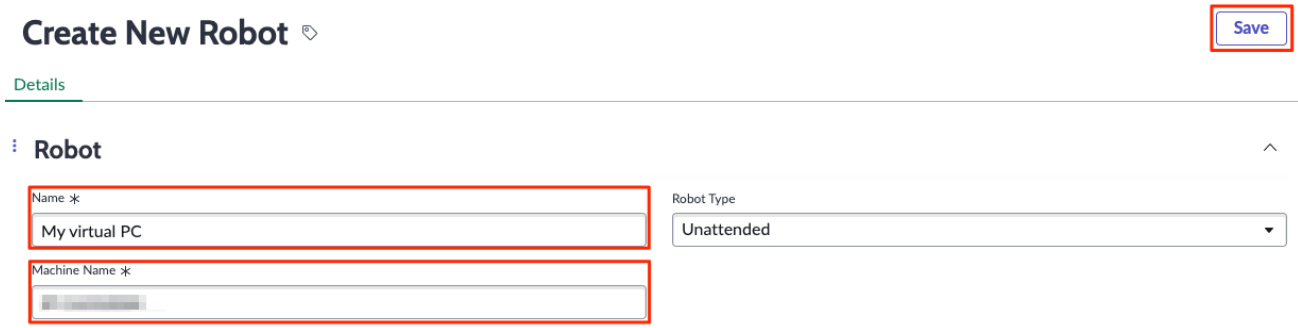
> **Note:** *To open a command prompt, you can use the search bar and search for cmd.exe*



6. Copy the machine name and enter it in the **Machine Name** field of the robot form.

7. Select **Robot Type** as **Unattended** and click **Save.**

   Click **Save**.



B. Create a new bot process in your ServiceNow instance

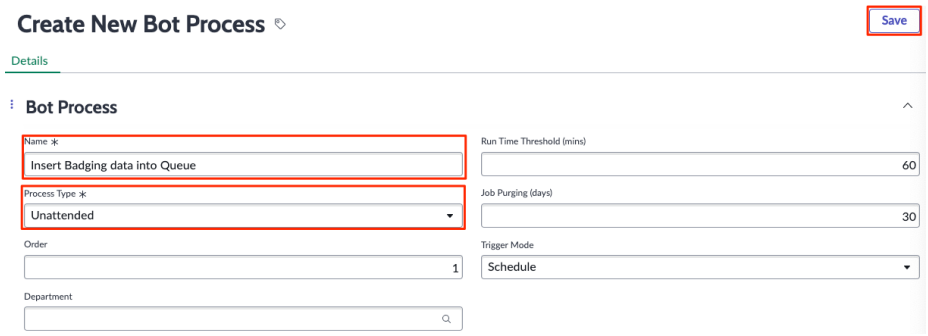
A bot process is a configuration of the robot. You assign and schedule a package that will be executed by the software agent.

If you navigated to another screen in ServiceNow navigate back to RPA Hub.

1. Create a bot process by doing one of the following actions.

Option	Action
From the list icon	**a.** Click the list icon ( ). **b.** On the **Lists** tab, under **Build**, click **Bot Process**. **c.** Click **New**.
From the plus icon	**a.** Click the plus icon ( ). **b.** Select **New Process**.

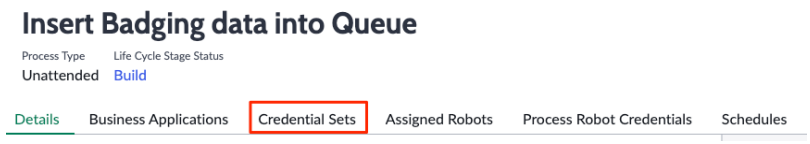
4. On the form, enter **Insert Badging data into Queue** in the **Name** field.
5. Select **Process Type** as **Unattended**.
6. Click **Save**.



7. Create a credential set

   A credential set within an unattended bot process is required so that the robot can log in to a Windows machine and perform the automation. Do the following:

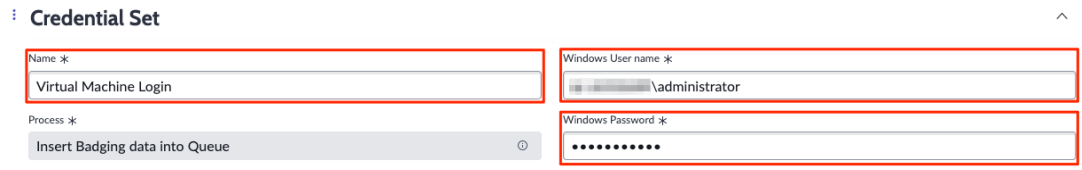
   a. Go to the **Credential Sets** tab and click **New**.



b. On the form, fill in the fields.

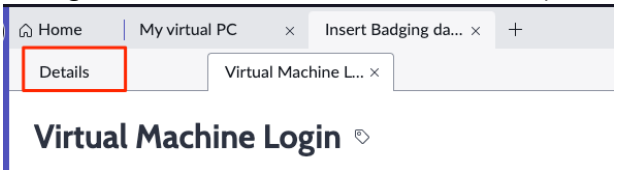
Credential set form

Field	Description
Name	Unique name of the credential set.
Process	Name of the associated bot process.
Windows User name	User name of the Windows machine to be used by the assigned robot. Enter the user name in the `DOMAIN \Username` format. **Note:** *On the virtual machine you can use the command prompt again and run 'whoami'. This will return the exact notation you need for the username.*
Windows Password	Password for the Windows machine to be used by the assigned robot.



c. Click **Save**.

8. Navigate to the **Details** tab of the bot process

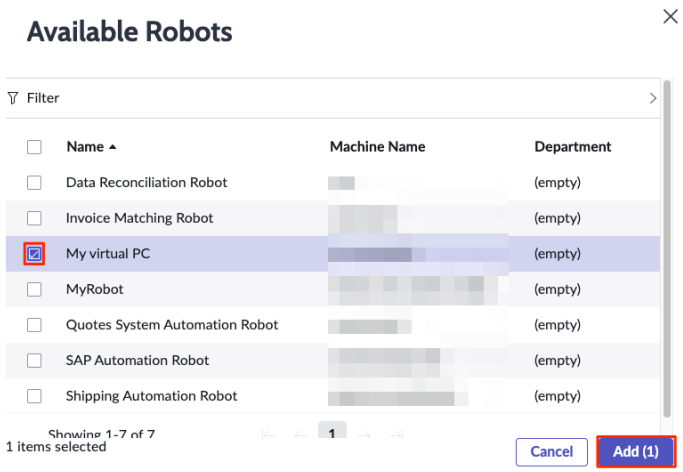


9. To assign a robot to this bot process, do the following:

   a. Go to the **Assigned Robots** tab and click **Add**.

   b. On the **Available Robots** popup, select your newly created robot.

c.



10. Map process robot to credentials, do the following:

A bot process could have a set of robots to execute the automation. The credentials mapping is required to specify which robot is using which credentials. Other robots will not be granted access to the credentials.

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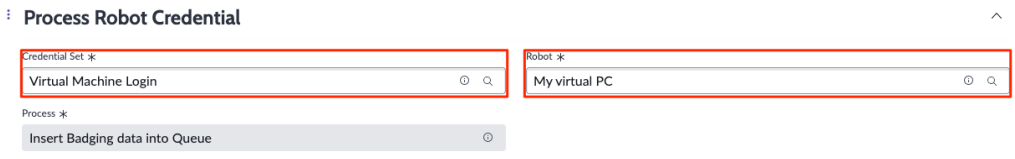
a. Go to the **Process Robot Credentials** tab and click **New**.

b. On the **Process Robot Credential** form, fill in the fields.

Process robot credential Form

Field	Description
Credential Set	Name of the credential set to be associated with the robot.
Robot	Name of the assigned robot.
Process	*Auto populated:* Name of the associated bot process.



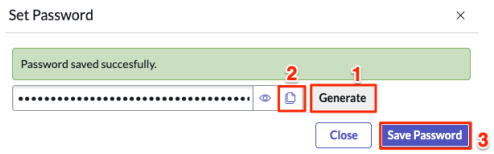
c. Click **Save**.

C. Prepare a Robot user

1. Navigate to **All > User Administration > Users**
2. Search for **User ID** '*rpa.robot*', open the user record

> **Note:** *The user rpa.robot is part of the demo data provided in ServiceNow instances. You can use it or create your own, if you choose to create your own make sure it matches the setup of rpa.robot.*

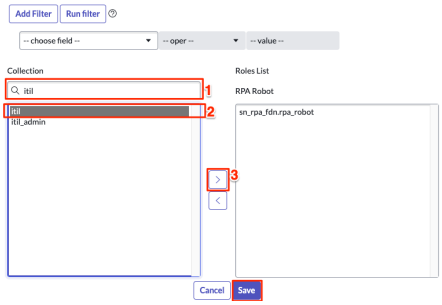
3. Click **Set Password**
4. On the popup window
    a. Click **Generate**
    b. Copy the password with the Copy function
    c. Click **Save Password**



    d. **Close** de popup window

Paste the generated password to a local file for later. It will be required to connect the robot.

5. Our robot in Lab 2.3 will need to read IT Request data and therefor require the *itil* role. Navigate to related list **Roles**
6. Click **Edit**
7. Search for role **itil** and click the **>** to add it
8. Click **Save**



This completes the ServiceNow setup for now. Good work!

D. Launch Unattended Robot

1. Go to your virtual windows machine
2. Start the Unattended Robot

Option	Action
From the desktop	Double click on the Unattended Robot Icon ().
From the start menu	a. Click the windows start icon b. Select **ServiceNow RPA > Unattended Robot**.

The Unattended Robot icon appears in the notification area (aka, system tray).

3. In the notification area at the far right of the taskbar, right-click the Unattended Robot icon () and click **Settings**.
4. In the ServiceNow Unattended Robot dialog box, fill in the fields.

Unattended Robot dialog box

Field	Action
RPA Hub	Enter the ServiceNow RPA Hub instance URL. For example, https://<instance name>.service-now.com/.
Authentication	Select the Basic type of authentication.
Username	Enter *rpa.robot* **Note:** *This field appears only when Basic is selected from the Authentication field.*
Password	Enter the generated password **Note:** *This field appears only when Basic is selected from the Authentication field.*

Note: *We do recommend using mTLS authentication for all production setups as it provides extra security. Check the ServiceNow documentation for more information on this.*

5. **Optional:** To add the settings for an internet connection as per your company policies, do the following steps:

a. In the ServiceNow Unattended Robot dialog box, under the Proxy Settings section, fill in the fields.

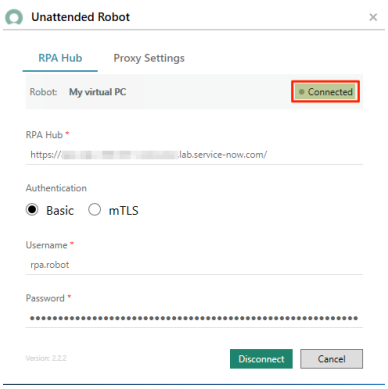
Unattended Robot dialog box

Field	Action
Server Address	Enter the proxy server URL.
Name	Enter your user name.
Password	Enter the password.

b. Click **Save**.

6. Click **Connect**.

7. Verify that the Connected status appears as shown below.



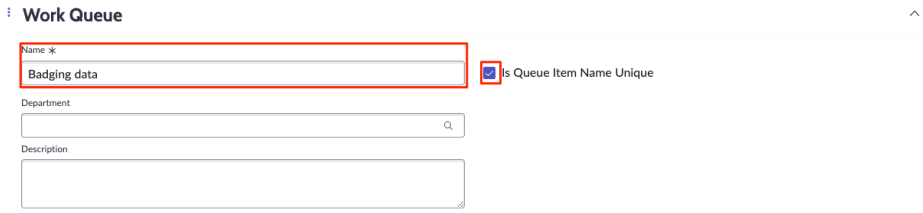
You can close the Unattended Robot window; the robot will continue running as shown in the system tray.

Congratulations, your robot is connected to ServiceNow and ready to run automations.

E. Create a new queue in your ServiceNow instance

If you navigated to another screen in ServiceNow navigate back to RPA Hub.

1. Click the list icon ( ).
2. On the **Lists** tab click **Build > Queues**.
3. Click **New**.
4. On the form, enter **Badging data** in the **Name** field.
5. Notice the **Is Queue Item Name Unique** check box which is selected by default.



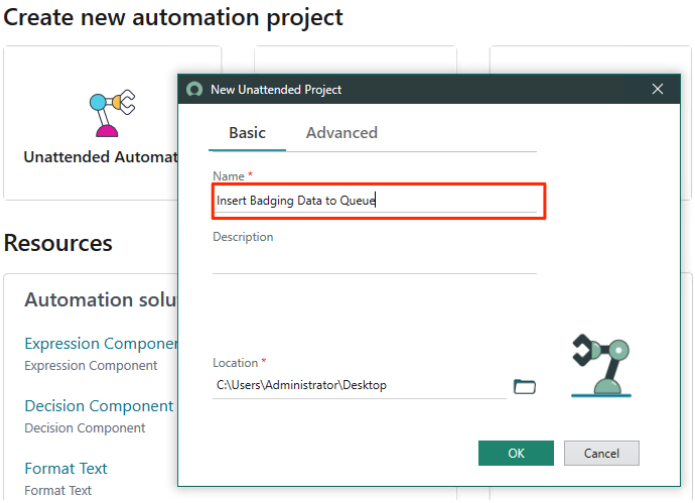
6. Click **Save**.
7. To associate a bot process to a queue, do the following:
   a. Go to the **Bot Process** tab and click **Add**.
   b. On the **Available Bot Processes** popup, select **Insert Badging data into Queue** bot process.
   c. Click **Add**.

> **Note:** *The connection from Queue to Bot Process is required to give the robots execution the selected Bot Process access to the queue. Without this link, the robot will not be able to read or write within the queue.*

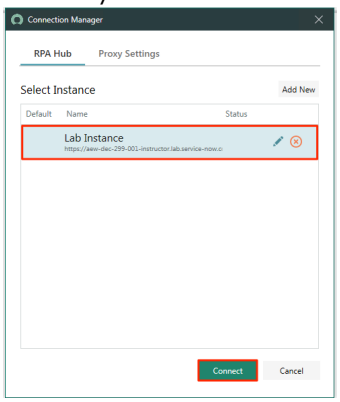
F. Read data from an Excel file

On the virtual machine:

1. If you closed it before, Open **RPA Desktop Design Studio.**
2. From the Home tab, choose to create a new **Unattended Automation** project.
3. Name the project **Insert Badging Data to Queue** and save it to the default location.

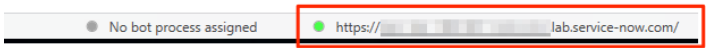


4. Click **OK**.
5. From the Design ribbon click on **Connect to** instance to launch the connection manager.
6. Select your Lab instance and click **Connect**



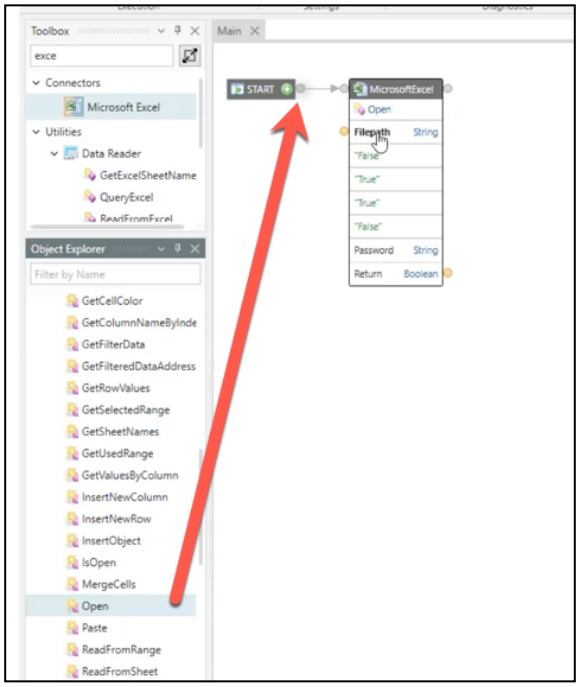
7. **In the**
   a. Enter your user name and password.
   b. Click **Log in**.
   c. Click **Allow** to allow Unattended Robot to connect to your ServiceNow instance and access data.
   You can see the successful connection in the toolbar of Desktop Design Studio

with a green light next to the URL.



8. From the **Toolbox**, drag the **Microsoft Excel** connector to **Global Objects** in **Project Explorer**.

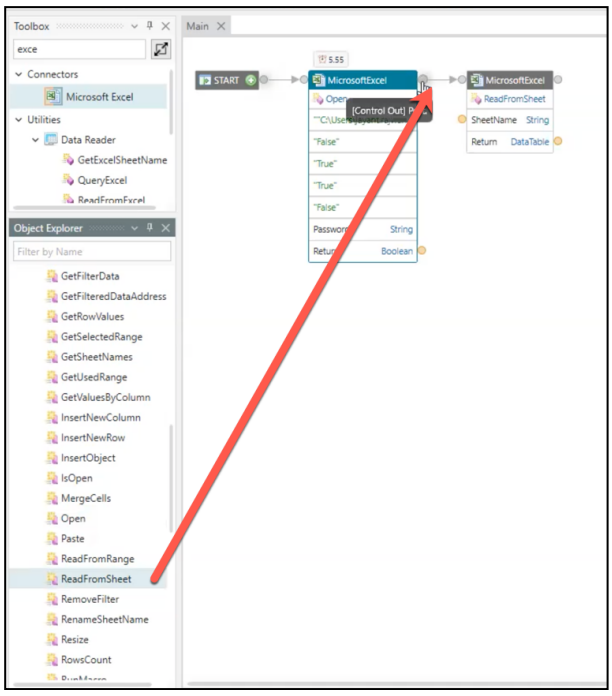
9. Double-click the **Microsoft Excel** connector, and from the **Object Explorer**, drag the **Open** method on to your diagram, connected to the **START** component.



10. Enter the full path of your Excel file (Badging data.xlsx) in the **Filepath** field of the **Open** method.

> **Note:** *A quick way to get the full filename is to open the properties dialog in an Explorer window, navigate to the security tab and copy the full path from there.*

11. Drag the **ReadFromSheet** method on to your diagram, connected to the Control Out port of the **Open** component.

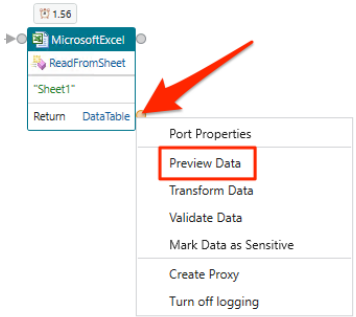


12. In the **SheetName** field, enter the sheet name (for example, Sheet1).

13. Click **Run** to execute the bot

    RPA Desktop Design Studio will disappear as the bot executes and you will see Excel being launched shortly.

14. With RPA Desktop back on screen, validate the *Return* Data Port of the *ReadFromSheet* component, do a right mouse button click on the data port and select **Preview Data**

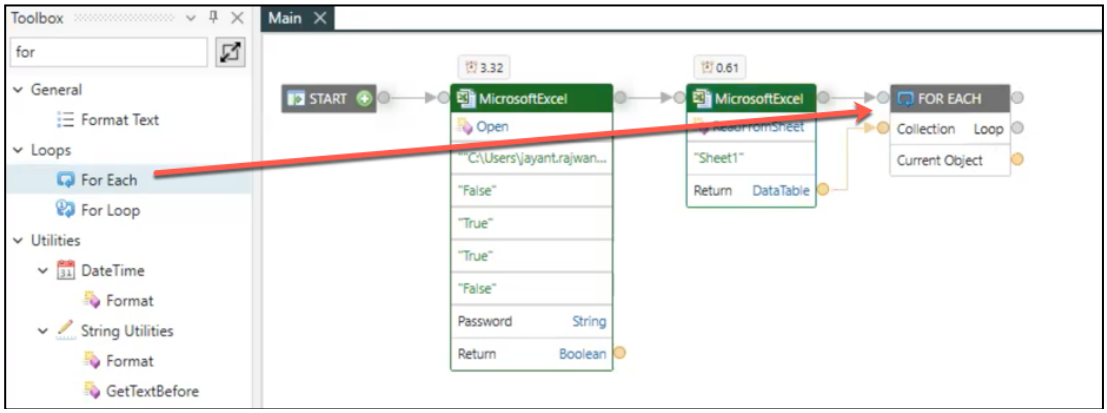


15. The data will display in a popup dialog, verify it matches the data in Excel

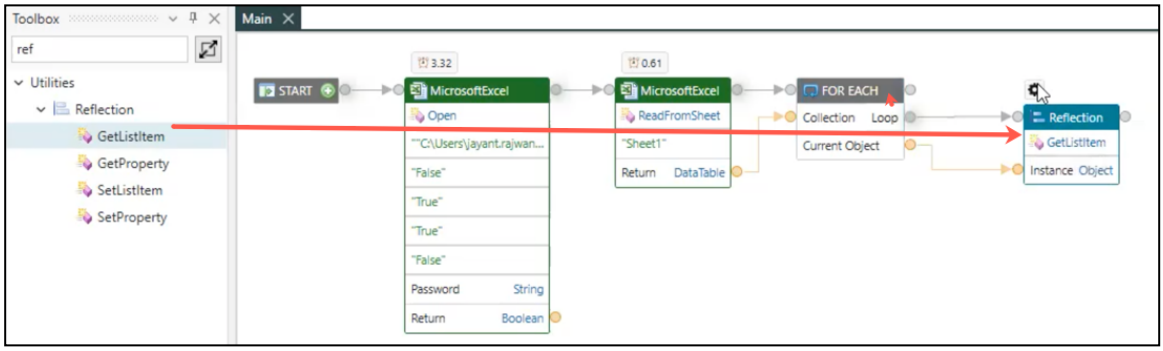
Congratulations, you have successfully read data from an Excel sheet!

G. Insert data to a queue

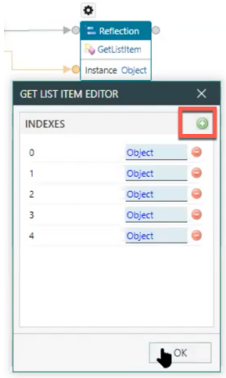
1. From the **Toolbox**, drag the **For Each** loop component on to your diagram connected to the **ReadFromSheet** connector as shown below.



2. From the **Toolbox**, drag the **GetListItem** reflection component on to your diagram connected to the **For Each** loop connector as shown below.

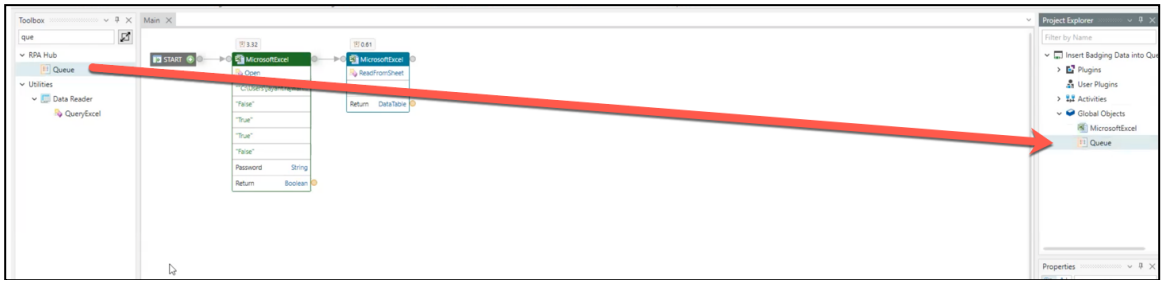


3. On the **GetListItem** component bar, do the following:
   a. Click the component settings icon ( ).
   b. Click the add icon 5 times to add 5 indexes, as shown below.

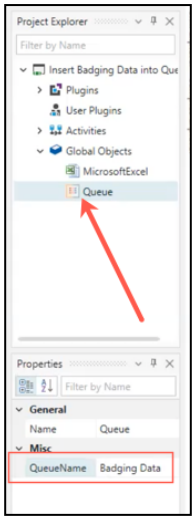


   c. Click **OK**.

4. From the Toolbox, drag the **Queue** connector to **Global Objects** in **Project Explorer**.



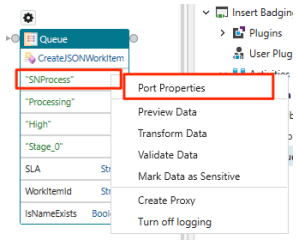
5. Double-click the **Queue** connector and in the **Properties**, enter the queue name (for example, Badging Data) from your ServiceNow instance in the **QueueName** field.



6. Double-click the **Queue** connector, and from the **Object Explorer**, drag the **CreateJSONWorkItem** method on to your diagram connected to the **GetListItem** component.

7. On the **CreateJSONWorkItem** component bar, do the following:

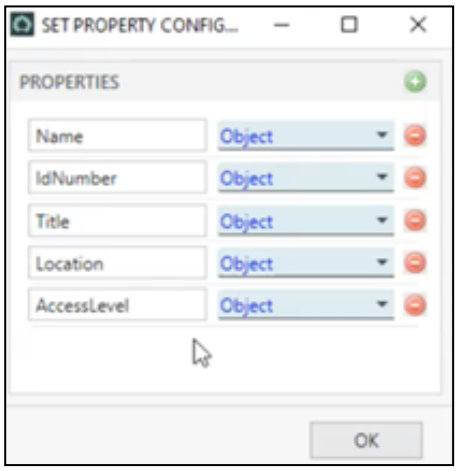
   a. Right click "*SNProcess*" and choose "**Port Properties**", change it to "**Connection**" and press OK. You will provide an input later.



   b. Click the component settings icon ( ).

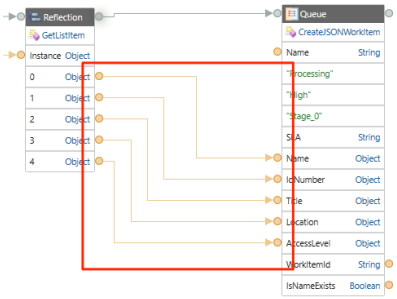
   c. Click the add icon 5 times to add 5 properties.

d. From the excel sheet, add the header titles as properties, as shown in the below image.

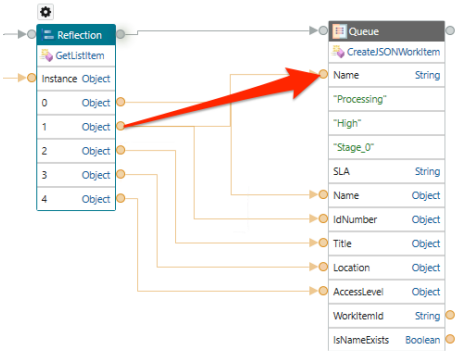


e. Click **OK**.

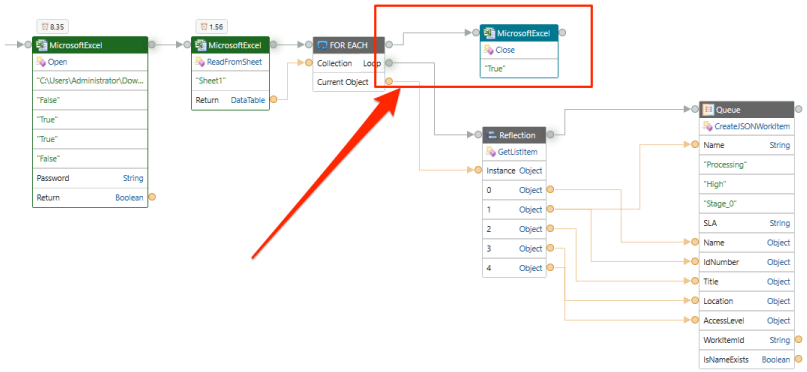
8. Connect the data out ports of the **GetListItem** component to the Data In ports of the **CreateJSONWorkItem** component.



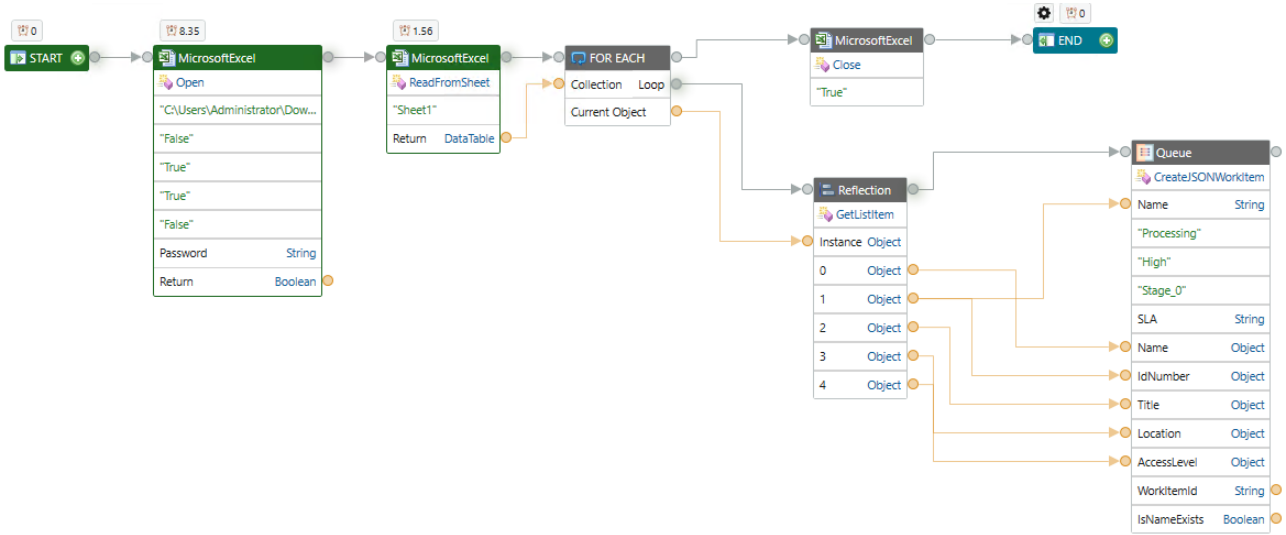
9. Connect the 2nd Data Out port (EmployeeID, #1) of the **GetListItem** component to the 1st Data In port (Name) of the **CreateJSONWorkItem** component.



10. Double-click the **Microsoft Excel** connector, and from the **Object Explorer**, drag the **Close** method on to your diagram, connected to the **For Each** loop component.



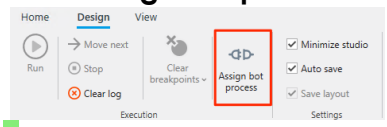
11. Connect the **END** component to the Control Out port of the **Close** connector. Your completed bot process will look like this one.



Lab Verification

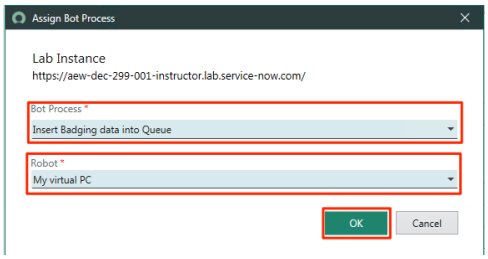
The robot will usually be triggered by ServiceNow and as such will now which Bot Process it executes. To test it from RPA Desktop Design Studio we need to supply this information before starting the automation – otherwise the bot will have no access to the ServiceNow data or queue.

1. Click **Assign bot process** in the Design ribbon



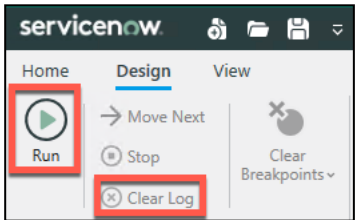
> **Note:** *If the connection to the ServiceNow instance has expired you may be asked to log in to your instance once more.*

2. Select the created Bot Process and Robot, click **OK**



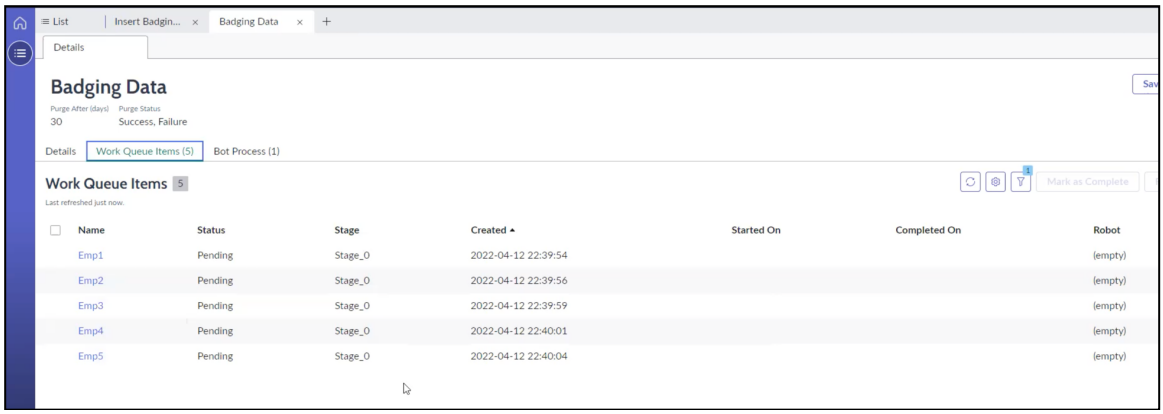
You can see the connected ServiceNow instance and bot process assignment in the status bar:

3. **Clear the log** and select **Run**. Verify that your data updates in the work queue of your ServiceNow instance.

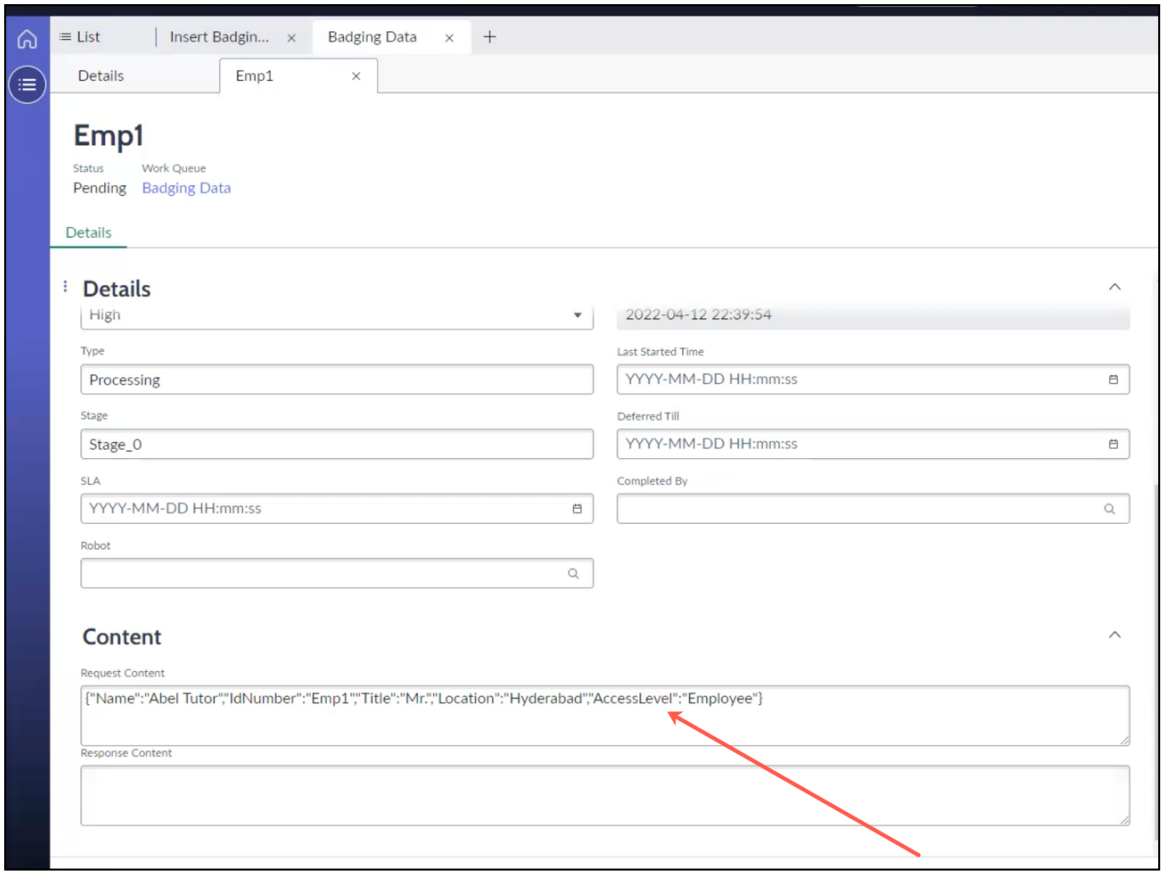


> **Note:** *Each executed component on the Main diagram should turn green. Failing components are marked by a red error icon, and more information for troubleshooting is available in the Execution Log.*

4. Log in to your ServiceNow instance, go to the Badging Data queue and verify the Work Queue Items.



5. Open a work queue item to verify content in Request Content tab.



Congratulations on completing the lab!