



Microsoft Power Virtual Agents in a Day

Lab 05: Integrate Pre-built Power Automate Flows

Hands-on Lab Step-by-Step

January 2022



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Power Automate

This lab is subject to the Terms of Use on page 28 of this document.

Goals for this lab

 <p>What you'll learn:</p> <ul style="list-style-type: none">• Integrate Power Virtual Agents with Power Automate to initiate bot actions• Create a topic that can complete a return and exchange process• Connect Microsoft Dataverse to your chatbots, allowing for certain data recall between sessions.	 <p>The time to complete this lab is [30] minutes.</p>
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Before we start...

Ensure that you:

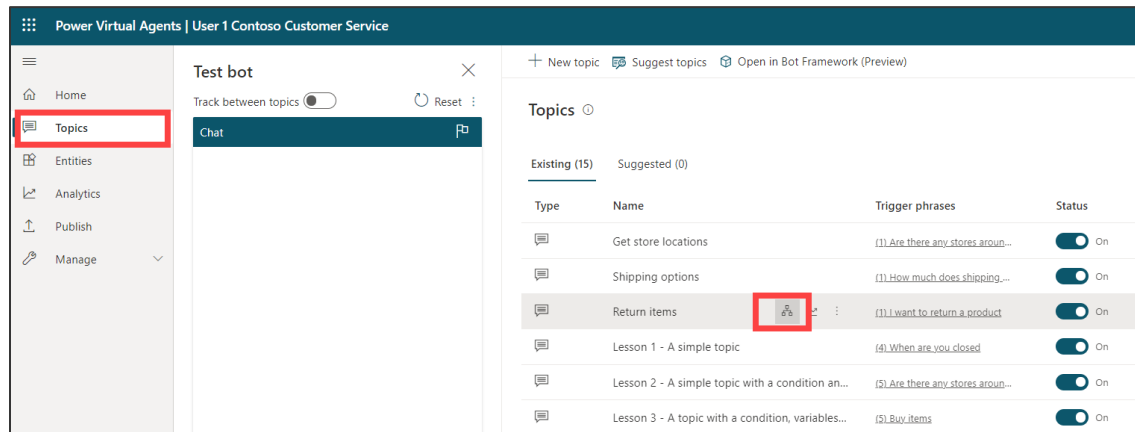
- **Imported** the Virtual Agent in a Day solution package to the environment where you have built your bot.
- **Fixed** connections for the imported Power Automate flows as instructed in the prerequisites.

The above steps should already be completed if your trainer has provided you with an environment to use for the labs.

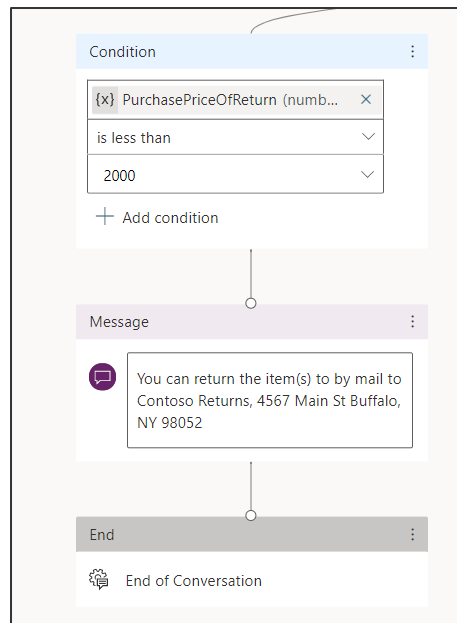
Navigate to <https://powerva.microsoft.com/> and sign in with your credentials.


Task 1: Add on to the Return Items topic

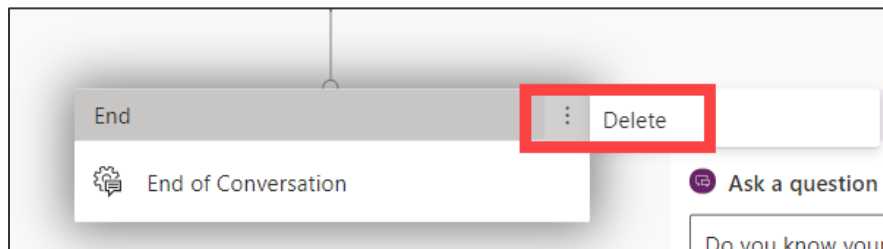
1. Click **Topics** in the left navigation pane.
2. Find the topic you built in Lab 4, **Return items**. Hover your mouse over the topic and then click the **Go to authoring canvas** button that appears. (See screenshot below.)




3. Scroll down the topic design until you find the Condition node where you branched on Purchase Price less than \$2000, and the Message node that says "You can return the item(s) by mail to Contoso Returns, 4567 Main St Buffalo, NY 98052."

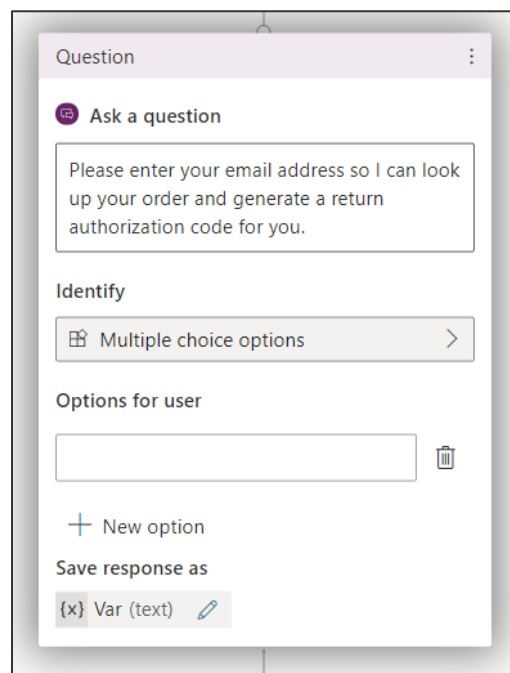


4. Delete the **End of Conversation** node that follows that Message node, by clicking the Options  icon in the header and choosing **Delete**.



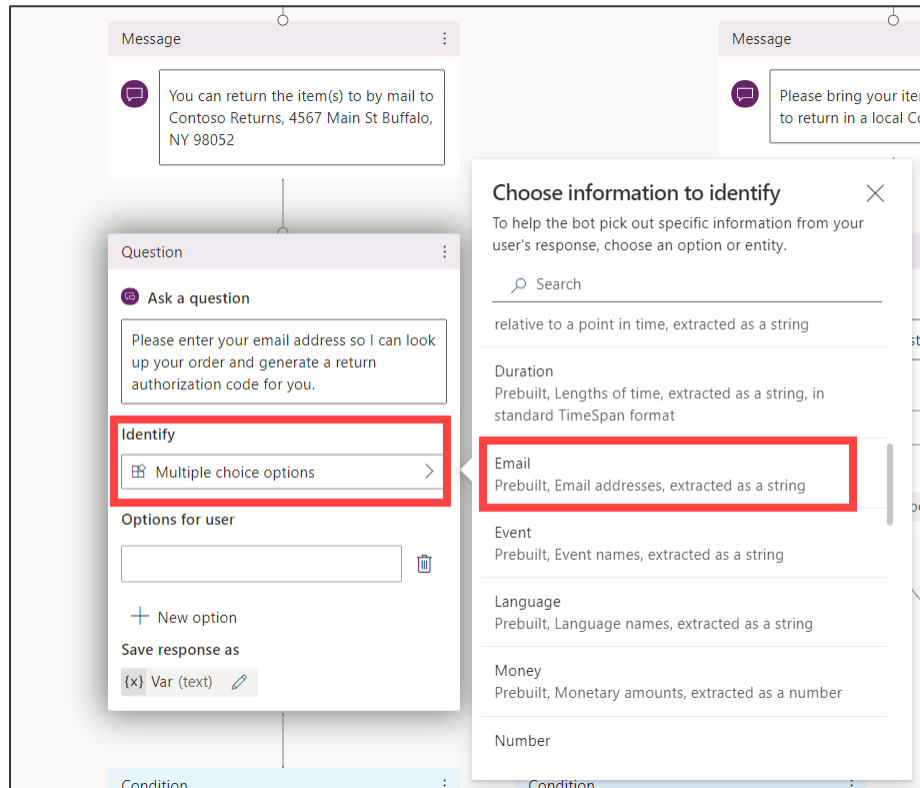
5. Where you just deleted the End of Conversation node, click the **Add node**  button and select **Ask a question**. Use the question:

Please enter your email address so I can look up your order and generate a return authorization code for you.

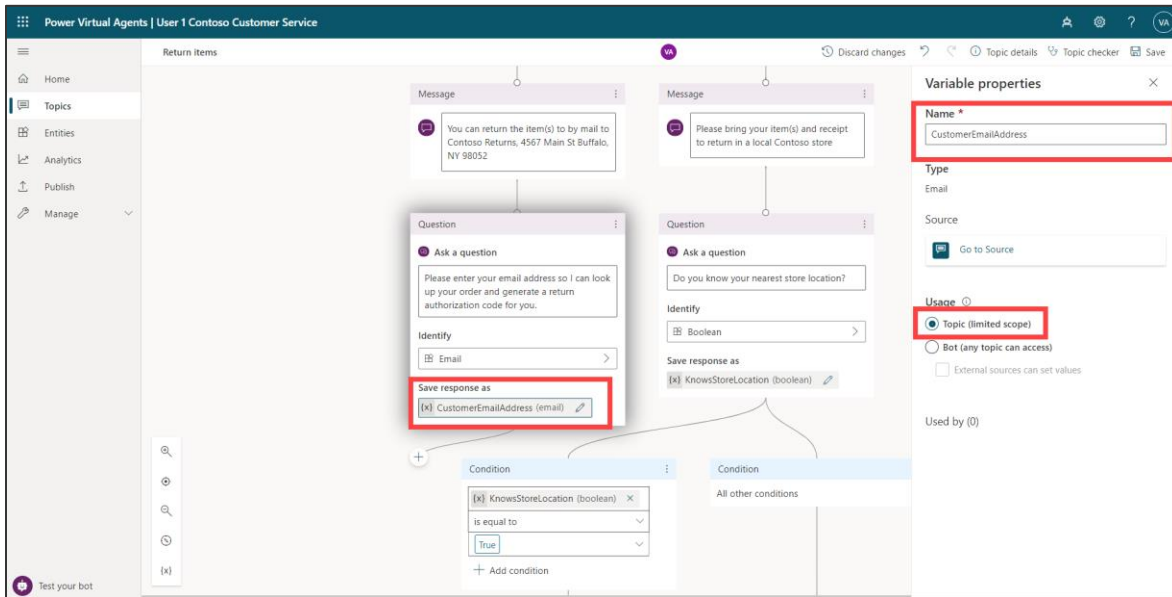


6. Click **Identify** field and choose **Email** from the Entities list.

When you use the Email entity, Power Virtual Agents will ensure that what the user enters is formatted as an email address. If they enter something else, it will ask again until they add a correctly formatted email address.




7. In the **Save response as** field, click the variable name **Var (text)**, and rename the variable name from **Var** to **CustomerEmailAddress**. Leave it as a Topic variable. Click **Save** and close the Variable Properties pane.



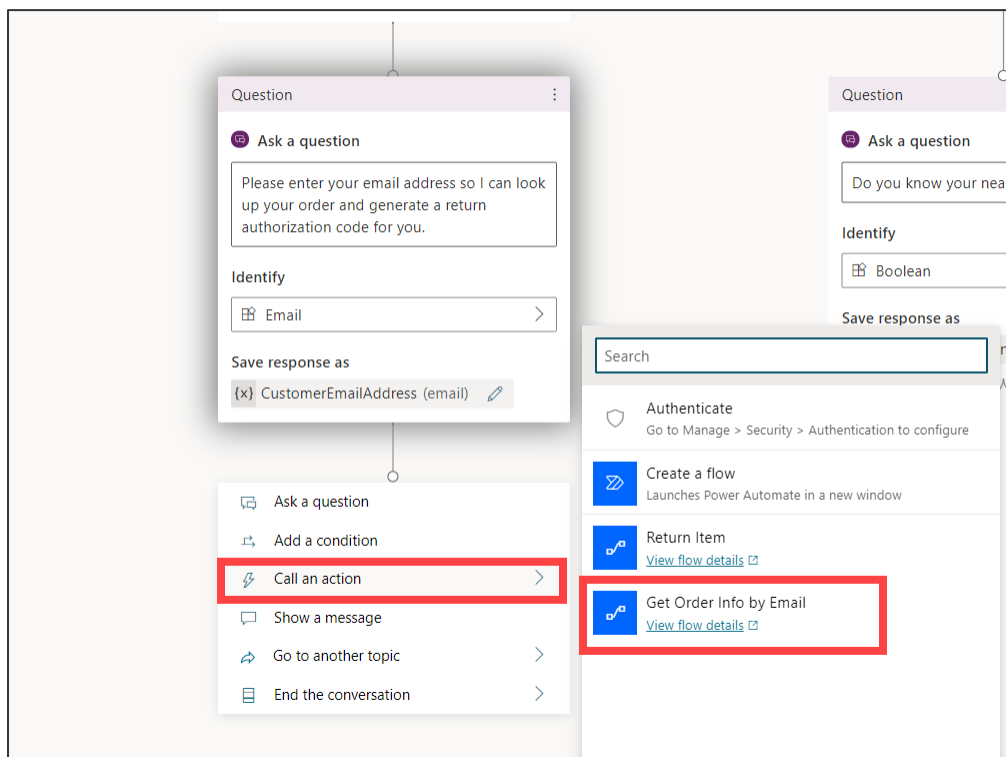
In the next task, we'll use the email address in a Power Automate action that looks up their order. Then we'll use another Power Automate flow to generate a code that authorizes the return.

Task 2: Call Get Order Info by Email action

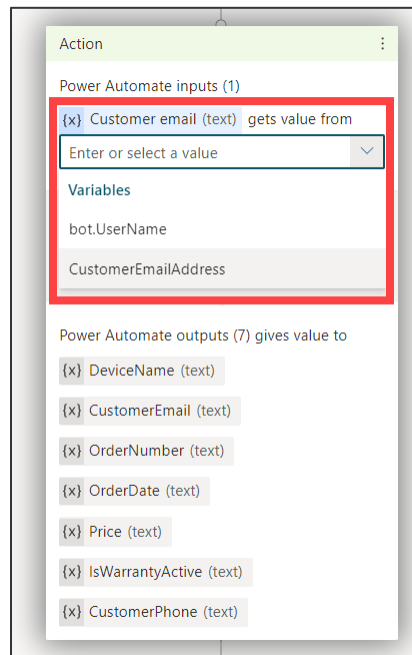
Now, we're going to use the email address to find the order, by adding the **Get Order Info by Email** flow (which you imported into your bot environment during the lab pre-requisites). This Power Automate flow finds the order record associated with the user's email address and returns information about the device order.

1. Click the **Add node**  button and select **Call an action**.
2. Choose **Get Order Info by Email** from the action list. (If you don't see this listed, you may need to complete the lab pre-requisites.)


TIP: Click on the name of the flow, not the View flow details link (that will open the flow in a new tab – if you accidentally click there)



3. The Power Automate flow tells you what inputs it needs. In the **Power Automate inputs** field, set it so that the flow will receive the value for **Customer email** from the CustomerEmailAddress variable you used to capture the customer' email address in Task 1.



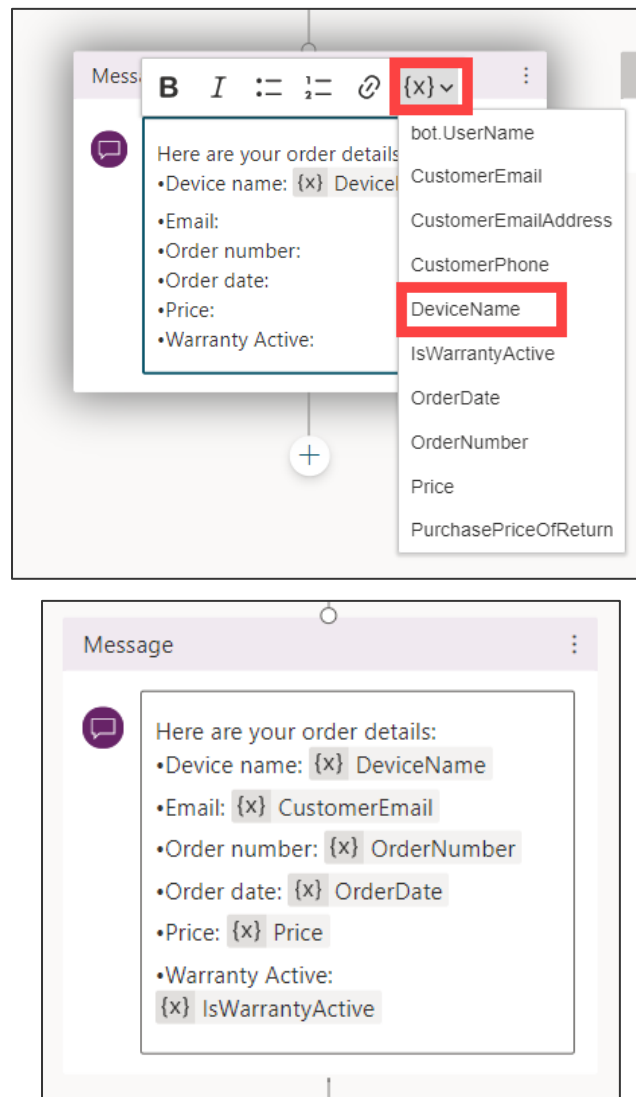
The Power Automate flow also tells you what outputs it will send you back as information stored in variables (which are named in the flow definition, not in the Power Virtual Agents topic). You can use those output variables in many ways; in this case you will show them to the user as text.

4. Click the **Add node**  button and select **Show a message**. We will show the order details to the user.
5. Copy and paste the text below into the **Show a message** node.

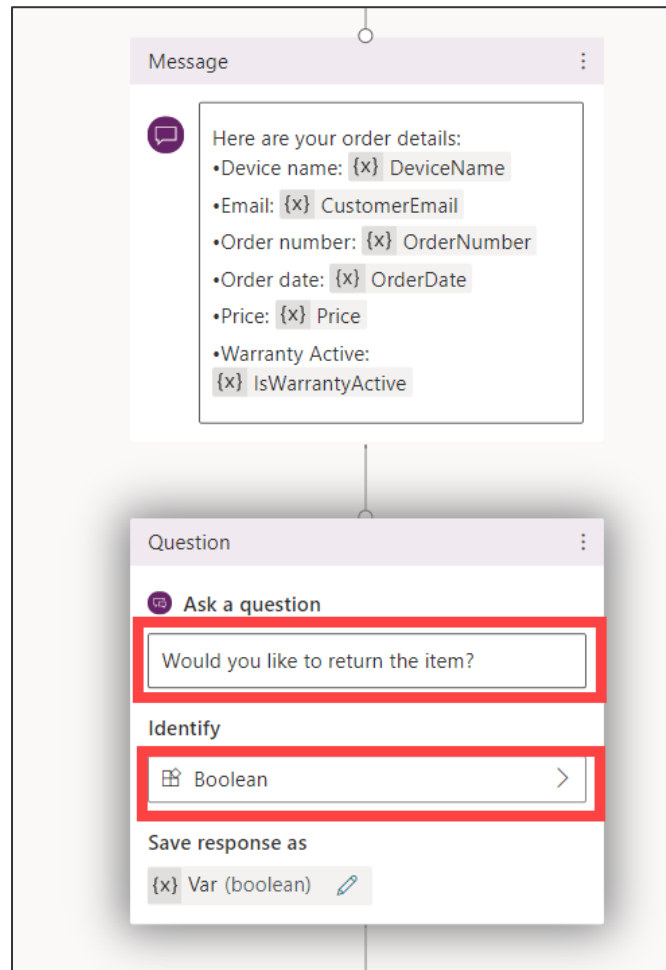
Here are your order details:

- Device name:
- Email:
- Order number:
- Order date:
- Price:
- Warranty Active:

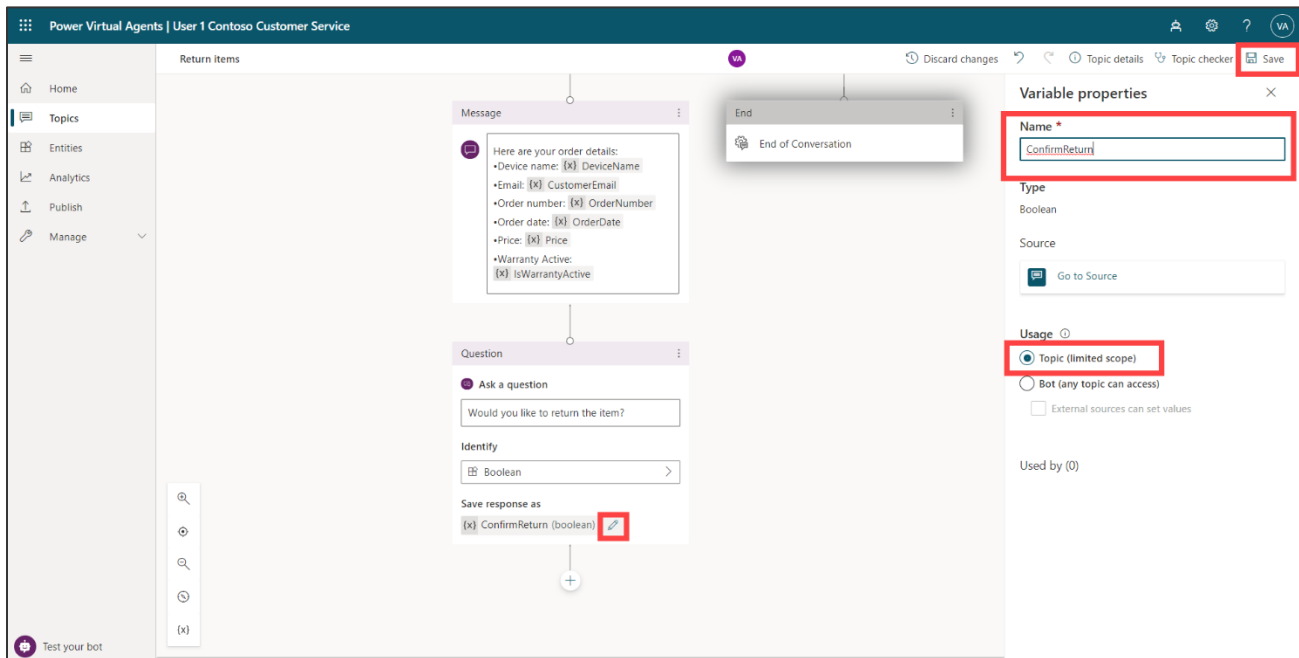
6. For each line item in the text (such as "Device name:"), click to place your cursor after the colon (":"), add a space, and select the corresponding variable from the **{x}** drop-down list in the node's editor bar. (Follow the screenshot below.)



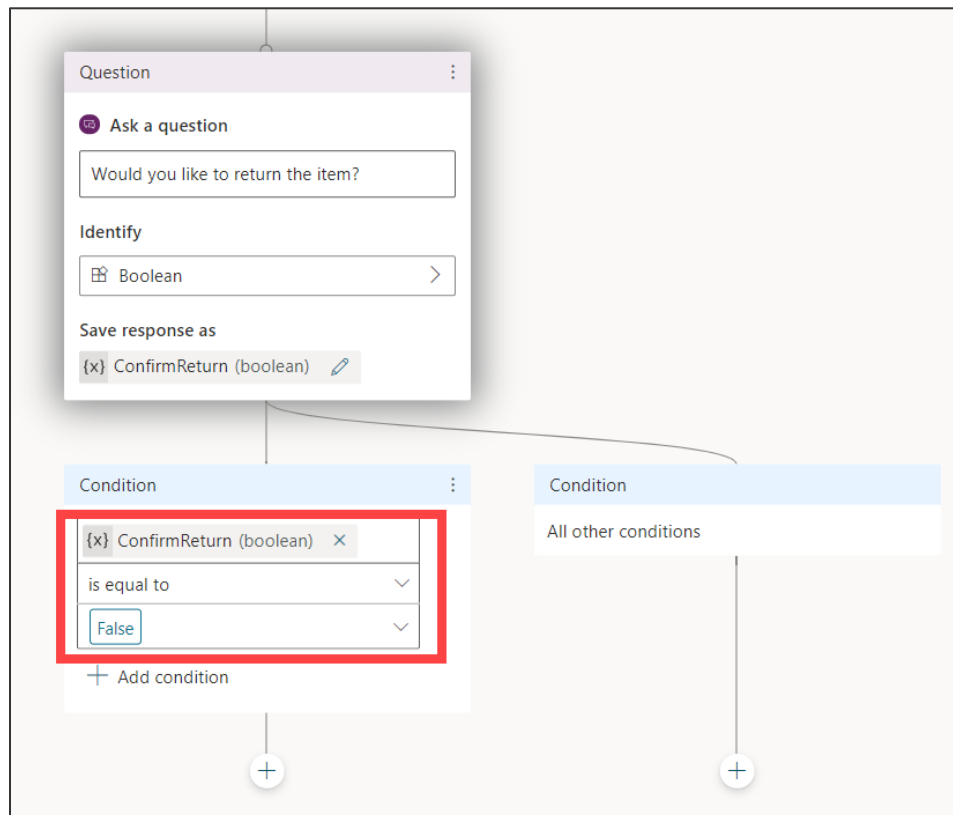
7. Add an **Ask a question** node. Use the question "Would you like to return the item?" and choose **Boolean** as the entity type to identify. (This will show the user "Yes" and "No" buttons in the chat, though you won't see them in the authoring canvas.)



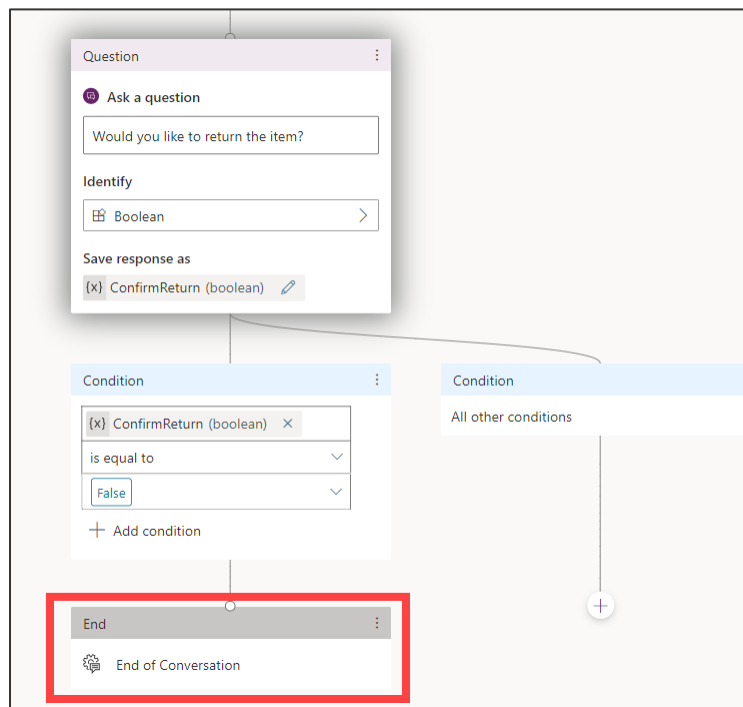
8. Name the variable **ConfirmReturn**. Leave it as a Topic variable. Click **Save** and close the Variable Properties pane.



9. **Add a Condition** to the conversation. In the Conditional branch, set up the node to test for the **ConfirmReturn** variable equal to False. (This branch will be for users who don't want to return their order after all.)




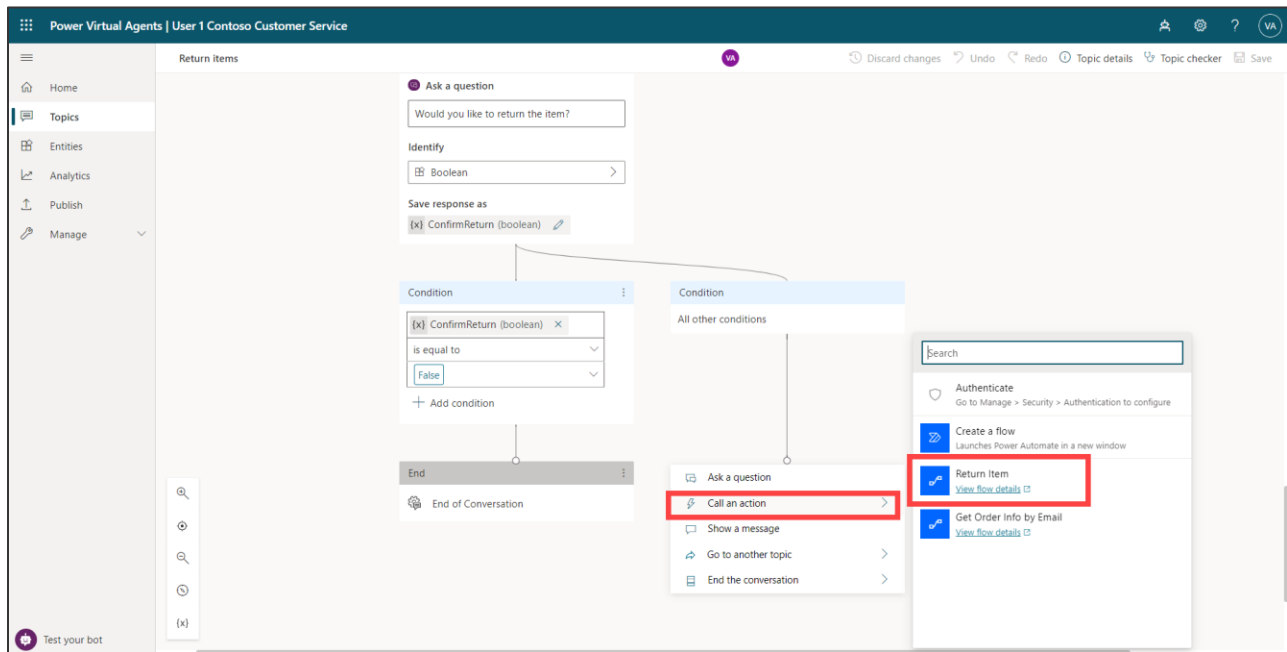
10. Add an **End the conversation > End with survey** node.



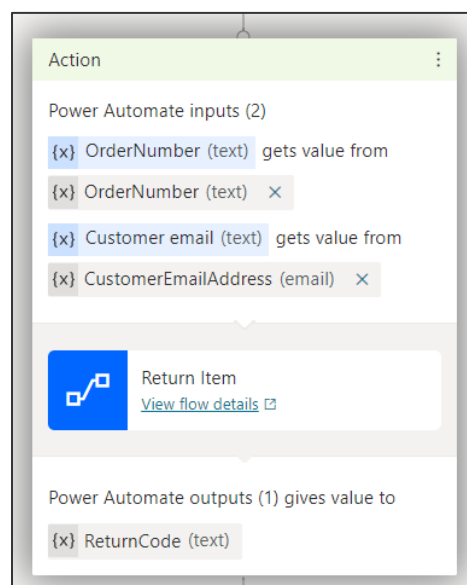
Task 3: Add Return Item action to the conversation

Next, we will add another Power Automate action, to return the device.

1. Under **All other conditions** (which will handle the “yes” response to the “Would you like to return the order?” question), click the **Add node**  button and select **Call an action**.
2. From the actions list, select **Return Item**.

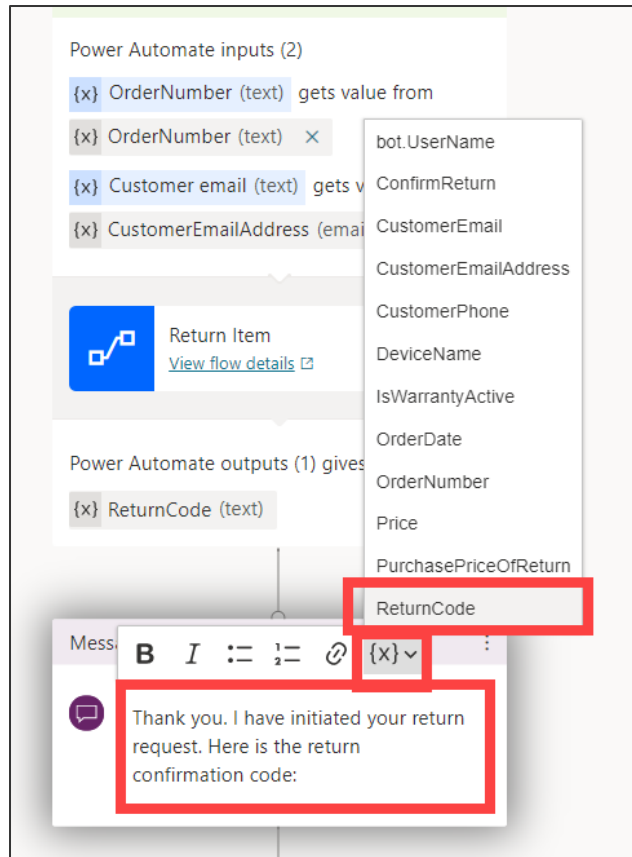


3. For **Power Automate inputs**, select the **OrderNumber** and **CustomerEmailAddress** variables. (See the following screenshot.)



4. Add a **Message** node after the action.
5. Enter the text below and insert the **Return Code** variable from Return Item's output:

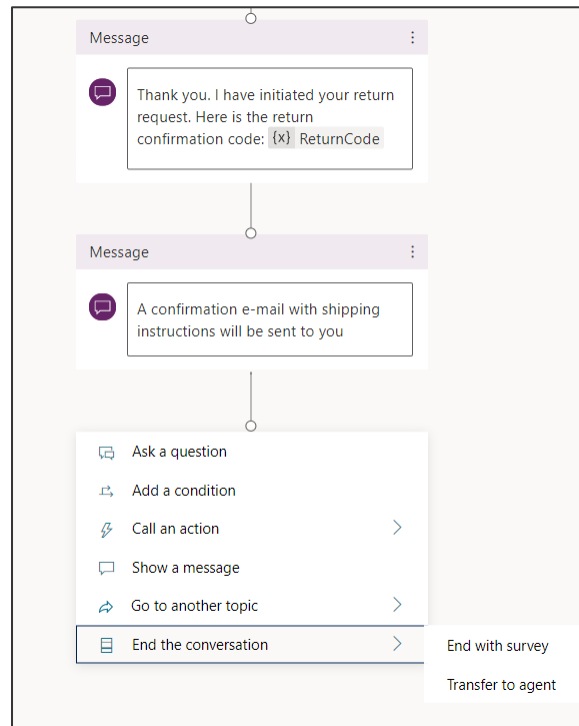
Thank you. I have initiated your return request. Here is the return confirmation code: {x}Return Code.



6. Add a new **Message** node with message

A confirmation e-mail with shipping instructions will be sent to you.

7. Then add an **End the conversation – End with survey**.

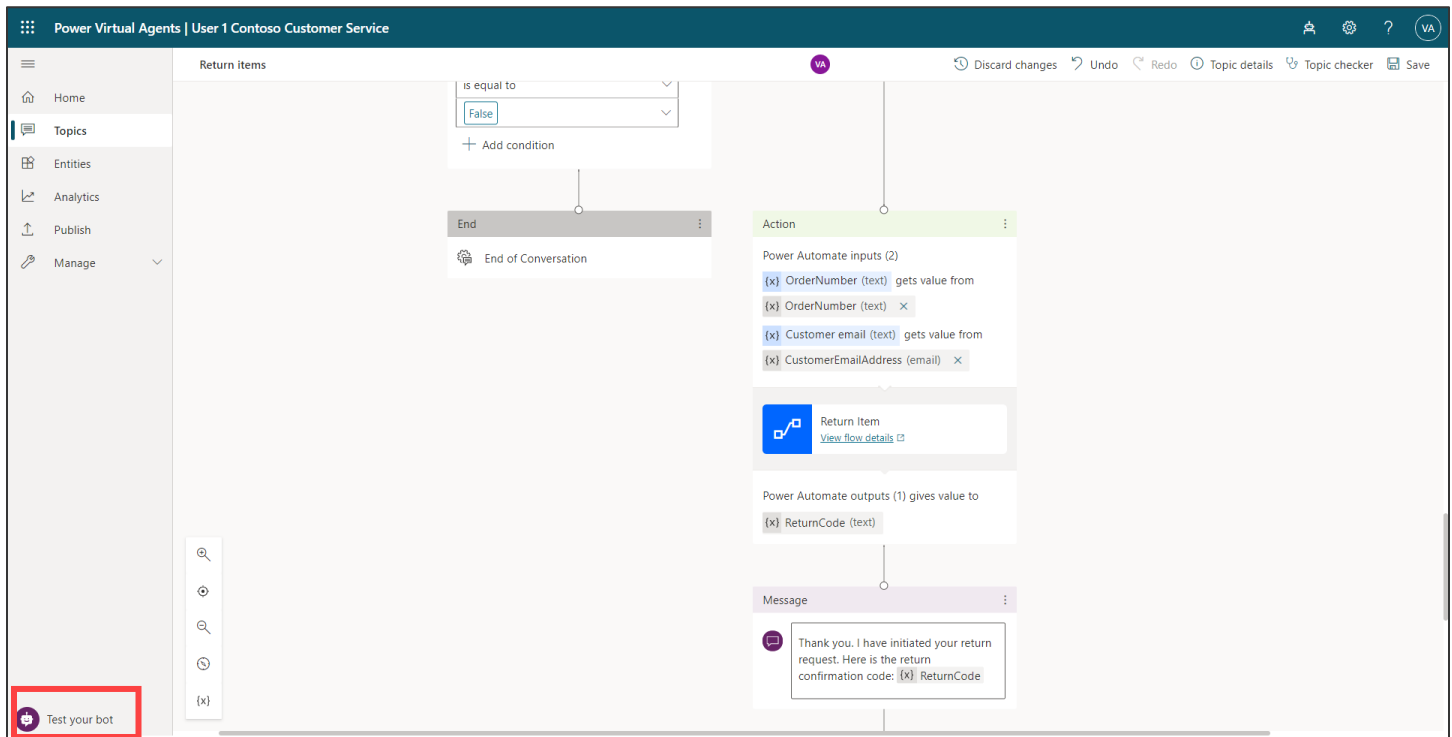


8. Save the topic.

Note: the final message is just an example. You can challenge yourself by building your own Power Automate flow to send emails through your chatbot.

Task 4: Test your conversation

1. Click **Test your bot**.



2. Turn on the **Track between topics** toggle



3. Tell the bot **"I want to return a product"**, then click **Send** ➤.

4. Reply to the bot's questions about your name and purchase price (\$899.99). When the chatbot asks for your email address, provide the email address you are using for the labs. The bot calls your Power Automate flow, and returns details of your order. (Your instructor will have set this data up for you before the labs)

The screenshot displays the Power Virtual Agents interface for 'User 1 Contoso Customer Service'. On the left, a 'Test bot' chat window shows a conversation where the user provides their name and purchase price (\$899.99). The bot asks for the email address, and the user provides 'admin@pvaia0521.onmicrosoft.com'. The bot then displays order details: Device name: Microsoft - Surface Pro 64GB, Email: admin@pvaia0521.onmicrosoft.com, Order number: dbdf2d99-a5a8-eb11-b1ac-000d3a5b019b, Order date: 4/29/2021 4:44:43 AM, Price: 899.99, and Warranty Active: True. The chat window includes 'Yes' and 'No' buttons for the question 'Would you like to return the item?'. On the right, a 'Return items' flow diagram is shown. It starts with a 'Message' action displaying order details, followed by a 'Question' action asking 'Would you like to return the item?'. The flow then branches based on the 'ConfirmReturn' boolean response, leading to a 'Condition' and an 'End' action.

5. Answer "Yes" to the question "Would you like to return the item?" The chatbot generates a return confirmation code and replies with the code.

The screenshot displays the Power Virtual Agents interface for 'User 1 Contoso Customer Service'. On the left, a 'Test bot' chat window shows the user answering 'Yes' to the question 'Would you like to return the item?'. The bot then displays a return confirmation code: 'RMA-1de93a66-5d26-4255-a03a-2f5fd9fe25c2'. The chat window includes a 'Type your message' input field. On the right, a 'Return items' flow diagram is shown. It starts with a 'Message' action displaying the return confirmation code, followed by a 'Message' action stating 'A confirmation e-mail with shipping instructions will be sent to you'. The flow then branches based on the 'ReturnCode' text response, leading to a 'Condition' and an 'End' action.

6. Finish the conversation by responding to the survey.

Congratulations -you have now created a bot which can submit and retrieve information from a database on behalf of the user. In the next lab you will build your own flow.

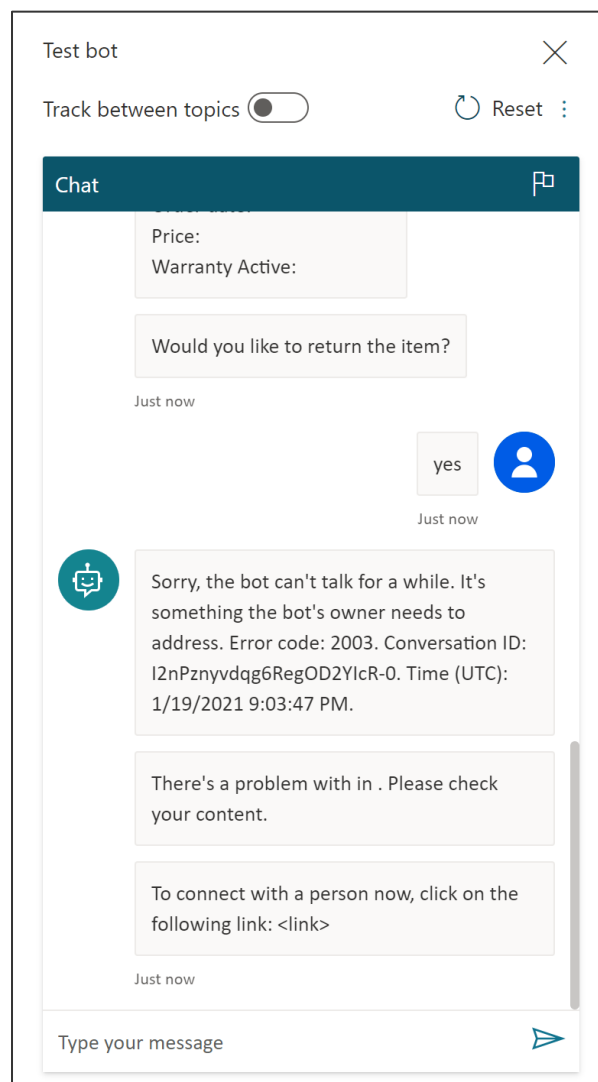
Best Practices for Flows in your Power Virtual Agent

Note: There is no lab work below. The following has been provided as information for your further learning. Please do not edit the existing flow for Return Items used below as other users in the training tenant will be using this for their lab.

Handling Exceptions

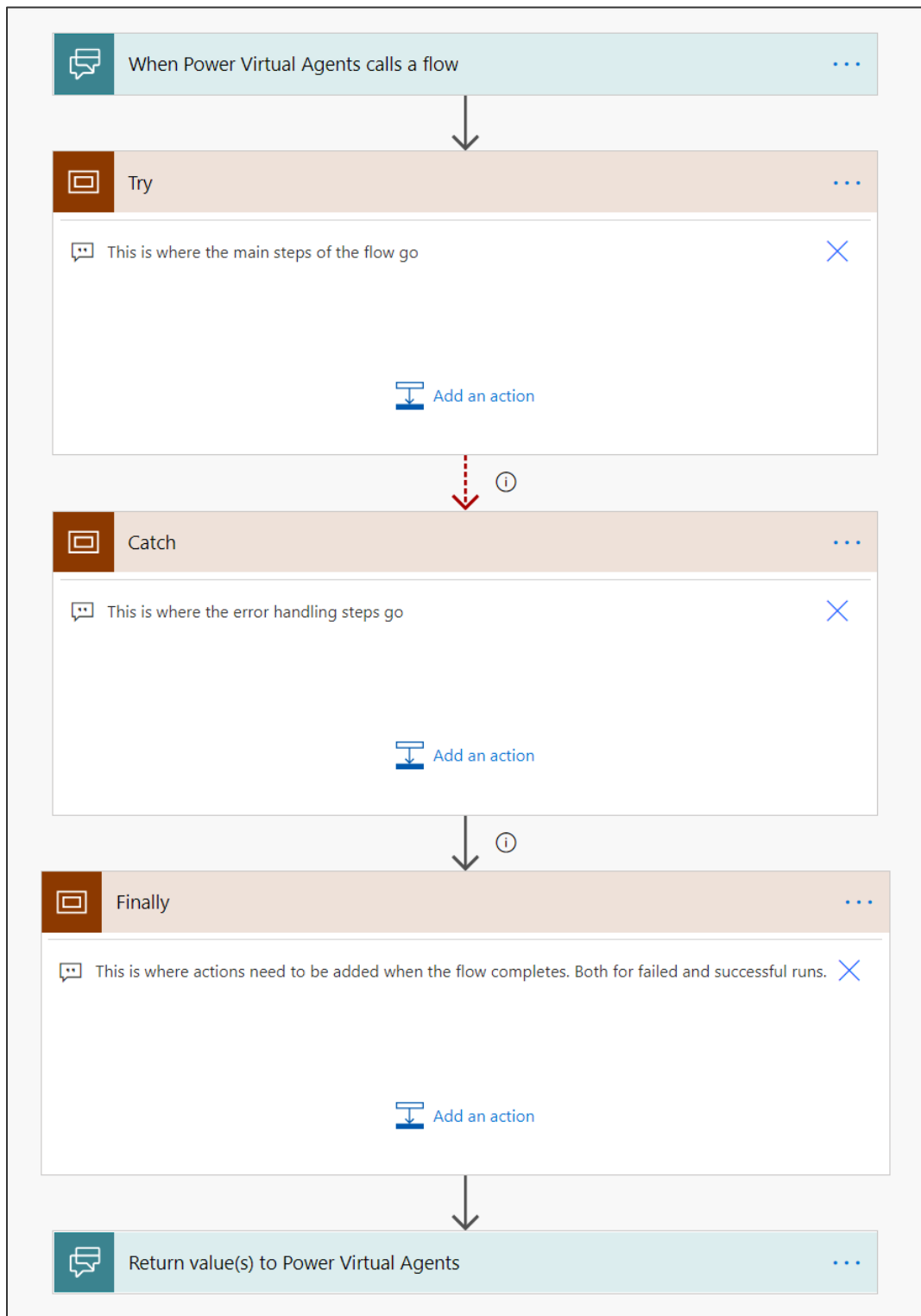
There can be instances where a flow in your Power Virtual Agents bot does not run successfully. For example, the person interacting with the bot might provide an incorrect value, which your flow is not expecting to handle. When a flow is run unsuccessfully during a conversation, the end users will be presented with an error code.

If you consider the Return Item flow used in this lab, the flow is expecting to update a record based on an existing Order Number stored in the system (Microsoft Dataverse). If the email address the customer provides cannot be found in Dataverse (i.e. there is no associated Order Number with the email address), their chat will look like this:



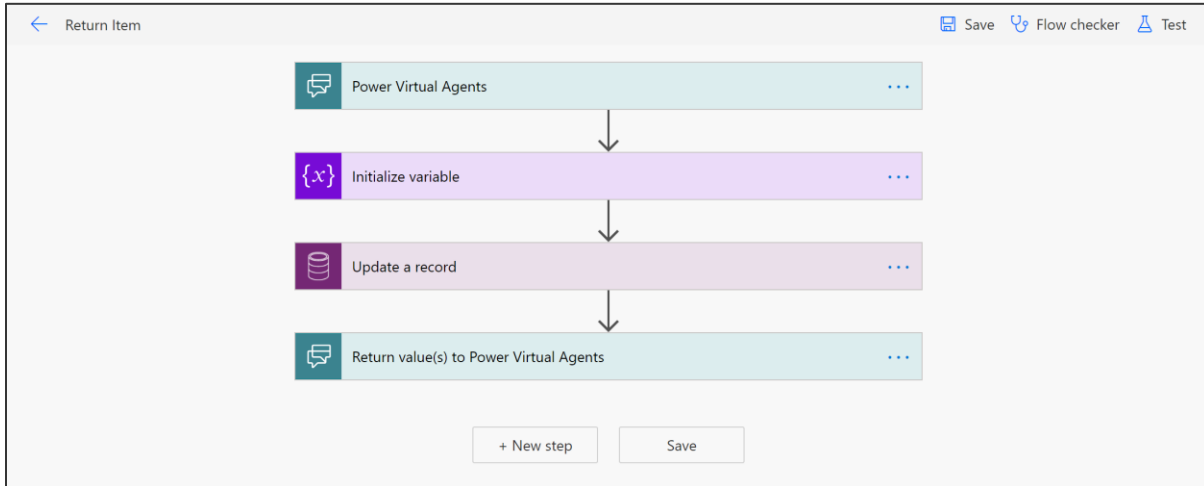
To avoid such situations, it is best practice to build your Power Automate flow so that it can handle exceptions. If the flow itself handles exceptions, the customer/end user can be provided with a user-friendly message rather than an error code.

You can use the **Try, Catch and Finally** pattern in your flow to handle errors and exceptions.

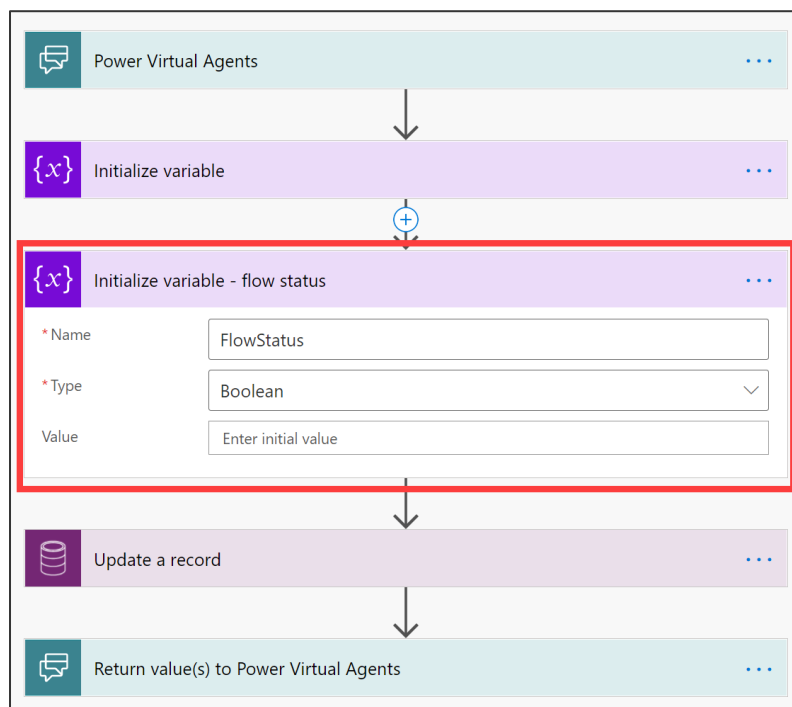


In the case for the Return Item flow, the details below will show you how the **Try and Catch** patterns can be used to avoid errors returning to the end user of the bot.

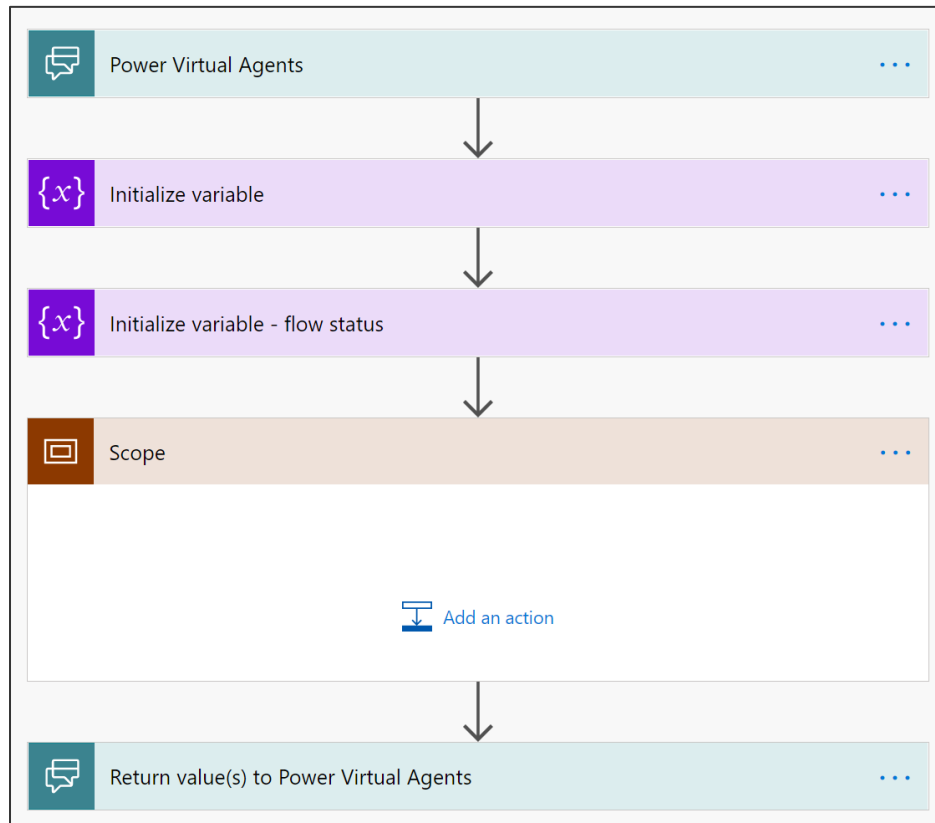
This is what the Return Item flow looks like.



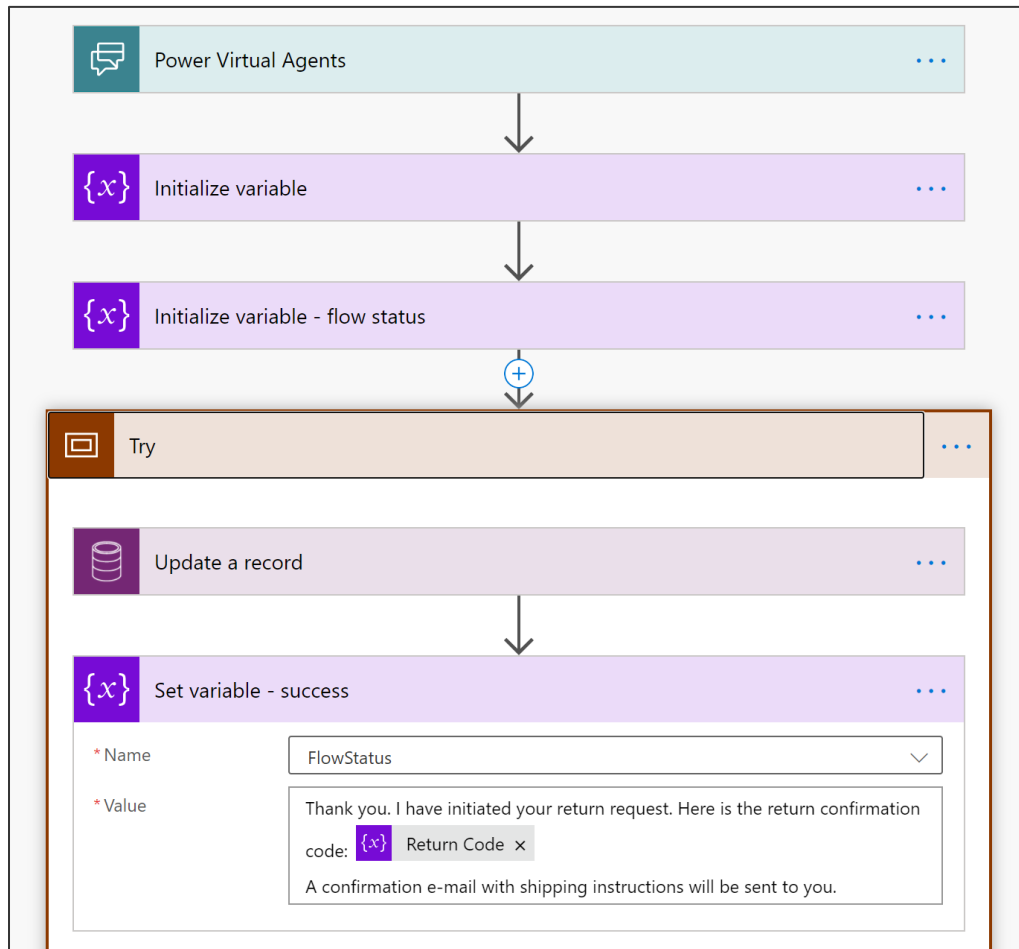
We will create another variable for our "Flow Status". This will later be returned to the bot conversation. The flow status will allow you to customize a message presented to the end user, whether the flow ran successfully or failed.



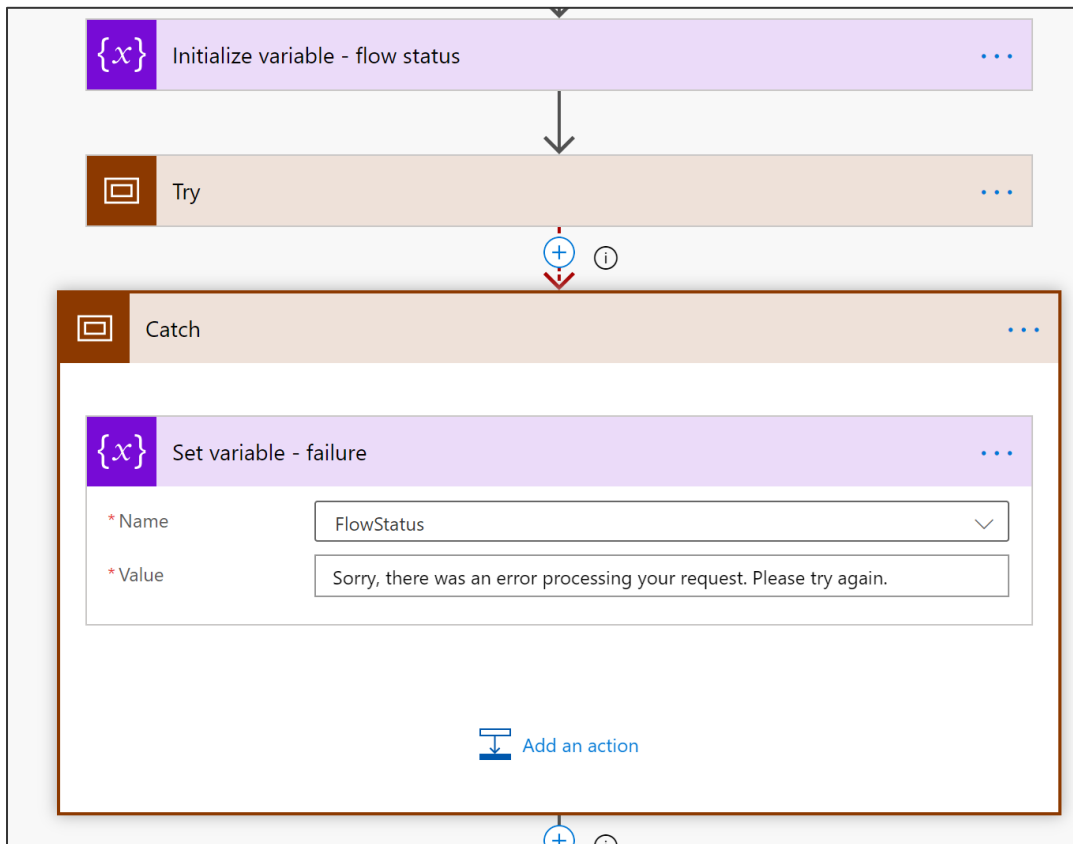
Next, we will create Scopes to group together the actions that occur if the flow is successful (Try) or if it fails (Catch). A scope is a type of action you can add in your flow.



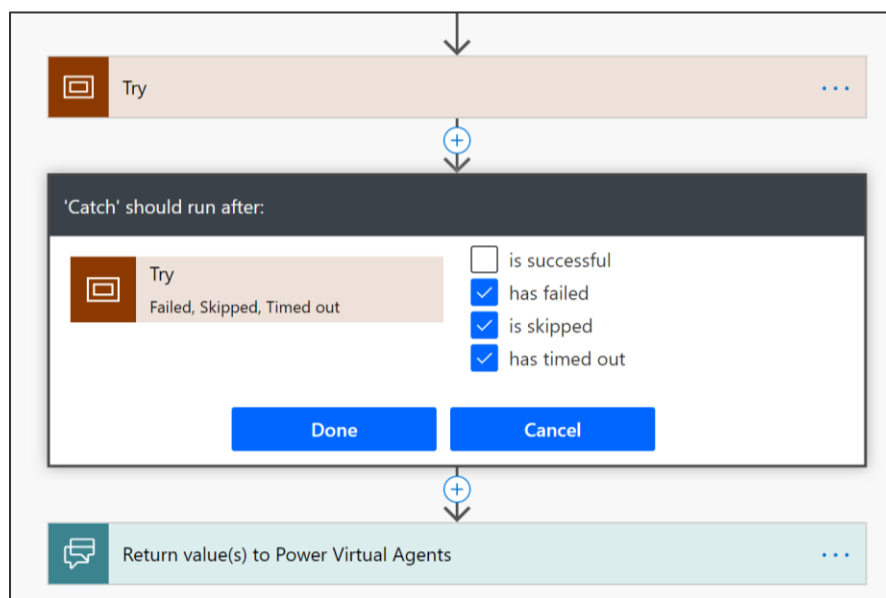
Within the Try scope, we will add the actions that should be performed on a successful run of the flow. Within the scope, we can set a variable for a custom message sent back to the bot if the flow is run successfully.



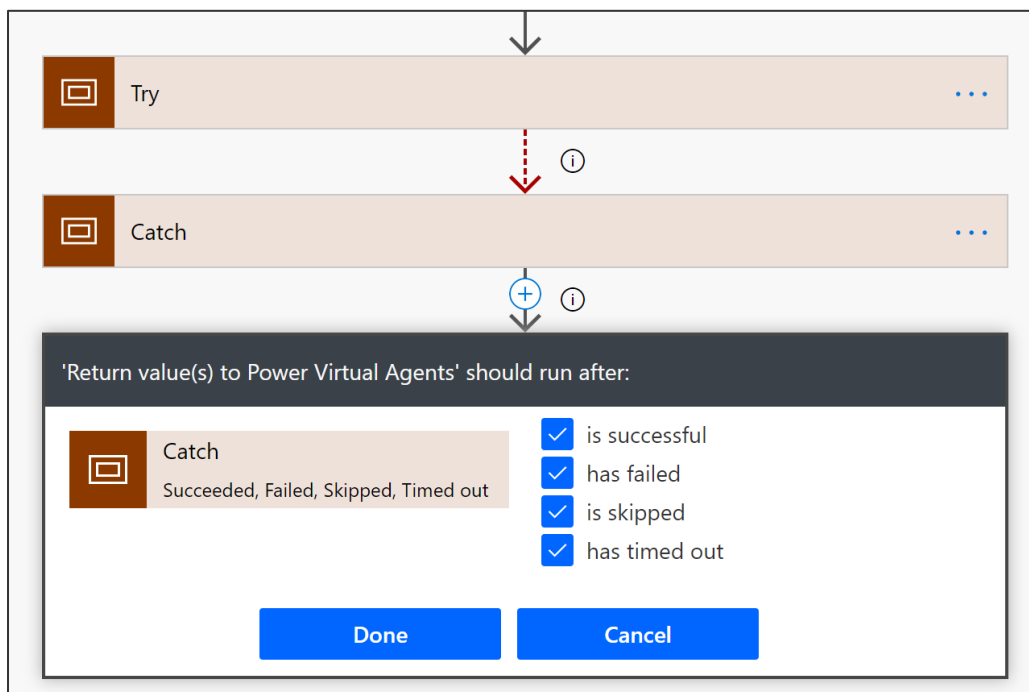
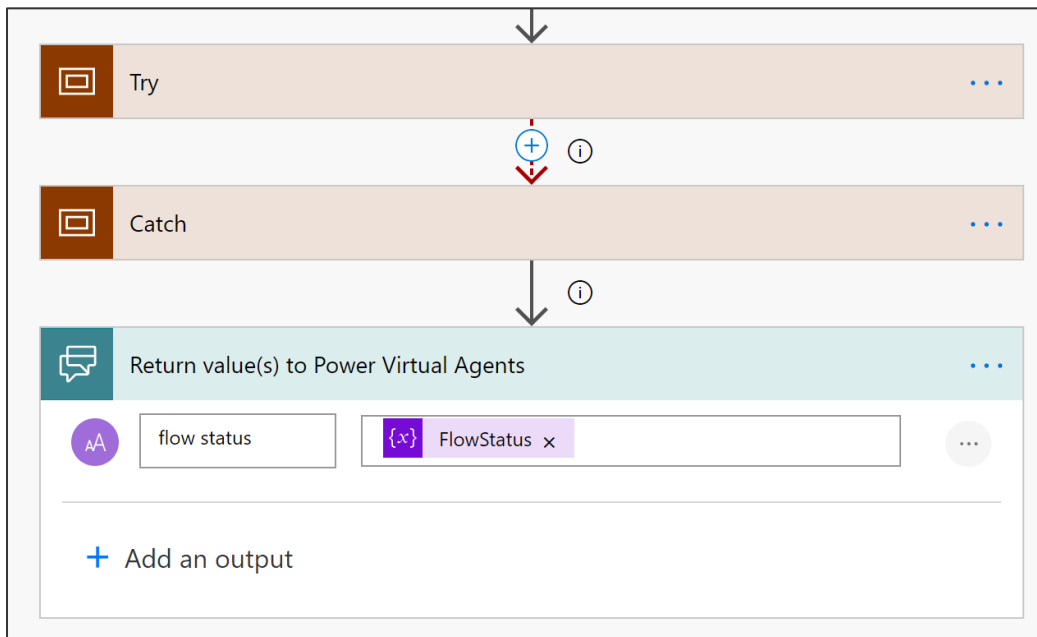
We can then create another scope for Catch. These are the actions that should occur if the actions in the Try scope are unsuccessful. In this case, a variable is set to display a custom user-friendly message back to the bot.



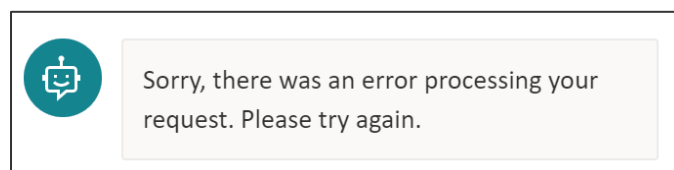
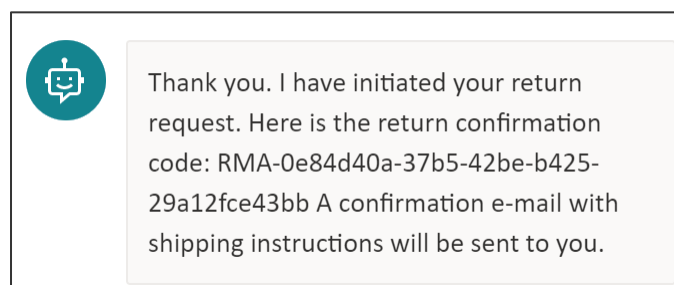
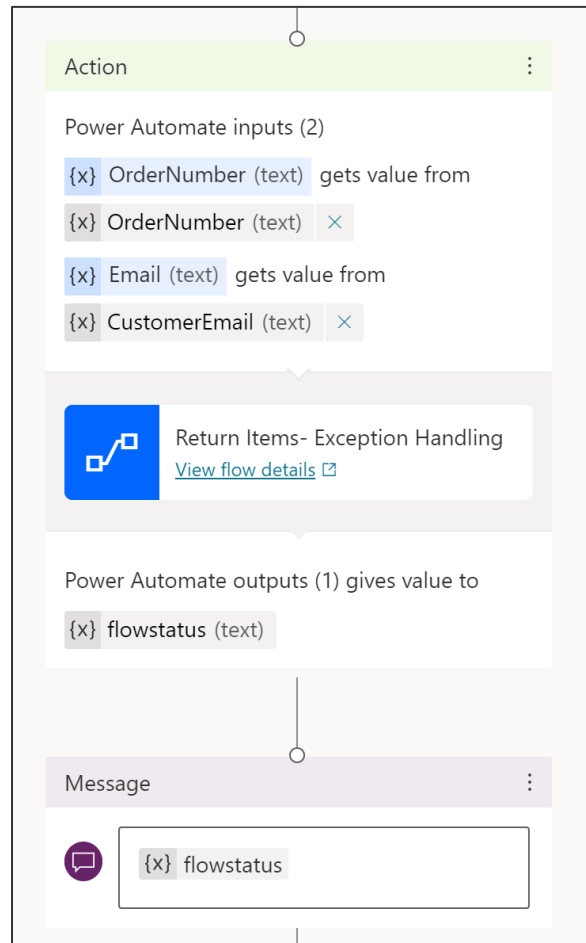
We can configure the **run after** settings for the Catch scope. This is to specify that the Catch scope actions should only run if the Try actions fail.



Lastly, we want the variables (user friendly messages) created in the Try and Catch scopes to be returned to the bot during the conversation. We can add the variable as a value returned to Power Virtual Agents. The run after settings for the Return Value(s) to Power Virtual Agents should be set to run regardless of flow success or failure.



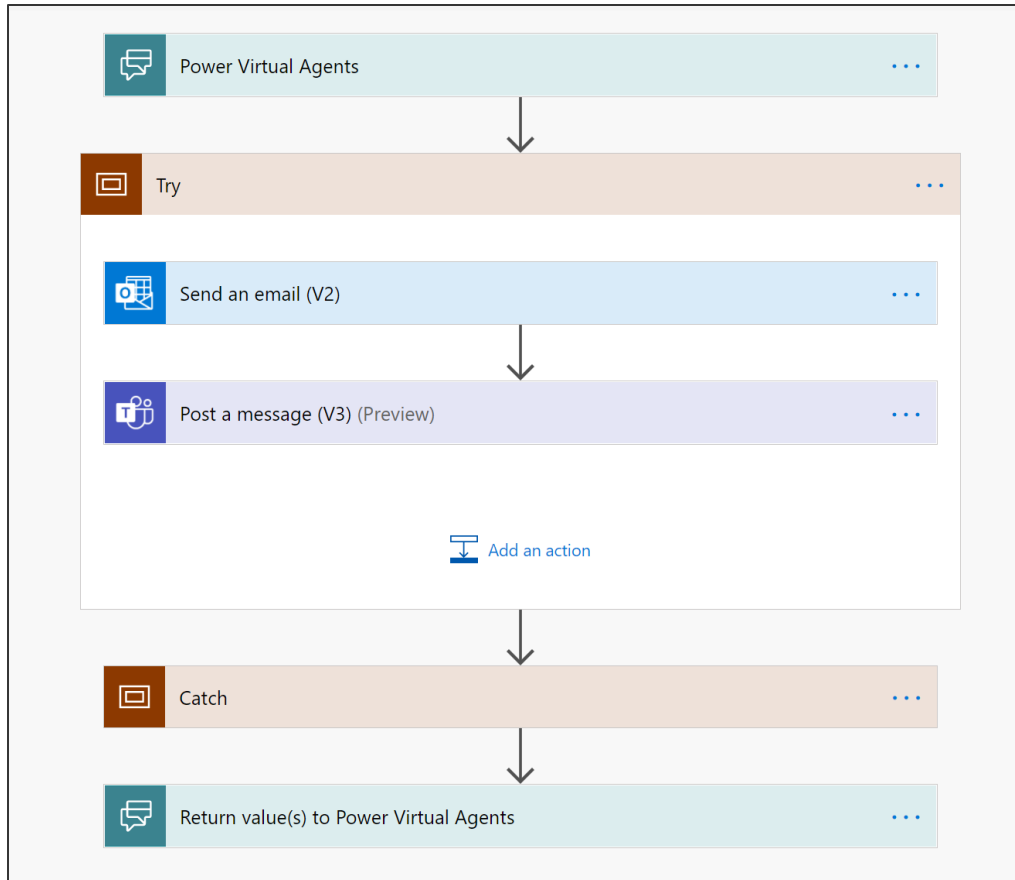
Back in the bot conversation authoring canvas, the messages can be edited to display the variable message created in the flow.



As the flow has run successfully, regardless of whether or not there was an issue processing the request, the end user will no longer be presented with an error code.

Minimize end user wait time

Another best practice for flows with you Power Virtual Agent is to minimize the time an end user has to wait for a flow to be performed. For example, you might have a flow in your bot conversation where the user can initiate an email and Teams message to be sent. Typically, your flow might look something like this:



According to the flow above, the end user would have to wait until the email is sent, Teams message is posted, and for any exception handling steps to occur before they get a response back from the bot. It is a better experience for the end user if they get a response from the bot as soon as possible. For example, if the flow took 1 minute to finish running, the end user would be on the other end waiting for a response.

To speed up the time taken to send a response back to the end user, it is recommended for the flow to perform the Return value(s) to Power Virtual Agents step as soon as possible. This way, the end user can continue their conversation with the bot sooner, while the remaining actions in the flow are still running in the background.



Lab survey

We would appreciate your feedback on Power Virtual Agents and on this hands-on-lab, such as the quality of documentation and the usefulness of the learning experience.

Please use the survey at <https://aka.ms/PVAiaDSurvey> to share your feedback.

You may provide feedback for each module as you complete it or at the end once you've completed all the modules. Thank you!

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