



# Microsoft Power Virtual Agents in a Day Preview

Lab 04: Build Power Automate Flows with your chatbot  
Hands-on Lab Step-by-Step

November 2022

Preview

# Contents

- Power Virtual Agents ..... 1**
  - Goals for this lab ..... 1*
  - Scenario: Contoso Coffee customer support ..... 1*
  - Prerequisites..... 2*
  - Preview Material Notice ..... 2*
  - Understanding Power Automate..... 3*
  - Exercise 1: Build a basic Power Automate flow in PVA..... 3*
  - Summary..... 11*
  - Lab survey..... 11*
  - Terms of Use ..... 11*

# Power Virtual Agents

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## Goals for this lab

After this lab you will be able to:

- Understand the basics of Power Automate
- Use Power Virtual Agents to request data from another data source using Power Automate in a basic use case (using the weather) and return the data in a conversational dialog with a customer or user
- The time to complete this lab is [40] minutes.

## Scenario: Contoso Coffee customer support

**Please note** that to keep the scenario simple to understand the Power Automate basics and how it works with Power Virtual Agents, we have not used Contoso Coffee as a use case in this lab. We have used a simple requirement to retrieve data from a public weather service (MSN Weather) based on a region. This is to showcase how Power Automate can be used to retrieve data from an external service. We plan to add more specific and detailed scenarios to this material later.

Welcome to Contoso Coffee! At Contoso Coffee, we are passionate about providing efficient, environmentally sustainable, and innovative coffee products, barista experiences, and services. With you as our newest Customer Support team member, we have no doubt that together we will reach higher levels of success and innovation!

Consumer sentiment is at an all-time high, but with increasing competition, it is more important than ever to minimize costs and focus on customer satisfaction so that we can maintain our competitive edge in having a robust customer base, while continuing to invest back into the customer experience and maximize our customer lifetime value.

Contoso Coffee are very interested in providing customers with the capability of asking questions about their order status, delivery time, and even the ability to be able to modify their order and cancel it. This will unlock a lot of capability for their call center staff and be able to help with deflecting common questions that take a lot of time on the phone, making both customers and agents happier and have more time. They also highlighted briefly that in B2B scenarios where they often work with other manufacturers, they would like to provide access for those partners the ability to view and ask questions around latest invoices or payments or be escalated to live agents if they are in a specific tier of manufacturer.

Customer support costs have continued to rise as the customer base has grown, and the company can no longer continue to expand the Customer Support team. You have been tasked with finding a solution using Power Virtual Agents.

## Prerequisites

Please note that some labs, especially later labs, do reference previous labs in reference to capabilities and previous tasks. The labs have been designed so as long you have access to a Power Virtual Agent trial which has Unified Authoring Preview available, you can get started from any lab without having to complete the previous module to be able to move forward.

For Lab 04 – Build Power Automate flows for your chatbot, we recommend you completing the following labs to get the best experience:

- Lab 00 – Overview
- Lab 03 – Unified Authoring 101

## Preview Material Notice

Please note that this material is provided is under continuous development and is targeted at the Preview version of Power Virtual Agents, Unified Authoring, released in public preview on November 10<sup>th</sup>. Please expect the product to change as the preview period continues and so some of the screenshots or text descriptions may not be what you experience in the latest version of preview in your environment.

We would appreciate your feedback on Power Virtual Agents Unified Authoring 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/pvaiadpreviewsurvey> 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!

## Understanding Power Automate

Power Automate is a cloud-based service that makes it practical and simple for line of business users to build workflows that automate time consuming business tasks and processes across applications and services.

Power Automate is part of a powerful and adaptable business application platform that includes Power Apps, Microsoft Dataverse, Dynamics 365, and Office 365. This platform allows our customers, our partners, and our ISV partners to create purpose-built solutions for their own companies, their industry, for functional roles or even for specific geographies. Line-of-business users, who understand their business needs best, can now easily analyze, compose, and streamline data and processes. Professional developers can easily extend the automation, analytics and apps line-of-business to leverage Azure services like Functions, App Service, and Logic Apps. API connectors, gateways, and Microsoft Dataverse make it possible to get more value out of services or data already in use, either in the cloud or on-premises.

Here are a few examples of what you can do with Power Automate.

- Automate business processes
- Send automatic reminders for past due tasks
- Move business data between systems on a schedule
- Connect to more than 500 data sources or any publicly available API
- You can even automate tasks on your local computer like computing data in Excel.

Just think about time saved once you automate repetitive manual tasks simply by recording mouse clicks, keystrokes and copy paste steps from your desktop! Power Automate is all about automation.

Power Virtual Agents connects easily with Power Automate, being able to pass the variables from user's responses and retrieve data from a number of different data sources, perform complex operations on that data and return to Power Virtual Agents to share that data with the user. Being able to operate on and retrieve data from almost any data source accessible via an API is one of the most valuable benefits of Power Virtual Agents.

As part of this Power Virtual Agents in a Day lab, it will not include an extensive introduction to Power Automate but does cover a basic scenario of how you can retrieve data from an external data source and use it in the conversational experience of Power Virtual Agents. To learn more specifically about Power Automate, you can review the [Microsoft Docs on Power Automate](#) and also review the in a day material for Microsoft Power Apps, which includes Power Automate.

## Exercise 1: Build a basic Power Automate flow in PVA

Connecting to data provides companies with some of the most benefits as it provides information and insight to users that is up to date and often the relevant for customer or user questions.

In this exercise, you will go through creating a new topic, adding a simple Power Automate action to retrieve information from an external service, and display that data back to the user.

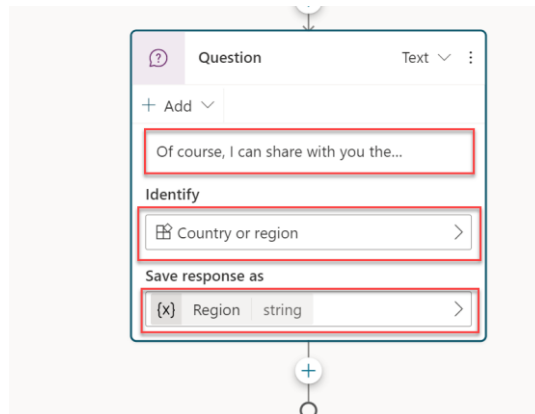
### Task 1: Create a new topic

1. Open the Power Virtual Agents authoring canvas and click New Topic. Name your Topic '**Check Weather**'

2. Enter some simple trigger phrases that a user may ask such as **'What is the Weather'** and **'What is the temperature today'**
4. Create a new Question Node and enter text like *'Of course, I can share with you the weather! Can you share the name of the region where you want to know the weather?'*
5. Here you could use the entity **'Country or region'** so that you can utilize slot filling to detect the region or country from the user's response to the question however for the purpose of these labs and you can select *'User's entire response'*

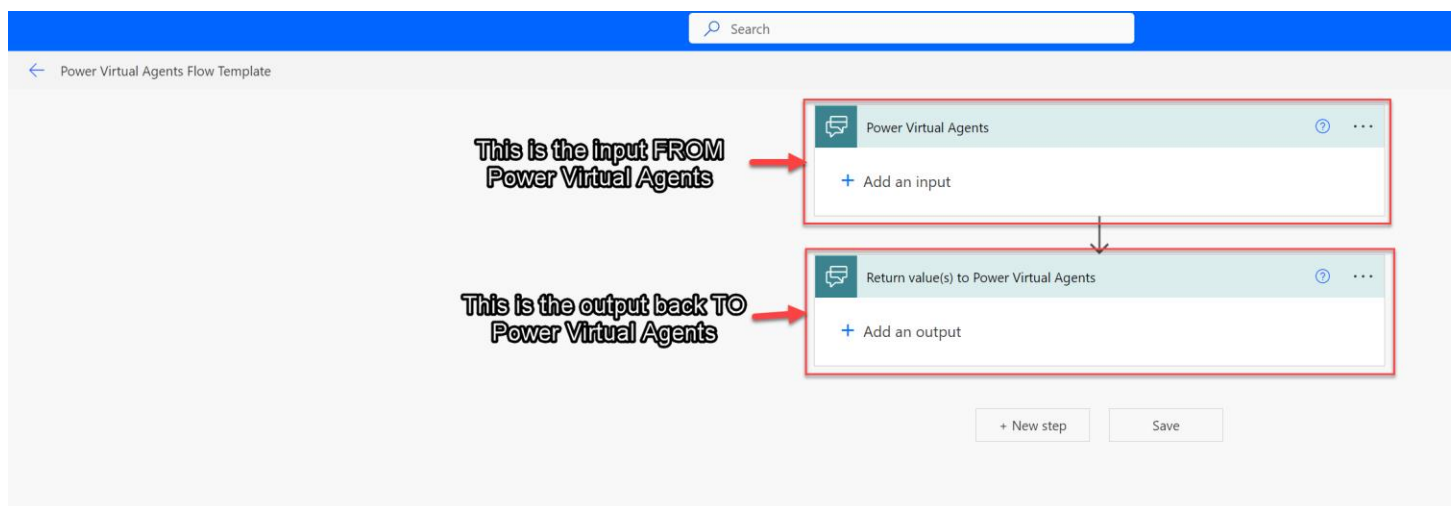
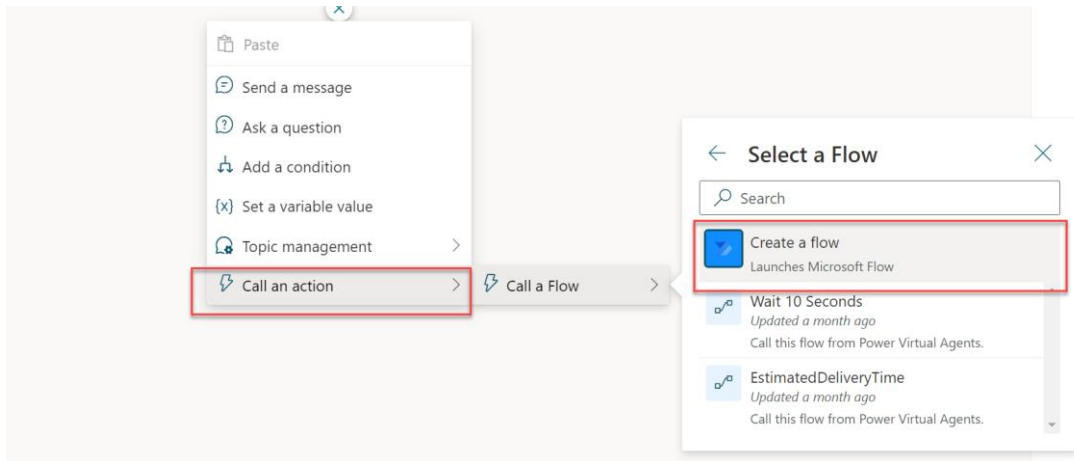
**Pro Tip!:** You could even detect or estimate the user's region from another topic or time zone area system variable!

6. Rename the variable to 'Region' as shown below in the screenshot:



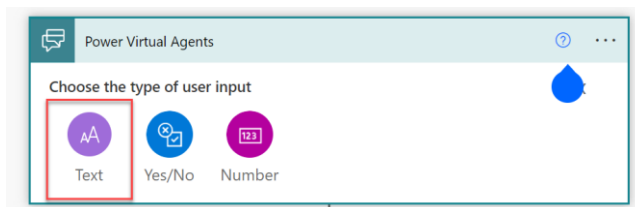
## Task 2: Create your Power Automate Flow

7. Click on the '+' new node button under to create a new node and perform the following actions. Click **'Call an action'** then click **'Call a Flow'** and lastly **'Create a flow'** as shown in the screenshot below. This will open Power Automate in a new browser window and includes the scaffolding pre and post actions for a new Power Automate flow to interact with Power Virtual Agents, as shown in the second screenshot below:

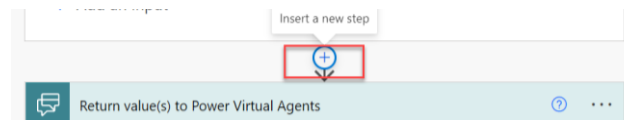


8. It is important to understand the scaffolding that occurs when creating a new Power Automate Flow using Power Virtual Agents, as shown above. Two nodes are automatically created. The first one is the input that the flow expects from Power Virtual Agents. There doesn't have to be any inputs set within this action, but a common input would be a user utterance or variable, like the country or region specified in the example. The second node is the output that a maker can return to Power Virtual Agents after the flow has retrieved or completed the operations within the automation.

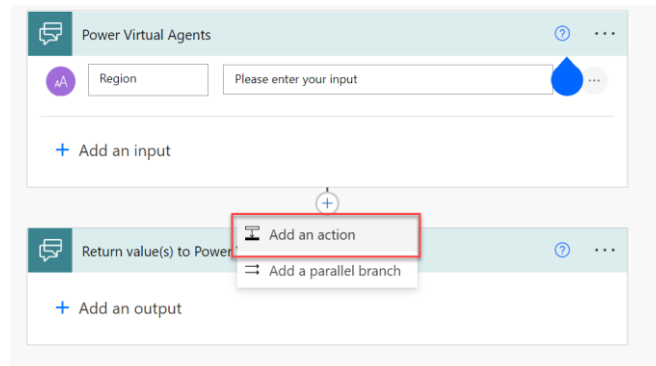
In your brand-new flow window that just opened, enter '+ Add an input' on the first scaffolded action and click 'Text' and enter '**Region**' (leaving the second column empty)



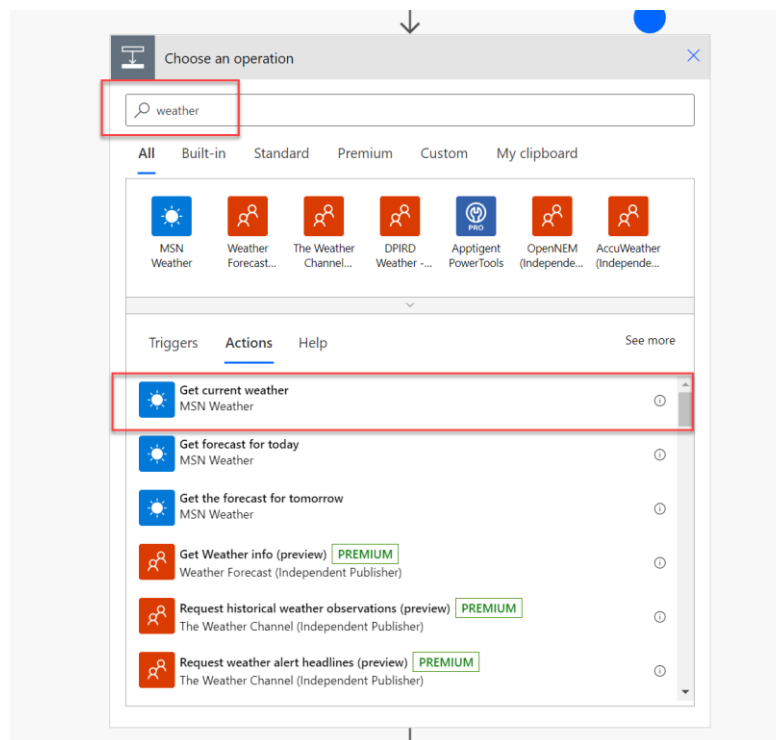
9. Click on '+' the new node as shown below,



10. Click 'Add an action'



11. Enter '**Weather**' in the search bar and select '**Get Current Weather**' by MSN Weather

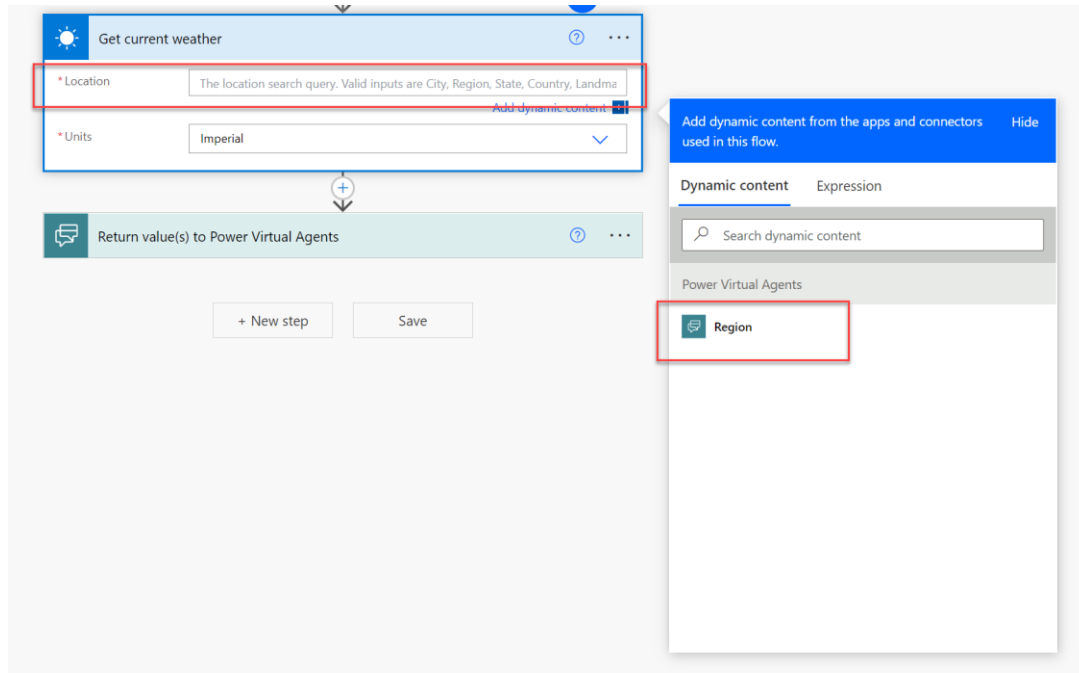


12. Once you select this, a new node will appear for you to enter the location and units. When you click into the '**Location**' field, as shown in the screenshot below, you see an option called '**Dynamic content**'.

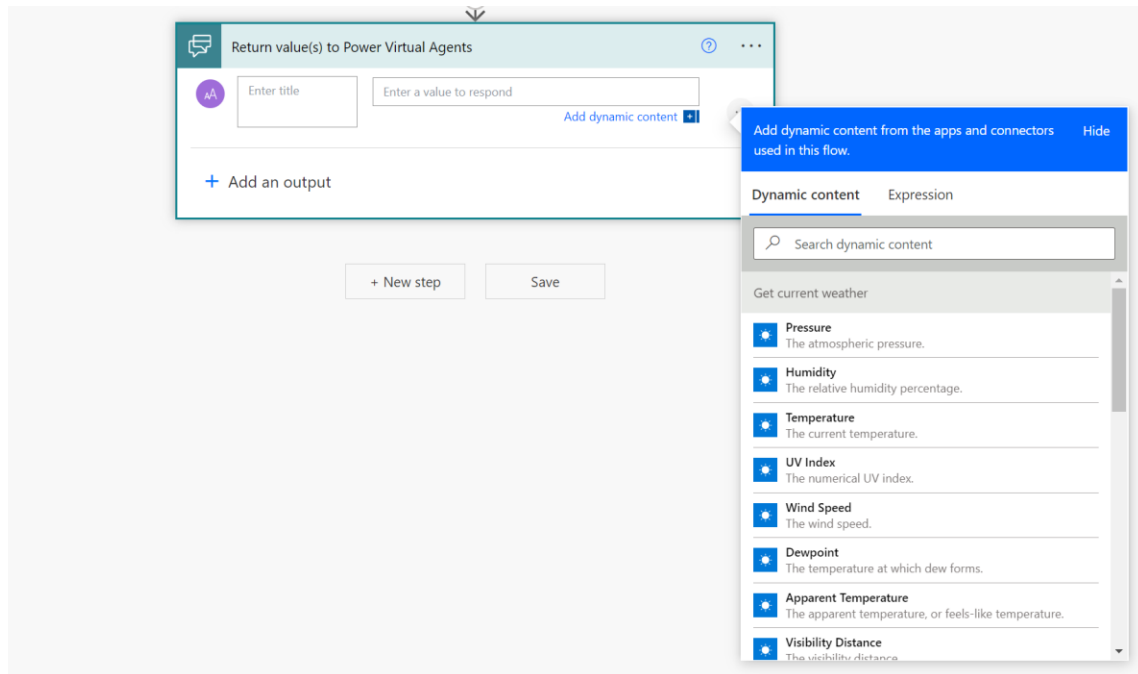


**Dynamic content** is real time data, and, in this scenario, the region data would be the data passed from Power Virtual Agents that you set up at the beginning in the topic and requested from your user. In the Dynamic data dropdown, as shown in the screenshot below, **Click 'Region' available** and keep units as **imperial**.

What we are doing here is sending the 'Region' data from the user to the Weather Service from MSN Weather. In flow, it will get this data and make it available for us to return back to the user in Power Virtual Agent in the next steps.

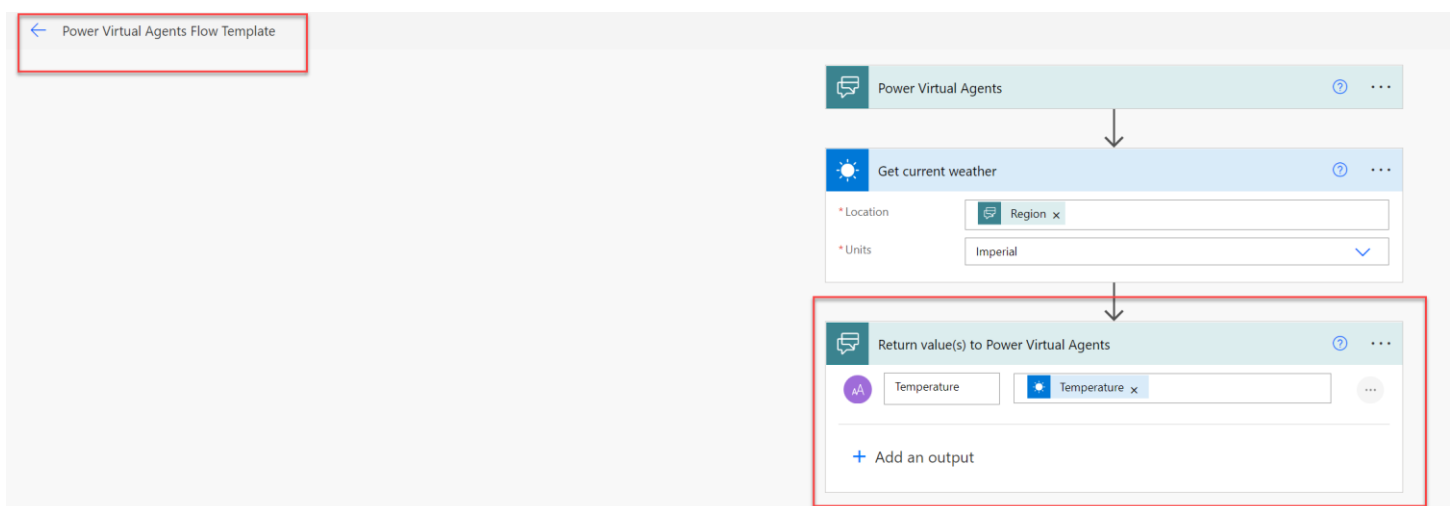


In the '**Return value(s) to Power Virtual Agent**' node at the end of the flow, click '**+Add Input**' and select **Text**. Click into the text bot that says '**Enter a value to respond**' and the Dynamic content will open from the result of the '**Get current weather**' API action in the previous step. Click 'Temperature' from dynamic data and add the 'Title' as the 'Temperature'

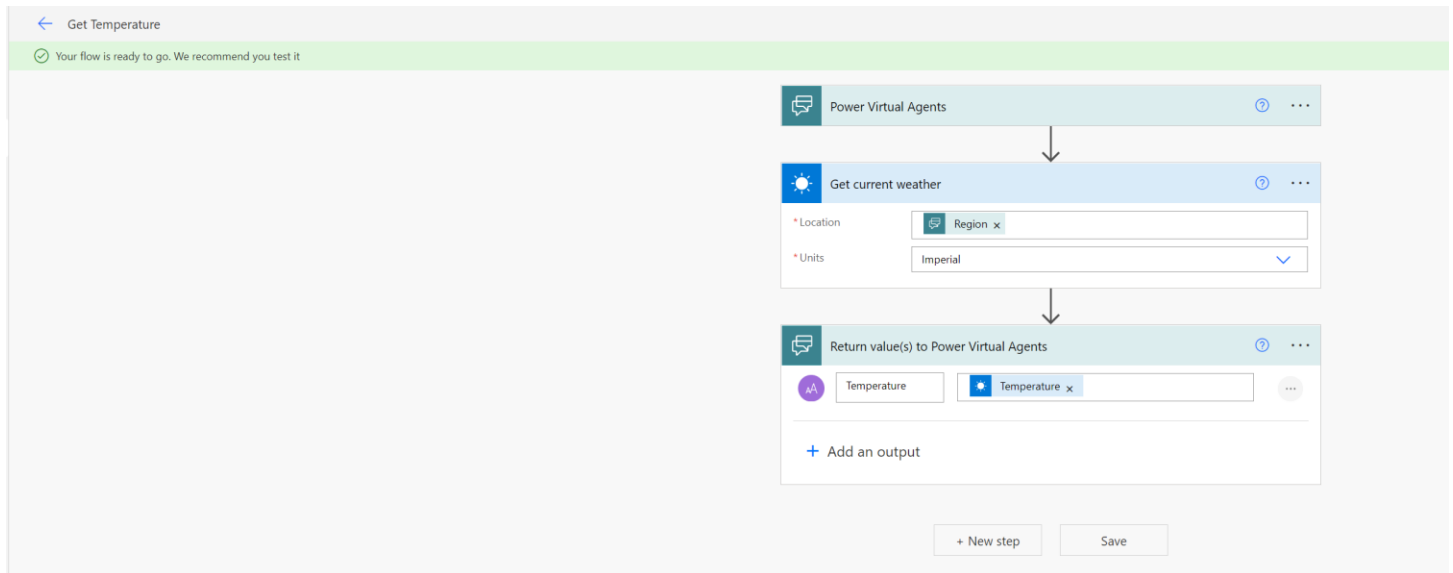


What you just built was an 'API request' to the MSN Weather Service where you entered the 'Region' from Power Virtual Agents and the MSN Weather Service has retrieved the data for the region, and when you have that data (almost instantly), you can send it back to Power Virtual Agent, and the end user.

13. The flow is almost complete. It needs to be renamed before we move on to best practices, so it is easily found in Power Virtual Agents and by Administrators. Click the template title as shown in the screenshot below and rename it to 'Get Temperature.'



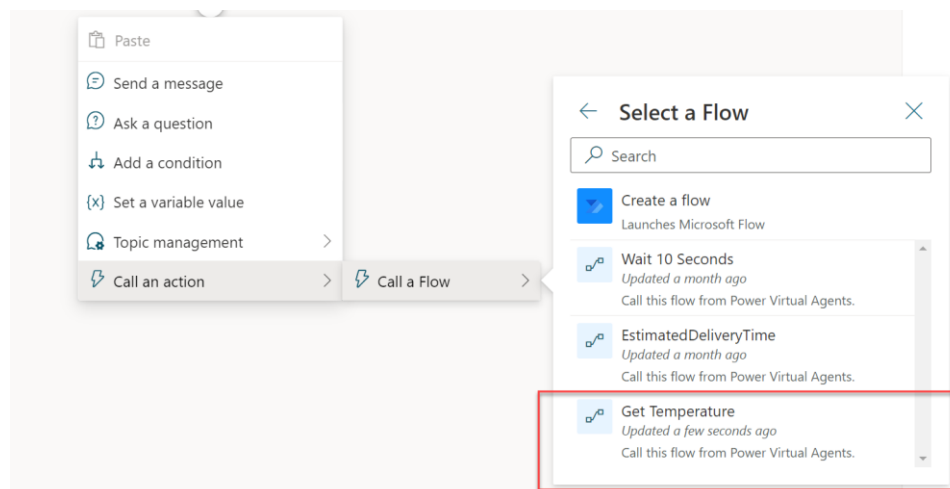
14. Click '**Save**' on the flow in Power Automate to ensure it is saved and wait a moment until you see the green banner as shown in the screenshot below to indicate the success.



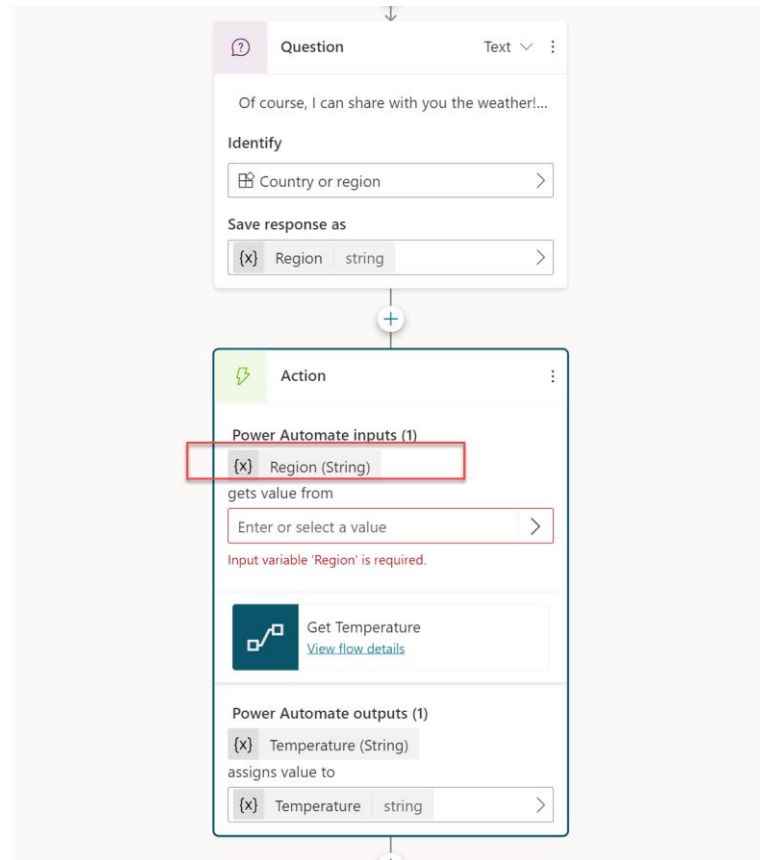
We have completed our work in Power Automate. Now let's switch back to Power Virtual Agents.

### Task 3: Connect Power Automate Flow with PVA

15. Open your existing topic in Power Virtual Agents and go back to the bottom of your flow, as shown below. Click **Call an action**, then **Call a flow**, and you should see your brand new Power Automate Flow in the list. From the list, click **'Get Temperature'**



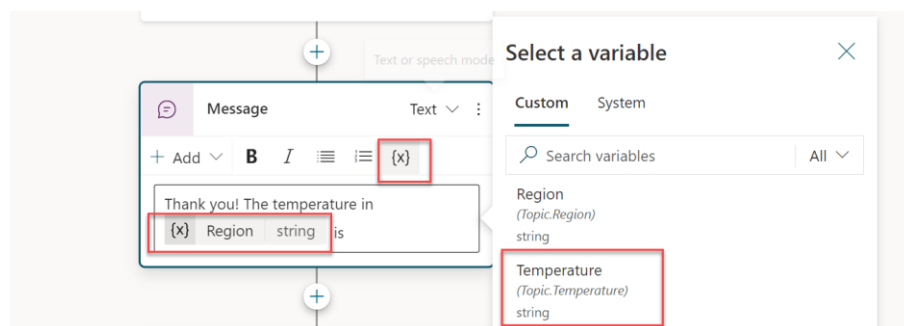
16. When you select the 'Get Temperature' flow, you will see a new 'Action' node is created automatically. If the flow requires an input, it requests the value to be selected. As the flow you created in the previous steps does have the input of **'Region'**, we need to add this input into the Power Automate action by selecting the variable the value is stored in from the user, which is **'Region'** from the previous steps earlier in the lab, as shown below.



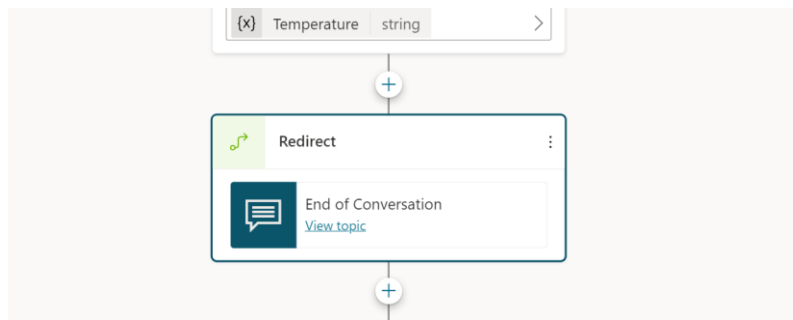
17. Click **'enter or select a value'** and select your 'Region' variable you created in the previous steps of this lab. This is now connected to the Power Automate flow, and outputs the result from Power Automate into the Temperature variable.

18. Create a new message node to be able to share the data with the user. We will use dynamic variables to show dynamic data. To enter variables into the node, use the **{X} button** on the **message node** and select a variable from the list as shown in the screenshot below. The variables we want to display to the user are 'Region' and 'Temperature' as shown below:

Enter the text *'Thank you! The temperature in: <Region Variable> is <Temperature Variable>.'*



19. To end the conversation, click **'Topic management'** and click **'Go to another topic'** and select **'End of Conversation'**



20. Save your topic and test your bot using the testing panel to test the flow and response is as expected.

You have successfully created a Power Automate Flow and a new topic in Power Virtual Agent that used the flow to provide real time data from an external service to the user!

**Please note:** There will be a more advanced Power Automate Flow Example expected to be added at a later date.

## Summary

Thank you for completing Lab 04 'Build Power Automate flows for your chat bot. You have successfully:

- Created a new Power Automate Flow
- Added the Power Automate Flow into your topic
- Set input and output variables
- Displayed dynamic data back to the user in Power Virtual Agents

## 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.

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