



CREATE YOUR FIRST POWER BI REAL-TIME DASHBOARD

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This activity has been created by [Rishona Elijah](#).

Approximate time: 25 minutes

This activity will take you through how you can build a real-time dashboard in Power BI. Without code, you can use Power BI to create beautiful visuals to display your data. With help from Power Automate, you can see the changes in Power BI occur before your eyes! This activity will demonstrate a scenario using Microsoft Forms. You can use the tools to collect survey responses, send it to Power BI, and view the feedback immediately in your dashboard.

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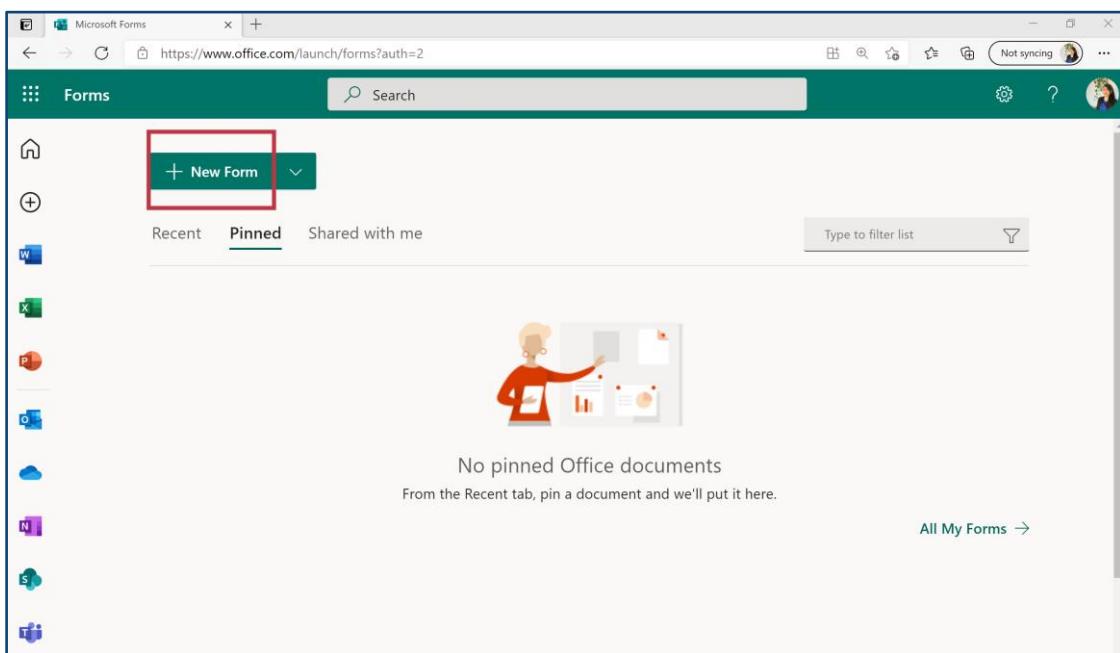
What you'll need

To complete the activity, you will need a work account with access to Office 365 apps, including Power BI Service, Power Automate and Microsoft Forms. When building the Power Automate flow, you may choose to do this in your [developer plan environment](#).

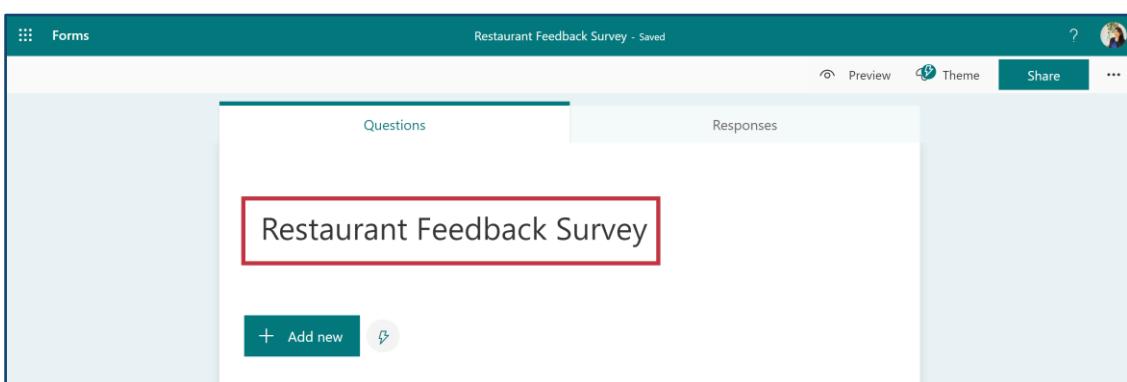
1. Create a Microsoft Form

You will start off by creating a short survey using Microsoft Forms. This will be the source for the dataset. As users submit the form, the results will update on the real-time dashboard.

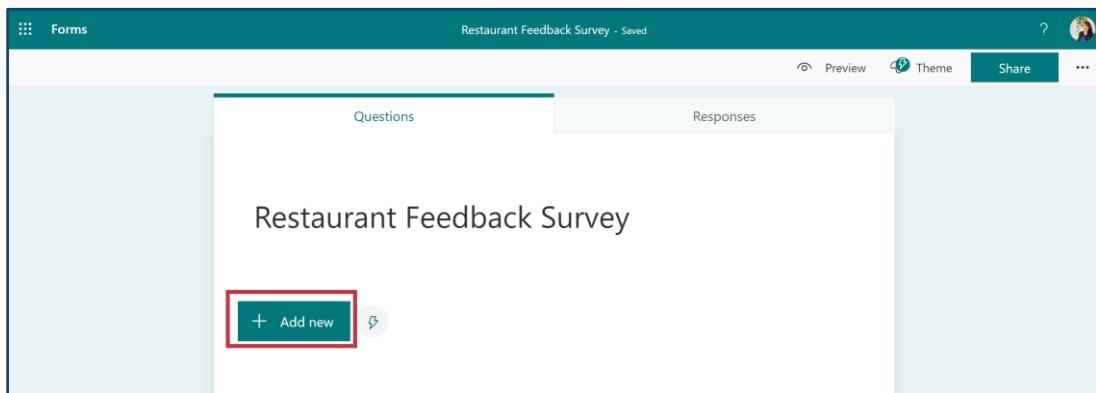
1. In your browser, go to <http://forms.microsoft.com/> and sign in with your work (Office 365) credentials. Once you are signed in, click **+New Form**.



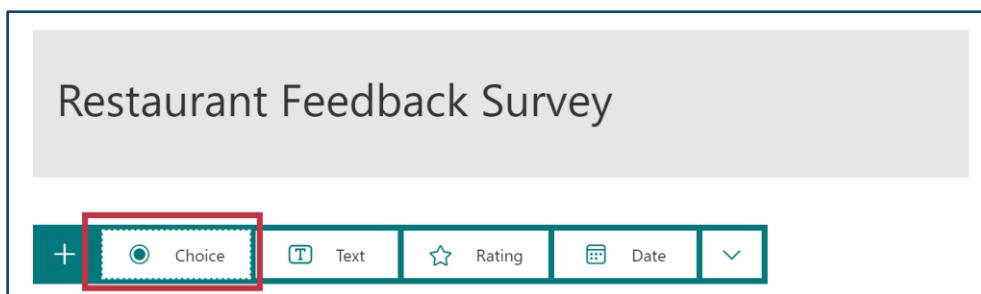
2. Click on the text *Untitled form*, and rename the form to **Restaurant Feedback Survey**.



3. Click **+ Add new** to create a new question.



4. Select **Choice**.



5. Type the following as the question:

What restaurant did you visit?

The screenshot shows the Microsoft Forms interface with the title 'Restaurant Feedback Survey'. Below the title, there is a question card numbered '1' with the text 'What restaurant did you visit?'. This question is highlighted with a red box. Below the question, there are two radio button options: 'Option 1' and 'Option 2'. At the bottom of the question card, there are buttons for '+ Add option' and 'Add "Other" option'. At the very bottom of the card, there are three toggle switches: 'Multiple answers', 'Required', and a third one that is partially visible. There are also up and down arrow buttons for reordering the questions.

6. Add the following 3 options to the question:

Sydney, Australia

Tokyo, Japan

Seattle, USA

Note: You will need to click +Add option to add the 3rd option.

1. What restaurant did you visit?

Sydney, Australia

Tokyo, Japan

Seattle, USA

+ Add option Add "Other" option

Multiple answers Required ...

7. You will now create 2 more questions. Click **+Add new** to add a new question, and select **Rating** as the type.

8. Type the following as the question:

How would you rate the customer service?

2. How would you rate the customer service?

☆ ☆ ☆ ☆ ☆

Levels: 5 Symbol: Star

Required ...

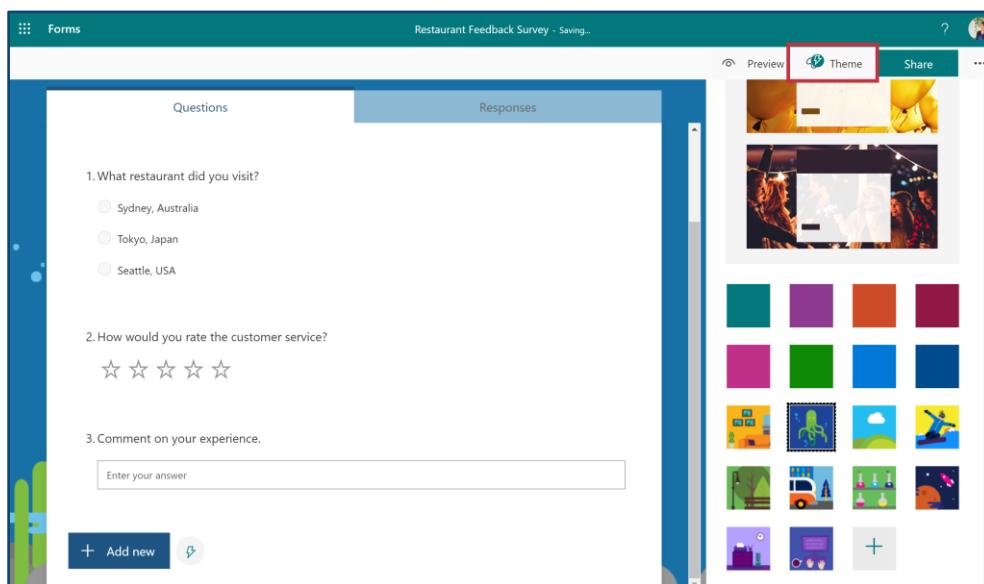
+ Add new

9. Click **+Add new** to add the last question. Select **Text** as the question type and enter the following as the question:

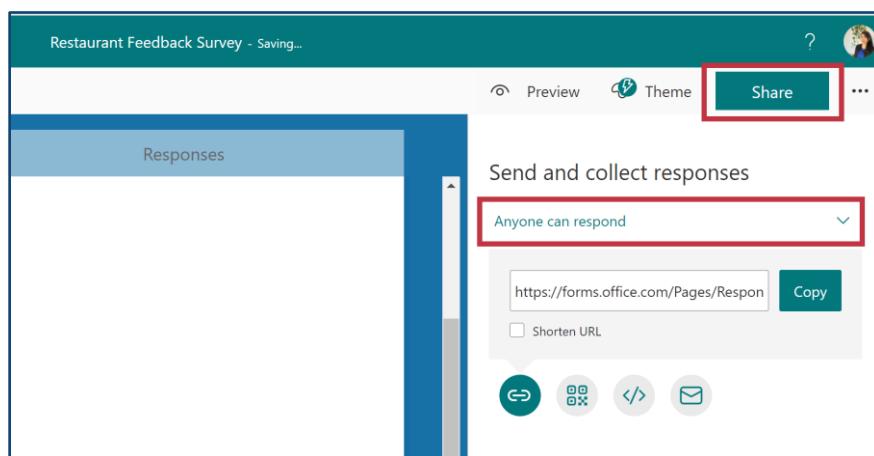
Comment on your experience.



10. If you like, you can click on **theme** and pick a new theme for the form.



11. Click on the **Share** button, and change the setting to **Anyone can respond**.



12. Your form should now look similar to below:

Restaurant Feedback Survey

1. What restaurant did you visit?

- Sydney, Australia
- Tokyo, Japan
- Seattle, USA

2. How would you rate the customer service?

☆ ☆ ☆ ☆ ☆

3. Comment on your experience.

Enter your answer

+ Add new

2. Create a push dataset

1. In a new browser tab, go to <https://powerbi.microsoft.com/> and sign in with your Office 365 work account. You should now have Power BI Service open.

Power BI Home

Good evening, Rishona

Find and share actionable insights to make data-driven decisions

+ New report

Favorites + frequent

My workspace

Discover

Learn

Workspaces

My workspace

Get data

Data stories from the Power BI community See more data stories

The DEFINITIVE 100 MOST USEFUL PRODUCTIVITY TIPS

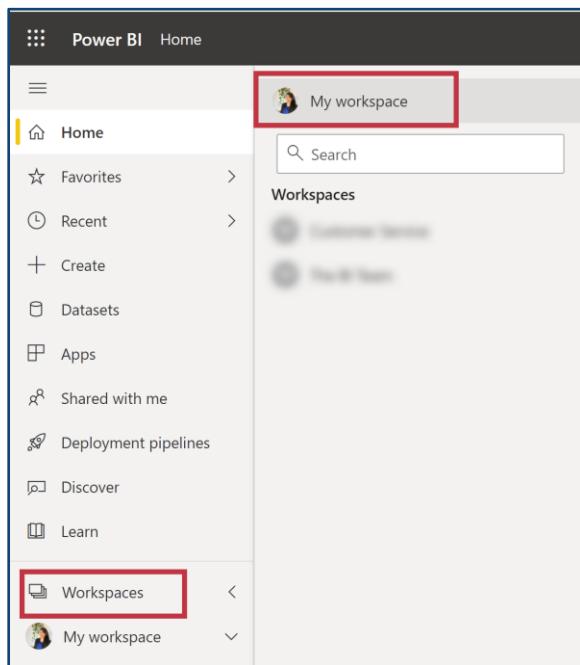
Cancer Analytics Dashboard

Cancer statistic in the USA

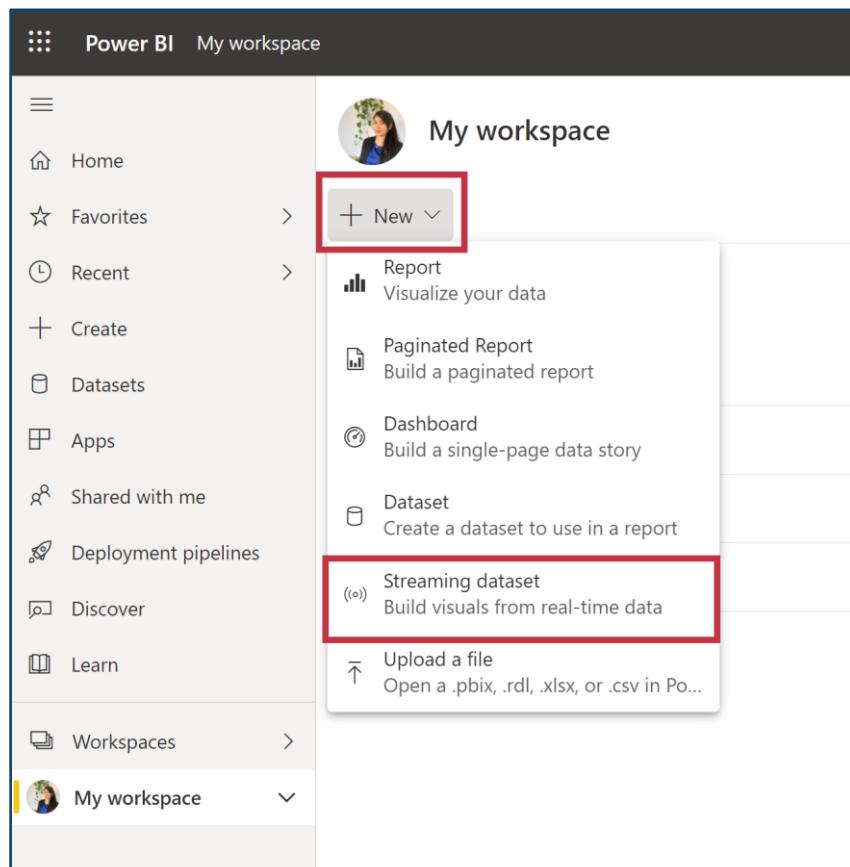
Ranking Sports by Degree of Difficulty for Key Skills

Sports ranked by degree of difficulty

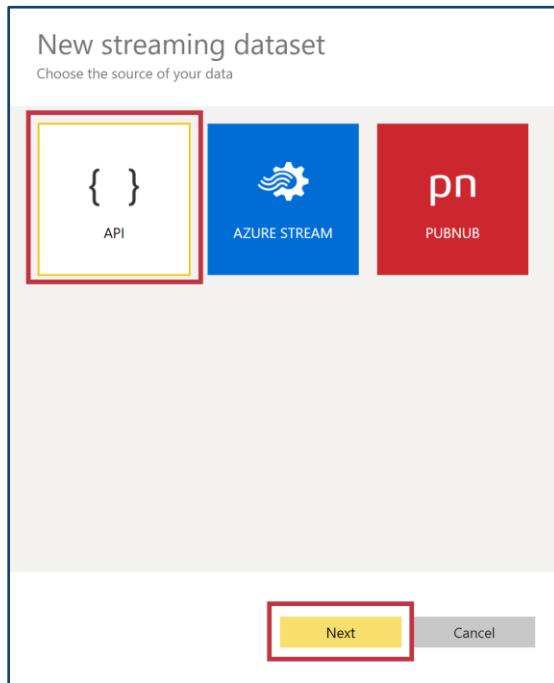
2. From the left navigation, click on **Workspaces** and open **My Workspace**.



3. Click on **+New** and select **Streaming dataset**.



4. Select **API** as the source, then click **Next**.



5. Enter **Restaurant Feedback** as the *Dataset name*.

A screenshot of the "New streaming dataset" configuration page. It includes instructions to "Create a streaming dataset and integrate our API into your device or application to send data. [Learn more about the API](#)". A required field "Dataset name" is filled with "Restaurant Feedback" and highlighted with a red border. Below it, "Values from stream" fields show an input "Enter a new value name" and a dropdown "Text". Under "Historic data analysis", a toggle switch is set to "Off".

6. You will add 4 Values from stream. Each of these are a column for your dataset, and will link back to an attribute/question on the Microsoft Form. Enter the following value names and select the corresponding data type from the dropdown.

Value Name	Data Type
Restaurant Location	Text
Customer Service Rating	Number
Comments	Text
Time Submitted	DateTime

New streaming dataset

Dataset name *

Values from stream *

Restaurant Location	Text
Customer Service Rating	Number
Comments	Text
Time Submitted	DateTime
Enter a new value name	Text

```
[
  {
    "Restaurant Location" : "AAAAAA555555",
    "Customer Service Rating" : 98.6,
    "Comments" : "AAAAAA555555",
    "Time Submitted" : "2021-04-20T10:15:30.297Z"
  }
]
```

Back Create Cancel

7. Switch the **Historic data analysis** toggle to **ON**. Click **Create**.

New streaming dataset

Values from stream *

Restaurant Location	Text
Customer Service Rating	Number
Comments	Text
Time Submitted	DateTime
Enter a new value name	Text

```
[
  {
    "Restaurant Location" : "AAAAAA555555",
    "Customer Service Rating" : 98.6,
    "Comments" : "AAAAAA555555",
    "Time Submitted" : "2021-04-20T10:15:30.297Z"
  }
]
```

Historic data analysis

On

Back Create Cancel

8. The streaming dataset is now created. You can click **Done**.

Streaming dataset created

The schema for Restaurant Feedback is created.

Push URL

```
https://api.powerbi.com/beta/9d80a3b2-7b78-47cd-891f-caedd5e31bf6/datasets/RestaurantFeedback
```

Raw cURL PowerShell

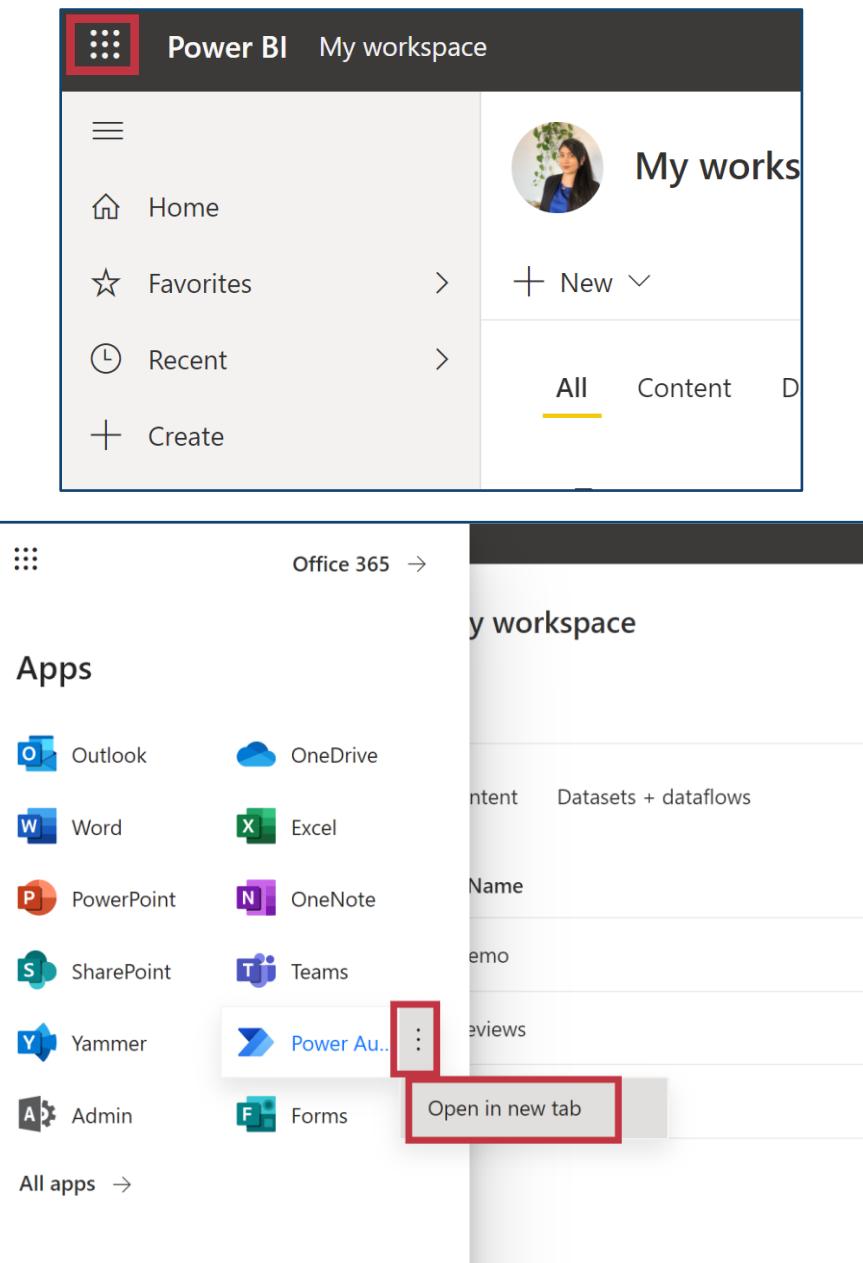
```
[  
{  
    "Restaurant Location" : "AAAAAA555555",  
    "Customer Service Rating" : 98.6,  
    "Comments" : "AAAAAA555555",  
    "Time Submitted" : "2021-04-20T21:34:45.026Z"  
}  
]
```

Done

3. Create a Power Automate flow

A flow will be created in Power Automate to push the survey results into your recently created dataset.

1. From Power BI, click on the waffle icon and open **Power Automate** in a new tab.



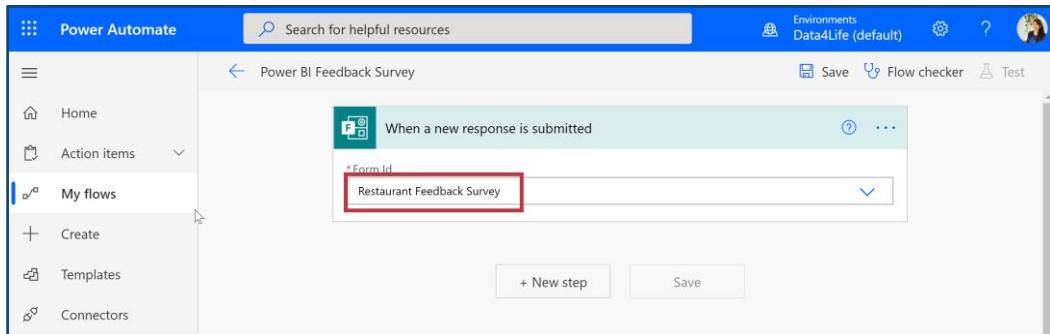
2. From the left navigation menu, click on **My flows**. Then click **+New flow > Automated cloud flow**.

The screenshot shows the Power Automate interface. On the left, there's a navigation menu with options like Home, Action items, My flows (which is selected and highlighted with a red box), Create, Templates, Connectors, Data, Monitor, AI Builder, Process advisor (preview), Solutions, and Learn. At the top, there's a search bar and a 'New flow' button (also highlighted with a red box). A dropdown menu titled 'Start from a template' is open, showing options like 'Template' (selected), 'Visio template', 'Business process flows', and 'Shared with me'. Below this, another dropdown titled 'Build your own from blank' is open, showing 'Automated cloud flow' (selected and highlighted with a red box), along with other options like 'Instant cloud flow', 'Scheduled cloud flow', 'Desktop flow', and 'Business process flow'. To the right, a list of existing flows is shown with columns for 'Modified' and 'Type'.

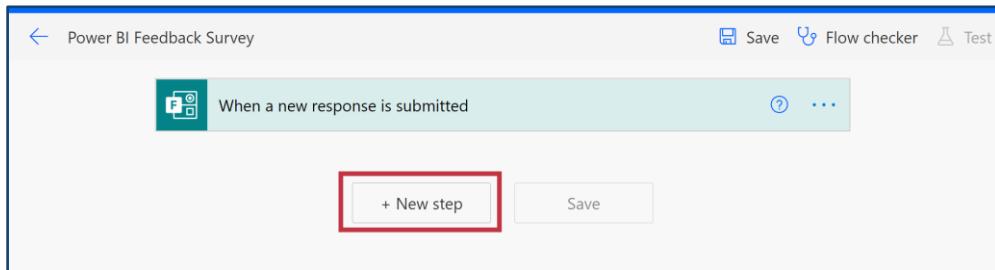
3. Enter **Power BI Feedback Survey** as the *Flow name*, and select the **Microsoft Forms trigger-When a new response is submitted**. Then, click **Create**.

The screenshot shows the 'Build an automated cloud flow' wizard. On the left, there's a preview area with a computer monitor icon, some books, and a robot. Below it, there's a section with the text 'Free yourself from repetitive work just by connecting the apps you already use—automate alerts, reports, and other tasks.' and a list of examples: 'Automatically collect and store data in business solutions' and 'Generate reports via custom queries on your SQL database'. On the right, there's a form to enter the flow details. The 'Flow name' field is filled with 'Power BI Feedback Survey' (highlighted with a red box). The 'Choose your flow's trigger *' section shows a list of triggers, with 'When a new response is submitted Microsoft Forms' selected (highlighted with a red box). At the bottom, there are 'Skip', 'Create' (highlighted with a red box), and 'Cancel' buttons.

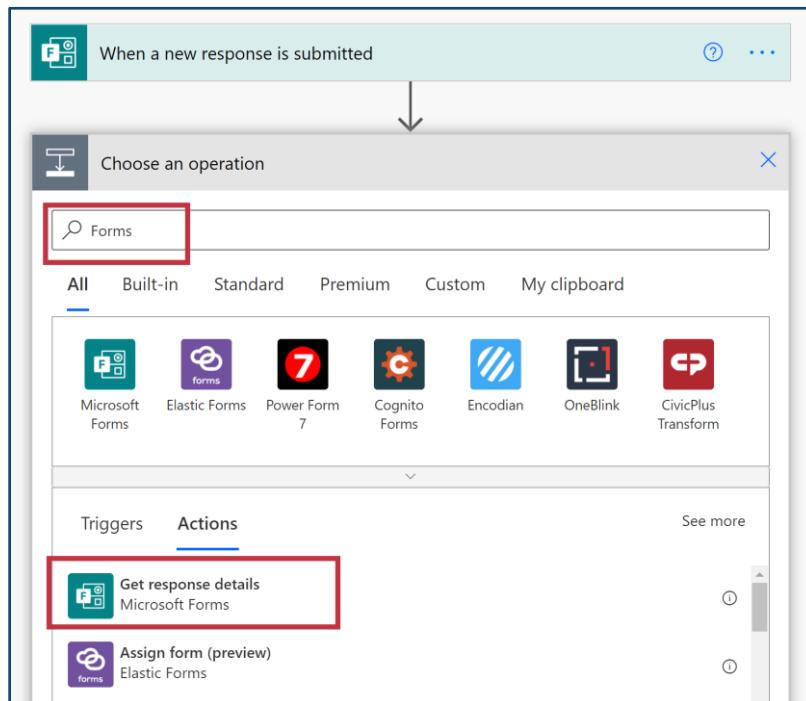
4. You will now be taken to the flow. In the trigger *When a new response is submitted*, choose **Restaurant Feedback Survey** from the *Form Id* dropdown.



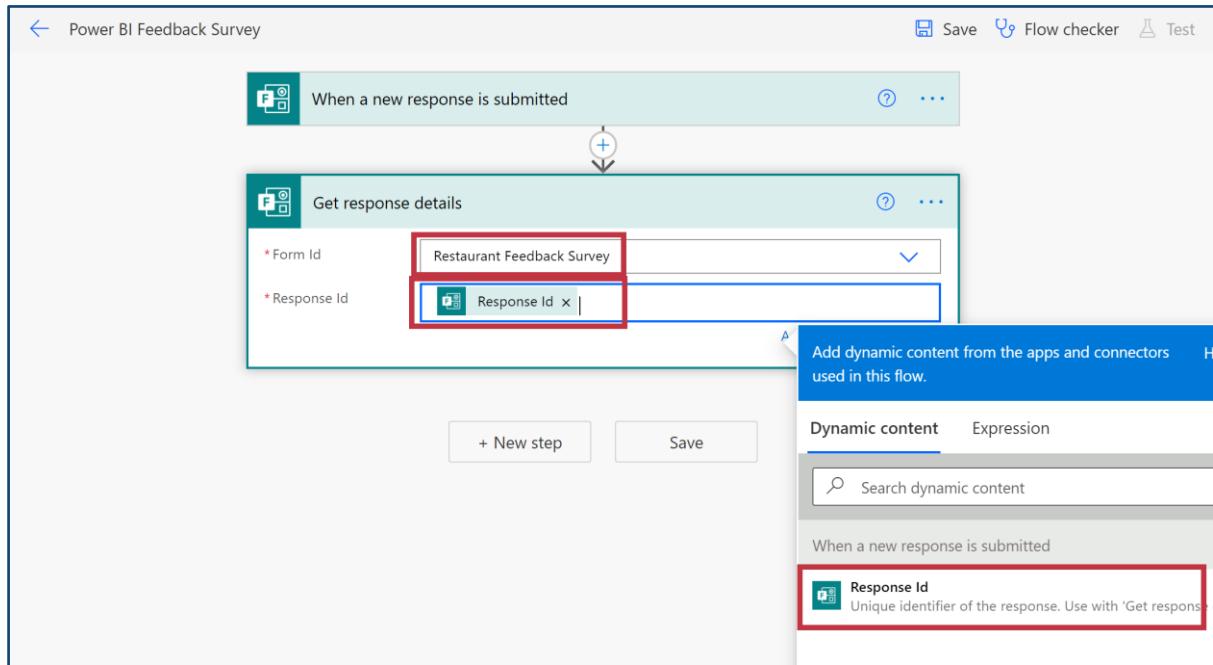
5. Click **+New step**.



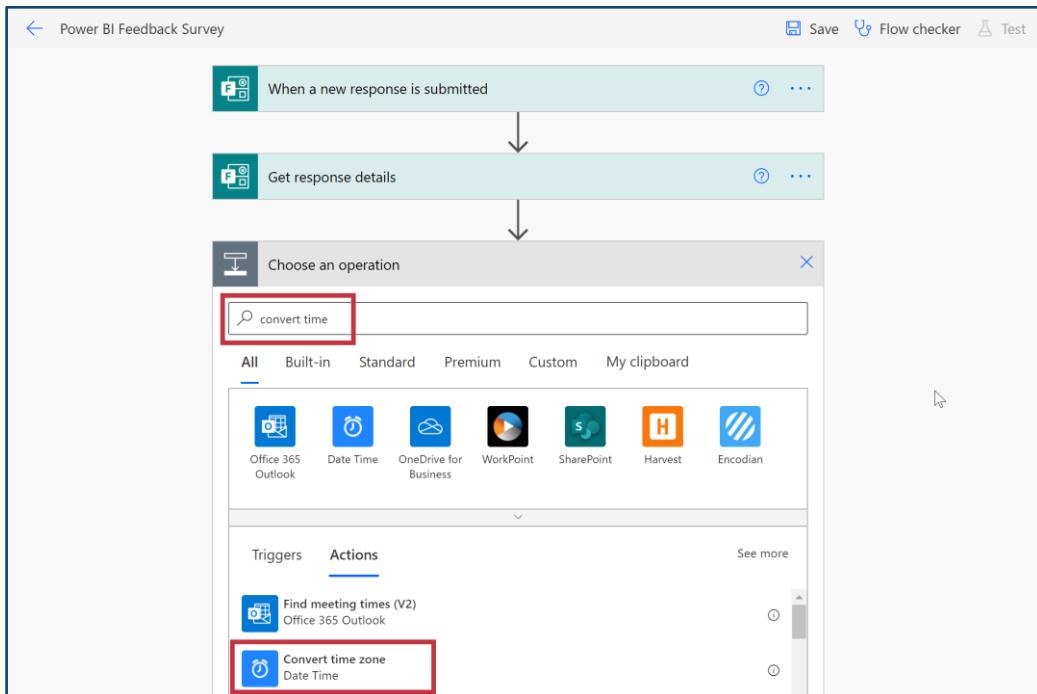
6. Search for *Forms*, and choose the **Microsoft Forms** action- **Get response details**.



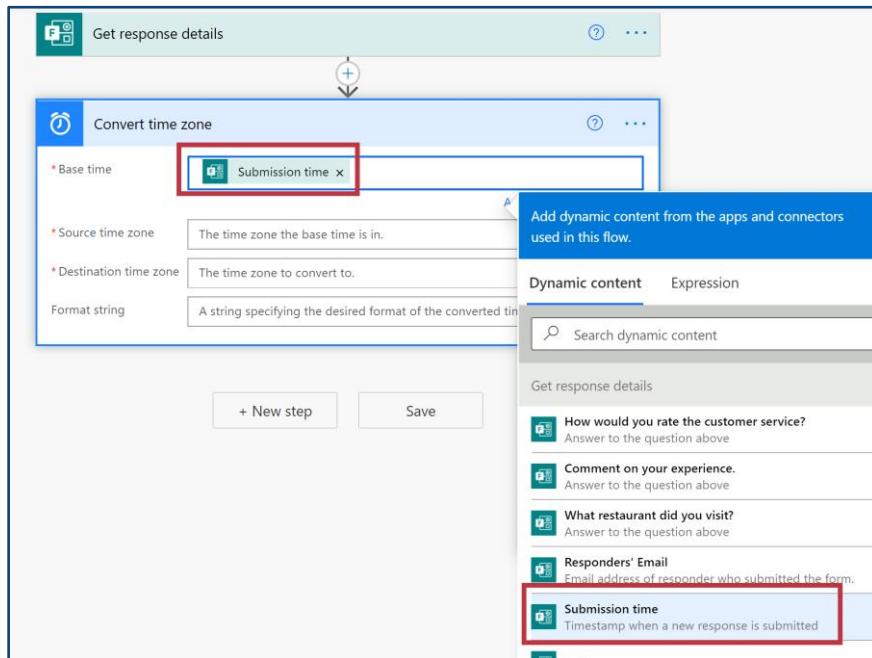
7. In the *Form Id* field, select **Restaurant Feedback Survey**. Click in the *Response Id* text box. You should then see a pop-out for dynamic content appear. Select the **Response ID dynamic content** that appears.



8. Click **+New step** underneath the last action and search for *Convert Time*. Select the **Date Time** action- **Convert time zone**. Adding this action will allow you to see the time the form was submitted in your local time zone.



9. Click in **Base time** field, and select **Submission time** from the Dynamic content.



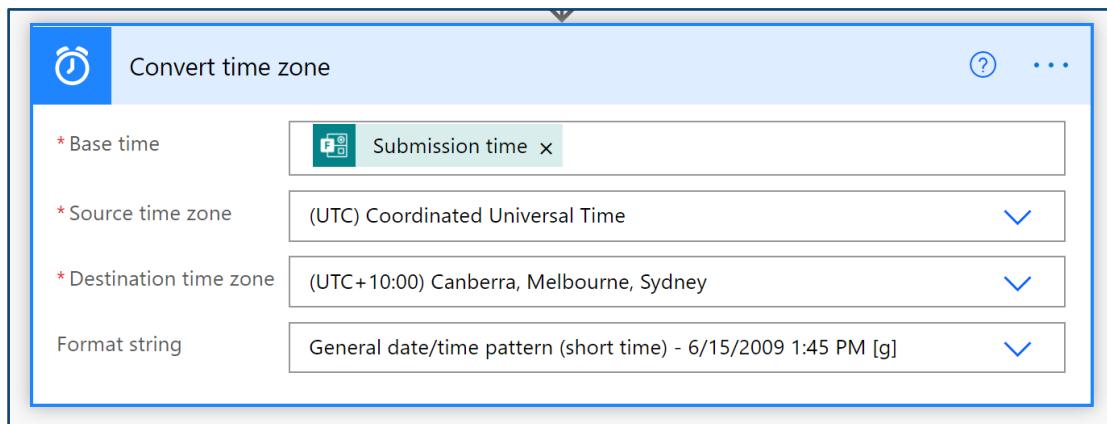
10. Fill out the following details in the action:

Source time zone: **(UTC) Coordinated Universal Time**

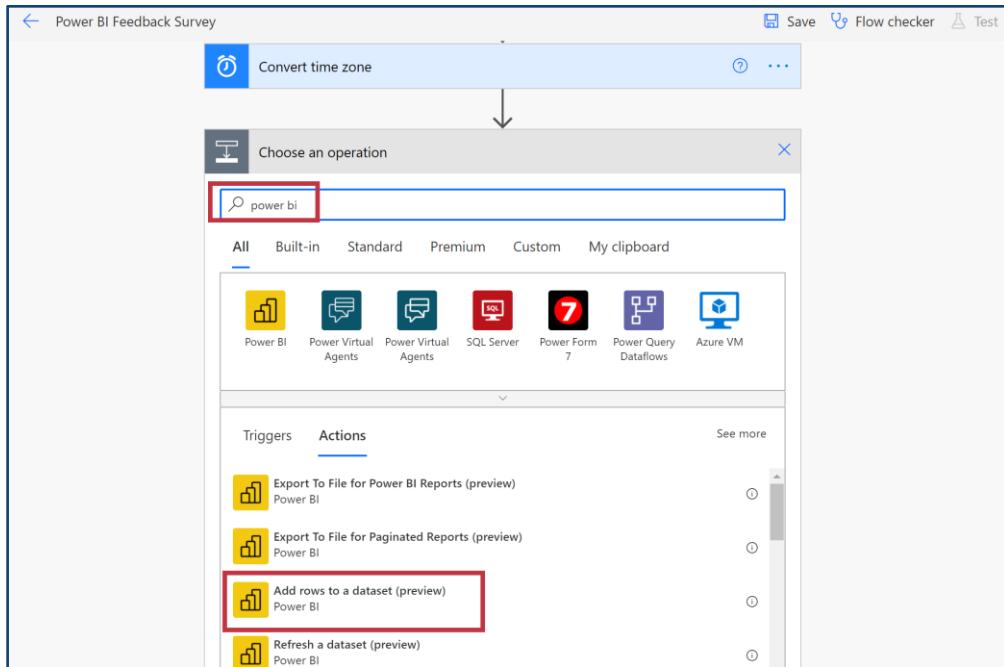
Destination time zone: **Choose your local time zone**

Format String: **General date/time pattern (short time) – 6/15/2009 1:45 PM [g]**

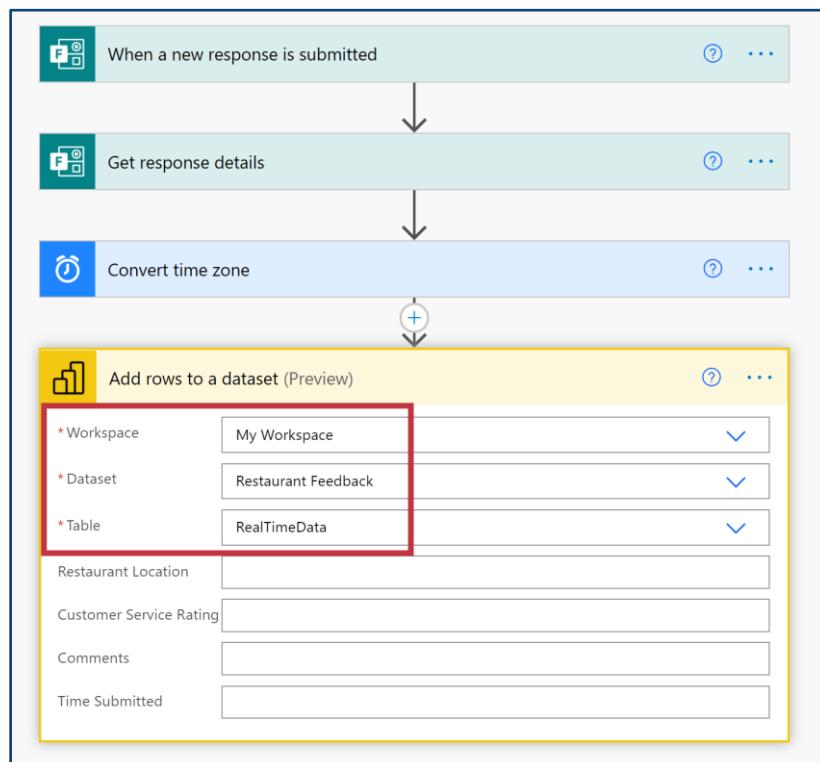
It should now look similar to below:



11. Click **+New step** underneath the last action and search for *Power BI*. Choose the **Power BI** action **Add rows to a dataset (preview)**.



12. For the *Workspace*, select **My Workspace**. For the *Dataset*, select **Restaurant Feedback**. For *Table*, select **RealTimeData**. You will now see the dataset columns created earlier appear in your action.



13. You will need to add the corresponding dynamic content from the Form into the matching field. Click in the *Restaurant Location* field, and select **What restaurant did you visit?** from the dynamic content.

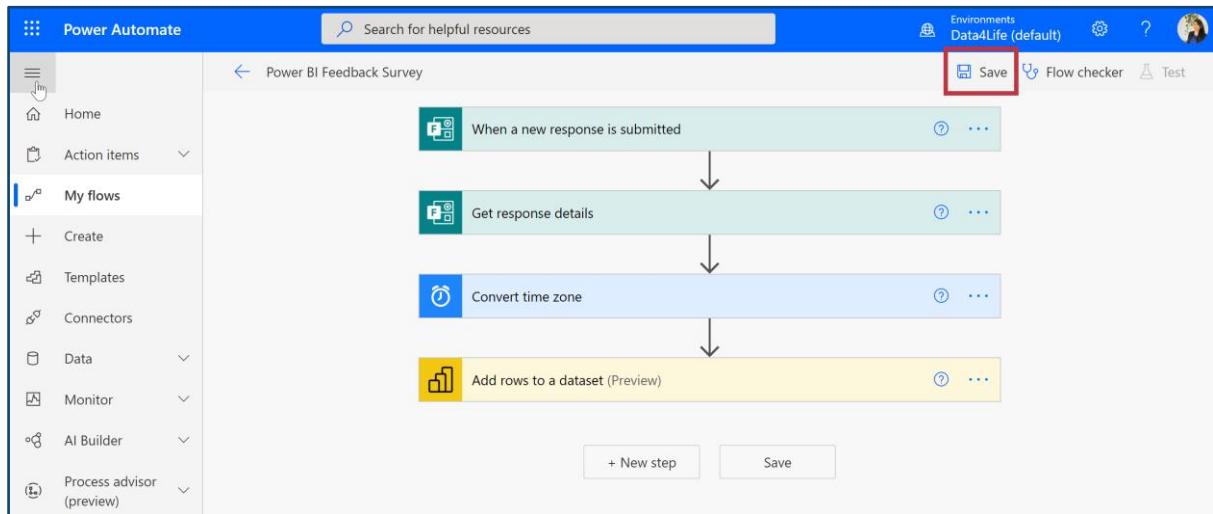
The screenshot shows the 'Add rows to a dataset (Preview)' step in Power Automate. The 'Restaurant Location' field is highlighted with a red box. A dynamic content picker is open, listing several options under 'Dynamic content'. The option 'What restaurant did you visit?' is selected and highlighted with a red box. Other visible options include 'How would you rate the customer service?', 'Comment on your experience.', and 'Converted time'.

14. For the remaining 3 fields, chose the following dynamic content:
Customer Service Rating: How would you rate the customer service?
Comments: Comment on your experience.
Time Submitted: Converted time

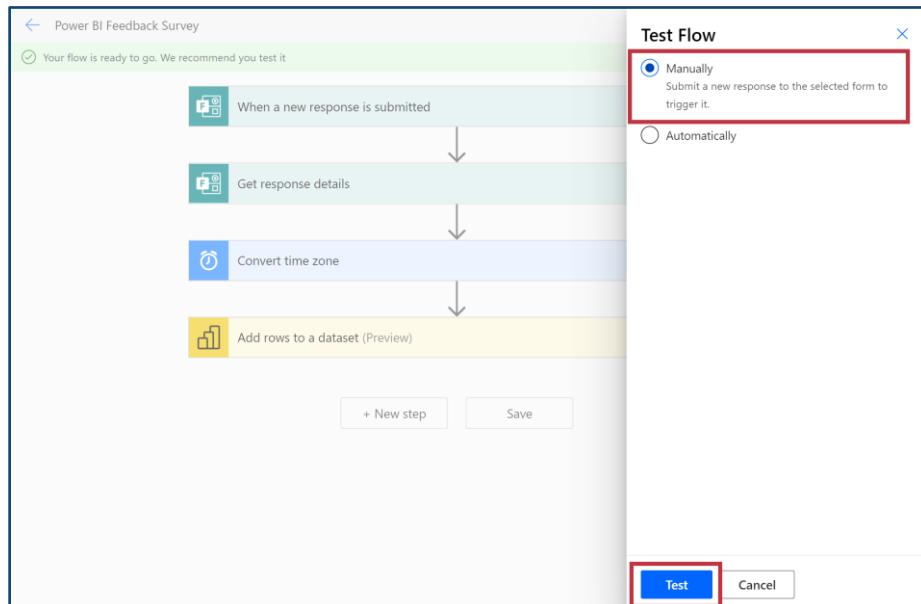
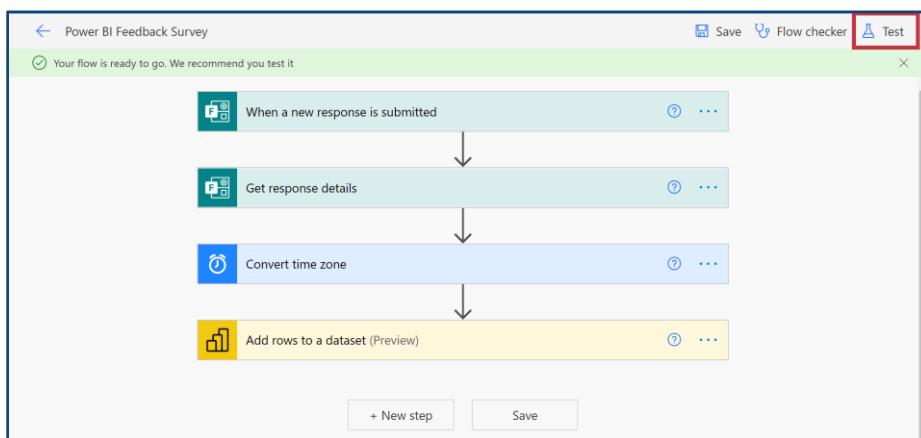
It should now appear as below.

The screenshot shows the 'Add rows to a dataset (Preview)' step with four fields filled with dynamic content:
- Restaurant Location: 'What restauran... x'
- Customer Service Rating: 'How would yo... x'
- Comments: 'Comment on y... x'
- Time Submitted: 'Converted time x'

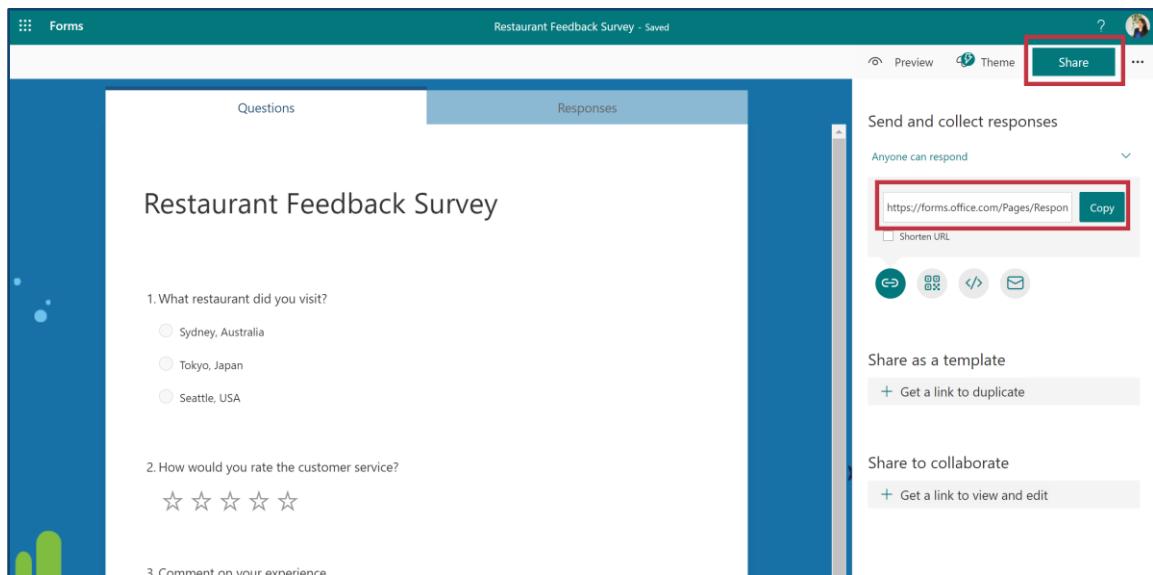
15. Click **Save** to save your flow.



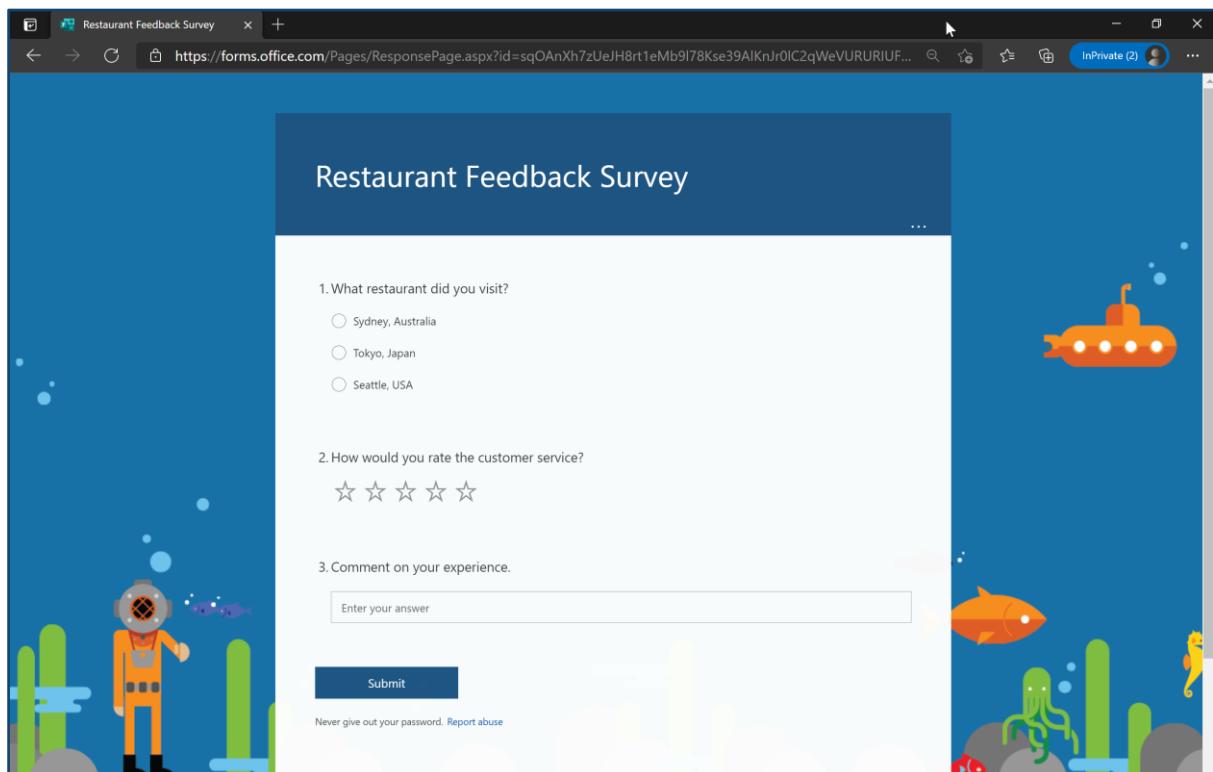
16. You are now ready to test out the flow. Click on the **Test** button. Then, choose **Manually** and click **test**.



17. You will need to now submit a response in your form to test it out. Go back to your browser tab with your Restaurant Feedback Survey in Microsoft Forms. Click **Share** and **copy the URL**.



18. Open up an InPrivate/ Incognito window. You can use the shortcut Ctrl+Shift+N on your keyboard to do this. In the InPrivate/Incognito window, go to your form URL.



19. Complete the 3 questions on the form and click **Submit**.

Restaurant Feedback Survey

1. What restaurant did you visit?

Sydney, Australia
 Tokyo, Japan
 Seattle, USA

2. How would you rate the customer service?

★★★★☆

3. Comment on your experience.

The food I ordered was great but service was slow.

Submit

Never give out your password. [Report abuse](#)

20. Go back to the browser tab with your Power Automate flow. You should now see a message that says the *flow ran successfully*.

Note: if you don't see it appear after about 30 seconds, go to **My flows**, and select **Power BI Feedback Survey**.

Power Automate

Search for helpful resources

New flow Import

Flows

Cloud flows Desktop flows Business process flows Shared with me

Name	Modified
Power BI Feedback Survey	9 min ago
[redacted]	1 mo ago

Here you will get a summary of each time the flow ran. Click on your latest submission.

Flows > Power BI Feedback Survey

Details		Edit	
Flow	Power BI Feedback Survey	Status	On
Owner	Rishona Elijah	Created	Apr 21, 08:02 AM
		Modified	Apr 21, 08:02 AM
		Type	Automated
		Plan	Per-user plan

Connections		Edit	
	Microsoft Forms		Power BI

Owners		Edit	
Want to share your flow with others? Upgrade now for more features and faster performance.			
Compare plans			

28-day run history [All runs](#)

Start	Durati...	Status
Apr 21, 08:10 AM (3 min ago)	00:00:01	Succeeded

Power BI Feedback Survey • Ran at 4/21/2021 8:10:03 AM

Your flow ran successfully.

```
graph TD; A[When a new response is submitted] --> B[Get response details]; B --> C[Convert time zone]; C --> D[Add rows to a dataset]
```

You are now ready to build your real-time dashboard!

4. Design your visuals

1. Go back to your Power BI tab, where you should be in My workspace. Refresh the page, and you should see a dataset called *Restaurant Feedback*. Click on **More Options > Create report**.

The screenshot shows the Power BI 'My workspace' interface. On the left, there's a navigation menu with options like Home, Favorites, Recent, Create, Datasets, Apps, Shared with me, Deployment pipelines, Discover, Learn, Workspaces, and My workspace. The 'My workspace' item is currently selected. In the center, there's a list of datasets. One dataset, 'Restaurant Feedback', is highlighted with a red box. A context menu is open over this dataset, with the 'Create report' option also highlighted with a red box. The menu includes other options like Delete, Manage permissions, Quick insights, Edit, and API Info.

2. We will use Power BI Service to create visuals for the report. On your report canvas, you should see the RealTimeData fields appear on the right side of the screen.

The screenshot shows the Power BI Service interface. On the left, there's a navigation menu similar to the Power BI desktop app. The main area is titled 'Build visuals with your data' and says 'Select or drag fields from the Fields pane onto the report canvas.' To the right, there are three panes: 'Filters', 'Visualizations', and 'Fields'. The 'Fields' pane is expanded, showing a list of fields under a group named 'RealTimeData'. This group is also highlighted with a red box. Other groups visible in the 'Fields' pane include 'Comments', 'Customer S...', 'Restaurant ...', and 'Time Submi...'. There are also sections for 'Values', 'Drill through', 'Cross-report', 'Off', 'Keep all filters', and 'On'.

Card: Average of Customer Service Rating

1. From the fields pane, tick the checkbox next to **Customer Service Rating**. This will automatically create a visual for you. We want to change this to display a card for the Average Customer Service rating.

The screenshot shows the Power BI Fields pane on the right side of the interface. A red box highlights the 'Customer Service Rating' field under the 'RealTimeData' category, which has a checked checkbox. Other fields listed include 'Comments', 'Restaurant Loc...', and 'Time Submitted'. On the left, a chart visual titled 'Customer Service Rating' is displayed, showing a single blue bar at the value 4.00.

2. With the visual still selected, click on the **card visual** from the Visualizations pane. Your visual should now appear as shown below.

The screenshot shows the Power BI Fields pane on the right. A red box highlights the 'Customer Service Rating' field under the 'RealTimeData' category. In the center workspace, a card visual displays the value '4.00' with the text 'Customer Service Rating' underneath. On the left, the Visualizations pane shows various visualization icons, with the 'Card' icon highlighted by a red box.

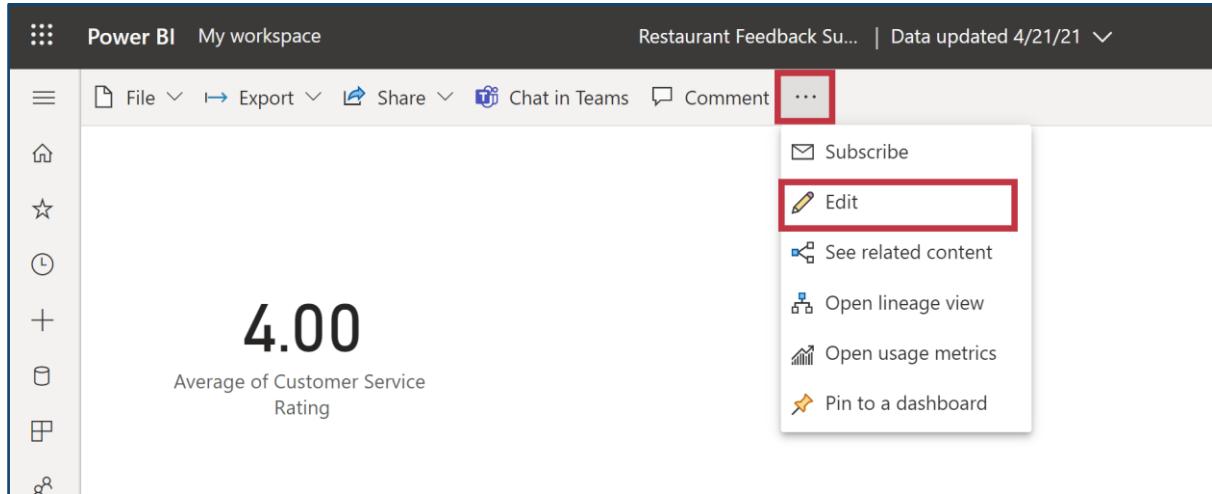
3. With the visual still selected, click on the arrow next to the **Customer Service Rating** field as shown below. Select **Average**.

The screenshot shows the Power BI interface with a visual displaying a value of 4.00. A context menu is open over the visual, specifically over the 'Customer Service Rating' field entry. The menu includes options like 'Remove field', 'Rename for this visual', 'Sum' (which is checked), and 'Average'. The 'Average' option is highlighted with a red box.

4. Click **Save** to save the report. Enter **Restaurant Feedback Survey** as the name of the report then click **Save**.

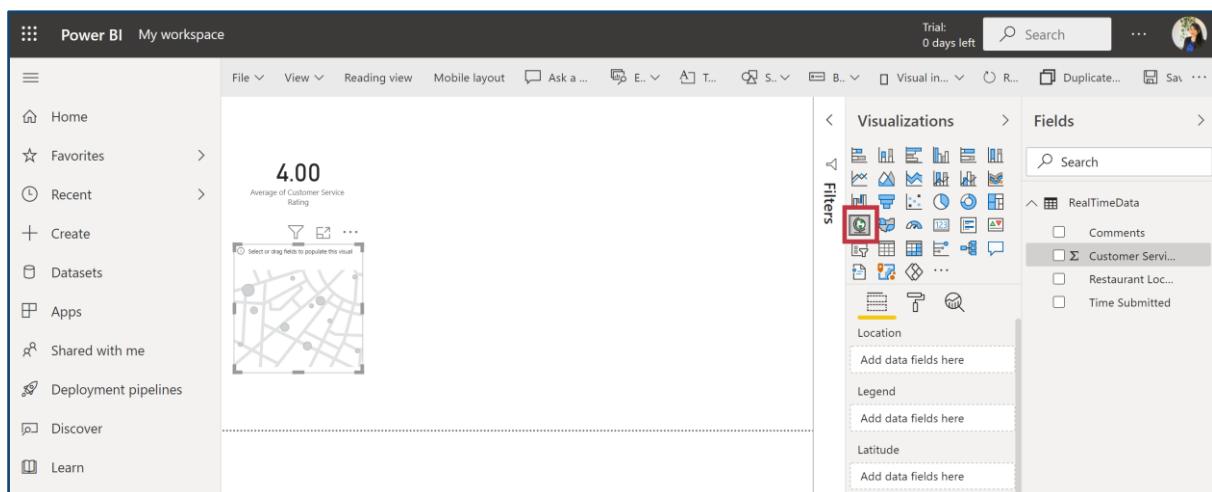
The screenshot shows the Power BI interface with a 'Save your report' dialog box in the foreground. The dialog box has a red box around the input field where 'Restaurant Feedback Survey' is typed. It also has a red box around the 'Save' button. In the background, the Power BI ribbon and fields pane are visible, with the 'Save' button in the ribbon also highlighted with a red box.

5. Click on the ... button and click **Edit** to go back to edit the report. Depending on the size of your screen, you may not need to click the ... button first.



Map: Location of Restaurant Visited

1. Click in the whitespace of your report page to ensure that no visuals are selected. Then, click on the **Map visual** from the *Visualisations* pane.



2. From the **Fields** pane, click and drag the **Restaurant Location** field into the *Location* bucket of the visual as shown. Your map visual should now update to show the location submitted in the form.

The screenshot shows the Power BI desktop interface. On the left, there is a map visual titled "Restaurant Location" showing a map of Sydney, Australia. Above the map, a card displays "4.00" as the "Average of Customer Service Rating". To the right of the visual is the "Fields" pane. In the "Visualizations" section of the Fields pane, there is a dropdown menu labeled "Location" which has "Restaurant Location" selected. A red box highlights this selection. In the "RealTimeData" section of the Fields pane, the "Restaurant Loc..." checkbox is checked, also highlighted with a red box. An arrow points from the "Restaurant Location" dropdown in the visual's properties to the checked "Restaurant Loc..." checkbox in the Fields pane.

3. With the visual still selected, click and drag the **Restaurant Location** field into the *size* bucket of the visual as shown. When more form submissions come through, this will change the size of the location segment on the map.

The screenshot shows the Power BI desktop interface. On the left, there is a map visual titled "Count of Restaurant Location by Restaurant Location" showing a map of Sydney, Australia. Above the map, a card displays "4.00" as the "Average of Customer Service Rating". To the right of the visual is the "Fields" pane. In the "Visualizations" section of the Fields pane, there is a dropdown menu labeled "Size" which has "Count of Restaurant Loc..." selected. A red box highlights this selection. In the "RealTimeData" section of the Fields pane, the "Restaurant Loc..." checkbox is checked, also highlighted with a red box. An arrow points from the "Count of Restaurant Loc..." dropdown in the visual's properties to the checked "Restaurant Loc..." checkbox in the Fields pane.

4. Click on the **format** icon shown. Expand **Title**, and enter **Location of Restaurant Visited** as the **Title text**.

The screenshot shows the Power BI desktop interface. On the left, there's a map visualization with a title '4.00 Average of Customer Service Rating'. To the right is the 'Format' pane. In the 'Visualizations' section of the Format pane, the 'Title' section is expanded, showing a title text input field containing 'Location of Restaurant Visited'. A red box highlights both the 'Title' section and the title text input field.

Table: Comments and Date Submitted

1. Click in the whitespace of your report page to ensure that no visuals are selected. Drag the **Time Submitted** field from the *Fields* pane onto the whitespace of your report. This should automatically create a table visual.

The screenshot shows the Power BI desktop interface. The 'Fields' pane on the right has a checkbox for 'Time Submitted' which is checked. A red arrow points from this checked field to a table visual on the report page. The table visual displays the value 'Time Submitted' with the date '04/21/21 08:10:00 AM'. The rest of the report page includes a map visualization and a summary card with a rating of 4.00.

2. Drag the **Comments** field from the *Fields* pane onto the table.

The screenshot shows the Power BI desktop interface. On the right, the **Fields** pane is open, displaying a list of fields under the category **RealTimeData**. The **Comments** field is selected, indicated by a yellow checkmark. A red arrow points from the **Comments** field in the **Fields** pane towards the table visual on the left. The table visual displays two columns: **Time Submitted** and **Comments**. The first row shows the timestamp **04/21/21 08:10:00 AM** and the comment **The food I ordered was slow.**.

3. Resize the table visual so that it appears similar to below.

The screenshot shows the Power BI desktop interface with the table visual resized. The entire table visual is now enclosed in a thick red rectangular border. The visual itself contains the same data as the previous screenshot: **Time Submitted** and **Comments** columns with the same row data. The **Fields** pane on the right remains the same, with the **Comments** field still selected.

Card: Total Submissions

1. Click in the whitespace of your report page to ensure that no visuals are selected. Drag the **Time Submitted** field from the *Fields* pane onto the whitespace of your report. Then, click on the **Card** visual so that it appears as shown below.

The screenshot shows a Power BI report titled "Restaurant Feedback Su... | Data updated 4/21/21". On the left, there's a card visual displaying the value "4.00" and the text "Average of Customer Service Rating". Below it is a map titled "Location of Restaurant Visited". In the center, a large card visual displays the text "04/21/21 08:10:00 AM" and "Earliest Time Submitted". To the right, the "Fields" pane is open, showing a hierarchy under "RealTimeData". The "Time Submitted" field is selected, indicated by a yellow checkmark. A red box highlights the card visual in the center of the report.

2. With the visual still selected, click on the *arrow next to the Earliest Time Submitted field* as shown below. Select **Count**.

The screenshot shows the same Power BI report as above. The "Fields" pane is open, and the "Time Submitted" field is selected. A context menu is open over the "Earliest Time Submitted" field in the list. The menu options are: Remove field, Rename for this visual, Earliest (which is checked with a green checkmark), Latest, Count (Distinct), and Count. The "Count" option is highlighted with a red box.

3. Double click in the space shown below, and rename the field to **Number of Submissions**.

The screenshot shows the Power BI Editor interface. On the left, there is a visual titled "Count of Time Submitted" which displays the number "1". Above the visual, there are two columns: "Time Submitted" and "Comments". A single row of data is visible: "04/21/21 08:10:00 AM" and "The food I ordered was great but service was slow.". To the right of the visual is the "Fields" pane. At the top of the pane, there is a section for "Visualizations" containing various chart icons. Below that is a "Filters" section. The "Fields" section contains a list of fields, with "Number of Submissions" highlighted and enclosed in a red box. Underneath the fields list are sections for "Drill through", "Cross-report", and "Keep all filters", each with its own settings.

4. Save your report.

Creating the Dashboard

You have now created the main visuals to display on the dashboard. To see the visuals update in real-time, they must be added to a dashboard.

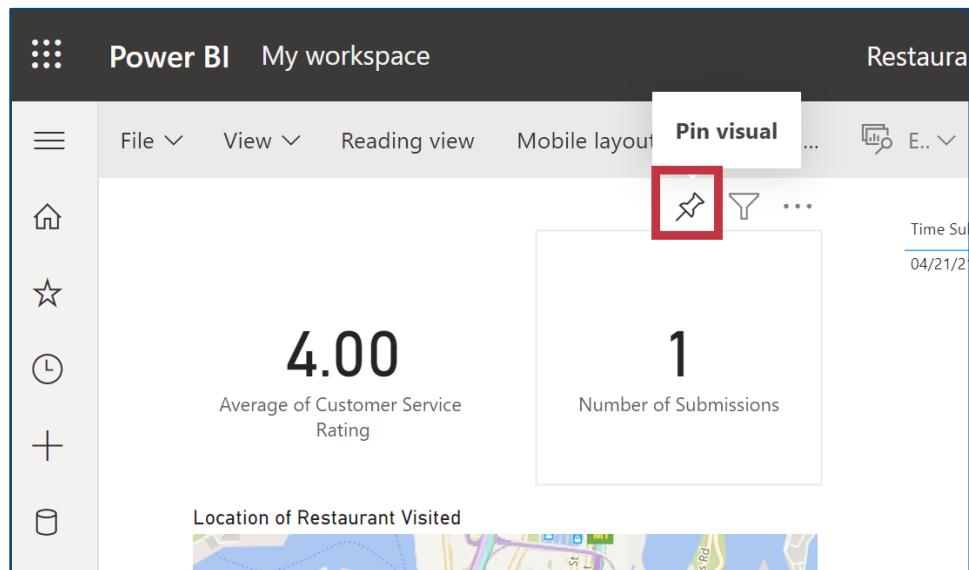
1. Optional: You can change the design/formatting of the visuals if you like. To explore how you can change the design, click on a visual, then click on the format icon. Here, you can change properties such as the text size, colours, background and borders.

The screenshot shows the Power BI Editor interface. The visual from the previous step is now highlighted with a red border. To the right of the visual is the "Format" pane, which is a detailed view of the visual's properties. It includes sections for "Search", "General", "Data label", "Category...", "Word wr...", "Title", and "Background...". Each section has a "On" or "Off" switch and a slider for adjustment.

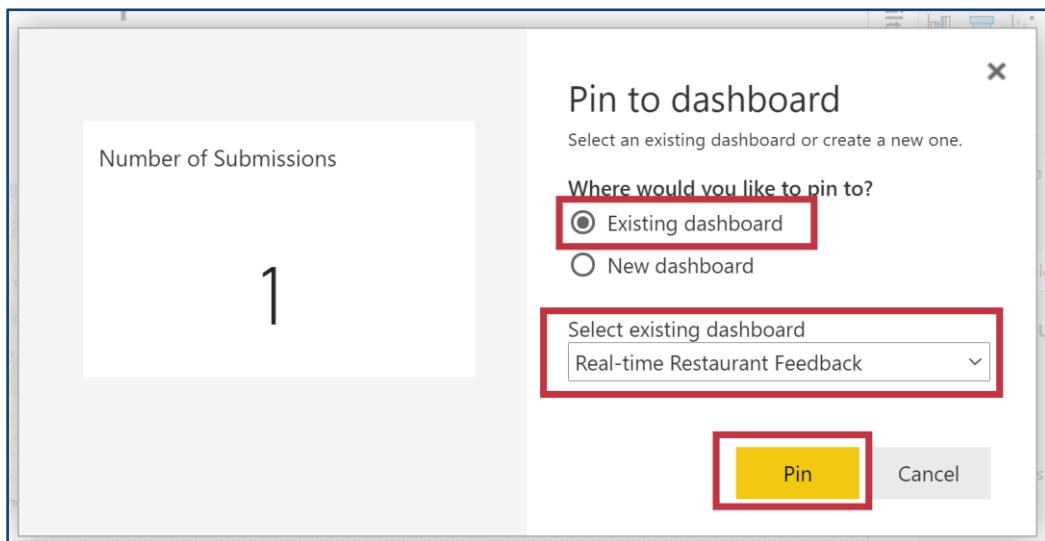
2. Hover over the *Average of Customer Service Rating* card visual and click on the **Pin** icon.

3. Select **New dashboard**, and name the dashboard **Real-time Restaurant Feedback**. Then, click **Pin**.

4. Hover over the **Number of submissions** card visual and click on the **Pin** icon.



5. Select to pin it to the **Real-time Restaurant Feedback** Existing Dashboard.

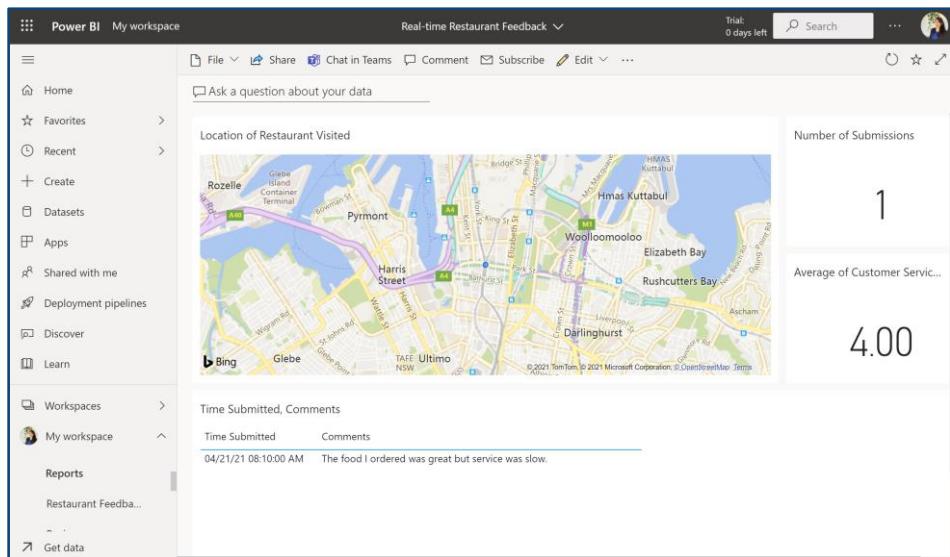


6. Repeat step 4 & 5 for the remaining 2 visuals so that all visuals will now be on the dashboard.

7. From the *left navigation menu* click on **Real-time Restaurant Feedback** from the *Dashboards* area underneath *My Workspace*. If you made any changes to your report, you will be prompted to Save first.

8. Your dashboard is now ready! You can move tiles on the dashboard if you wish to resize them.

Time Submitted	Comments
04/21/21 08:10:00 AM	The food I ordered was great but service was slow.



5. Test out your dashboard

1. Resize your screen (or use a different screen) so that you can see both your dashboard, and a browser with your form open. You can use an InPrivate/Incognito browser window again to open your form so that you can make submissions.

2. Go ahead and make multiple form submissions, and watch the dashboard update. You can also give the form to other people to submit as well.