Introduction to Power BI

This written guide is aimed to help anyone start from scratch and learn the basics of Power BI (PBI). The guide includes additional resources you can use to further your education in PBI. A .csv file link is included and required to follow along the examples given throughout this exercise ([*Excel file*](https://hi.switchy.io/blpbisample)). The exercise will introduce importing a data set, creating visualizations, making measures, publishing/sharing dashboards and other basics of PBI.

|  |
| --- |
| Additional Resources  Recommended Resource   * [Learnit training link (Beginner)](https://www.youtube.com/watch?v=i3CSD7bMMbg) * [Learnit training link (Advanced)](https://www.youtube.com/watch?v=ppD-jKqsqKM)   Optional Resource   * [Learnit training link (Master)](https://www.youtube.com/watch?v=i3wZRgx_gpY) |

Required data file: [Excel CSV file link](https://hi.switchy.io/blpbisample)

Required software: [Microsoft Power Bi](https://www.microsoft.com/en-us/download/details.aspx?id=58494)

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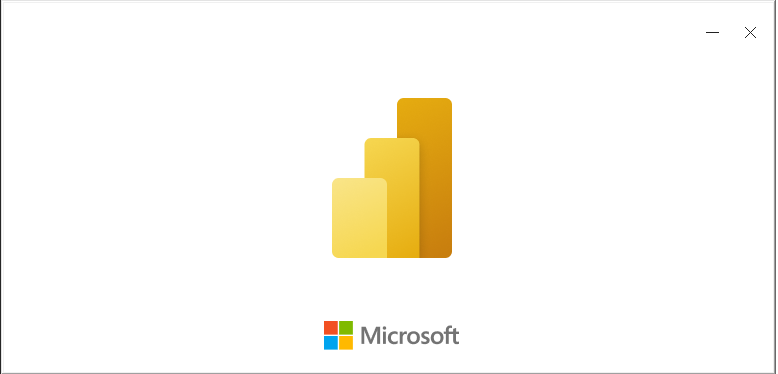
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# *Section 1: Getting Started*

## Open Microsoft Power BI

## If you do not have Microsoft Power BI (Desktop) installed, you can download it through the [Microsoft website here](https://www.microsoft.com/en-us/download/details.aspx?id=58494).



## You should see a pop-up window like Figure 1

## Click “Get Started”

Graphical user interface, application

Description automatically generated

Figure

## Enter your Ceridian Email (this is required for making dashboards and getting full access to the software)

Graphical user interface, application

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Figure

## Click continue and follow the prompt until you’re signed in

Graphical user interface, application

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Figure

# Section 2: Importing Data

## Import data by using the “Get Data” button

Graphical user interface, application

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Figure

## Select the excel .csv file provided in this guide ([Excel file](https://hi.switchy.io/blpbisample)) and click “Open”

## A preview screen of the data will pop up. Select “Load” to import the data into Power BI (Figure 5)

Graphical user interface, application, table, Excel

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Figure

# Section 3: Creating a Visualization

## Now we can begin to add visuals based on the imported data

## Note: There are 3 different views in Power BI. Report, Data, and Model shown in Figure 6

Graphical user interface, application

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Figure

## For most of this guide, we will be using the “Report” view where we can add visuals

## Your screen should look like Figure 7 here

Graphical user interface

Description automatically generated with medium confidence

Figure

## You will mainly be using the sections “Visualizations” and “Fields” to create visuals (outlined in orange in Figure 7).

## The “Fields” section is the different tables, columns, etc. that we imported earlier.

## The “Visualizations” section has various ways to visualize data and combinations of data.

## Let’s make our first visual.

## The data we have imported is a mock example of credit card transactions made in various cities throughout India

## Let’s make a visual representation of the amount each card type has spent.

## In the “Fields” section (right hand side), check “Amount” and “Card Type” like in Figure 8.

## If you do not see the names of columns, make sure to expand the list of the data by clicking the arrow next to the table name, shown in Figure 8

Graphical user interface, application

Description automatically generated Graphical user interface, application

Description automatically generated

Figure

## A default visualization will be automatically selected; however, we can change this at any time. Before you do, make sure your screen looks like Figure 9.

Graphical user interface, application

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Figure

## Let’s change the visual from the default “Clustered column chart” to an “Area chart”. See Figure 10 for comparison.

Graphical user interface, application

Description automatically generated

Figure

## If you notice no change in the visualization, make sure you select the visual you wish to change and choose the Area chart visualization

# Section 4: Formatting Visuals

## Let’s add a second visual

## Note: When creating a second visual, make sure to deselect the current visual. To do so, simply click in an empty space to deselect the first visual. Otherwise, it will change your current visual rather than the intended new visual

## This time, we’ll make a pie chart. The data points we’ll use is “Amount” and “Exp Type” (Expenditure type). See Figure 11 to compare.

Graphical user interface, application

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Figure

## With the pie chart, and all the other visualizations, we can format how we want certain things displayed. ***While having the pie chart selected***, click “Format” in the visualizations pane shown in Figure 12.

Graphical user interface, application

Description automatically generated

Figure

## There are a whole lot of ways to manipulate your visualizations and each visualization has different ways to be adjusted. Feel free to play around with these options (you can create a copy of any visual by right clicking the visual or delete the visual and repeat previous steps to continue with the exercise).

## Continuing for the pie chart, we will turn off the Legend and change how the data is displayed.

## First, turn off the legend by simply clicking from the “On” position to the “Off” position (See Figure 13). Notice the legend being removed and how the visualization automatically resizes to fill out the visual.

Text

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Figure

## The next step is to change the way the data is displayed in the pie chart. The default “label style” is set to Data value & Percent of total. Instead, we’ll change this **Category and Percent of total** (See Figure 14)

Graphical user interface, application, Word

Description automatically generated

Figure

## Also, we can change the font size of those labels. In the same section “Detail labels”, scroll down and change the font to a desired size (for this exercise, we’ll set it to 14).

# Section 5: Formatting Data

**At this point of the exercise, we have gotten a good start on the dashboard. This is a friendly reminder to save what you’ve created so far.**

## Power BI automatically detects the type of data that is imported, however, its not always right or we may want to change the default setting on how it is formatted/displayed.

## To showcase this, the next visualization we’ll be using are Cards.

## Select the “Card” visualization and the “Amount” data (See Figure 15). Remember to click an empty space before choosing a new visualization to avoid changing the last visualization you were working on.

Graphical user interface

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Figure

## You might notice the data being displayed is a total amount of currency, but without any delimiters to separate the numbers (missing commas). We can fix this by simply changing the formatting Power BI chose when the data was imported.

## To change this, select the “Amount” column on the right-hand side. Once selected, we change the format to include commas (See Figure 16).

Graphical user interface, application

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Figure

## If you are not able to see this view, even after selecting “Amount,” make sure to click on “Format” at the top of Power BI (in between “Help” and “Data/Drill”)

## You should now see the card displaying the same amount, but with commas (See Figure 17 to compare).

A picture containing graphical user interface

Description automatically generated

Figure

# Section 6: Duplicating Visuals

## Sometimes, we want to display different data, but using copies of a visualization we have formatted to our liking. To avoid the extra work of manipulating the formatting options for each visual, we can copy a visual and then change how the data is being displayed.

## Let’s add a border to our card visual. Make sure the card visual is selected, click on format (underneath the Visualizations panel), then find “Border” and switch it to “On.”

## Now, let’s add a count of how many transactions were made and the average amount spent but using the card visual we already made.

## Note: You may notice the numbers seem awfully high, but the generated data is not in USD, but rather Indian currency.

## To copy a visual, simply right click the visual, hover over “Copy”, then select “Copy visual” (See Figure 18)

Graphical user interface

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Figure

## You can paste by using the shortcut Ctrl + V. Make two copies and stop once your canvas looks like Figure 19.

Graphical user interface, chart, application

Description automatically generated with medium confidence

Figure

## If we had created visual cards from scratch, we would have to turn on the “Border” for each card, manually. This way, we avoid it by copying the visual which carries over the formatting changes we’ve already made.

## Of course, we’ll need to change the data being displayed. Save your work so far and hop over to *Section 7* to learn about the “Fields” section. Placeholder

# Section 7: Fields

## We’ll briefly look at the “Fields” section of Power BI. Essentially, when you choose a column to add to a visualization, it is being added to this section

## Most of the time, Power BI does a good job at guessing where this column should go in the field section. However, on occasion, it may guess incorrectly, or you need to manipulate it a certain way for a particular metric. For the purposes of this guide, we’ll keep things simple.

## Right now, you should have 3 identical cards displaying the same number. We’re going to change one now to show the number of transactions made.

## Select the middle card visual. Under the “Visualizations” panel, you’ll see a section labeled “Fields” (this is also next to the Format button we’ve been using).

## You should notice “Amount” is populated here. Select the drop-down arrow and we’re going to select “Count" (See Figure 20)

Graphical user interface, application

Description automatically generated

Figure

## Apply the same process on the third card but choose “Average” at the last step.

## You should end up having 3 cards looking like Figure 21

Graphical user interface

Description automatically generated with medium confidence

Figure

# Section 8: Map Visualization

## Let’s add a map visual to show how much each city is contributing to the total amount

## To do this, we’ll choose “Amount,” “City,” and the map visual (See Figure 22)

Graphical user interface, application

Description automatically generated

Figure

## You might notice that only one city is being populated. If you check the data, you’ll see there are a whole bunch of cities. They are not being displayed properly because Power BI needs to be corrected on the type of data it is looking at.

## To fix this, select the “City” column in the “Fields” pane on the right-hand side. Then change the “Data category” to “Place” (See Figure 23)

Graphical user interface, application

Description automatically generated

Figure

## Once you make this change, the map visual should populate all the cities correctly and look like Figure 24

Graphical user interface, application, Word

Description automatically generated

Figure

## Now let’s format the visual to highlight cities with high number of transactions.

## While the map visual is selected, head over to the “Format” section and click on “*fx*” in the “Data colors” drop-down menu. (See figure 25)

Graphical user interface, application

Description automatically generated

Figure

## To keep things simple for now, just compare to Figure 26 and match the settings for your visual. Feel free to play with the colors or any other setting to see how it changes the visual.

## Challenge: You can change the size of the bubbles used in the map visual. Hint – it is located in the formatting section.

## To keep things simple for now, just compare to Figure 26 and match the settings for your visual. Feel free to play with the colors or any other setting to see how it changes the visual.

Graphical user interface, application

Description automatically generated

Figure

# Section 9: Slicers

**We have come a long way since the beginning of this guide. This is a friendly reminder to save what you have so far.**

## **Slicers** are a big part of Power BI and they can help focus on different data points. We’ll be creating 3 different slicers in this section.

## The first slicer we’ll create is one for the different types of expenditures

## Use Figure 27 to start your first slicer

Graphical user interface, application

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Figure

## Checking any of the boxes will filter all your other visuals on the fly. A very powerful tool and even more so when you combine multiple slicers

## Before creating additional slicers, let’s format this slicer. I’ll provide screenshots (See Figure 28) of the settings I will be using, but feel free to change the slicer to your liking.

Diagram

Description automatically generated with low confidence

Figure

## Now, let’s make another slicer, but this time we’ll use “Card Type” (See Figure 29)

Graphical user interface, application

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Figure

## Note: At this point, feel free to take liberty in the design of the slicer otherwise follow along and mimic the examples provided as best as you can.

## Challenge: Create a slicer using the “Gender” column. When you’re finished, see Figure 30 (next page) for comparison

## Here’s a slicer using the “Gender” column

A picture containing background pattern

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Figure

## Mix & match the different slicers and you will quickly realize how powerful slicers can be for data analytics

# Section 10: Measures

## Another powerful feature of Power BI are ***Measures***

## Power BI Desktop helps you create insights into your data with just a few clicks. But sometimes that data just doesn’t include everything you need to answer some of your most important questions. Measures can help you get there.

## For the first part of creating a measure, we’re going to add a new column to our data. There are several ways to do this, the simplest one is to click “Modeling” at the top, then click “New column” (See Figure 31)

A picture containing text

Description automatically generated

Figure

## You will see a new column simply called “Column” in the Fields section. Power BI will also highlight the new column for you and can type right away (near the top of the canvas, looks similar to the excel formula bar). See Figure 32 to make sure you are on the right track.

Graphical user interface

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Figure

## The scope of this guide is to keep things simple, so I will provide a **copy/paste text** to insert now. Replace everything in the column formula bar with the following:

InterestRate =

var Platinum = 1.11

var Gold = 1.13

var Silver = 1.15

var Signature = 1.19

return

IF('Credit card transactions - India - Simple'[Card Type] == "Platinum", 'Credit card transactions - India - Simple'[Amount] \* Platinum,

IF('Credit card transactions - India - Simple'[Card Type] == "Gold", 'Credit card transactions - India - Simple'[Amount] \* Gold,

IF('Credit card transactions - India - Simple'[Card Type] == "Silver", 'Credit card transactions - India - Simple'[Amount] \* Silver,

IF('Credit card transactions - India - Simple'[Card Type] == "Signature", 'Credit card transactions - India - Simple'[Amount] \* Signature))))

## Once you have pasted everything in the formula bar, hit Enter. You should see a layout similar to Figure 33.

Graphical user interface, text, application, Word

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Figure

## This column simply calculates and adds the interest to the amount spent per transaction

## Now that we have this column, we can use it to create a measure.

## Let’s create the measure, just like when adding a new column, select the “Modeling” tab and click “New measure” (See Figure 34)

Graphical user interface, application

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Figure

## For this exercise, let’s look at the total profit made on interest alone. I recommend typing this part out so you can see how you can use the autofill feature while you type

## Tip: While typing, the autofill will filter as you type and when it highlights a selection that you want, hit “Tab” and it will autofill for you.

## We will be using the SUM function to calculate the profit using two columns. We will subtract the **InterestRate** column with the **Amount** column which will give us the **InterestProfit** number we’re looking for (See Figure 35)

Graphical user interface, application

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Figure

## I’ll provide a text line you can use to copy/paste

## InterestProfit = SUM('Credit card transactions - India - Simple'[InterestRate]) - SUM('Credit card transactions - India - Simple'[Amount])

## Now that we have created our measure, let’s use a familiar visualization to display that data, the “Card” visual

## Looking at our current canvas, it looks like we’re running out of space. Let’s first delete a visual. We’ll remove the middle “Card” displaying “Count of Amount”. Highlight the card and hit delete on your keyboard

## We want to keep things consistent, so copy one of the other cards and paste it onto the canvas ([Section 6](#_Section_6:_Duplicating) of the guide). Readjust so that it is level with the other cards.

## Select our new visual, deselect whichever column is currently selected, then select our new measure “InterestProfit” (See Figure 36)

Application

Description automatically generated with low confidence

Figure

## We will also go ahead and remove the decimal places, similar to [Section 5](#_To_change_this,), we will add commas to the display and also set the decimal place to zero (See Figure 37)

Graphical user interface, application

Description automatically generated

Figure

## At this point, we are nearly done. Feel free to adjust/move visuals around. You can also click around using the slicers or other visuals to see how it all filters things on the fly. You can also dig through the formatting options for all the different visuals we’ve made so far. When you’re done, move on to Section 10.

# Section 11: Publishing/Sharing a Dashboard

**We are coming to an end of the guide. This is a friendly reminder to save what you have so far.**

## We have successfully made a dashboard, but what now?

## Now we can “Publish” our dashboard which will then allow us to share it with others to use.

## Once you have everything set up the way you like, find the “Publish” button at the top and click it (See Figure 38)

Graphical user interface, application, Word

Description automatically generated

Figure

## You’ll be asked to save your file, do so. There will be a follow up to decide where to publish your dashboard. For now, simply choose “My workspace” and click “Select”(See Figure 39)

Graphical user interface

Description automatically generated with medium confidence

Figure

## Once it finishes, click “Open ‘YourFile.pbix’ in Power BI” (See Figure 40)

dGraphical user interface

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Figure

## If something happens and you missed the opportunity to open from the dialogue prompt, you can also access your workspace in this [link](https://app.powerbi.com/home). Make sure to sign in and you should be able to see your dashboards here.

## Up until this point, we have used the term “dashboard” rather loosely, but it is important to note the difference. What we have mostly done throughout this guide is create a “Report.” Now, after publishing the report, we can create a “dashboard”

## You will see the difference notated on the side panel under “My Workspace” where there are “Reports” and “Dashboards” (See Figure 41)

A picture containing application

Description automatically generated

Figure

## The blue outline is designating the Report we made in this guide that I titled “Demo Dashboard1.” The orange outline is showing the two different sections

## The last thing we need to do before turning our Report into a dashboard is “pin” all the visuals. We can do this simply by hitting the ellipses (3 dots …) shown in Figure 42 then click “Pin to a dashboard”

Graphical user interface, application, Teams

Description automatically generated

Figure

## Another pop-up will occur to ask if this is a new dashboard (which it is), name the dashboard (I did “First Dashboard),and to confirm the pin (See Figure 43)

## Graphical user interface, application, Word Description automatically generated

Figure

## Congratulations! You just made your first dashboard in Power BI.

## The last thing we will do in this guide is show you how to share this dashboard you created. Feel free to send it to yourself or another colleague to test things out. Figure 44 will show where the “Share” button is and Figure 45 will show you the pop-up window before confirming a share.

Graphical user interface, application, Teams

Description automatically generated Graphical user interface, application

Description automatically generated

Figure Figure

## You have successfully completed this beginner’s guide to Power BI! Click [here](#_top) and go to “Additional Resources” for more training options.