

Data Analytics with Power BI

Learners Guide

Contents

[1. Module 1: Introduction to Case Study 3](#_Toc126859523)

[1.1 Data Set 3](#_Toc126859524)

[1.2 Case Study 3](#_Toc126859525)

[2. Module 2: Data Collection and Import 4](#_Toc126859526)

[2.1 Data Import 4](#_Toc126859527)

[3. Module 3: Data Preparation 9](#_Toc126859528)

[3.1 Changing the datatype of a column 9](#_Toc126859529)

[3.2 Removing unwanted rows 9](#_Toc126859530)

[3.3 Transposing data 11](#_Toc126859531)

[3.4 Renaming columns 12](#_Toc126859532)

[4 Module 4: Data Model 12](#_Toc126859533)

[5. Module 5: Data Visualisation 15](#_Toc126859534)

[5.1 Scenario 1: Creating measures to find Employee Count by Gender 15](#_Toc126859535)

[5.2 Scenario 2: Creating measures to count Actives and Seps 24](#_Toc126859536)

[5.3 Scenario 3: Separation Analysis 28](#_Toc126859537)

[5.4 Scenario 4: Number of Employees for each Department 30](#_Toc126859538)

[5.5 Scenario 5: Adding interactivity in the report by adding Slicer for Department 31](#_Toc126859539)

[5.6 Scenario 6: Spread of different departments in various states. 32](#_Toc126859540)

[5.7 Scenario 7: What is the count of employees by different recruitment sources? 33](#_Toc126859541)

[5.8 Scenario 8: What is the Active number of Employees for various Departments? 35](#_Toc126859542)

[5.9 Scenario 9 : What is the separation count by performance score of employees? 36](#_Toc126859543)

[6.0 Scenario 10 : What is the active count of employees by Race? 37](#_Toc126859544)

[6. Module 6: Customizing Pages 41](#_Toc126859545)

[6.1 Applying themes in Power BI 41](#_Toc126859546)

[6.2 Renaming Pages in Power BI 42](#_Toc126859547)

[6.3 Scenario 11: Gender Ratio in each department. 43](#_Toc126859548)

[6.4 Scenario 12: Employee performance in each of the departments. 44](#_Toc126859549)

[6.5 Scenario 13: Managers for respective departments. 46](#_Toc126859550)

[6.6 Scenario 14: Employee survey results by each department. 47](#_Toc126859551)

[6.7 Scenario 15: Add Visual borders to all the visualizations on Department Summary page. 48](#_Toc126859552)

[7. Module 7: Setting up a drillthrough action in your Power BI report. 49](#_Toc126859553)

[7.1 Scenario 16: Identify the no of employees by Recruitment Source. 49](#_Toc126859554)

[7.2 Scenario 17: New derived column for age from DOB. 51](#_Toc126859555)

[7.3 Scenario 18: Employee Count by Age 53](#_Toc126859556)

[7.3 Scenario 19: Performance Score by Recruitment Source. 54](#_Toc126859557)

[7.4 Scenario 19: Recruitment source by employee gender. 55](#_Toc126859558)

# Module 1: Introduction to Case Study

## Data Set

The dataset that you will be using today is HR dataset that includes various Employees details spread across various States in the USA. The data revolves around a fictitious company and the core data set contains employee names, their DOBs, age, gender, marital status, date of hire, reasons for termination, department, whether they are active or separated, position title, manager name, and performance score.

## **Case Study**

Initech is in the process of acquisition by Massive Dynamic company. The executive board of Massive Dynamic company has requested the HR department of Initech company to present an employee summary to the executive board to gain insights on how to tackle the cultural shift during the merger/acquisition. Primarily the board is looking at the below details:

Total number of Employees

* Gender Diversity
* Employee Ethnicity
* Employee marital status
* Sources of hiring
* Separation rate
* Leadership roles in the organization

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# Module 2: Data Collection and Import

## **Data Import**

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| Let us start with looking at the data files. The dataset contains HR data. We are going to analyze this data. The CSV revolves around a fictitious company and the core data set contains **names, DOBs, age, gender, marital status, date of hire, reasons for termination, department, whether they are active or terminated, position title, pay rate, manager name, and performance score**.  HR data is in a csv file located in **/HR folder**.  **Department, Employment Status, Ethnicity, Gender, Location, Manager, Marital Status, and other related data are there in individual excel files in the folder HR/HR\_Data.** | Snapshot of the HR data  Table  Description automatically generated |
| Let us look at the **Gender data** file.   1. Open /HR/HR\_Data/Gender. xlsx. Notice that the first 3 rows contain data details, and the actual data starts from row 3. | Table  Description automatically generated |
| Now let us open **Employment Status** data file.  HR/HR\_Data/ EmploymentStatus.xlsx.  Notice that the data is laid out across the sheet and has a couple of blank rows with a note in row. | Graphical user interface, application, table, Excel  Description automatically generated |
| We will start by connecting to data from different files and perform data cleaning and transformation operations.   1. If you do not have the **Power BI Desktop** open, launch it now. 2. Select **Already have a Power BI Account? Sign in** option. 3. **Sign in** using your Power BI credentials. 4. 5. Start-up screen opens. Click on **X** on the top right corner of the dialog to close it. | Graphical user interface  Description automatically generated |
| Let us set up the locale to **US English**, to make it convenient to go through the rest of this lab.   1. From the ribbon, select **File -> Options and settings -> Options.** 2. In the left panel of Options dialog, select **Regional Settings**. 3. From the **Locale** drop down select **English (United States).** 4. Select **OK** to close the dialog. | Graphical user interface, application  Description automatically generated |
| First step is to load data to Power BI Desktop. The data are in csv and xlsx files.   1. From the ribbon, select **Home -> Get Data.** 2. Select Text/CSV.   **Note:** Power BI Desktop has the capability to connect to 70+ data sources. We are using csv and xlsx in this lab for simplicity. | Graphical user interface, application, Word  Description automatically generated |
| 1. Browse to **HR/HR\_Data/** folder and select **HR.csv**. 2. Click **Open**. | Graphical user interface, text, application  Description automatically generated |
| Power BI detects the data type of each column.  After completing your selection, you have three options – Load, Edit or Cancel.  • **Load** loads the data from the source into Power BI Desktop for you to start creating reports.  • **Transform Data** allows you to perform data shaping operations such as merging columns, adding additional columns, changing data types of columns as well as bringing in additional data.  • **Cancel** gets you back to the main canvas.   1. Click **Transform Data** as shown in the screenshot. A new window opens. | Table  Description automatically generated |
| You should be in the Query Editor window as shown in the screenshot to the right. Query Editor is used to perform data shaping operations.  Notice the HR file you connected to shows as a query in the left panel. You see a preview of the data in the centre panel. Power BI predicts data type of each field (based on the first 200 rows) which is indicated next to the column header. In the right panel, steps that Query Editor performs are recorded. | Graphical user interface, application, table, Excel  Description automatically generated |
| Let us load the other data sources. In the same way as above load all the other data available in the **HR\_Data** folder. | Graphical user interface, application, Word  Description automatically generated |

# Module 3: Data Preparation

In this section, we will explore methods to transform data in the data model. Transforming the data by renaming tables, updating data types, and appending tables together ensures that the data is ready to be used for analysis and reporting. In some instances, this means cleaning the data up so that similar sets of data are combined. In other instances, groups of data are renamed so that they are more recognizable by end users and simplifies report writing.

## **Changing the datatype of a column**

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| 1. Using **Home -> Data Type** or by selecting the data type next to the column header, change the data type of the DOB, DateofHire, DateofTermination, and Lastperformancereview\_Date columns of HR table to type Date since it is a date field. As you can notice in screenshot DOB data type has changed from text to date.   When the data is refreshed, it will process through all the **Applied Steps** that you have created. | Table  Description automatically generated |

## **Removing unwanted rows**

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| 1. In the left panel, select **Gender** query. 2. From the ribbon, select **Home -> Remove Rows -> Remove Top Rows.** 3. Remove Top Rows dialog opens. Enter **3** in the text box since we want to remove the top informational data row and the blank 2nd & 3rd row. | Graphical user interface  Description automatically generated |
| 1. Select **OK**. | Graphical user interface, application, Word  Description automatically generated |

|  |  |
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| Notice that the first row in Gender query now is the column header. So, let us make it a header.   1. With Gender query selected in the left panel, from the ribbon select **Home -> Use First Row as Headers.** | Graphical user interface, application, Word  Description automatically generated |
| Notice that the first row in Gender query now is the GenderID and Sex columns. | Table  Description automatically generated |
| 1. From the left panel, select **Employmentstatus** query. Notice the bottom 3 rows are not part of the data.   Let us remove them.   1. From the ribbon, select **Home -> Remove Rows -> Remove Bottom Rows.** 2. Remove Bottom Rows dialog opens. Enter **3** **in Number of rows** text box. 3. Select **OK.** | Graphical user interface, text, application, email  Description automatically generated  A picture containing graphical user interface  Description automatically generated |
| 1. With EmploymentStatus query selected in the left panel, from the ribbon select **Home -> Use First Row as Headers.** | Graphical user interface, application, Word  Description automatically generated |

## **Transposing data**

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| 1. From the left panel, select Employmentstatus Query. Notice EmployementStatusID and EmployementStatus data is laid across in rows. And the header is not useful. We need to transpose the table to meet our needs. 2. From the ribbon select **Transform -> Transpose**.   Notice this transposes the data into columns.  Now we need the first row to be the header. | Graphical user interface, application  Description automatically generated |

## **Renaming columns**

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| Let us make first row to be header for below tables or query.  Ethnicity, Location, Recruitment Source, SeperationReason |  |
| You have successfully imported the data and performed data shaping operations. Now, you are ready to load the data into the Power BI Desktop data model.  Let us do that.   1. Click on **File -> Close & Apply.** | Graphical user interface, application, Word  Description automatically generated |
| All the data will be loaded in memory within Power BI Desktop. You will see the progress dialog with the number of rows being loaded in each table as shown in the Figure. | Text  Description automatically generated |

# Module 4: Data Model

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| Upon landing on the main Power BI Desktop window, you will see the Report canvas.   1. On the top, you see the **Home** tab where the most common operations you perform are available like connecting to data source etc. 2. **Insert** tab has options to insert items to your report like text box, image, shapes etc. 3. **Modelling** tab in the ribbon enables additional data modelling capabilities like adding custom columns and calculated measures. 4. **View** tab has options to format the page layout. 5. **Help** tab provides self-help options. Some features include training videos and links to online communities. 6. On the left side, you have three icons, **Report, Data and Model**. Switching between these allows you to see the data and the relationships between the tables. 7. The center **white space** is the canvas where you will be creating visuals. 8. **Visualizations** panel on the right allows you to select visualizations, add values to the visuals and add columns to the axes or filters. |  |
| 1. The Fields window on the right panel, is where you will see the list of tables which you loaded previously. Click on the arrow next to a table name and expand. Upon expanding, you can see a list of the columns of that table. 2. Click on the Data icon. Expand HR table in the Fields as shown in the figure. |  |
| The last one is the Model icon. By now you already know what the Model icon is and its functionality. A quick recap on the same.   1. Click on the Model icon on the left panel of Power BI Desktop.   You will see the tables you have imported along with some Relationships. The Power BI Desktop automatically infers relationships between the tables.   * A relationship is created between HR and Manager tables using ManagerName column. * A relationship is created between HR and Department tables using DeptId column and so on.   Power BI supports 1 to many, 1 to 1 and many to many types of relationships between the tables.  In this session we will be using 1 to many types of relationship. | Graphical user interface, application  Description automatically generated |

# Module 5: Data Visualisation

## **Scenario 1: Creating measures to find Employee Count by Gender**

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| Power BI provides a wide range of visualization options to choose from.  In the Visualization pane, you can see there are icons of various visuals available. These are the most used visuals across industry.  Apart from these, Power BI also provides a variety of custom visuals. The custom visuals visualization marketplace is open sourced. You can import and add such custom visuals to your reports. To access these custom visuals.   1. Click on the **three ellipses** as shown in the screenshot. 2. Select **Get more visuals**. 3. A wide marketplace of custom visual opens from where you can select the most relevant visualization for your report.   More on this later. |  |
| Let us start by analyzing HR data by Gender and see what insights we can draw.   1. Select the Donut Chart 2. Select the Sex field from Gender table and EmpID field from HR table.   You can see a Donut graph showing count of employees by gender. |  |
| Now let us change the title of the graph from “Count of EmpID by Sex” to “Count of Employee by Gender”.   1. Under **Visualization** select **Format** Icon & under the **General** go to **Title** option, change the title to “Count of Employee by Gender” |  |
| 1. Let’s turn off the legend from the Donut Chart to do so.   Under **Visualization** select **Format** Icon & under the list go to **Legend** **on/off** option |  |
| We will be using a formula to create a Measure field. Such formulae in Power BI are also known as Data Analysis Expression or DAX.  While creating DAX calculations in our report, there are two aspects: **Calculated Columns and Measures.**  **Calculated column** is evaluated row by row. We usually extend a table by adding calculated columns.  **Measure** is used when we want to aggregate values from many rows in a table.   1. Navigate to **Fields** section on the Right panel. 2. From the panel right click on **EmpID** of HR table and click on **New Measure** options you will notice a formula bar will appear on top. 3. Enter this code in the formula bar **EmpCount = COUNT(HR[EmpID])** & click on the tick mark as shown in the screenshot. 4. Now you can see a new measure has been created with name **EmpCount.** 5. Now drag the **EmpCount** under **Values** & remove the count of EmpID by clicking on **X** mark next to the column.   We have a Donut chart visual that shows count of employees by gender |  |
| Another important aspect of data visualization is to have Metrics in the report. The Report user, at first glance should get an idea about the Total number of employees. Power BI provides a very handy way to create Metric cards. Let us create one.  One of the key Metrics would be the Total number of employees.   1. Select **card** visual from the **Visualizations** pane. 2. Click the checkbox next to **EmpCount** in **HR** table. |  |
| Now let us change the Title of the card to **Total Employees.**   1. Click on the **format** icon under **visualisation.**   Turn off **the category label** and change the **Title** to “Total Employees” and under **Alignment** choose **Center.**  Notice a card visual is created showing the Total Employees. |  |
| As mentioned, it is always good to have different tables for different functionality.  For analysis, if you need to add date attributes like Week number, Day of Week, Holiday, etc., we need to have a Date table. Let’s create Date table.   1. Navigate to Data view by clicking on the **Data** icon on the left panel. 2. From the ribbon select **Home -> New Table**.   Notice a new table is created in the FIELDS section on the right and formula bar opens.  Here, we will be using a formula to create a Date Calendar. Such formulae in Power BI are also known as Data Analysis Expression or DAX. While creating DAX calculations in our report, there are two aspects: Calculated Columns and Measures.  **Calculated** column is evaluated row by row. We usually extend a table by adding calculated columns.  **Measure** is used when we want to aggregate values from many rows in a table.   1. Enter **Date = CALENDAR ("01/01/2006","12/31/2019")** in the formula bar and click on the check mark. A Date table with a Date column is created.   Here, 1 DAX function have been used: **CALENDAR** function which takes the start and end data.  We are creating a Date calendar from 2006 to 2019 since our dataset has data for those years. | Graphical user interface, application, Word  Description automatically generated  Graphical user interface, application, Word  Description automatically generated |
| The Date field is now of data type Date/Time. We only need Date so let us change it to data type Date.   1. Select the **Date** field in the **Date** table. 2. From the ribbon, select **Column tools -> Data type -> Date.** | Graphical user interface, application  Description automatically generated |
| Now, we need to create a relationship between the newly created Date table and HR table. Previously we used the drag and drop feature to create relationship. Let us use a different way this time.   1. From the ribbon, select **Column tools -> Manage Relationships**. 2. Manage Relationships dialog opens. Select **New** button. 3. Create relationship dialog opens. Select **Date** from the top dropdown. 4. Select **HR** from the second dropdown. 5. Highlight **Date** from Date table and **DateofHire** from HR table. 6. Select **OK** to close Create relationship dialog. 7. Select **Close** to close Manage relationships dialog. | Graphical user interface  Description automatically generated  Table  Description automatically generated  Graphical user interface, application, table  Description automatically generated  Table  Description automatically generated |

## **Scenario 2: Creating measures to count Actives and Seps**

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| Now Massive Dynamic company wants to know how many employees are active and how many are separated. To get this analysis let us create 2 measure fields by name **Actives and Sep.**  We must use DAX measure to create **Actives** **and Sep** fields.   1. Navigate to **Fields** section on the Right panel select **HR** table, right click on **EmpCount** column choose **New Measure** option. 2. Enter the DAX code in the formula bar.   **Actives = CALCULATE([EmpCount], FILTER(HR, ISBLANK(HR[DateofTermination]))).**   1. Press **Enter** in your keyboard. You will see **Actives** measure in HR table. | Graphical user interface, application, Word  Description automatically generated  Graphical user interface, application  Description automatically generated |
| Let us create another measure to calculate the Separation.   1. Navigate to **Fields** section on the Right panel select **HR** table, right click on **EmpCount** column choose **New Measure** option. 2. Enter the DAX code in the formula bar **Seps = CALCULATE(COUNT(HR[EmpID]),FILTER(HR,NOT(ISBLANK(HR[DateofTermination])))).** 3. Press **Enter** in your keyboard. You will see **Seps** measure in HR table. | Graphical user interface, application, Word  Description automatically generated  Graphical user interface  Description automatically generated |
| Let us create 2 metrics cards.   1. Total number of active employees 2. Total number of separation employees. 3. Select **card** visual from the **Visualizations** pane. 4. Click the checkbox next to **Actives** in **HR** table.   Similarly create another card for seps.  Notice a card visual is created showing the Total Actives & Seps. | Logo  Description automatically generated |
| Now let us create a line chart to analyse active and separated trends.   1. Choose the **line chart** from visualization, drag **Date** column from Date table under **Axis** and **Actives and Seps** columns from HR table under **Values**. 2. Click on the **Format** icon change the **Title** of chart to “Actives and Separations Trend”. 3. Drag the Actives & Seps on Y-Axis, as shown in the screenshot.   You will now see Actives and Separation Trend analysis with line chart. | Chart, line chart  Description automatically generated |

## **Scenario 3: Separation Analysis**

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| In the process of acquisition Massive Dynamic company wants to know the reason for separation. To get this analysis let us create a stacked bar chart.   1. Choose the **Stacked column chart** from the **Visualization**, drag **SeparationReason** under **Axis** and **Seps** under **Values**. 2. Click on the **Format** icon change the **Title** text to “Separation by Reason”. 3. Turn off the X-Axis & Y-Axis title, as shown in the screenshot.   You will now see Actives and Separation Trend analysis with line chart. | Chart, bar chart  Description automatically generated |

## **Scenario 4: Number of Employees for each Department**

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| In the process of acquisition Massive Dynamic company wants to find out employees count by departments.   1. Selct **Treemap** under **Visualization,** drag **Position** column from Position tableunder **Group** & **EmpCount** columnfrom HR tableunder **Values.** 2. Change the Title to “**Employee Count by Department**” as shown in the screenshot.   The Data labels should provide a clear message to the report user on what details the visual is depicting. Our intention in this visual is to help the business understand the percentage share of positions in various Departments.  You will now see percentage share of positions in various Departments with Treemap. | Chart, treemap chart  Description automatically generated |

## **Scenario 5: Adding interactivity in the report by adding Slicer for Department**

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| Let us create a department slicer.   1. Under **visualization** select **Slicer** option, drag **Department** column from Department table to **Field**. 2. Change the **Style** to Tile as shown in the screenshot. 3. Move the slicer to the top of the dashboard.   You will now see department slicer on top of the dashboard. |  |

## **Scenario 6: Spread of different departments in various states.**

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| Power BI Filled Maps fill the Map with colour’s based on the geological data that you provide. Let us Create a Filled Map in Power BI with example.   1. Click on the **Filled Map** under the **Visualization** section.      1. Drag the **State** Column from the HR table to the **Location** field, **Department** column under legend filed as shown in the screenshot. 2. Turnoff the Legend & change the **Title** to “**State wise Departments**”.   You will now see “Sate wise Departments” filled map. | Map  Description automatically generated |

## **Scenario 7: What is the count of employees by different recruitment sources?**

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| 1. First, click on the **Clustered Column Chart** under the **Visualization** section. It will automatically create a Clustered Column Chart with dummy data. 2. Drag the **Recruitment Source** Column from HR table to **Axis** field. 3. Drag **EmpCount** column from HR table to Y axis. 4. Under the **Format** turn off **X-Axis, Y-Axis** Title. 5. Change the **Title** to “**Total Employees by Recruitment Source**”, as shown in the screenshot.   You will now see “Total Employees by Recruitment Source” Clustered Column Chart. | Chart, bar chart  Description automatically generated |

## **Scenario 8: What is the Active number of Employees for various Departments?**

|  |  |
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| Power BI Multi-Row Card is useful to display the data in a Group format (or a section-wise).   1. Click on the **Multi-Row Card** under the **Visualization**section. It creates a Multi-Row Card with dummy data. 2. Let us drag the **Department** and **Actives** to **Fields** section. As you can see, it shows the Multi-Row Card of Department and Actives. 3. Click on the **Format** icon Change the card **Title** to “**Actives by Department**”. 4. Click on the **Card** option, Change the **Font Color to Blue.** 5. Click on the **ellipsis (…)** on top the card, Choose **Sort descending** & **Sort by** as **Actives.**   You will now see “**Actives by Department**” Multi-Row Card. | Graphical user interface, application, Word  Description automatically generated  Graphical user interface, application  Description automatically generated |

## **Scenario 9 : What is the separation count by performance score of employees?**

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| Power BI **Clustered Bar Chart** is useful to compare multiple dimensions against a single measure.   1. Click on the Clustered Bar Chart under the **Visualization**section. It creates a Clustered Bar Chart with dummy data. 2. Let us drag the **PerformanceScore** to Y Axis section & **Seps** to X Axissection. 3. Under the **Visual** turn off **X-Axis** Title**, Y-Axis** Title.   You will now see “**Seps by PerformanceScore**” Clustered Bar Chart. | Chart, bar chart  Description automatically generated |

## **Scenario 10 : What is the active count of employees by Race?**

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| The purpose of a Pie chart is to illustrate the contribution of different values to a total.   1. Click the **Pie chart** button in the **Visualizations** area. A Pie chart is added to the report page. 2. Let us drag the **RaceDesc** to **Legend** and **Actives** to **Values** section. As you can see, it shows the Pie chart of Actives by Race. 3. Change the **Title** to “**Actives by Race**”, as shown in the screenshot.   You will now see “**Actives by Race**” Pie Chart. | Chart, pie chart  Description automatically generated |
| Similarly let us create another pie chart for **Seps by Race**.   1. Click the **Pie chart** button in the **Visualizations** area. A Pie chart is added to the report page. 2. Let us drag the **RaceDesc** to **Legend** and **Seps** to **Values** section. As you can see, it shows the Pie chart of Seps by Race. 3. Change the **Title** to “**Seps by Race**”, as shown in the screenshot.   You will now see “**Seps by Race**” Pie Chart. | Chart, pie chart  Description automatically generated |
| Power BI Donut Chart is like Pie Chart, which is useful to visualize the higher-level data.   1. Click on the **Donut Chart** under the **Visualization** section, it automatically creates a Donut Chart with dummy data. 2. Drag **Sex** column to **Legend** & **Actives** to **Values** field. 3. Change the **Title** to “**Actives by Gender**”, as shown in the screenshot. 4. Under the **Visual** option **turn off** the **Legend** & choose the **Detail label -> Label Style** to **Category, data value.**   You will now see “**Actives by Gender**” Donut Chart. | A picture containing chart  Description automatically generated |
| Similarly let us create another Donut chart for **Seps by Gender**.   1. Click on the **Donut Chart** under the **Visualization** section, it automatically creates a Donut Chart with dummy data. 2. Drag **Sex** column to **Legend** & **Seps** to **Values** field. 3. Change the **Title** to “**Seps by Gender**”, as shown in the screenshot. 4. Under the **Visual** option **turn off** the **Legend** & choose the **Detail label -> Label Style** to **Category, data value.**   You will now see “**Seps by Gender**” Donut Chart.  You will now see “**Seps by Gender**” Donut Chart. | Chart  Description automatically generated |

# Module 6: Customizing Pages

## **Applying themes in Power BI**

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| With report themes you can apply design changes to your entire report, such as using corporate Colors, changing icon sets, or applying new default visual formatting. When you apply a report theme, all visuals in your report use the Colors and formatting from your selected theme.   1. Click on the **View** option on the ribbon. Here, we have applied the **Innovate** them.   You will now see the Dashboard with Innovate theme as shown in the screenshot. | Graphical user interface, application, PowerPoint  Description automatically generated  Graphical user interface, chart  Description automatically generated |

## **Renaming Pages in Power BI**

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| --- | --- |
| Right-click on the existing page name at the bottom open the context menu. Please select the rename option, as shown below. Or double-click on the Power BI page title allows you to rename it.   1. Rename the first sheet **(Page 1)** as **“Employee Summary”.** 2. Similary, rename the Second sheet (Page 1) as **“Active & Seps Summary”.**   You will now see the Dashboard Pages being renamed. | Chart  Description automatically generated  A picture containing text  Description automatically generated |
| Let us add Visual borders to our analysis.   1. Click on the **“Total Employees”** card on **Employee Summary** page. 2. Under **Visualization** choose **General** option **turn on** the **Visual border** option and pick the **Visual border -> Color** to **white** and **Rounded corners** to **5 px.**   Similarly add Visual borders to other analysis on the Dashboard.  You will now see “Total Employees” card with a white Visual border. | A picture containing text  Description automatically generated |

## **Scenario 11: Gender Ratio in each department.**

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| 1. Let us create a new page and rename it as **“Department Summary”.** Create a new page by clicking on the **New Page (+)** option at the bottom of the dashboard. 2. Rename the Page as **“Department Summary”.** 3. Under **Visualization** click on **Stacked Column chart** icon & drag and drop the **Department** column from Fields section to **Axis**, **SEX** column from field section to **Legend**, again darg the **SEX** Column from Fields section to **Y Axis.** 4. Click on **Format** icon change the **Title** to **“Gender wise Department Ratio”.**   You will now see the Employee Performance by Department **Stacked Column chart** like the one in the screenshot. | Chart, histogram  Description automatically generated      **Chart  Description automatically generated** |

## **Scenario 12: Employee performance in each of the departments.**

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| 1. Under **Visualization** click on **Stacked bar chart** icon & drag and drop the **Department** column from Fields section to **Axis**, **Performance** column from field section to **Legend**, **EmpID** Column from Fields section to **X Axis.** 2. Click on **General** icon change the **Title** to **“Employee Performance by Department”.**   You will now see the Employee Performance by Department **Stacked bar chart** like the one in the screenshot. | **Chart, timeline  Description automatically generated** |

## **Scenario 13: Managers for respective departments.**

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| 1. Under **Visualization** click on **Table** icon & drag and drop the **Department** & **ManagerName** columns from Fields section to **Columns.** 2. Turn on the **Title and change it** to **“Managers”** and **Align** to **Center** as shown in the screen shot.   You will now see the Managers tablelike the one in the screenshot. | **A picture containing table  Description automatically generated** |

## **Scenario 14: Employee survey results by each department.**

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| 1. Under **Visualization** click on **Stacked Area Chart**, first Drag and Drop the **Department** from Fields section to **X Axis, EmpSatisfaction** under **Legend** & **EmpSatisfaction** under **Y Axis.** 2. Change the **Title** to **“Employee Satisfaction by Department”** as shown in the screen shot.   You will now see the **Stacked Area Chart** like the one in the screenshot. | **Graphical user interface, chart, line chart  Description automatically generated** |

## **Scenario 15: Add Visual borders to all the visualizations on Department Summary page.**

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| 1. Let’s choose the first visual **“Employee performance by Department”,** Under **Visualisation** Click on **General** icon, **Turn on** the Visual border **choose the desired color** and make **Rounded corners** as **5**.   Now **“Employee performance by Department”,** Visualization should look like the one in screenshot.  Similarly add Visual borders to all other visualisation the “Department Summary” page. | Chart  Description automatically generated |

# Module 7: Setting up a drillthrough action in your Power BI report.

## **Scenario 16: Identify the no of employees by Recruitment Source.**

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| Using the drillthrough feature in Power BI let us identify the number of employees recruited through each of the recruitment source and showcase the present status of the employees (Actives or Seps).   1. Create a new page by clicking on the **New Page (+)** option at the bottom of the dashboard. 2. Rename the Page as **“Recruitment Source Drillthrough”.** 3. In the **“Recruitment Source Drillthrough”** page create a **stacked column chart.** Under **Visualization choose Stacked bar chart.** 4. Drag and Drop the **Recruitment Source** from Fields section to **X** **Axis** region & **EmpCount,Seps,Actives** under **Y Axis** section.   Now you will see a Stacked bar chart is created on the dashboard as shown in the screenshot.   1. Drag **RecruitmentSource** column from **Fields** section, under **drillthrough** section. 2. Notice that as soon as you add the **RecruitmentSource**, there is a back icon added to your report. 3. Now you can invoke the drillthrough action on any other page in the report wherever the **RecruitmentSource** column is available. 4. To invoke the drillthrough action go **“Employee Summary”** page **select** “**Total Employees by** **Recruitment Source”** & **Right click** on **“Google Search bar”** to choose   **RecruitmentSource Drillthrough.**   1. This automatically takes me to the **Recruitment Source Drillthrough** Page, the target of our drillthrough action, with the correct filter applied, as show in screenshot. Our report automatically is filtered to the **“Google Search”**   Recruitment Source. | Chart, histogram  Description automatically generated    Chart, bar chart  Description automatically generated    Graphical user interface, chart  Description automatically generated  Chart  Description automatically generated |

## **Scenario 17: New derived column for age from DOB.**

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| To calculate the age of each Employee, all you need is to:   1. .In Power BI Desktop, Click on **Transform Data** 2. In **Power Query Editor** window, select the **Birthdate** column. 3. Go to **Add Column** Tab, **under “From Date & Time”** section, and under **Date, select Age.**   However, the age that you see in the Age column, does not really look like an age. That is because it is a Duration.  Duration is a specific data type in Power Query which represents the difference between two DateTime values. Duration is a combination of four values:  *days. hours. minutes. seconds*   1. For calculating the age in years under **Duration** click on **Total Years** as shown in the screenshot.   Note that the duration is calculated in days. In the end, no one says their age as 53.813698630136983! they say it as 53, rounded down.   1. You can easily select the Rounding and round down from the Transform tab for it as shown in the screenshot.   Now let us delete **Age** & **Total Years** columns and rename **Round down** column to “Age” as shown in the screenshot.  Now let us close & apply the changes.  This will give you the age in years.   1. To do so click on H**ome -> Close & Apply-> Close &** **Apply** to close the power query. | **Table  Description automatically generated**  **A picture containing table  Description automatically generated**  **Graphical user interface, table  Description automatically generated**  **Graphical user interface, table  Description automatically generated**  **Graphical user interface, application  Description automatically generated**  **Table  Description automatically generated**  **A picture containing graphical user interface  Description automatically generated**  **Table  Description automatically generated** |

## **Scenario 18: Employee Count by Age**

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| 1. Under **Visualisation** choose **Treemap** anddrag **Age** column to **Group** field & **EmpCount** column under **Values** field. 2. Under **Format** option **Turn on** the **Visual border**, increase the **Rounded corners** to **5 px** &choose thedesired **color.**   Now you will see a Treemap for Employee count, age by Recruitment Source as shown in the screenshot.  Now let us create the card which serves as a title.   1. Under **Visualisation** click on **Card** icon & drag **RecruitmentSource** column under **Fields** option. 2. **Turn on** the Visual borders under **Format->General->Visual border** option, choose the desired color and make **Rounded corners** as **5 px.**   A card visual will be created. | **Chart, treemap chart  Description automatically generated** |

## **Scenario 19: Performance Score by Recruitment Source.**

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| --- | --- |
| 1. Under **Visualisation** choose **Clustered bar chart** icon. 2. . Drag **RecruitmentSource** Column under **YAxis**, **PerformanceScore** under **Legend** & **PerformanceScore** under **X Axis** as shown in the screenshot. 3. **Turn on** the Visual borders under **Format->Visual border** option, choose the desired color and make **Rounded corners** as **5 px.** 4. 3.Change the title to Performance Score by Recruitment Source as shown in the screenshot.   Now a clustered bar chart like the screenshot will appear. | **Timeline  Description automatically generated** |

## **Scenario 19: Recruitment source by employee gender.**

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| 1. Under **Visualization,** Choose **Line and clustered** **column** **chart** icon. 2. Drag **Sex** Column under **X Axis,** **RecruitmentSource** column under **Y Axis** & **RecruitmentSource** column under **Column legend** as shown in the screenshot. 3. **Turn on** the Visual borders under **Format->Visual border** option, choose the desired color and make **Rounded corners** as **5 px.** 4. Change the **Title** to **“Recruitment Source by Gender”** as shown in the screenshot.   Now a **Line and clustered** **column** **chart** like the screenshot will appear. |  |
| Recruitment Source Drillthrough Should look like the one in the screenshot. | **Chart  Description automatically generated**  **Graphical user interface, chart, treemap chart  Description automatically generated** |

**Congratulations you finally done with HR Data analysis in Power BI.**