INTRODUCTION TO DATA MANAGEMENT

Course code: INT217

FINAL PROJECT REPORT

"Car brands comparison dashboard"

Submitted by:

Name: Rahul Prasad

Reg.no: 11802325

Section: KM070

Programme: BTech-CSE

Under the Guidance of

Ms. Vasudha; UID:23636

School of Computer Science and Engineering

Discipline of CSE/IT

School of Computer Science and Engineering

Lovely Professional University, Phagwara

CERTIFICATE

This is to certify that **Rahul Prasad** bearing Registration no. **11802325** has completed **INT-217** project titled, **"Car brands comparison dashboard"** under my guidance and supervision. To the best of my knowledge, the present work is the result of his/her original development, effort and study.

Signature and Name of the Supervisor

Designation of the Supervisor

School of Computer Science and Engineering

Lovely Professional University

Phagwara, Punjab.

Date: 25-11-2020

DECLARATION

I, **Rahul Prasad**, student of Computer Science and Engineering under CSE/IT Discipline at, Lovely Professional University, Punjab, hereby declare that all the information furnished in this project report is based on my own intensive work and is genuine.

Date: 25-11-2020

Signature: *Rahul*

Registration No: **11802325**

Name of the student: **Rahul Prasad**

ACKNOWLEDGEMENT

 The satisfaction that accomplishes the successful completion of this project would be incomplete without the mention of the people who made it possible, without whose constant guidance and encouragement would have made efforts go in vain. I consider myself privileged to express gratitude and respect towards all those who guided me through the completion of this project.

 I convey thanks to my project guide Ms. Vasudha of Computer Science and Engineering Department for providing encouragement, constant support and guidance which was of a great help to complete this project successfully.

 Last but not the least, I wish to thank my parents for financing my studies in Lovely Professional University as well as constantly encouraging me to learn engineering. Their personal sacrifice in providing this opportunity to learn engineering is gratefully acknowledged.

TABLE OF CONTENT

INTRODUCTION

Data Management:

Data management is the process of ingesting, storing, organizing and maintaining the data created and collected by an organization. Effective data management is a crucial piece of deploying the IT systems that run business applications and provide analytical information to help drive operational decision-making and strategic planning by corporate executives, business managers and other end users.

Excel:

Excel is a handy software that can be **used** to store and organize many data sets. Using its features and formulas, you can also **use** the tool to make sense of your data. For example, you could **use** a spreadsheet to track data and automatically see sums averages and totals.

Easy data entry and operations: One of the main advantages of MS excel is that it facilitates smooth and easy data entry. Compared to any other data entry and analyzing tools, MS Excel offers features like **Ribbon** interface, a set of commands used to perform certain operations

Excel Dashboard:

An **Excel dashboard** is one-pager (mostly, but not always necessary) that helps managers and business leaders in tracking key KPIs or metrics and take a decision based on it. It contains charts/tables/views that are backed by data. A **dashboard** is often called a report, however, not all reports are **dashboards**.

A well-designed **dashboard** provides on-demand access of all of your most **important** metrics. Access to data – As the name implies, a **dashboard** gathers multiple data sources, including **Excel**, into a single interface. That means you can immediately see a detailed overview of your business in one quick glance.

The main **purpose** of an operational dashboard is to provide a comprehensive snapshot of performance, which means that you should incorporate a large amount of detail without using too many drilldowns. Analytical Dashboards – Use data from the past to identify trends that can influence future decision-making.

OBJECTIVES / SCOPE OF ANALYSIS

The **goal of data management** is to help people, organizations, and connected things optimize the use of **data** within the bounds of policy and regulation so that they can make decisions and take actions that maximize the benefit to the organization.

Excel Objectives:

- Indicate the names and functions of the Excel interface components.
- Enter and edit data.
- Format data and cells.
- Construct formulas, including the use of built-in functions, and relative and absolute references.
- Create and modify charts.
- Preview and print worksheets.
- Use the Excel online Help feature.

Objectives of the dataset:

1. To analyse the sale of cars in different cities.
2. To compare the price and revenue of each car model.
3. To compare the fuel capacity of car models.
4. To compare the Top speed of cars.
5. To analyze the no.of complaints and type of complaints noticed by the customers for different cars.
6. To compare Brake Horse Power(BHP) of each model of cars.

The above objectives are of car brands comparison dataset.

SOURCE OF DATASET

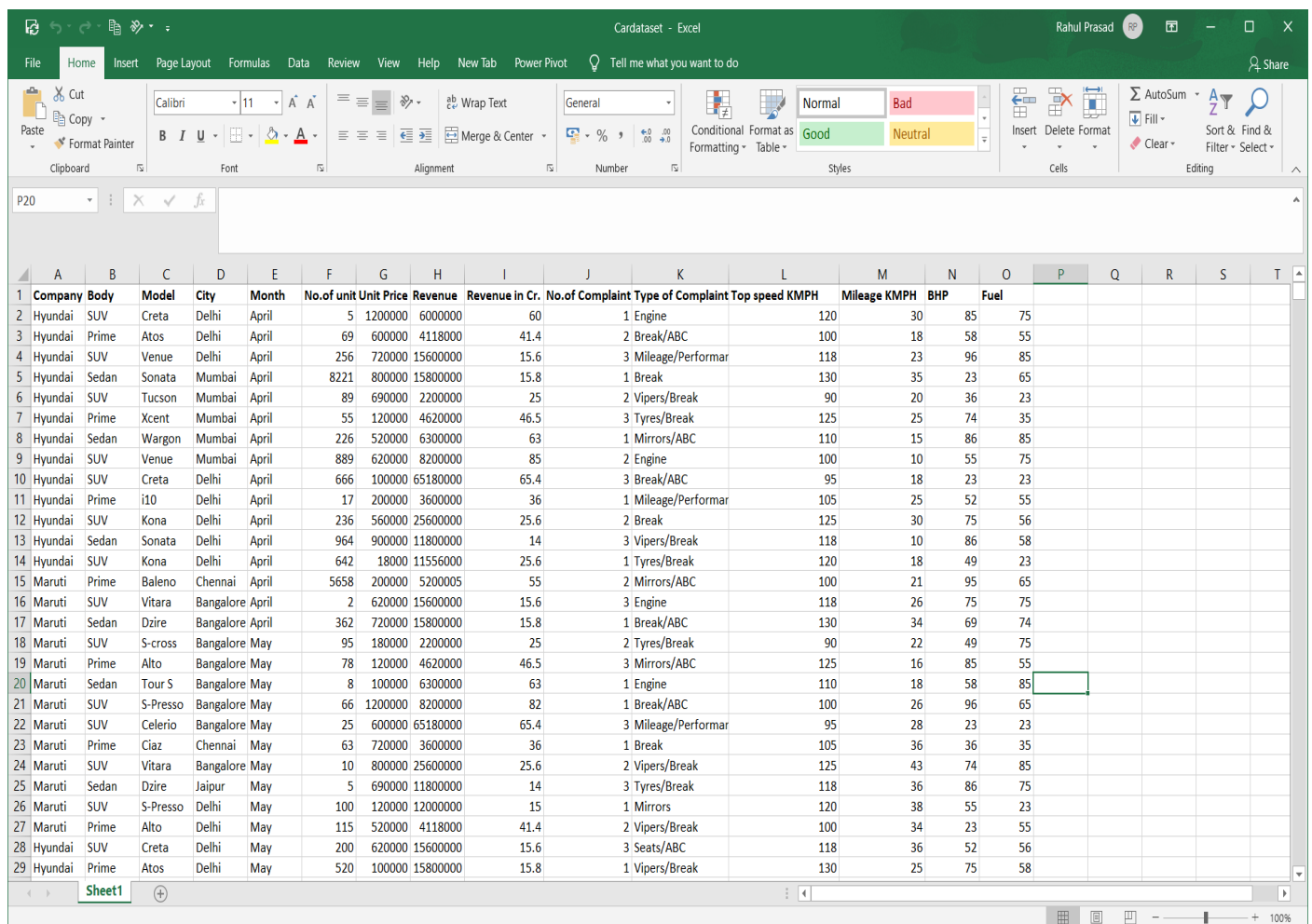Taking reference from a youtube video, https://youtu.be/Q_lumtjiwX0

I created my own dataset which compares the car brands and the dataset consists of 2020rows and 15 rows.

Dataset link: https://drive.google.com/file/d/1Or7zl2-5BW6i0BqSl66mm42RZRfnpJuK/view?usp=sharing

15 columns consists of:

Company, body, model, city, month, no. of units, unit price, revenue, revenue in cr., no. of complaint, type of complaints, top speed KMPH, mileage KMPH, BHP and Fuel.

Below picture is the view of dataset which I created.

Company	Body	Model	City	Month	No.of unit	Unit Price	Revenue	Revenue in Cr.	No.of Complaint	Type of Complaint	Top speed KMPH	Mileage KMPH	BHP	Fuel
Hyundai	SUV	Creta	Delhi	April	5	1200000	6000000	60	1	Engine	120	30	85	75
Hyundai	Prime	Atos	Delhi	April	69	600000	4118000	41.4	2	Break/ABC	100	18	58	55
Hyundai	SUV	Venue	Delhi	April	256	720000	15600000	15.6	3	Mileage/Performan	118	23	96	85
Hyundai	Sedan	Sonata	Mumbai	April	8221	800000	15800000	15.8	1	Break	130	35	23	65
Hyundai	SUV	Tucson	Mumbai	April	89	690000	2200000	25	2	Vipers/Break	90	20	36	23
Hyundai	Prime	Xcent	Mumbai	April	55	120000	4620000	46.5	3	Tyres/Break	125	25	74	35
Hyundai	Sedan	Wargon	Mumbai	April	226	520000	6300000	63	1	Mirrors/ABC	110	15	86	85
Hyundai	SUV	Venue	Mumbai	April	889	620000	8200000	85	2	Engine	100	10	55	75
Hyundai	SUV	Creta	Delhi	April	666	100000	65180000	65.4	3	Break/ABC	95	18	23	23
Hyundai	Prime	i10	Delhi	April	17	200000	3600000	36	1	Mileage/Performan	105	25	52	55
Hyundai	SUV	Kona	Delhi	April	236	560000	25600000	25.6	2	Break	125	30	75	56
Hyundai	Sedan	Sonata	Delhi	April	964	900000	11800000	14	3	Vipers/Break	118	10	86	58
Hyundai	SUV	Kona	Delhi	April	642	18000	11556000	25.6	1	Tyres/Break	120	18	49	23
Maruti	Prime	Baleno	Chennai	April	5658	200000	5200005	55	2	Mirrors/ABC	100	21	95	65
Maruti	SUV	Vitara	Bangalore	April	2	620000	15600000	15.6	3	Engine	118	26	75	75
Maruti	Sedan	Dzire	Bangalore	April	362	720000	15800000	15.8	1	Break/ABC	130	34	69	74
Maruti	SUV	S-cross	Bangalore	May	95	180000	2200000	25	2	Tyres/Break	90	22	49	75
Maruti	Prime	Alto	Bangalore	May	78	120000	4620000	46.5	3	Mirrors/ABC	125	16	85	55
Maruti	Sedan	Tour S	Bangalore	May	8	100000	6300000	63	1	Engine	110	18	58	85
Maruti	SUV	S-Presso	Bangalore	May	66	1200000	8200000	82	1	Break/ABC	100	26	96	65
Maruti	SUV	Celerio	Bangalore	May	25	600000	65180000	65.4	3	Mileage/Performan	95	28	23	23
Maruti	Prime	Ciaz	Chennai	May	63	720000	3600000	36	1	Break	105	36	36	35
Maruti	SUV	Vitara	Bangalore	May	10	800000	25600000	25.6	2	Vipers/Break	125	43	74	85
Maruti	Sedan	Dzire	Jaipur	May	5	690000	11800000	14	3	Tyres/Break	118	36	86	75
Maruti	SUV	S-Presso	Delhi	May	100	120000	12000000	15	1	Mirrors	120	38	55	23
Maruti	Prime	Alto	Delhi	May	115	520000	4118000	41.4	2	Vipers/Break	100	34	23	55
Hyundai	SUV	Creta	Delhi	May	200	620000	15600000	15.6	3	Seats/ABC	118	36	52	56
Hyundai	Prime	Atos	Delhi	May	520	100000	15800000	15.8	1	Vipers/Break	130	25	75	58

ANALYSIS ON DATASET

❖ INTRODUCTION:

Car brands comparison is a summary of all cars activity that occurs over a specific period of time in different cities. This report is important because it allows the company, team, managers and executives to assess how well their products or services are doing.

The comparison of car brands gives an overview of the car activities within a company. It shows the different trends happening in the car marketing over a certain time, but also analyses the different steps of the cars like car body, car model, car fuel capacity, car mileage in kmph, and the performance of cars according to the model and the brand of the car.

Technology has brought many luxuries to people. The invention of the automobile has brought convenience to everyday living. People use their vehicles to commute to work, school, home, and other events. Some people cannot even imagine living life without the use of an automobile. People have different tastes in the type of automobile that they drive; the automotive industry has made several different ways to commute

In the early days of the automobile, there were just a handful of companies that were itching to grow. Today, however, there are 14 major global corporations that control more than 60 major automotive brands across the globe, and that doesn't even count the little local companies in various countries around the world.

People around the world have a different perception for each car brand. For example, if a group of people believes that Maruti has better safety or fuel efficiency in its cars, therein another group of people considers it better in terms of latest technology or classic design. With oodles of impressions for each car's brand worldwide, this car brands comparison dashboard helps to find out what actually, are the different car brands known for**?**

In this project, I selected two companies of cars: Maruti and Hyundai to make comparison between them. The comparison is done between two companies and their models, how they differ in the price, fuel capacity, speed limit, BHP, and comparison is also done with the sales of cars in different cities with in a certain limit of time.

➢ GENERAL DESCRIPTION

A data dashboard is an information management tool that visually tracks, analyzes and displays key performance indicators (KPI), metrics and key data points to monitor the health of a business, department or specific process. They are customizable to meet the specific needs of a department and company. Behind the scenes, a dashboard connects to your files, attachments, services and API's, but on the surface displays all this data in the form of tables, line charts, bar charts and gauges. A data dashboard is the most efficient way to track multiple data sources because it provides a central location for businesses to monitor and analyze performance. Real-time monitoring reduces the hours of analyzing and long line of communication that previously challenged businesses.

A dashboard is an easy to read, one-page summary of the analysis of the information. It is an overview of your system at a glance. There are many advantages that result in the utilization of this tool. Some of the most important benefits are:

1. Customizable:- Dashboards could be customized in terms of users and expectations. Each decision level dashboard can be customized to present the most valuable and useful set of information. This allows each person to see the level of detail that they need in order to get their job done and meet their goals.

2. All-in-one:- In the past users would spend large amount of time reviewing and analysing different reports to end in a final conclusion. This tool allows to see, at a glance, an overall situation report of the desired information.

3. Drill into detail:- But, having all-in-one does not means the absence of details. Dashboards are developed with the ability to get as deeper in information as required by simply selecting the desired variable or object.

4. Intuitive data presentation:- There is no need for complicated and exhaustive training. Dashboards are design to be intuitive to any user. The graphic design allows an easy and smooth navigation throughout the information.

5. Mobile device accessible:- Most dashboards software are programmed to suit any mobile device. The idea is to reach anywhere, to everyone, in a timely manner with the most accurate information.

The dashboard method of reviewing details and viewing the status of operations provides a significant opportunity to make your business more efficient and quick to respond to issues and opportunities.

# ➢SPECIFIC REQUIREMENTS

1. Pivot Table:

A Pivot Table is used to summarise, sort, reorganise, group, count, total or average data stored in a table. It allows us to transform columns into rows and rows into columns. It allows grouping by any field (column), and using advanced calculations on them.
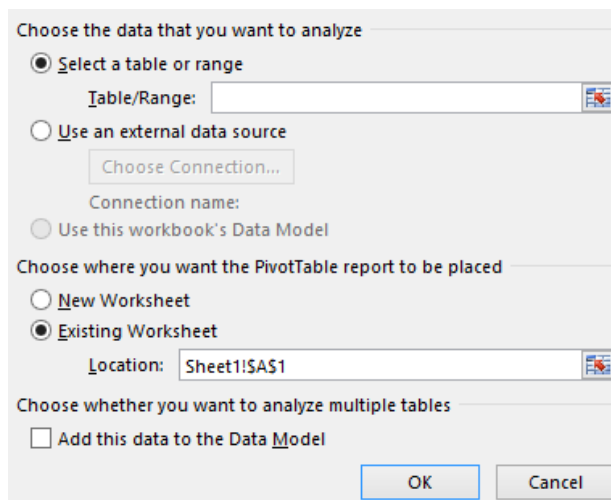
How to create a PivotTable

1.   Select the cells you want to create a PivotTable from.

Note: Your data shouldn't have any empty rows or columns. It must have only a single-row heading.

2.   Select **Insert** > **PivotTable**.
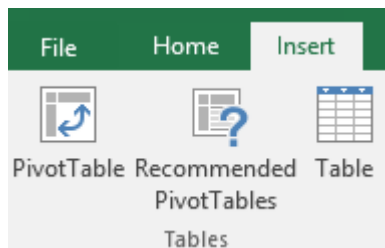
3. Under Choose the data that you want to analyze, select Select a table or range.

4. In Table/Range, verify the cell range.
5. Under Choose where you want the PivotTable report to be placed, select New worksheet to place the PivotTable in a new worksheet or Existing worksheet and then select the location you want the PivotTable to appear.
6. Select OK.

Building out PivotTable

1. To add a field to your PivotTable, select the field name checkbox in the **PivotTables Fields** pane.

   Note: Selected fields are added to their default areas: non-numeric fields are added to **Rows**, date and time hierarchies are added to **Columns**, and numeric fields are added to **Values**.

2. To move a field from one area to another, drag the field to the target area.

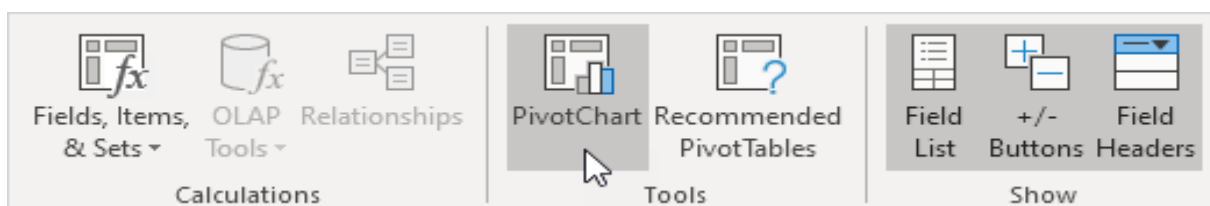# Pivot Tables created to make the dashboard:

Figure 1

PIVOT CHARTS:

A pivot chart is the visual representation of a pivot table in Excel. Pivot charts and pivot tables are connected with each other.

Insert Pivot Chart

To insert a pivot chart, execute the following steps.

1. Click any cell inside the pivot table.

2. On the Analyze tab, in the Tools group, click PivotChart.

The Insert Chart dialog box appears.

3. Click OK.

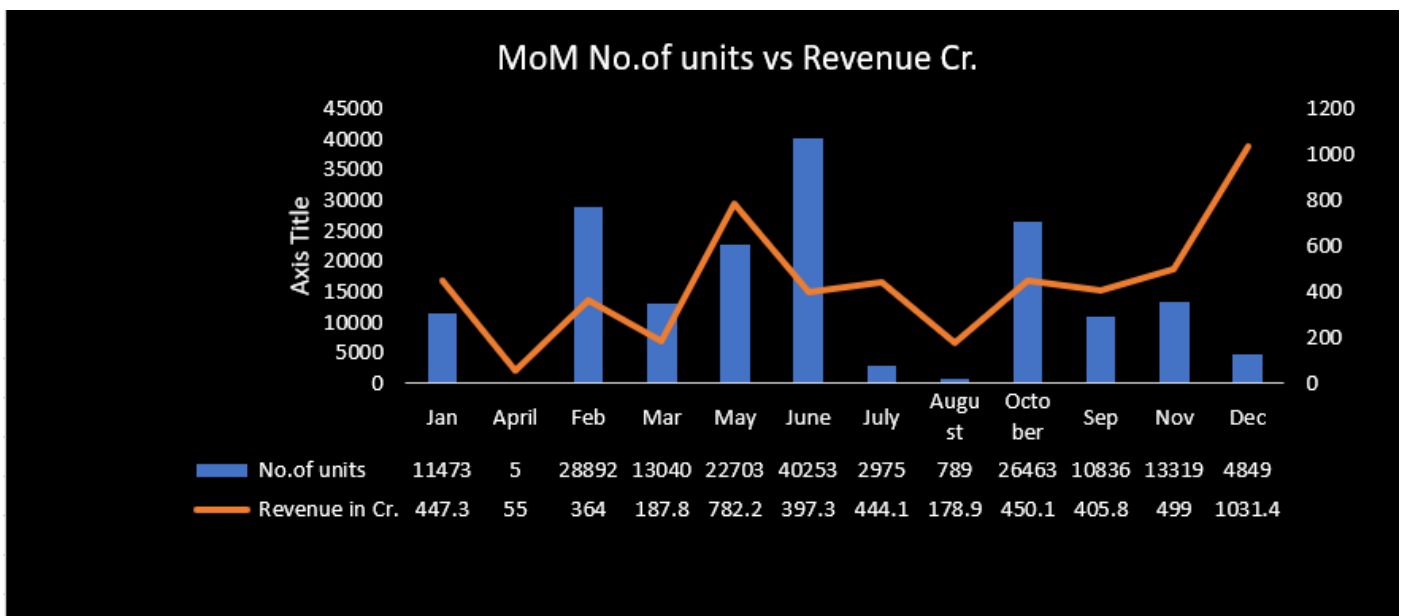# GRAPH (Primary axis) and LINE GRAPH (Secondary axis):

In Microsoft Excel, **a chart is often called a graph**. It is a visual representation of data from a worksheet that can bring more understanding to the data than just looking at the numbers.

A chart is a powerful tool that allows you to visually display data in a variety of different chart formats such as Bar, Column, Pie, Line, Area, Doughnut, Scatter, Surface, or Radar charts. With Excel, it is easy to create a chart.

Charts are often used to ease understanding of large quantities of data and the relationships between parts of the data. Charts can usually be read more quickly than the raw data. They are used in a wide variety of fields, and can be created by hand (often on graph paper) or by computer using a charting application.

A **line graph** (also called a line chart or run chart) is a simple but powerful tool and is generally used to show changes over time. Line graphs can include a single line for one data set, or multiple lines to compare two or more sets of data.

- **X axis (Horizontal Axis)**: On a line graph, the X axis is the independent variable and generally shows time periods.
- **Y axis (Vertical Axis)**: This axis is the dependent variable and shows the data you are tracking.

Figure:2

- The above graph is created with graph as primary axis and line graph as secondary axis.
- X axis: Months
- Y axis: No.of units and Revenue in Cr.

- **PIE-CHART**

  Pie charts are a popular way to show how much individual amounts—such as quarterly sales figures—contribute to a total amount—such as annual sales in different cities.

  Pie charts can convert one column or row of spreadsheet data into a pie chart. Each slice of pie (data point) shows the size or percentage of that slice relative to the whole pie.

  Pie charts are generally used to show percentage or proportional data and usually the percentage represented by each category is provided next to the corresponding slice of pie. Pie charts are good for displaying data for around 6 categories or fewer.

  A pie chart divides data into separate sections to show which individual parts make up the whole. To describe the chart, compare each "slice" of the chart to the others to determine what share of the total each category has.
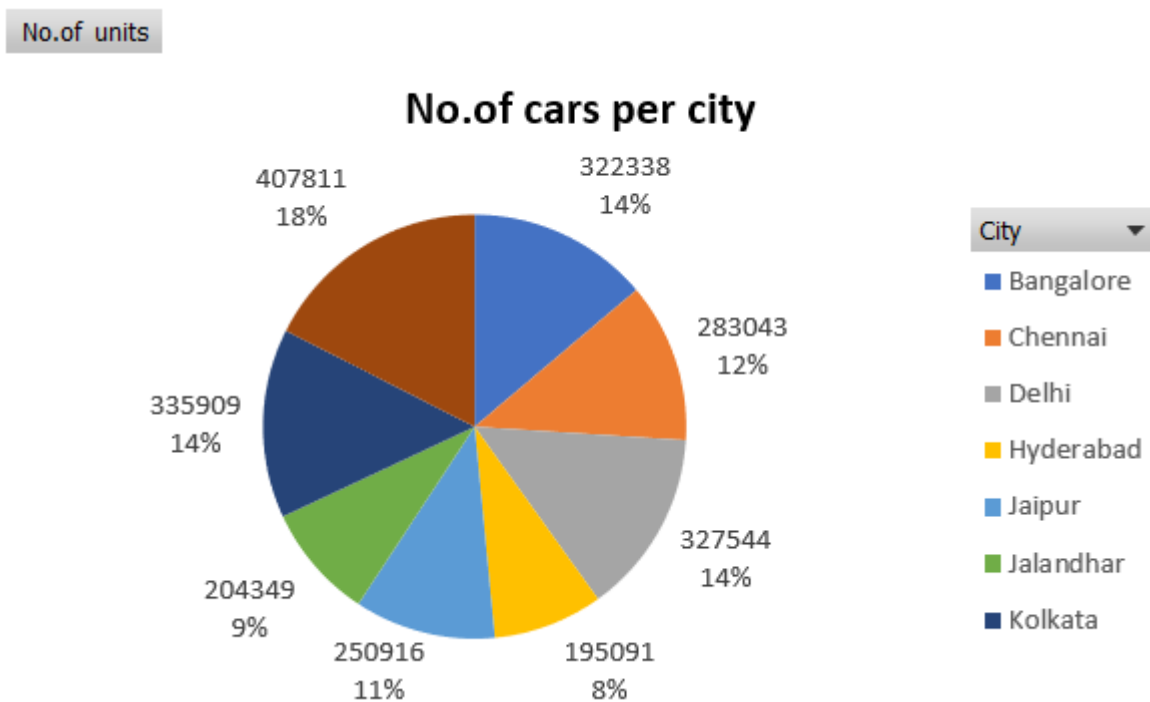
No.of units

Figure:3

The above pie chart is created between Cities and No.of units.

The pie chart shows what is the quantity and percentage of cars sold in different cities as mentioned in the chart.

- o **BAR GRAPH**

   A *bar chart* (also called a *bar graph*) is a great way to visually display certain types of information, such as changes over time or differences in size, volume, or amount. Bar charts can be horizontal or vertical; in Excel, the vertical version is referred to as *column chart*.

Different Kinds of Bar Charts

Excel provides variations of Bar and Column charts. Here's a quick summary of each:

- **Stacked:** A chart that shows the dependent variables stacked on top of each other. This chart is also called segmented.
- **Clustered:** A chart that displays a group of dependent variables, also called grouped. A double graph is a clustered graph that has two dependent variables.
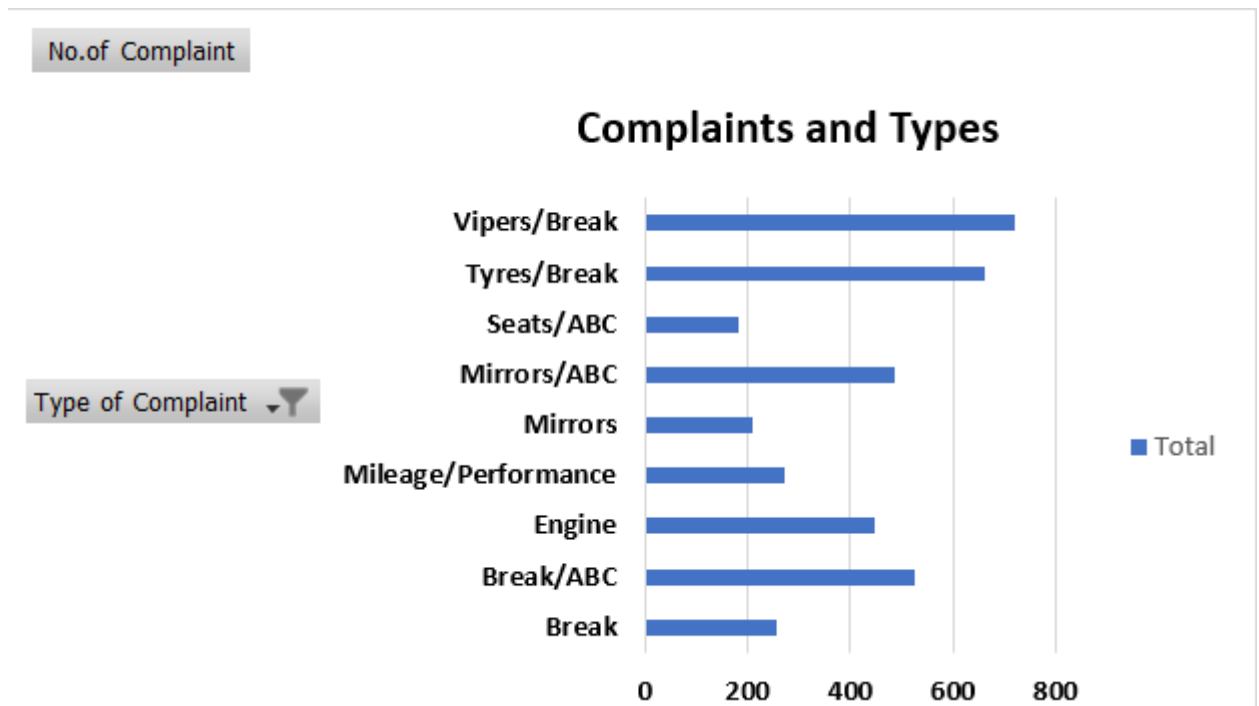- **3D:** A chart that shows the dependent variables in a 3D format.

Figure:4

Bar graph between Type of complaints and no.of complaints.

It shows what sort of complaints are more according to car models.

Additional Bar Graphs:

Since, the dashboard is all about the comparison of car brands and to make the comparison between car models it's very much important to show the comparison of fuel capacity, BHP, Mileage and the most important price of each cars.

So, to represent the comparison of fuel capacity, price, BHP; I used certain bar graphs(shown below) to show the comparison of car brands.
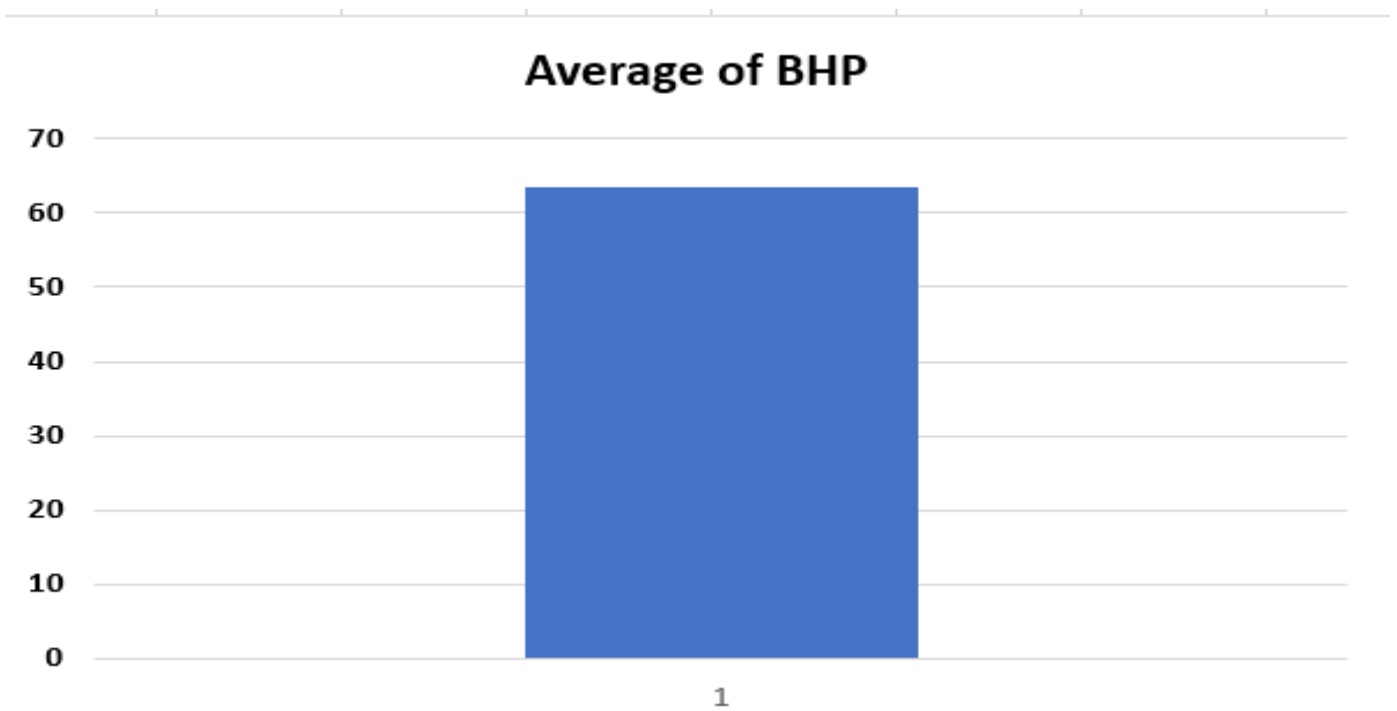
i) Bar graph of Average unit price:

Average of Unit Price

ii) Bar graph of Average fuel capacity:

Average of Fuel
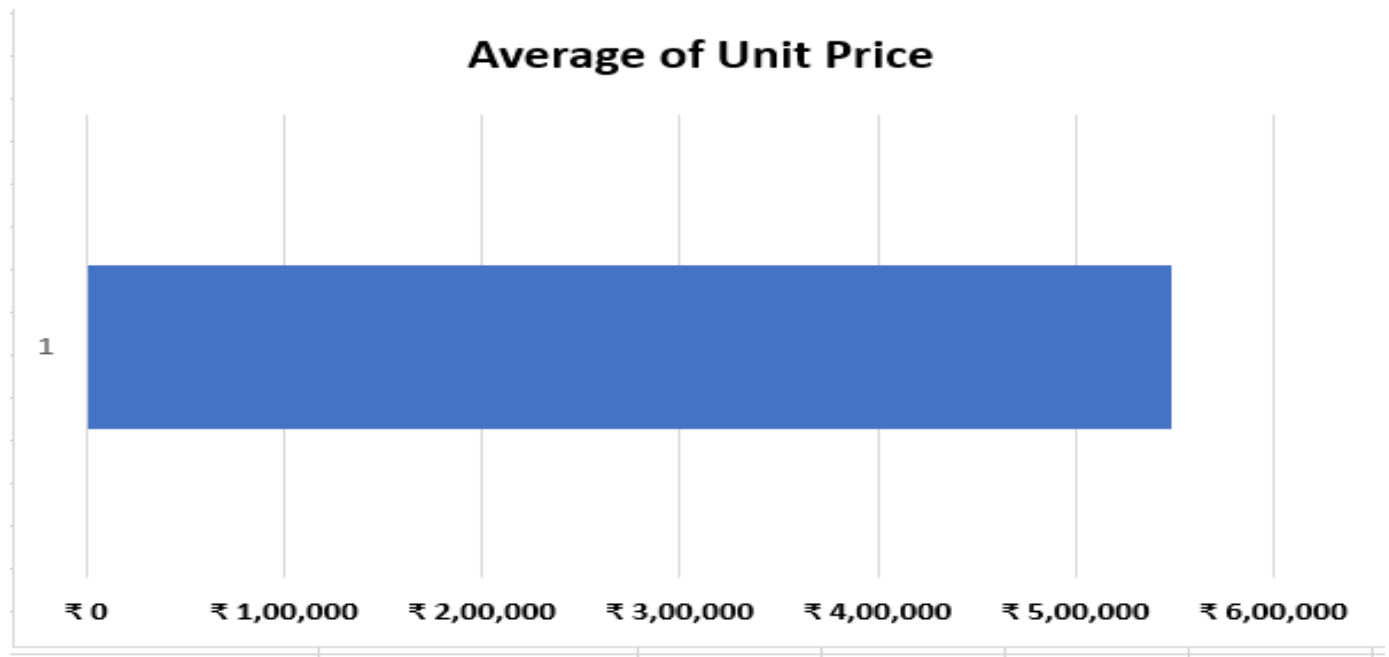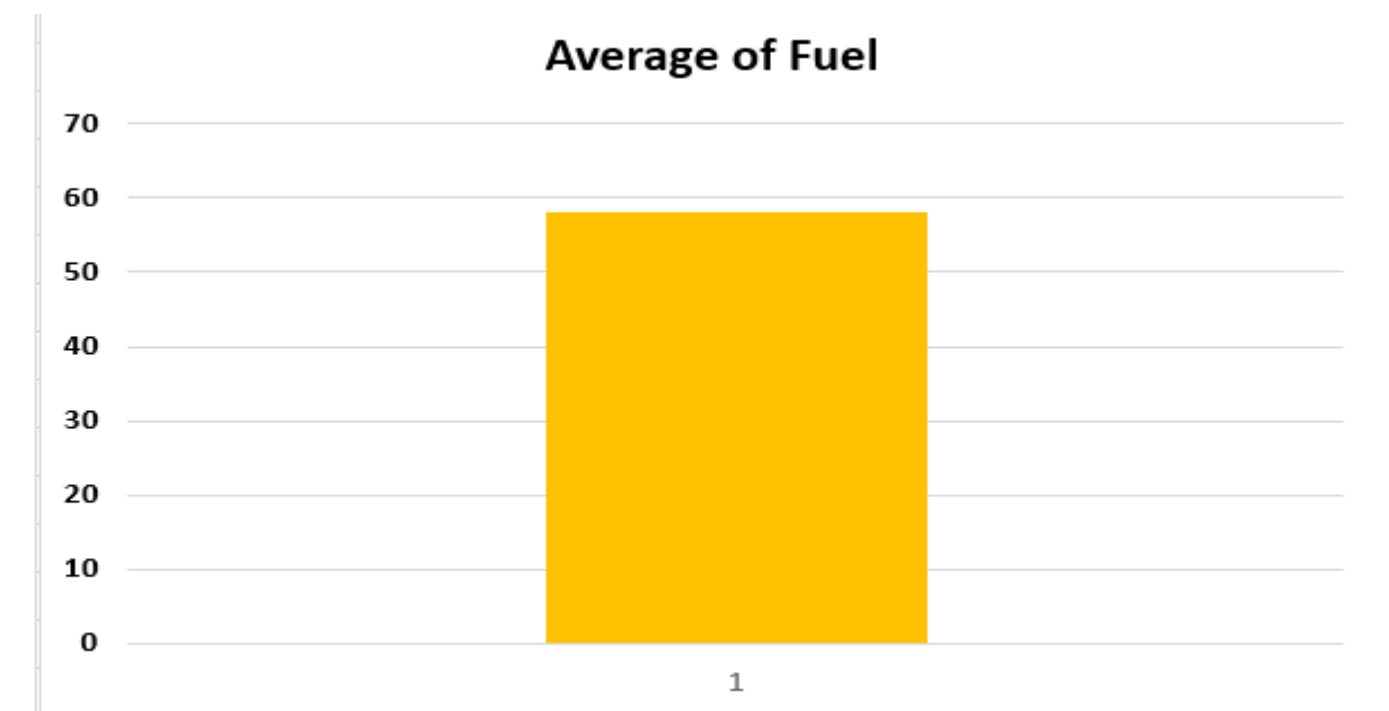
iii) Bar graph of Average BHP:
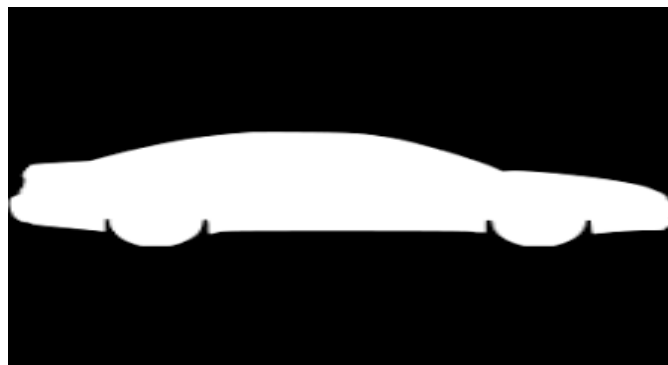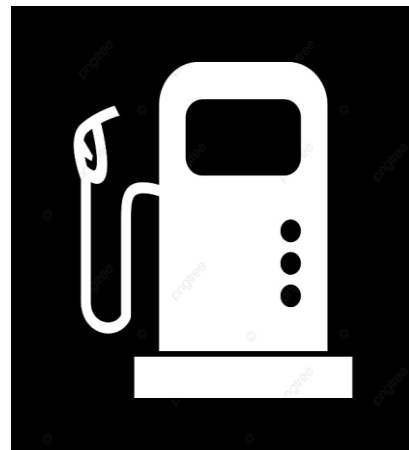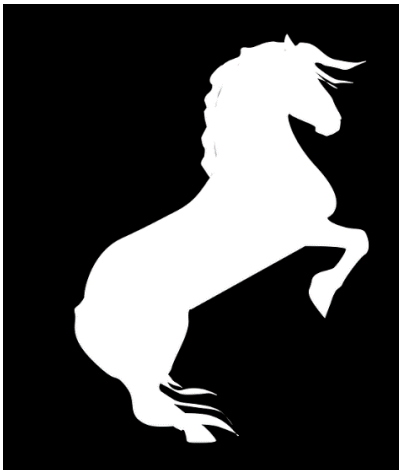

Average of BHP

To make my dashboard look impressive I also used some transparent pictures of car, fuel tank and Horse (shown below).

Car: To show the price of different cars based on the models of the company.

**Fuel Tank :** To represent the fuel capacity.

Horse: To represent the BHP(Brake Horsepower)

How I used the above shown pictures in the dashboard?

Firstly, I downloaded the pictures of car, Fuel tank, Horse from the google. Then, inserted into the excel sheet (the same sheet where the dashboard is represented) and made it transparent.

After making the pictures transparent I adjusted the bar graphs of Average unit price with car, bar graph of Average fuel capacity with fuel tank picture, bar graph of Average BHP with Horse image. This bar graphs where placed in such a manner that bar graphs is exactly fitted in the transparency as shown below.
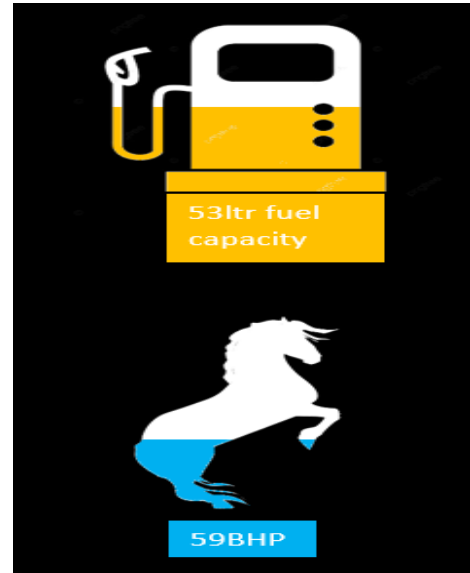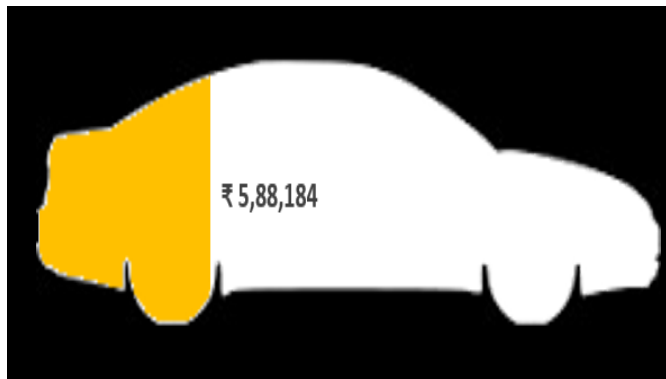
How Speedometer is represented?

In comparison of cars, speed plays an important role.

A SPEEDOMETER Chart is just like a speedometer with a needle which tells you a number by pointing it out on the gauge and that needle moves when there is a change in the data. It's a single-point chart which helps you to track a single data point against its target.

So, to make the comparison of speed of cars I created speedometer using the following process:

The **first data table** is to create the category range for the final SPEEDOMETER which will help you to understand the performance level.

The **second data table** is for creating labels ranging from 0 to 100. You can change it if you want to have a different range.
And in the **third data table**, we have three values which we will use create the pie chart for the needle. The pointer value is the real value which you want to track.

To create **a SPEEDOMETER** in Excel, you can use the below steps:

- First of all, go to Insert Tab ➜ Charts ➜ Doughnut Chart (**with this you'll get a blank chart**).
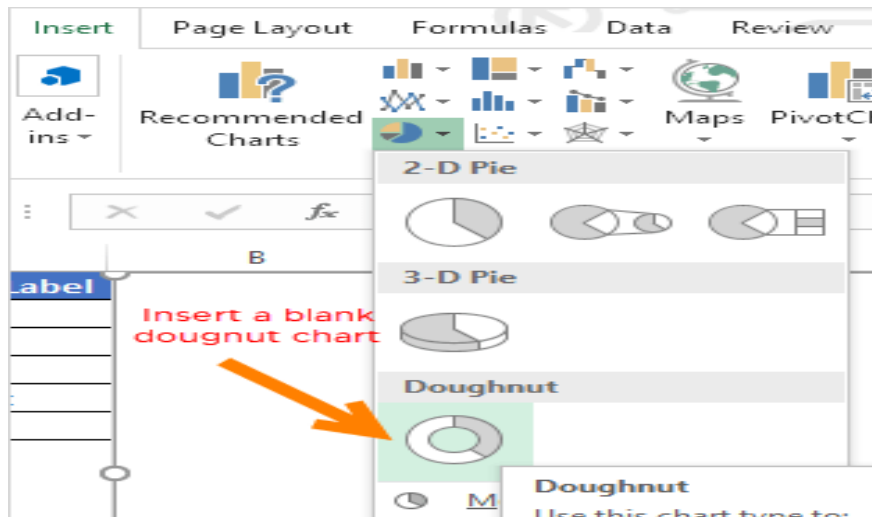
Now, right-click on the chart and then click on "Select Data".
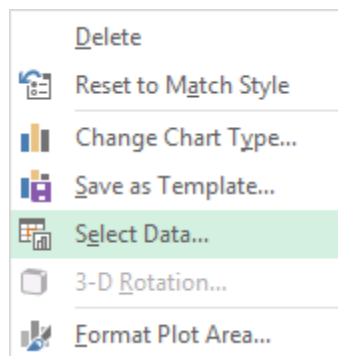
In the "Select Data" window, click on "Legend Entries" and enter "Category" in the name input bar. After that, select the "Value" column from the first data table.
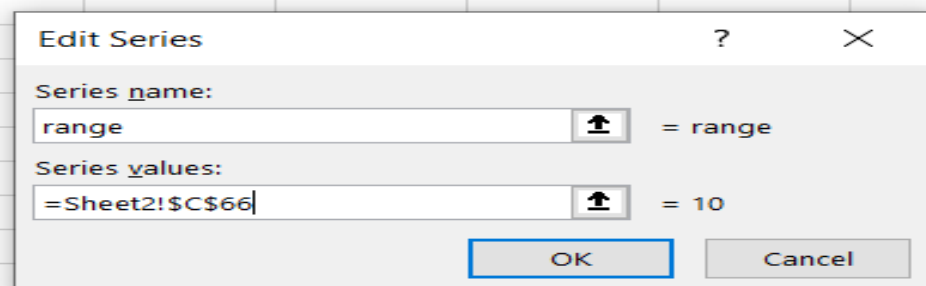
Once you click OK, you'll have a doughnut chart just like below.
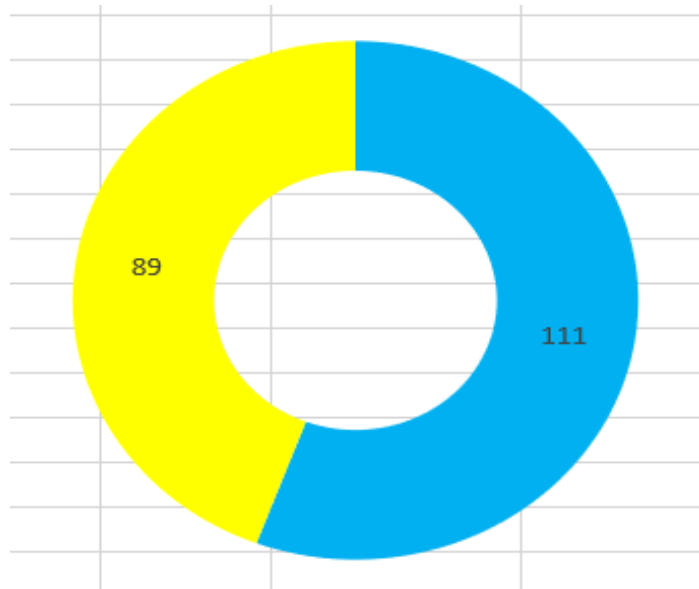
After that, changing the chart type into piechart and converting into secondary axis adjusting the selected data, making the secondary axis transparency and dividing the charts as required and look like speedometer the below figure is the final chart of speedometer which is used in the dashboard.
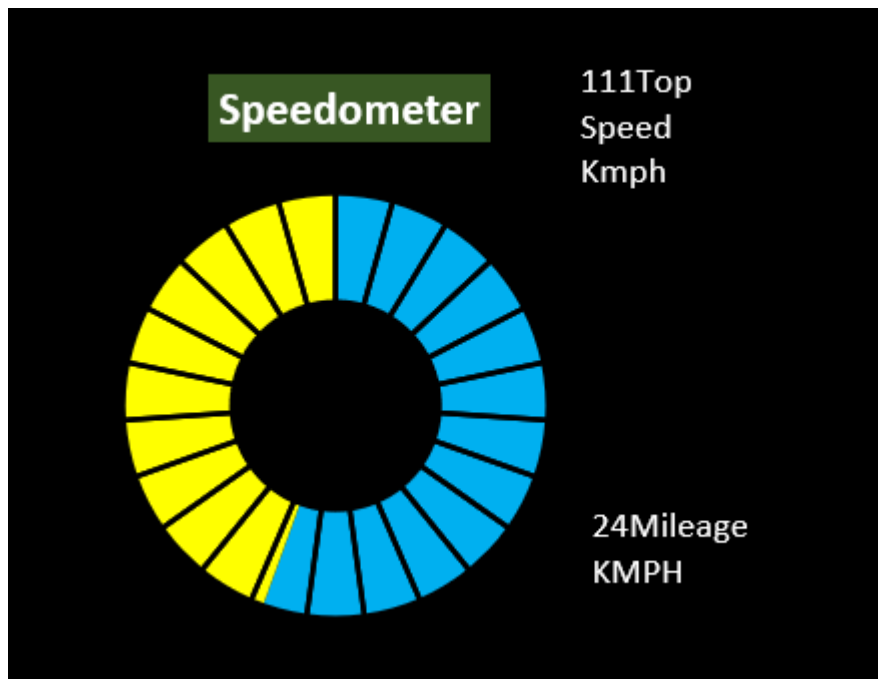
Figure 6

The above speedometer chart shows the variation in the **Top speed kmph** and **mileage kmph** based on the model of the cars.

Slicers:

Slicers are a powerful new way to filter pivot table data. It's easy to add a Slicer: Select a cell in the pivot table. On the Ribbon's Insert tab, click Slicer.

Slicers provide buttons that you can click to filter tables, or PivotTables. In addition to quick filtering, slicers also indicate the current filtering state, which makes it easy to understand what exactly is currently displayed.

The below are the slicers created to create the dashboard:

1. A slicer header indicates the category of the company and brands of the car in the slicer.

2. A filtering button that is not selected indicates that the item is not included in the filter.

3. A filtering button that is selected indicates that the item is included in the filter.

4. A **Clear Filter** button removes the filter by selecting all items in the slicer.

5. A scroll bar enables scrolling when there are more items than are currently visible in the slicer.

6. Border moving and resizing controls allow you to change the size and location of the slicer.

➤ FUNCTIONS

Average function:

AVERAGE(number1, [number2], ...)

The AVERAGE function syntax has the following arguments:

- **Number1** Required. The first number, cell reference, or range for which you want the average.
- **Number2, ...** Optional. Additional numbers, cell references or ranges for which you want the average, up to a maximum of 255.

To create certain graphs I used average function as follows:

Average of Unit Price	₹5,48,459
Average of Top speed	111
Average of BHP	64
Average of Fuel	58
Average of Mileage KMPH	26

With the above average function I created certain bar graphs and used them to create my dashboard.

➤ FORMULAS

- **GETPIVOTDATA()**

  The GETPIVOTDATA Function is categorized under Excel Lookup and Reference functions. The function helps to extract data from specified fields in an Excel Pivot Table. The pivot table is used often in financial analysis to facilitate deeper analysis of given data. The function helps extract, group, or add data from a pivot table.

  =GETPIVOTDATA(data_field, pivot_table, [field1, item1, field2, item2], …)

The GETPIVOTDATA function uses the following arguments:

1. **Data_field** (required argument) – This is the worksheet information from which we intend to remove nonprintable characters.
2. **Pivot_table** (required argument) – This is a reference to a cell, range of cells, or named range of cells in a pivot table. We use the reference to specify the pivot table.
3. **Field1, Item1, Field2, Item2** (optional argument) – This is a field/item pair. There are up to 126 pairs of field names and item names that may be used to describe the data that we wish to retrieve.

- **Calculating speed:**

To calculate the top speed I took 200 as maximum speed then from the max. speed I subtracted the average to speed that was 90. So, final I got top speed.

<mark>**Top speed=maximum speed – Average top speed**</mark>

Average Top speed = 111

Maximum speed = 200

Top speed = 200-111

= 89

➢ ANALYSIS RESULTS

An **Excel dashboard** is one-pager (mostly, but not always necessary) that helps managers and business leaders in tracking key KPIs or metrics and take a decision based on it. It contains charts/tables/views that are backed by data. A dashboard is often called a report, however, not all reports are dashboards.

The **Excel Dashboard** is used to display overviews of large data tracks. Excel Dashboards use dashboard elements like tables, charts, and gauges to show the overviews. The dashboards ease the decision-making process by showing the vital parts of the data in the same window.

With the dataset(car brands dataset) I created Pivot tables and with help of those pivot tables I also created pivot charts of different types with suitable rows and columns.

I also created different bar graphs to represent my dashboard.

Analysis Results of charts and graphs:

- **Pivot table:**
A pivot table is a statistics tool that summarizes and reorganizes selected columns and rows of data in a spreadsheet or database table to obtain a desired report.

Pivot tables are especially useful with large amounts of data that would be time-consuming to calculate by hand. A few data processing functions a pivot table can perform include identifying sums, averages, ranges or outliers. The table then arranges this information in a simple, meaningful layout that draws attention to key values.

Result of this is shown in Figure 1

- **Pivot charts:**

  A **pivot chart** is the visual representation of a **pivot table** in Excel. **Pivot charts** and **pivot** tables are connected with each other.

  A pivot chart is especially useful for user when dealing with tremendous amounts of data. It is a built-in feature of both, Microsoft Excel and Microsoft Access. While in case of MS Excel, a pivot chart can easily be copied or pasted within MS Excel as well as amongst other MS Office Software, a pivot chart cannot be copied and pasted in MS Access.

- **Graphs:**

  In Microsoft **Excel**, a **chart** is often called a **graph**. It is a visual representation of data from a worksheet that can bring more understanding to the data than just looking at the numbers.

  Graphs are a common method to visually illustrate relationships in the data. The purpose of a **graph** is to present data that are too numerous or complicated to be described adequately in the text and in less space.

  Result of this is shown in Figure 2

- **Pie charts:**

  A **pie chart** (or a circle **chart**) is a circular statistical graphic, which is divided into slices to illustrate numerical proportion. In a **pie chart**, the arc length of each slice (and consequently its central angle and area), is proportional to the quantity it represents.

  It enables you to easily visualize analytical or statistical data results. **Pie chart** elements commonly appear on **dashboards**. Their purpose is to visualize part-to-whole relationships. There is, however, contention over their effectiveness and frequent mis-use.

  Result of this is shown in Figure 3 and Figure 6

- **Bar graphs:**

  A **Bar Graph** (also called **Bar Chart**) is a graphical display of data using **bars** of different heights. It is a really good way to show relative sizes.

  We can use bar graphs to show the relative sizes of many things, such as what type of car people have, how many customers a shop has on different days and so on.

  Result of this is shown in Figure 4 and Figure 5

  Therefore, with the above information like Pivot table, Pivot chart, Graphs, Pie charts, Bar graphs we can analyse the dataset and also create dashboard.

➢ VISUALIZATION

A Dashboard provides a high-level overview of your dataset. It usually comprises of various charts, tables, and visualizations that are pleasing to the eye and easy to interpret. The design and contents of the dashboards are pre-decided and are always available at the click of a button, which helps in the process of quick decision making.

Dashboards are a data **visualization** tool that allow all users to understand the analytics that matter to their business, department or project. Even for non-technical users, **dashboards** allow them to participate and understand the analytics process by compiling data and **visualizing** trends and occurrences.

Below is the view of Dashboard which visualizes the dataset of car brands comparison: It show the comparison of car models like fuel capacity, no.of cars per city, variation of car price, complaint and types , BHP of different car models and speedometer of cars. This visualization makes people easily compare between the car brands in all formats.
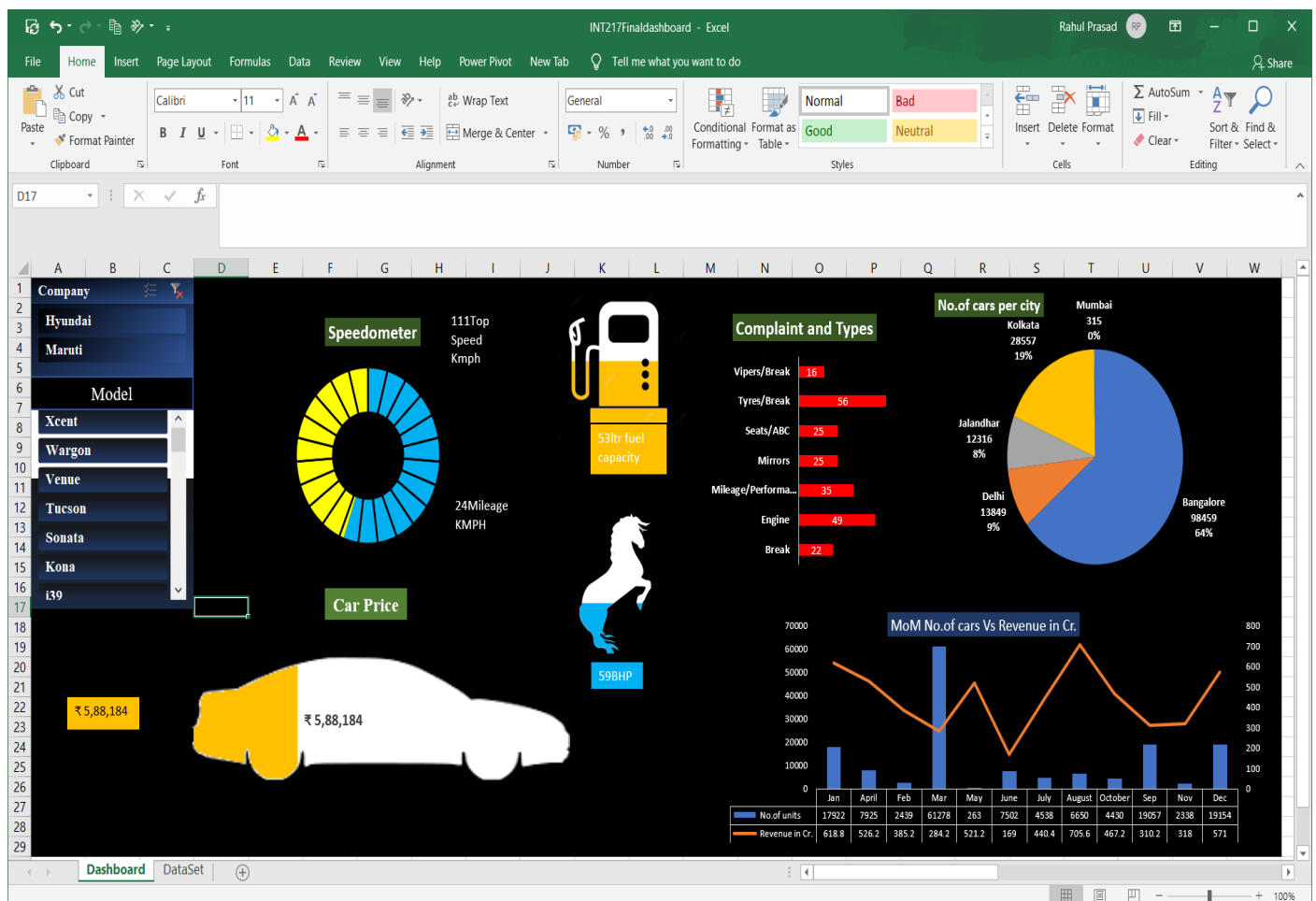
NOTE:

I visualized above dashboard with the help of following charts and graphs which are mentioned in the specific requirements.

➢ CONCLUSION:

Throughout the project I learned how to use the pivot tables and charts and some other features. The minor Microsoft features (Excel) that I did not know before. It was amazing to me how there are functions that were very good for analysing the datasets. Being aware of such functions will benefit a lot as a data science student and will help my future career to go smoothly. I learned that it is important to play around with the software. This is the key to learning more about excel and other softwares that is installed in the computers. I wish I had sufficient time to explore more about the Excel that we went over in class.

I have learnt how to build an interactive dashboard using Excel. This is a simple approach and can easily be applied to any other data. As we have seen, Excel dashboards are simple and easy to build, has a good number of features, and above all, it's free to build and to share with others.

A car brands comparison dashboard is the analyses of dataset which compares the features of different car models like price, fuel capacity, mileage, BHP, complaints and its types, sales of car in different cities etc.

I have demonstrated the power of data visualization in cars performance, monitoring, and analysis. This dashboard can be used by other people or customers to see the difference between the car models before they purchase any car.

➢ REFERENCES:

https://www.youtube.com/watch?v=Q_lumtjiwX0&list=WL&index=10&t=316s

https://trumpexcel.com/creating-excel-dashboard/

https://www.tutorialspoint.com/excel_dashboards/excel_dashboards_pivot_tables.htm

❖ BIBLIOGRAPHY

Title: Dashboard on Car brands comparison dataset.

Dan Bricklin

Dan Bricklin invented the spreadsheet---but don't hold that again him. The father of the spreadsheet. December 22, 2015. This article is more than 2 years old. You may not know Dan Bricklin, but you are almost certainly familiar with his work.

Microsoft originally marketed a spreadsheet program called Multiplan in 1982. … Microsoft released the first version of Excel for the Macintosh on September 30, 1985, and the first Windows version was 2.05 (to synchronize with the Macintosh version 2.2) in November | 1987.

Software genre: Spreadsheet

Developer: Microsoft Corporation

The content for this project report is taken from the following sources:

https://guides.library.illinois.edu/introdata
https://www.youtube.com/watch?v=9NUjHBNWe9M
https://corporatefinanceinstitute.com/resources/excel/study/excel-dashboards/
https://www.excel-easy.com/data-analysis/pivot-tables.html