Experiment No-07

A.1 Aim:
Develop a dashboard and reporting tool based on real time social media data.

Lab Objective	To design and develop social media analytics models
Lab Outcome	Design and develop a dashboard and reporting tool based on social media data.

A-2 Prerequisite
Python, Power BI

A.3 OutCome
Students will be able to collect, monitor, store and track social media data.

A.4 Theory:

Social media dashboards are valuable tools for businesses to track their digital presence and measure their campaigns' effectiveness. Popular examples include Hootsuite, Sprout Social and Buffer, and AgoraPulse which offer comprehensive dashboard capabilities ranging from post-scheduling to analytics reporting. A social media dashboard acts as a control center that aims to monitor and measure the most crucial social media marketing KPIs. In a social media dashboard, you would want it to have:

1. Keyword insights
2. Hashtag
3. Content Creation
4. Social Listening
5. Analytics

Power BI:

Power BI is an interactive data visualization software product developed by Microsoft with a primary focus on business intelligence. It is part of the Microsoft Power Platform. Power BI is a Data Visualization and Business Intelligence tool by Microsoft that converts data from different data sources to create various business intelligence reports. It provides interactive visualizations using which end users can create reports and interactive dashboards by themselves.

What is Query Editor?

Query Editor in Power BI is used to **edit** or **format** the data files **before they are loaded** into the Power BI Model. The Query Editor plays the role of an intermediate data container where you can modify data type or the way the data is stored by selecting the particular rows and columns.

Building Blocks of Power-BI

There are 4 major building blocks that make Power-BI a very powerful tool.
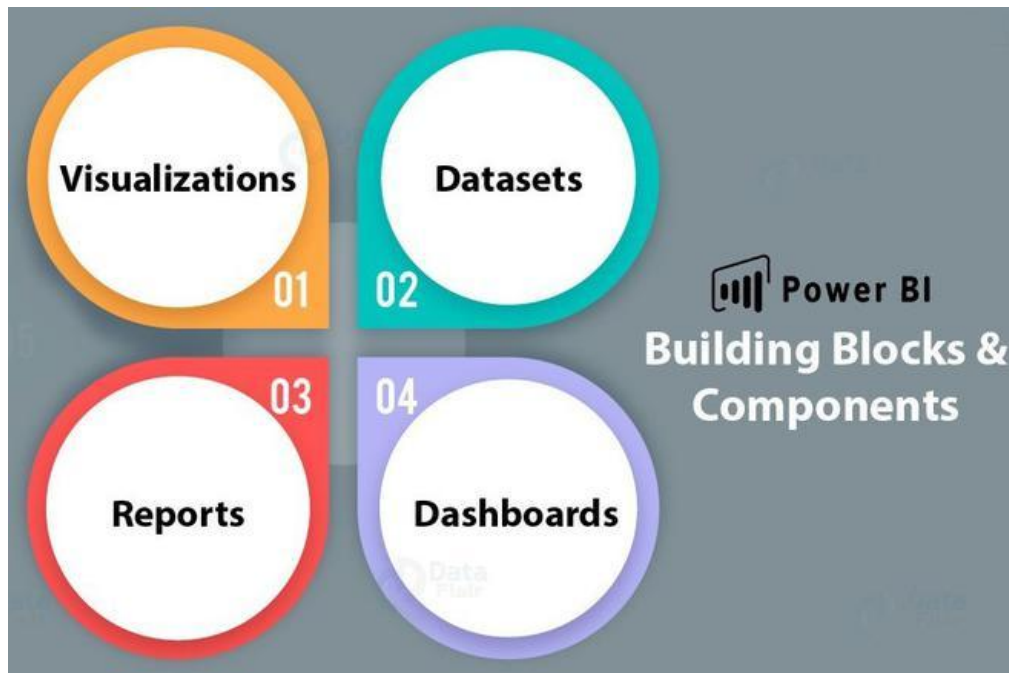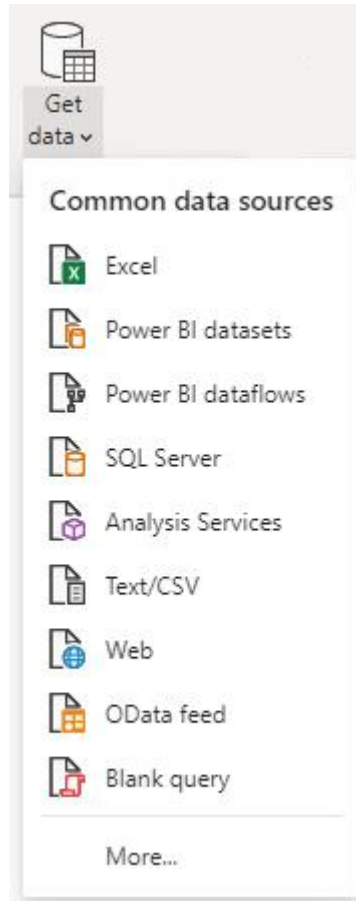
1. Visualization

A visualization is a visual representation of data, like a bar graph, pie chart, a color-coded map, or other through which you can visualize the data. The following image shows a collection of different visualizations that are there in the Power BI.


Power BI : Visualizations

2. Datasets:

A Dataset is a collection of data or a container of data that is used by PowerBI to create visualizations. A Dataset is something which you import or connect to. Datasets can be renamed, refreshed, removes, and explored.

Power BI : Types of Datasets

3. Reports:

A report is one or more pages of interactive visuals, text, and graphics that makes up a single report. All of the visualizations in a report come from a single dataset.
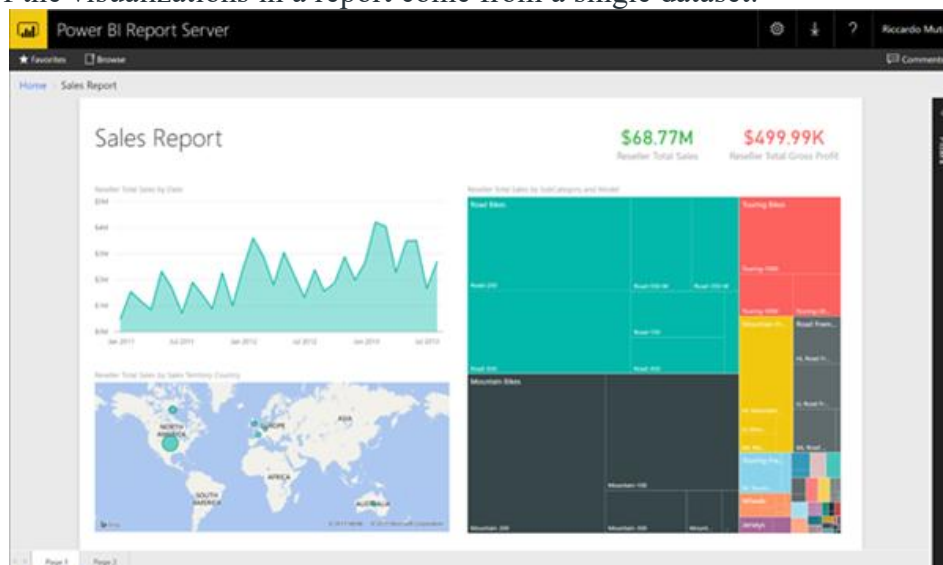
Power BI : Reports

4. Dashboards:

A dashboard represents a customized view of some subset of the underlying dataset(s). A dashboard is a single canvas that has tiles, graphics, and text. Purpose of Dashboards is to get all the info at one place, needed to make decisions. To monitor the most-important info about your business. To ensure all colleagues are on the same page. To monitor the growth of a business or product.
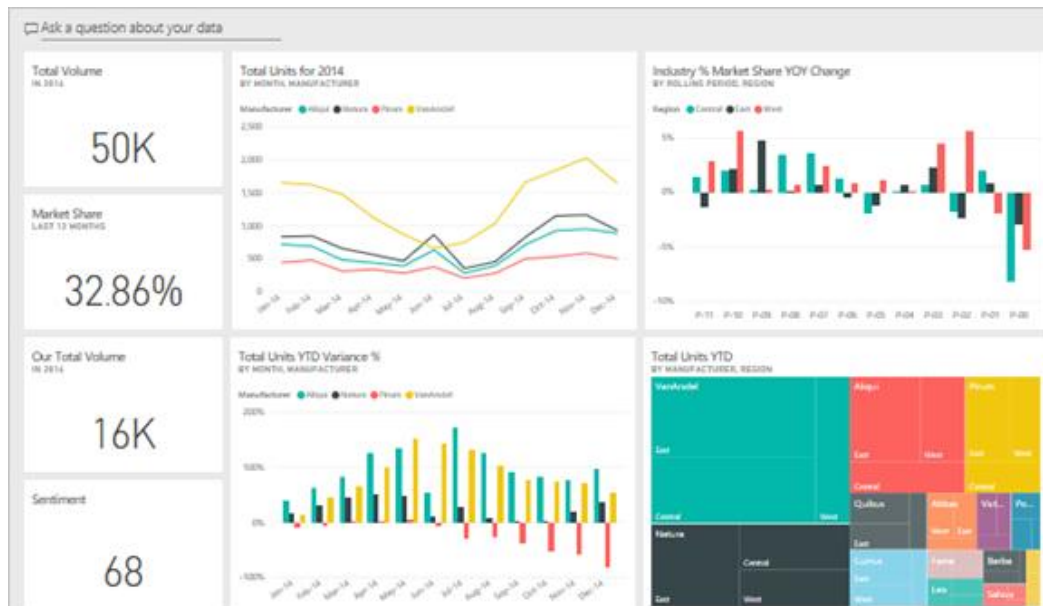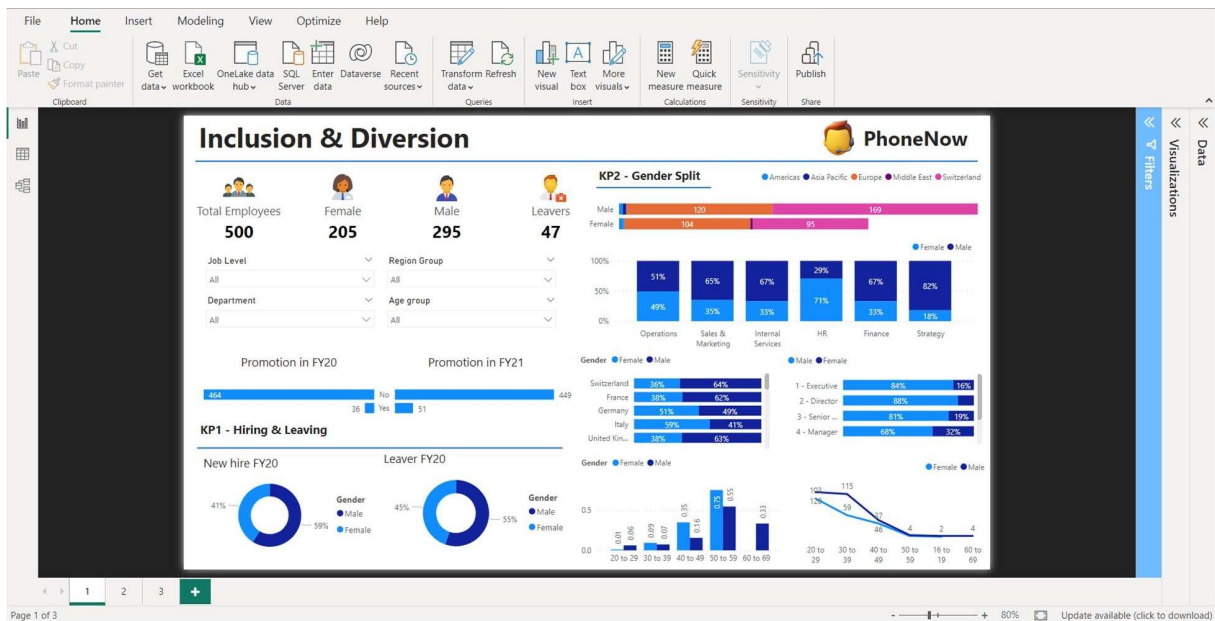
Power BI : Dashboards

PART B
(PART B: TO BE COMPLETED BY STUDENTS)

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Class: BE C COMPS	Batch: C2
Date of Experiment:	Date of Submission:
Grade:	

B.1.Study the Power BI tool to develop a dashboard and reporting tool based on real time social media data.
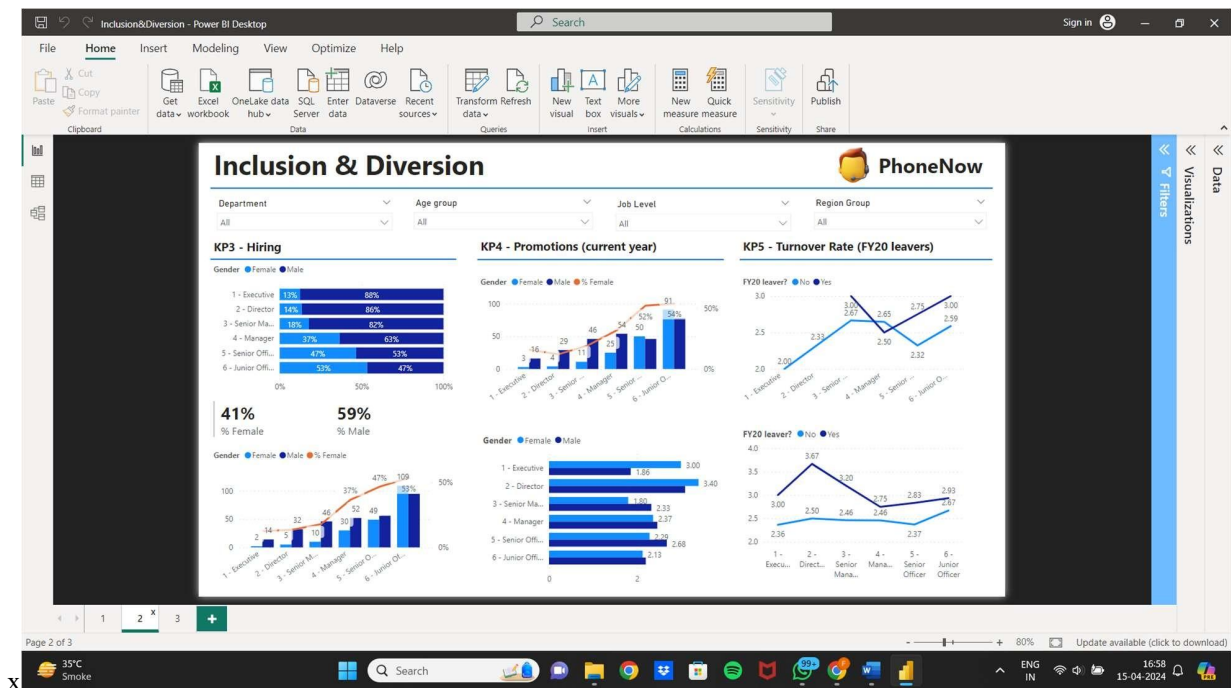
B.3 Observations and learning:

Power BI is utilized for creating visualizations and interactive dashboards. Students will learn how to import and connect datasets, perform data modeling, and create compelling visual reports. Query Editor in Power BI enables to transform raw data into structured formats suitable for analysis and visualization. Through this experiment, understood the importance of effective dashboard design, including considerations like user interactivity, data granularity, and KPI representation.

B.4 Conclusion:

The experiment provides with a comprehensive understanding of social media analytics and dashboard development. Hands-on experience in designing and developing a real-time dashboard enhances practical skills in data analytics and reporting.

B.5 Question of Curiosity
(To be answered by student based on the practical performed and learning/observations)

Q1. What is a Social Media Dashboard and why do you need one?

A Social Media Dashboard is a centralized tool or platform that allows users to monitor, analyze, and manage multiple social media accounts and activities in one place. It aggregates data from various social media platforms (like Facebook, Twitter, Instagram, LinkedIn, etc.) and presents key metrics and insights in a visual format.

You need a Social Media Dashboard for several reasons:
1. **Centralized Monitoring**: It provides a single interface to track activities across different social media channels, saving time and effort in managing multiple platforms separately.
2. **Performance Tracking**: A dashboard displays key performance indicators (KPIs) such as engagement rates, follower growth, reach, and conversions, helping to assess the effectiveness of social media strategies and campaigns.
3. **Real-time Insights**: It offers real-time data updates, enabling timely responses to trends, customer queries, or issues on social media.

Q2. Name and explain some powerful Social Media Dashboards.

1. **Hootsuite**: Hootsuite is a widely used social media management platform that allows users to schedule posts, engage with audiences, and monitor social media activity across multiple networks from one dashboard. It offers analytics and reporting features to track performance metrics.
2. **Sprout Social**: Sprout Social provides a comprehensive suite of tools for social media management, including scheduling, monitoring, engagement, and analytics. It offers detailed reports on audience demographics, engagement rates, and content performance.
3. **Buffer**: Buffer is known for its simplicity and user-friendly interface. It allows users to schedule posts, analyze performance metrics, and manage multiple social media accounts seamlessly. Buffer also offers a browser extension for easy content sharing.

Q3. What is Power BI? How is it used to create dashboard based on the social media data?

Power BI is a business intelligence tool developed by Microsoft that allows users to visualize and analyze data from various sources through interactive dashboards and reports. It is part of the Microsoft Power Platform and is widely used for data modeling, data visualization, and sharing insights across an organization.
Here's how Power BI can be used to create a dashboard based on social media data:
1. **Data Acquisition**: Power BI can connect to various data sources including social media platforms such as Facebook, Twitter, LinkedIn, etc. It can import data directly from these sources using APIs, or from CSV files, databases, or other data formats where social media data may be stored.
2. **Data Preparation**: Once the social media data is imported into Power BI, the Query Editor in Power BI can be used to clean, transform, and shape the data as needed. This may involve tasks like removing duplicates, merging tables, applying filters, or creating calculated columns.
3. **Data Modeling**: Power BI allows users to create data models by defining relationships between different tables and entities in the dataset. This step is crucial for accurate and meaningful analysis of social media data.
4. **Dashboard Design**: Using the Power BI Desktop application, users can design interactive dashboards by selecting appropriate visualizations such as bar charts, line

graphs, pie charts, maps, etc. These visualizations can be customized based on specific metrics and KPIs derived from the social media data.

5. **Data Visualization**: Power BI offers a wide range of visualization options with extensive formatting capabilities. Users can create dynamic and interactive reports that update in real-time as new data is added or refreshed.

6. **Adding Interactivity**: Power BI allows for interactivity within dashboards, enabling users to filter data, drill down into specific details, or highlight key insights using slicers, filters, and other interactive elements.

7. **Sharing and Collaboration**: Once the dashboard is created, it can be published to the Power BI Service where it can be shared with colleagues or stakeholders. Users can collaborate on reports, schedule data refreshes, and access dashboards from web browsers or mobile devices.

Q5. What is the difference between KPI and dashboard in social media analytics?

- **Focus**: KPIs are specific performance metrics used to measure success or progress, while dashboards provide a holistic view of multiple KPIs and metrics in a visual format.
- **Nature**: KPIs are individual metrics that quantify performance, whereas dashboards are tools that aggregate and present multiple KPIs and other relevant data for analysis and decision-making.
- **Role**: KPIs serve as the building blocks of dashboards, which utilize KPIs and other data to provide actionable insights and facilitate performance evaluation.