Plugging Into The Future: An Exploration Of Electricity Consumption Patterns

Requirements

The requirements for analyzing analysis on electricity consumption in India Identify the current patterns of electricity consumption in different regions and sectors of India. This information can be used to identify areas where consumption is high and areas where it is low. Identify opportunities for improving energy efficiency and reducing consumption in different sectors and regions. This information can be used to develop policies and programs to promote energy efficiency.

Collect The Dataset

In Dataset Consumption.csv data is in the form of a time series for a period of 24 months beginning from 2nd Jan 2019 till 5th December 2020. Columns contains States, Regions, Latitude, Longitude, Dates and Usage. The dataset has been scraped from the weekly energy reports of POSOC.

Fields Include

States - Indian States

Regions- States in Regions on Indian Map

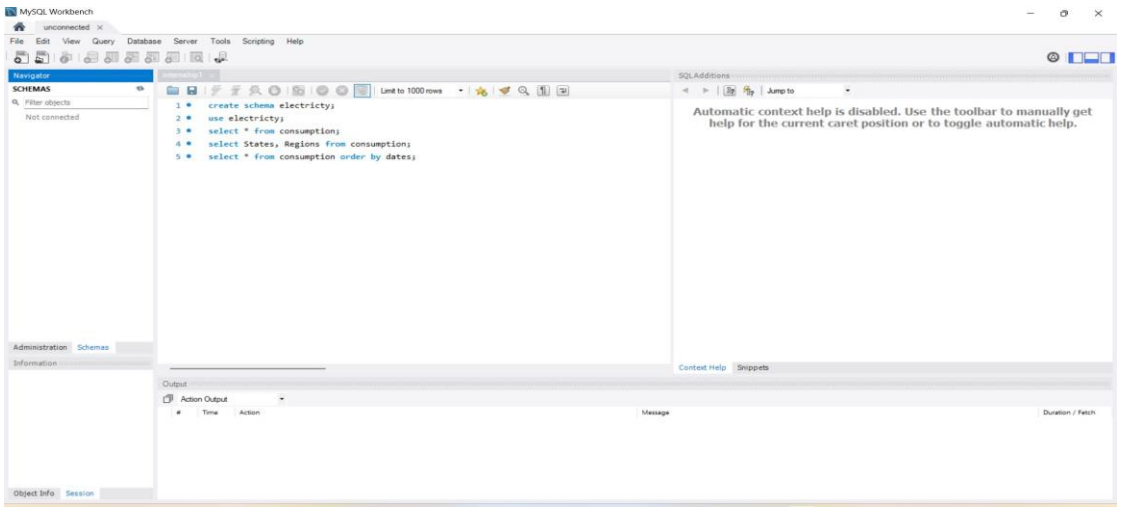
Latitude - States in Regions on Indian Map

Longitude - Geographical Coordinates of States

Dates - Dates of Usage

Usage - Power consumed in Mega Units (MU)

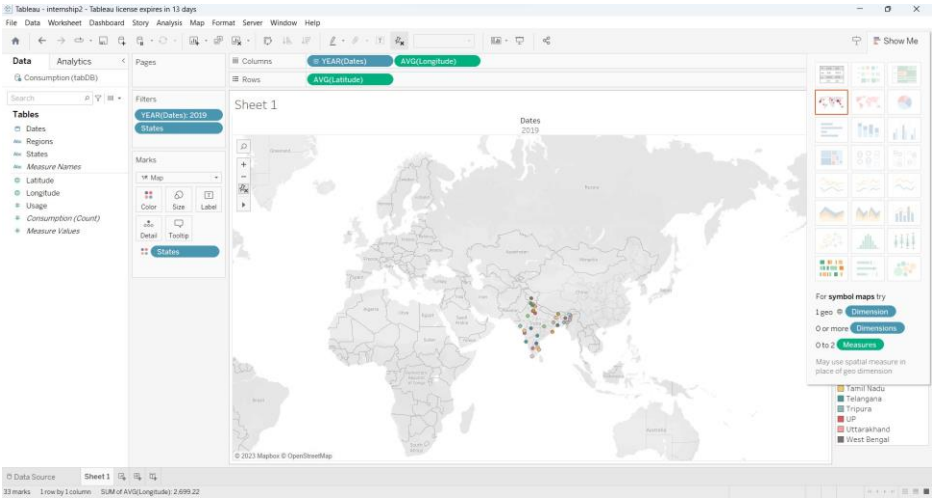
Storing Data In DB & Perform SQL Operation



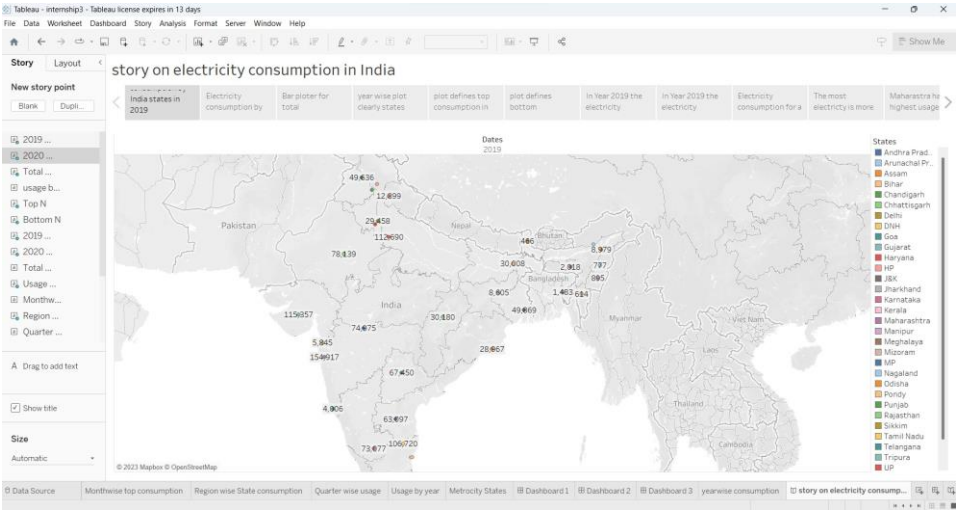
Data Visualization

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency. This data is preprocessed initially.

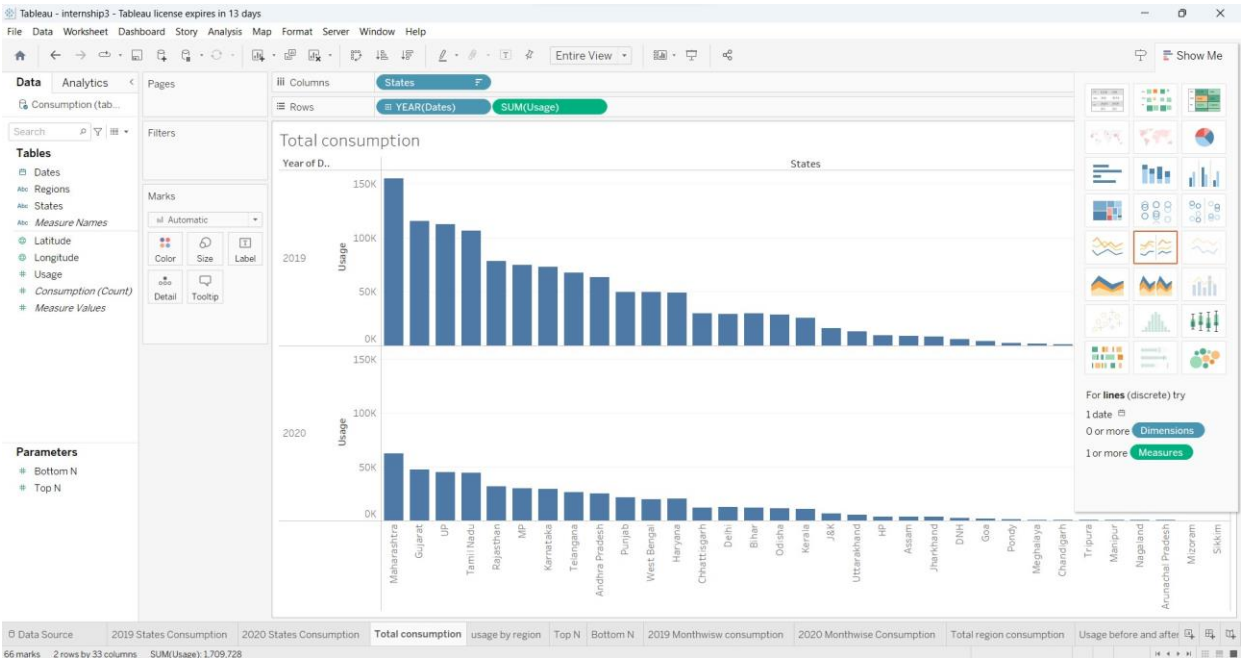
2019 states consumption



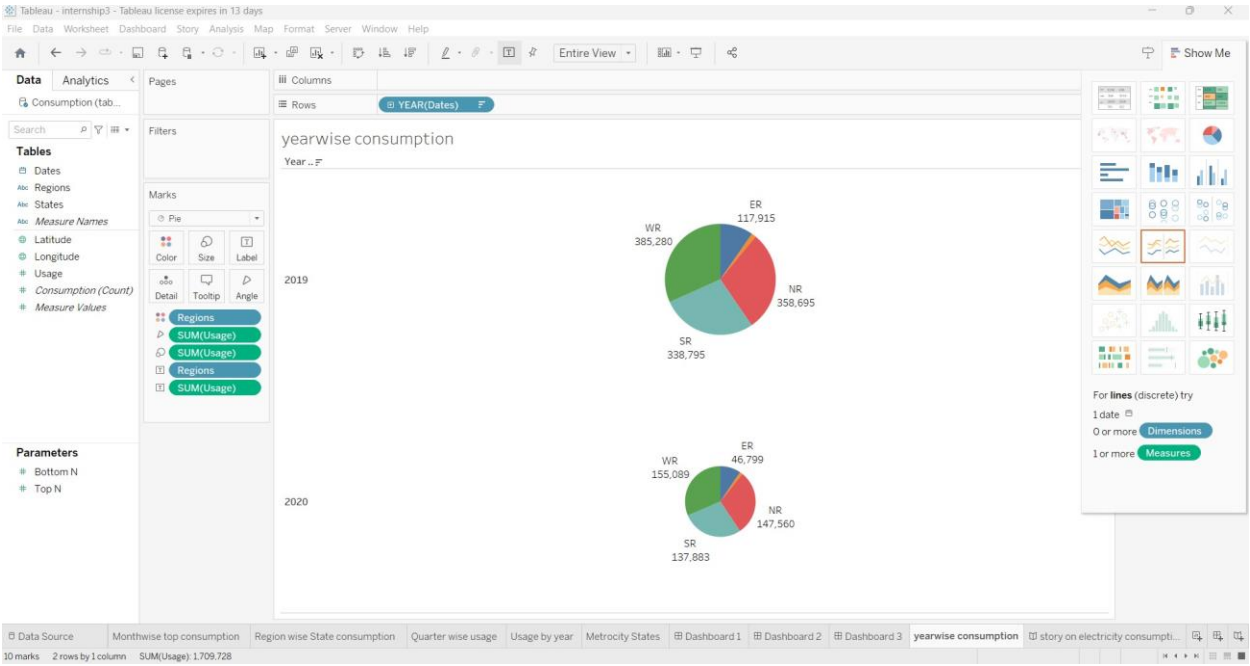
2020 states consumption



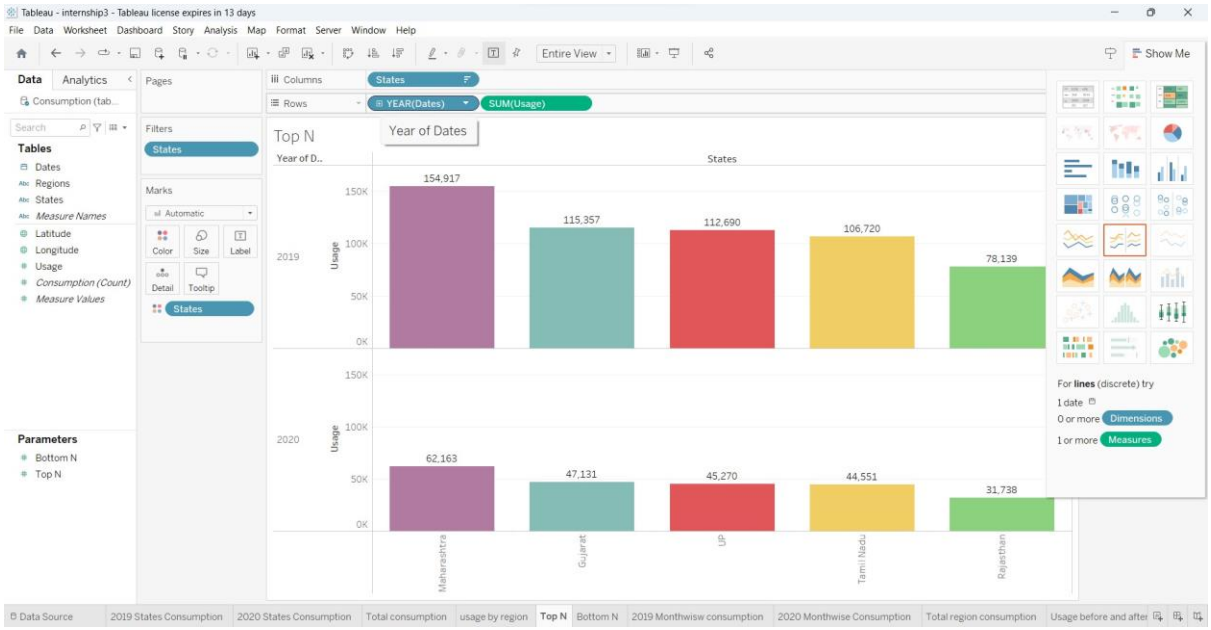
Total consumption



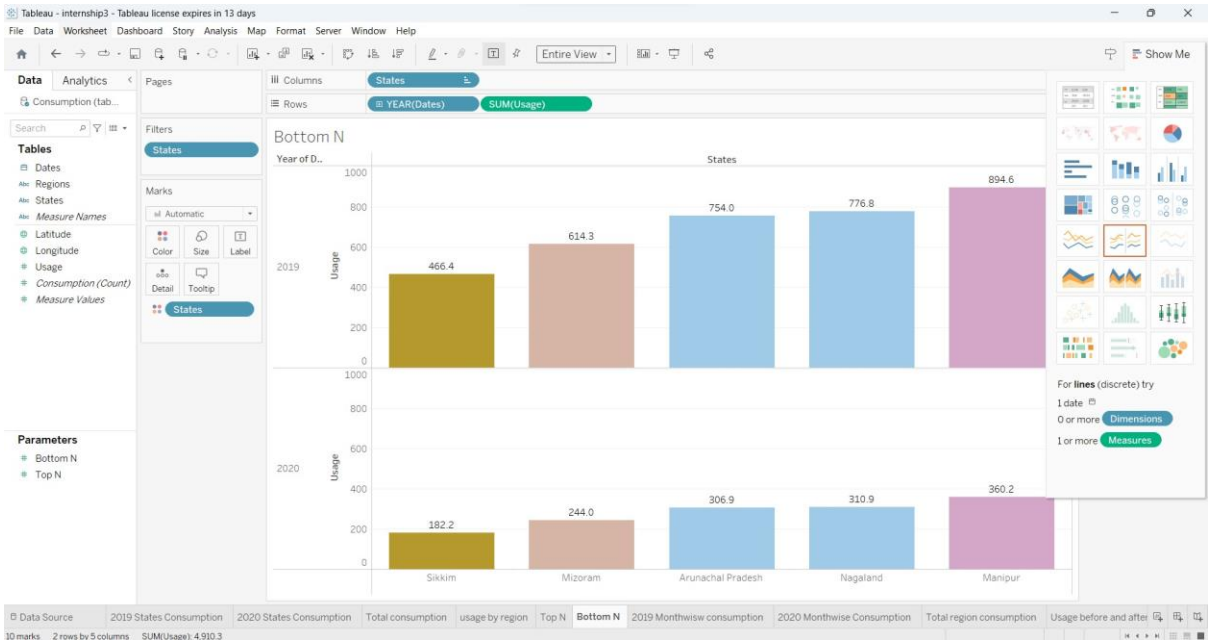
Year Wise consumption



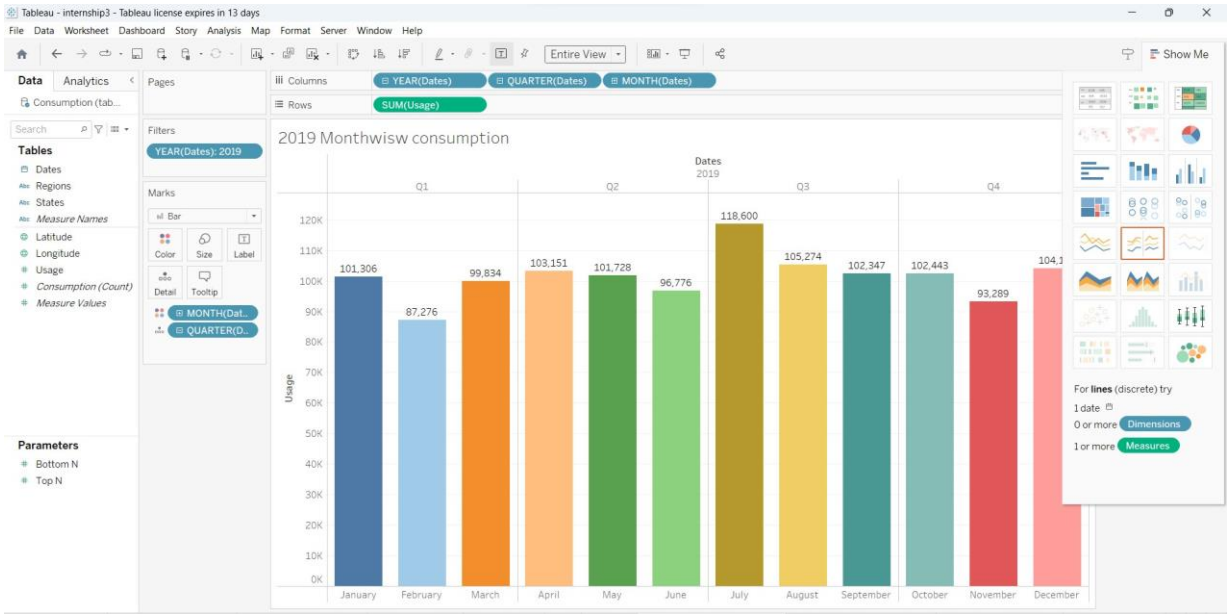
Top N consumption



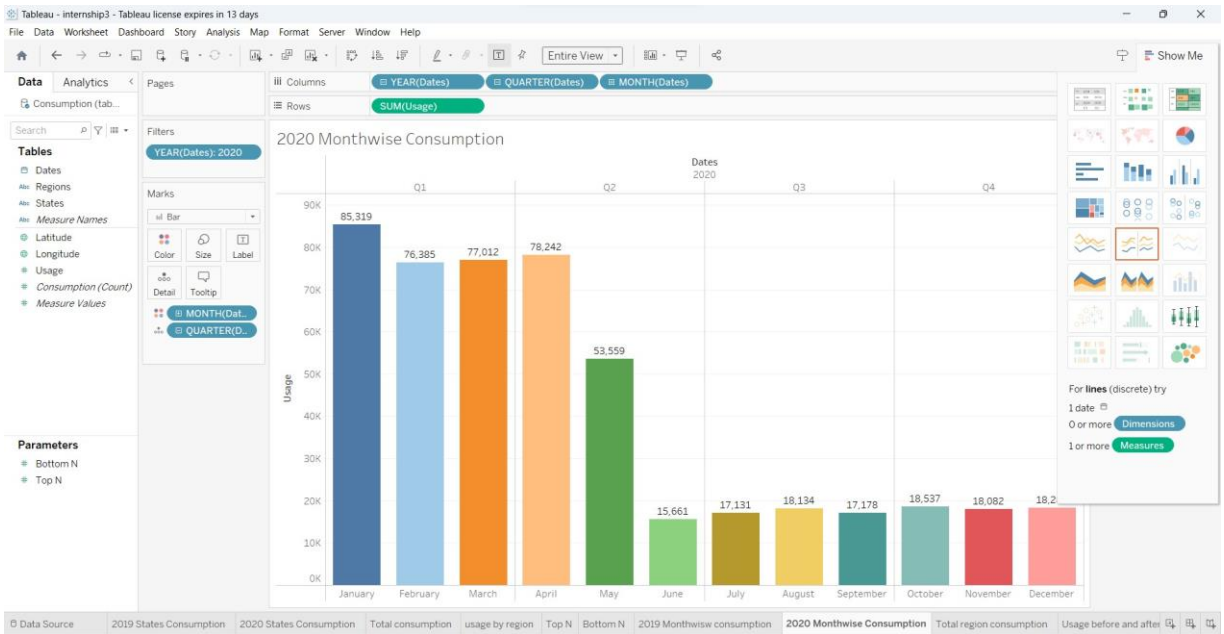
Bottom N consumption



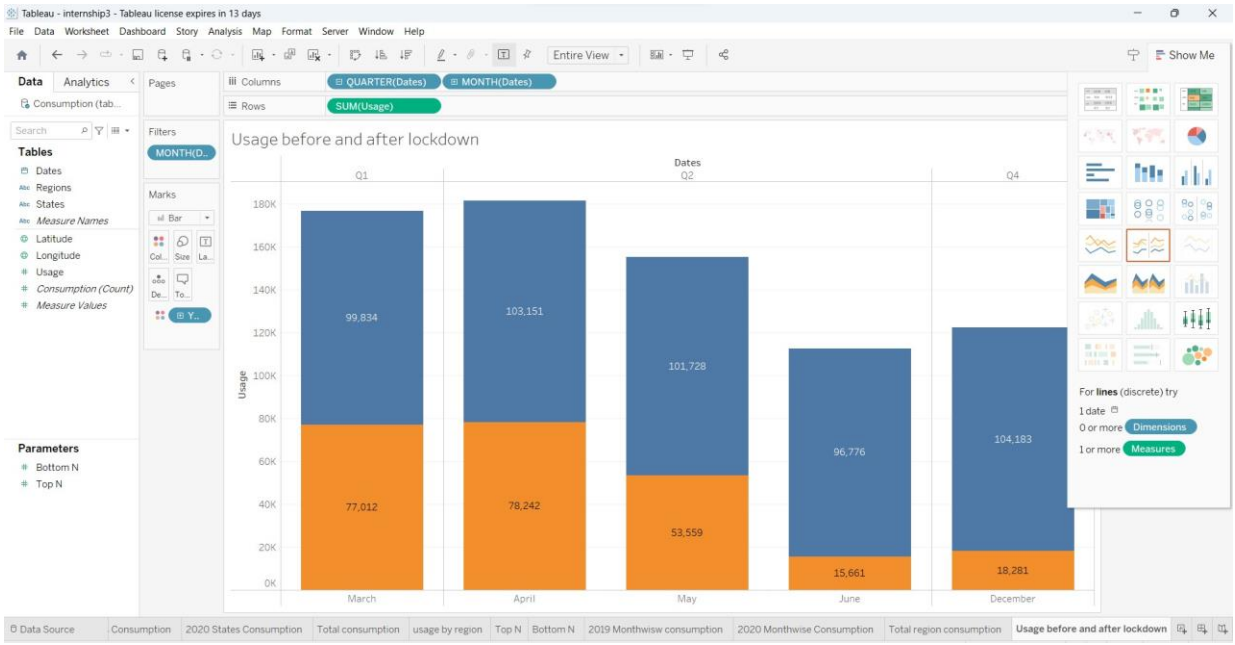
2019 Monthwise consumption



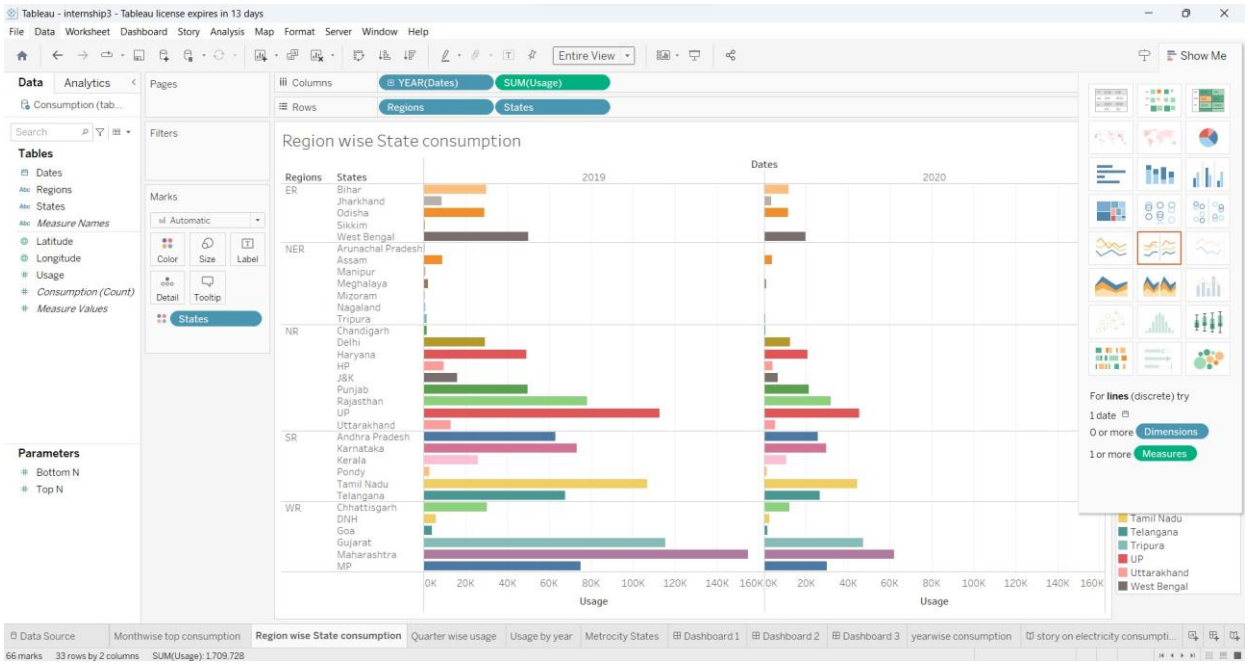
2020 Monthwise consumption



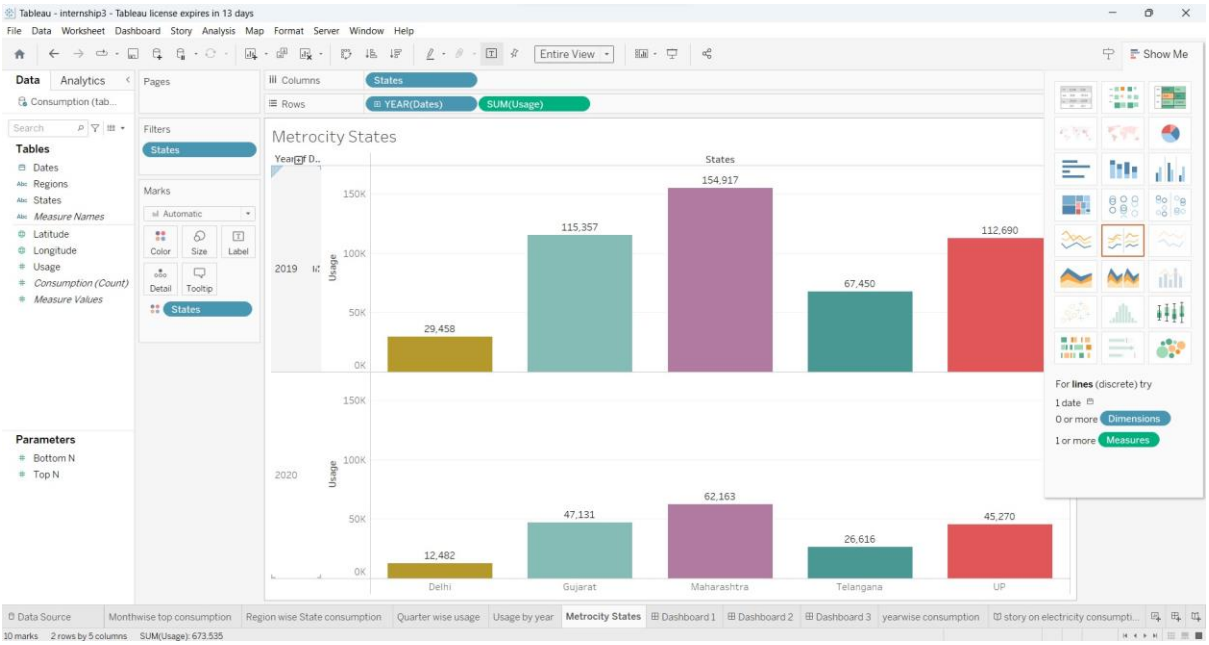
Usage Before and After LockDown



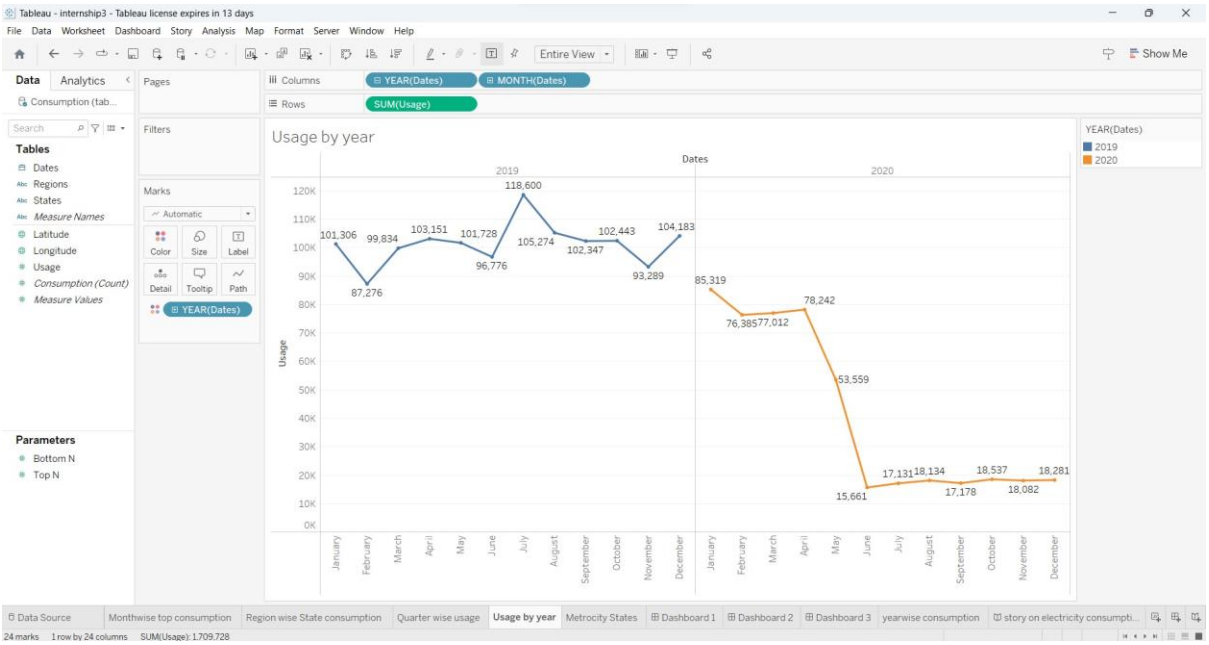
Region wise state consumption



Metrocity states



Usage by year

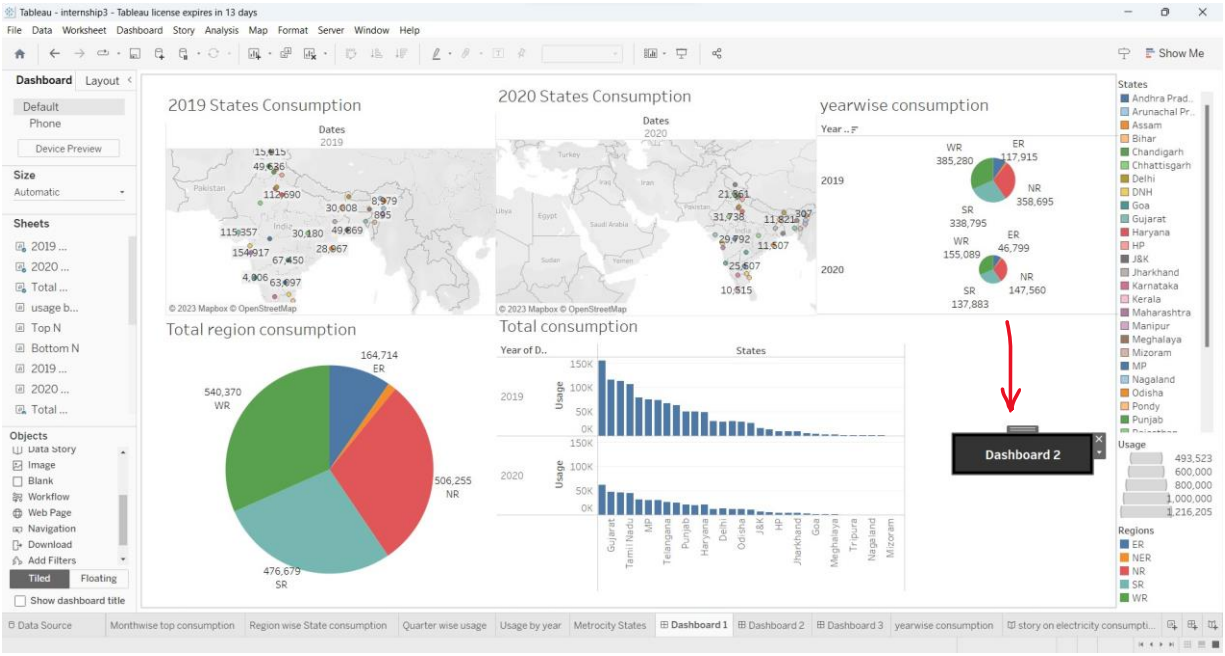


Dashboard

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data, and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries.

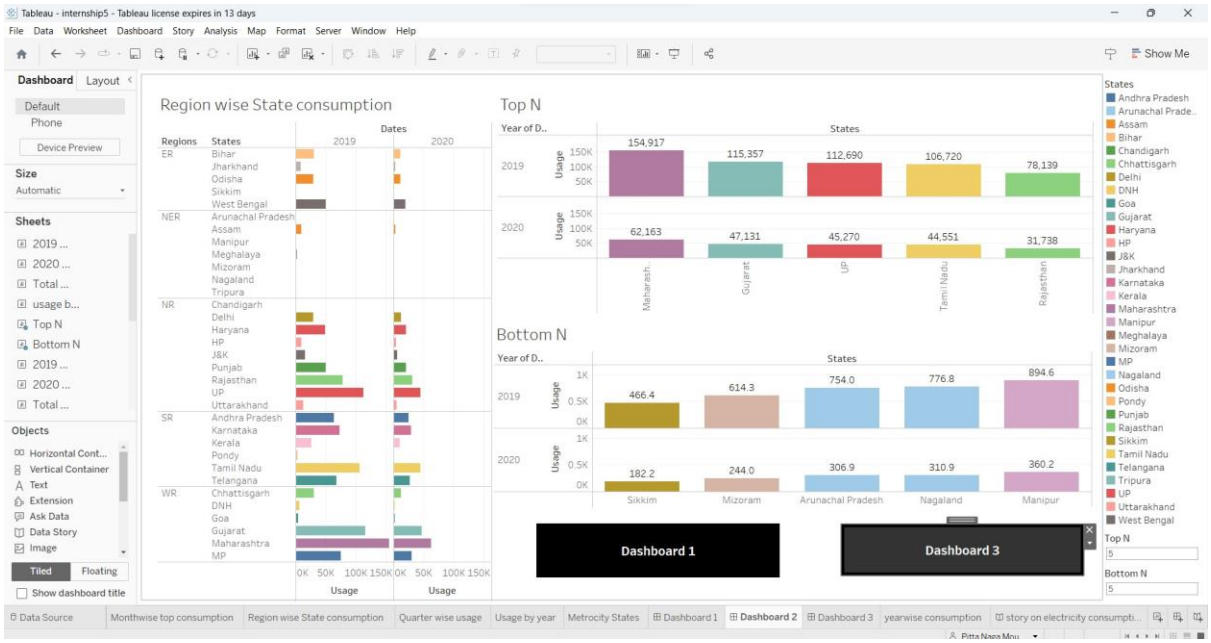
Responsive And Design Of Dashboard

The responsiveness and design of a dashboard for analyzing the performance and efficiency of Radisson Hotels is crucial to ensure that the information is easily understandable and actionable. Key considerations for designing a responsive and effective dashboard include user-centered design, clear and concise information, interactivity, data-driven approach, accessibility, customization, and security.



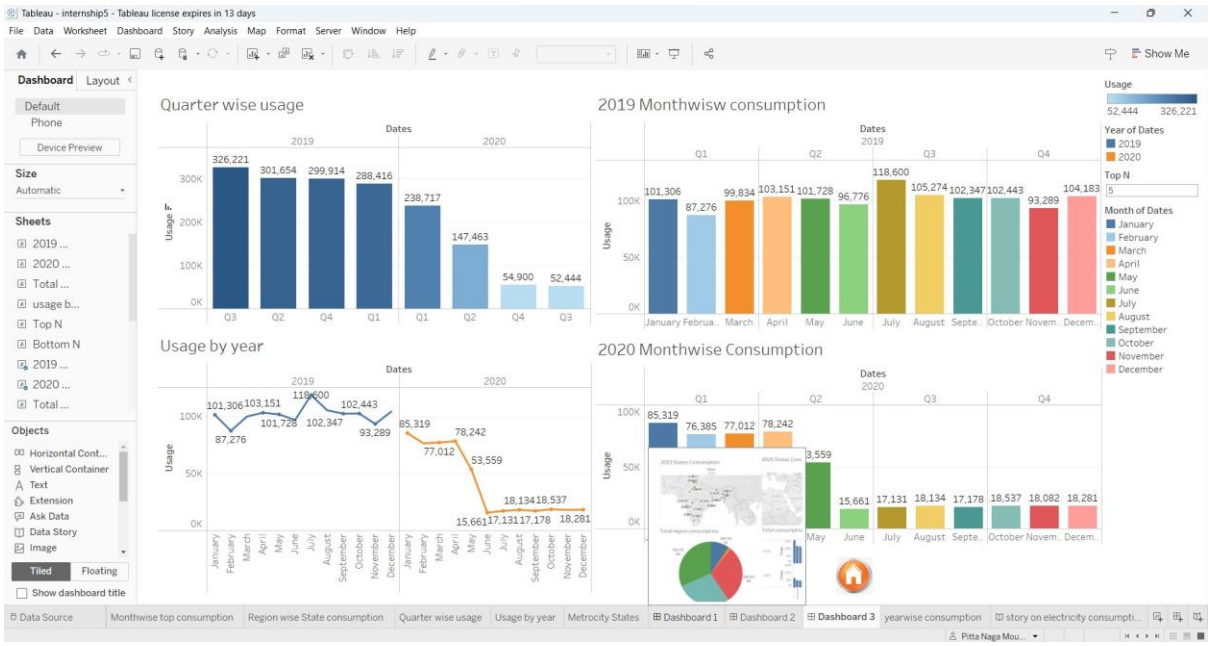
DashBoard 1

The arrow shown above is used to travel to the next dashboard in Tableau that has views created on various sheets.



DashBoard 2

We utilized two navigation buttons, dashboard 1 to access to the first dashboard and dashboard 3 to navigate to the third dashboard.

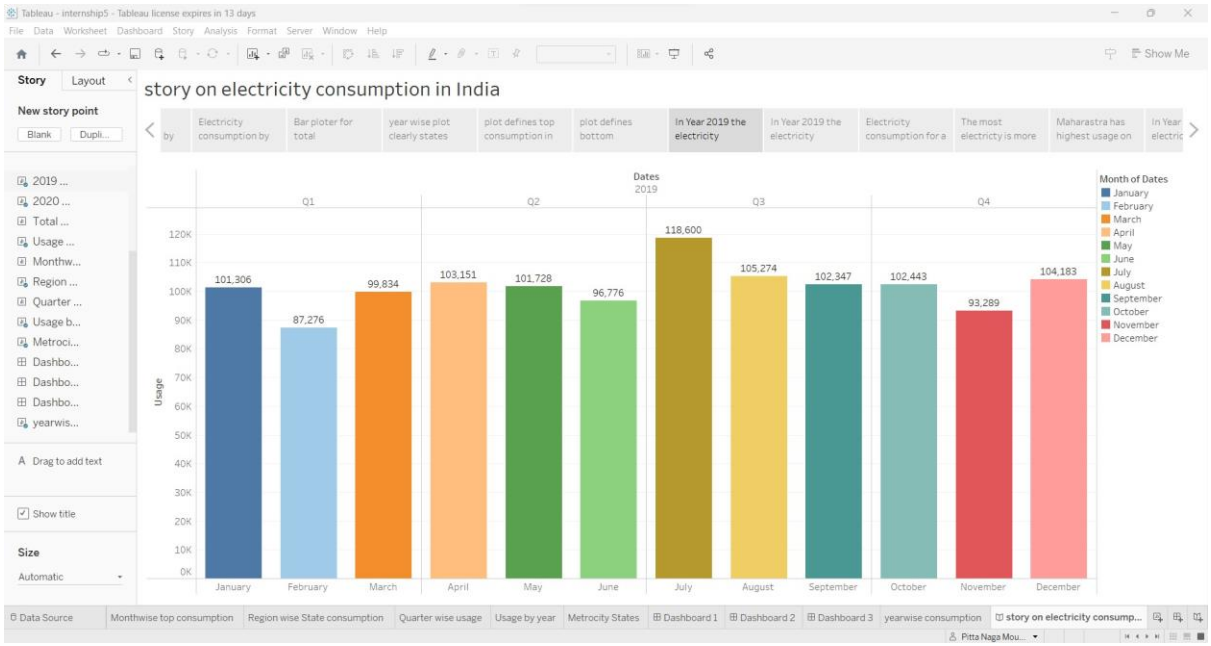


DashBoard 3

To get to home, we used the home logo.

Story

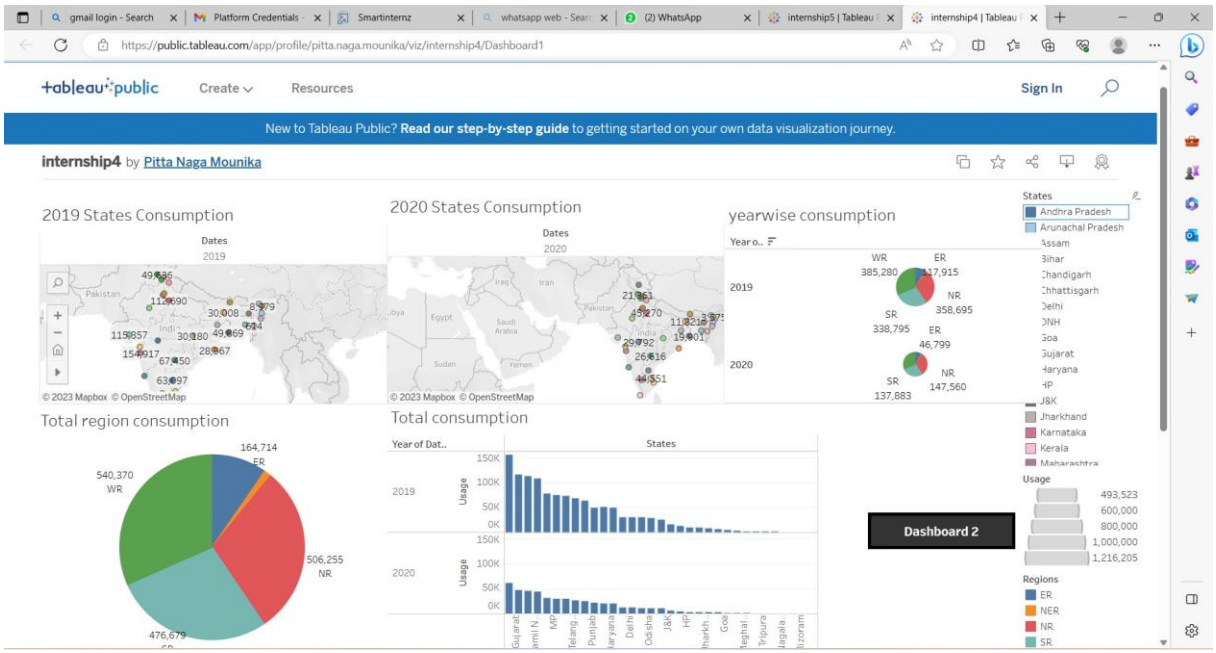
A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

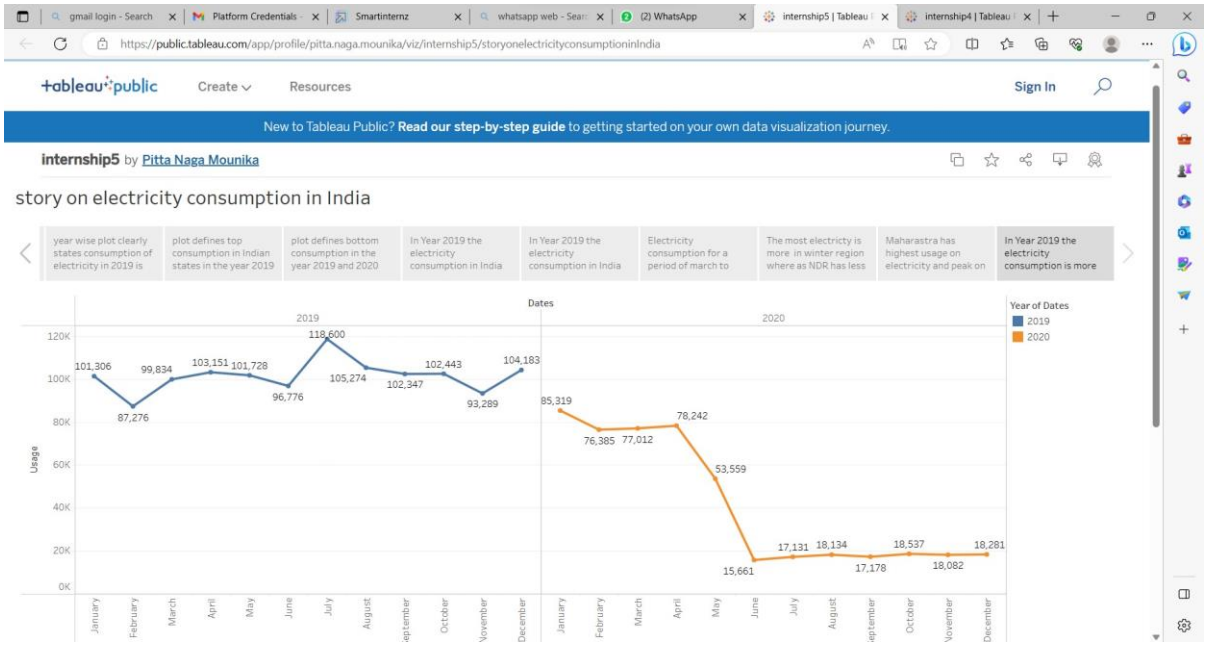


Performance Testing

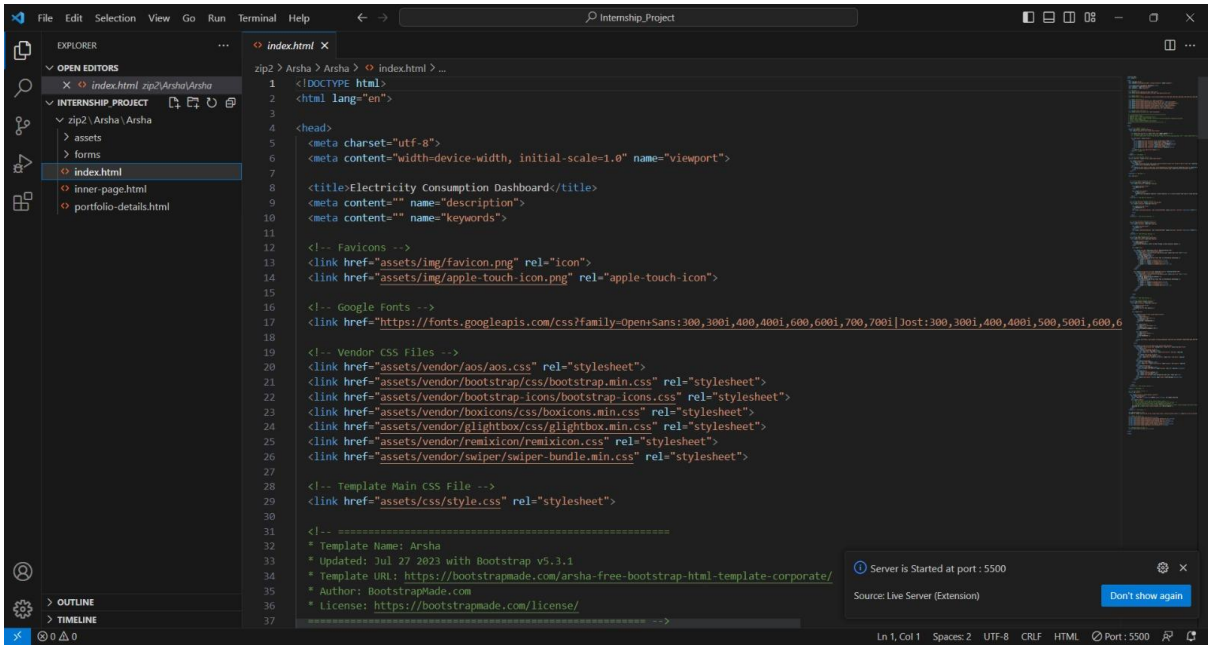
- 2019 State Consumption
- 2020 State Consumption
- Total Consumption
- Usage By Region
- Top N and Bottom N
- 2019 and 2020 Monthwise Consumption
- Total Consumption Region Wise
- Usage Before and After Lockdown
- Region wise State Usage
- Quarter Usage
- Metro city State usage

Web Integration

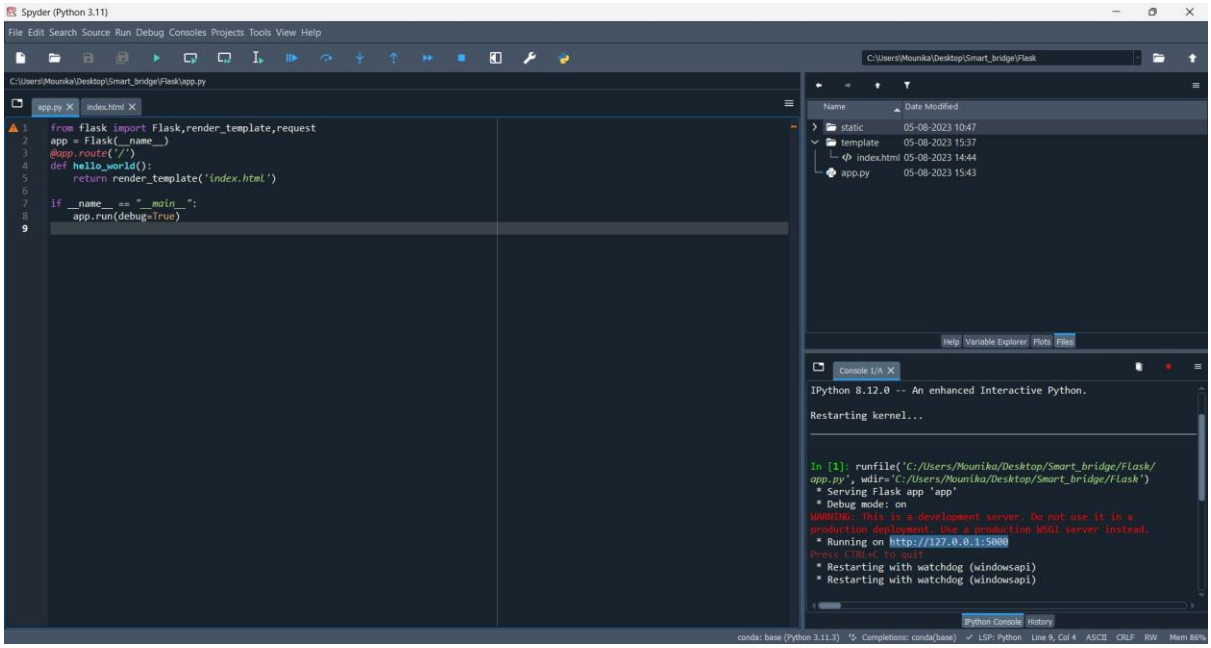




HTML Code:



Using Python Flask:



Final Output: