Data Visualization - Mini Project

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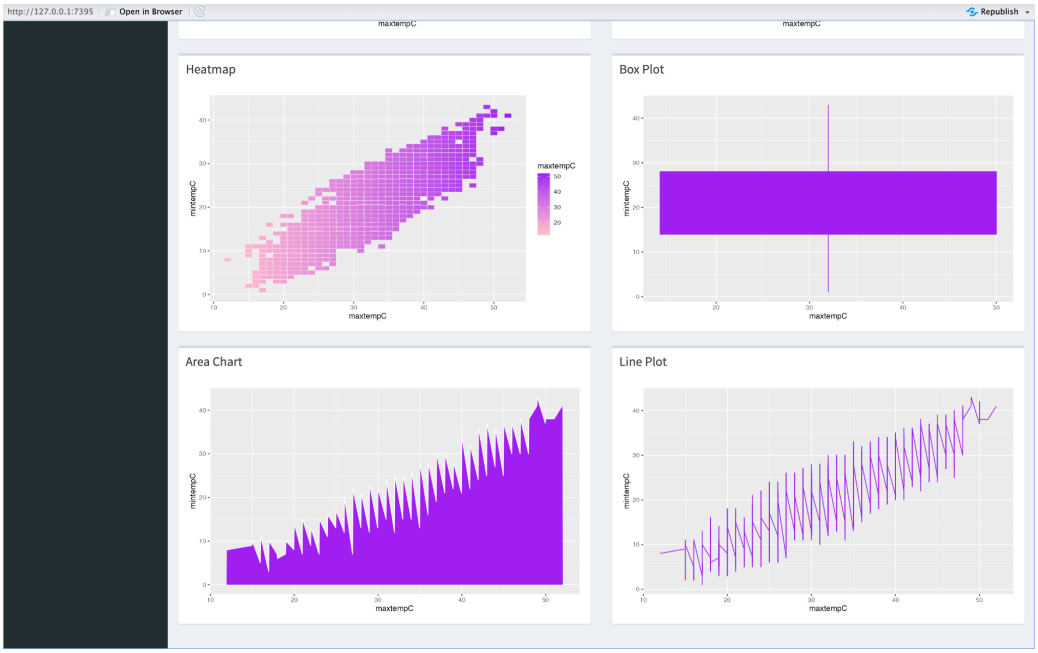
Weather Dashboard



The weather dashboard project involves visualizing weather data for 8 different cities in India: Bengaluru, Bombay, Delhi, Hyderabad, Jaipur, Kanpur, Nagpur, and Pune. The dataset includes information on various weather parameters such as maximum and minimum temperature, total snowfall, sun hours, dew point, wind chill, cloud cover, humidity, pressure, temperature, visibility, and wind speed.

Dataset source: we have collected our data "historical weather data for india" from https://www.kaggle.com/datasets/hiteshsoneji/historical-weather-data-for-indian-cities?select=pune.csv.

We have created a dashboard that allows users to select one of eight cities and then select attributes to create plots. The available attributes for each city include max temperature, min temperature, snowfall_cm, sunHour, DewpointC, FeelslikeC, heatindex, windchillc, cloud cover, humidity, pressure, temperature, visibility, and wind speed. The dashboard is designed to make it easy for users to quickly explore weather data for each city. They can also choose which attribute to use for the x-axis and y-axis for visualization.

To explore this dataset, we created 8 different plots using various data visualization techniques:
Scatter Plot: We used scatter plots to visualize the relationship between two variables. We plotted maxtempC vs. mintempC to show the relationship between maximum and minimum temperature for each city.
Histogram: We used histograms to visualize the distribution of a single variable. We plotted the frequency distribution of total snowfall in centimeters for each city.
Density Plot: We used density plots to visualize the distribution of a single variable similar to histograms, but with a smoother representation of the distribution. We plotted the density of sun hours for each city.

Bubble Chart: We used a bubble chart to show the relationship between three variables. We plotted the relationship between temperature, wind speed, and humidity for each city.
Heat Map: We used a heat map to show the intensity of a variable across different categories. We plotted the cloud cover for each city on a color-coded heat map.
Box Plot: We used box plots to show the distribution of a variable across different categories. We plotted the distribution of dew points for each city.
Area Chart: We used area charts to show the trend of a variable over time. We plotted the trend of temperature for each city over the course of a month.
Line Plot: We used line plots to show the trend of a variable over time similar to area charts but without the filled area. We plotted the trend of wind speed for each city over the course of a month.

Overall, this dashboard provides a powerful tool for exploring weather data for each of the eight cities. Users can quickly and easily create plots that allow them to understand the relationships and distributions of the different attributes.