

# COVID-19 Vaccination Dashboard - Code Explanation

## 1. Imports & Config

- streamlit: For UI components.
- pandas: For data processing.
- plotly.express: For interactive charts.
- json: To load GeoJSON files.
- Page is set to wide layout with a custom title.

## 2. Styling

- Loads a custom 'style.css' file to improve the look and feel of the dashboard.

## 3. Load Data

- Reads 'covid\_vaccine\_statewise.csv' using pandas.
- Drops rows where the state is missing.
- Converts the 'Updated On' column into a datetime object.

## 4. Aggregate Key Metrics

- Calculates total 1st and 2nd doses administered.
- Also computes gender-wise totals.

## 5. Title & Metric Cards

- Displays a big title using HTML.
- Shows 4 metric cards (1st Dose, 2nd Dose, Male, Female) with emojis.

## 6. Top 5 States by Dose

- Groups data by state and sorts to find the top 5 states for 1st and 2nd dose.
- Bar charts display this data.

## 7. Pie Chart - Gender

- Pie chart created using plotly to show male vs female vaccination counts.

## **8. Time Series - Trends**

- Groups data by date to visualize the trend of vaccine administration over time.
- Line chart created using plotly.

## **9. Choropleth Map**

- Groups data by state to calculate 1st dose totals.
- Loads a GeoJSON file of Indian states.
- Matches names and generates a choropleth map using plotly.

## **10. Data Explorer**

- Dropdown to select a state.
- Displays last 10 rows of vaccination data for the selected state.

## **11. Footer**

- Displays a footer with your name and DSBDA project credit.

## **DSBDA Concepts Applied**

- Data Cleaning: Dropping NaNs and converting datatypes.
- Data Transformation: Aggregation using groupby.
- Visualization: Pie chart, bar chart, line chart, choropleth map.
- Dashboard Development: Using Streamlit to make an interactive dashboard.
- Geo Visualization: State-wise map of vaccinations.