CS661 PROJECT

Global YouTube Stats Dashboard

Dr. Soumya Dutta
Dept. of CSE, IIT Kanpur

Project Members:

- Armeet Luthra 200185
- Rajarshi Dutta 200762
- Sourit Saha 200998
- Ritam Jana 200798
- Ojsi Goel 200653
- Sushmita 201027
- Yash Goel 201142
- Jatin Chauhan 200469
- Ishaan Maheshwari 200454

CONTENTS

INTRODUCTION

- **Project Focus**: Analyze YouTube's trending video data to understand video popularity and viewer engagement.
- **Techniques Applied**: Data preprocessing, statistical analysis, and graphs and charts plotting, using Python and its libraries.
- **Output**: Development of an interactive dashboard with Dash and Plotly, providing insights into factors driving video success.
- **Objective**:
  - Identify patterns and trends in viewer engagement with trending YouTube videos.
  - Explore how video category, publish time, and content type influence popularity.
  - Ensure data integrity through rigorous data processing techniques for meaningful analysis.
- **Significance**: Offers valuable insights for content creators, marketers, sociologists, and platform developers about the dynamics of online video content and aids in strategic decision-making.

DATASET DESCRIPTION

- **Dataset Source**: Kaggle
- **About**: Global YouTube Statistics 2023
- **Collection Method**: compiled from various reputable sources, ensuring accuracy and reliability of the information
- **Features Included**: subscribers, uploads, views, country of origin, published date, earnings, channel type etc.
- **Coverage**: Includes data from 50 countries
- **Link to Dataset**: Dataset Link

LIBRARIES USED

Plotly Express

- High-level data visualization tool within the Plotly ecosystem.
- Used for: Creating interactive and static charts such as trend lines, bar charts, and scatter plots.
- Benefits: Simplifies complex data visualization, offers dynamic updating, and integrates seamlessly with Dash.

Dash-Bootstrap Components

- Library providing Bootstrap components for Dash.
- Used for: Styling and laying out the dashboard effectively, making it responsive and visually appealing.
- Benefits: Eases dashboard styling, enhances UI without extensive CSS/HTML knowledge, ensures modern look and feel.

Dash

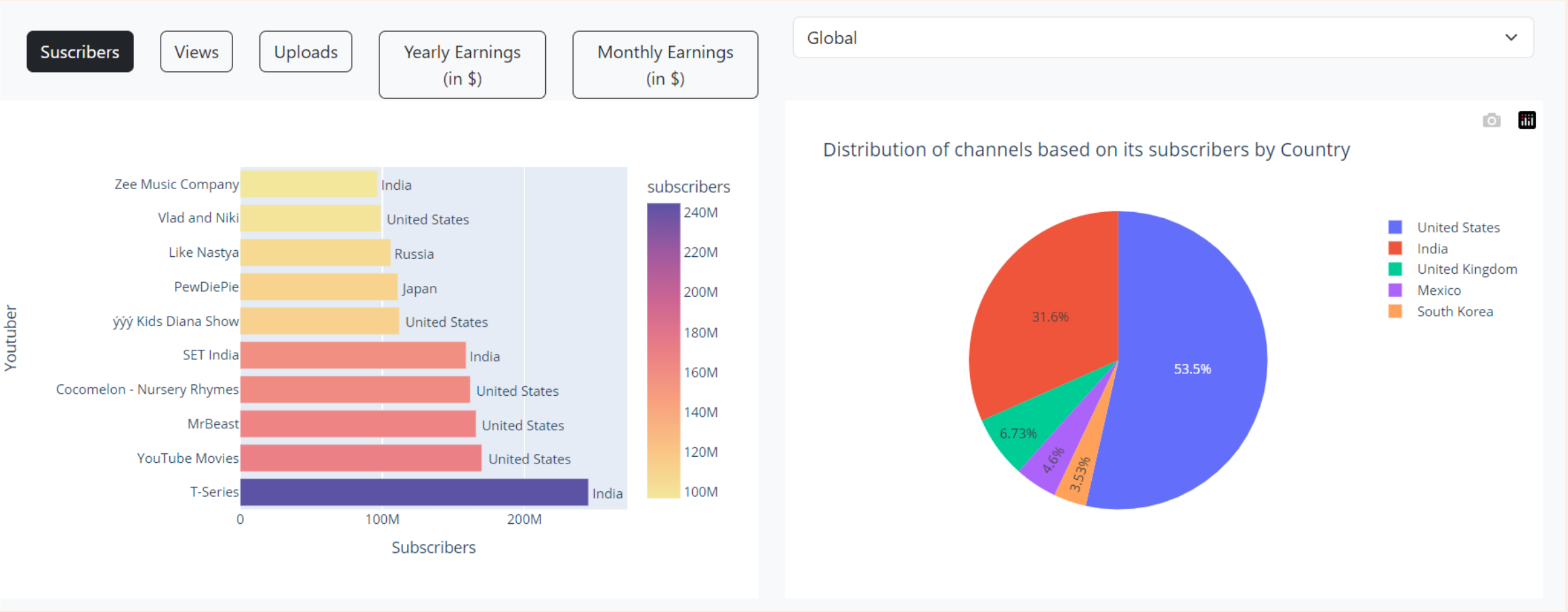
- Web application framework designed for data analysis apps in Python.
- Used for: Building the interactive web-based dashboard that displays visualizations.
- Benefits: Allows for real-time data updates without deep web development skills; enhances interactivity and user engagement.

Key Contributions

- Integration of advanced visualization and web technologies to create an accessible, interactive online tool.
- Facilitates the deployment of complex analytics into user-friendly interfaces, broadening accessibility to non-technical audiences.

EXPERIMENTS

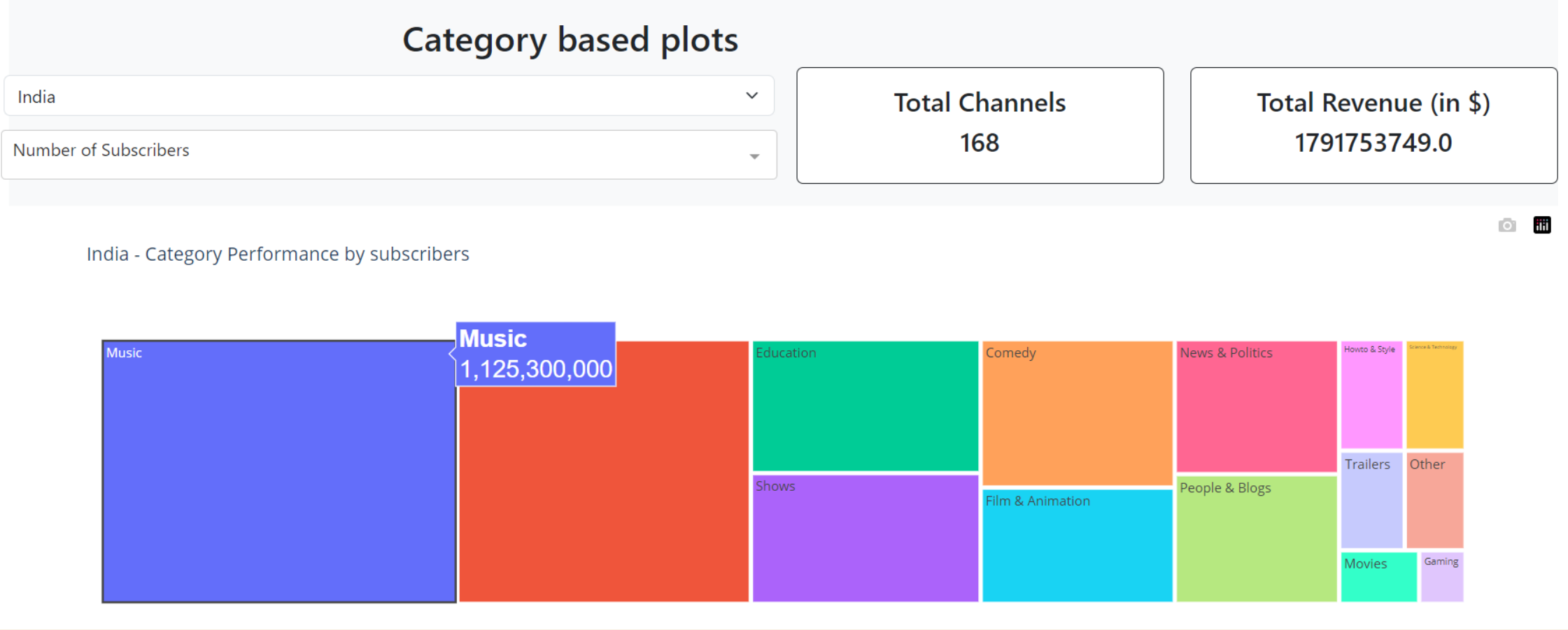
CHANNEL & COUNTRY-BASED OVERVIEW



Nature of Plots used: Bar Chart and Pie Chart

EXPERIMENTS

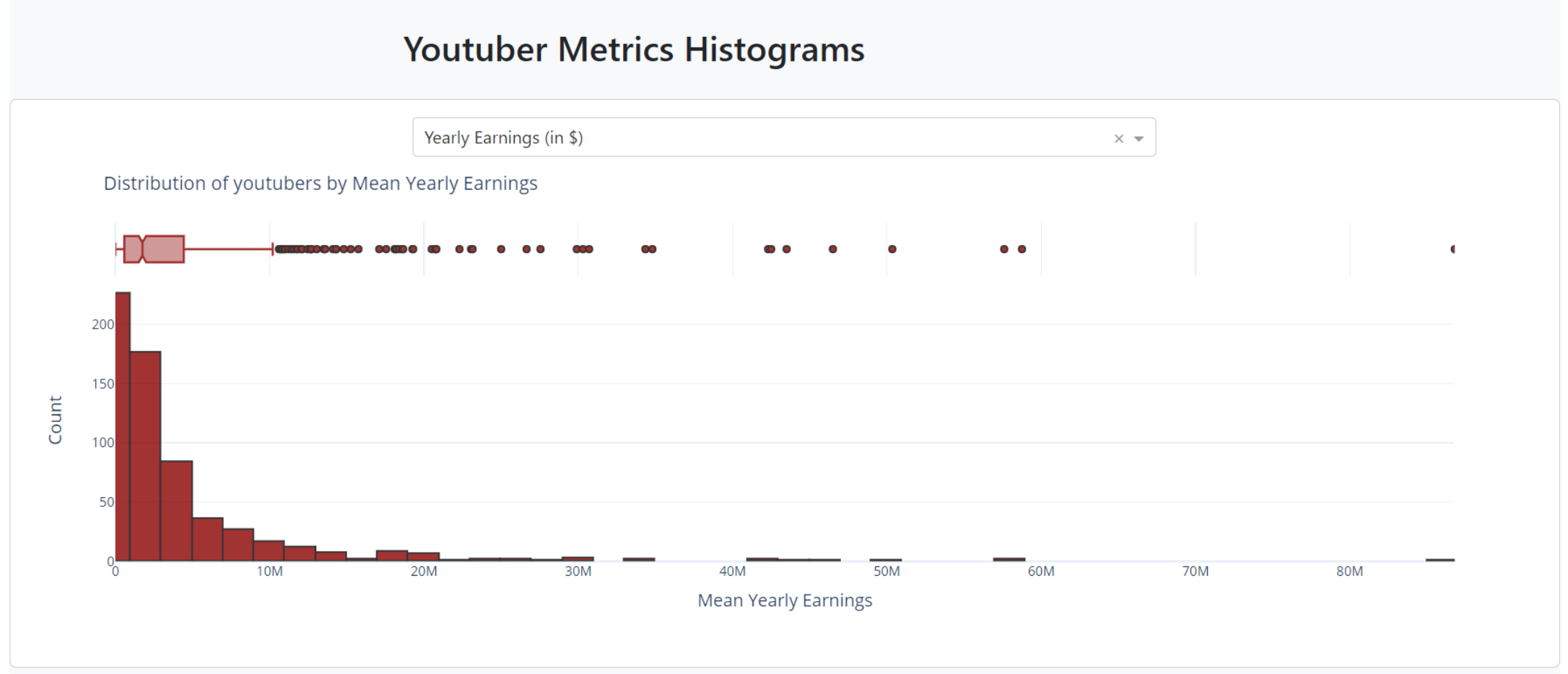
CATEGORY-BASED PLOTS



Nature of Plots used: TreeMap Plot

EXPERIMENTS

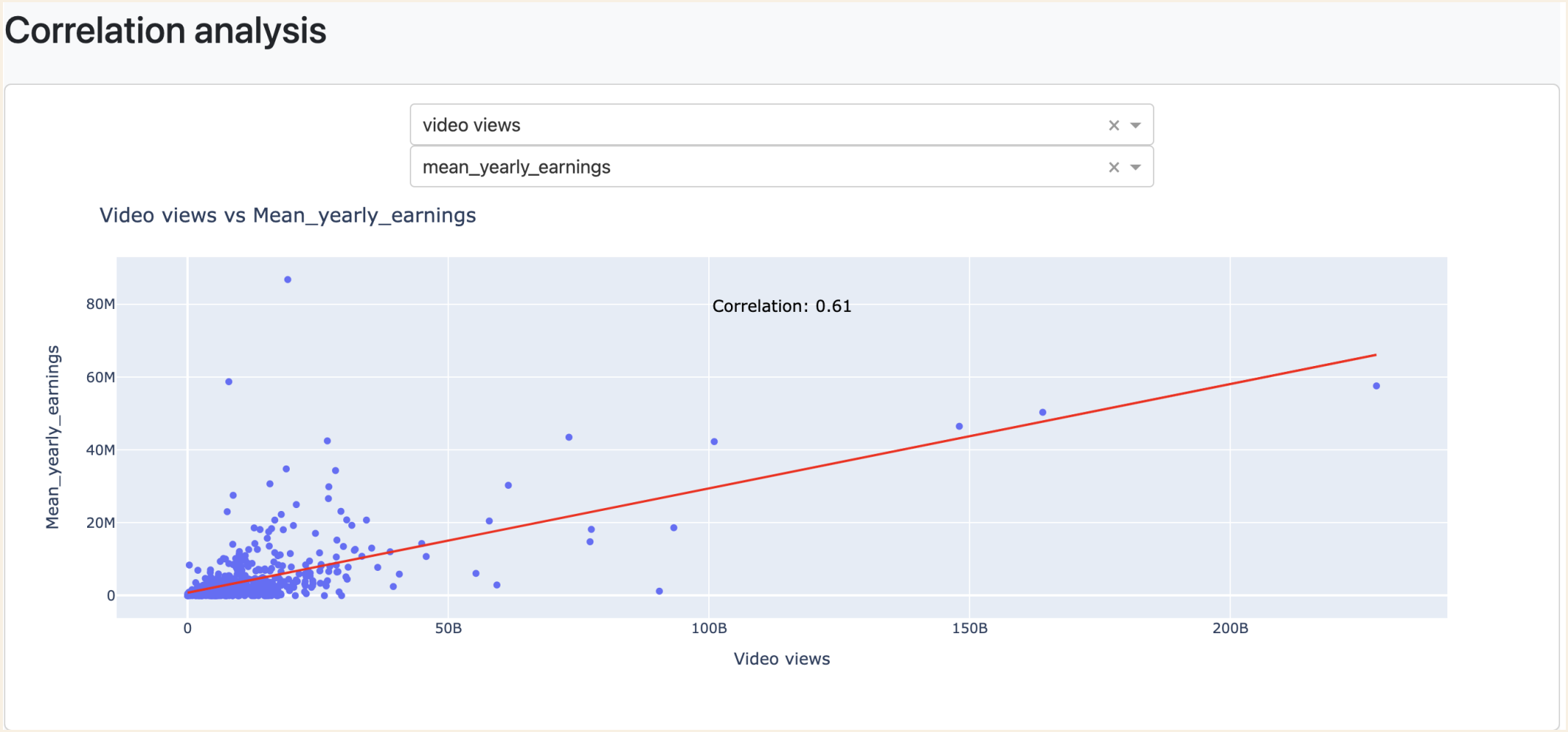
DISTRIBUTION ANALYSIS



Nature of Plots used: Histogram

EXPERIMENTS

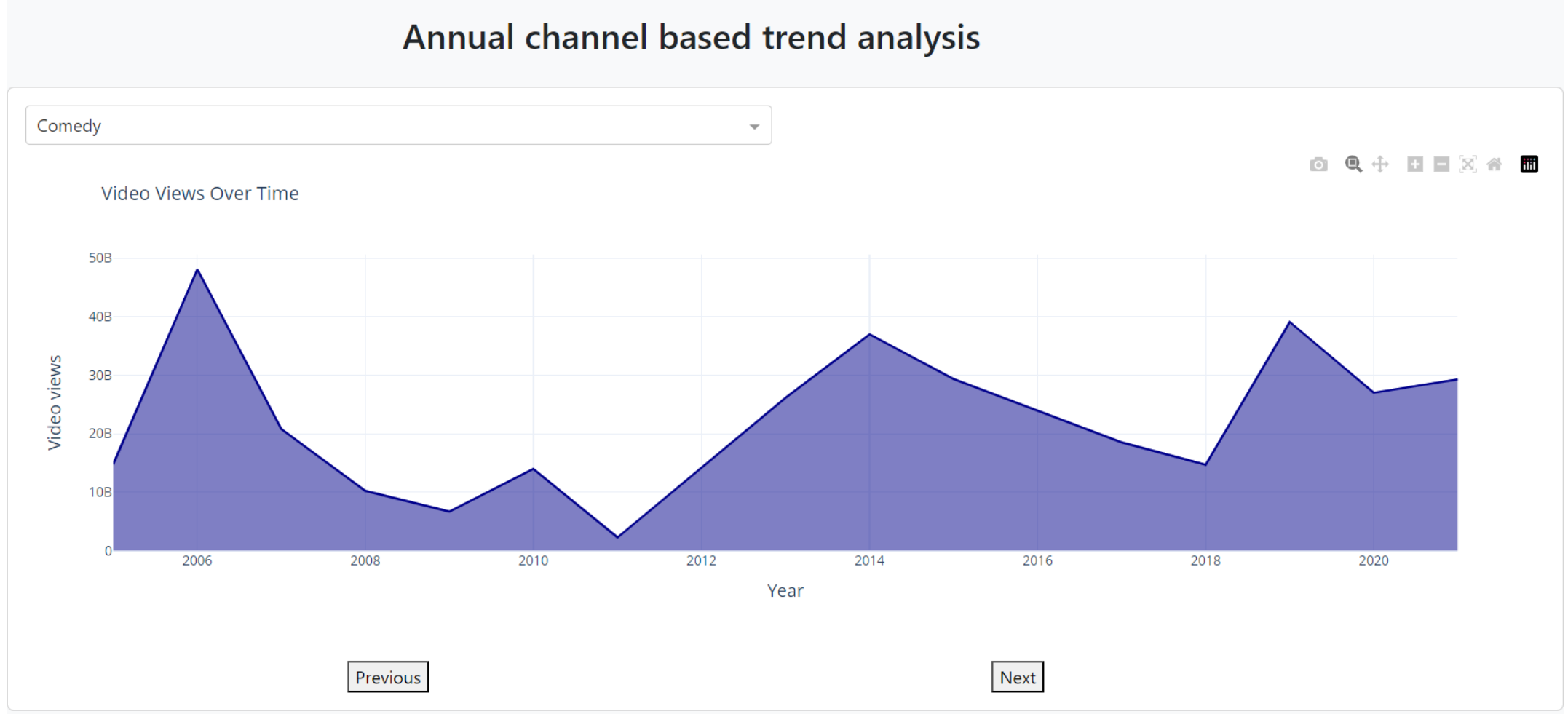
CORRELATION ANALYSIS



Nature of Plots used: Scatter Plot

EXPERIMENTS

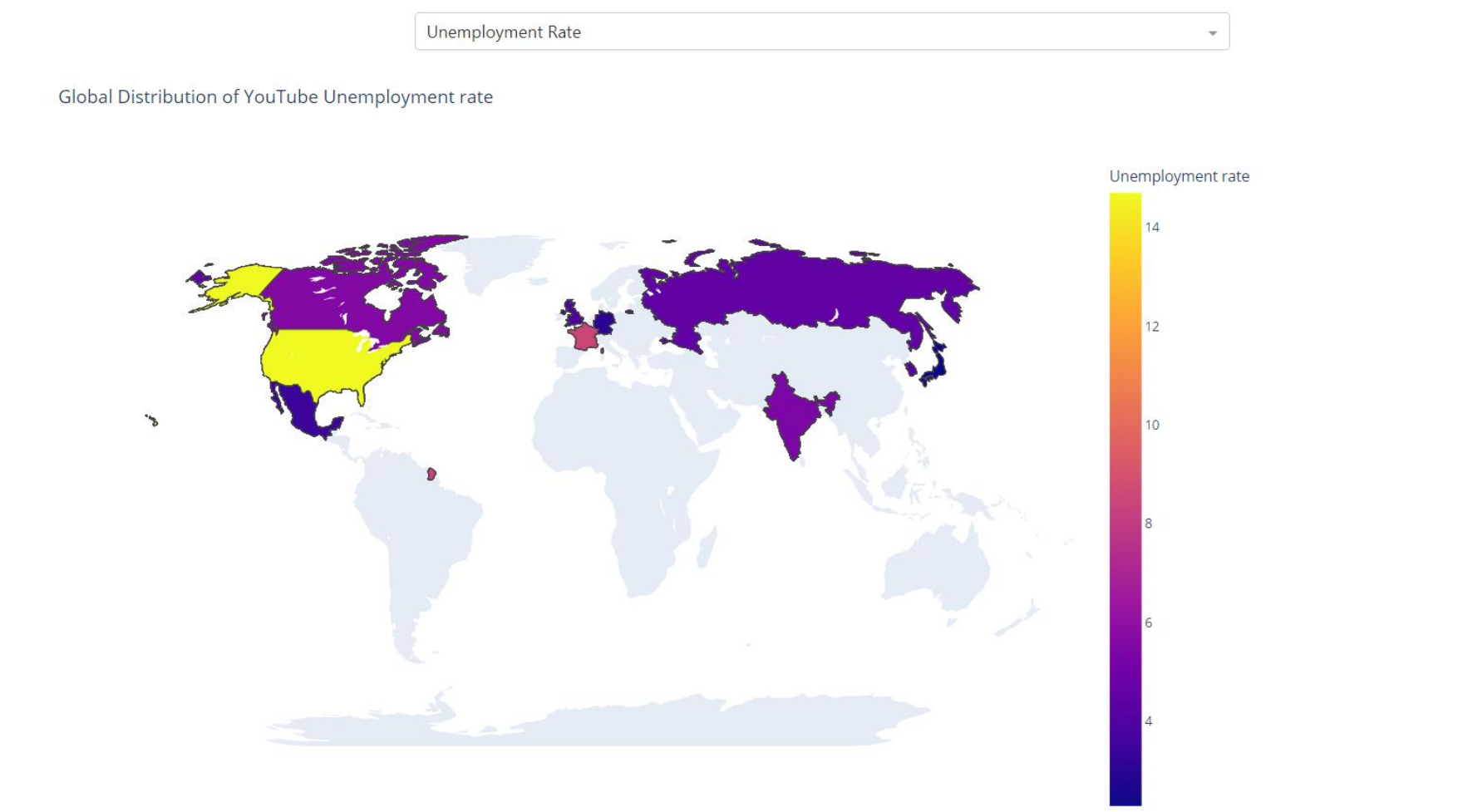
ANNUAL TREND ANALYSIS



Nature of Plots used: Line Chart

EXPERIMENTS

REGION-BASED STATISTICS



Nature of Plots used: Global Visualisation

DASHBOARD OVERVIEW

Source : https://yt -final-dashboard -2.onrender.com/ Web Viewer Terms | Privacy & Cookies Edit

- Link to the Dashboard: https://yt-final-dashboard-2.onrender.com/

CONCLUSION

- **Successful Analysis**: The project effectively utilized statistical analysis to explore YouTube's trending video data, revealing key patterns in viewer engagement and video popularity.
- **Interactive Dashboard**: Developed an interactive dashboard using Dash and plotly, which serves as a powerful tool for visualizing the dynamics behind video success on YouTube.
- **Insightful Findings**:
  - Identified significant trends and patterns in trending YouTube videos across different regions and channel types.
  - Demonstrated the impact of factors such as video category, publish time, and content type on a video's popularity.
- **Value to Stakeholders**:
  - Provided valuable insights for content creators and marketers to strategize effectively.
  - Offered a useful resource for sociologists and platform developers interested in digital culture and user behavior.

WORK DISTRIBUTION

Task	Member(s)
Project Ideation	Everyone
Data Preprocessing	Rajarshi, Armeet, Ojsi
Channel & country based analysis plots	Sourit, Ishaan
Category-based plots	Rajarshi
Distribution analysis and related plots	Armeet
Annual channel-based trend analysis and plots	Yash, Jatin
Correlation analysis and related plots	Armeet, Sourit
Region-based statistics and related plots	Ojsi, Sushmita
Front end: Dashboard UI	Ritam
Web deployment	Rajarshi

THANK YOU

GitHub Repository: Rajarshi1001/CS661_Project