Group – 1

Total Members: 9

Project Proposal: Social Media Engagement Patterns in India

1. Introduction

We propose to analyze social media engagement patterns in India with a in-depth and data-driven approach, focusing on:

- Which platforms are most used,
- What types of content people engage with,
- Differences in patterns across age groups, gender, and regions,
- Problems associated with excessive usage,
- Correlations between social media use and aspects like mental well-being, productivity, or sleep,
- Predictive insights on future platform engagement trends.

The project will combine both straightforward and advanced analytics, ensuring meaningful and detailed visualizations that go beyond simplistic representations.

2. Research Questions

- Which platforms are most popular across different age groups, genders, and regions?
- What types of content (e.g., reels, memes, news, educational) are most consumed?
- What are the common side effects reported due to overuse (e.g., anxiety, fatigue, sleep issues)?
- How do engagement patterns vary across states and urban/rural settings?
- Is there a measurable correlation between time spent on social media and reported impacts on mental health, productivity, or sleep quality?
- How does platform usage evolve over time, and what are the trends or spikes during major events?

3. Data Collection

We plan to gather data from:

- Kaggle and Public Datasets – Social media reports, digital engagement surveys,
- Statista and DataReportal – For up-to-date platform usage statistics,

- Existing Reports on Indian Digital Behavior – To supplement gaps in data.

4. Analytical Approach

Our expanded analytical framework includes:

- Descriptive Statistics: Percentages, frequencies, and distributions,
- Comparative Analysis: Platform use by age, gender, and region,
- Correlation & Impact Study: Exploring relationships between usage time and reported problems (e.g., anxiety, reduced sleep, decreased productivity),
- Time Series Analysis: Tracking platform usage trends over the years, highlighting spikes during key events,
- Interactive Platform Comparison Dashboard: A user-friendly interface allowing comparisons across platforms on usage, demographics, engagement patterns, and regional preferences.

5. Visualizations

We will use:

- Bar Charts: For platform popularity comparisons,
- Pie Charts & Sunburst Charts: For content type consumption, demographic breakdowns,
- Line Charts: To depict usage trends over time,
- Heatmaps: Showing regional intensity of platform usage across Indian states,
- Scatter Plots & Correlation Matrices: To visualize relationships between usage time and its impacts,
- Interactive Dashboard (Dash/plotly): For dynamic comparisons and insights at a glance.

6. Tools and Software

- Python (Pandas, Matplotlib, Plotly): Data analysis and visualizations,
- Dash/Plotly Dashboards: To build interactive comparison tools,

7. Timeline

Week	Task
1	Data cleaning, integration of public datasets
	Exploratory analysis, initial visualizations
2	Develop correlation & impact analysis
	Build interactive platform comparison dashboard
	Finalize results, refine visualizations, compile report and dashboard presentation

8. Expected Outcomes

- A comprehensive, data-driven understanding of social media engagement patterns in India,
- Detailed visual insights into usage differences across age, gender, and regions,
- Correlations between social media usage and its potential impacts,
- Identification of key trends and forecasts for future engagement,
- An interactive platform comparison dashboard for dynamic exploration of the findings.