Infosys Springboard Virtual Internship 6.0 Completion Report

Team Details

Batch Number - 2

Start date – 4th SEPTEMBER 2025

Names:

Atul Parashar
Oshin Paul
Prashanta Upadhyay

Internship Duration: 8 Weeks

1. Project Title

ElectViz Election Data Visualization for Media

2. Project Objective

The primary goal of this **ElectViz Election Data Visualization for Media** project was to design and develop an **interactive Power BI dashboard** to analyse and visualize **Lok Sabha Election data** in a meaningful way. The project aimed to make complex election statistics more understandable and accessible through clear visualizations and insights.

Main Objectives:

- To collect, clean, and organize large election datasets for analysis.
- To create interactive dashboards that display key election trends such as **party-wise performance, candidate profiles, and comparison of results** across multiple years.
- To help users quickly interpret the data using visual tools like **charts, graphs, and slicers** in Power BI.
- To apply theoretical knowledge of **data analytics, visualization, and business intelligence** in a practical, real-world scenario.
- To demonstrate how **data-driven insights** can assist media organizations, researchers, and the public in understanding election patterns.

The project's core objective was to transform **raw data into actionable insights** using Power BI's advanced visualization capabilities. It focused on showing how data analytics can simplify decision-making and storytelling through interactive visuals.

This project holds strong relevance to organizations, especially in sectors like **media and research**, where large volumes of data need to be analysed quickly to inform the public and

decision-makers. It demonstrates how **data visualization tools** can support transparency, comparative analysis, and effective communication of statistical data.

Additionally, through this project, I aimed to:

- Gain practical experience in handling real-world data.
- Strengthen my analytical and technical skills.
- Understand the complete process — from **data extraction and cleaning to visualization and reporting**.

In summary, the project's main objective was to **analyse, interpret, and present electoral data effectively** using Power BI, providing a dynamic and user-friendly dashboard that supports **data-driven insights and decision-making**.

3. Project description in detail

This **ElectViz Election Data Visualization for Media** project successfully demonstrates how Power BI can be used to turn large datasets into powerful visual analytics. The dashboard developed provides comprehensive insights into India's Lok Sabha elections, offering a dynamic tool for data-driven understanding, comparison, and decision-making. It bridges the gap between raw information and meaningful interpretation, showcasing the power of visualization in today's data-centric world.

1. Project Overview

The project titled **"ElectViz Election Data Visualization for Media"** focuses on transforming raw electoral data into a visually interactive dashboard that provides deep insights into the **Lok Sabha Election results** across multiple years. The idea behind the project was to analyse trends in party performance, candidate background, and seat distribution in an intuitive and user-friendly manner.

By leveraging the analytical and visualization capabilities of **Microsoft Power BI**, this project demonstrates how data analytics can help in understanding large-scale political data effectively. The dashboard presents information such as **party-wise wins, candidate details, and comparison between election years**, enabling users to explore insights dynamically.

---

2. Purpose of the Project

The main purpose of this project was to:

- Present complex election data in a simple and interactive format.
- Help users identify **patterns, trends, and shifts** in political performance.
- Demonstrate the real-world application of **Power BI and Business Intelligence tools** in data interpretation.

- Create a reusable and scalable dashboard that can be updated with new election data for future analysis.

The project also aimed to **enhance decision-making and public awareness** by showing how analytical tools can visualize political and social trends clearly.

---

3. Data Description

The data used in this project was related to **Lok Sabha Election results** and included multiple aspects such as:

- **Party-wise performance:** Number of seats won by each political party.
- **Candidate data:** Details of candidates including education, assets, and criminal background.
- **Year-wise results:** Comparative performance between **2014, 2019, and 2024 elections**.
- **Polling data and public surveys:** Showing exit poll results and opinion-based statistics.

The dataset was collected from **publicly available election sources and government websites**, ensuring data accuracy and reliability. The data underwent cleaning and transformation to make it compatible for Power BI analysis.

---

4. Tools and Technologies Used

The following tools and technologies were used in the project:

- **Microsoft Power BI:** For data visualization, dashboard creation, and report building.
- **Microsoft Excel:** Used for initial data cleaning, formatting, and preprocessing.
- **DAX (Data Analysis Expressions):** Applied for creating calculated columns, measures, and dynamic filters.
- **Power Query Editor:** Used for transforming, merging, and shaping the raw data before analysis.

These tools helped in building a robust and interactive dashboard capable of representing large datasets effectively.

---

5. Analytical Process

The project followed a step-by-step analytical workflow:

1. **Data Collection:** Election data was gathered from authentic online sources and official reports.

2. **Data Cleaning:** In Excel and Power BI Query Editor — removing null values, duplicates, and inconsistencies.
3. **Data Transformation:** Converted the data into structured tables suitable for modelling.
4. **Data Modelling:** Established relationships between tables (e.g., party, year, and candidate data).
5. **Visualization Design:** Created multiple pages in Power BI — each focusing on a different analytical aspect:
    - **Page 1:** Overview of total seats and vote share by parties.
    - **Page 2:** Candidate-wise distribution by party.
    - **Page 3:** Candidate background – education, assets, and criminal cases.
    - **Page 4:** Comparison of party performance across years.
    - **Page 5:** Poll results and public opinion visualization.
6. **Insights and Reporting:** Extracted and summarized patterns, observations, and visual conclusions from the data.

---

6. Key Findings

The analysis led to several key insights:

- Major national parties maintained dominance in certain regions, while smaller parties gained in specific states.
- There was a visible **shift in voter preference** between election years.
- Candidate profiles showed that higher education and financial assets were correlated with higher success rates.
- Poll predictions often showed close accuracy with real results, proving the effectiveness of data-based forecasting.
- Visual analytics simplified the understanding of how **party strategies and regional strengths** evolved over time.

---

7. Applications and Real-World Impact

This project has practical applications in various fields:

- **Media and Journalism:** Can be used for live election reporting and visual storytelling.
- **Political Research:** Assists analysts and researchers in studying voter trends and candidate backgrounds.

- **Government Agencies:** Helps in evaluating electoral transparency and candidate diversity.
- **Education and Academia:** Serves as a case study in data analytics, visualization, and Power BI learning.

The real-world impact of the project lies in its ability to make **complex data easy to understand and analyse**, enabling informed decisions based on visual insights.

4. Timeline Overview

Week	Activities Planned	Activities Completed
Week 1	Orientation on project goals, understanding Power BI basics, dataset planning, and team role assignment.	Successfully set up project workspace, established communication channels, and finalized the dataset structure and scope.
Week 2	Data collection and preprocessing in Excel. Cleaning, formatting, and preparing attributes for visualization.	Removed duplicates, handled missing values, standardized column formats, and created calculated fields such as spending category and age group.
Week 3	Import dataset into Power BI and design the initial dashboard structure.	Imported Excel data into Power BI, created data model relationships, and designed a preliminary dashboard layout with KPIs for total revenue and order count.
Week 4	Develop key visuals for customer demographics, spending behaviour, and preferences.	Added bar charts, pie charts, and donut charts to represent age, gender, cuisine type, and spending patterns effectively.
Week 5	Implement interactivity using DAX measures, filters, and slicers.	Created DAX formulas for total revenue, average rating, and discount rate. Added slicers for age, gender, and platform to make the dashboard dynamic.

Week 6	Testing and debugging of visuals, data relationships, and dashboard responsiveness.	Conducted performance checks, corrected mismatched relationships, aligned visuals, and optimized page navigation buttons.
Week 7	Mentor review and feedback integration. Refinement of visuals and insights section.	Incorporated mentor feedback, enhanced visual themes and formatting, and added key insights summaries for better presentation flow.
Week 8	Final presentation and documentation preparation.	Delivered the final Power BI dashboard presentation, compiled the internship completion report, and submitted all deliverables on time.

5a. Key Milestones

Milestone	Description	Date Achieved
Project Kickoff	The project began with a detailed understanding of the Food Trends Analysis theme under the F&B domain. The team defined the problem statement, outlined objectives, distributed individual responsibilities, and finalized the scope of work. Initial dataset planning and tool setup in Microsoft Excel and Power BI were also completed during this stage.	15th September ,2025
Prototype/First Draft	The first version of the Power BI dashboard was created using the cleaned dataset. Key performance indicators (KPIs) such as Total Revenue, Average Discount, and Total Orders were visualized. The basic structure of the dashboard was established, including	22nd September ,2025

	charts for demographics, platform distribution, and customer preferences.	
Mid-Term Review	An internal review and mentor discussion were conducted to evaluate the dashboard's accuracy, usability, and visual consistency. Based on feedback, the team enhanced interactivity by adding slicers, DAX measures, and tooltips. Colour schemes, layouts, and fonts were refined for better clarity and alignment with Infosys design standards.	6th October ,2025
Final Submission	All three dashboard pages — Sales Overview, Customer Insights, and Product Analysis — were completed and reviewed for data integrity and performance. The team finalized the Power BI report and ensured all visuals were dynamic and fully functional. The project report and supporting documentation were prepared for submission.	20th October ,2025
Presentation	The completed project was presented to mentors and peers, highlighting the analytical approach, visualization process, and key insights derived from the data. The presentation demonstrated how data analytics can help businesses in the F&B sector understand customer behaviour, enhance engagement, and optimize performance.	29th October, 2025

5b. Project execution details

The execution of this project involved a systematic and organized approach that combined **data collection, data preparation, analysis, and visualization**. The goal was to develop a fully interactive **Power BI dashboard** that presents the **Lok Sabha Election data** in a structured and visually appealing format. The execution process was divided into multiple stages to ensure accuracy, clarity, and efficiency throughout the development.

---

1. Planning and Understanding the Objective

Before starting the technical work, I clearly defined the **scope and purpose** of the project. The main objective was to analyse the **party-wise performance, candidate details, and comparison of results** across different election years (2014, 2019, and 2024).

I began by preparing a **project plan** that outlined:

- The data sources to be used.
- The types of analyses to be performed.
- The visuals and metrics to be represented on each dashboard page.
- The timelines for data collection, cleaning, visualization, and review.

This stage helped in creating a clear roadmap and prevented duplication of effort later in the process.

---

2. Data Collection

The data was collected from **authentic and publicly available election sources**, including official government portals, news sites, and open-source election datasets.

The datasets included:

- Year-wise election results.
- Candidate information such as name, education, assets, and criminal background.
- Party-wise seat distribution and total votes.
- Poll and survey data showing public opinion trends.

This data was downloaded and compiled in **Microsoft Excel** for initial review and preparation.

---

3. Data Cleaning and Preprocessing

After collection, the data was thoroughly cleaned and formatted to make it usable for Power BI. The cleaning process involved:

- Removing duplicates and irrelevant columns.
- Correcting spelling errors and inconsistent entries (like party names).
- Replacing missing or blank values.
- Standardizing numerical data such as total votes and asset values.
- Converting data types (text, numbers, dates) for accurate aggregation.

This process was done using **Excel and Power Query Editor** in Power BI. Clean and structured data is essential for correct visual outputs, so this was one of the most crucial stages.

---

4. Data Modelling and Relationships

Once the data was cleaned, I imported it into Power BI and created a **data model**.
Different tables such as *Party Data, Candidate Data, and Year-wise Results* were connected through relationships (e.g., Party ID or Year).

This step ensured that when the user applied filters or slicers, all related visuals updated dynamically and accurately. The model was optimized to maintain efficiency and prevent duplication of data.

---

5. Visualization and Dashboard Design

This was the most important and creative part of the execution. The dashboard was designed using a **multi-page layout**, with each page focusing on a different analytical aspect of the election.

Page 1 – Overall Election Overview

- Displayed total seats, votes, and party-wise performance.
- Included visuals like bar charts and maps for geographical representation.

Page 2 – Candidates by Party

- Focused on how many candidates each party fielded and how many won.
- Used clustered bar charts and donut visuals for clarity.

Page 3 – Candidate Profile Analysis

- Displayed insights about education levels, asset ownership, and criminal records of candidates.
- Helped in understanding the background and diversity among elected representatives.

Page 4 – Year-wise Comparison

- Compared performance of major parties across 2014, 2019, and 2024 elections.
- Used line and bar charts to highlight trends and seat changes over years.

Page 5 – Polls and Opinion Data

- Showed exit poll predictions versus actual results.
- Provided visual representation of voter preferences and prediction accuracy.

Each visual was selected thoughtfully to ensure easy interpretation of data. Color coding, tooltips, and slicers were used to improve interactivity and aesthetics.

---

6. DAX Calculations and Measures

During the design process, I used **DAX (Data Analysis Expressions)** to create custom calculations such as:

- Total Seats Won = SUM(Seats)
- Vote Share % = (Party Votes / Total Votes) * 100
- Year-on-Year Seat Growth
  These calculations allowed dynamic updates in visuals when slicers or filters were applied.

---

7. Testing and Validation

Once the dashboard was complete, I thoroughly tested all visuals to ensure:

- Accuracy of relationships and measures.
- Correct updates when filters were changed.
- Proper display of charts across all pages.

Any inconsistencies or incorrect mappings were fixed during this stage. This ensured that the final dashboard provided **accurate and reliable insights**.

---

8. Documentation and Reporting

After successful testing, I documented the **workflow, structure, and analytical findings** in a report. The documentation included:

- Explanation of each dashboard page.
- Key observations derived from the visuals.

- Screenshots of the Power BI dashboard.
  This report served as a complete guide to understanding the project execution and results.

---

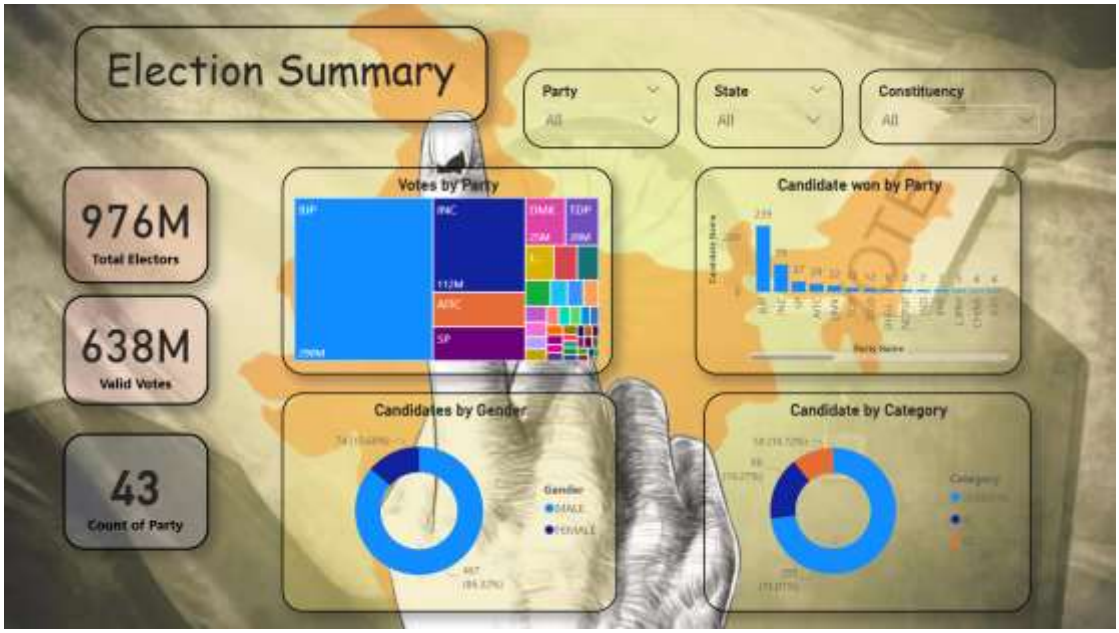
9. Final Presentation and Delivery

In the final stage, the Power BI dashboard was presented as part of the internship deliverable. The project was explained page by page, highlighting how each visualization contributes to the overall understanding of the election data.
The presentation demonstrated both **technical skills** (data handling and visualization) and **analytical understanding** (interpreting results and insights).

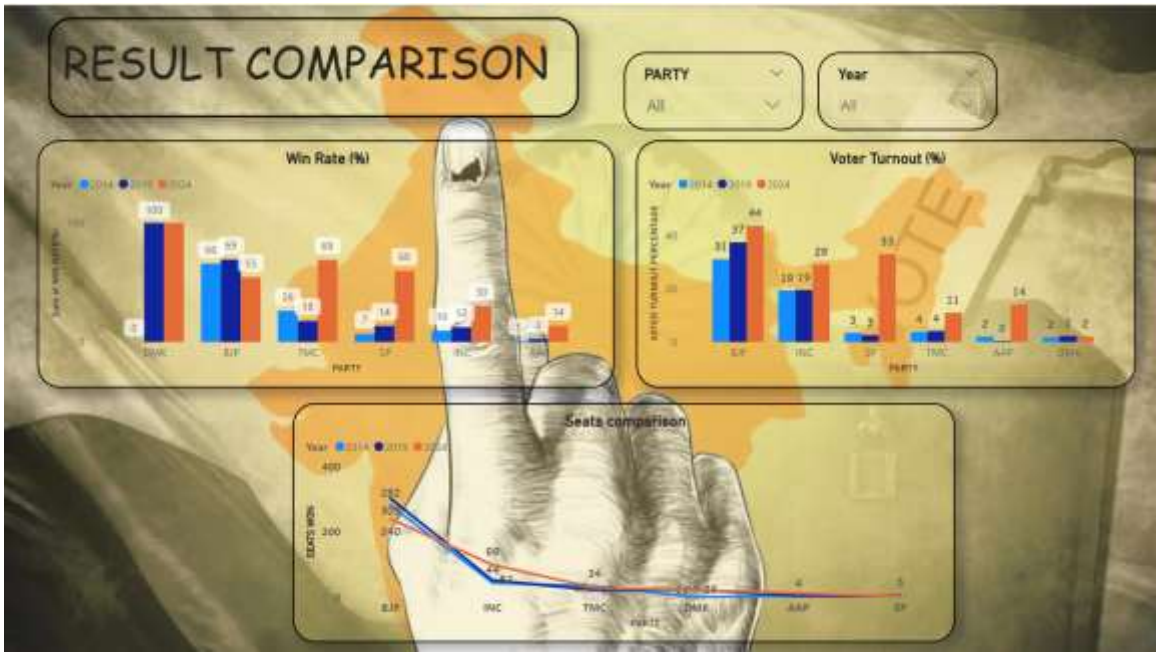
Summary of Execution

- Followed a **structured workflow** from data collection to visualization.
- Applied **data cleaning, modelling, and DAX formulas** for accurate analysis.
- Created a **multi-page, interactive Power BI dashboard** with clear insights.
- Ensured data accuracy, usability, and visual clarity at every step.
- Delivered a professional-level data analytics project demonstrating the **practical application of Power BI** in real-world data interpretation.

6. Snapshots / Screenshots




CANDIDATES DATA
PARTY
All
Year
All
Average assets by Winning Candidates
Sum of criminal cases by party
Education Qualification of Candidates
PARTY


RESULT COMPARISON
PARTY
All
Year
All
Win Rate (%)
Voter Turnout (%)
Seats comparison
PARTY

7. Challenges Faced

During the course of my internship project on **ElectViz Election Data Visualization for Media**, I encountered several challenges in different phases — technical, operational, and communication-related. Each challenge provided a valuable learning experience and helped me develop practical problem-solving skills.

1. Technical Challenges

a) Data Inconsistency and Missing Values:
The raw election data collected from multiple public sources was inconsistent, incomplete, and often formatted differently. This caused errors while importing data into Power BI.
Resolution: I used **Excel** and **Power Query Editor** to clean, merge, and standardize datasets by correcting spellings, handling null values, and aligning formats.

b) Complex Data Modelling:
Creating relationships between multiple tables (party data, candidate data, and year-wise results) initially produced incorrect aggregations and duplicates.
Resolution: I identified unique keys (like *Party-ID* and *Year*) and established correct **one-to-many relationships** in Power BI's data model, ensuring filters and slicers worked accurately.

c) DAX Formula Errors:
Writing calculated measures such as seat share, vote percentage, and year-over-year comparison sometimes resulted in incorrect outputs.
Resolution: I debugged the DAX formulas step-by-step, studied official documentation, and tested measures using Power BI's "Evaluate" function until accurate results were achieved.

d) Performance Optimization:
The dashboard became slow due to large datasets and multiple visuals.
Resolution: I optimized the model by removing unnecessary columns, summarizing data, and minimizing heavy calculations to improve refresh speed.

2. Operational Challenges

a) Time Management:
Balancing the internship tasks with other academic responsibilities was initially difficult.
Resolution: I followed a clear schedule — dividing work into phases (data preparation, modelling, visualization, testing) — which ensured timely completion of milestones.

b) Version Control and File Management:
Frequent changes in datasets sometimes led to confusion and version mismatches.
Resolution: I maintained separate backup files and used systematic naming conventions to track progress and prevent data loss.

---

3. Communication Challenges

a) Explaining Technical Concepts to Non-Technical Audiences:
Presenting Power BI visuals and analytics to teachers or non-technical evaluators was challenging, as they were not familiar with technical terms like DAX or data modelling.
Resolution: I simplified my presentation by using easy-to-understand language, focusing on **insights and conclusions** rather than technical complexity. I also used visuals effectively to support verbal explanations.

b) Feedback Interpretation:
At times, feedback from mentors or peers was general and not specific to technical aspects, making it difficult to implement changes.
Resolution: I sought clarification in meetings and confirmed requirements before making modifications to ensure alignment with expectations.

8. Learnings & Skills Acquired

The internship on **ElectViz Election Data Visualization for Media** was a significant learning experience that enhanced both my technical and professional competencies. Throughout the project, I gained a deeper understanding of data analytics concepts, visualization tools, and project execution strategies that are crucial in real-world applications.

1. Technical Learnings

- **Power BI Proficiency:**
  I learned how to import, clean, and transform raw data using **Power Query Editor** and how to create meaningful **visualizations, slicers, and dashboards**. This included hands-on practice in building interactive reports that deliver valuable insights from complex election datasets.

- **Data Modeling and Relationships:**
  I developed the ability to design efficient **data models** by establishing correct relationships between multiple tables (party-wise, candidate-wise, and year-wise data). I

also learned to manage data hierarchies and handle one-to-many and many-to-one connections.

- **DAX (Data Analysis Expressions):**
  I gained knowledge in writing **DAX formulas** to create calculated measures and columns for vote percentage, seat share, and comparison metrics. This improved my analytical thinking and formula debugging skills.

- **Data Cleaning & Preparation:**
  I learned to handle **incomplete, inconsistent, or duplicate data** using Excel and Power BI tools, ensuring accuracy and consistency before visualization.

- **Analytical Thinking:**
  I developed the skill to identify meaningful patterns, trends, and relationships within election data, such as performance variations among political parties and regional voting patterns across multiple election years.

- **Performance Optimization:**
  Through model tuning and efficient query design, I learned how to **optimize dashboards** for faster performance and smoother user interaction.

---

2. Tools and Technologies Gained

- **Microsoft Power BI** – for building dashboards and performing data visualization.
- **Microsoft Excel** – for data cleaning, preprocessing, and preliminary analysis.
- **DAX & Power Query** – for advanced analytics and transformation operations.
- **Data Modelling Concepts** – to structure datasets for analytical accuracy.

---

3. Soft Skills and Professional Development

- **Problem-Solving Skills:**
  By facing real data issues, I learned how to troubleshoot problems independently and apply logical reasoning to overcome technical challenges.

- **Communication Skills:**
  I improved my ability to explain technical insights clearly to both technical and non-technical audiences using visual storytelling and simple language.

- **Time Management and Planning:**
  Working on multiple dashboards under deadlines taught me to plan tasks effectively, prioritize work, and maintain consistent progress.

- **Team Collaboration:**
  I enhanced my teamwork and coordination skills while discussing ideas, sharing findings, and aligning efforts within the group project setup.

- **Presentation and Reporting:**
  I developed confidence in preparing **professional PowerPoint presentations** and project reports that clearly convey data-driven findings.

4. Domain Knowledge

- Acquired an understanding of **Indian election data patterns**, including party performance, regional variations, and voter behaviour analysis.
- Learned how **data analytics can support decision-making** in governance, policy, and media reporting.

9. Testimonials from team

Atul Parashar

My internship with Infosys Springboard 6.0 on the project *"Election Data Analysis using Power BI"* was a highly enriching and insightful experience. It allowed me to explore the field of data analytics and gain hands-on experience in transforming raw data into meaningful insights through visualization. This project enhanced my technical proficiency in Power BI and strengthened my analytical thinking and problem-solving skills. I sincerely thank my mentor, **Ms. Nithyasri S J**, for her continuous support, motivation, and valuable guidance throughout the internship. This experience has significantly contributed to my confidence and professional growth.

Oshin Paul

My internship under Infosys Springboard 6.0 on *"Election Data Analysis using Power BI"* was an exciting and valuable learning journey. Through this project, I gained practical exposure to real-world data visualization techniques and learned how to interpret and present complex information effectively. The experience helped me develop my analytical, technical, and communication skills. I am deeply grateful to **Ms. Nithyasri S J** for her constant mentorship, encouragement, and insightful feedback during every stage of the project. This internship has been a great stepping stone in enhancing my understanding of data analytics and visualization.

Prashanta Upadhyay

My internship experience with Infosys Springboard 6.0 on the project *"Election Data Analysis using Power BI"* was highly informative and rewarding. It provided me with the opportunity to work on real-time data, analyse voting trends, and create interactive dashboards that translate numbers into actionable insights. This experience improved my technical expertise in Power BI and data interpretation. I sincerely thank **Ms. Nithyasri S J** for her invaluable guidance and motivation throughout this internship. Her support helped me enhance both my analytical mindset and professional confidence in handling data-driven projects.

10. Conclusion

The internship on **ElectViz Election Data Visualization for Media** has been a highly enriching and insightful experience that helped bridge the gap between academic learning and real-world application. It provided an excellent opportunity to practically apply my theoretical knowledge of data analytics, visualization, and interpretation in a meaningful and result-oriented project.

Throughout this internship, I developed strong analytical and technical skills by working with real election datasets, designing data models, and creating interactive dashboards that present political insights in a simplified manner. The process of cleaning, analysing, and visualizing large volumes of election data enhanced my proficiency in **Power BI**, **Excel**, and **DAX**, while also improving my ability to think critically and interpret data logically.

This project also improved my **communication, presentation, and problem-solving skills**, as I learned to explain data findings effectively through visuals and concise storytelling. By understanding the patterns and trends in election data, I gained valuable exposure to how **data-driven insights can support decision-making** in governance, media, and policy-making sectors.

The internship has significantly contributed to my **academic growth** by strengthening my understanding of **data analytics, visualization techniques, and reporting tools**. On a professional level, it has guided me toward pursuing a career in **data analytics, business intelligence, or data-driven research**, aligning perfectly with my long-term career aspirations.

Overall, this internship was not just a technical project but a comprehensive learning journey that enhanced both my analytical and professional skills. It has inspired me to continue exploring the field of **data analytics** and leverage these insights for impactful, evidence-based decision-making in the future.

11. Acknowledgements

We would like to express our heartfelt gratitude to Infosys Springboard for providing this invaluable opportunity to gain practical exposure in the field of Data Analytics and Business Intelligence. The structured learning modules, hands-on projects, and professional mentorship created a truly immersive learning environment that encouraged both technical growth and analytical thinking.

A special note of appreciation is extended to our mentor, Mrs. Nithyasri S J, for her constant guidance, encouragement, and insightful feedback throughout the internship. Her mentorship played a crucial role in helping us refine our dashboard design, ensure data accuracy, and present our findings in a professional and impactful manner.

We are also thankful to the Infosys mentors and the learning community for providing high-quality resources, tutorials, and continuous support throughout the program. These materials greatly enhanced our understanding of Power BI, DAX, and data visualization techniques, allowing us to build a meaningful and well-structured analytical solution.

Finally, we express our sincere gratitude to Infosys for fostering a culture of innovation and learning that encourages students to explore, experiment, and apply technology to real-world business challenges. The experience gained through this internship will remain a cornerstone of our academic and professional journey, motivating us to continue developing as data-driven and responsible professionals.