Project Title:

Visualizing Election Data for a News Company

Project Statement:

In the high-stakes environment of elections, news agencies require accurate, real-time, and historical visualizations to enhance their reporting. This project uses Power BI to integrate public election datasets and build dashboards that deliver insights into vote shares, turnout rates, party trends, and constituency-level performance. These dashboards enable journalists and editorial teams to analyze and present complex electoral data with clarity and accuracy.

Outcomes:

- Unified election data across multiple years and levels (state, national)
- Real-time election result tracking for broadcast and digital coverage
- Visualizations of vote share evolution, turnout patterns, and swing regions
- Party-wise and candidate-wise performance dashboards
- Geographic mapping of election results with filtering capabilities
- AI-driven keyword clustering from candidate bios and manifestos
- Scalable model adaptable to future elections and datasets

Modules to be Implemented:

1. **Data Integration & Modeling**
   - Import and transform election data (CSV, Excel, APIs)
   - Normalize constituency names, candidate details, and vote counts
   - Create a star schema with Fact_ElectionResults, Dim_Candidate, Dim_Constituency, Dim_Party

2. **Historical Trends Dashboard**
   • Visualize vote shares and turnout rates across years
   • Analyze party trends using line graphs and area charts
   • Identify swing constituencies and long-term strongholds

3. **Real-Time Results Dashboard**
   • Live result integration (mock or API)
   • Visuals include vote % bar graphs and seat count indicators
   • Filters for region, party, candidate, and election year

4. **Turnout and Demographics Analysis**
   • Turnout trends by gender, age group, and geography
   • Urban vs. rural voting behavior comparison
   • Heatmaps and pie charts for demographic slices

5. **Party and Candidate Performance Tracker**
   • Analyze win/loss margins, re-election trends
   • Drill-downs to constituency-level data
   • Party-wise and alliance-wise seat share visuals

Week-wise Module Implementation Plan with Deliverables

Week 1–2
Data Integration & Modeling | Cleaned and normalized election datasets, star schema in Power BI
Week 3–4
Historical Trends | Vote share trends, swing analysis, party performance charts
Week 5–6
Real-Time Results | Live election simulation visuals, interactive result panels
Week 7–8
Turnout & Demographics | Heatmaps, demographic filters, urban vs. rural split
Week 9–10
Party & Candidate Insights | Win/loss drilldowns, party dashboards, final report

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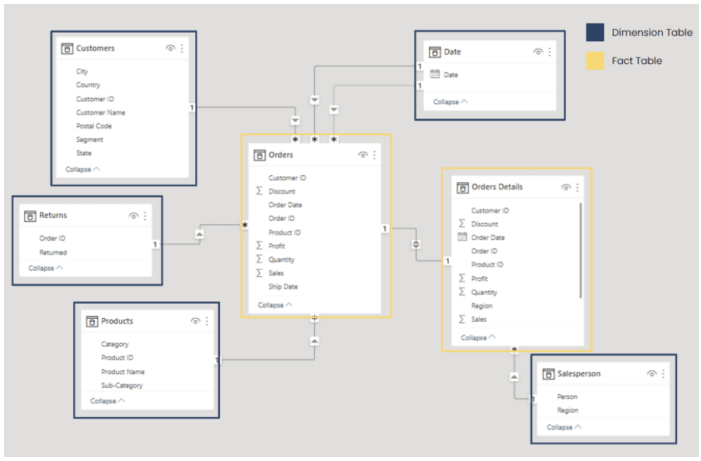
Evaluation Criteria (Milestone-Based)

Milestone 1 (End of Week 2):
• Historical data from multiple elections imported and cleaned
• Star schema with valid relationships across candidates, votes, constituencies

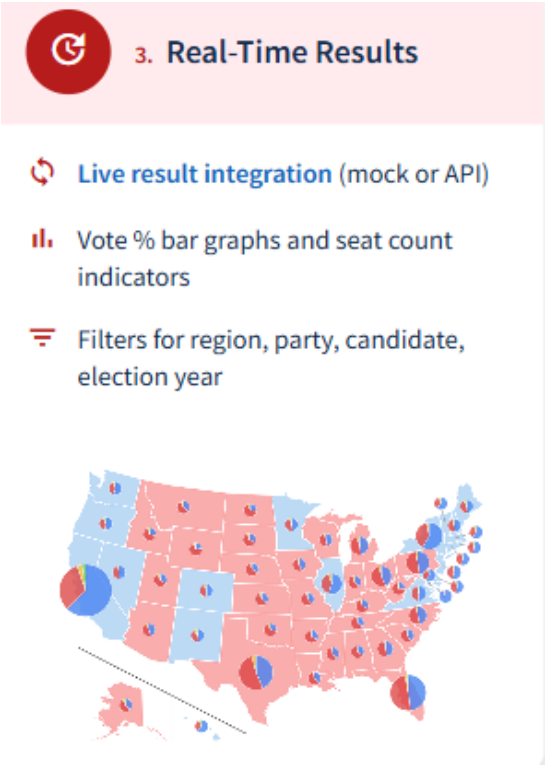


Milestone 2 (End of Week 4):

- Vote share and turnout dashboards complete
- Filter functionality enabled across years and parties

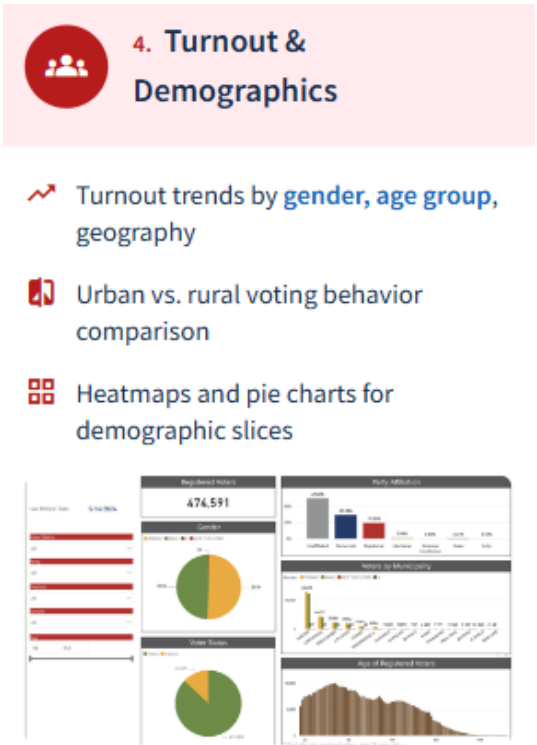
Milestone 3 (End of Week 6):

- Real-time result module simulated with live updates
- Interactive constituency and party-level views



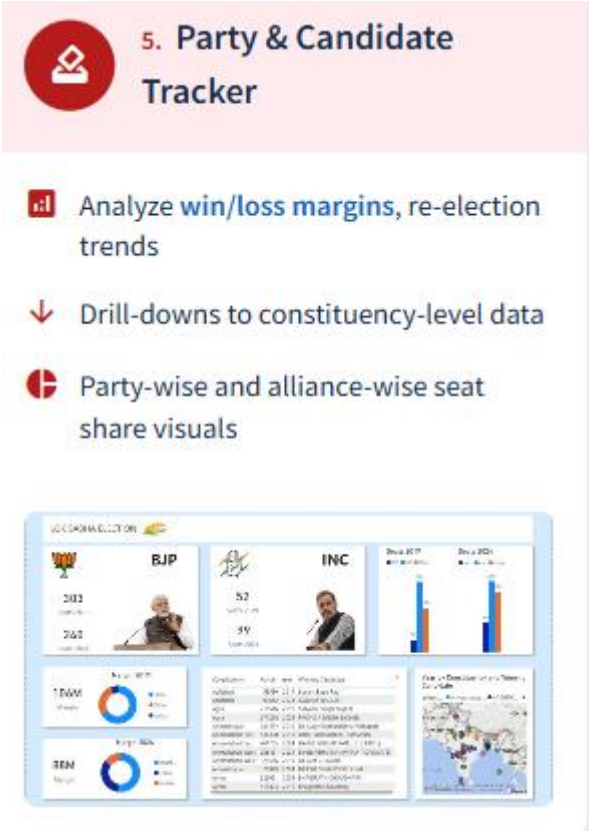
Milestone 4 (End of Week 8):

- Demographic trends and turnout visuals validated
- Drill-through from region to booth-level insights



Milestone 5 (End of Week 10):

- Final dashboards delivered with full interactivity and usability
- Documentation and broadcast-ready visuals prepared



Architecture Diagram

- **Data Ingestion Layer:** Public Election CSVs, JSON APIs
- **Transformation Layer:** Power Query in Power BI
- **Semantic Model:** Star schema with dimension and fact tables
- **Visualization Layer:** Power BI dashboards for editorial and public use

Power BI Architecture