



## MILESTONE 2: DASHBOARD DEVELOPMENT & VISUALIZATION

**Project:** Election Insights Command Center **Phase:** Core Development (Pages 1 & 2) **Status:** Completed

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### DATA MODELLING ARCHITECTURE

**Objective:** To create a robust schema that allows seamless filtering across National and State datasets.

- **Schema Type:** Galaxy Schema (Multiple Fact Tables).
- **Fact Tables (Data):**
  1. national\_cleaned\_enriched (Lok Sabha Data).
  2. state\_cleaned\_enriched (Vidhan Sabha Data).
- **Dimension Tables (Lookups):**
  1. Dim\_State (Common State list for filtering maps).
  2. Dim\_Year (Common Timeline for filtering years).
  3. Party\_Master (Branding table for Logos and Hex Colors).
- **Relationships:** One-to-Many relationships established between Dimensions and Fact Tables to ensure slicers work dynamically across all pages.

### DEVELOPMENT STATUS (DAX)

- **Data Cleaning:** Completed via Python (ETL).
- **DAX Measures:** 28 Core Measures implemented, including:
  - Total Seats Won (Calculated using is\_winner flag).
  - Strike Rate (Calculated as Wins / Contested).
  - Winner Color (Dynamic HEX code assignment for maps).
  - Vote Share % (Context-aware percentage calculation).

etc.

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## DEVELOPMENT PHASE – PAGE 1&2

### I.PAGE 1: NATIONAL ELECTION COMMAND CENTER

**Theme:** "The Macro View" **Purpose:** A high-level dashboard to instantly visualize the status of the national government, majority, and geographic dominance.

#### Visual 1: Year Slicer (Top Right)

- **Type:** Slicer (Dropdown/Tile).
- **Field:** Dim\_Year[year].
- **Why we used it:** It acts as the "Time Machine." It allows the user to switch context between different election cycles (e.g., 1984 vs. 2014) to see how the political landscape shifted.

#### Visual 2: The Headline KPIs (5 Cards)

- **Type:** 5 Separate Cards (with Accent Stripe).
- **What they show:**
  1. **SEATS DECLARED:** (Nat Total Seats Won) - The primary metric for forming a government.
  2. **TOTAL VOTES:** (Nat Total Votes) - Shows the sheer scale of the election.
  3. **VOTER TURNOUT:** (Nat Avg Turnout %) - Highlights democratic participation.
  4. **TOTAL PARTIES:** (Nat Total Parties) - Shows the scale of the political landscape.
  5. **TOTAL CANDIDATES:** (Nat Total Candidates) - Shows the volume of aspirants.
- **Why we used them:** To provide an immediate "Health Check" of the election before the user dives into complex charts.

#### Visual 3: Parliament Majority Chart

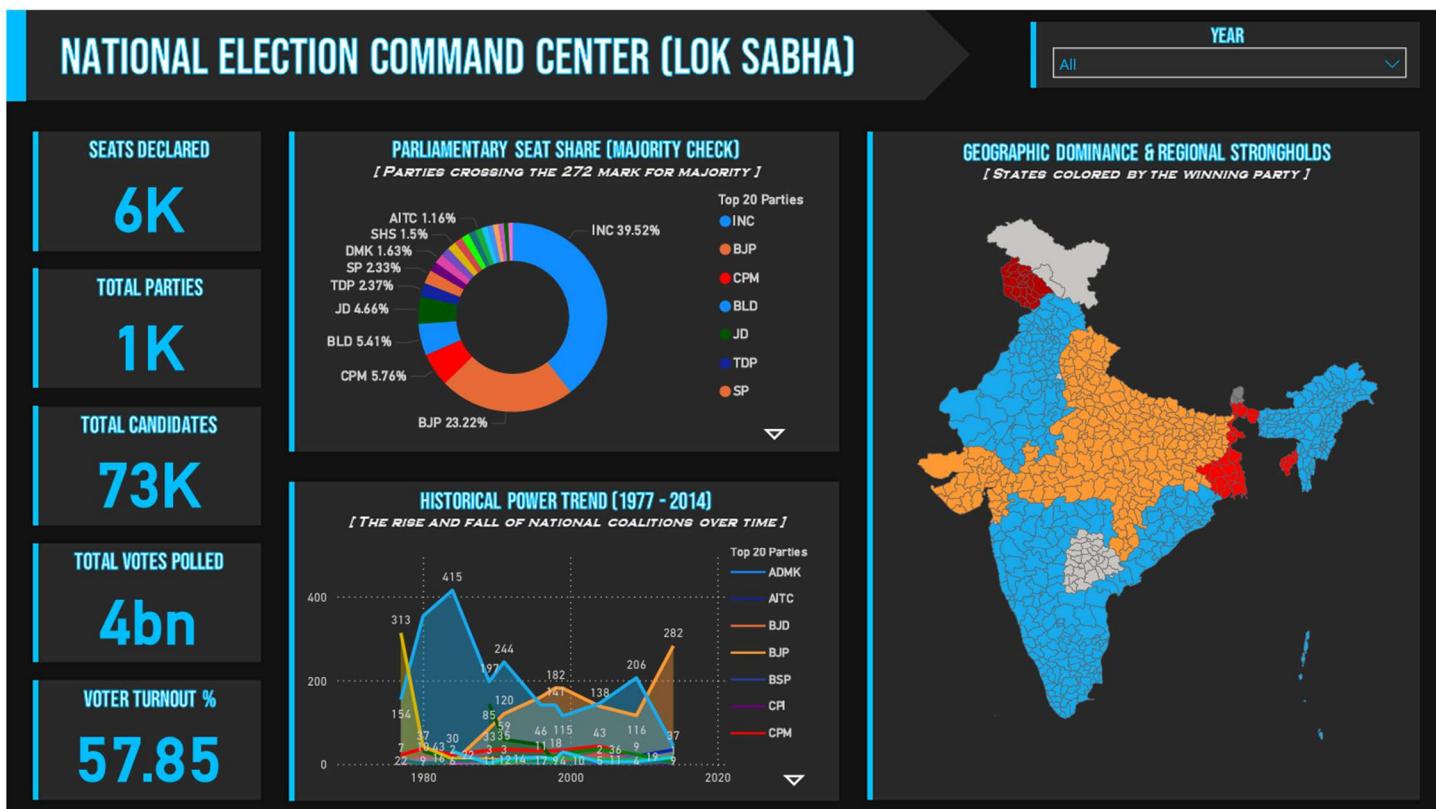
- **Type:** Donut Chart.
- **Fields:** Legend = Party\_Code, Values = Nat Total Seats Won.
- **What it shows:** The seat share of the top 6 parties.
- **Why we used it:** To instantly answer the most critical question: "Did any party cross the majority mark (272)?" The circular shape visually represents the parliament floor.

## Visual 4: Geographic Dominance Map

- Type: Shape Map (Custom India TopoJSON).
- Fields: Location = Dim\_State, Color = Nat Winner Color.
- What it shows: A color-coded map where Saffron indicates BJP states, Blue indicates INC states, etc.
- Why we used it: To visualize "Regional Strongholds." It reveals the North-South or East-West political divide at a glance.

## Visual 5: Historical Trend Line

- Type: Line Chart
- Fields: X-Axis = Year, Y-Axis = Nat Total Seats Won, Legend = Party\_Code.
- What it shows: The rise and fall of major parties from 1977 to 2014.
- Why we used it: Context. It shows if a party's current victory is a sudden "Wave" or part of a long-term growth trend.



## 2. PAGE 2: STATE BATTLEGROUNDS ANALYSIS

**Theme:** "The Regional Deep Dive" **Purpose:** To drill down into specific legislative assembly (Vidhan Sabha) results, analyzing local efficiency and leadership trends.

### Visual 1 & 2: The Controllers (Dual Slicers)

1. **State Slicer: (Dim\_State)** - The primary filter. Users select "Uttar Pradesh" or "Bihar" to isolate that specific region's data.
2. **Year Slicer: (Dim\_Year)** - Allows users to pick a specific Assembly Election year (e.g., UP 2012) to see that specific result.

### Visual 3: State KPIs (5 Cards)

- **Type:** 5 Separate Cards.
- **What they show:**
  1. **ASSEMBLY SEATS: (State Total Seats)** - Total constituencies in that state.
  2. **TOTAL STATE VOTES: (State Total Votes)** - Total votes polled in that specific assembly election.
  3. **STATE TURNOUT: (State Avg Turnout %)** - Did this state vote more than the national average?
  4. **PARTIES CONTESTED: (State Total Parties)** - Intensity of local competition.
  5. **CANDIDATES: (State Total Candidates)** - Total aspirants.
- **Why we used them:** To reset the context from "National" to "Local" numbers immediately.

### Visual 4: Assembly Constituency Map

- **Type:** Shape Map (Zoomed to State).
- **Fields:** Location = Dim\_State, Color = State Winner Color.
- **What it shows:** The state map painted with the colors of the winning parties.
- **Why we used it:** To show "Micro-Level" dominance. It reveals if a party won the rural belts vs. urban centers within the state.

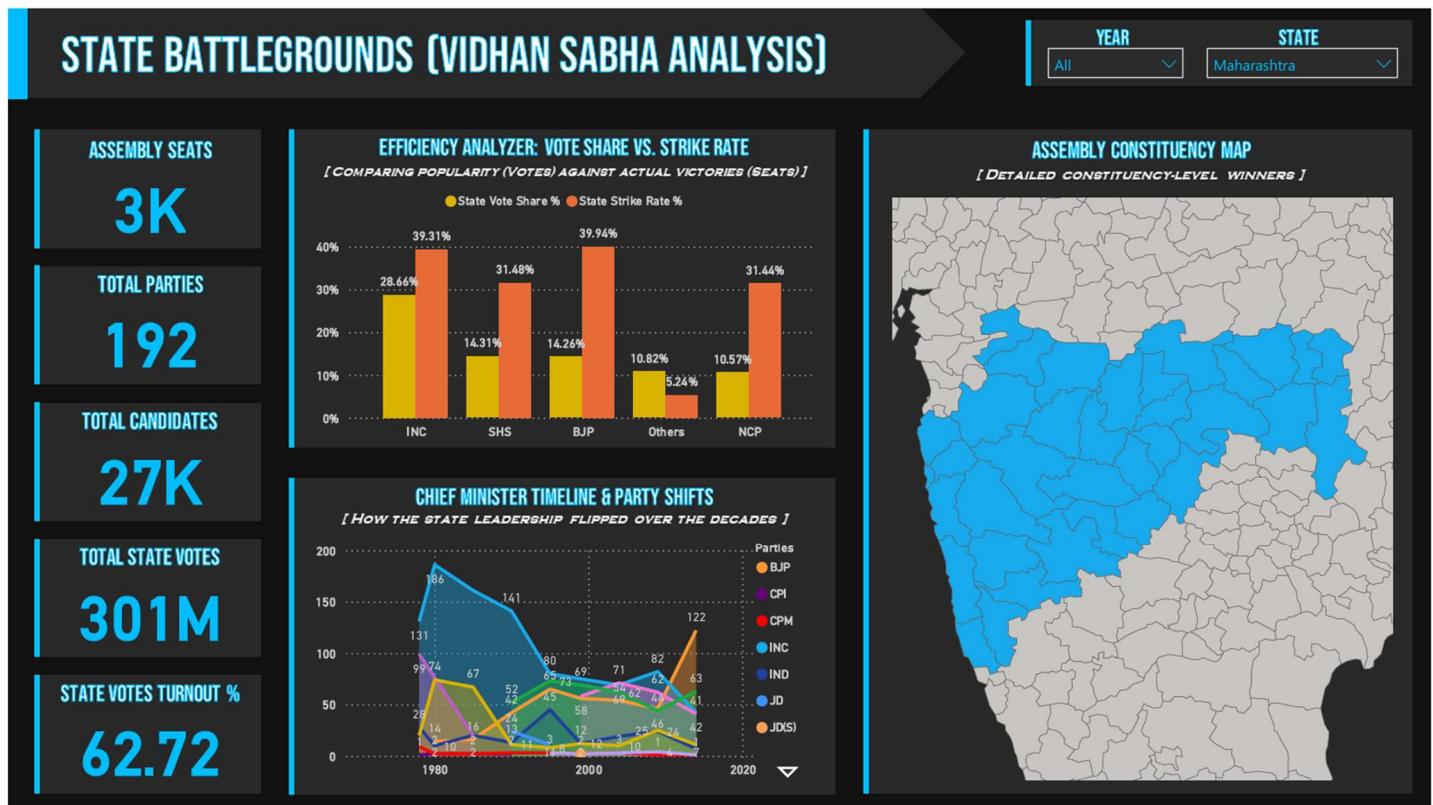
### Visual 5: Efficiency Analyzer (Clustered Column Chart)

- **Type:** Clustered Column Chart.
- **Fields:** X-Axis = Party\_Code, Y-Axis = State Vote Share % AND State Strike Rate %.

- **What it shows:** Side-by-side bars comparing "Popularity" (Votes) vs. "Efficiency" (Strike Rate).
- **Why we used it:** To expose the "First Past the Post" reality. It highlights "Tragic Giants" (parties getting many votes but winning 0 seats) versus "Smart Players" (parties winning high seats with low votes).

### Visual 6: State Leadership Timeline

- **Type:** Line Chart .
- **Fields:** X-Axis = Year, Y-Axis = State Total Seats Won, Legend = Party\_Code.
- **What it shows:** The history of political instability or dominance in that state.
- **Why we used it:** To visualize "Anti-Incumbency." It clearly shows how often the state flips its government (e.g., seeing the lines cross every 5 years indicates a swing state).



## SPRINT REVIEW

### A. Visual Verification:

- **Color Consistency:** Verified that BJP appears Saffron (#FF9933) and INC appears Blue (#19AAED) across both National and State pages. Confirmed that small/independent parties correctly default to Grey (#808080) using the COALESCE DAX logic.
- **Map Integrity:** Confirmed that selecting "2014" on the National Map correctly colors the states. Checked "State Battlegrounds" map for blank spots and fixed the "Orissa/Odisha" mismatch issue.

### B. Data Validation:

- **Total Vote Match:** Performed a cross-check where the sum of State Total Votes in the Matrix visual exactly matched the Nat Total Votes KPI Card, proving that row-level aggregation is accurate.
- **Slicer Logic:** Verified that the "State Slicer" on Page 2 does not show empty Union Territories (like Chandigarh) by applying a "Visual Level Filter" (Seats > 0).

### C. Feedback Implemented:

- **Layout Change:** Changed the KPI layout from 4 cards to 5 cards (adding "Total Parties") to improve symmetry and provide better context on political scale.
- **Font Update:** Switched to "Bebas Neue" for all headline numbers to achieve a professional "Media Command Center" aesthetic.

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## NEXT GOALS

### Sprint 3: Advanced Analytics & UI:

- **Goal:** Pages 3, 4, 5 (Micro View & Polish).
- **Tasks:**
  - Building "Strike Rate" Scatter Plot and other useful charts for making dashboard effective.
  - Design "War Room" (Page 5) with Margin Filters.
  - Integrate Party Logos & Color Formatting.
  - Final QA, Presentation & Documentation.