

ER Diagram for the Election Results Schema

An **Entity-Relationship (ER) diagram** is a structural model used in database design to illustrate the *entities* (tables) and *relationships* between them ¹ ². In our case, each table in the schema (e.g. *Party_Wise_Results*, *States*, *Constituency_Wise_Results*, etc.) is an entity, with its columns as attributes (fields). In ER notation, entities are typically drawn as rectangles listing their attributes ³. Primary keys (PK) are underlined, and foreign keys (FK) link one entity to another. For example, the **Party_Wise_Results** table has Party_Id as its PK, and **States** has State_Id as its PK. These serve as unique identifiers for records in those tables. ER modeling best practices (from Visual Paradigm and Lucidchart guides) emphasize that each entity (noun) and its relationships (verbs) should be clearly depicted ³ ².

Key Entities in This Schema

The schema consists of five main entities corresponding to the tables created:

- **Constituency_Wise_Details**: Candidate-level data for each constituency (attributes include *Sr_No*, *Candidate_Name*, *Political_Party*, *EVM_Votes*, *Postal_Votes*, *Total_Votes*, *Votes_Percentage*, and *Constituency_Id*).
- **Constituency_Wise_Results**: Summary of each constituency's result (attributes include *Sr_No*, *Parliament_Constituency*, *Constituency_Name*, *Winning_Candidate_Name*, *Total_Votes_Received*, *Winning_Margin*, *Constituency_Id*, *Party_Id*). Its composite primary key is (**Parliament_Constituency**, *Constituency_Id*).
- **Party_Wise_Results**: Each political party's aggregate results (attributes include *Political_Party_Name*, *Total_Seats_Won*, *Party_Id*, *Alliance*). *Party_Id* is the primary key, and *Alliance* is an added attribute (e.g. NDA, INDIA, etc.).
- **State_Wise_Results**: Leading/trailing candidate info per constituency along with state (attributes include *Constituency_Name*, *Constituency_No*, *Parliament_Constituency*, *Leading_Candidate_Name*, *Trailing_Candidate_Name*, *Vote_Margin*, *Current_Status*, *State_Id*). Its primary key is *Parliament_Constituency*.
- **States**: Lists each state (attributes *State_Id*, *State_Name*). *State_Id* is the primary key.

Each of the above tables becomes an ER entity (rectangle). In ER diagrams, we treat entities as “definable things” (e.g. a State, Party, Constituency) ³. Their columns become attributes, with the primary key attribute(s) underlined (e.g. *Party_Id* underlined in **Party_Wise_Results**). (By ERD convention, an entity is often drawn as a rounded-rectangle with its name on top and attributes listed inside ³.)

Relationships and Cardinality

Figure: Example ER diagram showing database tables (entities) and relationships. Boxes are entities listing their attributes (PK underlined). Lines (often with crow's feet) indicate relationships via foreign keys.

The foreign-key relationships in our schema define how tables connect. In general, a foreign key in one table points to the primary key of another, creating a one-to-many (1:N) or one-to-one link ⁴. The example

diagram above (for a different domain) shows entities linked by such foreign keys. In our schema, similar links occur. For instance, **Party_Wise_Results** (PK=*Party_Id*) is connected to **Constituency_Wise_Results** by *Party_Id* (FK) – meaning one party can appear in many constituency results (a 1:N relationship). Likewise, **States** (PK=*State_Id*) connects to **State_Wise_Results** by *State_Id* (FK), so each state can have multiple constituency results. These are standard one-to-many cardinalities (each parent entity instance relates to many child instances) ⁵ ⁴ .

- **Party_Wise_Results → Constituency_Wise_Results (1:N)**: *Party_Wise_Results.Party_Id* (PK) links to *Constituency_Wise_Results.Party_Id* (FK). One party can win many seats.
- **States → State_Wise_Results (1:N)**: *States.State_Id* (PK) links to *State_Wise_Results.State_Id* (FK). One state contains many constituencies.
- **Constituency_Wise_Results → Constituency_Wise_Details (1:N)**: *Constituency_Wise_Results.Constituency_Id* (part of PK) corresponds to *Constituency_Wise_Details.Constituency_Id*. Each constituency's result summary relates to multiple candidate-detail records.

Each of the above relationships follows the usual ERD rule: a foreign key in the “many” side refers back to the primary key of the “one” side ⁴ . Cardinality notation (e.g. crow's feet for “many”) would depict these as 1:N relationships ⁵ . No tables appear to have a many-to-many relationship that isn't resolved (so no associative/junction table is needed here).

Summary

In summary, the ER diagram for this database schema would depict five entities (the tables) with their key attributes, and lines linking **Party_Wise_Results** to **Constituency_Wise_Results**, and **States** to **State_Wise_Results**, etc. This visual representation helps clarify the structure: ER diagrams “illustrate how entities ... relate to each other within a system” ² . By following ER modeling conventions (entities as rectangles, attributes listed, keys underlined, relationships drawn as connectors ¹ ⁴), one can easily verify the schema's design and ensure all relationships are well-defined.

Sources: ER modeling concepts and symbols are discussed in data modeling guides ¹ ² ⁴ ³ . The example diagram above is illustrative of the same principles applied to a sample database schema.

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- ¹ ³ ⁵ What is Entity Relationship Diagram (ERD)?
<https://www.visual-paradigm.com/guide/data-modeling/what-is-entity-relationship-diagram/>
 - ² ER Diagram (ERD) - Definition & Overview | Lucidchart
<https://www.lucidchart.com/pages/er-diagrams>
 - ⁴ Entity-Relationship Diagram Symbols and Notation | Lucidchart
<https://www.lucidchart.com/pages/ER-diagram-symbols-and-meaning>