

| **Political Campaign** |
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# Business Description

## Business background

Comprehensive election data, including information on voters, campaign funders, and contributions, is gathered by an impartial commission. This contains information about campaign volunteers, including their roles, contact data, and tasks they have been given. The commission also gathers information on opposition research, funding, and survey findings. Analyzing information about any problems that surfaced during the election preparations and actual elections is also crucial.

## Problems. Current Situation

No problems encountered. Proposed logical data model.

## the Benefits of implementing a database. Project Vision

By ensuring correctness, reducing redundancy, and providing robust security, database implementation enhances data management. It facilitates efficient data retrieval and reporting, fostering collaboration and thoughtful decision-making. In the end, a well-structured database offers the capacity to appropriately employ data for growth and operational efficiency.

# Model description

## Definitions & Acronyms

**ID**: Identifier; a unique number assigned to an entry in a table.

**VARCHAR**: Variable Character; a data type used to store strings of varying lengths.

**TEXT**: A data type used to store long strings of text.

**INT**: Integer; a data type used to store whole numbers.

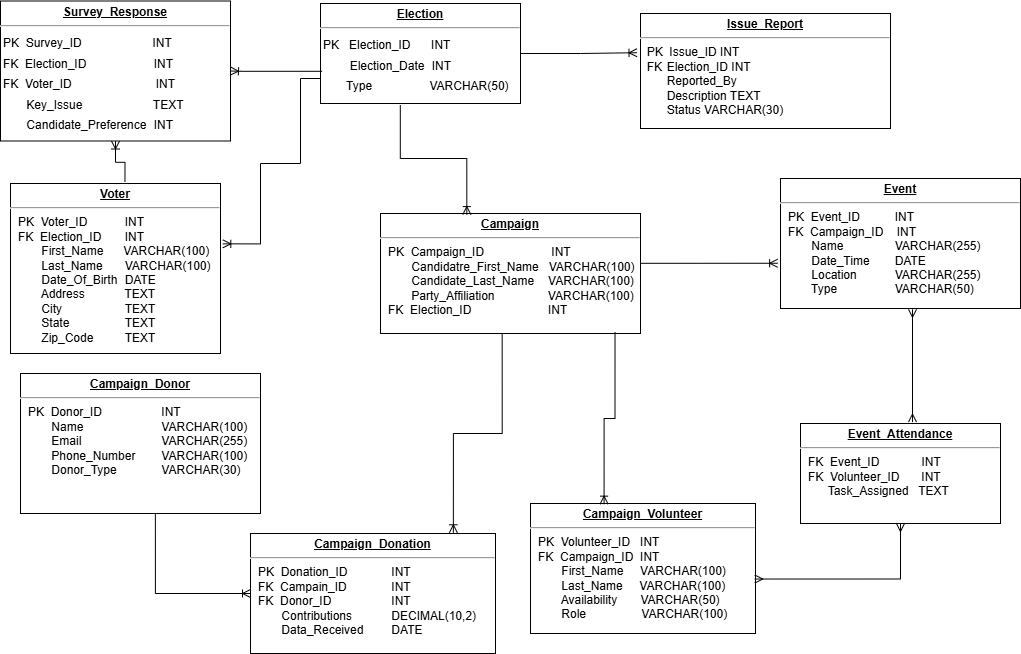
**NOT NULL**: A constraint that ensures a field must have a value (cannot be empty).

**AUTO INCREMENT**: A feature that automatically generates a unique number for each new entry.

**FK (FOREIGN KEY)**: A field in one table that uniquely identifies a row of another table, establishing a relationship between the two.

**PK (PRIMARY KEY)**: A field in a database table that uniquely identifies each row in that table, ensuring that no two rows can have the same value for this field. It serves as a unique identifier for records and cannot contain NULL values.

## Logical Scheme



## Objects

Table Description

Stores details of registered voters.

| Table Name | Field name | Field Description | Field Constraints | Data Type |
| --- | --- | --- | --- | --- |
| voter | voter\_ID | Unique identifier for a voter | Auto Increment, NOT NULL, PK | INT |
| first\_name | First name of the vote | NOT NULL | VARCHAR(100) |
| last\_name | Last name of the voter | NOT NULL | VARCHAR(100) |
| date\_of\_birth | Voter’s date of birth | CHECK(if legal voting age) | DATE |
| address | Voter’s registration street name, building number, apartment building. |  | TEXT |
| city | City where voter registrated |  | TEXT |
| state | State where voter registrated |  | TEXT |
| zip\_code | Zip code of voter’s registration place |  | TEXT |

Each voter votes in one election.

One voter can take multiple surveys.

Example with data

| voter\_ID | first\_name | last\_name | date\_of\_birth | address | city | state | zip\_code |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | John | Doe | 1999-01-01 | Oak street 3-2 | New York | New York | NY-4828 |

Table Description

Stores donor information.

| Table Name | Field name | Field Description | Field Constraints | Data Type |
| --- | --- | --- | --- | --- |
| campaigm\_donor | donor\_id | Unique identifier for a donor | Auto Increment, NOT NULL, PK | INT |
| name | Full name or organization name | NOT NULL | VARCHAR(100) |
| email | Contact email | UNIQUE, NOT NULL | VARCHAR(255) |
| phone\_number | Contact phone number | UNIQUE, NOT NULL | VARCHAR(100) |
| donor\_type | Type of donor | Private/Organisation | VARCHAR(30) |

One donor can donate multiple times

Example with data

| donor\_id | name | email | phone\_number | donor\_type |
| --- | --- | --- | --- | --- |
| 1 | Jane Smith | jane.smith@example.com | +1 2012893375 | Private |
| 2 | John’s Tires | johns.tires@example.com | +1 2016705124 | Organisation |

Table Description

Tracks donations made by donors.

| Table Name | Field name | Field Description | Field Constraints | Data Type |
| --- | --- | --- | --- | --- |
| campaign\_donation | donation\_id | Unique donation record identifier | Auto Increment, NOT NULL, PK | INT |
| donor\_id | Links to the donor who made the contribution | FK(Campaign\_Donor) | INT |
| campain\_id | Links the donation to a specific campaign | FK(Campaign) | INT |
| contribution | Amount donated | CHECK (Amount > 0) | DECIMAL(10,2) |
| date\_receved | Date of the donation | NOT NULL | DATE |

Each donation belongs to one donor.

Each donation is for one campaign.

Example with data

| contribution\_id | donor\_id | campain\_id | amount | date |
| --- | --- | --- | --- | --- |
| 1 | 1 | 1 | 98765432.12 | 2022-09-30 |

Table Description

Tracks campaign volunteers.

| table name | field name | field description | field Constraints | Data Type |
| --- | --- | --- | --- | --- |
| campaign\_volunteer | volunteer\_id | Unique identifier for a volunteer | Auto Increment, NOT NULL | INT |
| campagn\_id | Links to the campaign that person volunteering | FK(Campaign) | INT |
| first\_name | First name of volunteer | NOT NULL | VARCHAR(100) |
| last\_name | Last name of volunteer | NOT NULL | VARCHAR(100) |
| availability | Days/times the volunteer is available | NOT NULL (e.g., "Weekends", "Full-time") | VARCHAR(50) |
| role | Assigned role (e.g., "Event Coordinator") | NOT NULL | VARCHAR(100) |

Each volunteer works for one campaign.

A volunteer attends multiple events.

Example with data

| voter\_id | campagn\_id | first\_name | last\_name | availability | role |
| --- | --- | --- | --- | --- | --- |
| 1 | 36 | Michael | Johnson | Full-time | Content Writer |

Table Description

Tracks campaign events like rallies, town halls.

| Table Name | Field name | Field Description | Field Constraints | Data Type |
| --- | --- | --- | --- | --- |
| event | event\_id | Unique identifier for an event | Auto Increment, NOT NULL, PK | INT |
| campaign\_id | Links to the campaign that organized event | FK(Campaign) | INT |
| name | Name of the event (e.g., "Rally in NYC") | NOT NULL | VARCHAR(255) |
| date | Event date | NOT NULL | DATE |
| location | Venue of the event | NOT NULL | VARCHAR(255) |
| type | Type of event | CHECK (Type IN ('Rally', 'Town Hall', 'Debate')) | VARCHAR(50) |

An event has multiple volunteers.

Each event belongs to one campaign.

Example with data

| event\_id | campaign\_id | name | date | location | type |
| --- | --- | --- | --- | --- | --- |
| 1 | 5 | Spring Rally | 2023-04-15 | Central Park, New York, NY | Rally |

Table Description

The Attendance table tracks participation in events.

| Table Name | Field name | Field Description | Field Constraints | Data Type |
| --- | --- | --- | --- | --- |
| event\_attendance | event\_id | Links to the volunteer who attended | FK (Event) | INT |
| volunteer\_id | Links to the attended event | FK (Campaign\_Volunteer) (Nullable) | INT |
| task\_assigned | Task assigned to volunteer | (e.g., "Speaker", "Attendee", "Organizer") | VARCHAR(50) |

An event has multiple volunteers.

A volunteer attends multiple events.

Example with data

| event\_id | volunteer\_id | task\_assigned |
| --- | --- | --- |
| 1 | 1 | Receptionist |

Table Description

Stores responses to surveys from voters.

| Table Name | Field name | Field Description | Field Constraints | Data Type |
| --- | --- | --- | --- | --- |
| survey\_response | survey\_id | Unique identifier for the survey response | Auto Increment, NOT NULL, PK | INT |
| voter\_id | Links response to a voter | FK (Voter) | INT |
| election\_id | Links response to an election | FK(Election) | INT |
| key\_issue | Main issue with candidate |  | TEXT |

One voter can take multiple surveys.

Each survey response is tied to one election.

Example with data

| survey\_id | voter\_id | election\_id | response |
| --- | --- | --- | --- |
| 1 | 101 | 3 | I believe healthcare is the top issue. |

Table Description

Tracks problems that arose during the election.

| Table Name | Field name | Field Description | Field Constarians | Data Type |
| --- | --- | --- | --- | --- |
| issue\_report | issue\_id | Unique issue identifier | Auto Increment, NOT NULL, PK | INT |
| election\_id | Links issue to a specific election | FK(Election) | INT |
| description | Detailed description of the issue | NOT NULL | TEXT |
| reported\_by | Name of the person reporting the issue | NOT NULL | VARCHAR(255) |
| status | Status of the report ('Open', 'Resolved') | CHECK (Status IN ('Open', 'Resolved')) | VARCHAR(50) |

Each issue report belongs to one election.

Example with data

| issue\_id | election\_id | description | reported\_by | status |
| --- | --- | --- | --- | --- |
| 1 | 4 | Voter registration issues | Maria Garcia | Open |

Table Description

Stores candidates running for election.

| Table Name | Field name | Field Description | Field Constarians | Data Type |
| --- | --- | --- | --- | --- |
| campaign | campaign\_id | Unique identifier for a campaign | Auto Increment, NOT NULL, PK | INT |
| candidate\_first\_name | First name of candidate | NOT NULL | VARCHAR(100) |
| candidate\_last\_name | Last name of candidate | NOT NULL | VARCHAR(100) |
| party\_affiliation | Political party associated with the campaign | NOT NULL | VARCHAR(100) |
| election\_id | Links campaign to an election | FK(Election) | INT |

One campaign receives many donations.

Each campaign is tied to one election.

One campaign has many volunteers.

One campaign organizes multiple events.

Example with data

| candidate\_id | candidate\_firt\_name | candidate\_last\_name | party\_affiliation | election\_id |
| --- | --- | --- | --- | --- |
| 1 | Bob | Smith | Republican | 1 |

Table Description

Tracks election details.

| Table Name | Field name | Field Description | Field Constarians | Data Type |
| --- | --- | --- | --- | --- |
| election | election\_id | Unique identifier for the election | Auto Increment, NOT NULL, PK | INT |
| election\_date | Date when the election takes place | CHECK (Year >= 2000) | INT |
| type | Type of election | CHECK (Type IN ('Presidential', 'Congressional', 'Local')) | VARCHAR(50) |

One election has multiple survey responses.

One election has multiple issue reports.

One election has many campaigns.

One election has many voters.

Example with data

| election\_id | election\_date | type |
| --- | --- | --- |
| 1 | 2024-01-10 | Local |