

| Political Campaign  **SUBJECT AREAS** |
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| **Logo / Image** |

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# Political Campaign Description

## Political campaign background

The aim of this political campaign is to methodically plan and coordinate the complex elements of election activities. These activities include event planning, voter contact, volunteer management, research, and fundraising. The infrastructure of the campaign is carefully crafted to effectively manage social media interactions, surveys, and financial transactions, thus optimizing voter engagement and support.

## Problems. Current Situation

Political campaigns today frequently encounter problems of data fragmentation, poor communication, and lack of coordination among volunteers, voters, and campaign staff. Using hand tracking or outdated systems to manage campaign events, voter engagement, and money transfers most frequently leads to errors, mismanagement, and even loss of critical information. Without a centralized database, accessing critical information is a slow and laborious process.

## the Benefits of implementing a database. Project Vision

The application of a comprehensive and well-tabulated database in the political campaign offers numerous advantages:

*Efficient Volunteer Managemen*t: Application of dedicated volunteer tables enables easy assignment tracking, contact information, and history of involvement.

*Organization of Campaign Events*: A organized process of campaign event planning and budgeting enhances execution and monitoring of attendance.

*Data-Driven Decision Making*: Systematic storage of research outcomes and survey data of voters helps in strategic campaign planning.

*Successful Voter Contact*: Maintaining thorough records of voter demography and political orientation makes it possible to tailor appropriate communication.

*Social Media Impact Analysis*: Following social media engagement metrics in order to continually refine online outreach strategy.

*Financial Transparency*: Accurate accounting for all campaign fiscal transactions ensures accountability and proper use of funds.

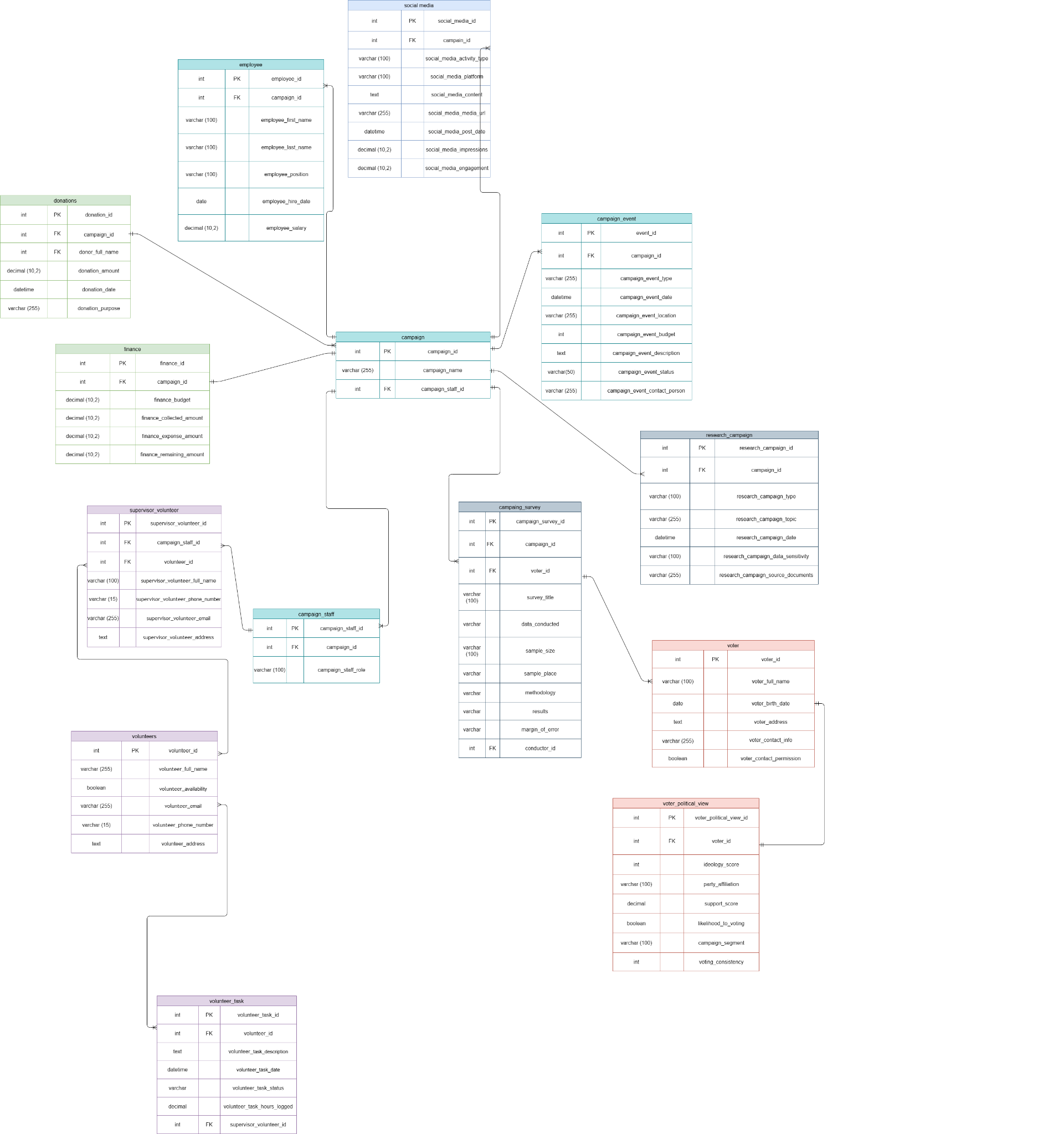
The project proposes designing an efficient, data-driven political campaign to enhance operational efficiency, voter engagement, and overall campaign success. By implementing a comprehensive database, the campaign aims to streamline processes and improve communication. This system is intended to provide a strategic advantage in managing campaign activities, optimizing resource utilization, and ultimately increasing voter support and campaign effectiveness.

# Model description

## Definitions & Acronyms

none

## Logical Scheme



## Objects

The database schema manages political campaigns with tables for: campaigns (core campaign data), donations (financial contributions), volunteers (supporter information), social\_media (platform presence), campaign\_staff (employee assignments), campaign\_events (organized activities), finance (budget tracking), research\_resources (campaign research), campaign\_survey (feedback collection), tasks (action items), voter (demographic data), voter\_political\_view (political preferences), and employee (staff details). This comprehensive system effectively tracks everything from finances and personnel to voter information and campaign activities, allowing campaign managers to coordinate resources, monitor progress, and make data-driven decisions.

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| campaign | campaign\_id | Unique identifier for the campaign, can not be null, PK | int |
| campaign\_name | The name of the campaign, can not be NULL | varchar (255) |
|  | campaign\_staff\_id | FK, shows relation to the campaign staff table | int |
|  | campaign\_employee\_id | FK, shows employee’s id, who works on campaign and relation to the campaign employee table | int |

Comments on table relationships

**One-to-many** relationship between:

Donations (campaign\_id) and campaign (campaign\_id) - many donations can be done to one campaign

campaign\_staff\_employee (campaign\_staff\_employee\_id) and campaign (campaign\_staff\_employee\_id) - many employees can work for one campaign in this case

social media (campain\_id) and campaign (campaign\_id) - many post or social media interactions are created for the one campaign

campaign (campaign\_id) and employee (campaign\_id) - many employees work for the specific campaign

campaign (campaign\_id) and campaign\_event (campaign\_id) - usually politics make multiple appearances in the public during events, so it is important to track events for one campaign.

campaign (campaign\_id) and research\_opposition (campaign\_id) - it is possible to do one research for campaign needs, but in order to keep track of changing political environment, there is need to do multiple research for one campaign in order to make changes in campaign decision-making.

**One-to-one** relationship between:

finance (campaign\_id) and (campaign\_id) - campaign has a one budget (finance), maybe a bank account which is used for this one campaign needs.

Example with data

| campaign\_id | campaign\_name | campaign\_staff\_id | campaign\_employee\_id |
| --- | --- | --- | --- |
| 568 | Go, Greens, Go! | 004512 | 5-8963 |
| 16578 | Let’s win | 007852 | 10858-3 |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| campaign\_event | event\_id | Unique identifier for each event, PK | int |
| campaign\_id | Identifier linking the event to a specific campaign, FK | int |
|  | campaign\_event\_type | Type or category of the event, NOT NULL | varchar (255) |
|  | campaign\_event\_date | Scheduled date and time of the event, Not NULL | datetime |
|  | campaign\_event\_location | Venue or location where the event will take place | varchar (255) |
|  | campaign\_event\_budget | Allocated budget for the event, Check (>= 0) | int |
|  | campaign\_event\_description | Detailed information about the event | text |
|  | campaign\_event\_status | Current status of the event (e.g., scheduled, canceled) | varchar(50) |
|  | campaign\_event\_contact\_person | Contact person responsible for the event | varchar (255) |

Comments on table relationships

**One-to-many** relationship between:

campaign (campaign\_id) and campaign\_event (campaign\_id) - usually politics make multiple appearances in the public during events, so it is important to track events for one campaign.

Example with data

| event\_id | campaign\_id | campaign\_event\_type | campaign\_event\_date |
| --- | --- | --- | --- |
| 526 | 005 | Rally | 2025-04-26 10:30:00 |
| 8294 | 005 | Debate | 2025-08-02 14:00:00 |

| campaign\_event\_location | campaign\_event\_budget | campaign\_event\_description | campaign\_event\_status |
| --- | --- | --- | --- |
| Sport Hall | 5000 | Major campaign rally featuring the candidate and several celebrity endorsers | Scheduled |
| VMU Auditorium | 300 | Public debate between candidates on key issues | Scheduled |

| campaign\_event\_contact\_person |  |  |  |
| --- | --- | --- | --- |
| Jonas Jonaitis |  |  |  |
| Petras Petraitis |  |  |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| campaign\_staff\_employee | campaign\_staff\_id | Unique identifier for each staff assignment, PK | Int |
| campaign\_id | Identifier linking to the specific campaign, FK referencing campaign | int |
|  | campaign\_staff\_role | Role assigned to the employee within the campaign, NOT NULL | varchar (100) |

Comments on table relationships

**One-to-many** relationship:

campaign\_staff\_employee (campaign\_staff\_employee\_id) and campaign (campaign\_staff\_employee\_id) - many employees can work for one campaign in this case

supervisor\_volunteer (campaign\_staff\_employee\_id) and campaign\_staff\_employee (campaign\_staff\_employee\_id) - supervisor of volunteers can work for one campaign staff.

Example with data

| campaign\_staff\_\_id | campaign\_id | campaign\_staff\_role |  |
| --- | --- | --- | --- |
| 12485 | 1548 | campaign manager |  |
| 28941 | 1894 | supervisor |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| employee | employee\_id | Unique identifier for each employee, PK | Int |
| campaign\_id | Links the employee to a campaign, FK | int |
|  | employee\_first\_name | First name of the employee, Not Null | varchar (100) |
|  | employee\_last\_name | Last name of the employee, Not Null | varchar (100) |
|  | employee\_position | Job position of the employee, Not Null | varchar (100) |
|  | employee\_hire\_date | Date of hiring, Not Null | date |
|  | employee\_salary | Employee’s salary, Check (>= 0) | decimal (10,2) |

Comments on table relationships

**One-to-many** relationship

campaign (campaign\_id) and employee (campaign\_id) - many employees work for the specific campaign (it is possible to link other tables like campaign\_staff\_employee, but this time for the sake of clarity employees table was linked to the campaign table directly.

Example with data

| employee\_id | campaign\_id | employee\_first\_name | employee\_last\_name |
| --- | --- | --- | --- |
| 19684 | 858 | Pranas | Pranaitis |
| 2861 | 59 | Lukas | Lukaitis |

| employee\_position | employee\_hire\_date | employee\_salary |  |
| --- | --- | --- | --- |
| team lead | 2020-05-04 | 3000 |  |
| ceo | 2019-01-20 | 5200 |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| donations | donation\_id | Unique identifier for each donation, PK | int |
| campaign\_id | Links donation to a campaign, FK referencing campaign | int |
|  | donor\_full\_name | Full name of the donor, Not Null | int |
|  | donation\_amount | Amount donated, Check (>= 0) | decimal (10,2) |
|  | donation\_date | Date of donation, Not Null | datetime |
|  | donation\_purpose | Purpose of the donation | varchar (255) |

Comments on table relationships

One-to-many relationship:

Donations (campaign\_id) and campaign (campaign\_id) - many donations can be done to one campaign

Example with data

| donation\_id | campaign\_id | donor\_full\_name | donation\_amount |
| --- | --- | --- | --- |
| 128520 | 506 | Rokas Rokaitis | 350 |
| 1820645 | 506 | Marija Marijaite | 405 |

| donation\_date | donation\_purpose |  |  |
| --- | --- | --- | --- |
| 2025-02-02 | for the Mr. Smith |  |  |
| 2025-03-10 | to support this campaign |  |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| finance | finance\_id | Unique identifier for finance records, PK | Int |
| campaign\_id | Links finance records to a campaign, FKreferencing campaign | int |
| finance\_budget | Total campaign budget, Check (>= 0) | decimal (10,2) |
|  | finance\_collected\_amount | Funds collected, Check (>= 0) | decimal (10,2) |
|  | finance\_expense\_amount | Total expenses, Check (>= 0) | decimal (10,2) |
|  | finance\_remaining\_amount | Remaining funds | decimal (10,2) |

Comments on table relationships

One-to-one relationship:

finance (campaign\_id) and campaign (campaign\_id) - one campaign has one budget (finance). If it would

Example with data

| finance\_id | campaign\_id | finance\_budget | finance\_collected\_amount |
| --- | --- | --- | --- |
| 1743 | 2964 | 860 000 | 50 000 |
| 164 | 129681 | 30 000 | 67 800 |

| finance\_expense\_amount | finance\_remaining\_amount |  |  |
| --- | --- | --- | --- |
| 30 800 | 879 200 |  |  |
| 41 000 | 56800 |  |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| supervisor\_volunteer | supervisor\_volunteer\_id | Unique identifier for volunteer supervisor, PK | int |
| campaign\_staff\_id | Links supervisor to a campaign staff Foreign Key referencing campaign\_staff\_employee member, | int |
|  | volunteer\_id | Links supervisor to a volunteer, Foreign Key referencing volunteers | int |
|  | supervisor\_volunteer\_full\_name | Supervisor's full name, Not Null | varchar (100) |
|  | supervisor\_volunteer\_phone\_number | Contact number, Unique, Not Null | varchar (15) |
|  | supervisor\_volunteer\_email | Email address, Unique, Not Null | varchar (255) |
|  | supervisor\_volunteer\_address | Residential address | text |

Comments on table relationships

one-to-many

supervisor\_volunteer (campaign\_staff\_id) and campaign\_staff (campaign\_staff\_id) - several supervisors can belong to one department (or campaign staff in this case)

many-to-many

supervisor\_volunteer (volunteer\_id) and volunteer (volunteer\_id) - many supervisors can supervise many volunteers at the time, it depends on the number of supervisors.

Example with data

| supervisor\_volunteer\_id | campaign\_staff\_id | volunteer\_id | supervisor\_volunteer\_full\_name |
| --- | --- | --- | --- |
| 89 | 4895641 | 1651 | Linas Linaitis |
| 5 | 61 | 52 | Petras Petraitis |

| supervisor\_volunteer\_phone\_number | supervisor\_volunteer\_email | supervisor\_volunteer\_address |  |
| --- | --- | --- | --- |
| 3701111111 | supervisor@gmail.com | Putvinskis street 56, Kaunas, Lithuania |  |
| 4508211684 | campaignvolunter@yahoo.com | Post street 89, Vilnius, Lithuania |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| volunteers | volunteer\_id | Unique identifier for each volunteer, PK | Int |
| volunteer\_full\_name | Volunteer’s full name, Not Null | varchar (255) |
|  | volunteer\_availability | Indicates if the volunteer is available, Default: False | boolean |
|  | volunteer\_email | Contact email, unique, Not Null | varchar (255) |
|  | volunteer\_phone\_number | Contact phone number, unique, Not Null | varchar (15) |
|  | volunteer\_address | Volunteer’s address | text |

Comments on table relationships

**many-to-many** relationship

volunteers (volunteer\_id) and supervisor\_volunteer (volunteer\_id) - one volunteer can work in different teams with different supervisors and one supervisor can supervise many volunteers.

Example with data

| volunteer\_id | volunteer\_full\_name | volunteer\_availability | volunteer\_email |
| --- | --- | --- | --- |
| 125 | Robert Johnson | yes | robert.johnson@email.com |
| 63 | John Smith | no | john.smith@email.com |

| volunteer\_phone\_number | volunteer\_address |  |  |
| --- | --- | --- | --- |
| 451111208 | 456 Oak Ave, Apt 2B, Springfield, IL 62702 |  |  |
| 458928582 | 101 Pine Ln, Springfield, IL 62704 |  |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| volunteer\_task | volunteer\_task\_id | Unique task identifier, PK | Int |
| volunteer\_id | Links task to volunteers, FK referencing volunteers volunteer, | int |
|  | volunteer\_task\_description | Task details, Not Null | text |
|  | volunteer\_task\_date | Date of task, Not Null | datetime |
|  | volunteer\_task\_status | Status of task, Not Null | varchar |
|  | volunteer\_task\_hours\_logged | Hours spent on task, Check (>= 0) | decimal |
|  | supervisor\_volunteer\_id | Supervisor of the task, FK referencing supervisor\_volunteer | int |

Comments on table relationships

many-to-many

volunteer\_task (volunteer\_id) and volunteer\_task (volunteer\_id) - one volunteer can do one tasks or many tasks, However, one task can be done by many volunteers, or many volunteers can do many tasks.

Example with data

| volunteer\_task\_id | volunteer\_id | volunteer\_task\_description |  |
| --- | --- | --- | --- |
| 52 | 98 | distribute leaflets during meeting |  |
| 146 | 102 | help to prepare hall for the meeting |  |

| volunteer\_task\_date | volunteer\_task\_status | volunteer\_task\_hours\_logged | supervisor\_volunteer\_id |
| --- | --- | --- | --- |
| 2025-01-02 15:00 | done | 5 | John Smith |
| 2025-04-01 13:00 | preparing | 20 | Robertas Robertis |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| research\_campaign | research\_campaign\_id | Unique identifier for research, PK | int |
| campaign\_id | Links research to a campaign, FK referencing campaign | int |
|  | research\_campaign\_type | Type of research, Not Null | varchar (100) |
|  | research\_campaign\_topic | Research focus area, Not Null | varchar (255) |
|  | research\_campaign\_collection\_date | Date data was collected, Not Null | datetime |
|  | research\_campaign\_data\_sensitivity | Sensitivity level of data, Not Null | varchar (100) |
|  | research\_campaign\_source\_documents | Sources used | varchar (255) |

Comments on table relationships

one-to-many

research\_campaign (campaign\_id) and campaign (campaign\_id) - multiply researches can be done for one campaign

Example with data

| research\_campaign\_id | campaign\_id | research\_campaign\_type | research\_campaign\_topic |
| --- | --- | --- | --- |
| 18 | 852 | survey | opponents |
| 5 | 1520 | survey | opinion about green deal |

| research\_campaign\_collection\_date | research\_campaign\_data\_sensitivity | research\_campaign\_source\_documents |  |
| --- | --- | --- | --- |
| 2024-05-18 10:12 | not sensitive | wikipedia |  |
| 2021-06-03 17:03 | not sensitive | surveys collected from the voters directly |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| social media | social\_media\_id | Unique identifier for social media activity | int |
| campain\_id | Links post to campaign, Foreign Key referencing campaign | int |
|  | social\_media\_activity\_type | Type of post,Not Null | varchar (100) |
|  | social\_media\_platform | Social media platform, Not Null | varchar (100) |
|  | social\_media\_content | Post content, Not Null | text |
|  | social\_media\_media\_url | Link to media | varchar (255) |
|  | social\_media\_post\_date | Date of post, Not Null | datetime |
|  | social\_media\_impressions | Number of people reached, Check (>= 0) | decimal (10,2) |
|  | social\_media\_engagement | User engagement count, Check (>= 0) | decimal (10,2) |

Comments on table relationships

one-to-many

social media (campain\_id) and campaign (campain\_id) - multiply post and other media types can be created for the one campaign

Example with data

| social\_media\_id | campain\_id | social\_media\_activity\_type | social\_media\_platform |
| --- | --- | --- | --- |
| 52 | 895 | reels | instagram |
| 98 | 923 | post | facebook |

| social\_media\_content | social\_media\_media\_url | social\_media\_post\_date | social\_media\_impressions |
| --- | --- | --- | --- |
| about new deal with opponent | www.facebook/reels/politics | 2023-05-01 06:00 | 13025 |
| about meeting with voters | www.instagram/reels/meeting/hall/456789 | 2023-05-05 08:40 | 18632 |

| social\_media\_engagement |  |  |  |
| --- | --- | --- | --- |
| 89 |  |  |  |
| 45 |  |  |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| campaing\_survey | campaign\_survey\_id | Unique survey identifier, PK | int |
| voter\_id | Links survey to a voter, FK referencing voter | int |
|  | campaign\_id | Links campaign table, FK | int |
|  | survey\_title | Survey name, Not Null | varchar (100) |
|  | data\_conducted | Data collection details, Not Null | date |
|  | sample\_size | Number of respondents, Not Null | varchar (100) |
|  | sample\_place | Survey location | varchar |
|  | methodology | Survey method, Not Null | varchar |
|  | results | Survey findings | varchar |
|  | margin\_of\_error | Error margin percentage | varchar |
|  | conductor\_id | Person in charge of survey, Foreign Key referencing employee | int |

Comments on table relationships

one-to-many

campaing\_survey (campaign\_id) campaign (campaign\_id) - many surveys can be done in order to research opinion or other matters for the campaign.

Example with data

| campaign\_survey\_id | voter\_id | campaign\_id | survey\_title |
| --- | --- | --- | --- |
| 15 | 20 | 178416 | Best liked politicians |
| 92 | 52 | 63125 | Opinion about city plans to build new mall |

| data\_conducted | sample\_size | sample\_place | methodology |
| --- | --- | --- | --- |
| 2025-03-03 | 8900 | Kaunas | survey |
| 2025-03-03 | 7400 | Vilnius | survey |

| results | margin\_of\_error | conductor\_id | Field name N |
| --- | --- | --- | --- |
| People like the most John Smith | 23 prc. | 85 |  |
| Voters would like to have a new mall | 1 proc. | 89 |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| voter | voter\_id | Unique identifier for each voter, PK | int |
| voter\_full\_name | Voter's complete name, not null | varchar (100) |
|  | voter\_birth\_date | Voter's date of birth | date |
|  | voter\_address | Voter's complete address information | text |
|  | voter\_contact\_info | Contact details like email, phone number | varchar (255) |
|  | voter\_contact\_permission | Whether voter has given permission to be contacted | boolean |

Comments on table relationships

one-to-many

voter (voter\_id) and campaing\_survey voter\_id) - one voter can participate in different surveys.

Example with data

| voter\_id | voter\_full\_name | voter\_birth\_date | voter\_address |
| --- | --- | --- | --- |
| 150 | Maja Majaite | 1990-02-09 | 505 Walnut Ave, Apt 3C, Springfield, IL 62703 |
| 460 | Robertas Luksas | 1950-04-02 | 707 Fir Ln, Springfield, IL 62704 |

| voter\_contact\_info | voter\_contact\_permission |  |  |
| --- | --- | --- | --- |
| 45128006, maja.m@gmail.com | yes |  |  |
| 4512368, roberts@gmail.com | no |  |  |

| Table Name | Field name | Field Description | Data Type |
| --- | --- | --- | --- |
| voter\_political\_view | voter\_political\_view\_id | Unique identifier for each political view record, PK | int |
| voter\_id | Reference to the voter table, FK | int |
|  | ideology\_score | Numerical representation of political ideology | int |
|  | party\_affiliation | Political party the voter is affiliated with | varchar (100) |
|  | support\_score | Level of support for specific candidates/issues | decimal |
|  | likelihood\_to\_voting | Whether the voter is likely to vote | boolean |
|  | campaign\_segment | Category for campaign targeting purposes | varchar (100) |
|  | voting\_consistency | Historical voting participation score | int |

Comments on table relationships

one-to-one

voter\_political\_view (voter\_id) and voter (voter\_id) one voter will have one sided opinion about matter.

Example with data

| voter\_political\_view\_id | voter\_id | ideology\_score | party\_affiliation |
| --- | --- | --- | --- |
| 546 | 856 | 89 | liberals |
| 91 | 892894 | 90 | democrats |

| support\_score | likelihood\_to\_voting | campaign\_segment | voting\_consistency |
| --- | --- | --- | --- |
| 76 | yes | environment | 20 |
| 89 | yes | social policy | 45 |