VoteX – Campaign Compass

Review – 2 Report

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In partial fulfilment for the Course

of

21CSC205P – DATABASE MANAGEMENT SYSTEM

in **CINTEL Department**

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MARCH 2024

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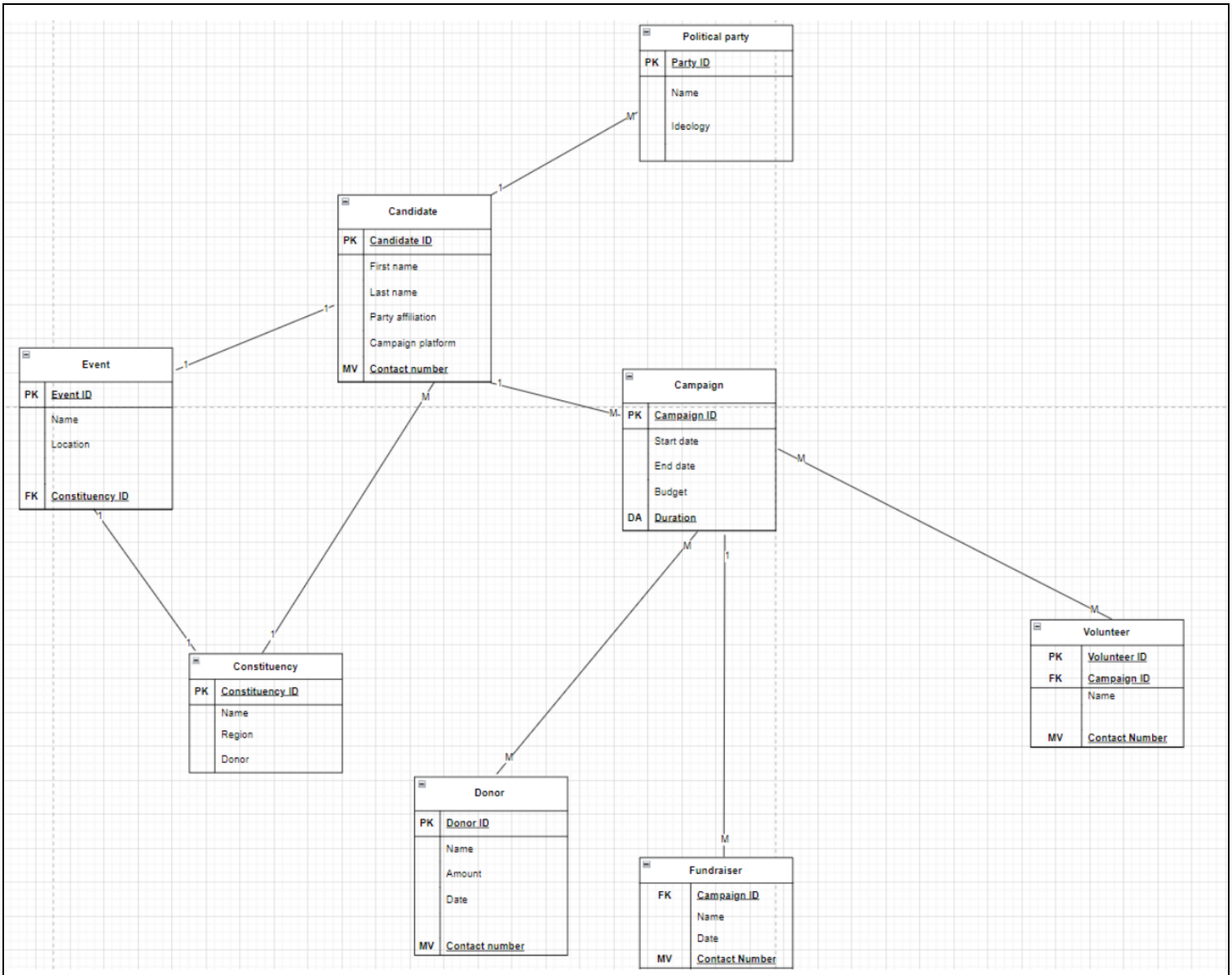
RELATIONAL SCHEMA

The relational schema for the "VoteX – Campaign Compass" project outlines the structure of the database without delving into specific entities. It defines the relationships between different components of the system, facilitating efficient data management and retrieval. The schema includes primary keys to uniquely identify records, foreign keys to establish relationships between tables, and additional attributes to capture relevant information. By organizing the database in this manner, the schema serves as a foundational framework for the storage and organization of data, supporting the overarching objectives of the project to streamline political campaigning and voter engagement efforts.

The schema includes the following entities and attributes from the ER Diagram.

- Candidate(CandidateID: PK, Name, PartyAffiliation, CampaignPlatform, ContactDetails)
- Voter(VoterID: PK, Name, Street, City, State, ZipCode, ContactDetails)
- Campaign(CampaignID: PK, CandidateID: FK, StartDate, EndDate, Budget, Description)
- Constituency(ConstituencyID: PK, Name, Region)
- Donor(DonorID: PK, Name, ContactDetails, DonationAmount, DonationDate)
- Volunteer(VolunteerID: PK, Name, ContactDetails)
- VolunteersInCampaign(VolunteerID: FK, CampaignID: FK)
- Fundraiser(FundraiserID: PK, Name, ContactDetails, CampaignID: FK, FundsRaised, FundraiserDate)
- Event(EventID: PK, Name, Date, Location, CampaignID: FK)
- PoliticalParty(PartyID: PK, Name, Leader, Ideology)

The relational schema for the VoteX project outlines the structure of its database, defining tables for entities such as Candidate, Voter, Campaign, Constituency, Donor, Volunteer, Fundraiser, Event, and Political Party. Each table includes attributes representing specific data fields associated with the respective entity, such as candidate names, campaign budgets, volunteer contact details, and event locations. Relationships between entities are established through foreign key constraints, facilitating data integrity and enabling efficient querying and retrieval of information. This schema serves as the foundation for organizing and managing data related to political campaigns, elections, fundraising efforts, and volunteer activities within the VoteX system.



Relational Schema of our database

DATABASE

Amazon Relational Database Service (Amazon RDS) is a robust, scalable, and fully managed relational database service offered by Amazon Web Services (AWS). Here are a few points about Amazon RDS:

• Amazon RDS eliminates the need for users to manually set up, operate, and scale relational databases, as it handles routine database tasks such as provisioning, patching, backup, recovery, and scaling automatically. This significantly reduces administrative burden and allows developers to focus on building applications.

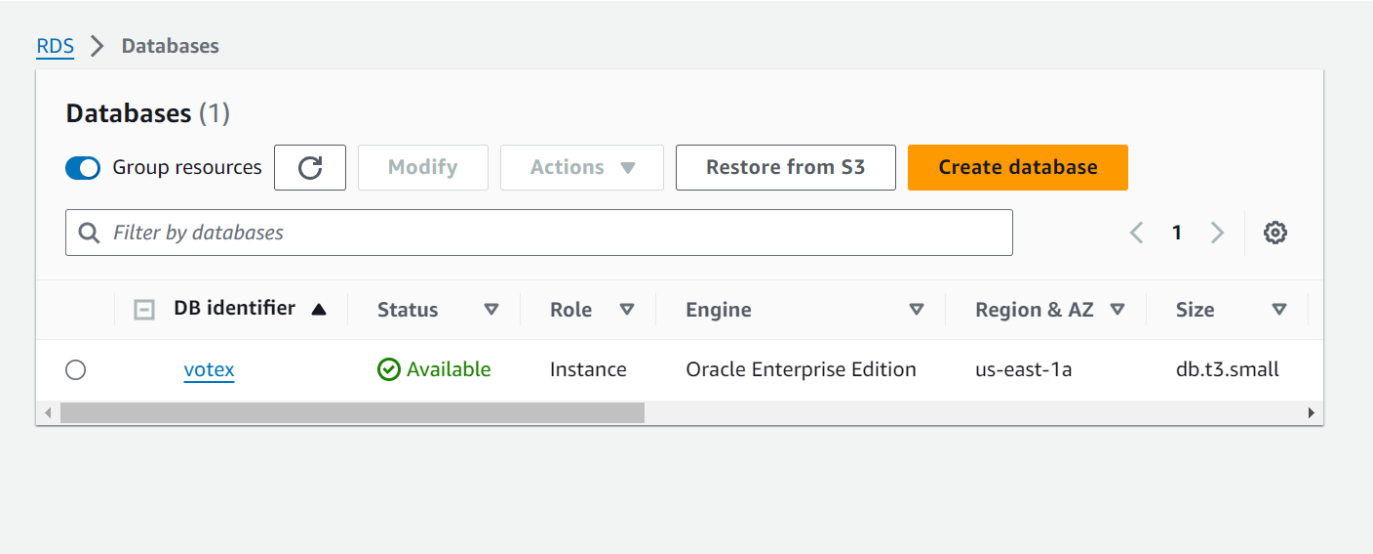
• Amazon RDS is designed to be highly available, fault-tolerant, and durable. It runs on AWS infrastructure, leveraging multiple Availability Zones for data redundancy and automatic failover, ensuring high reliability and durability of data.

• Amazon RDS supports various popular relational database engines, including MySQL, PostgreSQL, Oracle, SQL Server, and MariaDB, offering users the flexibility to choose the database engine that best fits their application requirements.

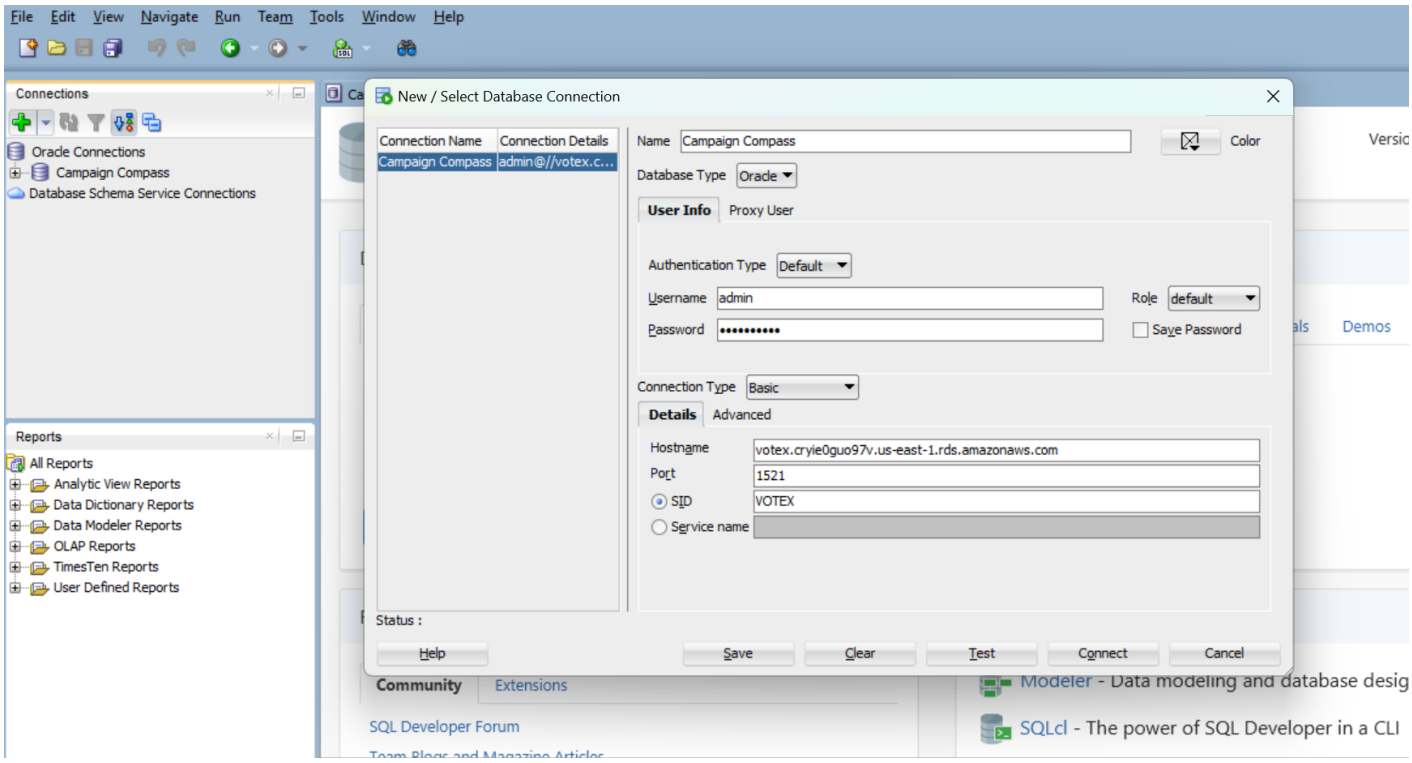
• Amazon RDS provides built-in security features such as encryption at rest and in transit, network isolation using Amazon Virtual Private Cloud (VPC), and fine-grained access control through AWS Identity and Access Management (IAM), ensuring data confidentiality, integrity, and availability.

• Amazon RDS offers automated backups, snapshots, and point-in-time recovery, allowing users to easily restore databases to previous states in case of accidental data loss or corruption.

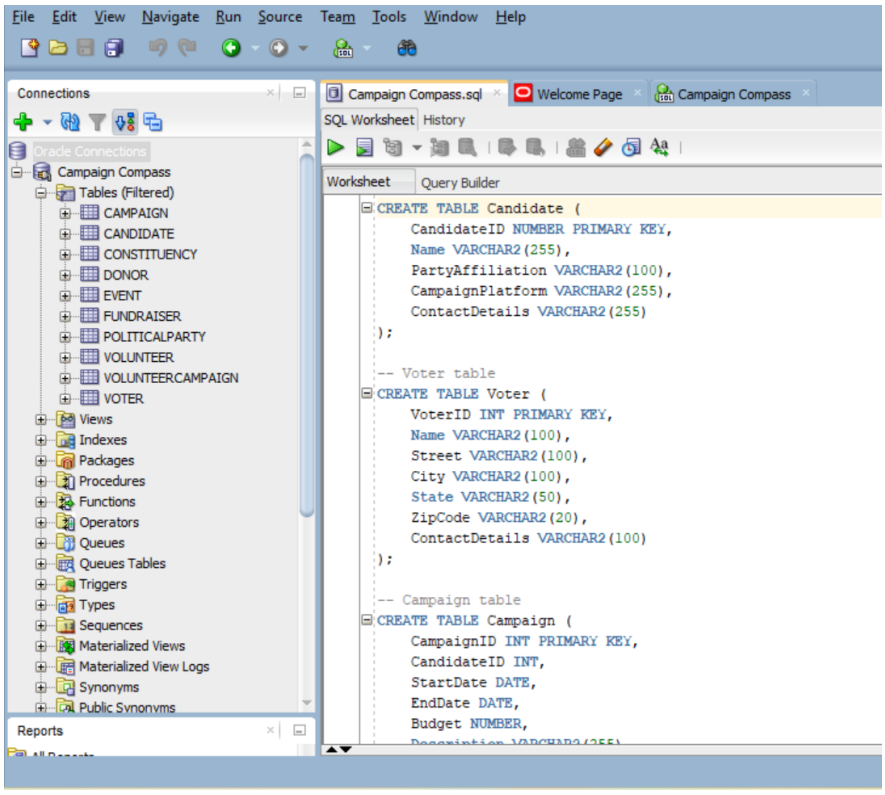
DATABASE CREATION



Creation of database instance in Amazon Relation database Service (RDS)



Establishing Connection between Oracle SQL Developer and Amazon RDS



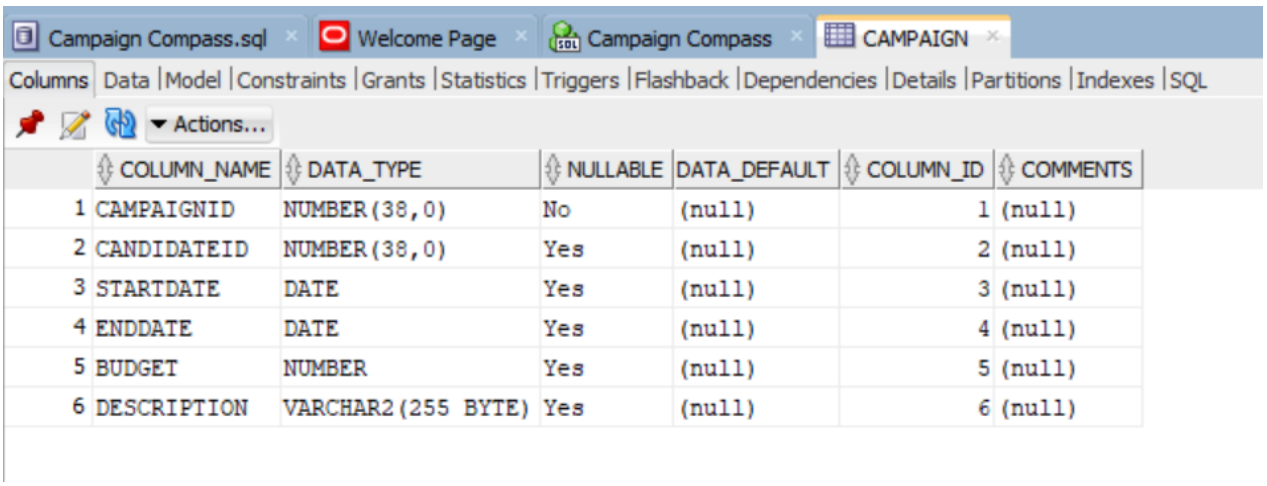
A general overview of the workbench in Oracle SQL after giving connection.

```sql
CREATE TABLE PoliticalParty (
    PartyID INT PRIMARY KEY,
    Name VARCHAR2(100),
    Leader VARCHAR2(100),
    Ideology VARCHAR2(100)
);

-- Event table
CREATE TABLE Event (
    EventID INT PRIMARY KEY,
    Name VARCHAR2(100),
    EventDate DATE,
    Location VARCHAR2(100),
    CampaignID INT,
    CONSTRAINT fk_event_campaign FOREIGN KEY (CampaignID) REFERENCES Campaign(CampaignID)
);

-- Fundraiser table
CREATE TABLE Fundraiser (
    FundraiserID INT PRIMARY KEY,
    Name VARCHAR2(100),
    ContactDetails VARCHAR2(100),
    CampaignID INT,
    FundsRaised NUMBER,
    FundraiserDate DATE,
    CONSTRAINT fk_fundraiser_campaign FOREIGN KEY (CampaignID) REFERENCES Campaign(CampaignID)
);
```

The DDL Commands for creating tables in the database along with the constraints.



Campaign Compass.sql | Welcome Page | Campaign Compass | CAMPAIGN

Columns | Data | Model | Constraints | Grants | Statistics | Triggers | Flashback | Dependencies | Details | Partitions | Indexes | SQL

Actions...

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	CAMPAIGNID	NUMBER(38,0)	No	(null)	1	(null)
2	CANDIDATEID	NUMBER(38,0)	Yes	(null)	2	(null)
3	STARTDATE	DATE	Yes	(null)	3	(null)
4	ENDDATE	DATE	Yes	(null)	4	(null)
5	BUDGET	NUMBER	Yes	(null)	5	(null)
6	DESCRIPTION	VARCHAR2(255 BYTE)	Yes	(null)	6	(null)

	CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION	R_OWNER	R_TABLE_NAME	R_CONSTRAINT_NAME	DELETE_RULE	STATUS	DEFERRABLE	VALIDATED
1	FK_CANDIDATE	Foreign_Key	(null)	ADMIN	POLITICALPARTY	SYS_C005952	NO ACTION	ENABLED	NOT DEFERRABLE	VALIDATED
2	SYS_C005953	Primary_Key	(null)	(null)	(null)	(null)	(null)	ENABLED	NOT DEFERRABLE	VALIDATED

An example of a created table named “Campaign” with its attributes and constraints.