

Montréal Youth Soccer Club

Prepared for

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Professor of the databases class with the course ID of 353

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Project Overview

A group of four students worked on a database project that sought to develop a complete database system for organizing information about the club, such as members, staff, and locations. The main goal was to create a database that is easy to manage, scalable, and guarantees data integrity. In order to capture the key entities and relationships, the project required creating a conceptual schema. This model was then translated into a relational schema, which was then implemented using SQL. Detailed DDL statements for table construction, DML statements for data manipulation, and count queries for data analysis were among the deliverables. MySQL was utilized for the project, and throughout the design and implementation stages, the goals were to preserve data consistency and support a range of user interactions. issues like guaranteeing data integrity and designing a versatile schema were addressed through the use of constraints and well-defined relationships.

Completed Tasks

Conceptual Database Design

- **Design Overview:** Developed a conceptual schema to model the data requirements for the club. This included identifying key entities and their attributes.
 - **Entities:** Defined entities such as Person, Location, Team, FamilyMember, and ClubMember.
 - **Attributes:** Specified attributes for each entity to capture relevant details (e.g., PersonID, Name, DateOfBirth for Person).
 - **Relationships:** Identified and established relationships between entities to represent their associations (e.g., BasedIn, FamilyMembership, RegisteredAt).

E/R to Relations Conversion

- **Entity-Relationship Diagram:** Converted the conceptual E/R diagram into a relational schema to be implemented in a database.
 - **Tables:** Created corresponding tables for each entity and relationship in the schema.
 - **Primary and Foreign Keys:** Defined primary keys for entity tables and foreign keys for relationships to ensure data integrity and establish connections between tables.

DDL Statements

- **Table Creation:** Wrote SQL Data Definition Language (DDL) statements to define and create the necessary tables in the database.
 - **Table Definitions:** Included statements for creating tables, specifying columns, data types, and constraints.
 - **Constraints:** Implemented primary key constraints, foreign key constraints, and other relevant constraints to enforce data integrity.

DML Statements

- **Data Manipulation:** Developed SQL Data Manipulation Language (DML) statements to interact with the data in the database.
 - **Insertion:** Created statements for inserting sample data into the tables.
 - **Updating:** Provided statements for updating existing records as needed.
 - **Deletion:** Included statements for removing records from the tables.

Query Examples

- **Count Queries:** Created SQL queries to count records and generate summaries based on various criteria.
 - **Sample Queries:** Provided examples of queries to count the number of club members, family memberships, and other relevant data points.

