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Formula1 DB

Project Description

Managing Formula 1 with MySQL
- This relational database is designed to manage and store detailed information related to Formula 1, one of the most prestigious and followed motor racing competitions in the world. Using MySQL, a relational database management system, this project allows for efficient and structured organization and analysis of historical and current competition data.

Objective
- The main objective of this database is to provide a solid and flexible structure to record and query information about Formula 1 seasons, including race details, teams, drivers, engineers, sponsors, and results. The database is designed to facilitate data analysis, statistics generation, and retrieval of relevant information for fans, journalists, and sports analysts.

Key Components
1. Seasons and Races:
- The database stores information about different Formula 1 seasons and the races held in each season, including specific race data such as date and location.

2. Teams and Drivers:
- Teams competing in Formula 1 are registered along with the drivers who are part of each team. The database allows tracking the career paths of drivers and their associations with different teams over time.

3. Engineering Teams and Sponsors:
- The database also includes information about the engineering teams behind the teams' cars and the sponsors supporting them. This information is crucial for understanding the dynamics and financing behind each team.

4. Results and Statistics:
- Race results are recorded, including final positions of drivers, points earned, fastest laps, and any penalties received. This enables detailed tracking of driver and team performance throughout the season.

Technology Used
- SQL (Structured Query Language): Language used to manage and manipulate the database, allowing for creation, updating, querying, and deletion of data.
- MySQL: Relational database management system (RDBMS) chosen to implement this project due to its scalability and widespread adoption in the industry.

- In summary, this relational database for Formula 1, implemented using MySQL, offers a solution for comprehensive management of information for one of the most complex and exciting sports competitions in the world. 🏁

Diagrama E-R
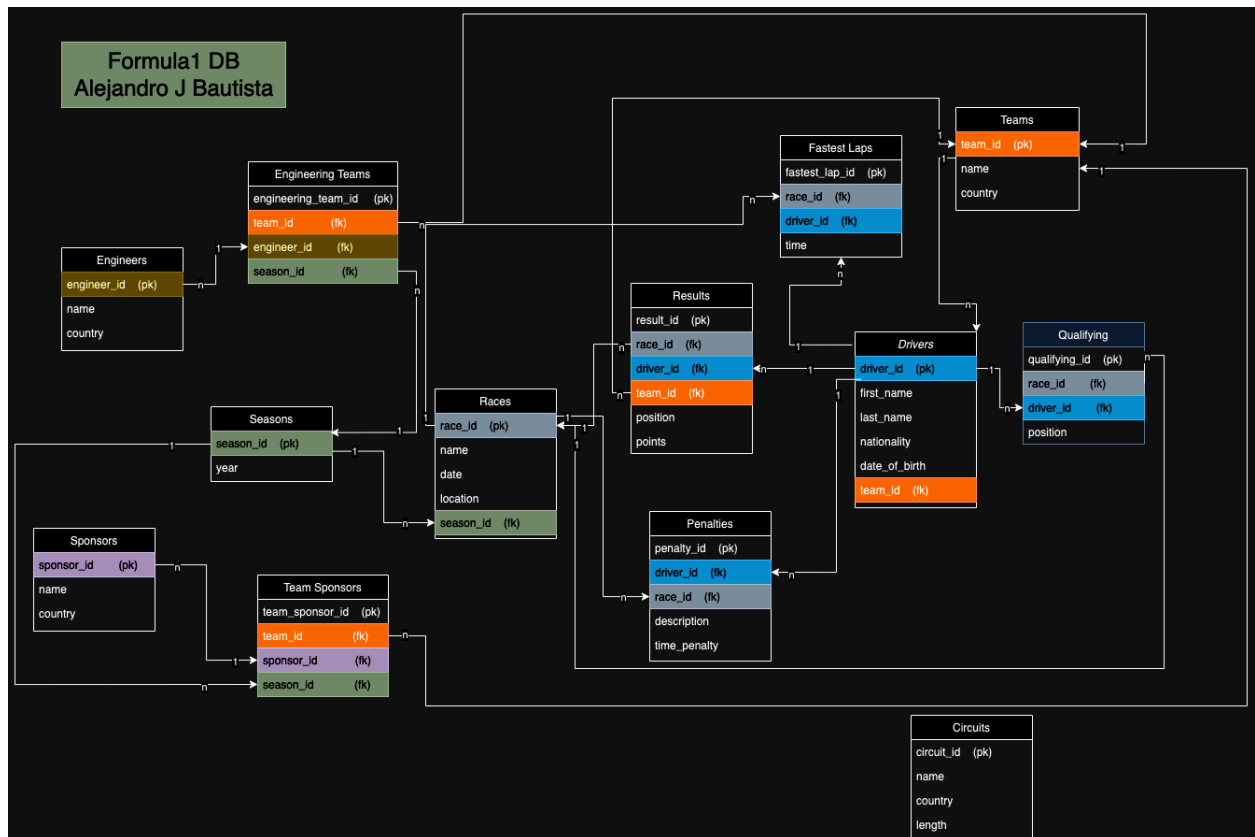
Tables and Relationships

1️⃣ Drivers:

- driver_id (PK)
- first_name
- last_name
- nationality
- date_of_birth
- team_id (FK)

Relationships:

- (1-n) with Teams
- (1-n) with Results
- (1-n) with Fastest_Laps
- (1-n) with Qualifying
- (1-n) with Penalties

2️⃣ Teams:

- team_id (PK)
- name
- country

Relationships:

- (1-n) with Drivers
- (1-n) with Results
- (m-n) with Engineers through Engineering Teams
- (m-n) with Sponsors through Team_Sponsors

3 Seasons:

- season_id (PK)
- year

Relationships:

- (1-n) with Races
- (1-n) with Team_Constructors
- (1-n) with Team_Sponsors

4 Circuits (Additional, not directly related in the simplified design):

- circuit_id (PK)
- name
- country
- length

5 Races:

- race_id (PK)
- name
- date
- location
- season_id (FK)

Relationships:

- (1-n) with Results
- (1-n) with Fastest_Laps
- (1-n) with Qualifying
- (1-n) with Penalties

6 Results:

- result_id (PK)
- race_id (FK)
- driver_id (FK)
- team_id (FK)
- position
- points

Relationships:

- (n-1) with Races
- (n-1) with Drivers
- (n-1) with Teams

7 Fastest_Laps:

- fastest_lap_id (PK)
- race_id (FK)
- driver_id (FK)
- time

Relationships:

- (n-1) with Races
- (n-1) with Drivers

8 Qualifying:

- qualifying_id (PK)
- race_id (FK)
- driver_id (FK)
- position

Relationships:

- (n-1) with Races
- (n-1) with Drivers

9 Penalties:

- penalty_id (PK)
- driver_id (FK)
- race_id (FK)
- description
- time_penalty

Relationships:

- (n-1) with Drivers
- (n-1) with Races

10 Engineers

- engineer_id (PK)
- name
- country

Relationships:

- (1-n) with Engineering Team

🔢1️⃣1️⃣Egineering_Team:

- engineering_team_id (PK)
- team_id (FK)
- engineer_id (FK)
- season_id (FK)

Relationships:

- (n-1) with Engineers
- (n-1) with Teams
- (n-1) with Seasons

🔢1️⃣2️⃣Sponsors:

- sponsor_id (PK)
- name
- country

Relationships:

- (1-n) with Team_Sponsors

🔢1️⃣3️⃣Team_Sponsors:

- team_sponsor_id (PK)
- team_id (FK)
- sponsor_id (FK)
- season_id (FK)

Relationships:

- (n-1) with Sponsors
- (n-1) with Teams
- (n-1) with Seasons