

## **ER DESIGN**

### **High-Level Overview of F1 Competition System**

The F1 Competition system is designed to manage various aspects of a Formula 1 racing event. The primary functions and use cases include:

**1. Team Management:**

- Adding, updating, and deleting team information, such as team name, country, and sponsor information.

**2. Driver Management:**

- Adding, updating, and deleting driver information, including name, date of birth, country, and the team they belong to.

**3. Race Management:**

- Planning races, including date, time, and location, and managing race results.

**4. Circuit Management:**

- Adding and updating circuit information, such as name, location, and length.

**5. Result Management:**

- Recording race results, including driver positions, times, and points.

## **Description of Entities, Their Attributes, and Relationships**

### **1. Team**

- Attributes:
  - id (INT)
  - name (VARCHAR)
  - country (VARCHAR)
  - sponsor\_info (VARCHAR)
- Relationships:
  - Has one or more drivers (OneToMany with Driver)

### **2. Driver**

- Attributes:
  - id (INT)
  - name (VARCHAR)
  - dob (DATE)
  - country (VARCHAR)
  - team\_id (INT)
- Relationships:
  - Belongs to one team (ManyToOne with Team)
  - Participates in multiple races (ManyToMany with Race)

### **3. Race**

- Attributes:
  - id (INT)
  - name (VARCHAR)
  - date (DATE)
  - time (TIME)
  - circuit\_id (INT)
- Relationships:
  - Takes place on one circuit (ManyToOne with Circuit)
  - Involves multiple drivers (ManyToMany with Driver)

#### 4. Circuit

- Attributes:
  - id (INT)
  - name (VARCHAR)
  - location (VARCHAR)
  - length (FLOAT)
- Relationships:
  - Hosts multiple races (OneToMany with Race)

#### 5. Result

- Attributes:
  - id (INT)
  - race\_id (INT)
  - driver\_id (INT)
  - position (INT)
  - time (TIME)
  - points (INT)
- Relationships:
  - Linked to one race (ManyToOne with Race)
  - Linked to one driver (ManyToOne with Driver)