The Formula 1 Database

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1. Choice of DBMS

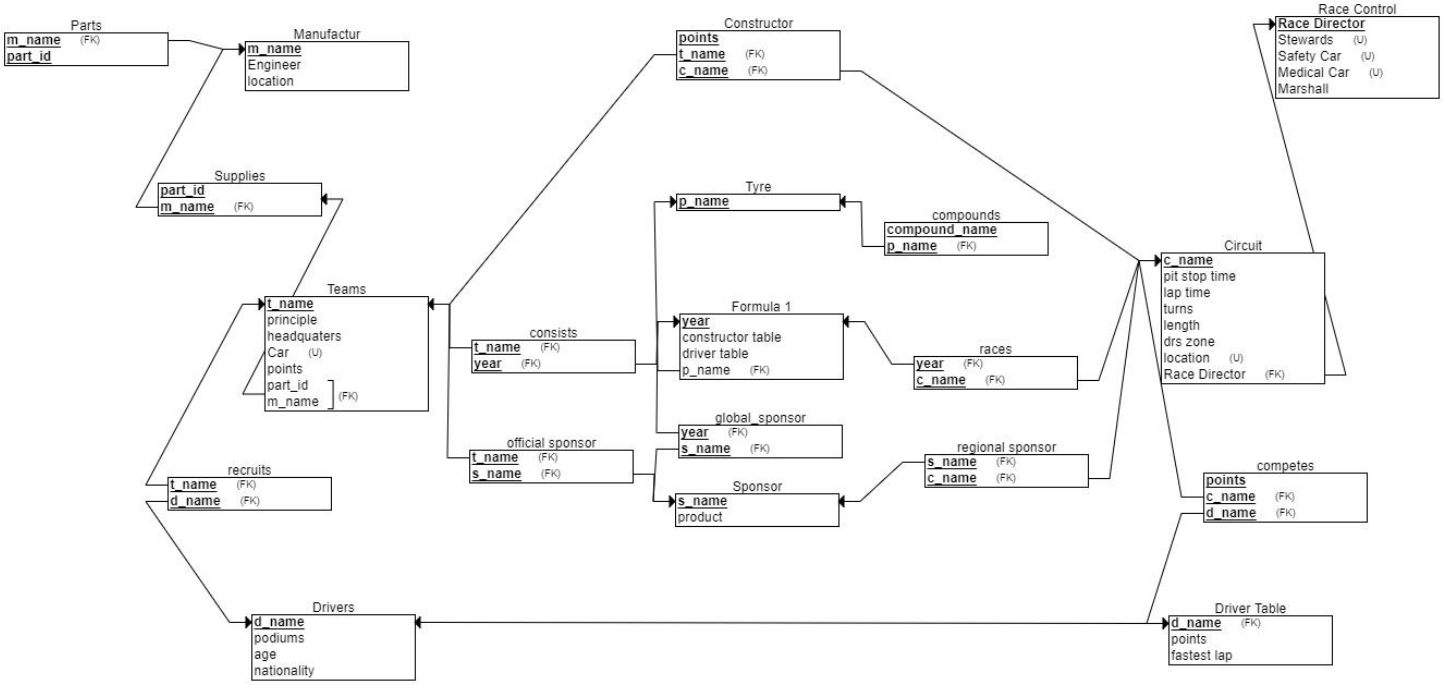
We have chosen PostgreSQL as our choice of DBMS.PostgreSQL is a Relational based Database Management System i.e RDBMS.

A relational database stores data in the form of multiple tables. The database structure works by arranging every table into rows (known as records or tuples) and columns (known as fields or attributes). Tables, columns, and rows are the three major components of a relational database.

The Reason we chose RDBMS as our database was because we have about 20 entities and RDBMS provides ease of use in creation and maintenance of such a huge database while still maintaining constraints of the database. On the technical side of things , It is easier to add new data or modify existing tables in an RDBMS while maintaining data consistency with the existing format. This is mainly because an RDBMS is ACID-compliant.Relational databases are considered low-maintenance because users can quickly test, regulate, fix and back up data as the automation tool in RDBMS help systematizes these tasks.

These are the main reasons we chose RDBMS for our project and one of the best implementations of RDBMS is the PostgreSQL , thereby justifying out choice.

2. Relational Data Model


Parts
m_name (FK)
part_id
Manufactur
m_name
Engineer
location
Supplies
part_id
m_name (FK)
Teams
t_name
principle
headquaters
Car (U)
points
part_id
m_name
(FK)
recruits
t_name (FK)
d_name (FK)
Drivers
d_name
podiums
age
nationality
Constructor
points
t_name (FK)
c_name (FK)
Tyre
p_name
compounds
compound_name
p_name (FK)
consists
t_name (FK)
year (FK)
Formula 1
year
constructor table
driver table
p_name (FK)
races
year (FK)
c_name (FK)
global_sponsor
year (FK)
s_name (FK)
official sponsor
t_name (FK)
s_name (FK)
Sponsor
s_name
product
regional sponsor
s_name (FK)
c_name (FK)
Race Control
Race Director
Stewards (U)
Safety Car (U)
Medical Car (U)
Marshall
Circuit
c_name
pit stop time
lap time
turns
length
drs zone
location (U)
Race Director (FK)
competes
points
c_name (FK)
d_name (FK)
Driver Table
d_name (FK)
points
fastest lap

3. Database Description

We have two files `f1_create.sql` and `f1_insert.sql`. The `f1_create.sql` file consists of create table statements for about 20 tables and the `f1_insert.sql` consists of insert queries of about 8-10 per table.

4. Work Division

The Mapping of ER diagram to Relational diagram was completed by all of us sitting together and discussing.

The Create statements were done by Royston and Rohan. The Insert queries were done by Rohan and Rahul.