F1 : The Complete Database

Team Member 1 Name   : Janam Vaidya(Representative)
Team Member 1 ID   : 201701027
Team Member 1 contact : 9558482769

Team Member 2 Name   : Milan Nagariya
Team Member 2 ID   : 201701010

Team Member 3 Name   : Rishabh K. Pandat
Team Member 3 ID   : 201701048

Scope of Database

It involves keeping records of all aspects that go into this thrilling sport, such as details about the current season, driver, the team, race tracks, sponsorship, team and driver records, F1 rules, etc. In addition to that, this database all keeps a track of limited resources like tyres and engines given to each team during the season, and sponsored merchandise.

Description

Formula1 is a complex sport with lots of things happening at the spur of the moment. F1 season usually starts in March and ends in December. Our objective in creating this database is to provide as much information as it is required by any new Formula 1 fan to enjoy this glamorous sport without any confusion and inconvenience across the world. Formula 1 is also praised as "most glorified moving circus which you can enjoy across the world" , but in order to really get to the essence of the sport one must understand how it works.

There are 10 teams in F1 competing against each other, each having their own unique name, each having a nationality, each having a certain number of allocated parts and tyres throughout the year, each having their own sponsorships, each having 2 drivers and 2 cars participating in a race and various other attributes. Now as a fan one would love to know about these drivers which represents their team and their nationality in F1. These drivers have their own racing number printed and

painted on their suits and car. Our database also consists of records and performance figures of each team and individual driver which makes you familiar with these teams and drivers and the history of F1. These gladiators(drivers) tame one of the fastest cars in the world and to help them do that tyres play a major role. These high performance tyres are classified based upon their properties such speed delta, longevity, etc and are uniquely identified based upon their color. As F1 cars can go upto 365km/hr, a set of tyres starts to fade away making the car slow, hence enters the strategy. Strategy is the plan which consists of cleverly choosing the time in the race to change the tyres of a car in such a way that you end up as high as possible in a race. Strategies are based upon tyres and racetracks.

Speaking of racetracks, there are 21 of them spread across 21 countries. Each racetrack uniquely represents a nation's participation in these high octane sport. Races are pre-scheduled and are fixed. Each racetrack hosts a complete race weekend. Race weekend consists of Practice on Thursday or Friday, Qualifying on Saturday and Race on Sunday. Our database covers every information needed by a new fan for scheduling a visit to a race such as information regarding racetrack, nearest city, weather, time zone, itinerary of all the activities other than the race, etc.

As in every sport F1 also have the price which every team and driver fight for, Constructor and Driver Championship. Each car collects points based on finishing position in a race and a team earns the collective points of both cars. Our database also keeps the tab for the ongoing Championship Standings which makes the life of a new F1 fan ever more easy.

Following are sample queries, the system is expected to answer:

1. Retrieve all drivers who have won more than 2 races.
2. Retrieve all teams with constructor score more than 50.
3. Retrieve teams which have only 1 engine available for the rest of the season.
4. Retrieve the driver who has set the fastest lap in 3rd Grand Prix.
5. Retrieve the racetracks where 'xyz' driver has set the fastest lap records.
6. Retrieve the name of Grand Prix's where the weather was rainy.
7. Retrieve teams who have been disqualified for the maximum number of times in the season.
8. Retrieve the driver with maximum number of penalty points.
9. Retrieve the sponsor name who have more than 10 devoted employees.
10. Retrieve the tyre type with color code 'abc' and longevity more than 15 laps.