FORMULA 1

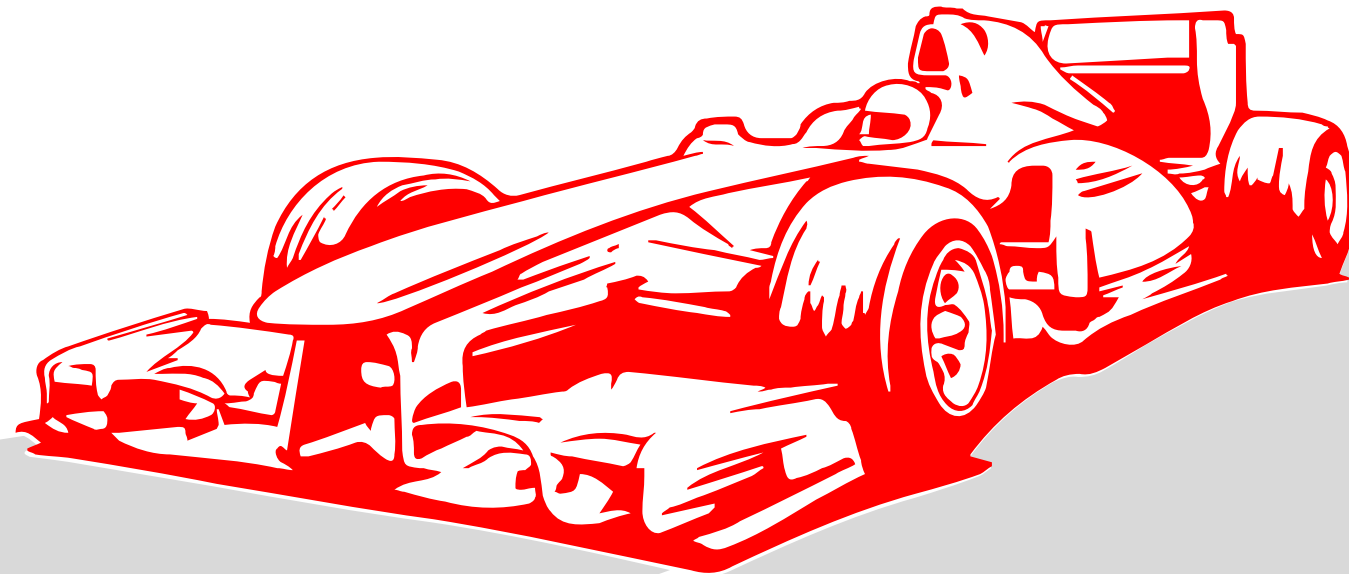## CIS 189: Solving Hard Problems

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Overview and Stakeholder Analysis

1. Formula 1 Organizers

As we shift to a rotating schedule, to capture the global audience in South Asia, how do we prioritize certain tracks and tournament length?
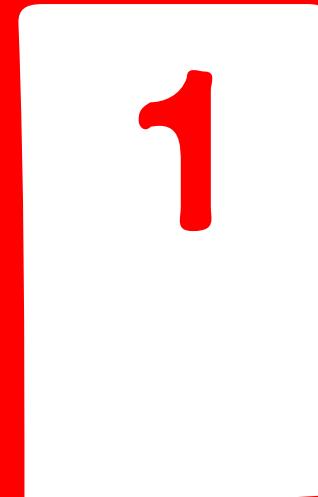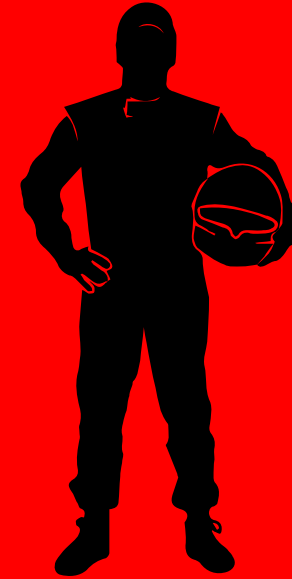
2. Formula 1 Teams

Will drivers have to race in dangerous tracks and be able to take a break between travelling and the physically/mentally taxing races?

3. Formula 1 Audience

Will a nearby track I like such as the Monaco track host a race? Will weather be pleasant or be extremely hot in Bahrain or cold in France?

4. Formula 1 Tracks

Where should I choose to open a new track to maximise our value add to the tournament and our chances of being included in it?

Features

Tracks and Weather Data

We use the lat., long., and the average weekly weather of the nearest city due to data unavailability for 75 tracks.
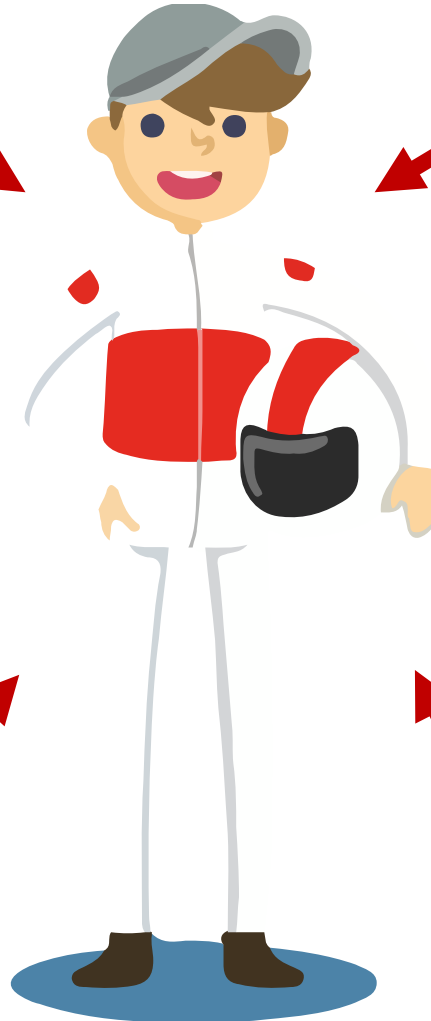
Teams and Preferences

We use the 11 major teams from the last tournament and users can decide the track preferences for each team

Audience Preferences

Each track has an "audience score." Due to no race having every track, we randomize default preferences

Start week and Race Count

F1 Organizers can decide when to start the season and how many races to incorporate?

Optimization

01 Audience Track Preferences

Our main objective is to maximize revenue and TV ratings, which is driven by audience preferences: distance to audience, track turns .etc

02 Team Track Preferences

The tournament won't have the same ratings without the best-performing teams and drivers

03 Weather

We set the ideal temperature as 25°C and minimize the absolute difference to boost ticket sales and attendance

04 Distance between tracks

As transporting cars and teams can be expensive, we minimize the distance between subsequent tracks

Data Sources

Weather

1 https://www.kaggle.com/datasets/han
sukyang/temperature-history-of-
1000-cities-1980-to-2020

Circuits

2 https://www.kaggle.com/datasets/roh
anrao/formula-1-world-championship-
1950-2020

Teams

3 https://raw.githubusercontent.com/t
oUpperCase78/formula1-
datasets/master/Formula1_2022season
_teams.csv

THANK YOU

Now for the web-app demo!!