Group Project

IPL Scheduler

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Outline

Introduction

The Indian Premier League (IPL) is a men's T20 franchise cricket league in India. The Board of Control founded the league for Cricket in India (BCCI) in 2007. It is usually held annually in summer across India between March to May. The Indian Premier League (IPL) is a Twenty-20 cricket tournament league established with the objective of promoting cricket in India and thereby nurturing young and talented players. The IPL is a franchise-based competition with ten teams, each representing an Indian city. Franchises acquire players via an annual player auction, trading players in specific trading windows, and signing players who are not picked up in the auction.

Problem statement

To make an algorithm to schedule IPL matches, in an efficient way while considering all possible situations.

Our Criteria

- No team should play matches on consecutive days.
- Each team must play a match at their home ground and a match away alternatively.
- If there is a prediction of rain in an area, stadiums in that area should be avoided.
- For matches that are anticipating a larger audience, stadiums with inadequate seating capacity must be avoided.

Teams and Stadiums

There are 10 teams, namely :

Mumbai Indians	Chennai Super Kings
Kolkata Knight Riders	Sunrisers Hyderabad
Rajasthan Royals	Royal Challengers Bangalore
Delhi Capitals	Punjab Kings
Lucknow Super Giants	Gujarat Titans

There are 8 stadiums which are Chennai, Bengaluru, Hyderabad, Mumbai, Navi Mumbai, Ahmedabad, Kolkata and Delhi.

Each team plays the other team twice.

There are 90 matches played in the playoffs.

Then the top four teams are made to play qualifiers, Suppose they are 1, 2, 3, and 4. 1 and 2 play then 3 and 4. After this, the lost team of 3 and 4 are out of the tournament. and the winner of 1 2 directly goes to the finals. Now the winner of 3 4 and loser of 1 2 play the winner in this goes to the finals.

Therefore a total of 94 matches are played.

The format with which we are scheduling has been changed to a new format which is, each team plays the team in the same row and the same column twice, and all others once. The groups are made according to the team's seeding. We have taken the old format for our convenience.
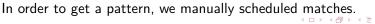
Our Teams and Schedules

For our ease, we have selected 4 teams and 4 stadiums
The teams we have chosen are :

- Mumbai Indians
- Kolkata Knight Riders
- Chennai Super Kings
- Royal Challengers Bangalore

We have 4 stadiums which are the home grounds of the teams we have selected.
They are:

- Mumbai (Wankhede Stadium)
- Kolkata (Eden Gardens)
- Chennai (M. A. Chidambaram/Chepauk Stadium)
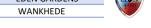- Bangalore (Chinnaswamy Stadium)

In order to get a pattern, we manually scheduled matches.

Manual Scheduling

DATE	DAY	MATCH 1	GROUND	STADIUM
4th feb	SATURDAY	CSK VS MI	CHENNAI	CHEPAUK
5th feb	SUNDAY			
6th feb	MONDAY	MI VS RCB	MUMBAI	WANKHEDE
7th feb	TUESDAY	CSK VS KKR	KOLKATHA	EDEN GARDENS
8th feb	WEDNESDAY			
9th feb	THURSDAY	KKR VS RCB	BANGLORE	CHINNA SWAMY
10th feb	FRIDAY			
11th feb	SATURDAY	MI VS KKR	KOLKATHA	EDEN GARDENS
12th feb	SUNDAY	CSK VS RCB	BANGLORE	CHINNA SWAMY
13th feb	MONDAY			
14th feb	TUESDAY			
15th feb	WEDNESDAY	KKR VS CSK	CHENNAI	CHEPAUK
16th feb	THURSDAY			
17th feb	FRIDAY	RCB VS MI	BANGLORE	
18th feb	SATURDAY			
19th feb	SUNDAY	KKR VS MI	MUMBAI	WANKHEDE
20th feb	MONDAY	CSK VS RCB	CHENNAI	CHEPAUK
21st feb	TUESDAY			
22nd feb	WEDNESDAY	KKR VS RCB	KOLKATHA	EDEN GARDENS
23rd feb	THURSDAY	MI VS CSK	MUMBAI	WANKHEDE

Problems we faced

The problems that we faced are :

- We had to make sure the climatic conditions during that week were formidable
  Example: In Chennai, February is semi summer season so climate won't be an issue.

- If it was a popular match, an ideal day had to be chosen
  Example: CSK vs RCB is a popular match so it is scheduled on a sunday.

- To avoid a team playing consecutively, we had to put a day break between some of the matches
  Example: If the February 7th match was scheduled on 5th of February then CSK will be playing consecutively.

References

https://www.iplt20.com/