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Problem 1: Find the total number of matches played.

CODE :-

```
total_matches = matches_df.shape[0]
print("Total Matches Played:", total_matches)
```

OUTPUT :-

Total Matches Played: 636

Problem 2: Find all the unique seasons available.

CODE:-

```
unique_seasons = matches_df['season'].unique()
print("Unique Seasons:", unique_seasons)
```

OUTPUT:-

Unique Seasons: [2017 2008 2009 2010 2011 2012 2013 2014 2015 2016]

Problem 3: Find how many matches were played in each season.

CODE:-

```
matches_per_season = matches_df['season'].value_counts()
print(matches_per_season)
```

OUTPUT:-

2013 76
2012 74
2011 73
2016 60
2015 59
2014 60
2010 60
2009 59
2008 58
2017 58

Problem 4: Find which city hosted the maximum matches.

CODE:-

```
top_city = matches_df['city'].value_counts().idxmax()
print("City hosting maximum matches:", top_city)
```

OUTPUT:-

City hosting maximum matches: Bangalore

Problem 5: Find how many matches had Duckworth-Lewis (DL) method applied.

CODE:-

```
dl_applied_matches = matches_df[matches_df['dl_applied'] == 1].shape[0]
print("Matches with DL applied:", dl_applied_matches)
```

OUTPUT:-

Matches with DL applied: 7

Problem 6: Find the team that won the most matches.

CODE:-

```
most_match_winner = matches_df['winner'].value_counts().idxmax()
print("Team with most wins:", most_match_winner)
```

OUTPUT:-

Team with most wins: Mumbai Indians

Problem 7: Find the player with the most 'Player of the Match' awards.

CODE:-

```
top_player = matches_df['player_of_match'].value_counts().idxmax()
print("Top Player of the Match Awards:", top_player)
```

OUTPUT:-

Top Player of the Match Awards: CH Gayle

Problem 8: How many matches were won by runs? (bat first wins)

CODE:-

```
bat_first_wins = matches_df[matches_df['win_by_runs'] > 0].shape[0]
print("Matches won by runs:", bat_first_wins)
```

OUTPUT:-

Matches won by runs: 249

Problem 9: How many matches were won by wickets? (bat second wins)

CODE:-

```
bat_second_wins = matches_df[matches_df['win_by_wickets'] > 0].shape[0]
print("Matches won by wickets:", bat_second_wins)
```

OUTPUT:-

```
Matches won by wickets: 389
```

Problem 10: Find the match with the highest margin of victory by runs.

CODE:-

```
highest_run_win = matches_df.loc[matches_df['win_by_runs'].idxmax()]
print(highest_run_win[['winner', 'win_by_runs']])
```

OUTPUT:-

```
winner        Mumbai Indians
win_by_runs              146
```

Problem 11: Find the match with the highest margin of victory by wickets.

CODE:-

```
highest_wicket_win = matches_df.loc[matches_df['win_by_wickets'].idxmax()]
print(highest_wicket_win[['winner', 'win_by_wickets']])
```

OUTPUT:-

```
winner           Kolkata Knight Riders
win_by_wickets                      10
```

Problem 12: How many matches ended with no result.

CODE:-

```
no_result = matches_df[matches_df['result'] == 'no result'].shape[0]
print("Matches with no result:", no_result)
```

OUTPUT:-

Matches with no result: 3

Problem 13: Which venue hosted the most matches?

CODE:-

```
top_venue = matches_df['venue'].value_counts().idxmax()
print("Venue hosting most matches:", top_venue)
```

OUTPUT:-

Venue hosting most matches: M Chinnaswamy Stadium

Problem 14: How many times was 'field' chosen after winning the toss?

CODE:-

```
field_decisions = matches_df[matches_df['toss_decision'] == 'field'].shape[0]
print("Times 'field' was chosen:", field_decisions)
```

OUTPUT:-

Times 'field' was chosen: 315

Problem 15: How many times was 'bat' chosen after winning the toss?

CODE:-

```
bat_decisions = matches_df[matches_df['toss_decision'] == 'bat'].shape[0]
print("Times 'bat' was chosen:", bat_decisions)
```

OUTPUT:-

Times 'bat' was chosen: 320

Problem 16: Find which team won the most tosse

CODE:-

```
top_toss_winner = matches_df['toss_winner'].value_counts().idxmax()
print("Team with most toss wins:", top_toss_winner)
```

OUTPUT:-

Team with most toss wins: Mumbai Indians

Problem 17: Find total number of matches where toss winner = match winner.

CODE:-

```
toss_match_winner = matches_df[matches_df['toss_winner'] ==
matches_df['winner']].shape[0]
print("Matches where toss winner = match winner:", toss_match_winner)
```

OUTPUT:-

Matches where toss winner = match winner: 325

Problem 18: List all unique teams that have ever played.

CODE:-

```
teams = pd.unique(matches_df[['team1', 'team2']].values.ravel())
print("Unique Teams:", teams)
```

OUTPUT:-

Unique Teams: ['Sunrisers Hyderabad' 'Royal Challengers Bangalore' 'Mumbai Indians' ...]

Problem 19: Find number of matches played in each city.

CODE :-

```
matches_per_city = matches_df['city'].value_counts()
print(matches_per_city)
```

OUTPUT:-

```
Bangalore      66
Mumbai         57
Delhi          57
...
```

Problem 20: Find the total number of unique players who have won "Player of the Match" award.

CODE :-

```
unique_players = matches_df['player_of_match'].nunique()

print("Total unique 'Player of the Match' awardees:", unique_players)
```

OUTPUT:-

Total unique 'Player of the Match' awardees: 226