# India vs Australia Mastercard 1st T-20I Analysis

```
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
```

```
In [2]: def match_day():
            from datetime import date
            match_date = date(2022, 9, 20)
            print("Date of the match is:",match date)
            print("Mastercard T20I Series")
            print("India vs Australia")
            toss_winner = "AUS"
            toss_decision = "bowl"
            print("Toss:",toss_winner,"won the toss and decided to",toss_decision)
            Stadium = 'Punjab Cricket Association Stadium'
            print("Stadium:",Stadium)
        match_day()
         Date of the match is: 2022-09-20
         Mastercard T20I Series
         India vs Australia
         Toss: AUS won the toss and decided to bowl
         Stadium: Punjab Cricket Association Stadium
```

# **India Scorecard**

```
In [3]:
        print("India Playing XI:-\n")
        playing 11=['KL Rahul', 'Rohit Sharma (c)', 'Virat Kohli', 'Suryakumar Yadav', 'Hardik Pandya',
                    'Axar Patel', 'Dinesh Karthik', 'Harshal Patel', 'Umesh Yadav', 'Bhuvneshwar Kumar',
                        'Yuzvendra Chahal']
       for i in playing 11:
                print(i)
        print("\nSCORECARD")
        print("*** India Batting ***")
        player=['KL Rahul','Rohit Sharma (c)','Virat Kohli','Suryakumar Yadav','Hardik Pandya',
                    'Axar Patel', 'Dinesh Karthik', 'Harshal Patel']
        runs=[55,11,2,46,71,6,6,7]
        balls=[35,9,7,25,30,5,5,4]
       fours=[4,1,0,2,7,1,0,1]
        sixes=[3,1,0,4,5,0,0,0]
        strike_rate=[157.14,122.22,28.57,184.00,236.67,120,120,175]
        ind={"Batting":player,"R":runs,"B":balls,"4s":fours,"6s":sixes,"S/R":strike rate}
        ind=pd.DataFrame(ind)
        print(ind)
        print("")
       ytb=['Umesh Yadav','Bhuvneshwar Kumar','Yuzvendra Chahal' ]
        print("\nYet to bat:")
       for i in ytb:
```

```
print(i)
#======BowLing=========
print("\n***AUS Bowlig***\n")
player=['Josh Hazlewood', 'Pat Cummins', 'Adam Zampa', 'Nathan Ellis', 'Cameron Green', 'Glenn Maxwell']
overs=[4.0,4.0,4.0,4.0,3.0,1.0]
M=[0,0,0,0,0,0]
Runs=[39,47,36,30,46,10]
wickets=[2,0,0,3,1,0]
econ=[9.75,11.75,9.00,7.50,15.33,10.00]
aus_bowl={"Bowling":player,"0":overs,"M":M,"R":Runs,"W":wickets,"Econ":econ}
aus_bowl=pd.DataFrame(aus_bowl)
print(aus_bowl)
print("")
Buys=0
fours=sum(fours)
sixes=sum(sixes)
print("\nIndia Total Fours:",fours)
print("\nIndia Total Sixes:",sixes)
print("\nExtras:",sum(Runs)-sum(runs)+Buys)
Ind=sum(Runs)+Buys
print("\nTotal runs:",Ind)
```

KL Rahul
Rohit Sharma (c)
Virat Kohli
Suryakumar Yadav
Hardik Pandya
Axar Patel
Dinesh Karthik
Harshal Patel
Umesh Yadav
Bhuvneshwar Kumar
Yuzvendra Chahal

#### SCORECARD

### \*\*\* India Batting \*\*\*

|   | Batting          | R  | В  | 4s | 6s | S/R    |
|---|------------------|----|----|----|----|--------|
| 0 | KL Rahul         | 55 | 35 | 4  | 3  | 157.14 |
| 1 | Rohit Sharma (c) | 11 | 9  | 1  | 1  | 122.22 |
| 2 | Virat Kohli      | 2  | 7  | 0  | 0  | 28.57  |
| 3 | Suryakumar Yadav | 46 | 25 | 2  | 4  | 184.00 |
| 4 | Hardik Pandya    | 71 | 30 | 7  | 5  | 236.67 |
| 5 | Axar Patel       | 6  | 5  | 1  | 0  | 120.00 |
| 6 | Dinesh Karthik   | 6  | 5  | 0  | 0  | 120.00 |
| 7 | Harshal Patel    | 7  | 4  | 1  | 0  | 175.00 |

Yet to bat: Umesh Yadav Bhuvneshwar Kumar Yuzvendra Chahal

### \*\*\*AUS Bowlig\*\*\*

|   | Bowling        | 0   | Μ | R  | W | Econ  |
|---|----------------|-----|---|----|---|-------|
| 0 | Josh Hazlewood | 4.0 | 0 | 39 | 2 | 9.75  |
| 1 | Pat Cummins    | 4.0 | 0 | 47 | 0 | 11.75 |
| 2 | Adam Zampa     | 4.0 | 0 | 36 | 0 | 9.00  |
| 3 | Nathan Ellis   | 4.0 | 0 | 30 | 3 | 7.50  |
| 4 | Cameron Green  | 3.0 | 0 | 46 | 1 | 15.33 |
| 5 | Glenn Maxwell  | 1.0 | 0 | 10 | 0 | 10.00 |

India Total Fours: 16

India Total Sixes: 13

Extras: 4

Total runs: 208

## Top 3 scorers of India

ind.nlargest(3,'R')

|   | Batting          | R  | В  | <b>4</b> s | 6s | S/R    |
|---|------------------|----|----|------------|----|--------|
| 4 | Hardik Pandya    | 71 | 30 | 7          | 5  | 236.67 |
| 0 | KL Rahul         | 55 | 35 | 4          | 3  | 157.14 |
| 3 | Suryakumar Yadav | 46 | 25 | 2          | 4  | 184.00 |

## Top 3 wicket takers of Australia

In [5]: #nlargest
 aus\_bowl.nlargest(3,'W')

|   |   | Bowling        | 0   | M | R  | W | Econ  |
|---|---|----------------|-----|---|----|---|-------|
| , | 3 | Nathan Ellis   | 4.0 | 0 | 30 | 3 | 7.50  |
| ( | 0 | Josh Hazlewood | 4.0 | 0 | 39 | 2 | 9.75  |
|   | 4 | Cameron Green  | 3.0 | 0 | 46 | 1 | 15.33 |

## Australia Bowling Dataset

```
In [6]: aus_bowl=pd.read_csv("Australia_Bowling_Mastercard_First.csv")
In [7]: aus_bowl.head()
```

|   | Timestamp          | Over | Bowler         | Runs | Wickets | Batsman      | Score |
|---|--------------------|------|----------------|------|---------|--------------|-------|
| 0 | 9/20/2022 19:06:45 | 1    | Josh Hazlewood | 4    | 0       | NaN          | 4     |
| 1 | 9/20/2022 19:12:23 | 2    | Pat Cummins    | 10   | 0       | NaN          | 14    |
| 2 | 9/20/2022 19:15:18 | 3    | Josh Hazlewood | 11   | 1       | Rohit Sharma | 25    |
| 3 | 9/20/2022 19:30:18 | 4    | Adam Zampa     | 5    | 0       | NaN          | 30    |
| 4 | 9/20/2022 19:31:33 | 5    | Nathan Ellis   | 5    | 1       | Virat Kohli  | 35    |

```
In [8]: # Drop the Timestamp column
    aus_bowl=aus_bowl.drop(labels='Timestamp',axis=1)
    aus_bowl.head()
```

|   | Over | Bowler         | Runs | Wickets | Batsman      | Score |
|---|------|----------------|------|---------|--------------|-------|
| 0 | 1    | Josh Hazlewood | 4    | 0       | NaN          | 4     |
| 1 | 2    | Pat Cummins    | 10   | 0       | NaN          | 14    |
| 2 | 3    | Josh Hazlewood | 11   | 1       | Rohit Sharma | 25    |
| 3 | 4    | Adam Zampa     | 5    | 0       | NaN          | 30    |
| 4 | 5    | Nathan Ellis   | 5    | 1       | Virat Kohli  | 35    |

```
In [9]: len(aus_bowl)
```

```
In [10]:
          aus_bowl.shape
           (20, 6)
In [11]:
          aus_bowl.isna().sum()
           0ver
                     0
           Bowler
                     0
           Runs
                     0
           Wickets
                     0
           Batsman
                    14
           Score
                     0
           dtype: int64
          aus_bowl=aus_bowl.fillna('No_Wicket')
In [13]:
         aus_bowl.isna().sum()
           0ver
                     0
           Bowler
                     0
                     0
           Runs
           Wickets
                    0
           Batsman
                     0
           Score
                     0
           dtype: int64
```

```
In [14]:
          aus_bowl.dtypes
                       int64
            0ver
                      object
            Bowler
            Runs
                       int64
            Wickets
                       int64
            Batsman
                      object
            Score
                       int64
           dtype: object
In [15]:
          aus_bowl.info()
           <class 'pandas.core.frame.DataFrame'>
           RangeIndex: 20 entries, 0 to 19
           Data columns (total 6 columns):
                Column
                        Non-Null Count Dtype
                         -----
                Over
                         20 non-null
                                        int64
                Bowler
                        20 non-null
                                        object
            1
                                        int64
             2
                Runs
                         20 non-null
                Wickets 20 non-null
                                        int64
                Batsman 20 non-null
                                        object
                         20 non-null
                Score
                                        int64
           dtypes: int64(4), object(2)
           memory usage: 1.1+ KB
```

```
In [16]: aus_bowl.describe()
```

|       | Over     | Runs    | Wickets   | Score      |
|-------|----------|---------|-----------|------------|
| count | 20.00000 | 20.0000 | 20.000000 | 20.000000  |
| mean  | 10.50000 | 10.4000 | 0.300000  | 95.400000  |
| std   | 5.91608  | 4.2476  | 0.470162  | 61.299438  |
| min   | 1.00000  | 4.0000  | 0.000000  | 4.000000   |
| 25%   | 5.75000  | 7.0000  | 0.000000  | 43.250000  |
| 50%   | 10.50000 | 10.5000 | 0.000000  | 88.500000  |
| 75%   | 15.25000 | 12.0000 | 1.000000  | 142.750000 |
| max   | 20.00000 | 21.0000 | 1.000000  | 208.000000 |

```
In [17]: aus_bowl.Runs.value_counts()
```

```
10 4
11 3
5 3
12 3
7 2
16 2
4 1
13 1
21 1
```

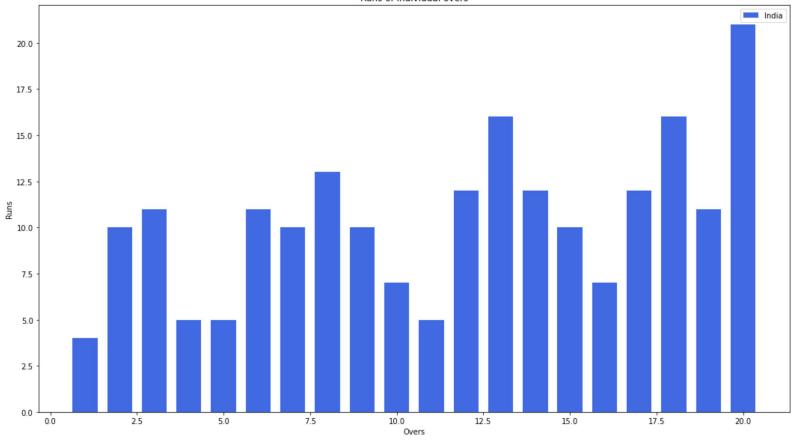
Name: Runs, dtype: int64

Total runs Scored by India

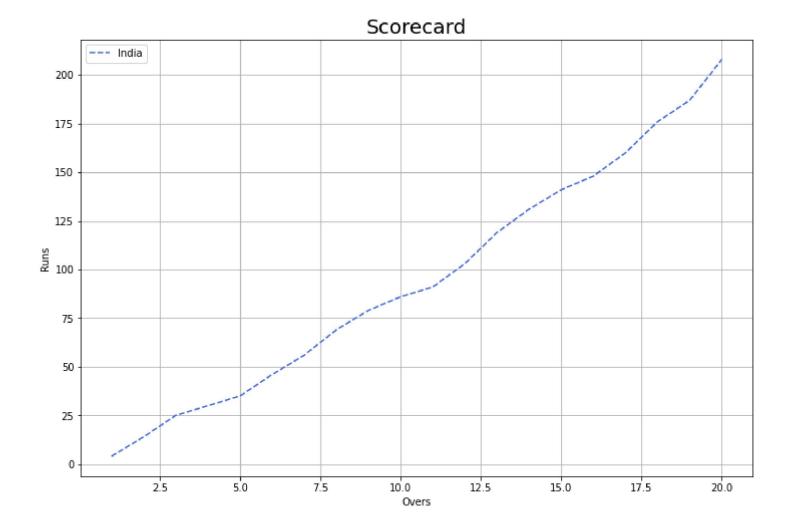
```
In [18]: aus_bowl.Runs.sum()
```

```
# Import Libraries
import matplotlib.pyplot as plt
# Create figure
fig = plt.figure()
# Figure size
fig.set_size_inches(18,10)
x=aus_bowl["Over"]
y=aus_bowl["Runs"]
plt.bar(x,y,color='royalblue',width=0.72,label="India")
plt.xlabel("Overs")
plt.ylabel("Runs")
plt.title('Runs of individual overs')
plt.legend()
plt.show()
```





```
In [20]:
        # Import Libraries
         import matplotlib.pyplot as plt
        # Create figure
        fig = plt.figure()
        # Figure size
        fig.set_size_inches(12,8)
        x=aus_bowl["Over"]
        y=aus_bowl["Score"]
         plt.plot(x,y,color='royalblue',linestyle='dashed',label="India")#marker='o'
         plt.xlabel("Overs")
         plt.ylabel("Runs")
         plt.title('Scorecard',fontsize=20)
         plt.grid()
         plt.legend()
         plt.show()
```

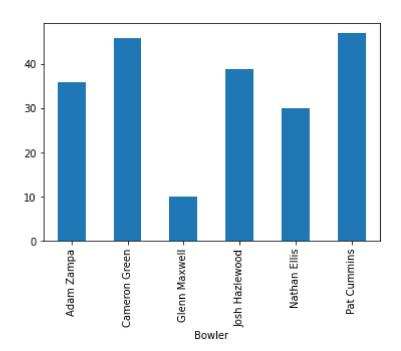


## Australia Bowling Performance

```
aus_bowl['Bowler'].nunique()
          6
         # over counts how many overs each bowler bowled
         aus_bowl.Bowler.value_counts()
          Josh Hazlewood
          Pat Cummins
          Adam Zampa
          Nathan Ellis
          Cameron Green
          Glenn Maxwell
          Name: Bowler, dtype: int64
In [24]:
         aus_bowl=pd.DataFrame(aus_bowl,columns=["Bowler","Runs","Wickets"])
         aus_bowl.groupby("Bowler").sum("Runs")#.sum("Runs")
```

### **Runs Wickets**

| Bowler         |    |   |
|----------------|----|---|
| Adam Zampa     | 36 | 0 |
| Cameron Green  | 46 | 1 |
| Glenn Maxwell  | 10 | 0 |
| Josh Hazlewood | 39 | 2 |
| Nathan Ellis   | 30 | 3 |
| Pat Cummins    | 47 | 0 |



```
In [26]: aus_bowl=pd.read_csv("Australia_Bowling_Mastercard_First.csv")
```

Fall of Wickets

| Ва | tsman | Axar Patel | Dinesh Karthik | KL Rahul | Rohit Sharma | Suryakumar Yadav | Virat Kohli |
|----|-------|------------|----------------|----------|--------------|------------------|-------------|
|    | Over  |            |                |          |              |                  |             |
| 3  |       | 0          | 0              | 0        | 1            | 0                | 0           |
| 5  |       | 0          | 0              | 0        | 0            | 0                | 1           |
| 12 |       | 0          | 0              | 1        | 0            | 0                | 0           |
| 14 |       | 0          | 0              | 0        | 0            | 1                | 0           |
| 16 |       | 1          | 0              | 0        | 0            | 0                | 0           |
| 19 |       | 0          | 1              | 0        | 0            | 0                | 0           |

## How many wickets Fall down of India

```
In [29]: aus_bowl.Batsman.nunique()
```

6

Which Bowler out which Batsman

In [30]: pd.crosstab(aus\_bowl.Batsman,aus\_bowl.Bowler)

| Bowle            | r Cameron Green | Josh Hazlewood | Nathan Ellis |
|------------------|-----------------|----------------|--------------|
| Batsmar          | ı               |                |              |
| Axar Patel       | 0               | 0              | 1            |
| Dinesh Karthik   | 0               | 0              | 1            |
| KL Rahul         | 0               | 1              | 0            |
| Rohit Sharma     | 0               | 1              | 0            |
| Suryakumar Yadav | , 1             | 0              | 0            |
| Virat Kohli      | 0               | 0              | 1            |

which Bowler Bowled which over

In [31]: pd.crosstab(aus\_bowl.Over,aus\_bowl.Bowler)

| Bowler | Adam Zampa | Cameron Green | Glenn Maxwell | Josh Hazlewood | Nathan Ellis | Pat Cummins |
|--------|------------|---------------|---------------|----------------|--------------|-------------|
| Over   |            |               |               |                |              |             |
| 1      | 0          | 0             | 0             | 1              | 0            | 0           |
| 2      | 0          | 0             | 0             | 0              | 0            | 1           |
| 3      | 0          | 0             | 0             | 1              | 0            | 0           |
| 4      | 1          | 0             | 0             | 0              | 0            | 0           |
| 5      | 0          | 0             | 0             | 0              | 1            | 0           |
| 6      | 0          | 0             | 0             | 0              | 0            | 1           |
| 7      | 1          | 0             | 0             | 0              | 0            | 0           |
| 8      | 0          | 1             | 0             | 0              | 0            | 0           |
| 9      | 0          | 0             | 1             | 0              | 0            | 0           |
| 10     | 0          | 0             | 0             | 0              | 1            | 0           |
| 11     | 1          | 0             | 0             | 0              | 0            | 0           |
| 12     | 0          | 0             | 0             | 1              | 0            | 0           |
| 13     | 1          | 0             | 0             | 0              | 0            | 0           |
| 14     | 0          | 1             | 0             | 0              | 0            | 0           |
| 15     | 0          | 0             | 0             | 0              | 0            | 1           |
| 16     | 0          | 0             | 0             | 0              | 1            | 0           |
| 17     | 0          | 0             | 0             | 1              | 0            | 0           |
| 18     | 0          | 0             | 0             | 0              | 0            | 1           |
| 19     | 0          | 0             | 0             | 0              | 1            | 0           |
| 20     | 0          | 1             | 0             | 0              | 0            | 0           |

# **Australia Scorecard**

```
In [32]:
        print("Australia Playing XI:-\n")
         playing 11=['Aaron Finch (c)','Cameron Green','Steven Smith','Glenn Maxwell','Josh Inglis',
                     'Tim David', 'Matthew Wade (wk)', 'Pat Cummins', 'Nathan Ellis', 'Adam Zampa',
                         'Josh Hazlewood']
        for i in playing 11:
                 print(i)
         print("\nSCORECARD")
         print("*** Australia Batting ***")
         player=['Aaron Finch','Cameron Green','Steven Smith','Glenn Maxwell','Josh Inglis',
                     'Tim David', 'Matthew Wade (wk)', 'Pat Cummins']
         runs=[22,61,35,1,17,18,45,4]
         balls=[13,30,24,3,10,14,21,1]
        fours=[3,8,3,0,3,1,6,1]
         sixes=[1,4,1,0,0,1,2,0]
         strike_rate=[169.23,203.33,145.83,33.33,170,128.57,214.29,400.00]
         aus={"Batting":player,"R":runs,"B":balls,"4s":fours,"6s":sixes,"S/R":strike rate}
         aus=pd.DataFrame(aus)
         print(aus)
         print("")
        ytb=['Nathan Ellis','Adam Zampa','Josh Hazlewood']
         print("\nYet to bat:")
        for i in ytb:
```

```
#======Bowling========
print("\n***IND Bowlig***\n")
player=['Bhuvneshwar Kumar','Umesh Yadav','Axar Patel','Yuzvendra Chahal','Harshal Patel','Hardik Pandya']
overs=[4.0,2.0,4.0,3.2,4.0,2.0]
M=[0,0,0,0,0,0]
Runs=[52,27,17,42,49,22]
wickets=[0,2,3,1,0,0]
econ=[13.00,13.50,4.25,12.60,12.25,11.00]
ind_bowl={"Bowling":player,"0":overs,"M":M,"R":Runs,"W":wickets,"Econ":econ}
ind_bowl=pd.DataFrame(ind_bowl)
print(ind_bowl)
print("")
Buys=2
fours=sum(fours)
sixes=sum(sixes)
print("\nAustralia Total Fours:",fours)
print("\nAustralia Total Sixes:",sixes)
print("\nExtras:",sum(Runs)-sum(runs)+Buys)
Aus=sum(Runs)+Buys
print("\nTotal runs:",Aus)
```

print(i)

Aaron Finch (c)
Cameron Green
Steven Smith
Glenn Maxwell
Josh Inglis
Tim David
Matthew Wade (wk)
Pat Cummins
Nathan Ellis
Adam Zampa
Josh Hazlewood

#### SCORECARD

### \*\*\* Australia Batting \*\*\*

|   | Batting           | R  | В  | 4s | 6s | S/R    |
|---|-------------------|----|----|----|----|--------|
| 0 | Aaron Finch       | 22 | 13 | 3  | 1  | 169.23 |
| 1 | Cameron Green     | 61 | 30 | 8  | 4  | 203.33 |
| 2 | Steven Smith      | 35 | 24 | 3  | 1  | 145.83 |
| 3 | Glenn Maxwell     | 1  | 3  | 0  | 0  | 33.33  |
| 4 | Josh Inglis       | 17 | 10 | 3  | 0  | 170.00 |
| 5 | Tim David         | 18 | 14 | 1  | 1  | 128.57 |
| 6 | Matthew Wade (wk) | 45 | 21 | 6  | 2  | 214.29 |
| 7 | Pat Cummins       | 4  | 1  | 1  | 0  | 400.00 |

Yet to bat: Nathan Ellis Adam Zampa Josh Hazlewood

### \*\*\*IND Bowlig\*\*\*

|   | Bowling           |     | Μ | R  | W | Econ  |
|---|-------------------|-----|---|----|---|-------|
| 0 | Bhuvneshwar Kumar | 4.0 | 0 | 52 | 0 | 13.00 |
| 1 | Umesh Yadav       | 2.0 | 0 | 27 | 2 | 13.50 |
| 2 | Axar Patel        | 4.0 | 0 | 17 | 3 | 4.25  |
| 3 | Yuzvendra Chahal  | 3.2 | 0 | 42 | 1 | 12.60 |
| 4 | Harshal Patel     | 4.0 | 0 | 49 | 0 | 12.25 |
| 5 | Hardik Pandya     | 2.0 | 0 | 22 | 0 | 11.00 |

```
Australia Total Fours: 25
```

Australia Total Sixes: 9

Extras: 8

Total runs: 211

# Top 3 scorers of Australia

```
in [33]: #nlargest
aus.nlargest(3,'R')
```

|   | Batting           | R  | В  | 4s | 6s | S/R    |
|---|-------------------|----|----|----|----|--------|
| 1 | Cameron Green     | 61 | 30 | 8  | 4  | 203.33 |
| 6 | Matthew Wade (wk) | 45 | 21 | 6  | 2  | 214.29 |
| 2 | Steven Smith      | 35 | 24 | 3  | 1  | 145.83 |

## Top 3 wicket takers of India

```
In [34]: #nlargest
ind_bowl.nlargest(3,'W')
```

|   | Bowling          | 0   | M | R  | W | Econ  |
|---|------------------|-----|---|----|---|-------|
| 2 | Axar Patel       | 4.0 | 0 | 17 | 3 | 4.25  |
| 1 | Umesh Yadav      | 2.0 | 0 | 27 | 2 | 13.50 |
| 3 | Yuzvendra Chahal | 3.2 | 0 | 42 | 1 | 12.60 |

# **India Bowling Dataset**

```
Batsman Score
                          Bhuvneshwar Kumar 8
0 9/20/2022 21:23:21 1
                                                    0
                                                             NaN
                                                                         8
1 9/20/2022 21:23:44 2
                          Umesh Yadav
                                             16
                                                             NaN
                                                                         24
                                                    0
2 9/20/2022 21:24:03 3
                          Bhuvneshwar Kumar 14
                                                                         38
                                                    0
                                                             NaN
3 9/20/2022 21:24:35 4
                          Axar Patel
                                             2
                                                             Aaron Finch 40
4 9/20/2022 21:24:56 5
                          Yuzvendra Chahal
                                            8
                                                             NaN
                                                                         48
                                                    0
```

```
In [37]: len(ind_bowl)
```

20

|   | Over | Bowler            | Runs | Wickets | Batsman     | Score |
|---|------|-------------------|------|---------|-------------|-------|
| 0 | 1    | Bhuvneshwar Kumar | 8    | 0       | NaN         | 8     |
| 1 | 2    | Umesh Yadav       | 16   | 0       | NaN         | 24    |
| 2 | 3    | Bhuvneshwar Kumar | 14   | 0       | NaN         | 38    |
| 3 | 4    | Axar Patel        | 2    | 1       | Aaron Finch | 40    |
| 4 | 5    | Yuzvendra Chahal  | 8    | 0       | NaN         | 48    |

```
In [39]: ind_bowl.dtypes

Over int64
Bowler object
Runs int64
Wickets int64
Batsman object
Score int64
dtype: object
```

# ind\_bowl.info()

<class 'pandas.core.frame.DataFrame'> RangeIndex: 20 entries, 0 to 19 Data columns (total 6 columns): Non-Null Count Dtype Column 0ver 20 non-null int64 Bowler 20 non-null object 1 Runs 20 non-null int64 Wickets 20 non-null 3 int64 Batsman 5 non-null object Score 20 non-null int64 dtypes: int64(4), object(2)

memory usage: 1.1+ KB

In [41]: ind\_bowl.describe()

|       | Over     | Runs      | Wickets   | Score      |
|-------|----------|-----------|-----------|------------|
| count | 20.00000 | 20.000000 | 20.000000 | 20.000000  |
| mean  | 10.50000 | 10.550000 | 0.300000  | 109.450000 |
| std   | 5.91608  | 5.443248  | 0.571241  | 61.005155  |
| min   | 1.00000  | 2.000000  | 0.000000  | 8.000000   |
| 25%   | 5.75000  | 7.500000  | 0.000000  | 57.000000  |
| 50%   | 10.50000 | 11.000000 | 0.000000  | 110.500000 |
| 75%   | 15.25000 | 14.250000 | 0.250000  | 149.500000 |
| max   | 20.00000 | 22.000000 | 2.000000  | 211.000000 |

# In [42]: ind\_bowl.Runs.describe()

20.000000 count 10.550000 mean 5.443248 std min 2.000000 25% 7.500000 50% 11.000000 75% 14.250000 22.000000 max

Name: Runs, dtype: float64

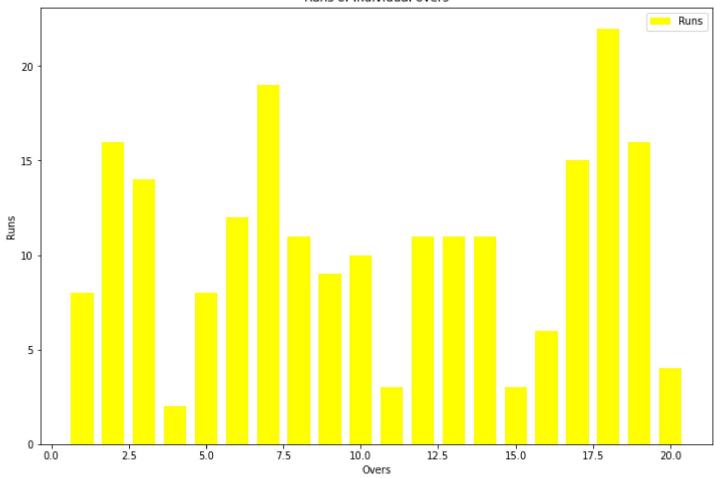
```
In [43]: ind_bowl.Runs.value_counts()
          Name: Runs, dtype: int64
           Total Runs
In [44]:
         sum(ind_bowl['Runs'])
```

211

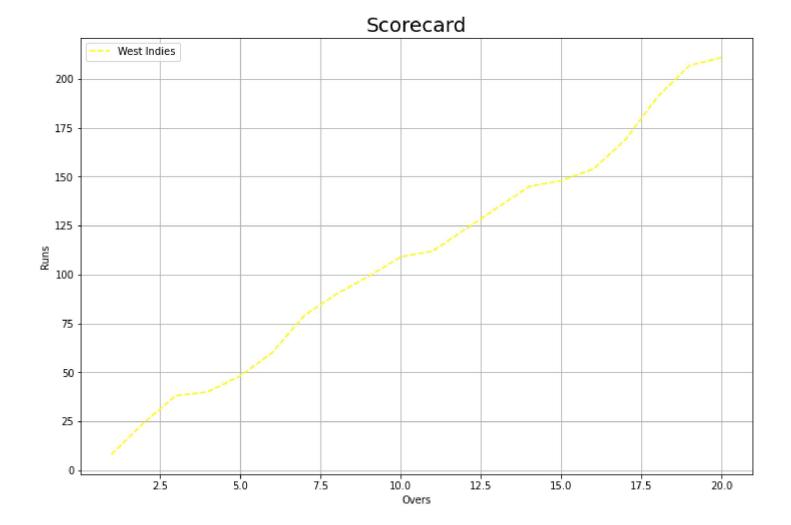
Australia Batting Performance

```
# Import Libraries
import matplotlib.pyplot as plt
# Create figure
fig = plt.figure()
# Figure size
fig.set_size_inches(12,8)
x=ind_bowl["Over"]
y=ind_bowl["Runs"]
plt.bar(x,y,color='yellow',width=0.72,label="Runs")
plt.xlabel("Overs")
plt.ylabel("Runs")
plt.title('Runs of individual overs')
plt.legend()
plt.show()
```

### Runs of individual overs



```
# Import Libraries
import matplotlib.pyplot as plt
# Create figure
fig = plt.figure()
# Figure size
fig.set_size_inches(12,8)
x=ind_bowl["Over"]
y=ind_bowl["Score"]
plt.plot(x,y,color='yellow',linestyle='dashed',label="West Indies")#marker='o'
plt.xlabel("Overs")
plt.ylabel("Runs")
plt.title('Scorecard',fontsize=20)
plt.grid()
plt.legend()
plt.show()
```



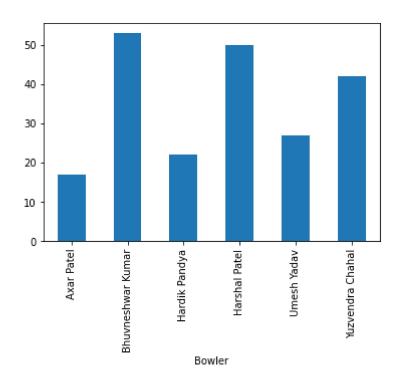
# India Bowling Performance

```
ind_bowl['Bowler'].nunique()
          6
         # over counts how many overs each bowler bowled
         ind_bowl.Bowler.value_counts()
          Bhuvneshwar Kumar
          Axar Patel
          Yuzvendra Chahal
          Harshal Patel
          Umesh Yadav
          Hardik Pandya
          Name: Bowler, dtype: int64
In [50]:
         ind_bowl=pd.DataFrame(ind_bowl,columns=["Bowler","Runs","Wickets"])
         ind_bowl.groupby("Bowler").sum("Runs")#.sum("Runs")
```

|                   | Runs | Wickets |
|-------------------|------|---------|
| Bowler            |      |         |
| Axar Patel        | 17   | 3       |
| Bhuvneshwar Kumar | 53   | 0       |
| Hardik Pandya     | 22   | 0       |
| Harshal Patel     | 50   | 0       |
| Umesh Yadav       | 27   | 2       |
| Yuzvendra Chahal  | 42   | 1       |

```
ind_bowl=ind_bowl.groupby("Bowler")["Runs"].sum()
ind_bowl.plot(kind="bar")
```

<AxesSubplot:xlabel='Bowler'>



```
ind_bowl=pd.read_csv("India_Bowling_vs_Australia.csv")
```

Fall of Wickets

### which Bowler Bowled which over

In [54]: pd.crosstab(ind\_bowl.Over,ind\_bowl.Batsman)

|   | Batsman | Aaron Finch | Cameron Green | Josh Inglis | Steve Smith, Glenn Maxwell | Tim David |
|---|---------|-------------|---------------|-------------|----------------------------|-----------|
|   | Over    |             |               |             |                            |           |
| 4 | ŀ       | 1           | 0             | 0           | 0                          | 0         |
| 1 | 11      | 0           | 1             | 0           | 0                          | 0         |
| 1 | 12      | 0           | 0             | 0           | 1                          | 0         |
| 1 | 15      | 0           | 0             | 1           | 0                          | 0         |
| 2 | 20      | 0           | 0             | 0           | 0                          | 1         |

```
In [55]: ind_bowl.Batsman.nunique()
```

5

In [56]: pd.crosstab(ind\_bowl.Batsman,ind\_bowl.Bowler)

| Bowler                     | <b>Axar Patel</b> | Umesh Yadav | Yuzvendra Chahal |
|----------------------------|-------------------|-------------|------------------|
| Batsman                    |                   |             |                  |
| Aaron Finch                | 1                 | 0           | 0                |
| Cameron Green              | 1                 | 0           | 0                |
| Josh Inglis                | 1                 | 0           | 0                |
| Steve Smith, Glenn Maxwell | 0                 | 1           | 0                |
| Tim David                  | 0                 | 0           | 1                |

which Bowler Bowled which over

In [57]: pd.crosstab(ind\_bowl.Over,ind\_bowl.Bowler)

| Over         1         0         0         0         0           2         0         0         0         0         0           3         0         1         0         0         0         0           4         1         0         0         0         0         0           5         0         0         0         0         0         1           6         0         0         0         0         0         1           7         0         0         0         0         0         1           8         0         0         1         0         0         0           9         1         0         0         0         0         0           10         0         0         0         0         0         0           11         1         0         0         0         0         0           12         0         0         0         0         0         0           13         0         0         0         0         0         0           15         1         0         0         0  | Bowler | Axar Patel | Bhuvneshwar Kumar | Hardik Pandya | Harshal Patel | Umesh Yadav | Yuzvendra Chahal |
|--|--------|------------|-------------------|---------------|---------------|-------------|------------------|
| 2       0       0       0       0       1       0         3       0       1       0       0       0       0         4       1       0       0       0       0       0         5       0       0       0       0       0       1         6       0       0       0       0       0       0         7       0       0       0       0       0       1         8       0       0       0       0       0       0         9       1       0       0       0       0       0         10       0       0       0       0       0       0         11       1       0       0       0       0       0         11       1       0       0       0       0       0       0         12       0  | Over   |            |                   |               |               |             |                  |
| 3       0       1       0       0       0       0       0         4       1       0       0       0       0       0       0         5       0       0       0       0       0       1       0       0         6       0       0       0       0       0       0       0       0       0       0       0       1       0 </th <th>1</th> <th>0</th> <th>1</th> <th>0</th> <th>0</th> <th>0</th> <th>0</th>    | 1      | 0          | 1                 | 0             | 0             | 0           | 0                |
| 4       1       0       0       0       0       0       0       0       0       0       0       0       0       1       0       0       1       0  | 2      | 0          | 0                 | 0             | 0             | 1           | 0                |
| 5       0       0       0       0       0       1         6       0       0       0       0       0       0         7       0       0       0       0       0       1         8       0       0       0       1       0       0         9       1       0       0       0       0       0         10       0       0       0       0       0       0         11       1       0       0       0       0       0         12       0       0       0       0       0       0         13       0       0       0       0       0       0         14       0       0       0       0       0       0         15       1       0       0       0       0       0         16       0       0       0       0       0       0         18       0       0       0       0       0       0         19       0       1       0       0       0       0   | 3      | 0          | 1                 | 0             | 0             | 0           | 0                |
| 6       0       0       0       1       0       0         7       0       0       0       0       0       1         8       0       0       1       0       0       0         9       1       0       0       0       0       0         10       0       0       0       0       0       0         11       1       0       0       0       0       0       0         12       0       0       0       0       0       1       0       0         13       0       0       0       0       0       0       1       0  | 4      | 1          | 0                 | 0             | 0             | 0           | 0                |
| 7       0       0       0       0       0       1         8       0       0       0       1       0       0         9       1       0       0       0       0       0         10       0       0       0       0       0         11       1       0       0       0       0       0         12       0       0       0       0       1       0         13       0       0       0       0       1       0         14       0       0       1       0       0       0         15       1       0       0       0       0       0         16       0       0       0       0       0       0         17       0       1       0       0       0       0         18       0       0       0       0       0       0         19       0       1       0       0       0       0       0  | 5      | 0          | 0                 | 0             | 0             | 0           | 1                |
| 8       0       0       1       0       0       0         9       1       0       0       0       0       0         10       0       0       0       1       0       0         11       1       0       0       0       0       0         12       0       0       0       0       1       0         13       0       0       0       0       0       1         14       0       0       0       0       0       0         15       1       0       0       0       0       0         16       0       0       0       0       0       0         17       0       1       0       0       0       0         18       0       0       0       0       0       0       0         19       0       1       0       0       0       0       0       0  | 6      | 0          | 0                 | 0             | 1             | 0           | 0                |
| 9       1       0       1       0       0       0       1       0  | 7      | 0          | 0                 | 0             | 0             | 0           | 1                |
| 10       0       0       0       1       0       0         11       1       0       0       0       0       0         12       0       0       0       0       1       0         13       0       0       0       0       0       1         14       0       0       1       0       0       0         15       1       0       0       0       0       0         16       0       0       0       1       0       0         17       0       1       0       0       0         18       0       0       0       0       0         19       0       1       0       0       0  | 8      | 0          | 0                 | 1             | 0             | 0           | 0                |
| 11       1       0       0       0       0       0       0       0       0       1       0       0       0       1       0       0       1       0       0       1       0   | 9      | 1          | 0                 | 0             | 0             | 0           | 0                |
| 12       0       0       0       0       1       0         13       0       0       0       0       0       1         14       0       0       0       0       0       0         15       1       0       0       0       0       0         16       0       0       0       0       0       0         17       0       1       0       0       0       0         18       0       0       0       0       0       0         19       0       1       0       0       0       0  | 10     | 0          | 0                 | 0             | 1             | 0           | 0                |
| 13       0       0       0       0       0       1         14       0       0       0       0       0       0         15       1       0       0       0       0       0       0         16       0       0       0       1       0 <td< th=""><th>11</th><th>1</th><th>0</th><th>0</th><th>0</th><th>0</th><th>0</th></td<> | 11     | 1          | 0                 | 0             | 0             | 0           | 0                |
| 14       0   | 12     | 0          | 0                 | 0             | 0             | 1           | 0                |
| 15       1       0       0       0       0       0       0       0       0       1       0   | 13     | 0          | 0                 | 0             | 0             | 0           | 1                |
| 16       0       0       1       0       0         17       0       1       0       0       0       0         18       0       0       0       1       0       0         19       0       1       0       0       0       0  | 14     | 0          | 0                 | 1             | 0             | 0           | 0                |
| 17       0       1       0       0       0       0       0         18       0       0       0       1       0       0       0         19       0       1       0       0       0       0       0       0   | 15     | 1          | 0                 | 0             | 0             | 0           | 0                |
| 18       0       0       0       1       0       0         19       0       1       0       0       0       0  | 16     | 0          | 0                 | 0             | 1             | 0           | 0                |
| <b>19</b> 0 1 0 0 0  | 17     | 0          | 1                 | 0             | 0             | 0           | 0                |
|  | 18     | 0          | 0                 | 0             | 1             | 0           | 0                |
| <b>20</b> 0 0 0 0 0 1  | 19     | 0          | 1                 | 0             | 0             | 0           | 0                |
|  | 20     | 0          | 0                 | 0             | 0             | 0           | 1                |

```
In [58]: print("AUS won by 4 wickets (4 balls left")

AUS won by 4 wickets (4 balls left

In [4]: print("Player of the Match:-\nCameron Green(AUS)\n1/46(3) & 61(30)")

Player of the Match:-
Cameron Green(AUS)
1/46(3) & 61(30)

In []:
```