# **ICC WORLD CUP**

## A PROJECT REPORT

Submitted by

Sankalp Kumar Sahoo (230720100072) Sarat Kumar Sahoo (230720100096) Prajna Priyadarsini Parida (230720100090) Itishree Guru (230720100066) Pallabi Kar (230720100094)

in partial fulfillment for award of the degree of

# MASTER OF COMPUTER APPLICATION



Shaping Lives... Empowering Communities...

# SCHOOL OF ENGINEERING AND TECHNOLOGY BHUBANESWARCAMPUS

CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT ODISHA

**JANUARY 2024** 

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# **CERTIFICATE**

# DEPARTMENT OF MASTER OF COMPUTER APPLICATION SCHOOL OF ENGINEERING AND TECHNOLOGY

#### **BHUBANESWAR CAMPUS**

# **BONAFIDE CERTIFICATE**

Certified that this project report ICC WORLD CUP is the bonafide work of "SANKALP KUMAR SAHOO" who carried out the project work under my supervision. This is to further certify to the best of my knowledge, that this project has not been carried out earlier in this institute and the university.

SIGNATURE (Mr. Subham Sahu)

Certified that the above mentioned project has been duly carried out as perthe norms of the college and statutes of the university.

SIGNATURE (Mr. Rakesh Kumar Ray) HEAD OF THE DEPARTMENT

**HOD** of Master of computer Application

**DEPARTMENT SEA** 

**DECLARATION** 

I hereby declare that the project entitled "ICC WORLD CUP"

submitted for the "Minor Project" of 1ST semester in Master of

Computer Application is my original work and the project has not

formed the basis for the award of any Degree / Diploma or any other

similar titles in any other University / Institute.

Name of the Students: Sankalp Kumar Sahoo

**Signature of the Students:** 

**Registration No: 230720100072** 

Place:

Date:

## **ACKNOWLEDGEMENTS**

We wish to express our profound and sincere gratitude to Mr. Subham Sahu, Department of Master of Computer Application, SOET, Bhubaneswar Campus, who guided me into the intricacies of this project nonchalantly with matchless magnanimity.

I thank Mr. Rakesh Kumar Ray, Head of the Dept. of Master of Computer Application, SoET, Bhubaneswar Campus and Dr. Sujata Chakravarty, Dean, School of Engineering and Technology, Bhubaneswar Campus for extending their support during Course of this investigation.

I would be failing in my duty if I don't acknowledge the cooperation rendered during various stages of image interpretation by Mr. Subham Sahu.

I am highly grateful to Mr. Subham Sahu who evinced keen interest and invaluable support in the progress and successful completion of my project work.

I am indebted to Mr. Subham Sahu for their constant encouragement, co-operation and help. Words of gratitude are not enough to describe the accommodation and fortitude which they have shown throughout my endeavor.

Name of the Student: Sankalp Kumar Sahoo Signature of the Student: Registration No.: 230720100072

Place:

Date:

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# **ABSTRACT**

In this project, I classified every Matches in the World Cup to be either significant or non-significant and then find the percentage of significant Matches based on the Status ,Venue, Time , Date etc for all countries that have played in the ICC World Cup . I then created a Web-application using Pandas, Numpy, Plotly ,Matplotlib, Dash Framework and then deployed the Pie, Bar, Scatter ,Line, Histogram ,Box .

This abstract explores the intersection of Python visualization and ICC World Cup, delving into the significance of visual analytics for decision-makers in this dynamic industry. By harnessing the capabilities of Python libraries such as Matplotlib, Seaborn, and Plotly, professionals can distill complex datasets into compelling visual narratives.

A significant portion of the abstract is dedicated to discussing the various types of visualizations that Python enables in the ICC World Cup domain. From basic line charts illustrating sales trends over time to intricate heatmaps unraveling customer behavior, Python's visualization capabilities provide a spectrum of tools for stakeholders to gain actionable insights. Specific attention is given to scatter plots and bubble charts showcasing correlations between customer demographics and product preferences.

#### INTODUCTION

The ICC Cricket World Cup, inaugurated in 1975, stands as the premier international cricket tournament, attracting teams from around the globe. Held every four years, this event is the pinnacle of competition in the cricketing world, showcasing skill, talent, and sportsmanship. The World Cup has evolved significantly over the years, featuring dynamic formats and expanding participation, making it a highly anticipated and celebrated spectacle. Beyond its competitive essence, the World Cup holds cultural significance, uniting nations and leaving an indelible mark on the cricketing legacy. This brief introduction sets the stage for an exploration of the tournament's rich history, transformative journey, and its enduring impact on the sport.

### **Cricket World Cup**

The Cricket World Cup is a prestigious tournament where national cricket teams compete to be crowned champions of the World.

#### **Brief history of the tournament**

The Cricket World Cup started in 1975 and has since become a highly anticipated event, showcasing the best in cricket.

#### Format of the Tournament:-

#### Number of teams participating:-

The tournament usually features 10 to 14 teams, representing cricket-playing nations from around the globe.

#### Round-robin stage:-

The teams compete against each other in a round-robin format, playing a predetermined number of matches to determine the top teams.

#### **Knockout stage:-**

The top teams from the round-robin stage move on to the knockout stage, which includes intense semifinals and a thrilling final match to decide the champion.

#### Final Match:-

The final match is the pinnacle of the tournament, with two teams battling it out under immense pressure to lift the coveted trophy.

#### 2.1 PYTHON VISUALIZATION LIBRARIES

Python visualization libraries are software tools and frameworks in the Python programming language designed to facilitate the creation of graphical visualizations from data. These libraries empower data scientists, analysts, and developers to represent complex datasets in a visual format, making it easier to identify patterns, trends, and insights. Python's visualization ecosystem is rich and diverse, offering a variety of tools that cater to different visualization needs and preferences.

#### 2.2 PANDAS

Pandas is a powerful and popular open-source Python library for data manipulation, analysis, and cleaning. It provides easy-to-use data structures and functions needed to work with structured data seamlessly. Developed by Wes McKinney and first released in 2008, Pandas has since become an essential tool in the toolkit of data scientists, analysts, and developers working with tabular data. Features of PANDAS Data Frame and Series, Data Indexing and Selection, Data Cleaning and Preprocessing, Time Series Data.

#### **2.3 NUMPY**

NumPy, short for Numerical Python, is a fundamental library in Python for numerical computing. It provides support for large, multi-dimensional arrays and matrices, along with mathematical functions to operate on these arrays efficiently. NumPy is an essential building block for many other scientific computing and machine learning libraries in the Python ecosystem. Features of NumPy is Multidimensional Arrays, Mathematical Functions, Random Module.

#### 2.4 PLOTLY

Plotly is a versatile and interactive Python library for creating visually appealing and interactive data visualizations. It supports a wide range of chart types and can be used for both exploratory data analysis and the creation of interactive dashboards and web applications. Plotly is known for its ease of use, support for collaboration, and ability to generate visually appealing plots with a few lines of code. Features of Interactive Visualizations, Wide Range of Chart Types, Dashboards and Web Applications, Export Options, Collaboration and Sharing.

#### 2.5 PLOTLY EXPRESS

Plotly Express is a high-level interface for creating a wide variety of interactive visualizations with Plotly. Introduced to the Plotly library, it provides a concise and user-friendly syntax, making it particularly suitable for users who want to quickly generate sophisticated plots without delving into the intricacies of Plotly's lower-level API. Features of Plotly Express is Simplicity and Conciseness, Wide Range of Chart Types, Mapping, Animation.

#### 2.6 MATPLOTLIB

Matplotlib is a widely-used Python library for creating static, animated, and interactive visualizations in 2D. It provides a flexible and customizable interface for generating a wide range of plots and charts, making it an essential tool for data scientists, researchers, and analysts. Matplotlib serves as the foundation for many other data visualization libraries in the Python ecosystem. Features of Matplotlib is 2D Plotting, Customization and Styling, Mathematical Expressions.

#### 2.7 SEABORN

Seaborn is a Python data visualization library based on Matplotlib that provides an additional layer of abstraction and ease of use for creating attractive and informative statistical graphics. It simplifies the process of creating complex visualizations by providing high-level functions for common statistical plot types and enhancing the aesthetics of Matplotlib plots. Seaborn is particularly useful for visualizing relationships in datasets and is widely used in data analysis, exploration, and presentation. Features of Seaborn is High-Level Interface, Statistical Plot Types, Color Palettes and Themes, Categorical Plots.

#### **DETAILS DESIGN**

This project can be used to make a huge number of dataset. In that dataset our python source code visualize the whole set the product held and where the growth and down is happened and that's properties means what product and which geographical area the product is sales most. How its look like. For this visualize a data set is required for each product. We used the Python IDE and it library that helps execute our source code

# 3.1 HARDWARE SOFTWARE REQUIRED

specification	Component	Quantity
SOFTWARE	Anaconda Navigator	1
	Jupyter Notebook	1
	Python IDE	1
HARDWARE	Desktop/Laptop	1

#### 3.1.1 SOFTWARE

# 3.1.1.1 ANACONDA NAVIGATER

Anaconda Navigator is a desktop graphical user interface (GUI) included in Anaconda® Distribution that allows you to launch applications and manage conda packages, environments, and channels without using command line interface (CLI) commands. Navigator can search for packages on Anaconda.org or in a local Anaconda Repository. It is available for Windows, macOS, and Linux.



### 3.1.1.2 JUPYTER NOTEBOOK

The Jupyter Notebook is an open source web application that you can use to create and share documents that contain live code, equations, visualizations, and text. Jupyter Notebook is maintained by the people at <u>Project Jupyter</u>. Jupyter Notebooks are a spin-off project from the Python project, which used to have an Python Notebook project itself. The name, Jupyter,

comes from the core supported programming languages that it supports: Python ships with the Pandas, which allows us to write our programs in Python, but there are currently over 100 other library that you can also use.



Fig2: JUPYTER NOTEBOOK

### 3.1.1.3 **PYTHON IDE**

Python has a simple syntax similar to the English language. Python has syntax that allows developers to write programs with fewer lines than some other programming languages. Python runs on an interpreter system, meaning that code can be executed as soon as it is written. This means that prototyping can be very quick.



## 3.2.1 HARDWARE

#### 3.2.1.1 DESKTOP/LAPTOP

A desktop helps to fast run the source and display a clear output picture for the reference. Desktop storage helps us to store the data set. It must be support the Anaconda packages and Python IDE.

### WORKING PROCESS

We used US commercial data for our project report on e-commerce, which has over 3000 columns and 19 rows.

Here, we analyze the product, or the project with the highest sales volume. Which product does the buyer find least appealing? Which year has the highest sales and which has the lowest? How customers place online or device-based product orders. which region is most well-liked for product variety sales. Python is used to visualize all of this using various libraries. Thus, we import the entire library first, and then we import or upload our data set. import numpy as np import pandas as pd import seaborn as sns import plotly.express as px import plotly import matplotlib.pyplot as plt

#### 4.1 DATASET AND IT'S EXPLANATION

- > Participating Teams
- Country Host
- Champions Wons
- ➤ Highest Total in a Innings
- ➤ Lowest Total in a Innings
- ➤ Number of Viewership in each WC
- > Top 10 Scorers in WCs
- > Top 10 Sixers in WCs
- > Top 10 Wicket Takers in WC
- > Top Scorers in each WC

# **Participating Teams**

```
df = pd.read_csv(r"C:\Users\prksh\python\1.csv")
df.head(14)
```

#### World Cup Year(Participating Teams) Match Played in each World Cup 1975(8) 1979(8) 1983(8) 1987(8) 1992(9) 1996(12) 1999(12) 2003(14) 2007(16) 2011(14) 2015(14) 2019(10) 2023(10)

```
import plotly.express as px
Year = [1975,1979,1983,1987,1992,1996,1999,2003,2007,2011,2019,2023]
Match_Played =[15,15,27,27,39,37,42,54,51,49,49,48,]
fig = px.line( x = Year ,
y = Match_Played,
title = 'Match Played in Each World Cup')
fig.show()
```

Line Graph

Match Played in Each World Cup



# **Country Host**

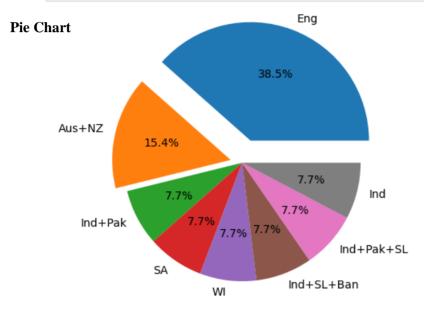
```
df = pd.read_csv(r"C:\Users\prksh\python\2.csv")
df.head(8)
```

	Host Countries(Year)	Number of times Host
0	ENG(1975,1979,1983,1999,2019)	5
1	AUS+NZ(1992,2015)	2
2	IND+PAK(1987)	1
3	SA(2003)	1
4	WI(2007)	1
5	IND+SL+BAN(2011)	1
6	IND+PAK+SL(1996)	1
7	IND	1

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

Hosting_No = [5,2,1,1,1,1,1,1]
Teams= (['Eng','Aus+NZ','Ind+Pak','SA','WI','Ind+SL+Ban','Ind+Pak+SL','Ind'])
explode=[0.2,0.1,0,0,0,0,0,0]

plt.pie(Hosting_No,labels=Teams, explode=explode,autopct='%1.1f%%')
plt.show()
```



## **Winnner Teams**

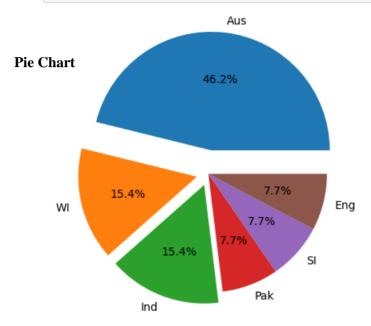
```
df = pd.read_csv(r"C:\Users\prksh\python\3.csv")
df.head(6)
```

	Teams	Number of World Cup Won
0	Australia	6
1	West Indies	2
2	India	2
3	Pakistan	1
4	Srilanka	1
5	England	1

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

Championship_wons = [6,2,2,1,1,1]
Teams= (['Aus','WI','Ind','Pak','SI','Eng'])
explode=[0.2,0.1,0.1,0,0,0]

plt.pie(Championship_wons,labels=Teams, explode=explode,autopct='%1.1f%%')
plt.show()
```

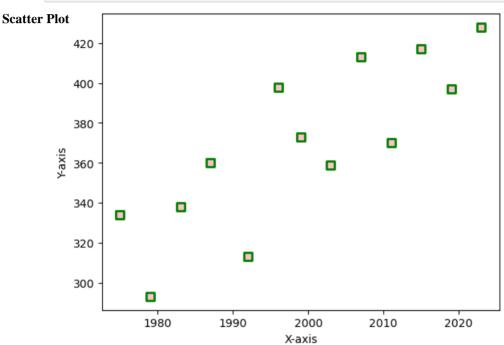


# **Highest Total in a Innings**

```
df = pd.read_csv(r"C:\Users\prksh\python\4.csv")
df.head(14)
```

	Year(Teams)	Highest Total Score in each World Cup
0	1975(Eng)	334
1	1979(WI)	293
2	1983(Pak)	338
3	1987(WI)	360
4	1992(SL)	313
5	1996(SL)	398
6	1999(IND)	373
7	2003(AUS)	359
8	2007(IND)	413
9	2011(IND)	370
10	2015(AUS)	417
11	2019(ENG)	397
12	2023(SA)	428

```
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
x1 = [1975,1979,1983,1987,1992,1996,1999,2003,2007,2011,2015,2019,2023]
y1 = [334,293,338,360,313,398,373,359,413,370,417,397,428]
plt.scatter(x1, y1, c = "pink", linewidths = 2, marker = "s", edgecolor = "green", s = 50)
plt.xlabel("X-axis")
plt.ylabel("Y-axis")
plt.show()
```



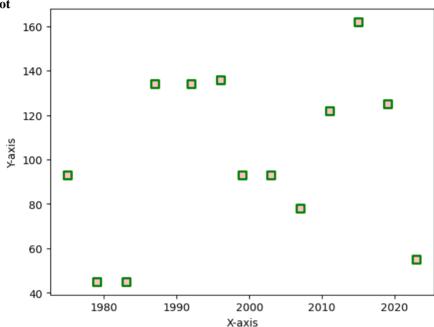
# **Lowest Total in a Innings**

```
df = pd.read_csv(r"C:\Users\prksh\python\5.csv")
df.head(14)
```

	Year(Teams)	Lowest Total Score in Each World Cup
(	1975(England)	93
1	1979(Canada)	45
2	1983(Canada)	45
3	3 1987(Zimbabwe)	134
4	1992(Zimbabwe)	134
5	1996(UAE)	136
6	1999(Kenya)	93
7	2003(Canada)	93
8	3 2007(Bermuda)	78
9	2011(Canada)	122
10	2015(Afghanistan)	162
11	2019(Afghanistan)	125
12	2 2023(Sri Lanka)	55

```
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
x1 = [1975,1979,1983,1987,1992,1996,1999,2003,2007,2011,2015,2019,2023]
y1 = [93,45,45,134,134,136,93,93,78,122,162,125,55]
plt.scatter(x1, y1, c ="pink", linewidths = 2, marker ="s", edgecolor ="green", s = 50)
plt.xlabel("X-axis")
plt.ylabel("Y-axis")
plt.show()
```

#### **Scatter Plot**



# Number of Viewership in each WC

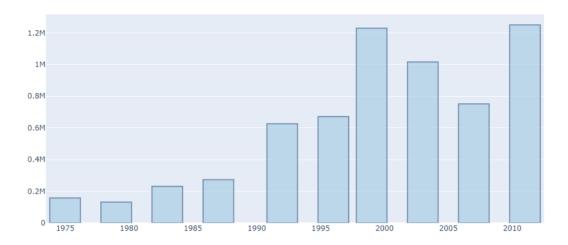
```
df = pd.read_csv(r"C:\Users\prksh\python\6.csv")
df.head(14)
```

	Year	Number of Viewers
0	1975	158000
1	1979	132000
2	1983	231081
3	1987	273217
4	1992	350000
5	1999	550000
6	2003	626845
7	2007	672000
8	2011	1229826
9	2015	1016420
10	2019	752000
11	2023	6400000

```
import plotly.graph_objects as go
Years =[1975,1979,1983,1987,1992,1996,1999,2003,2007,2011,2015,2019,2023]
Attendence = [158000,132000,231081,273217,626845,672000,1229826,1016420,752000,1250307]
# Use the hovertext kw argument for hover text
fig = go.Figure(data=[go.Bar(x=Years, y=Attendence,
hovertext=['27% market share', '24% market share', '19% market share'])])
# Customize aspect
fig.update_traces(marker_color='rgb(158,202,225)', marker_line_color='rgb(8,48,107)',
marker_line_width=1.5, opacity=0.6)
fig.update_layout(title_text='Number_of_viewers')
fig.show()
```

#### **Bar Graph**

Number\_of\_viewers



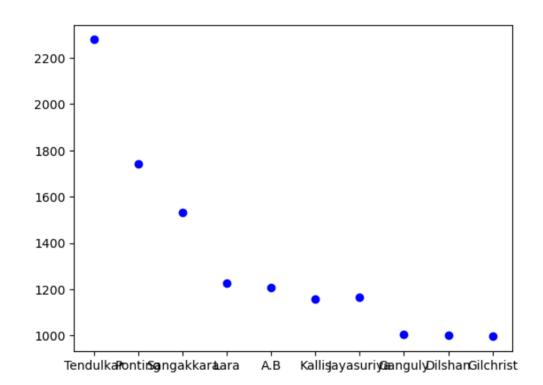
# Top 10 Scorers in WCs

```
df = pd.read_csv(r"C:\Users\prksh\python\7.csv")
df.head(10)
```

	Name of the Crickters(CountryName)	Most Runs
0	SR Tendulkar(IND)	2278
1	RT Pointing(AUS)	1743
2	KU Sangakkara(SL)	1532
3	BC Lara	1225
4	AB de Villlers(SA)	1207
5	JH Kallis(SA)	1158
6	ST Jaysuriya(SL)	1165
7	SC Ganguly(IND)	1006
8	TK Dishan(SL)	1000
9	AC Gilchrist(AUS)	996

```
import matplotlib.pyplot as plt
x = ['Tendulkar', 'Ponting', 'Sangakkara', 'Lara', 'A.B', 'Kallis', 'Jayasuriya', 'Ganguly', 'Dilshan', 'Gilchrist']
y = [2278,1743,1532,1225,1207,1158,1165,1006,1000,996,]
plt.scatter(x, y, c = "blue")
plt.show()
```

## **Scatter Plot**



# **Top 10 Sixers in WCs**

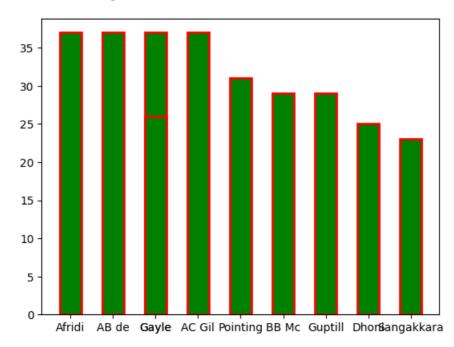
```
df = pd.read_csv(r"C:\Users\prksh\python\10.csv")
df.head(10)
```

#### Player Name(Countries) Most Sixes In Each World Cup 37 SM Afridi(PAK) 1 AB De Villiers(SA) 37 CH Gayle(WI) 37 AC Gilchrist(AUS) 37 3 RT Pointing(AUS) 31 5 BB Mccullum(NZ) 29 MJ Guptill(NZ) 29 7 CH Gayle(WI) 26 MS Dhoni 25 8 9 KU Sangakkara(SL) 23

```
Names = ['Afridi','AB de','Gayle','AC Gil','Pointing','BB Mc','Guptill','Gayle','Dhoni','Sangakkara']
Sixes =[37,37,37,31,29,29,26,25,23]
plt.bar(Names,Sixes,color ='g',width = 0.5,bottom=0,
    align ='center',edgecolor='r',linewidth=2,tick_label=Names)
```

## **Bar Graph**

<BarContainer object of 10 artists>



# Top 10 Wicket Takers in WC

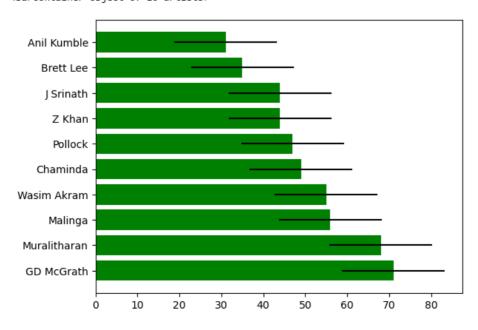
```
df = pd.read_csv(r"C:\Users\prksh\python\8.csv")
df.head(14)
```

	Name of the Player(Country)	Most Wickets
0	GD McGrath(AUS)	71
1	M Muralitharan(SL)	68
2	L Malinga	56
3	Wasim Akram(Pak)	55
4	Chaminda Vaas(SL)	49
5	Shaun Pollock(SA)	47
6	Z Khan(IND)	44
7	J Srinath(IND)	44
8	Brett Lee(AUS)	35
9	Anil Kumble(IND)	31

```
import numpy as np
Names= ['GD McGrath', 'Muralitharan', 'Malinga', 'Wasim Akram', 'Chaminda', 'Pollock', 'Z Khan', 'J Srinath', 'Brett Lee', 'Anil Kumble']
Sixes =[71,68,56,55,49,47,44,44,35,31]
# to plot horizontal bar plot use plt.barh() function
plt.barh(Names, Sixes, color = 'g', xerr=np.std(Sixes))
```

#### **Barh Graph**

<BarContainer object of 10 artists>



# Top Scorers in each WC

```
df = pd.read_csv(r"C:\Users\prksh\python\9.csv")
df.head(14)
```

#### Year(Player Name) Top Scorer in World Cup 0 1975(Glenn Tumer) 333 1 1979(Gorden Geenidge) 253 2 1983(David Gower) 484 3 1992(Graham Gooch) 471 1992(Martin Crowel) 456 5 1996(Sarchin Tendulkar) 523 6 461 1992(Sachin Tendulkar) 7 1999(Ralhul Dravid) 673 8 2003(Sachin Tendulkar) 659 9 2007(Mattew Hayden) 659 10 2011(Tilakaratne Dishan) 500 11 2015(Martin Guptil) 547 2019(Rohit Sharma) 12 648 13 2023(Virat Kohli) 765

```
import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd

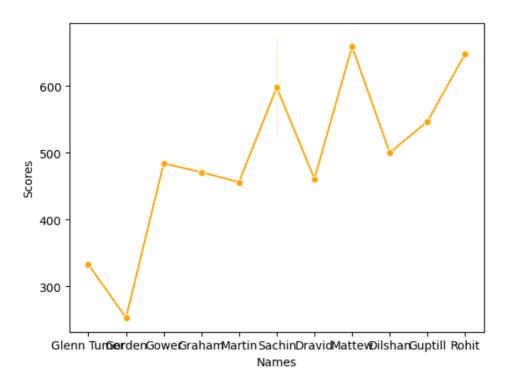
# Create a sample dataset
data = {
          'Names': ['Glenn Tumer', 'Gorden', 'Gower', 'Graham', 'Martin', 'Sachin', 'Dravid', 'Sachin', 'Mattew', 'Dilshan', 'Guptill', 'Rohit'],
          'Scores': [333,253,484,471,456,523,461,673,659,500,547,648]
}

df = pd.DataFrame(data)

# Create a Seaborn Line plot
sns.lineplot(x='Names', y='Scores', data=df, marker='o', color='Orange')

# Show the plot
plt.show()
```

# **Line Plot**



#### **CONCLUSION**

Our World Cup project, utilizing Python visualization tools such as Matplotlib, Seaborn, and Plotly, has been a captivating exploration of the tournament's rich history. Through visually appealing representations, we uncovered insights beyond mere scores, delving into historical trends, player performances, and team dynamics. The flexibility of Python's data visualization capabilities highlighted its adaptability, suggesting future enhancements with machine learning, real-time data integration, and augmented reality. This project emphasized the synergy of analytical skills and compelling visualization, showcasing Python as a potent tool in sports analytics. As we conclude, we acknowledge the dynamic nature of sports analytics and envision ongoing advancements, inviting enthusiasts to further explore the intersection of data, sports, and storytelling.

This project owes its success to the collaborative efforts of the Python community, developers, and cricket enthusiasts who contributed to its development and refinement. The shared passion for cricket and the capabilities of Python have played pivotal roles in creating a digital space where fans can connect and celebrate the spirit of the Cricket World Cup.

The Cricket World Cup 2023 Project in Python leaves a lasting impression as a testament to the intersection of technology and sports. By combining the excitement of cricket with the capabilities of Python, this project has successfully delivered an immersive and dynamic platform, leaving a positive impact on the digital landscape of cricket engagement. As the tournament concludes, the legacy of this project endures, reflecting the ever-evolving nature of sports in the digital age.

#### **FUTURE SCOPE**

The future scope of a World Cup project using Python is broad and promising. Key areas for expansion include real-time data integration for live matches, implementing machine learning for predictive analytics, delving deeper into player and team analytics, exploring 3D visualizations and augmented reality, providing user-driven interactivity, investigating sustainability analytics, integrating external APIs, collaborating with other data sources, developing educational modules, and fostering a community for ongoing engagement. Staying updated on technological advancements is crucial to ensuring the project remains innovative and relevant.

**Real-Time Data Integration:** Integrate real-time data feeds during live matches. This could include player statistics, team performance metrics, and even sentiment analysis from social media. Enhancing your visualizations with up-to- the-minute information adds a dynamic layer to the project.

**Player and Team Analytics:** Dive deeper into player and team analytics by incorporating more detailed metrics, such as player movement patterns, team formations, or positional heatmaps. This could provide a more granular understanding of strategies employed during matches.

REFERENCE
https://github.com/topics/world-cup-2023
https://www.youtube.com/watch?v=4QkYy1wANXA
https://en.wikipedia.org/wiki/Cricket_World_Cup

# **ASSESSMENT**

SL NO	RUBRICS	FULL MARK	MARKS OBTAINED	REMARK
1	Understanding the relevance, scope and dimension of the project	10		
2	Methodology	10		
3	Quality of Analysis and Results	10		
4	Interpretations and Conclusions	10		
5	Report	10		
	Total	50		

Date Signature of Faculty