# PRO-C103

## Capstone class : Data visualization

### What is our GOAL for this MODULE?

In this module we learn to plot the data on the graph to visualize the data.

### What did we ACHIEVE in the class TODAY?

- We learned to take images using OpenCV library to access webcam and upload them on dropbox.
- We learned to visualize data by plotting multiple graphs.

### Which CONCEPTS/CODING BLOCKS did we cover today?

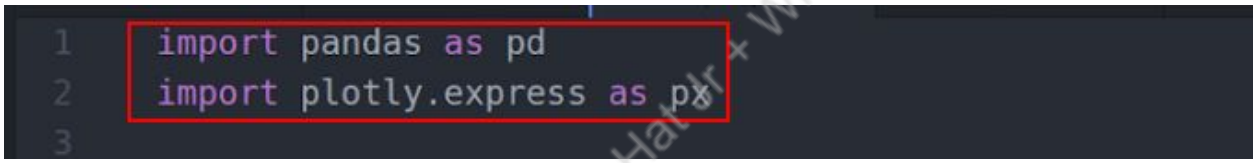
- Installing the plotly and pandas library using pip.
- Plotting the data on the graph.
- Using the pandas library to read the files .

## How did we DO the activities?

1. We installed the open pandas and plotly library on our system using python package manager.

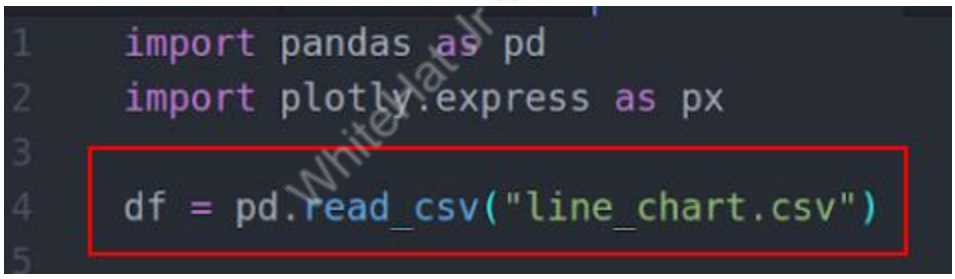

```
Documents/datavisualsation$ pip3 install plotly_express
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: plotly_express in /home/ashura/.local/lib/python3
.8/site-packages (0.4.1)
Requirement already satisfied: pandas>=0.20.0 in /home/ashura/.local/lib/python3
.8/site-packages (from plotly_express) (1.0.4)
```

2. Then we imported the libraries in our code.



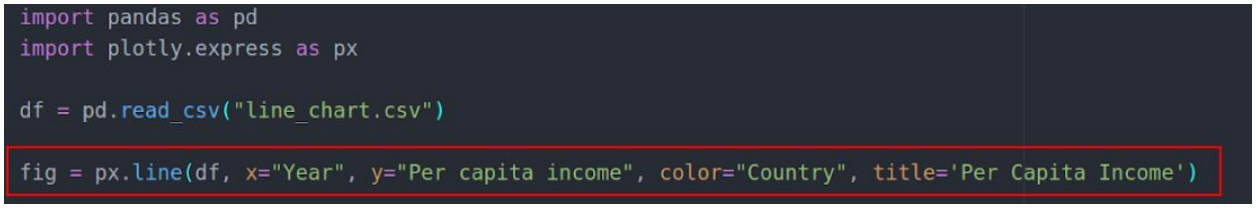
```
import pandas as pd
import plotly.express as px
```

3. Using pandas read_csv function we read the csv file.



```
import pandas as pd
import plotly.express as px

df = pd.read_csv("line_chart.csv")
```

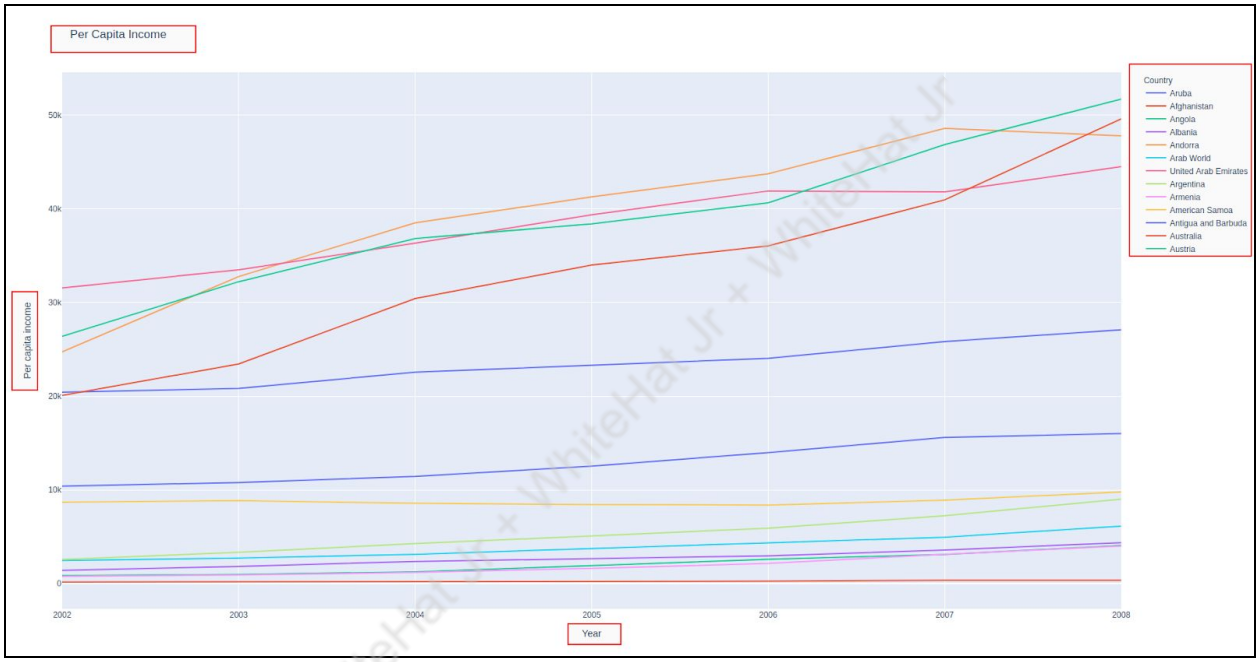
4. Then we plotted the line chart using the px.line method where we passed data, year as x, and per capita income as y.



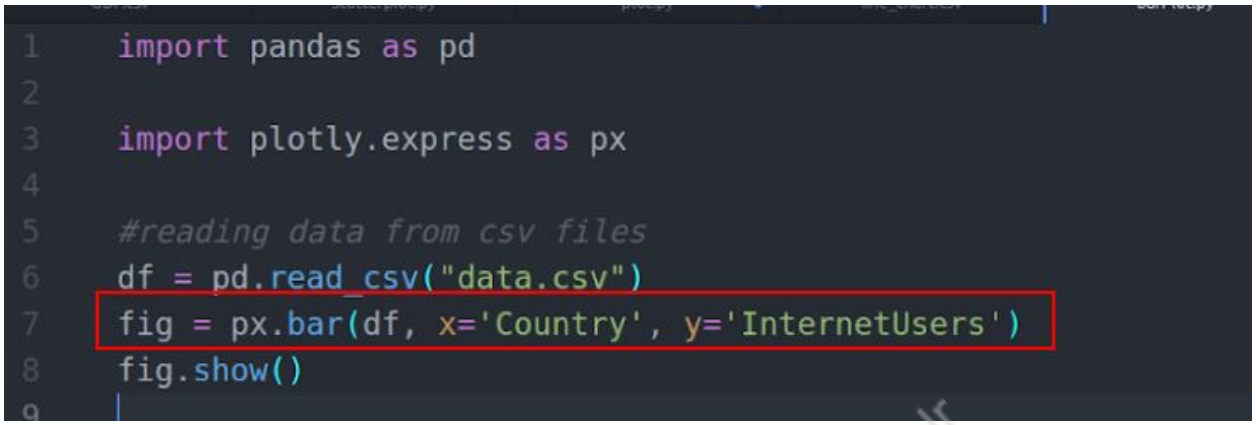
```
import pandas as pd
import plotly.express as px

df = pd.read_csv("line_chart.csv")

fig = px.line(df, x="Year", y="Per capita income", color="Country", title='Per Capita Income')
```

5. Using the fig.show method function we show the graph.

```
import pandas as pd
import plotly.express as px

df = pd.read_csv("line_chart.csv")

fig = px.line(df, x="Year", y="Per capita income", color="Country", title='Per Capita Income')

fig.show()
```



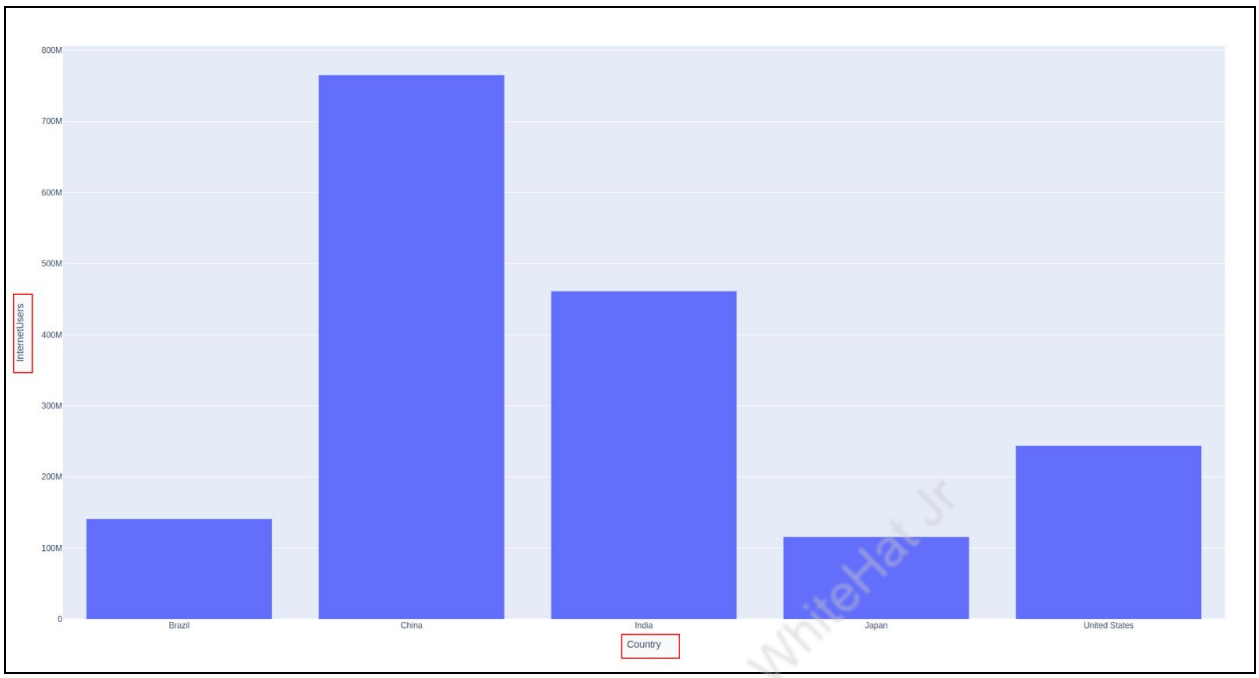
6. Then we plotted the bar graph using the px.bar method.



```
import pandas as pd

import plotly.express as px

#reading data from csv files
df = pd.read_csv("data.csv")
fig = px.bar(df, x='Country', y='InternetUsers')
fig.show()
```

7. Using the fig.show() method we show the bar chart.

```
import pandas as pd

import plotly.express as px

#reading data from csv files
df = pd.read_csv("data.csv")
fig = px.bar(df, x='Country', y='InternetUsers')
fig.show()
```




8. Using px.scatter() method we plotted the scatter graph.

```
import pandas as pd
import plotly.express as px

df = pd.read_csv("data.csv")
fig = px.scatter(df, x="Population", y="Per capita",
                 size="Percentage",color="Country",
                        size_max=60)
```

9. Then using the show method we show the scatter graph.

```
import pandas as pd
import plotly.express as px

df = pd.read_csv("data.csv")
fig = px.scatter(df, x="Population", y="Per capita",
                 size="Percentage",color="Country",
                      size_max=60)
fig.show()
```


## What's NEXT?

In the next class, we will learn about finding the central tendencies.

## EXTEND YOUR KNOWLEDGE:

You can try different libraries for visualization like matplotlib etc.
https://www.fusioncharts.com/blog/best-python-data-visualization-libraries/