Chapter 2 - Data Visualisation using Pyplot

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LEARNING OBJECTIVES

This presentation will help you to analyse and comprehend about the following topics:

1. **Matplotlib**
2. **Line Plot/Chart**
3. **Bar Chart/Plot**

- **Matplotlib** is 2D plotting library that helps in visualisation figures.
- **Pyplot** is a collection of methods within matplotlib which allows the user to construct 2D plots easily.

To be able to use graphics, we need to **import matplotlib.pyplot** module in the current shell environment.

- **LINE PLOT/CHART** - is a type of plot which displays information as a series of **data points** called markers connected by straight line.

Watch this video to understand the way to create graph using MATPLOTLIB -

[https://www.youtube.com/watch?v=UO98IJ Q3QGI](https://www.youtube.com/watch?v=UO98IJQ3QGI)

To draw a line plot

Import matplotlib

plt.plot(x,y,color,others)

plt.xlabel("car")

plt.ylabel("company")

plt.set_title("Comparison of car cost")

plt.show()

Try yourself :

https://www.youtube.com/watch?v=a9UrKTVEeZA

https://www.edureka.co/blog/python-matplotlib-tutorial/

Create a line chart the values 4,5,6,7 and 8,10,12,14:

```python
import matplotlib.pyplot as plt

plt.plot([4,5,6,7],[8,10,12,14])

plt.show()
```

- **SCATTER PLOT/CHART** - is a two dimensional data visualisation that uses dots to represent the relationship. It uses scatter() function.

Create a scatter chart the following data values
marks=[10,20,30,40,50]
girls=[67,78,87,98,53]
boys=[33,44,55,66,77]

```python
import matplotlib.pyplot as pt
marks=[10,20,30,40,50]
girls=[67,78,87,98,53]
boys=[33,44,55,66,77]
pt.scatter(marks,girls,c='r',marker='x')
pt.scatter(marks,boys,c='b',marker='y')
pt.title("performance of boys vs girls")
pt.show()
```

ASSIGNMENT

1. Mr. Harry wants to draw a line chart using a list of elements named LIST. Write code to plot a line chart using the given LIST. The LIST contains the numbers 100,200,300,400,500
2. Write a code to plot the speed of the 3 trains after every hour. Train A is superfast, Train B is passenger and Train C is a goods train. Plot the graph using your own values.
3. What is a scatter chart? How it is different from line chart?
4. Plot a line graph for y=4*x
5. Write a python program to plot the function y=x*x

ALL THE ABOVE QUESTIONS TO BE PART OF PRACTICAL FILE ALSO.YOU WRITE THE CODE USING W3SCHOOL.COM OR JUPYTER.ORG SITES