PROGRAM4

BCS358D

Bar Plot in Matplotlib

- A bar plot or bar chart is a graph that represents the category of data with rectangular bars with lengths and heights that is proportional to the values which they represent.
- The bar plots can be plotted horizontally or vertically.
- A bar chart describes the comparisons between the discrete categories.
- One of the axis of the plot represents the specific categories being compared, while the other axis represents the measured values corresponding to those categories.

Bar Plot using Matplotlib

Write a Python program to Demonstrate how to Draw a Bar Plot using Matplotlib.

```
import matplotlib.pyplot as plt

# Sample data for demonstration

categories = ['0-10', '10-20', '20-30', '30-40', '40-50’]

values = [55, 48, 25, 68, 90]

# Create a bar plot

plt.bar(categories, values, color='skyblue’)

# Add labels and title

plt.xlabel('Overs’)

plt.ylabel('Runs’)

plt.title('Bar Plot Showing Runs scored in an ODI Match’)

# Display the plot

plt.show()
```

Another Instance

```
import matplotlib.pyplot as plt

import numpy as np

# Sample data for demonstration

categories = ['0-10', '10-20', '20-30', '30-40', '40-50’]

values1 = [55, 48, 25, 68, 90]

values2 = [65, 38, 35, 58, 80]


width=0.4

p=np.arange(len(categories))

p1=[j+width for j in p]


plt.xlabel('Overs', fontsize=15)

plt.ylabel('Runs', fontsize=15)
```

```
# Create a bar plot

plt.bar(p, values1, width, color='yellow',label='Player1’)

plt.bar(p1, values2, width, color='red',label='Player2’)

plt.legend()

plt.xticks(p+width/2, categories)



# Add labels and title

plt.title('Bar Plot Showing Runs scored in an ODI Match’)



# Display the plot

plt.show()
```

Scatter plot in Matplotlib

- With Pyplot, we can use the scatter() function to draw a scatter plot.
- The scatter() function plots one dot for each observation.
- It needs two arrays of the same length, one for the values of the x-axis, and one for values on the y-axis:
- ***Syntax****: matplotlib.pyplot.scatter(x_axis_data, y_axis_data, s=None, c=None, marker=None, cmap=None, vmin=None, vmax=None, alpha=None, linewidths=None, edgecolors=None)*
  - ***x_axis_data****: An array containing data for the x-axis.matplotlib*
  - ***s****: Marker size, which can be a scalar or an array of size equal to the size of x or y*
  - ***c:*** *Color of the sequence of colors for markers*
  - ***marker****: Marker style.*
  - ***cmap****: Colormap name*
  - ***linewidths****: Width of the marker border*
  - ***edgecolor****: Marker border color*
  - ***Alpha****: Blending value, ranging between 0 (transparent) and 1 (opaque).*

Scatter Plot using Matplotlib

Write a Python program to Demonstrate how to Draw a Scatter Plot using Matplotlib.

```
import matplotlib.pyplot as plt


day=[1, 2 , 3 , 4 , 5, 6]

num=[48, 12, 28, 38, 20, 36]

plt.xlabel('Days', fontsize=15)

plt.ylabel('Number of cases', fontsize=15)

plt.title('Number of cases repored', fontsize=15)

plt.scatter(day, num, s=250, color=['g', 'b', 'r', 'm', 'b', 'g'])

plt.show()
```