

Task 10: Use matplotlib module for plotting in python.

Aim: To use matplotlib module for plotting in python.

Problem 10.1: write a python programming to display a bar chart of the popularity of programming languages.

Sample data:

programming languages: Java, Python, PHP, JavaScript, C#, C++

Popularity: 22.2, 17.6, 8.8, 8.7, 7.7, 6.7

Algorithm:

1. Define two lists for programming languages and their popularity respectively.
2. Find the maximum popularity value in the list.
3. Define a scaling factor to scale the bar height as the popularity value scaled by the scaling factors.
4. For each language and popularity pair, calculate the bar height as the popularity value scaled by the scaling factor.
5. Print the chart using a loop to iterate over the programming language

list: a.

- a. Print the language name and a separator character (e.g. "|").
- b. Use a loop to print the bar chart by printing the bar character (e.g. "*") a number of times equal to the bar height.
- c. Print the popularity value with a separator character.

Program:-

```
# pip install matplotlib
import matplotlib.pyplot as plt
languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
popularity = [22.2, 17.6, 8.8, 8.7, 7.7, 6.7]
plt.bar(languages, popularity, color='b')
plt.title('Popularity of programming languages')
plt.xlabel('programming languages')
plt.ylabel('popularity')
plt.show()
```

Problem 10.2: write a python programming to create a pie chart of the popularity of programming languages.

Sample data:

programming language: Java, Python, PHP, JavaScript, C#, C++

popularity: 22.2, 17.6, 8.8, 8.7, 7.7, 6.7

Algorithm:

1. Create a list of programming languages and popularity.
2. Create a pie chart using the matplotlib library.
3. Set the title and legend for the pie chart.
4. Show the pie chart.

Program:

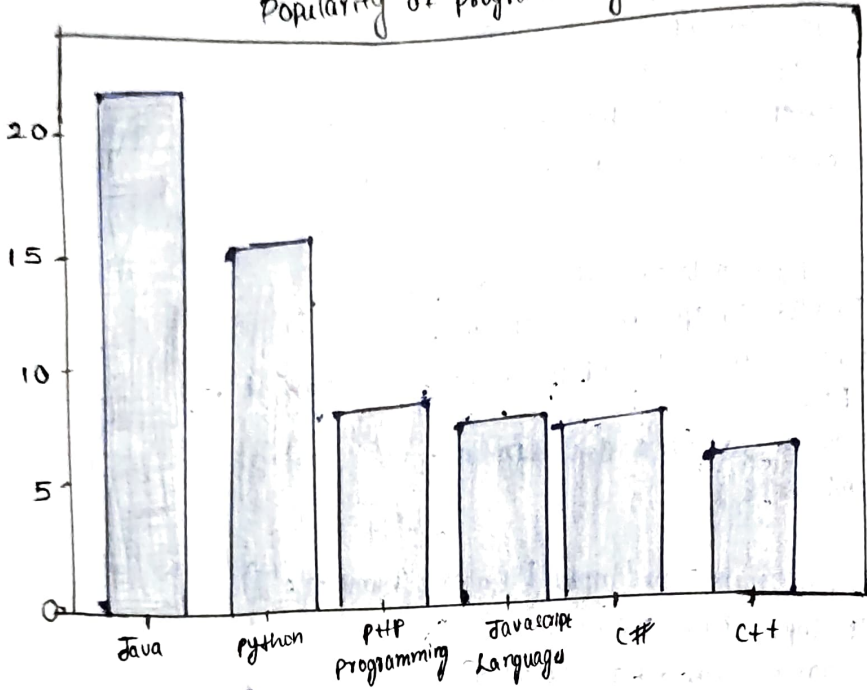
```
import matplotlib.pyplot as plt
```

Step 1

```
languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
```

Output:-

Popularity of programming Languages.



Sample data:-

Programming languages: Java, Python, PHP, Javascript, C#, c++

Popularity: 22.2, 17.6, 8.8, 8.7, 6.7

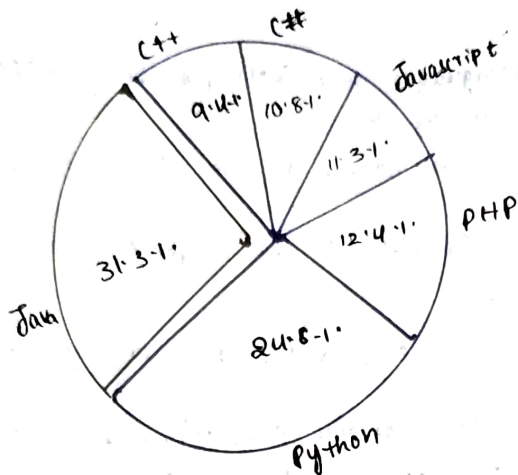
af.

Sample data:-

programming languages: Java, Python, PHP, JavaScript, C#, C++

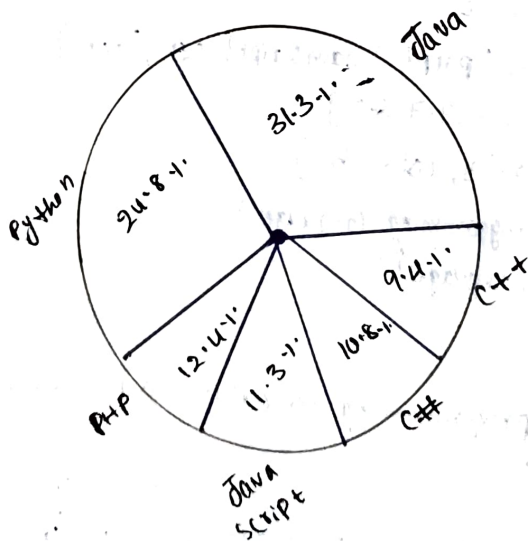
Popularity: 22.2, 17.6, 8.8, 8.7, 7.7, 6.7

Sample Output:-



Output:-

Popularity of programming Languages:



dp

popularity = (22.2, 17.6, 8.8, 8, 7.7, 6.7)

step 2

plt.pie(popularity, labels=language, autopct='%1.1f%%')

step 3

plt.title('Popularity of programming languages')

plt.legend(language, loc='best')

step 4

plt.show()

VEL TECH	
EX No.	10
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VA VOCE (5)	5
PROJECT (5)	5
TOTAL (20)	15
PERCENTAGE	75%

Result:- Thus the python program use matplotlib module for plotting is executed and verified successful.