Task: 10 Use Matplotlib module for plotting in python.

Aim: To use Matplotlib module for plotting in python

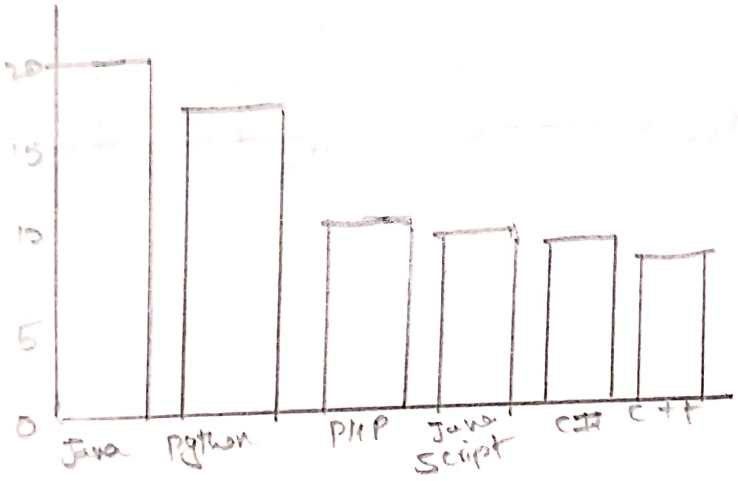
Problem -1: Write a python programming to display a bar chart of popularity of programming languages.

Sample data:

Programing language: Java, Python, PHP, Javascript, C#, C++

Popularity: 22.2, 17.6, 8.8, 7.7, 6.7

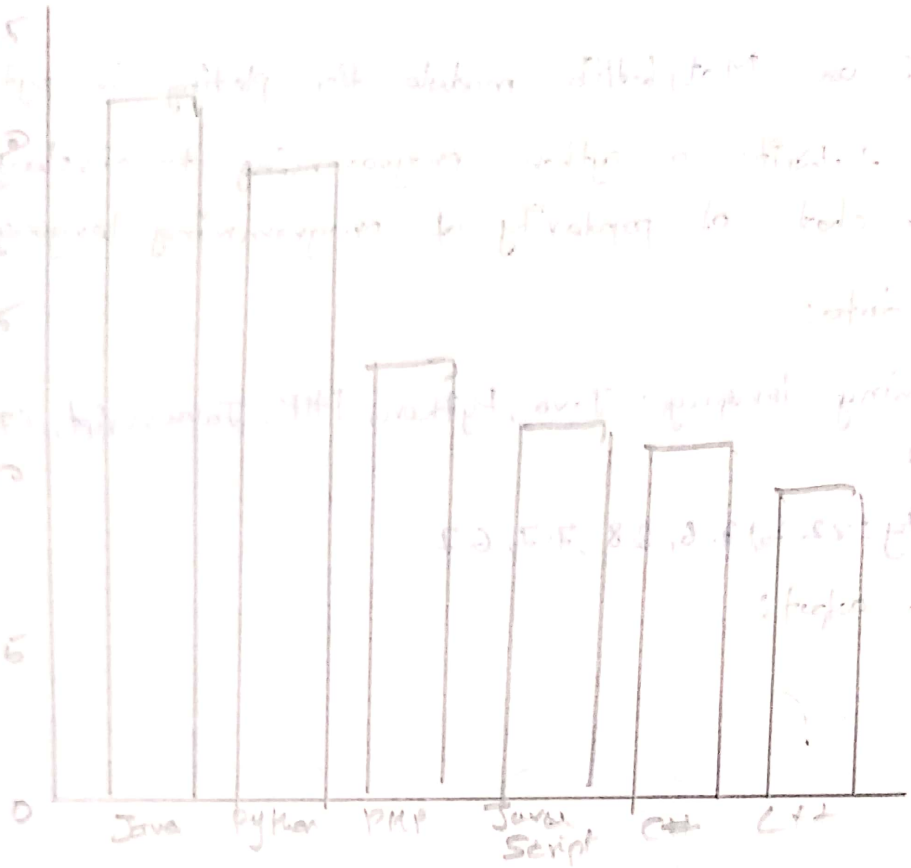
Sample output:



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 heights within a certain limit (eg. 50 character)
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:

Output



a. Print the language name and a separator character (eg. "I")

b. Use a loop to print the bar chart by printing the bar character (eg. "*") a number of times equal to their bar height.

c. Print the popularity value with a separator character

d. Print a newline 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, 6.7]
plt.bar(languages, popularity, color = 'b')
plt.title('popularity of programming Language')
plt.xlabel('Programming languages')
plt.ylabel('Popularity')
plt.show()
```

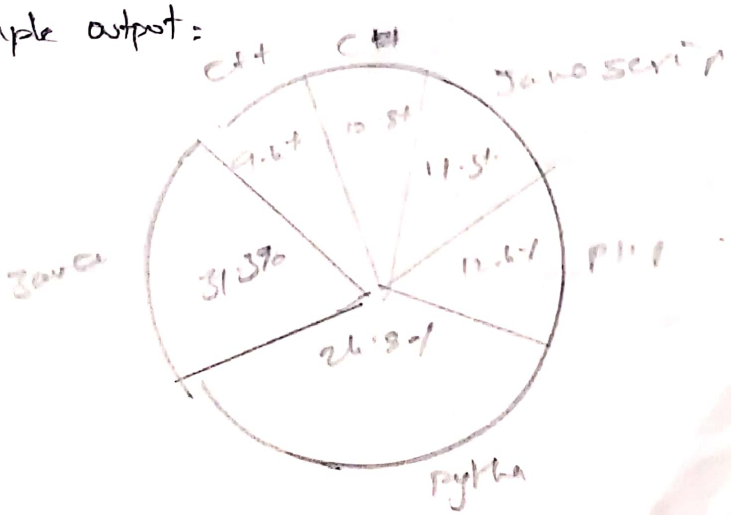
Problem .2. write a python programming to create a pie chart of the popularity of programming languages

Sample data:

Programming langages: Java, Python, PHP, JavaScript, C#, C++

Popularity: 22.2, 17.6, 8.8, 8, 7.7, 6.7

Sample output:

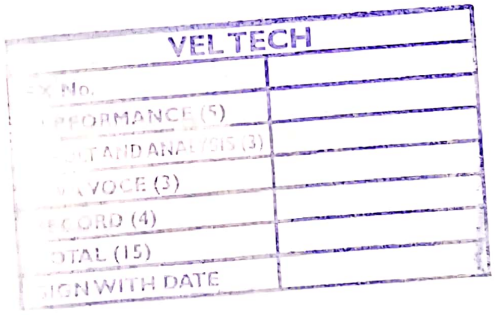


Algorithm:

1. Create a list of programming languages and popolarity.
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++']
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
#step.2
plt.pie(popularity, labels=languages, autopct='%1.1f%%')
#step 3
plt.title('popularity of programming Languages')
plt.legend(languages, loc="best")
#step 4
plt.show()
```



Result:

Thus the python programming use Matplotlib module for plotting is executed and verified successfully.