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 chat 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, 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 factor.
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. 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 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 Languages')
    plt.xlabel('programming Languages')
    plt.ylabel('popularity')
    plt.show()
```

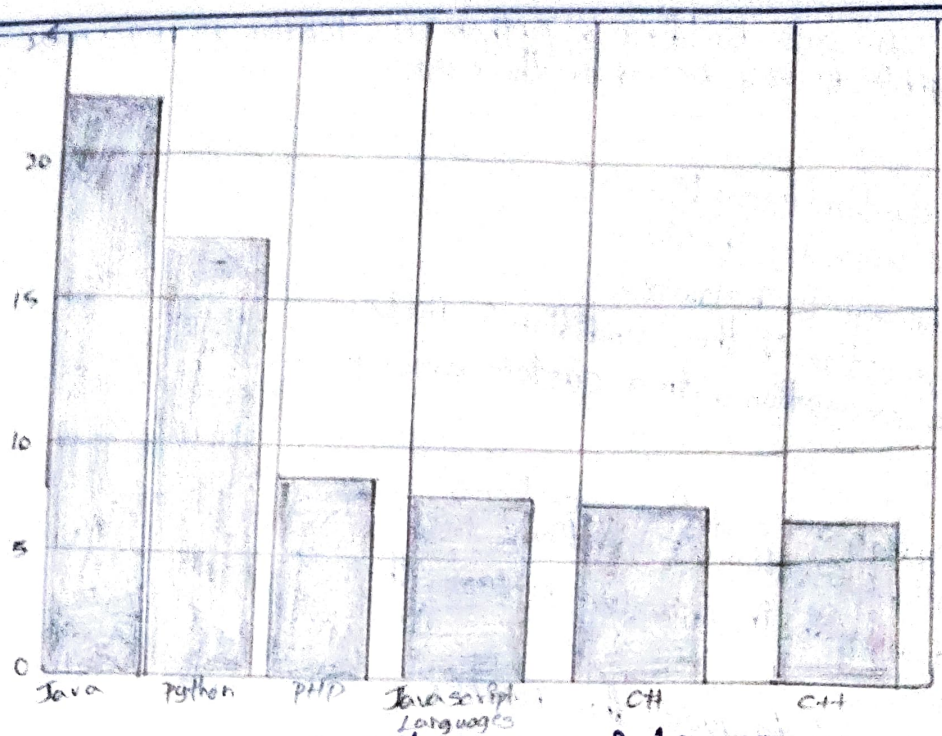
Problem 10.2. write a python programming to create a pie chart of the popularity of programming Languages.

sample data:-

Programming languages: Java, python, PHP, Javascript, C#, C++
Popularity: 22.2, 17.6, 8.8, 8, 7.7, 6.7

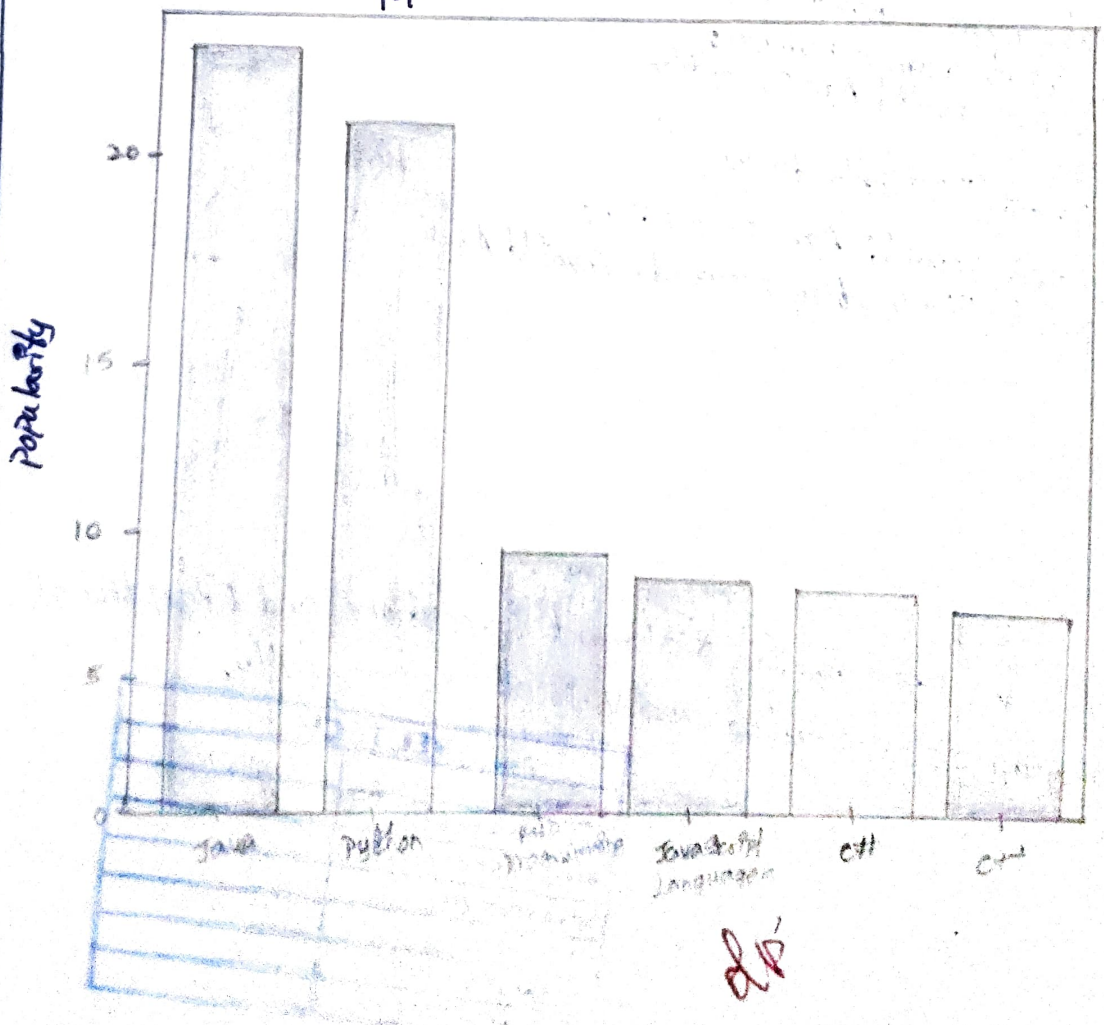
Algorithm:-

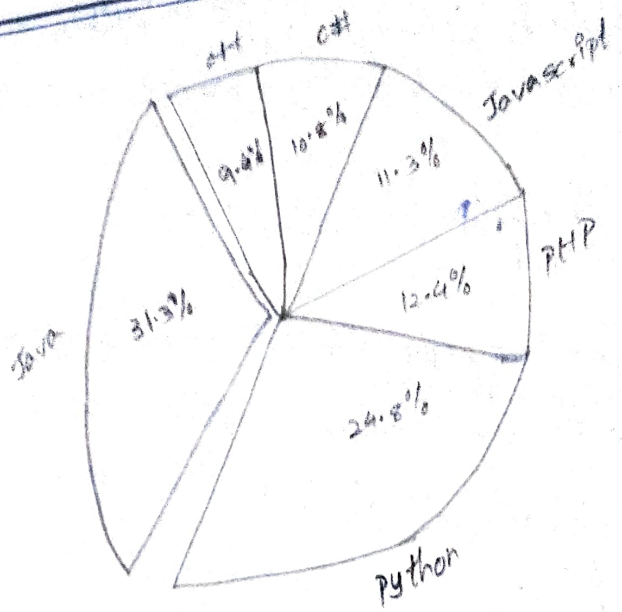
1) create a list of programming Languages and popularity.
2) create a pie chart using the matplotlib library.
3) set the title and legend for the pie chart.
4) show the pie chart.



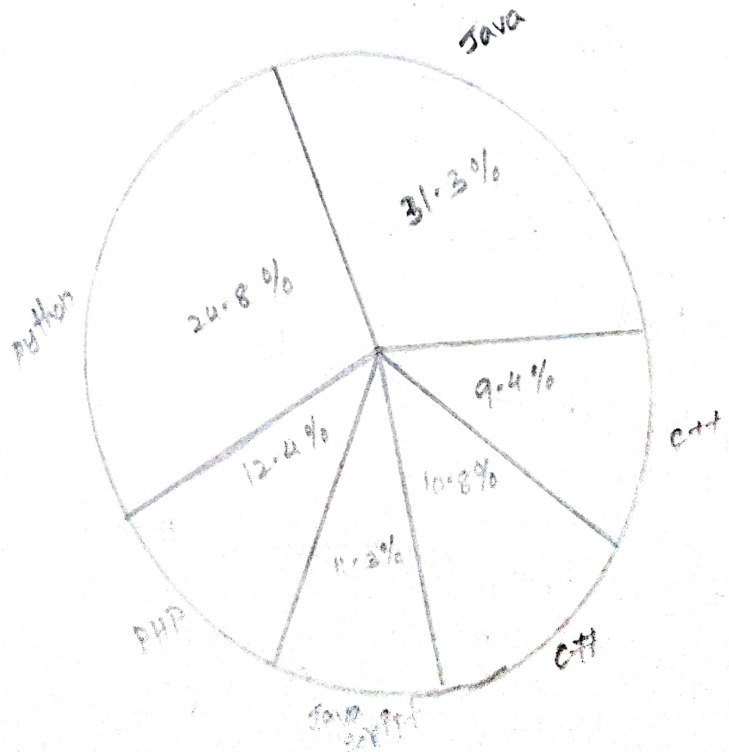
Popularity of Programming Languages
worldwide, oct 2018 compared to a year ago

Popularity of programming Languages





Popularity of programming Languages



Program:-

```
import matplotlib.pyplot as plt
# step1
languages = ['Java', 'python', 'PHP', 'Javascript', 'C#', 'C++']
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
# step2
plt.pie(popularity, labels = languages, autopct = '%1.1f%%')
# step3
plt.title('Popularity of programming Languages')
plt.legend(languages, loc = "best")
#step4
plt.show()
```

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