

Task 10:- use matplotlib module for plotting in python

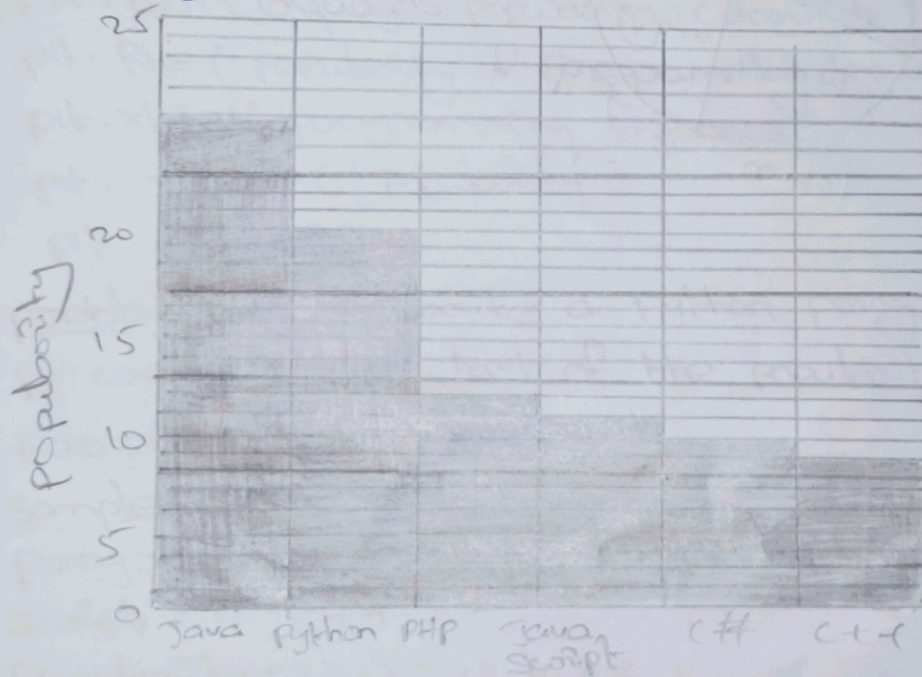
Aim:- To use matplotlib module for plotting in python

problem 10.1:- write a python programming to display a bar chart of the popularities of programming languages.

sample data:-

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

popularity: 22.2, 17.6, 8.8, 7.7, 6.2

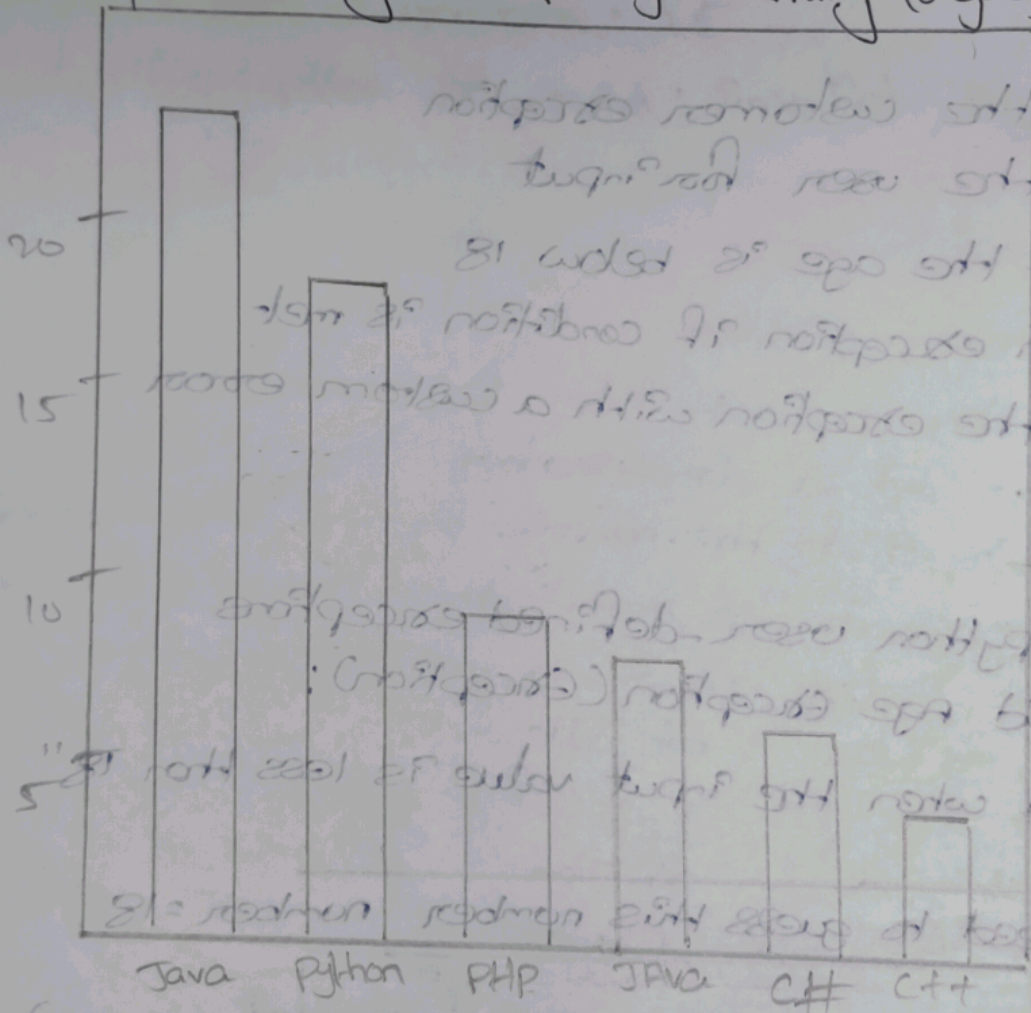


Algorithm:-

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 (e.g. 50 characters).
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

popularity of programming languages



- print the language name and a separation character (e.g. ",")
- use a no. of lines equal to bar height.
- print the popularity value with a separation character.
- print a newline character.

program:-

```
# pip install matplotlib.
```

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

```
languages = ('Java', 'python', 'PHP', 'Java script', '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, Java script, C#, C++

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

Algorithm:-

- create a list of programming languages & popularity
- create a pie chart using the matplotlib library.
- set the title and legend for the pie chart.
- show the pie chart.

program:-

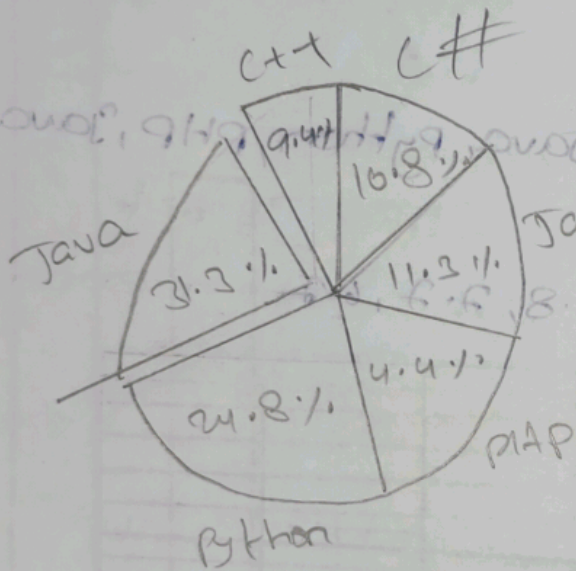
```
import matplotlib.pyplot as plt
```

```
# step 1
```

```
languages = ('Java', 'python', 'PHP', 'Java script', 'C#', 'C++')
```

```
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
```


Sample output



Expected programming languages

Expected programming languages

Expected programming languages

Expected programming languages

Expected programming languages

Expected programming languages

Expected programming languages

Expected programming languages

step 2

plt.pie (popularity, labels = languages, output = ' %.1.1
F %.1.1 %')

step 3

plt.title ('Popularity of programming languages')

plt.legend (languages, loc = "best")

step 4

plt.show ()

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

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EX No.	
PERFORMANCE (5)	10
RESULT AND ANALYSIS (5)	5
VOICE (5)	5
SKILL (5)	5
ATTITUDE (5)	5
TOTAL (20)	30
DATE	