

Dt: 8/10/25

## Task 10: Use Matplotlib Module for Plotting in Python

Aim:

Problem 10.1 write a Python programming to display a bar chart of the popularity of Programming Language.

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 languages
  - a. Print the language name and a separator character
  - b. Use a loop to print the bar chart by printing the bar character a number of times equal to the bar height
  - c. Print the popularity value with a separator character and print a new line character.

Program:

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

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

```
Popularity = [22.2, 17.6, 8.8, 8.7, 6.7]
```

```
plt.bar(languages, Popularity, color = 'b')
```

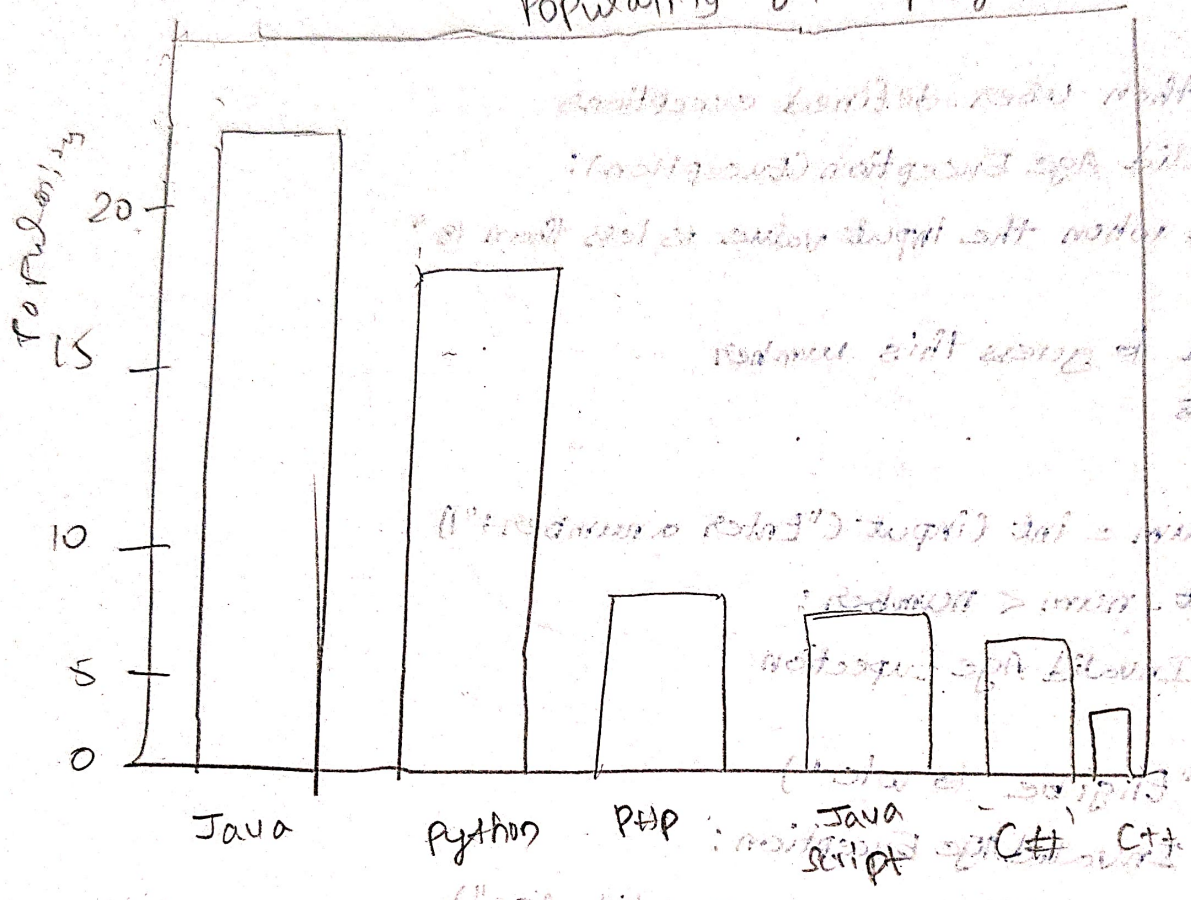
```
plt.title('Popularity of Programming Languages')
```

```
plt.xlabel('Programming Languages')
```

```
plt.ylabel('Popularity')
```

```
plt.show()
```

# Popularity of Programming Language



Programming Language



## Task 10.2

Aim: To write a Python Programming to create a pie chart of the popularity of programming languages.

### 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++']
```

```
Popularity = [22.2, 17.6, 8.8, 8.7, 7.7, 6.7]
```

```
# step 2.
```

```
plt.pie(Popularity, labels=languages, autopct='%1.1f%%')
```

```
# Step 3:
```

```
plt.title('Popularity of Programming languages')
```

```
plt.legend('legendlanguages', loc="best")
```

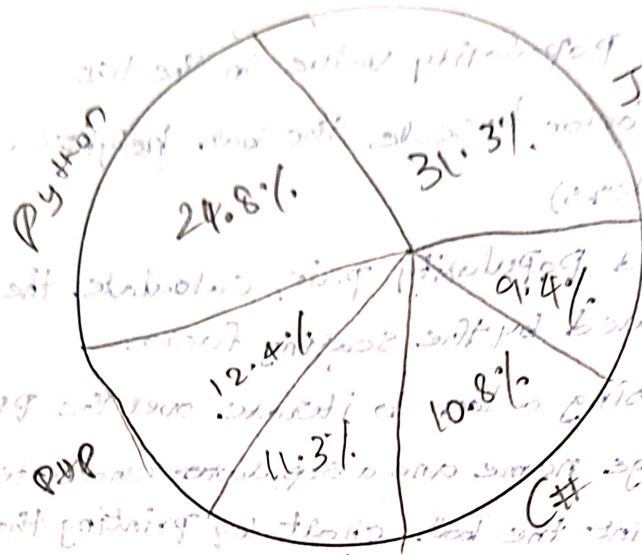
```
# Step 4:
```

```
plt.show()
```

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PERFORMANCE (5)	10
RESULT AND ANALYSIS (3)	5
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RECORD (4)	5
DATE	15

### Result:

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



Programs:

```

import java.util.*;
public class Program {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int[] arr = new int[n];
        for (int i = 0; i < n; i++) {
            arr[i] = sc.nextInt();
        }
        // ... (rest of the code)
    }
}
  
```