

Experiment 26

Aim:

To develop a program for multiple plots.

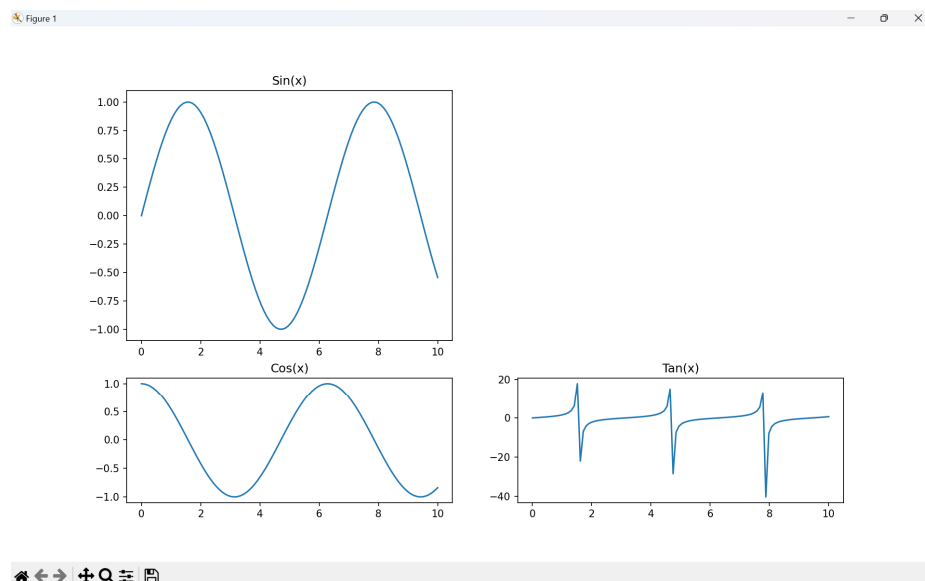
Code:

```
1 import matplotlib.pyplot as plt
2 import numpy as np
3
4 x = np.linspace(start=0, stop=10, num=100)
5 y1 = np.sin(x)
6 y2 = np.cos(x)
7 y3 = np.tan(x)
8
9 fig, axs = plt.subplots(nrows=2, ncols=2, gridspec_kw={'height_ratios': [2, 1], 'width_ratios': [1, 1]})
10
11 axs[0, 0].plot(x, y1)
12 axs[0, 0].set_title('Sin(x)')
13 axs[0, 1].axis('off')
14
15 axs[1, 0].plot(x, y2)
16 axs[1, 0].set_title('Cos(x)')
17
18 axs[1, 1].plot(x, y3)
19 axs[1, 1].set_title('Tan(x)')
```

Input:

```
x = np.linspace(start=0, stop=10, num=100)
y1 = np.sin(x)
y2 = np.cos(x)
y3 = np.tan(x)
```

Output:



Experiment 27

Aim:

To develop a program to display a bar chart of the popularity of programming Languages

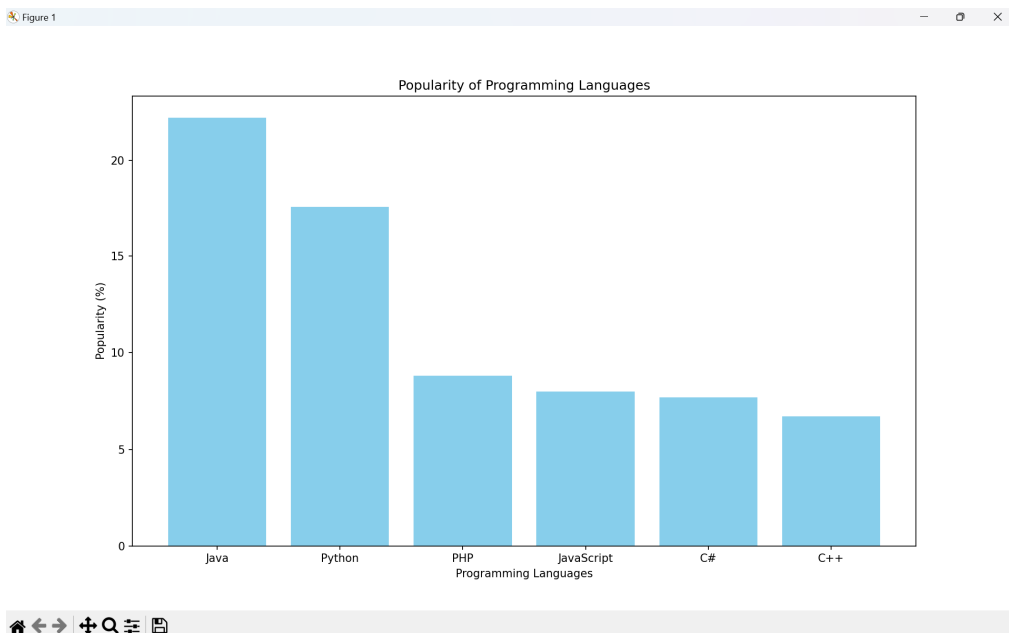
Code:

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
multipleplots26.py Version control Current File
barchart27.py
1 import matplotlib.pyplot as plt
2
3 languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
4 popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
5
6 plt.figure(figsize=(10, 6))
7 plt.bar(languages, popularity, color='skyblue')
8
9 plt.title('Popularity of Programming Languages')
10 plt.xlabel('Programming Languages')
11 plt.ylabel('Popularity (%)')
12
13 plt.show()
14
```

Input:

```
languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
```

Output:



Experiment 28

Aim:

To develop Python programming to display a horizontal bar chart of the popularity of programming Languages

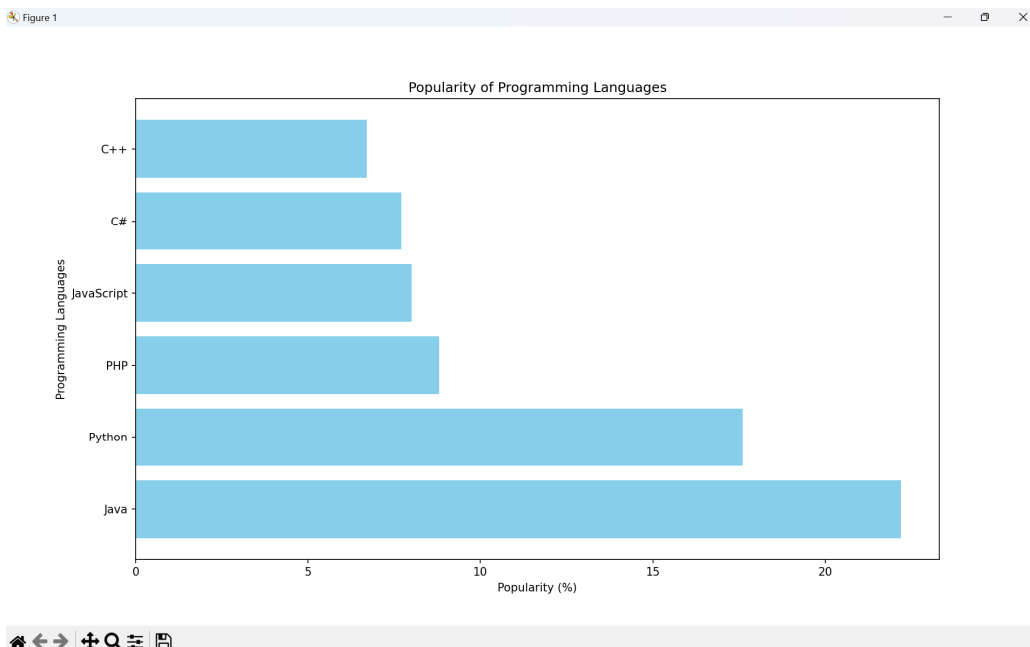
Code:

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
multipleplots26.py Version control Current File
horizontalbar28.py x
1 import matplotlib.pyplot as plt
2
3 languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
4 popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
5
6 # Create a horizontal bar chart
7 plt.figure(figsize=(10, 6))
8 plt.barh(languages, popularity, color='skyblue')
9
10 # Add titles and labels
11 plt.title('Popularity of Programming Languages')
12 plt.xlabel('Popularity (%)')
13 plt.ylabel('Programming Languages')
14
15 # Display the chart
16 plt.show()
17
Codes > horizontalbar28.py 2:1 CRLF UTF-8 4 spaces Python 3.12 (Codes)
```

Input:

```
languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
```

Output:



Experiment 29

Aim:

To develop a program to display a bar chart of the popularity of programming Languages with different colors

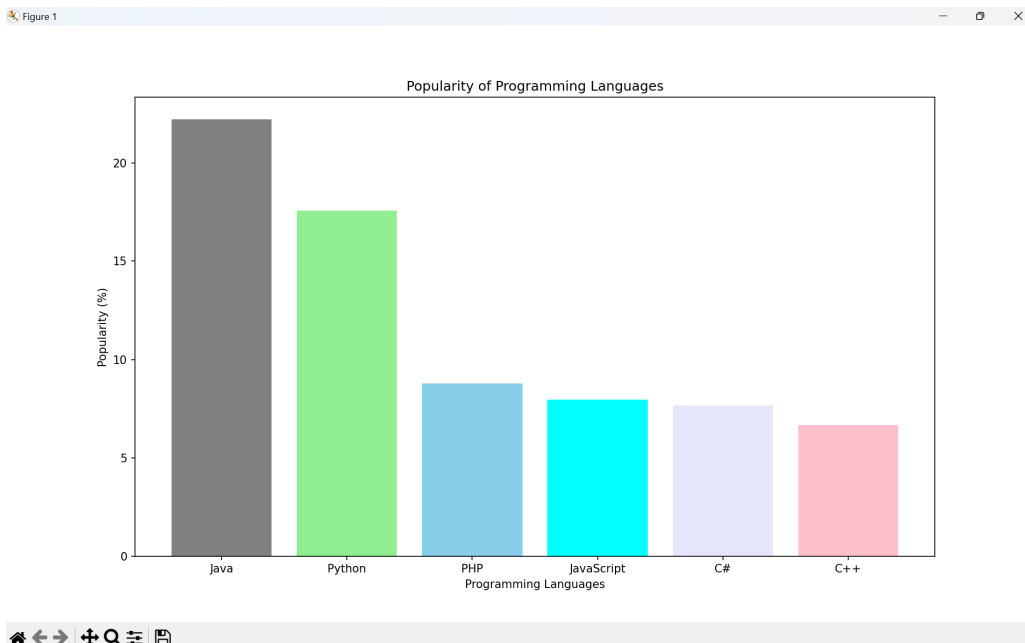
Code:

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
multipleplots26.py Version control Current File
barchartdiffcolor29.py x
1 import matplotlib.pyplot as plt
2
3 languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
4 popularity = [22.2, 17.6, 8.8, 8.0, 7.7, 6.7]
5
6 colors = ['grey', 'lightgreen', 'skyblue', 'cyan', 'lavender', 'pink']
7
8 plt.figure(figsize=(10, 6))
9 plt.bar(languages, popularity, color=colors)
10
11 plt.title('Popularity of Programming Languages')
12 plt.xlabel('Programming Languages')
13 plt.ylabel('Popularity (%)')
14
15 plt.show()
16
Codes > barchartdiffcolor29.py Waiting for process detach 6:34 CRLF UTF-8 4 spaces Python 3.12 (Codes)
```

Input:

```
languages = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
```

Output:



Experiment 30

Aim:

To develop a program to create bar plot of scores by group and gender.

Code:

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
multipleplots26.py Version control Current File
barmenwomen30.py
1 import seaborn as sns
2 import matplotlib.pyplot as plt
3 import pandas as pd
4
5 data = {
6     'Group': ['Group 1', 'Group 2', 'Group 3', 'Group 4', 'Group 5'],
7     'Men': [22, 30, 35, 35, 26],
8     'Women': [25, 32, 30, 35, 29]
9 }
10
11 df = pd.DataFrame(data)
12
13 df_melted = df.melt(id_vars='Group', var_name='Gender', value_name='Score')
14
15 plt.figure(figsize=(10, 6))
16 sns.barplot(data=df_melted, x='Group', y='Score', hue='Gender')
17
18 plt.xlabel('Groups')
19 plt.ylabel('Scores')
20
```

Input:

```
data = {
    'Group': ['Group 1', 'Group 2', 'Group 3', 'Group 4', 'Group 5'],
    'Men': [22, 30, 35, 35, 26],
    'Women': [25, 32, 30, 35, 29]
}
```

Output:

