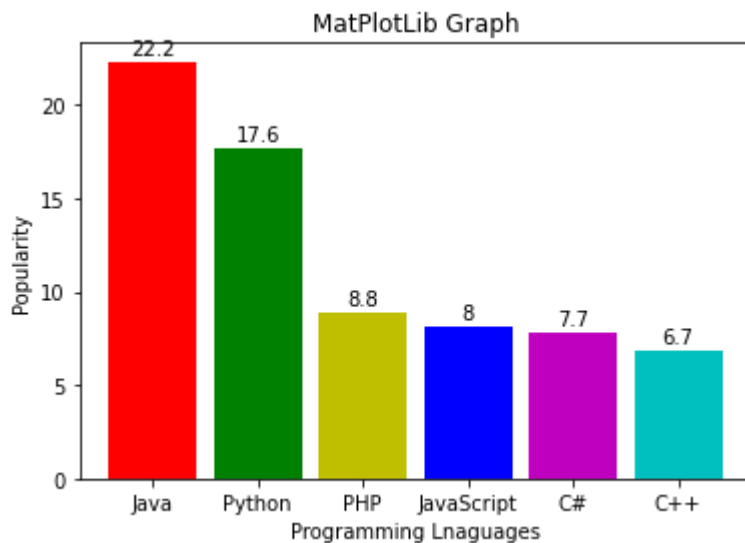


Q5

```

from matplotlib import pyplot as plt
x = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
y = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
barlist = plt.bar(x, y, color='g', edgecolor='b', linewidth=2)
for index, value in enumerate(y):
    plt.text(index, value+0.5, str(value), ha="center")
barlist[0].set_color('r')
barlist[1].set_color('g')
barlist[2].set_color('y')
barlist[3].set_color('b')
barlist[4].set_color('m')
barlist[5].set_color('c')
plt.title("MatPlotLib Graph")
plt.xlabel("Programming Languages")
plt.ylabel("Popularity")
plt.show()

```



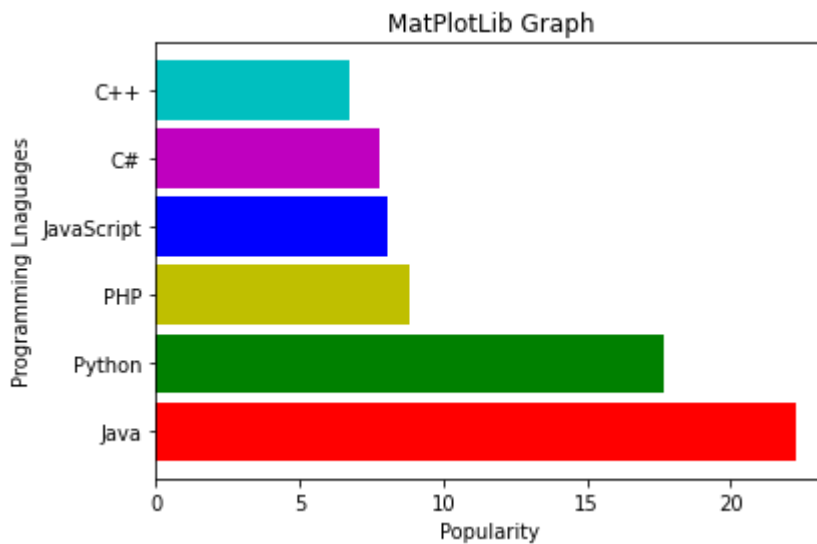
Q6

```

from matplotlib import pyplot as plt
x = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
y = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
barlist = plt.barh(x, y, color='g', edgecolor='b', linewidth=2)
barlist[0].set_color('r')
barlist[1].set_color('g')
barlist[2].set_color('y')
barlist[3].set_color('b')
barlist[4].set_color('m')
barlist[5].set_color('c')
plt.title("MatPlotLib Graph")

```

```
plt.xlabel("Popularity")
plt.ylabel("Programming Languages")
plt.show()
```



Q7

```
import numpy as np
import matplotlib.pyplot as plt

# data to plot
n_groups = 5
men_means = (22, 30, 33, 30, 26)
women_means = (25, 32, 30, 35, 29)

# create plot
fig, ax = plt.subplots()
index = np.arange(n_groups)
bar_width = 0.35
opacity = 0.8

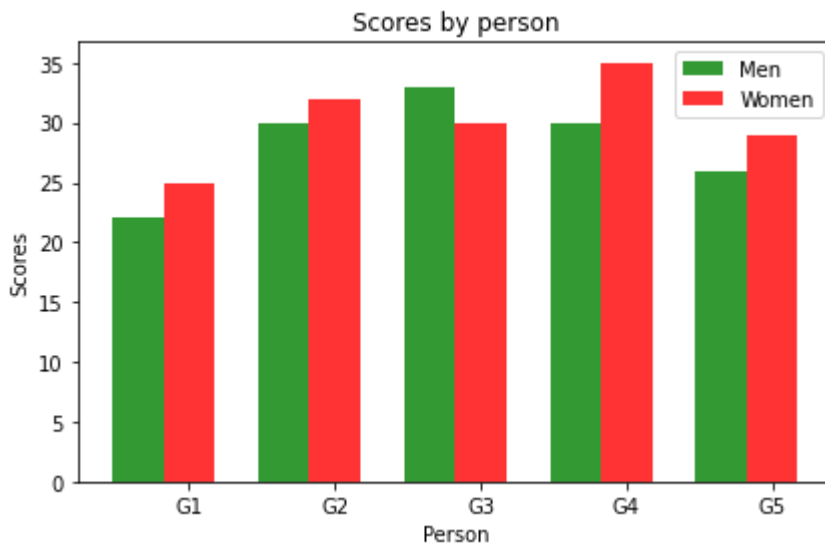
rects1 = plt.bar(index, men_means, bar_width,
alpha=opacity,
color='g',
label='Men')

rects2 = plt.bar(index + bar_width, women_means, bar_width,
alpha=opacity,
color='r',
label='Women')

plt.xlabel('Person')
plt.ylabel('Scores')
plt.title('Scores by person')
plt.xticks(index + bar_width, ('G1', 'G2', 'G3', 'G4', 'G5'))
plt.legend()
```

```
plt.legend()
```

```
plt.tight_layout()
plt.show()
```



Q8

```
import numpy as np
import matplotlib.pyplot as plt
```

```
people = ('G1','G2','G3','G4','G5','G6','G7','G8')
segments = 4
```

```
# multi-dimensional data
```

```
data = [[ 3.40022085,  7.70632498,  6.4097905,  10.51648577,  7.5330039,
          7.1123587,  12.77792868,  3.44773477],
 [ 11.24811149,  5.03778215,  6.65808464,  12.32220677,  7.45964195,
          6.79685302,  7.24578743,  3.69371847],
 [ 3.94253354,  4.74763549,  11.73529246,  4.6465543,  12.9952182,
          4.63832778,  11.16849999,  8.56883433],
 [ 4.24409799,  12.71746612,  11.3772169,  9.00514257,  10.47084185,
          10.97567589,  3.98287652,  8.80552122]]
```

```
percentages = (np.random.randint(5,20, (len(people), segments)))
y_pos = np.arange(len(people))
```

```
fig = plt.figure(figsize=(10,8))
ax = fig.add_subplot(111)
```

```
colors = 'rgwm'
patch_handles = []
# left alignment of data starts at zero
left = np.zeros(len(people))
for i, d in enumerate(data):
    patch_handles.append(ax.barh(y_pos, d,
                                  color=colors[i%len(colors)], align='center',
```

```

    left=left))
    left += d

# search all of the bar segments and annotate
for j in range(len(patch_handles)):
    for i, patch in enumerate(patch_handles[j].get_children()):
        bl = patch.get_xy()
        x = 0.5*patch.get_width() + bl[0]
        y = 0.5*patch.get_height() + bl[1]
        ax.text(x,y, "%d%%" % (percentages[i,j]), ha='center')

ax.set_yticks(y_pos)
ax.set_yticklabels(people)
ax.set_xlabel('Scores')
plt.show()

```

