

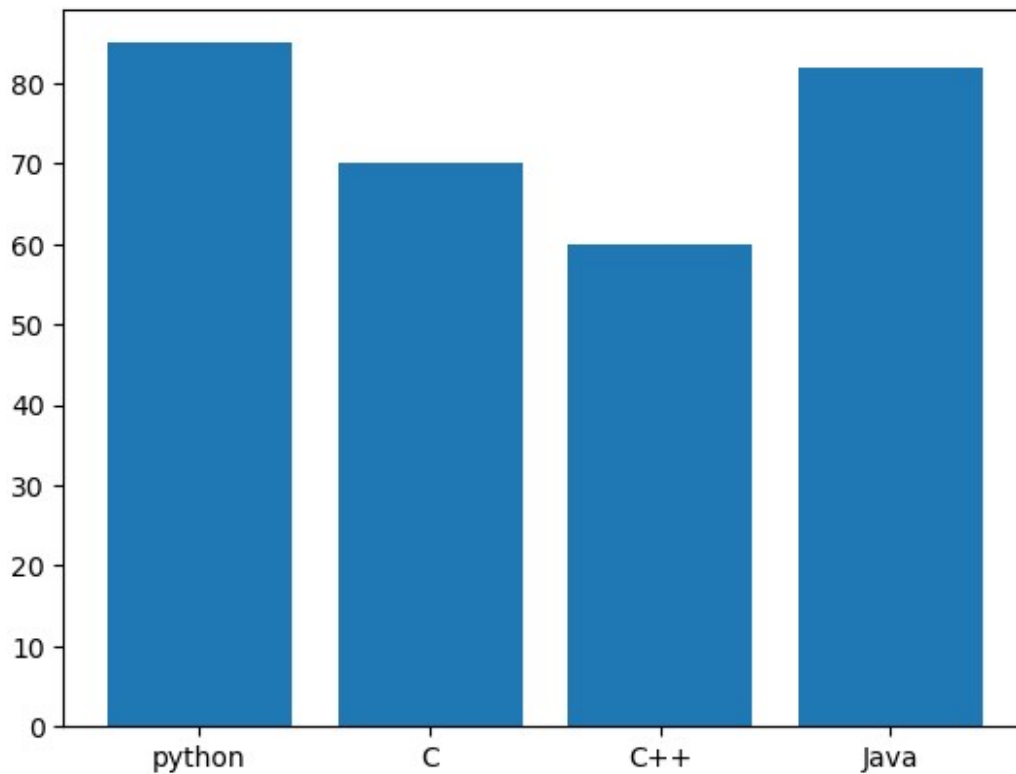
Data Visualization

```
import matplotlib.pyplot as plt
print(plt)

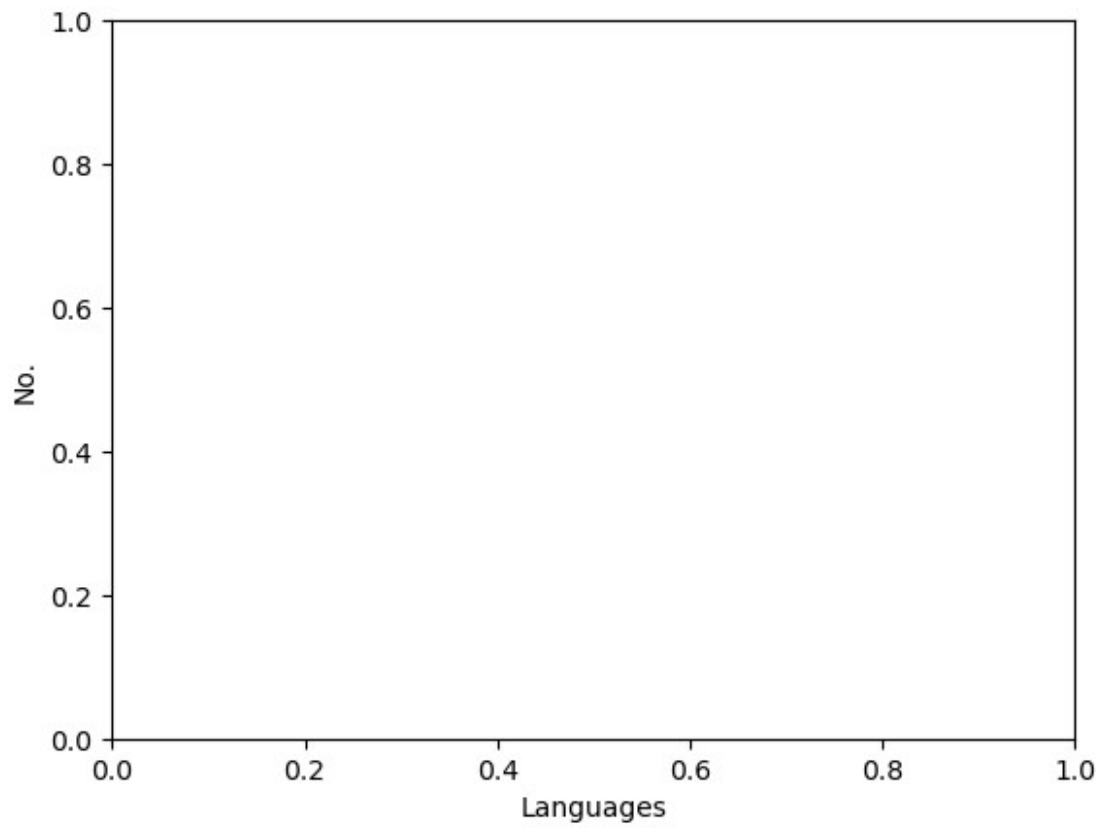
<module 'matplotlib.pyplot' from 'C:\\Users\\ahmad\\anaconda3\\Lib\\
site-packages\\matplotlib\\pyplot.py'>

x = ['python', 'C', 'C++', 'Java']
y = [85, 70, 60, 82]

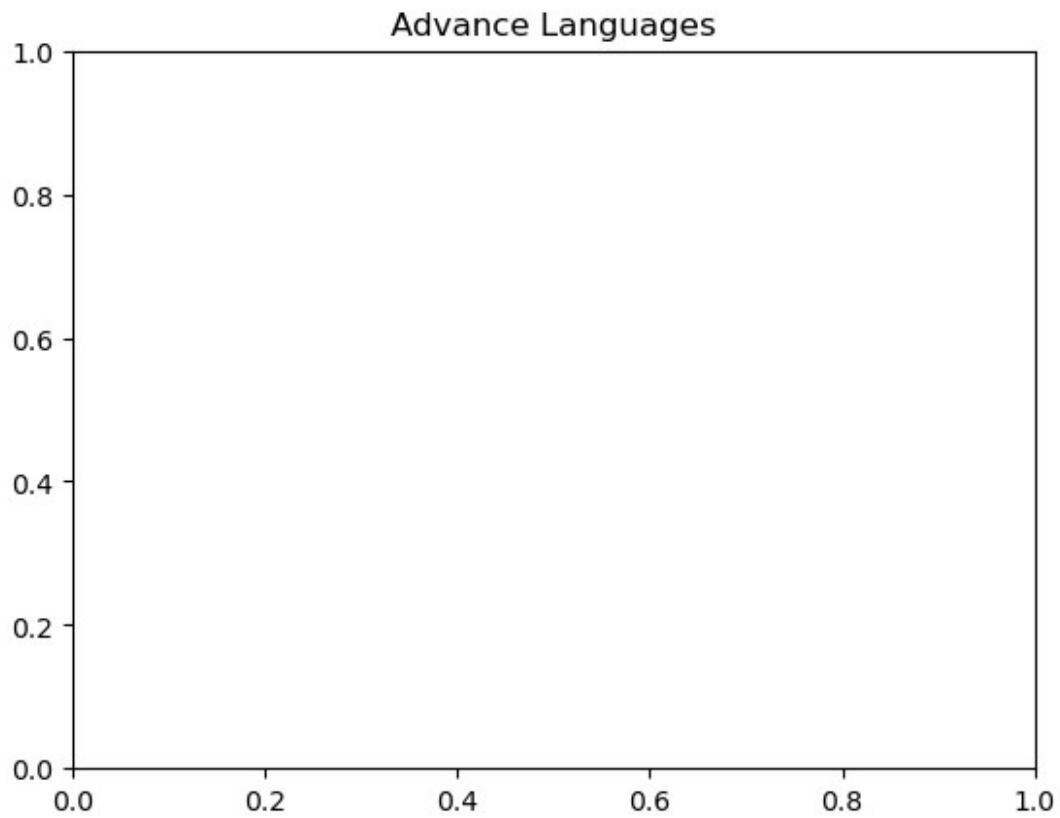
plt.bar(x,y)
plt.show()
```



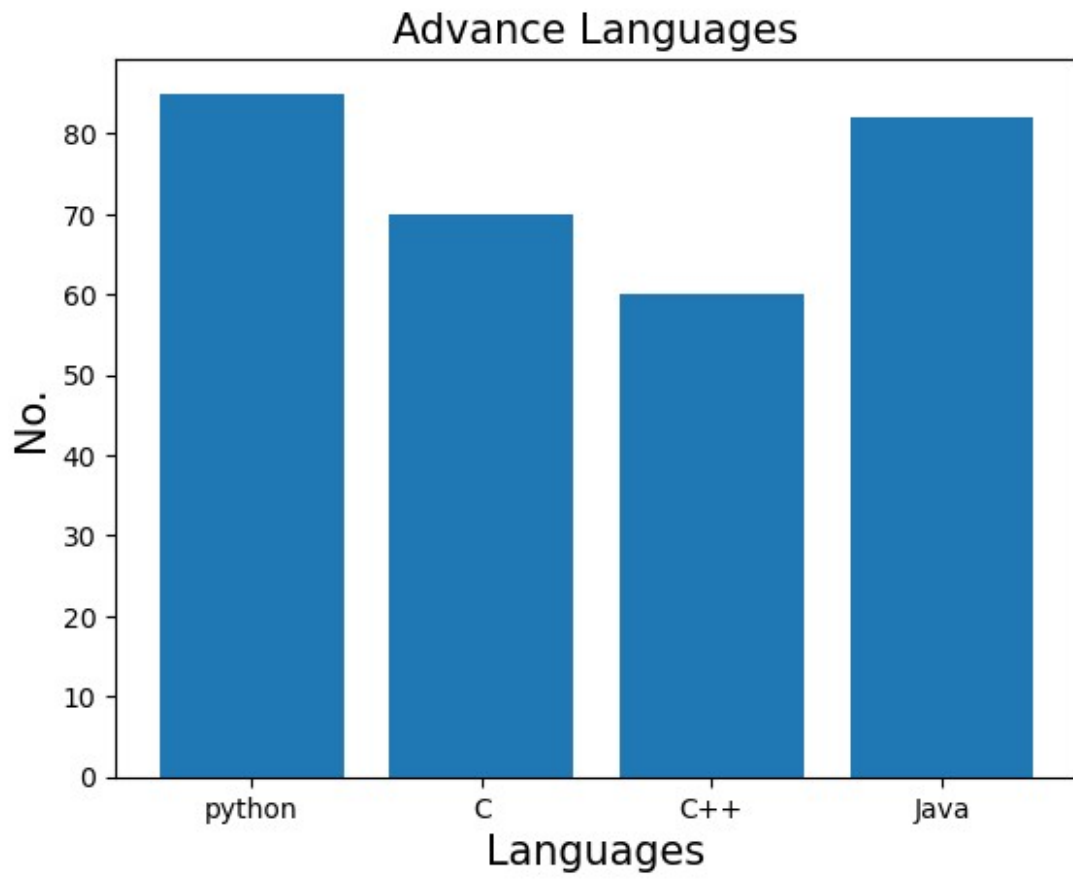
```
plt.xlabel('Languages')
plt.ylabel('No.')
Text(0, 0.5, 'No.')
```



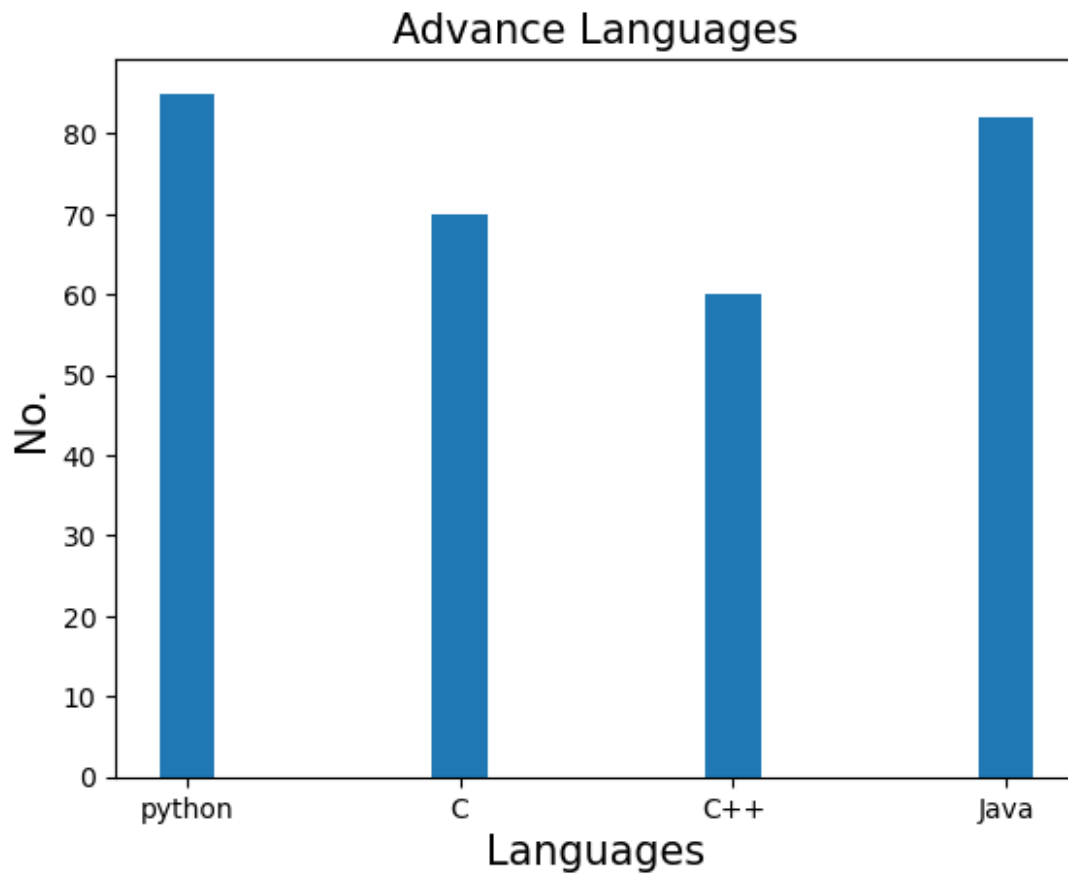
```
plt.title('Advance Languages')  
Text(0.5, 1.0, 'Advance Languages')
```



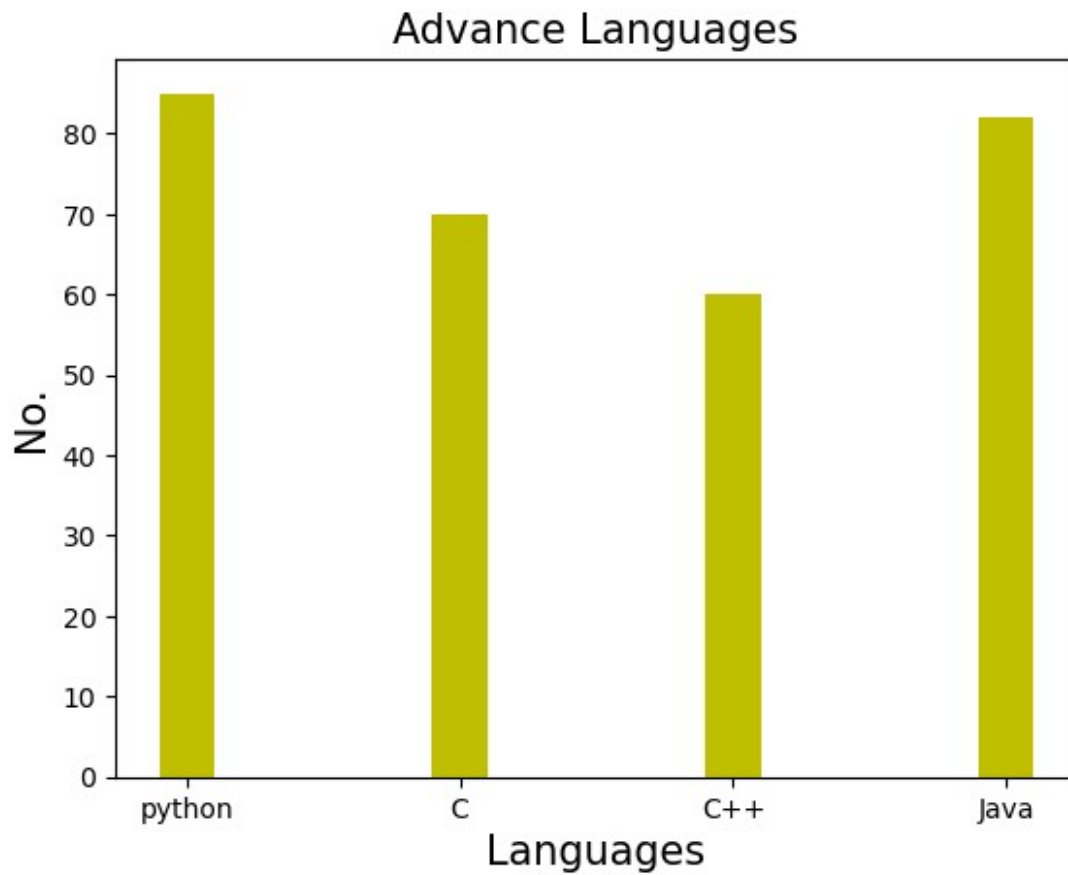
```
plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)
plt.bar(x,y)
plt.show()
```



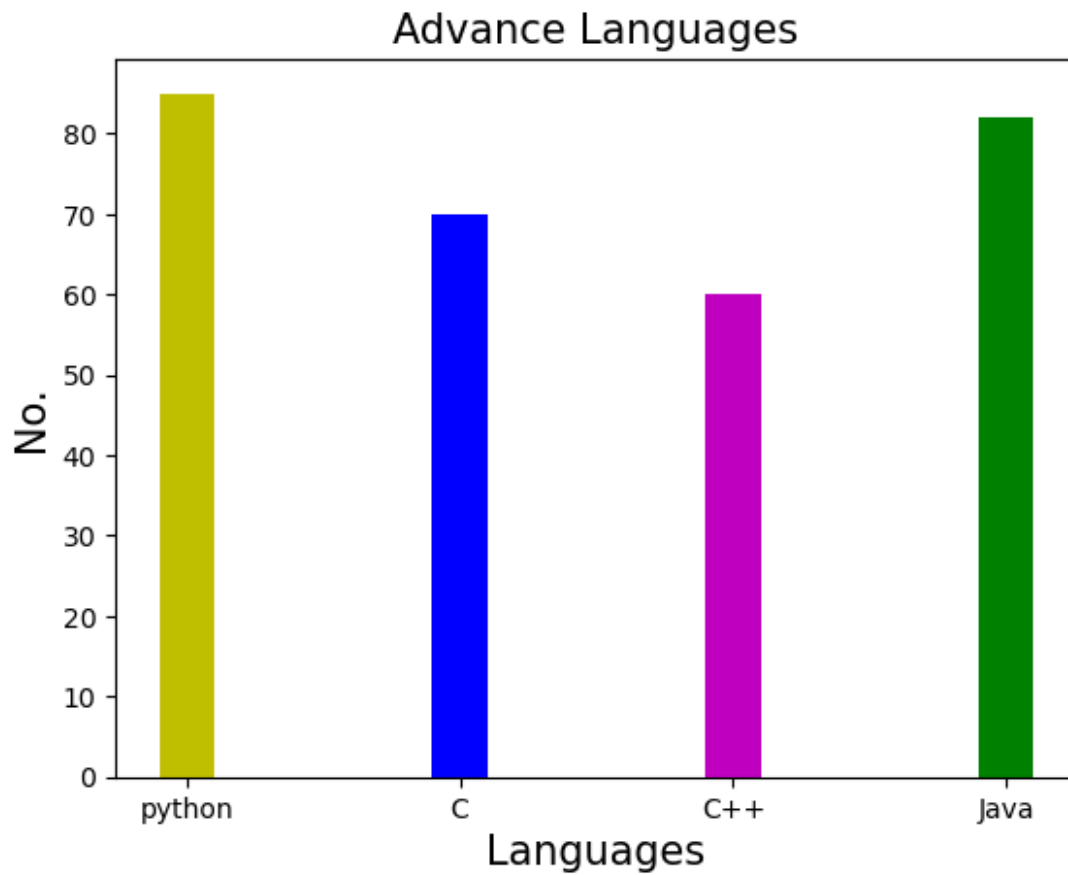
bbbb



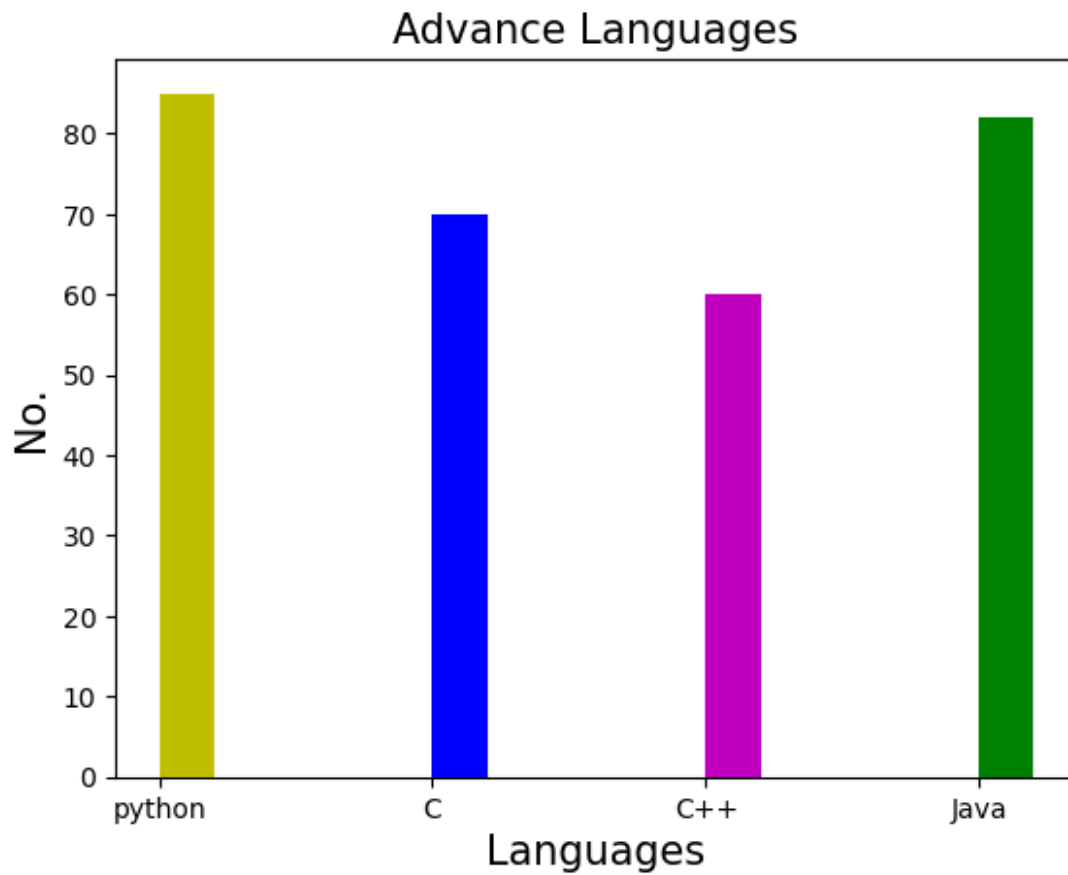
```
plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)
plt.bar(x,y, width=0.2, color='y')
plt.show()
```



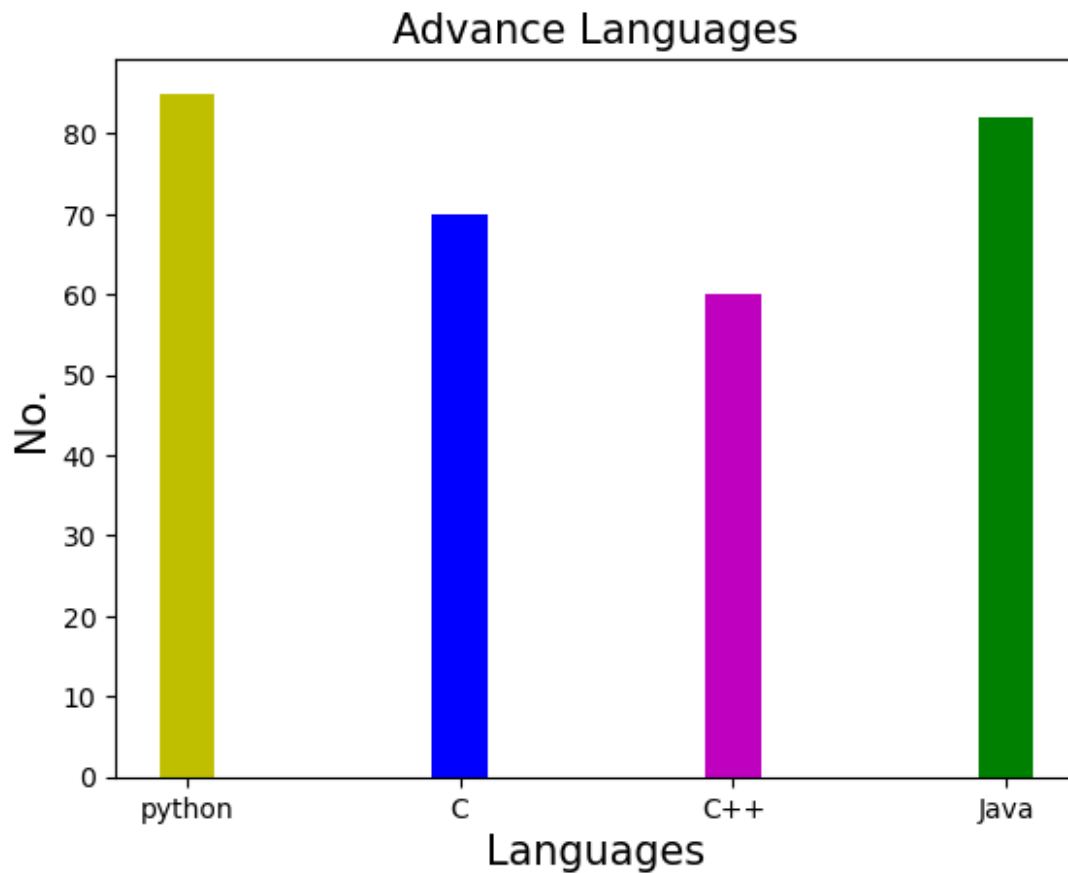
```
plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)
colors = ['y', 'b', 'm', 'g']
plt.bar(x,y, width=0.2, color=colors)
plt.show()
```



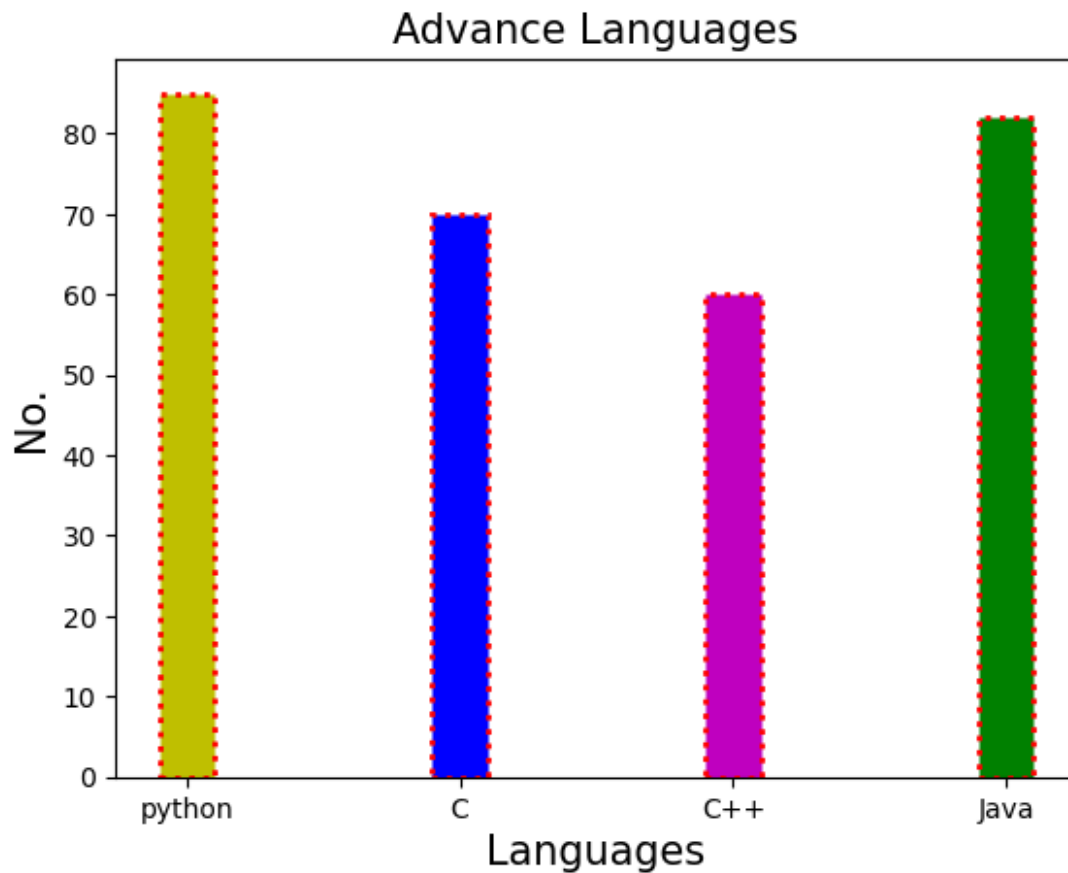
```
plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)
colors = ['y', 'b', 'm', 'g']
plt.bar(x,y, width=0.2, color=colors, align='edge')
plt.show()
```



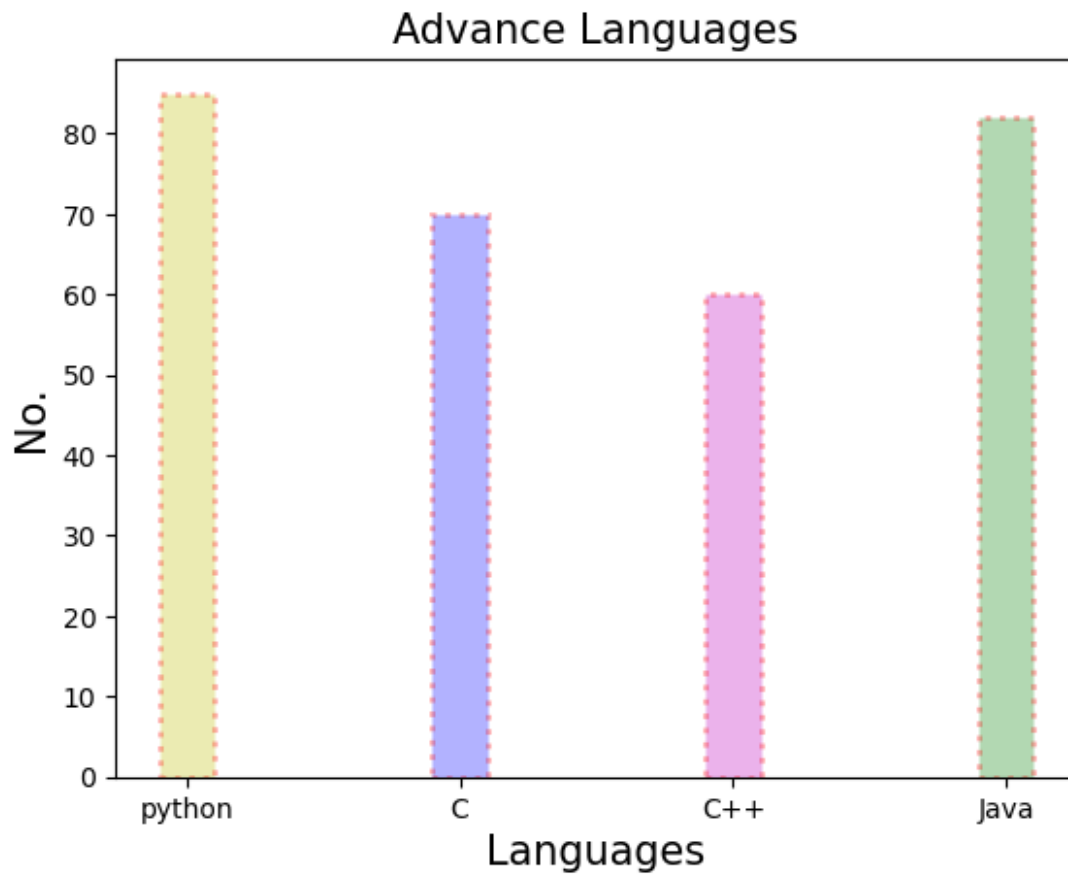
```
plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)
colors = ['y', 'b', 'm', 'g']
plt.bar(x,y, width=0.2, color=colors, align='center')
plt.show()
```

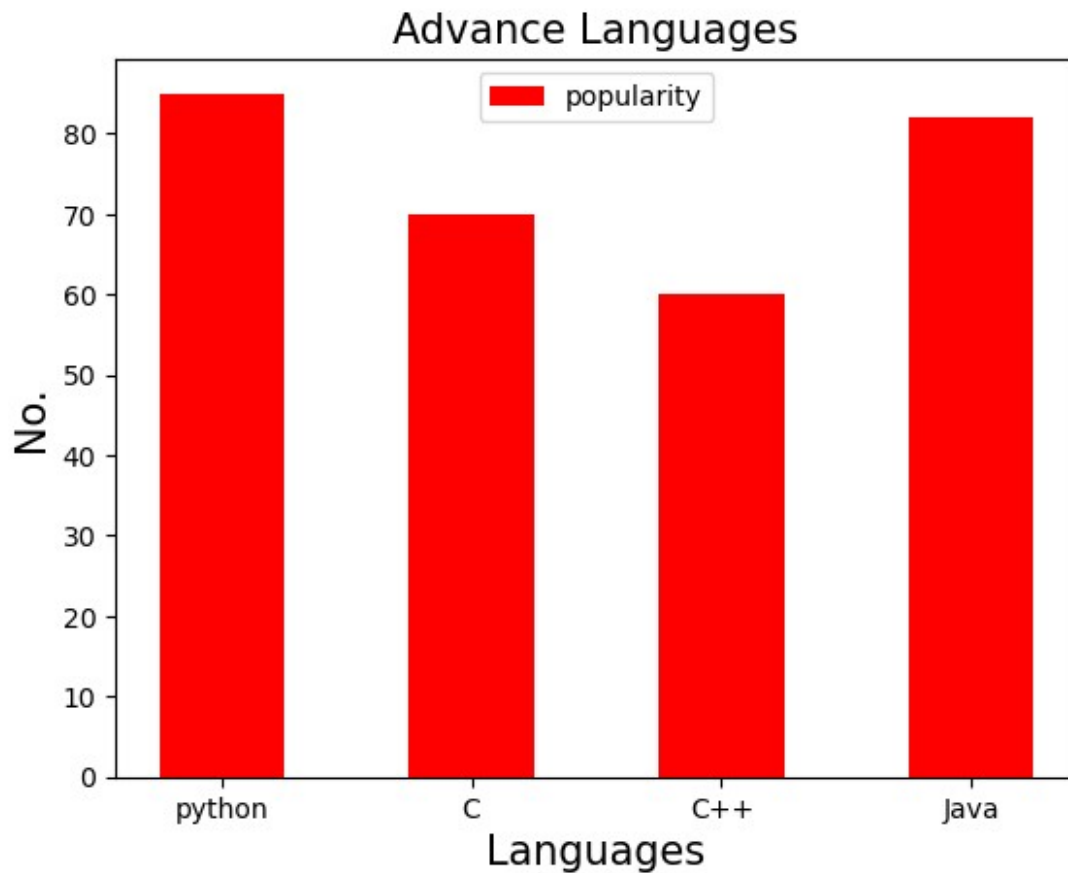
```
plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)
colors = ['y', 'b', 'm', 'g']
plt.bar(x,y, width=0.2, color=colors, align='center', edgecolor='r',
linewidth=2, linestyle=':')
plt.show()
```



```
plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)
colors = ['y', 'b', 'm', 'g']
plt.bar(x,y, width=0.2, color=colors, align='center', edgecolor='r',
linewidth=2, linestyle=':', alpha=0.3)
plt.show()
```

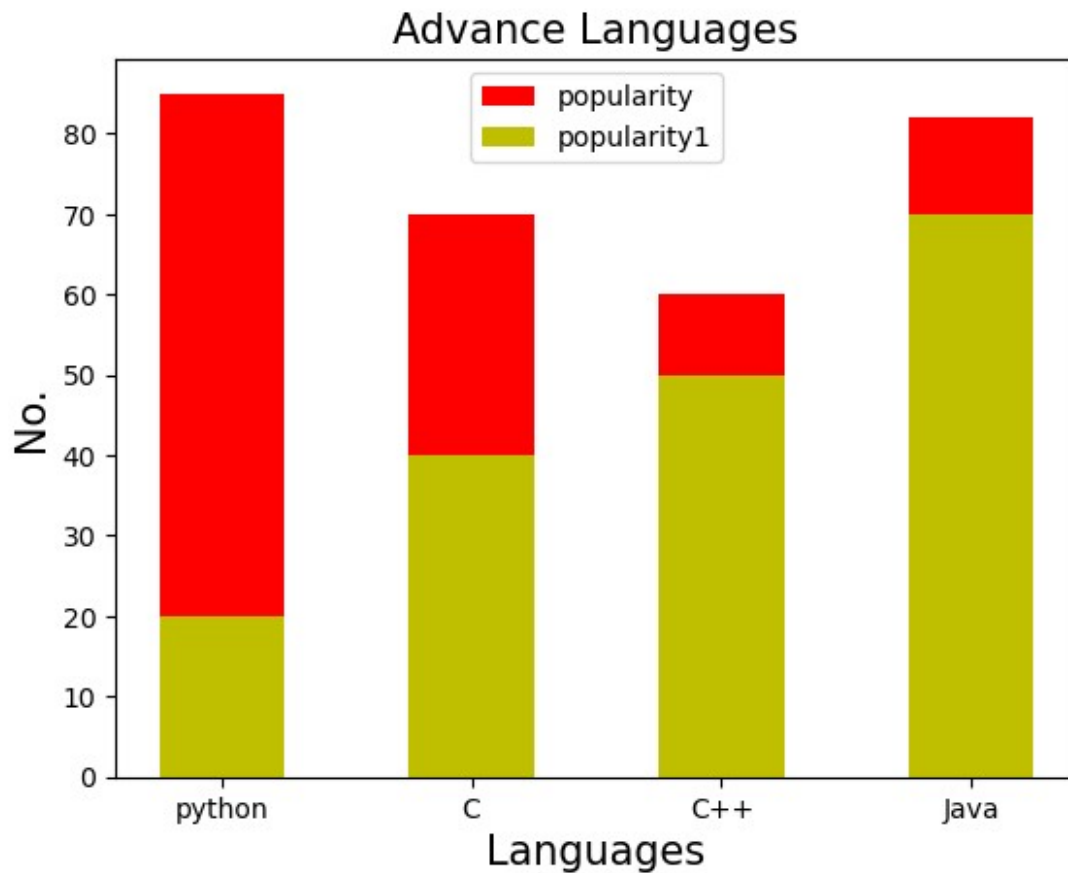


```
plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)
colors = ['y', 'b', 'm', 'g']
plt.bar(x,y, width=0.5, color='r', align='center', label='popularity')
plt.legend()
plt.show()
```



```
z = [20, 40, 50, 70]
plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)
colors = ['y', 'b', 'm', 'g']
plt.bar(x,y, width=0.5, color='r', align='center', label='popularity')
plt.bar(x,z, width=0.5, color='y', align='center',
label='popularity1')
plt.legend()

plt.show()
```



```
import numpy as np

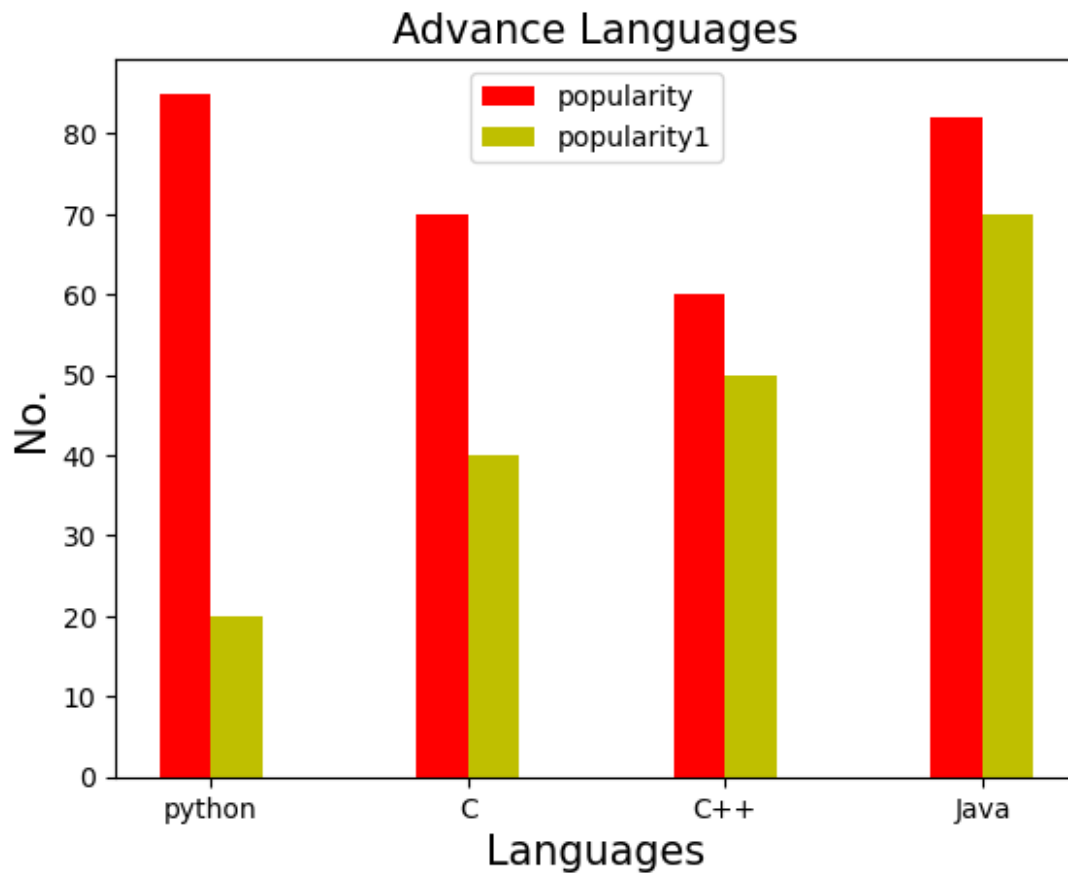
z = [20, 40, 50, 70]
p = np.arange(len(x))
width = 0.2
p1 = [j+width for j in p]

plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)

plt.bar(p,y, width, color='r', align='center', label='popularity')
plt.bar(p1,z, width, color='y', align='center', label='popularity1')

plt.xticks(p+width/2, x)

plt.legend()
plt.show()
```



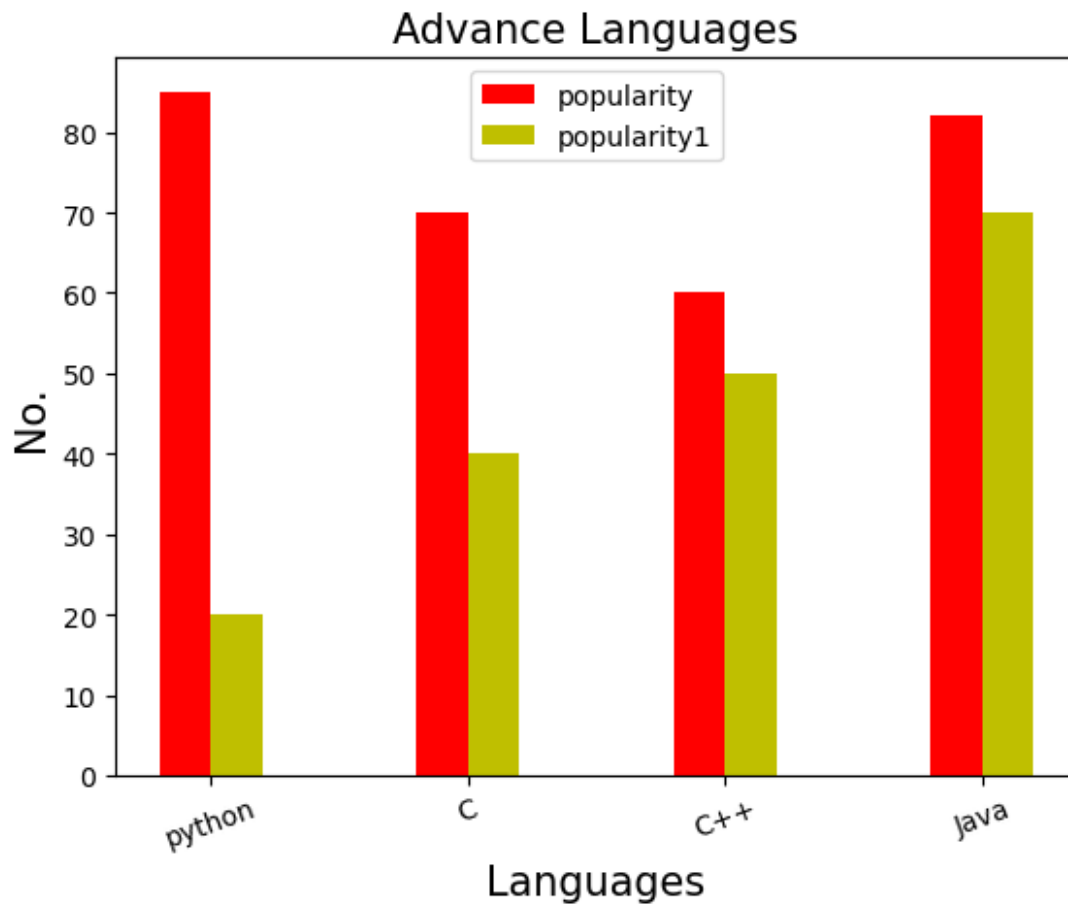
```
z = [20, 40, 50, 70]
p = np.arange(len(x))
width = 0.2
p1 = [j+width for j in p]

plt.xlabel('Languages', fontsize=15)
plt.ylabel('No.', fontsize=15)
plt.title('Advance Languages', fontsize=15)

plt.bar(p,y, width, color='r', align='center', label='popularity')
plt.bar(p1,z, width, color='y', align='center', label='popularity1')

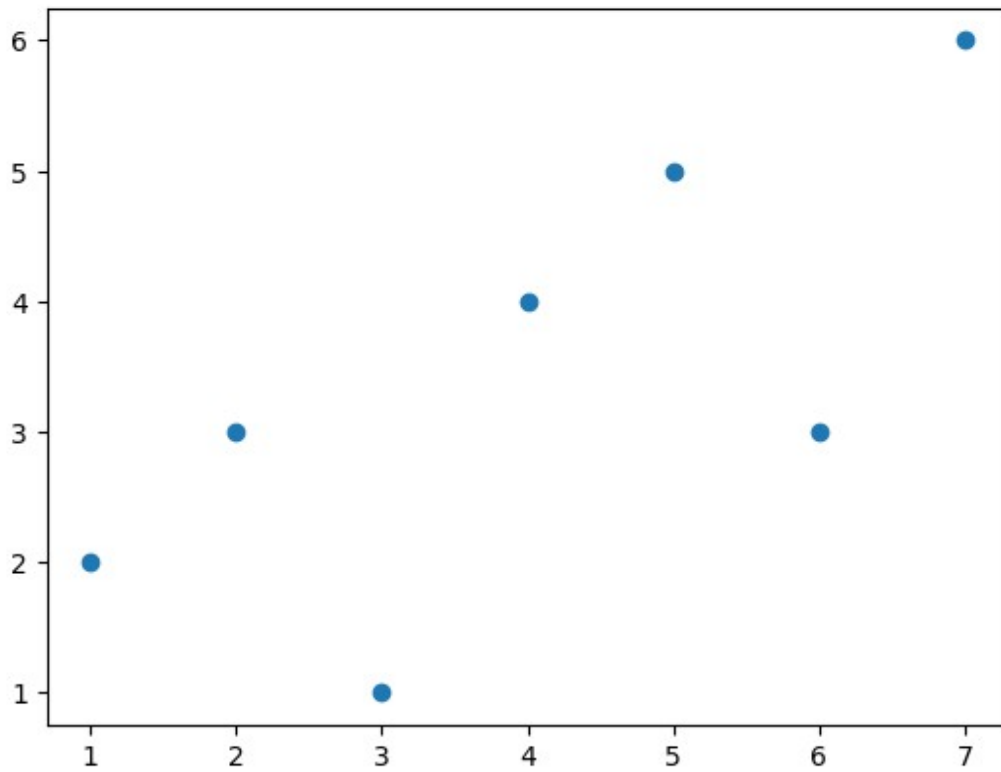
plt.xticks(p+width/2, x, rotation=20)

plt.legend()
plt.show()
```

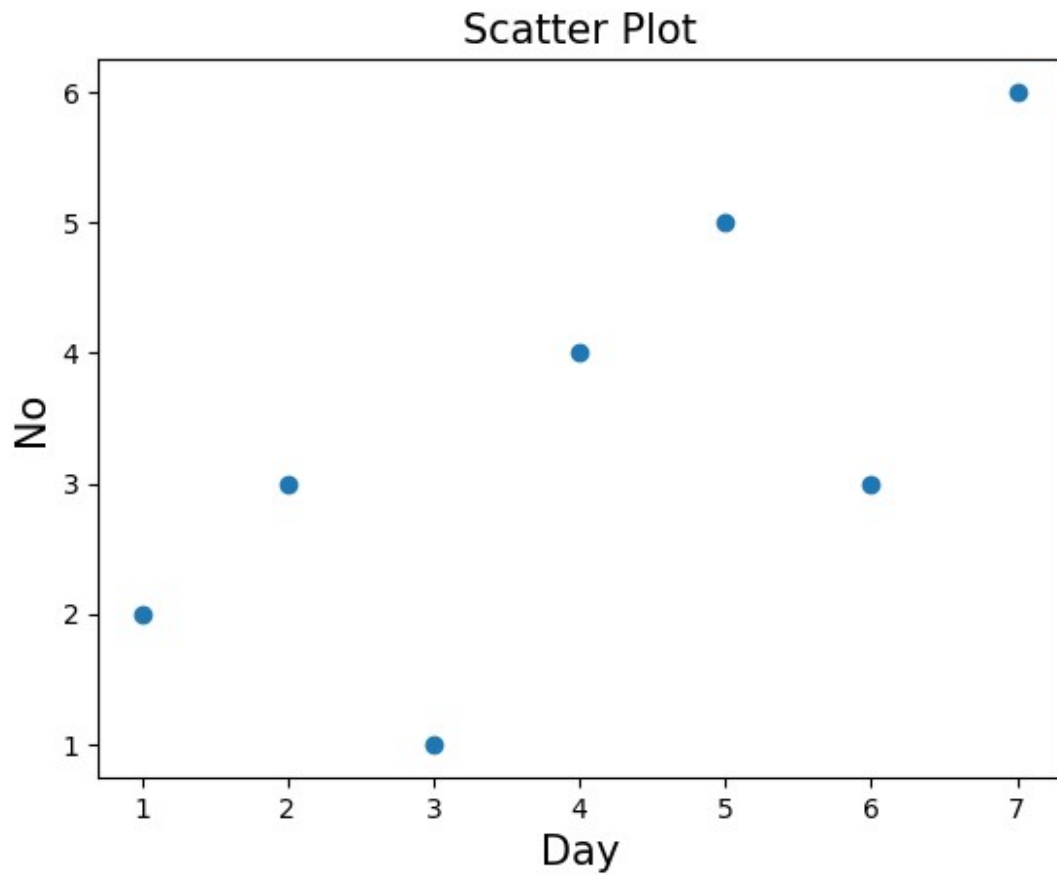


Scatter Plot

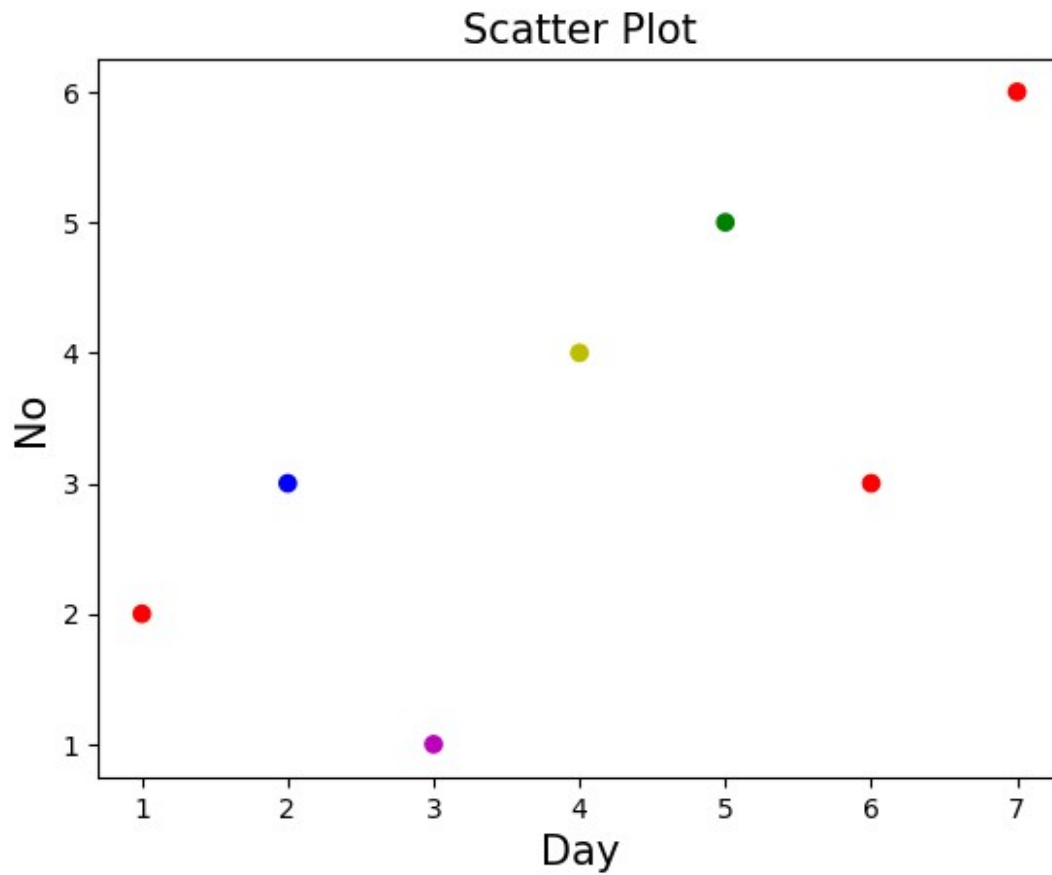
```
import matplotlib.pyplot as plt  
day = [1,2,3,4,5,6,7]  
no = [2,3,1,4,5,3,6]  
plt.scatter(day, no)  
plt.show()
```



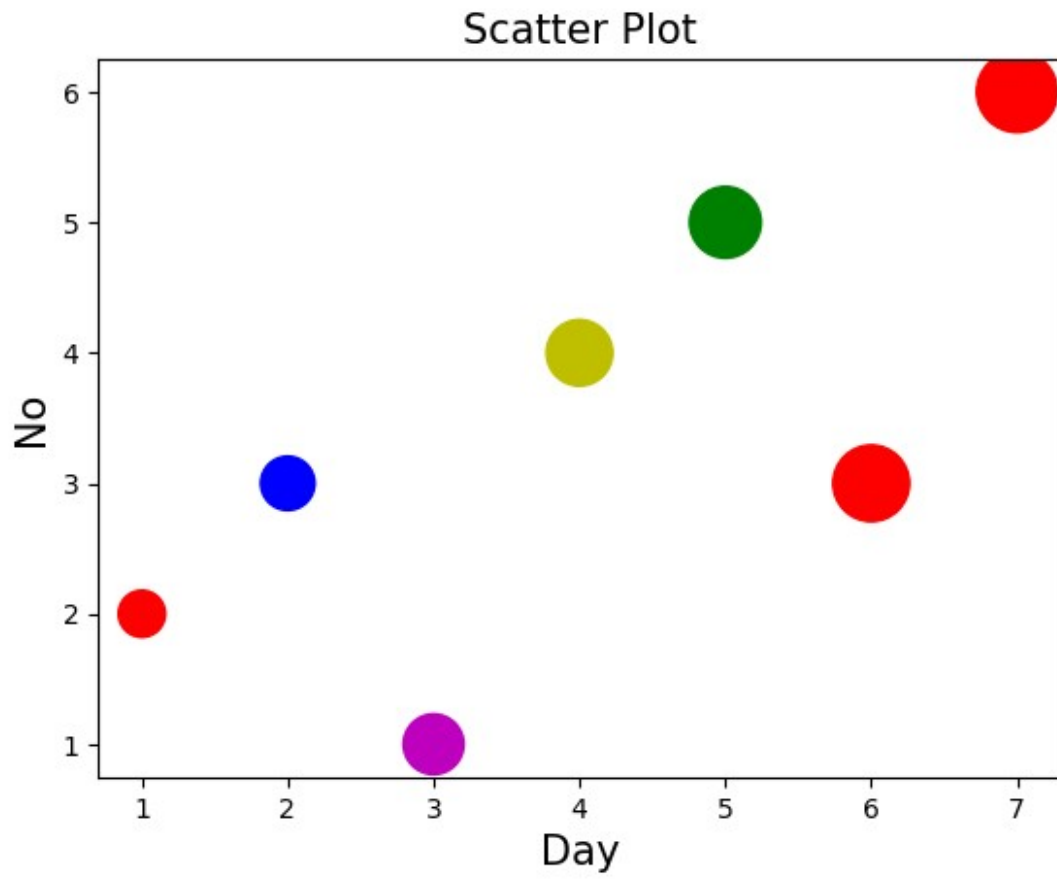
```
plt.scatter(day, no)
plt.title('Scatter Plot', fontsize=15)
plt.xlabel('Day', fontsize=15)
plt.ylabel('No', fontsize=15)
plt.show()
```

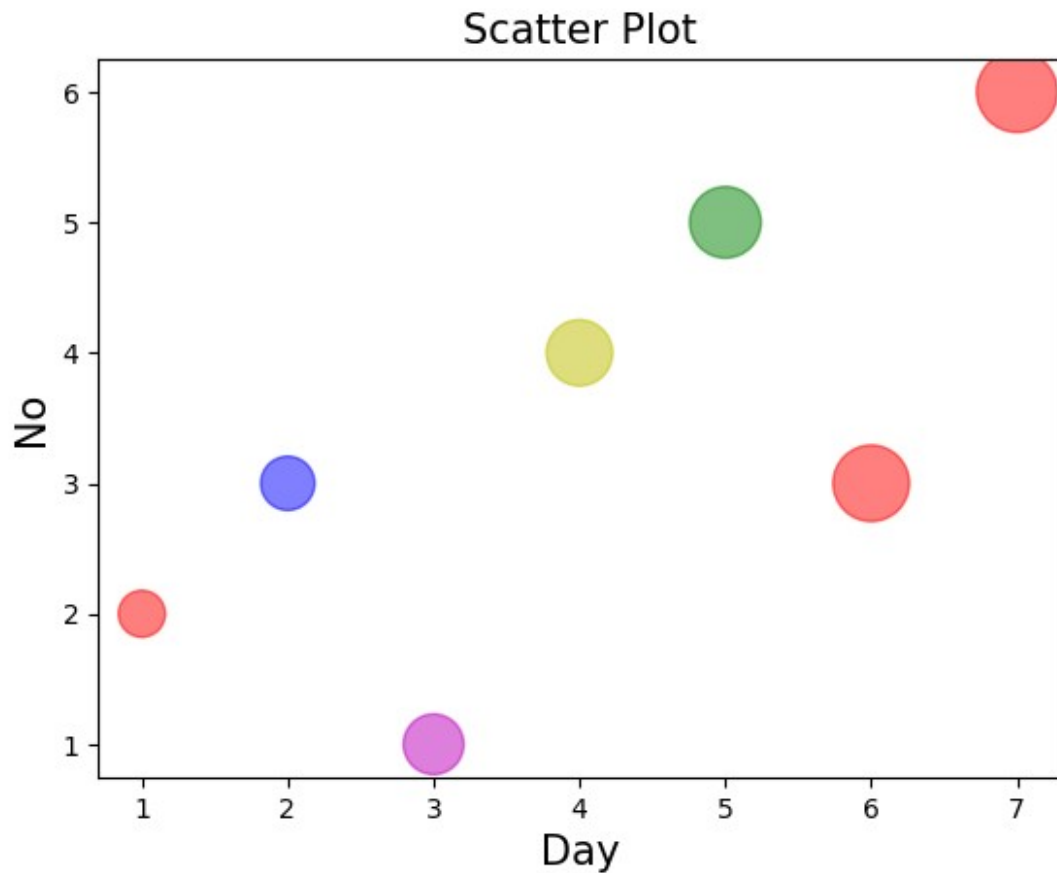
```
colors = ["r", "b", "m", "y", "g", "r", "r"]  
plt.scatter(day, no, c=colors)  
plt.title('Scatter Plot', fontsize=15)  
plt.xlabel('Day', fontsize=15)  
plt.ylabel('No', fontsize=15)  
plt.show()
```



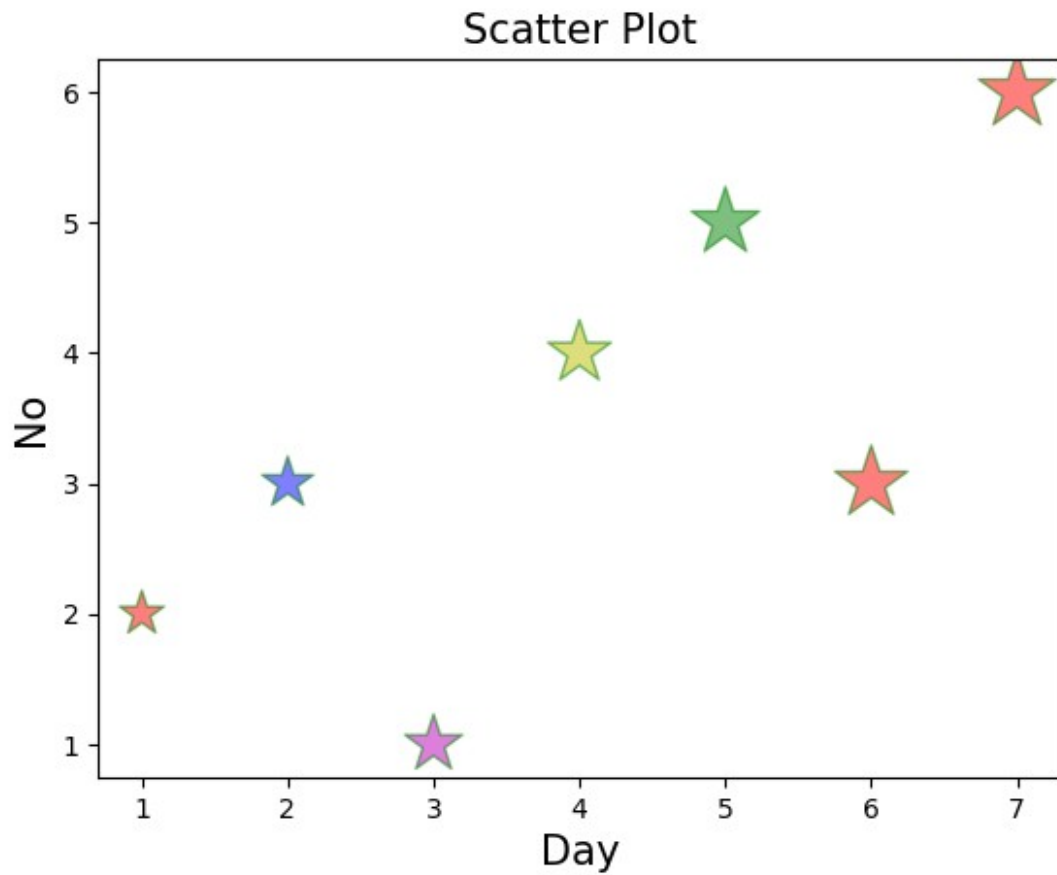
```
colors = ["r", "b", "m", "y", "g", "r", "r"]
size = [300, 400, 500, 600, 700, 800, 900]
plt.scatter(day, no, c=colors, s=size)
plt.title('Scatter Plot', fontsize=15)
plt.xlabel('Day', fontsize=15)
plt.ylabel('No', fontsize=15)
plt.show()
```



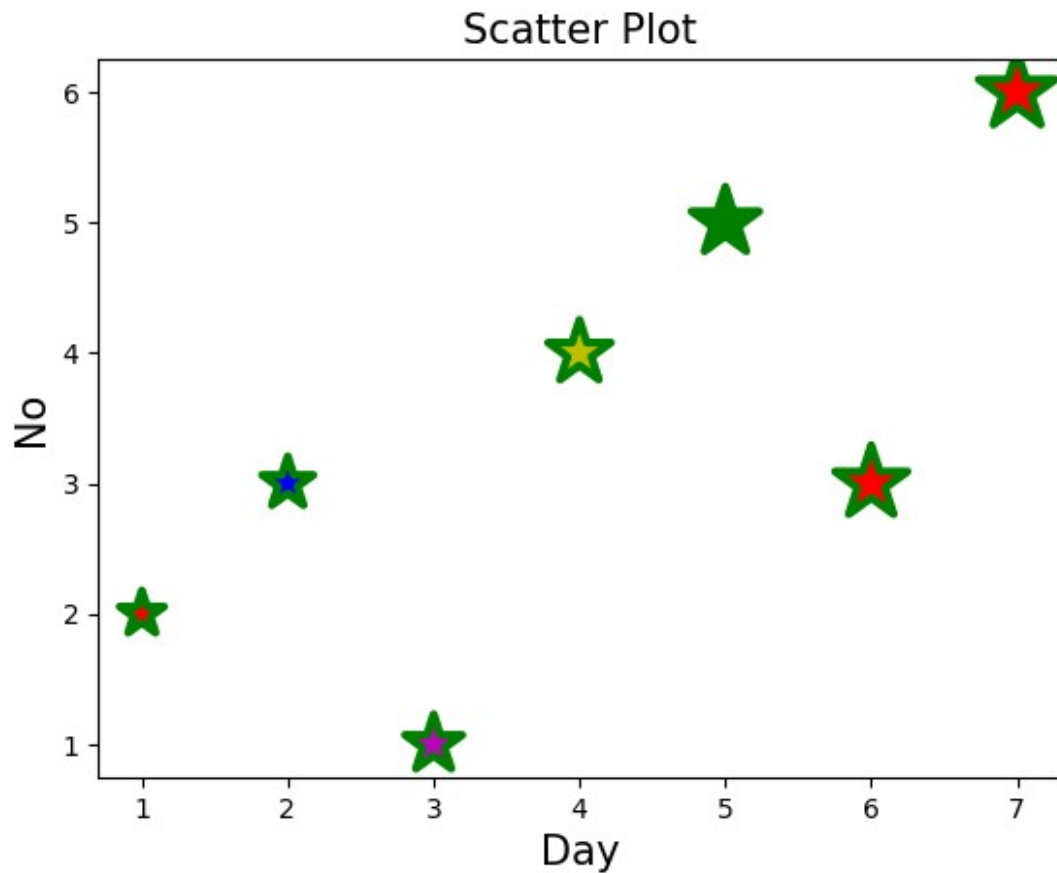
b



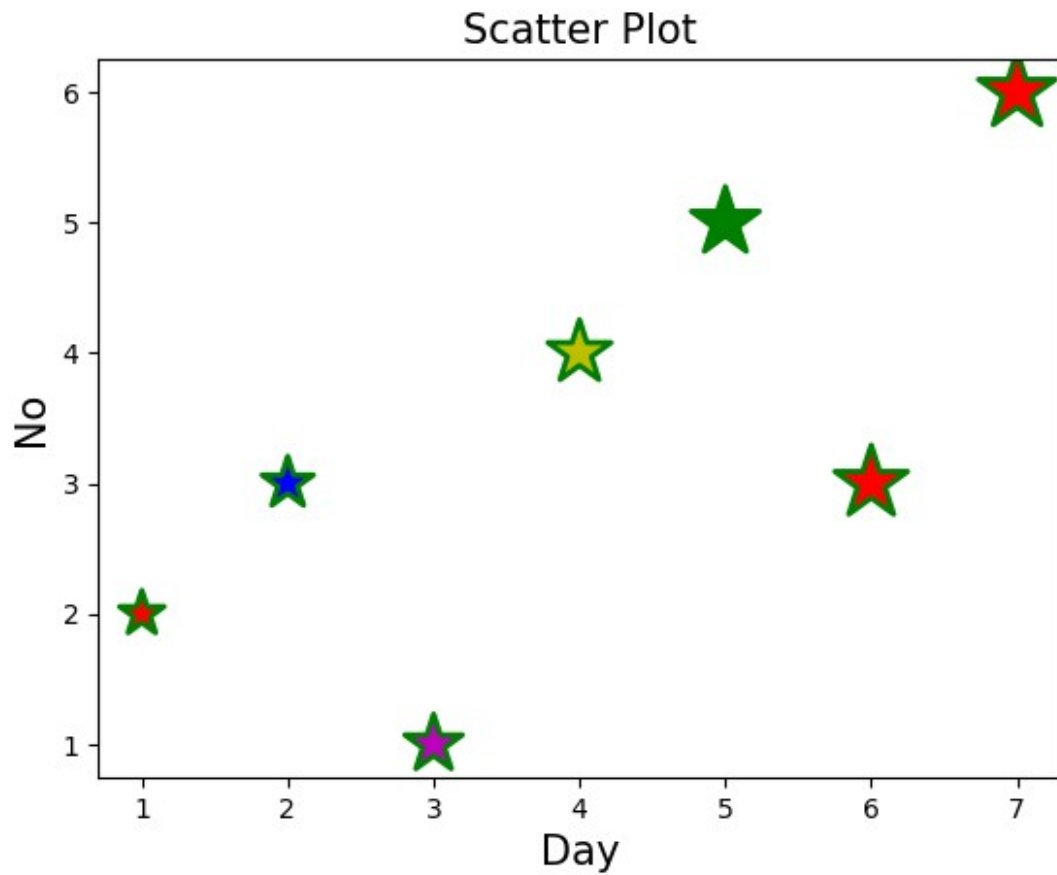
```
colors = ["r", "b", "m", "y", "g", "r", "r"]
size = [300, 400, 500, 600, 700, 800, 900]
plt.scatter(day, no, c=colors, s=size, alpha=0.5, marker='*')
plt.title('Scatter Plot', fontsize=15)
plt.xlabel('Day', fontsize=15)
plt.ylabel('No', fontsize=15)
plt.show()
```



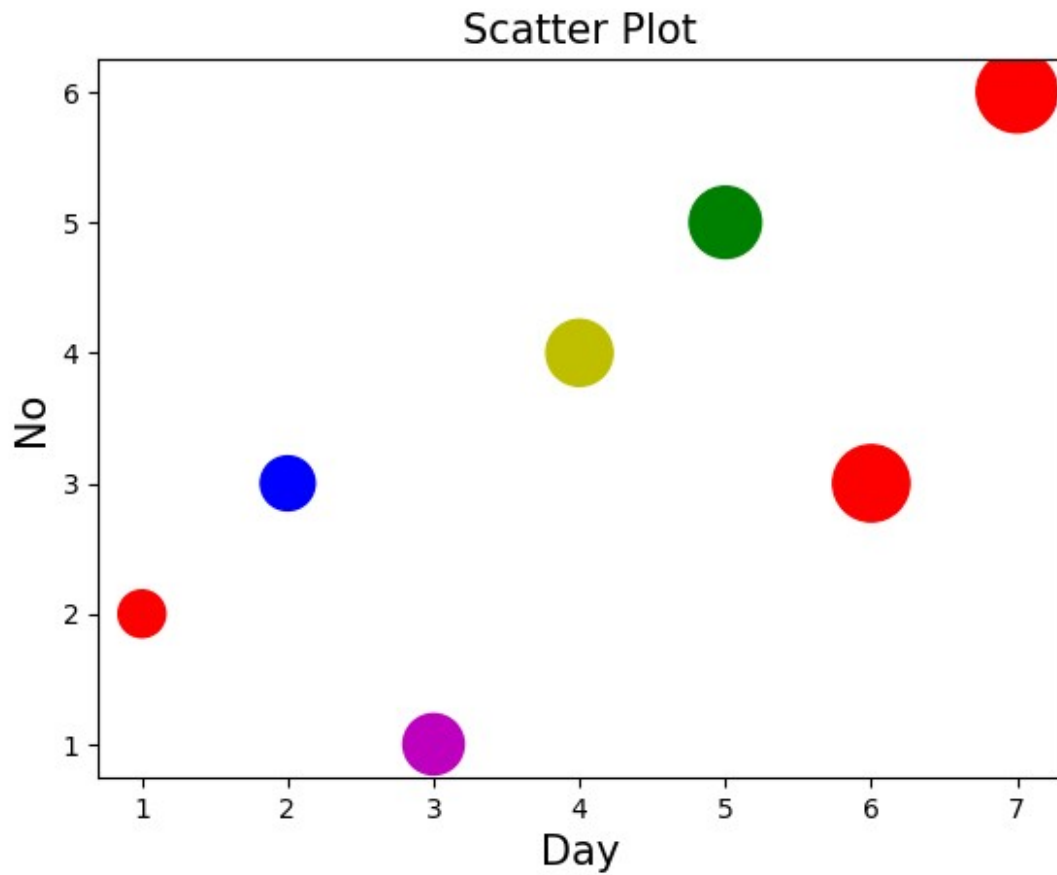
```
colors = ["r", "b", "m", "y", "g", "r", "r"]
size = [300, 400, 500, 600, 700, 800, 900]
plt.scatter(day, no, c=colors, s=size, marker='*', edgecolor='g')
plt.title('Scatter Plot', fontsize=15)
plt.xlabel('Day', fontsize=15)
plt.ylabel('No', fontsize=15)
plt.show()
```



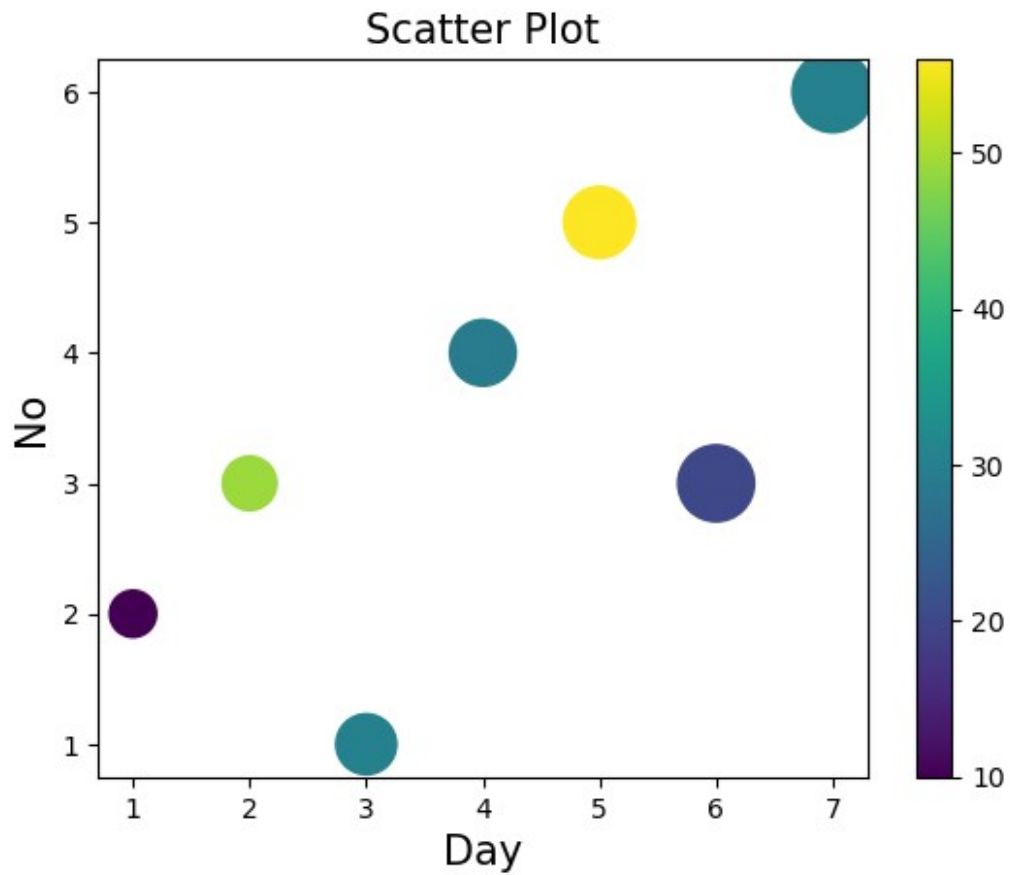
```
colors = ["r", "b", "m", "y", "g", "r", "r"]
size = [300, 400, 500, 600, 700, 800, 900]
plt.scatter(day, no, c=colors, s=size, marker='*', edgecolor='g',
            linewidth=2)
plt.title('Scatter Plot', fontsize=15)
plt.xlabel('Day', fontsize=15)
plt.ylabel('No', fontsize=15)
plt.show()
```



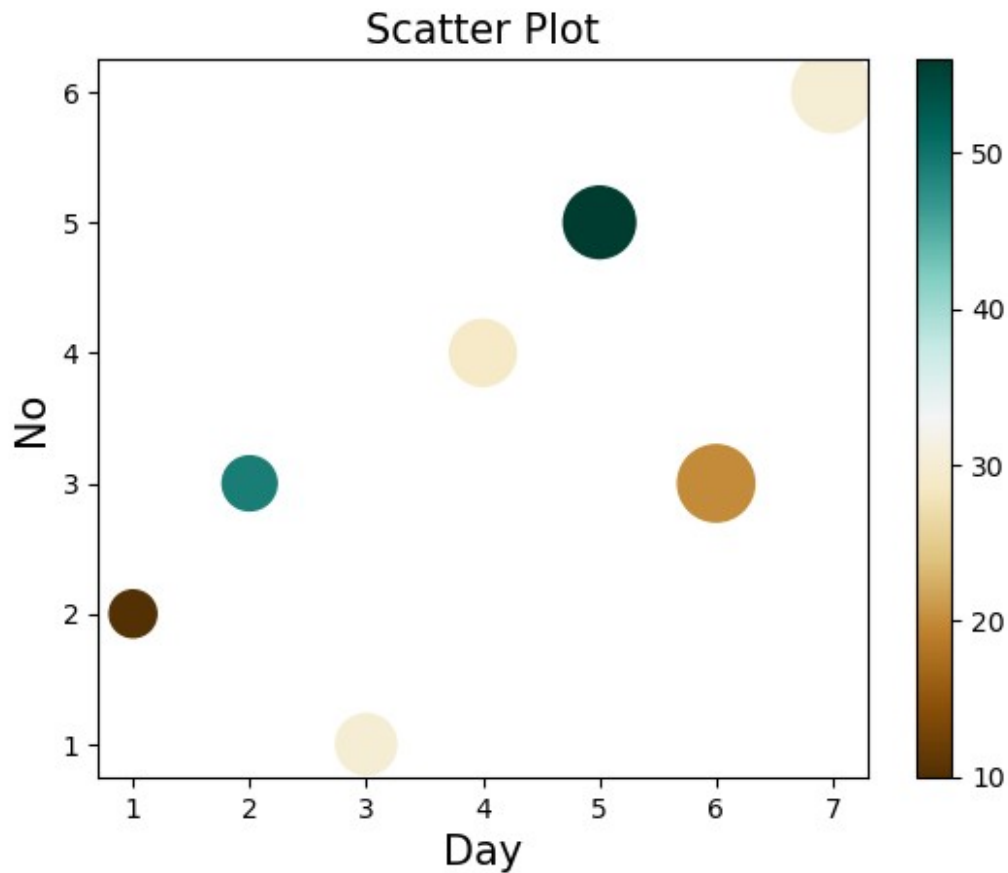
```
colors = ["r", "b", "m", "y", "g", "r", "r"]
size = [300, 400, 500, 600, 700, 800, 900]
plt.scatter(day, no, c=colors, s=size)
plt.title('Scatter Plot', fontsize=15)
plt.xlabel('Day', fontsize=15)
plt.ylabel('No', fontsize=15)
plt.show()
```



```
colors = [10, 49, 30, 29, 56, 20, 30]
size = [300, 400, 500, 600, 700, 800, 900]
plt.scatter(day, no, c=colors, cmap='viridis', s=size)
plt.colorbar()
plt.title('Scatter Plot', fontsize=15)
plt.xlabel('Day', fontsize=15)
plt.ylabel('No', fontsize=15)
plt.show()
```

```
colors = [10, 49, 30, 29, 56, 20, 30]
size = [300, 400, 500, 600, 700, 800, 900]
plt.scatter(day, no, c=colors, cmap='BrBG', s=size)
plt.colorbar()
plt.title('Scatter Plot', fontsize=15)
plt.xlabel('Day', fontsize=15)
plt.ylabel('No', fontsize=15)
plt.show()
```



```
colors = [10, 49, 30, 29, 56, 20, 30]
size = [300, 400, 500, 600, 700, 800, 900]
plt.scatter(day, no, c=colors, cmap='BrBG', s=size)
t = plt.colorbar()
t.set_label("Color Bar")
plt.title('Scatter Plot', fontsize=15)
plt.xlabel('Day', fontsize=15)
plt.ylabel('No', fontsize=15)
plt.show()
```

