gvz12arce

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Programming and Data Structures with Python Lab12. 2D and 3D Data Visualization using Matplotlib and Seaborn

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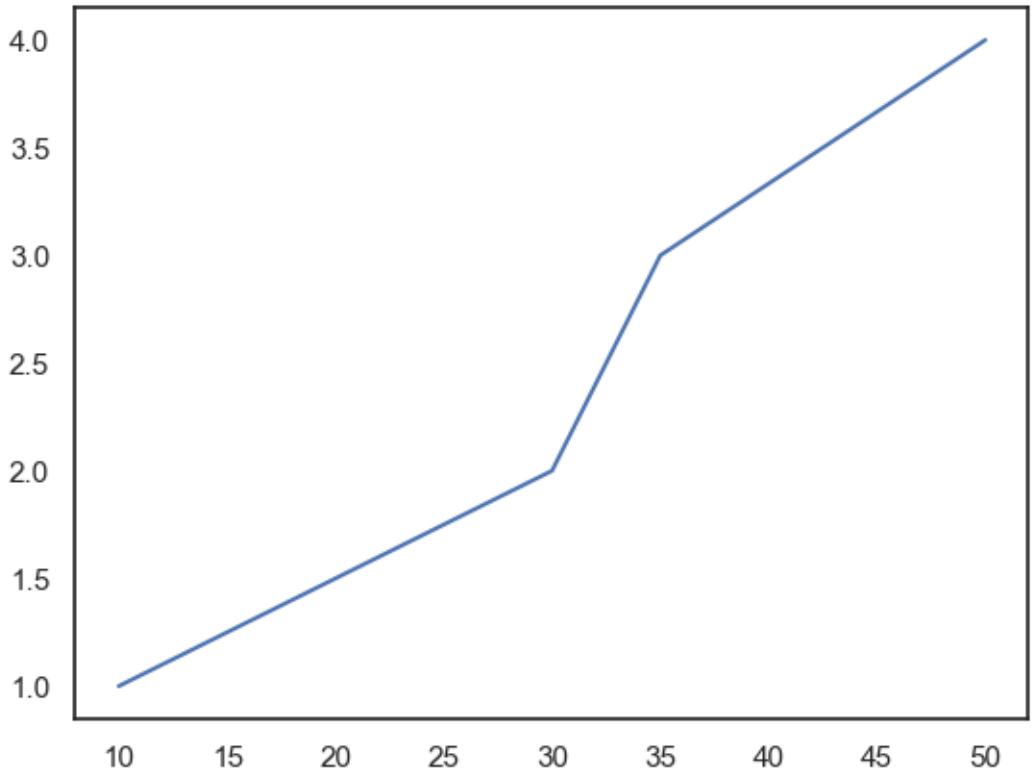
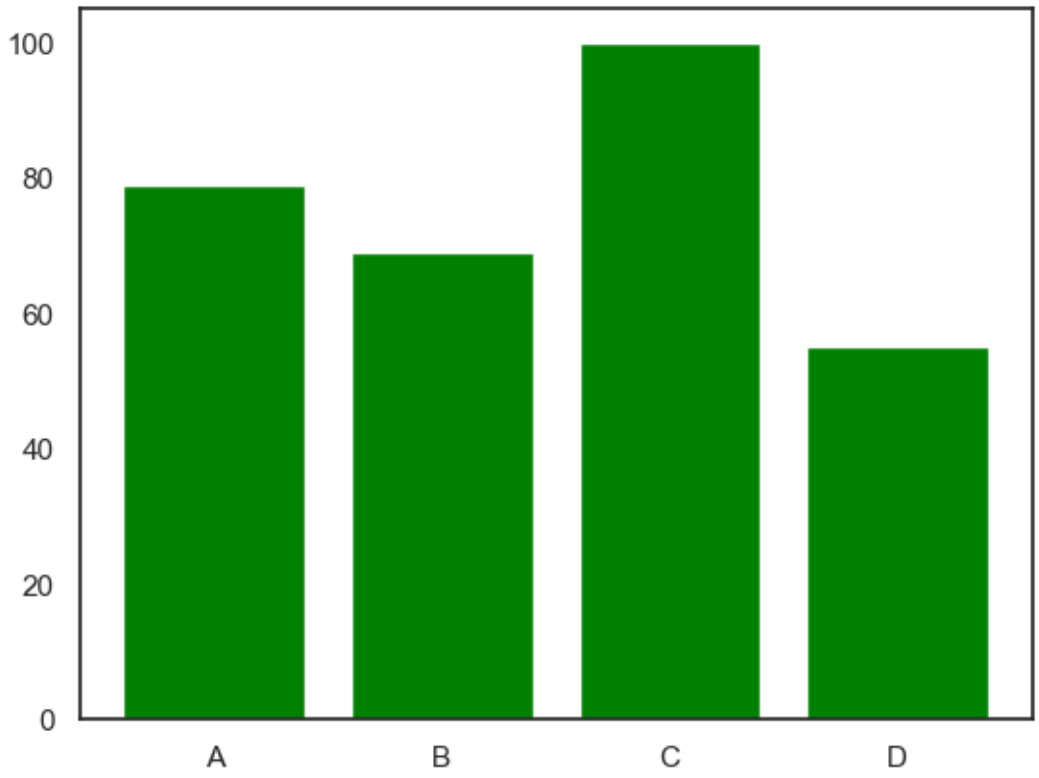
[16]:
```
from matplotlib import pyplot as plt
plt.plot([10,30,35,50], [1, 2, 3, 4])
```

[16]:
```
[<matplotlib.lines.Line2D at 0x11760d790>]
```

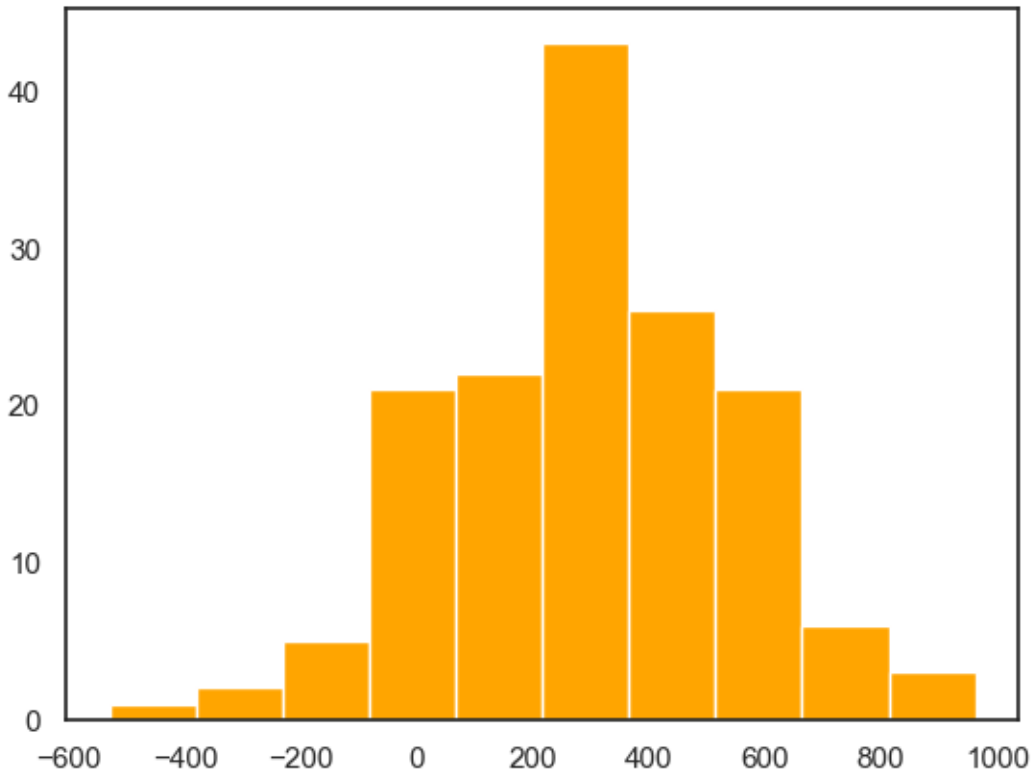


[17]:
```
from matplotlib import pyplot as plt
x = ["A", "B", "C", "D"]
y = [79, 69, 100, 55]
```

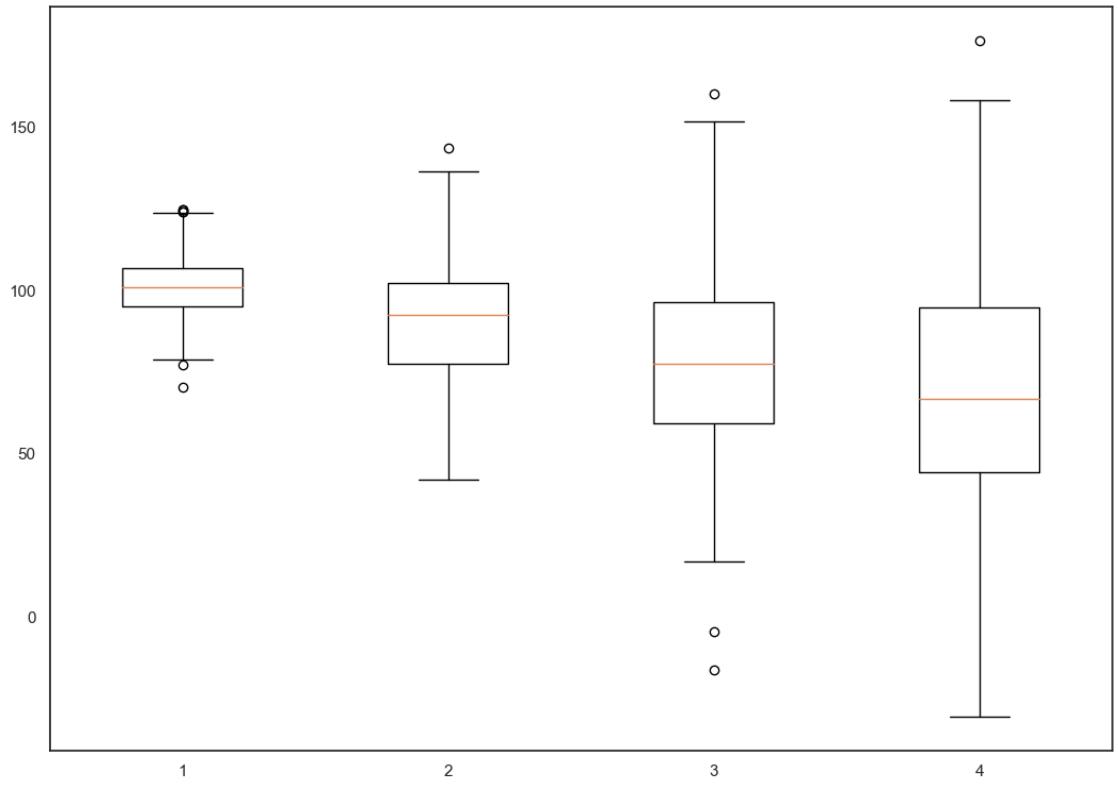
```
plt.bar(x, y, color = "green")
plt.show()
```



[19]:
```
from matplotlib import pyplot as plt
import numpy as np
x = np.random.normal(300,250,150)
plt.hist(x,color = "orange")
plt.show()
```

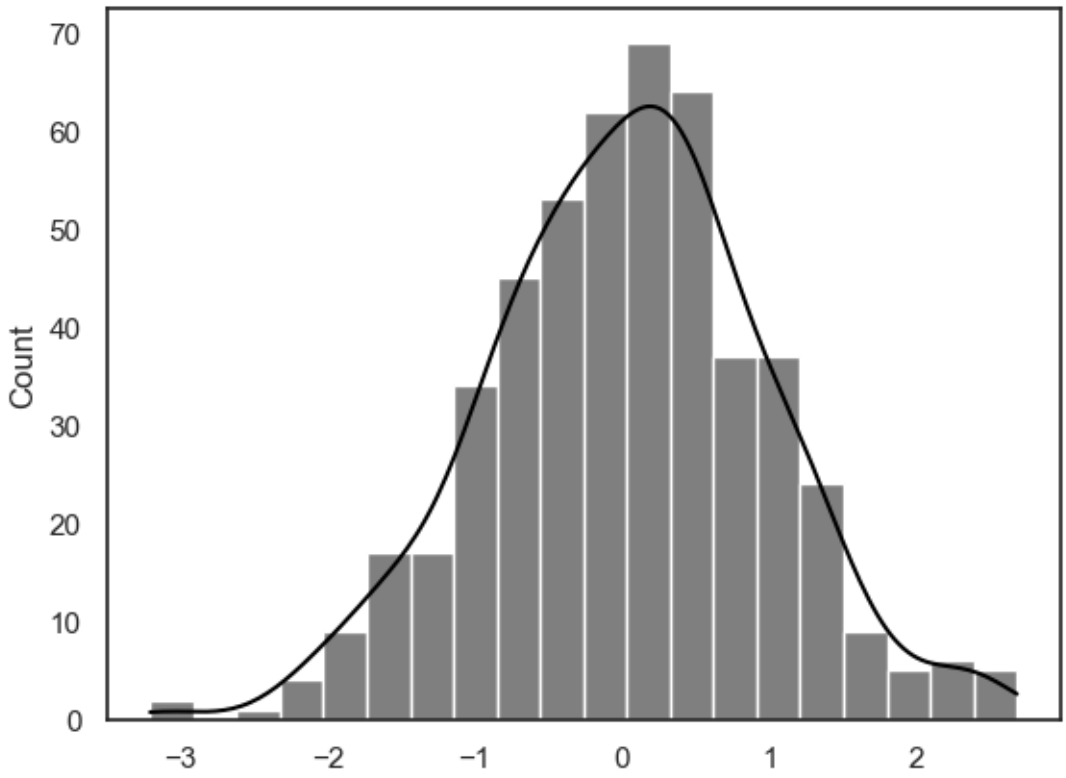


[21]:
```
import matplotlib.pyplot as plt
import numpy as np
np.random.seed(10)
data_1 = np.random.normal(100, 10, 200)
data_2 = np.random.normal(90, 20, 200)
data_3 = np.random.normal(80, 30, 200)
data_4 = np.random.normal(70, 40, 200)
data = [data_1, data_2, data_3, data_4]
fig = plt.figure(figsize =(10, 7))
ax = fig.add_axes([0, 0, 1, 1])
bp = ax.boxplot(data)
plt.show()
```



[27]:
```
import numpy as np
import seaborn as sns
sns.set(style="white")
rs = np.random.RandomState(10)
d = rs.normal(size=500)
# Plot a simple histogram and kde
sns.histplot(d, kde=True, color="black")
```

[27]: <AxesSubplot:ylabel='Count'>



[29]:
```python
import matplotlib.pyplot as plt
import numpy as np

# Create random data points in 3D space
np.random.seed(0)
n_points = 100
x = np.random.rand(n_points)
y = np.random.rand(n_points)
z = np.random.rand(n_points)

# Create a 3D scatter plot
fig = plt.figure(figsize=(8, 6))
ax = fig.add_subplot(111, projection='3d')
ax.scatter(x, y, z, c='b', marker='o')

# Add labels and a title
ax.set_xlabel('X-axis')
ax.set_ylabel('Y-axis')
ax.set_zlabel('Z-axis')
ax.set_title('3D Scatter Plot')

# Show the plot
```

```
plt.show()
```