Darshan UNIVERSITY

योग: कर्मसु कौशलम्

Python Programming - 2101CS405

Lab - 11

In [ ]:
```
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```
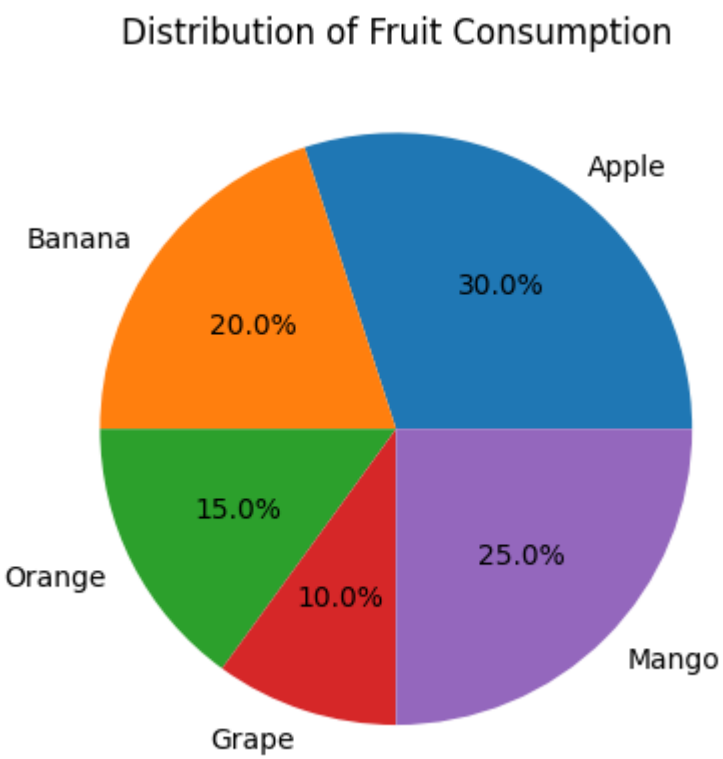

Graphs

A

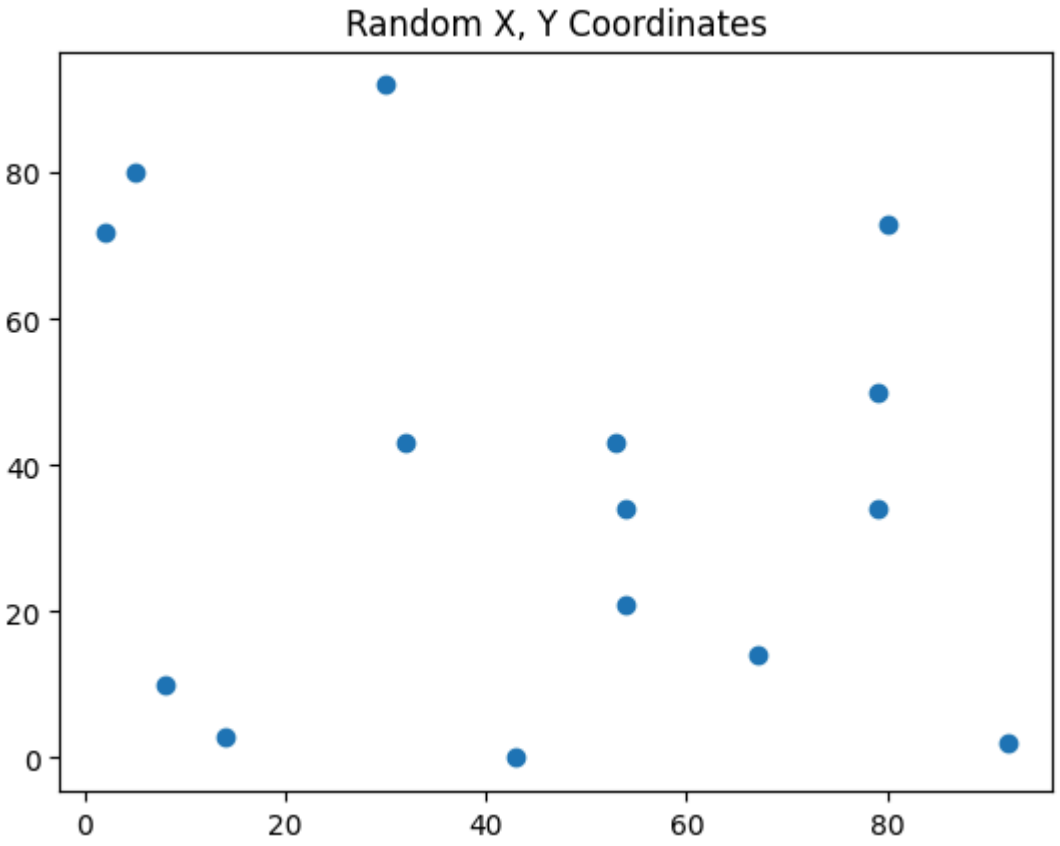
01) WAP to demonstrate the use of Pie chart.

In [6]:
```
import matplotlib.pyplot as plt

labels = ['Apple', 'Banana', 'Orange', 'Grape', 'Mango']
sizes = [30, 20, 15, 10, 25]
plt.pie(sizes, labels=labels, autopct='%1.1f%%')
plt.title('Distribution of Fruit Consumption')
plt.show()
```



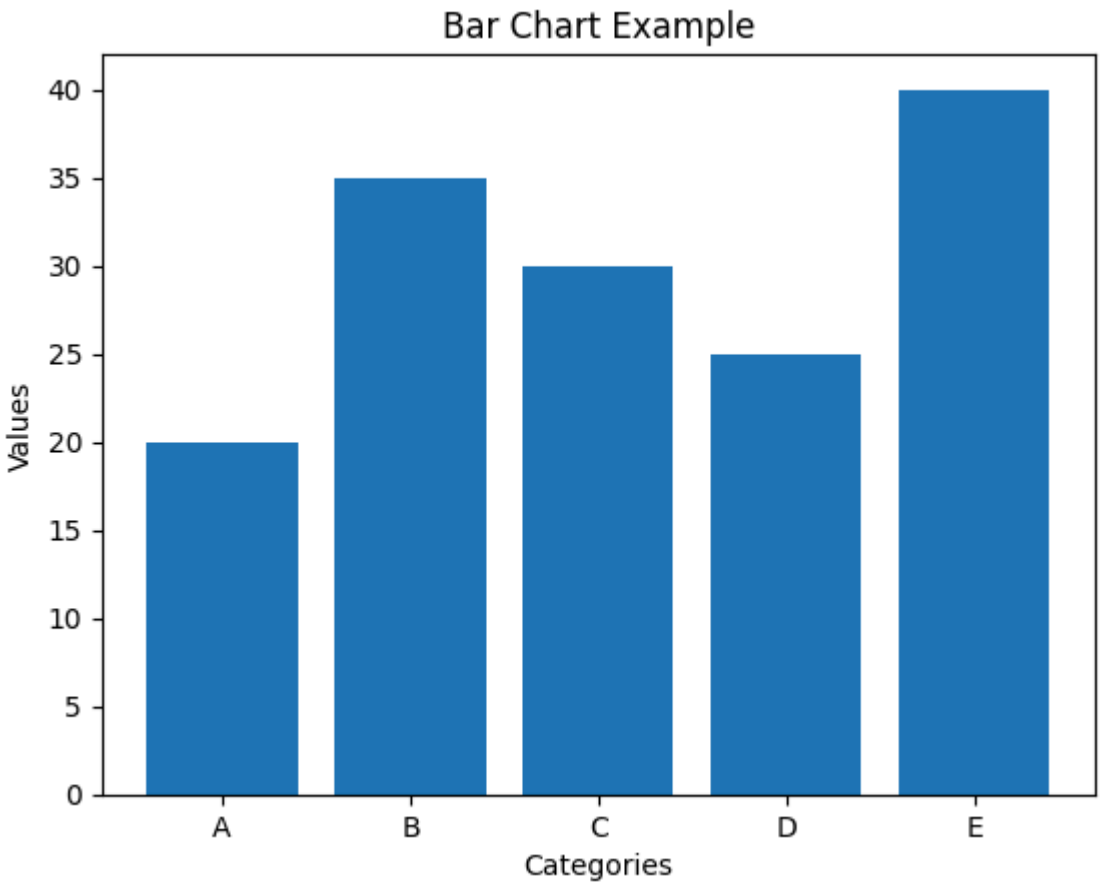
02) WAP to to Plot List random of X, Y Coordinates in Matplotlib.

In [19]:
```
import matplotlib.pyplot as plt
import random

x = [random.randint(0, 100) for i in range(15)]
y = [random.randint(0, 100) for i in range(15)]
plt.scatter(x, y)
plt.title('Random X, Y Coordinates')
plt.show()
```



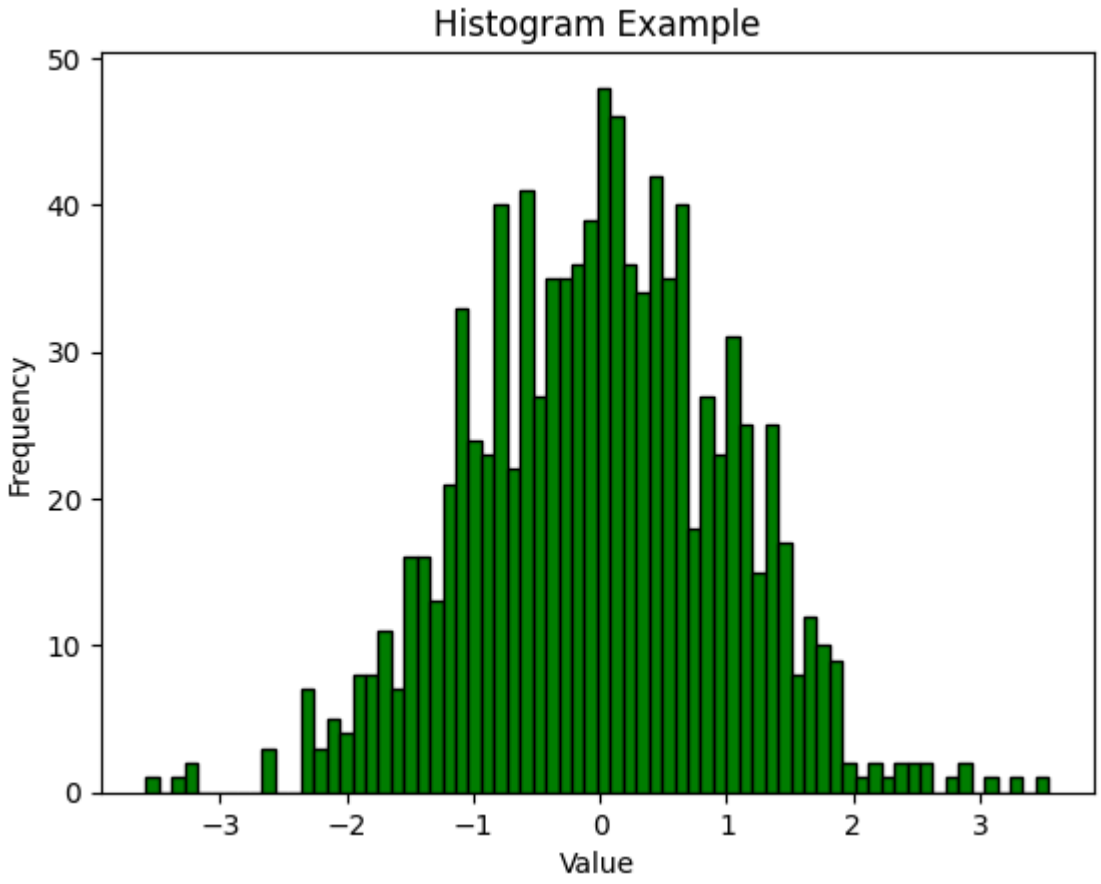
03) WAP to demonstrate the use of Bar chart.

In [23]:
```
import matplotlib.pyplot as plt

categories = ['A', 'B', 'C', 'D', 'E']
values = [20, 35, 30, 25, 40]
plt.bar(categories, values)
plt.title('Bar Chart Example')
plt.xlabel('Categories')
plt.ylabel('Values')
plt.show()
```



04) WAP to demonstrate the use of Histogram.

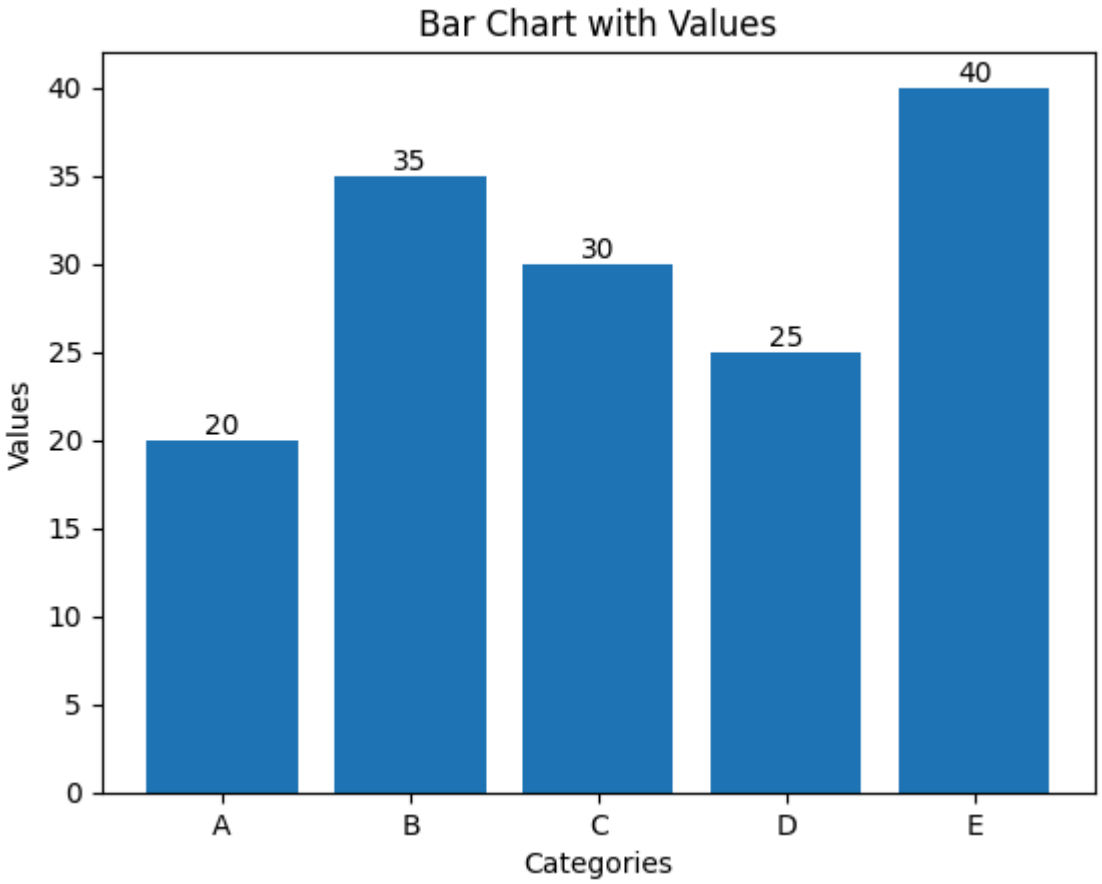
In [36]:
```
import matplotlib.pyplot as plt
import numpy as np

data = np.random.randn(1000)
plt.hist(data, bins=70, color='green', edgecolor='black')
plt.title('Histogram Example')
plt.xlabel('Value')
plt.ylabel('Frequency')
plt.show()
```



B

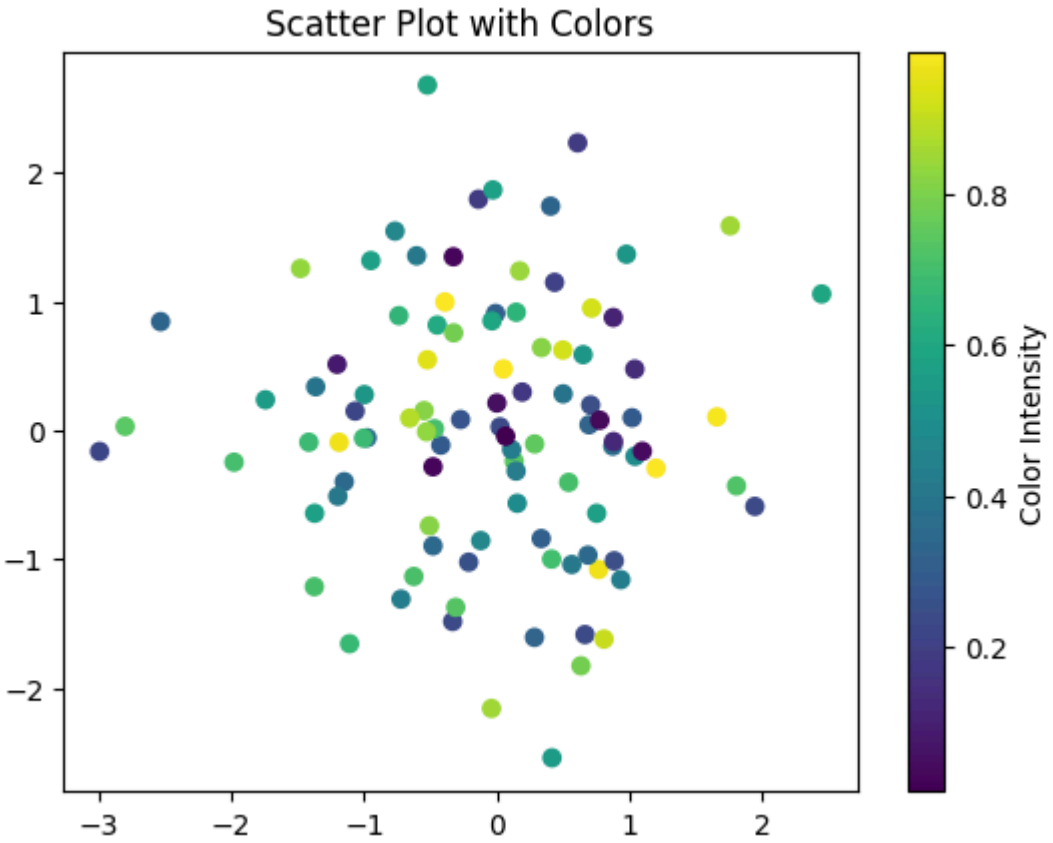
01) WAP to display the value of each bar in a bar chart using Matplotlib.

In [45]:
```
import matplotlib.pyplot as plt

categories = ['A', 'B', 'C', 'D', 'E']
values = [20, 35, 30, 25, 40]
bars = plt.bar(categories, values)
plt.title('Bar Chart with Values')
plt.xlabel('Categories')
plt.ylabel('Values')
for bar in bars:
    height = bar.get_height()
    plt.text(bar.get_x() + bar.get_width() / 2, height, str(height),ha='center', va
plt.show()
```



02) WAP create a Scatter Plot with several colors in Matplotlib?

In [57]:
```
import matplotlib.pyplot as plt
import numpy as np

x = np.random.randn(100)
y = np.random.randn(100)
colors = np.random.rand(100)
plt.scatter(x, y, c=colors)
plt.title('Scatter Plot with Colors')
plt.colorbar(label='Color Intensity')
plt.show()
```



03) WAP to Display an Image in Grayscale in Matplotlib.

In [66]:
```
import matplotlib.pyplot as plt
import matplotlib.image as mpimg

img = mpimg.imread('my_img.jpg')
grayscale_img = img.mean(axis=2)
plt.imshow(grayscale_img, cmap='gray')
plt.title('Grayscale Image')
plt.axis('off')
plt.show()
```

Grayscale Image