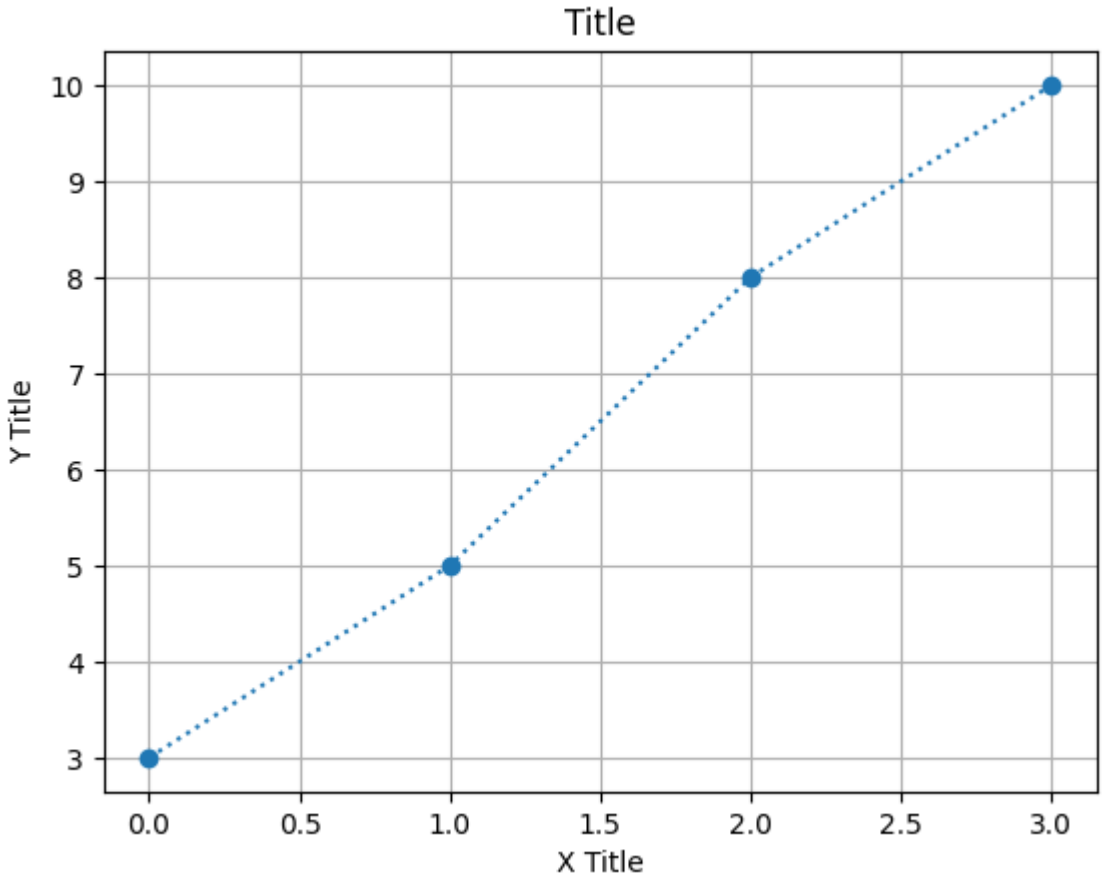
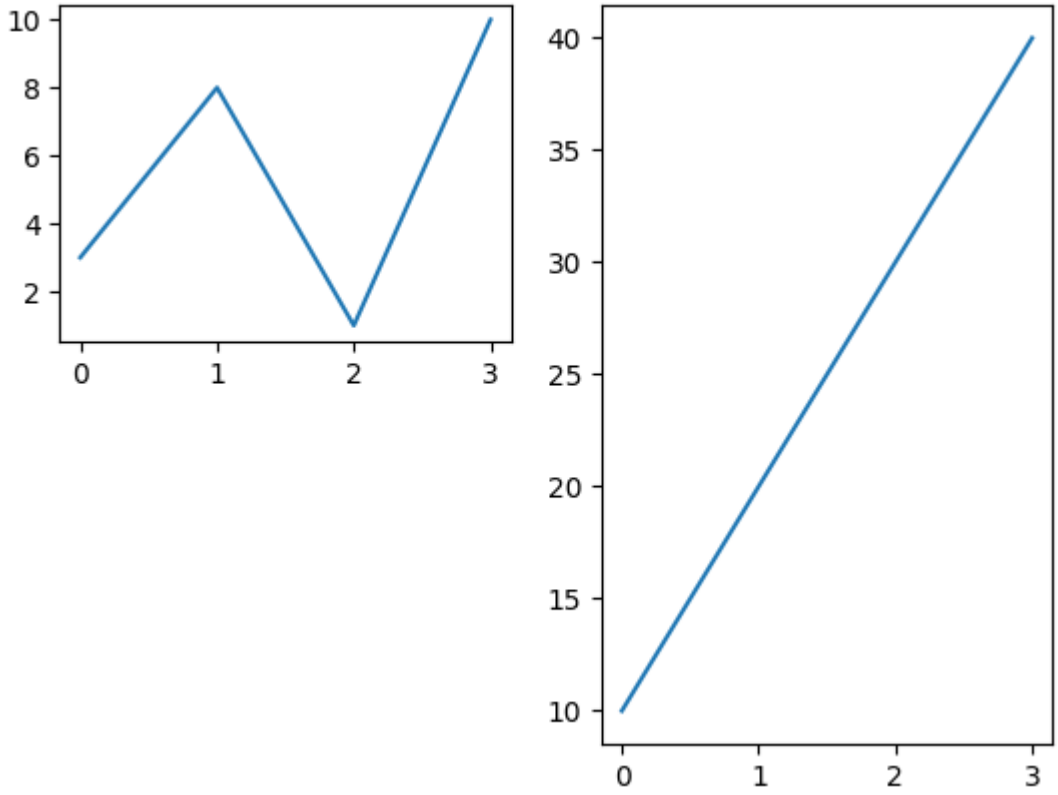
In [23]:

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

ypoints = np.array([3, 5, 8, 10])

plt.plot(ypoints, linestyle = 'dotted',marker='o')

plt.xlabel("X Title")

plt.ylabel("Y Title")

plt.grid()

plt.title("Title")

plt.show()
```



In [21]:

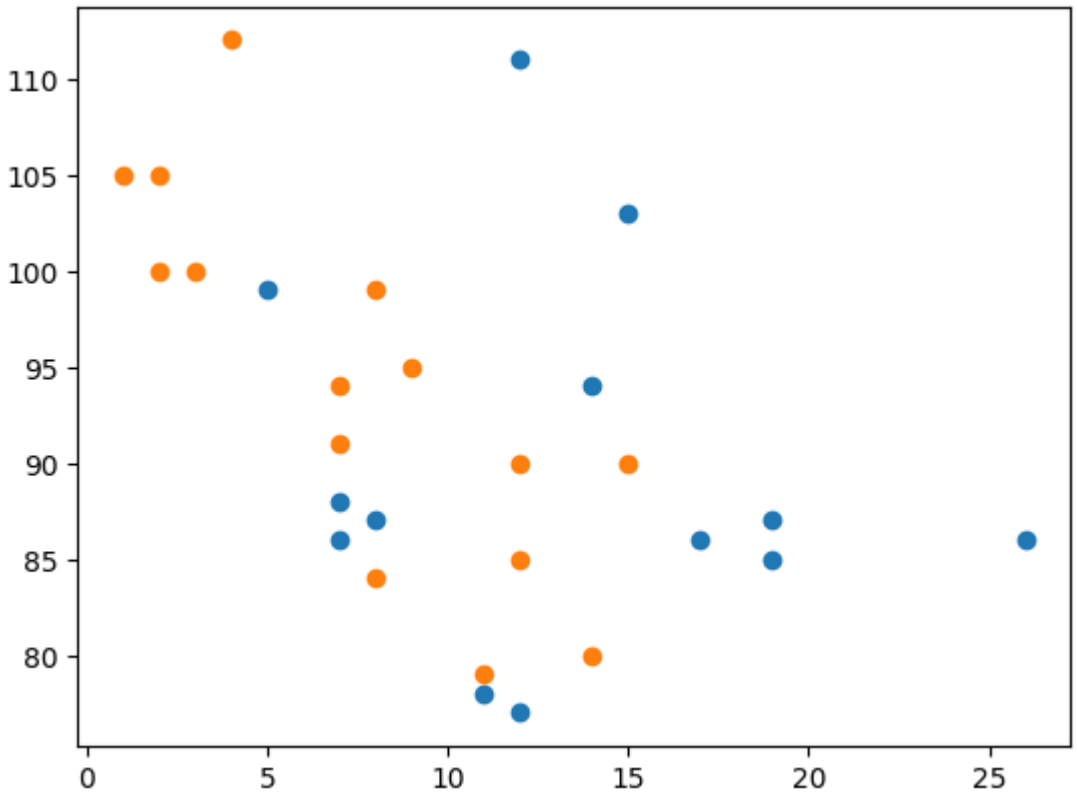
```
#plot 1:
x = np.array([0, 1, 2, 3])
y = np.array([3, 8, 1, 10])

plt.subplot(2, 2, 1)
plt.plot(x,y)

#plot 2:
x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])

plt.subplot(1, 2, 2)
plt.plot(x,y)

plt.show()
```



Scatter Plot

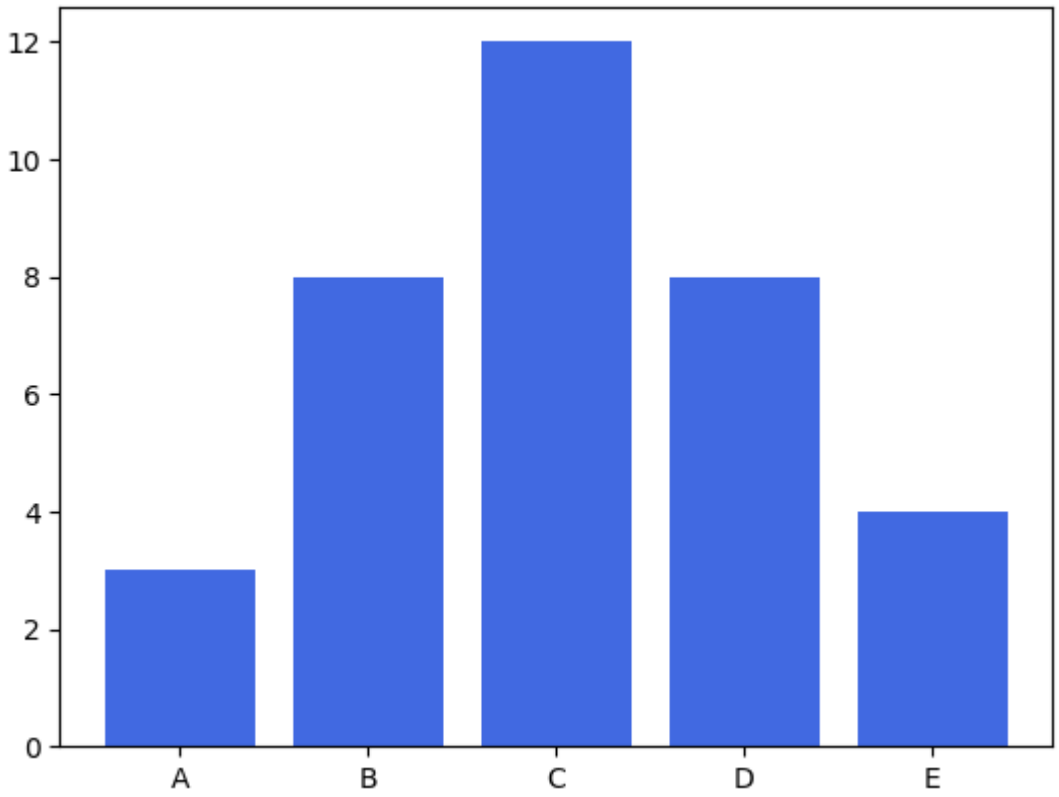
In [25]:

```
x = np.array([5,7,8,7,12,17,15,19,14,11,12,19,26])
y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
plt.scatter(x, y)

x = np.array([2,2,8,1,15,8,12,9,7,3,11,4,7,14,12])
y = np.array([100,105,84,105,90,99,90,95,94,100,79,112,91,80,85])
plt.scatter(x, y)
plt.show()
```



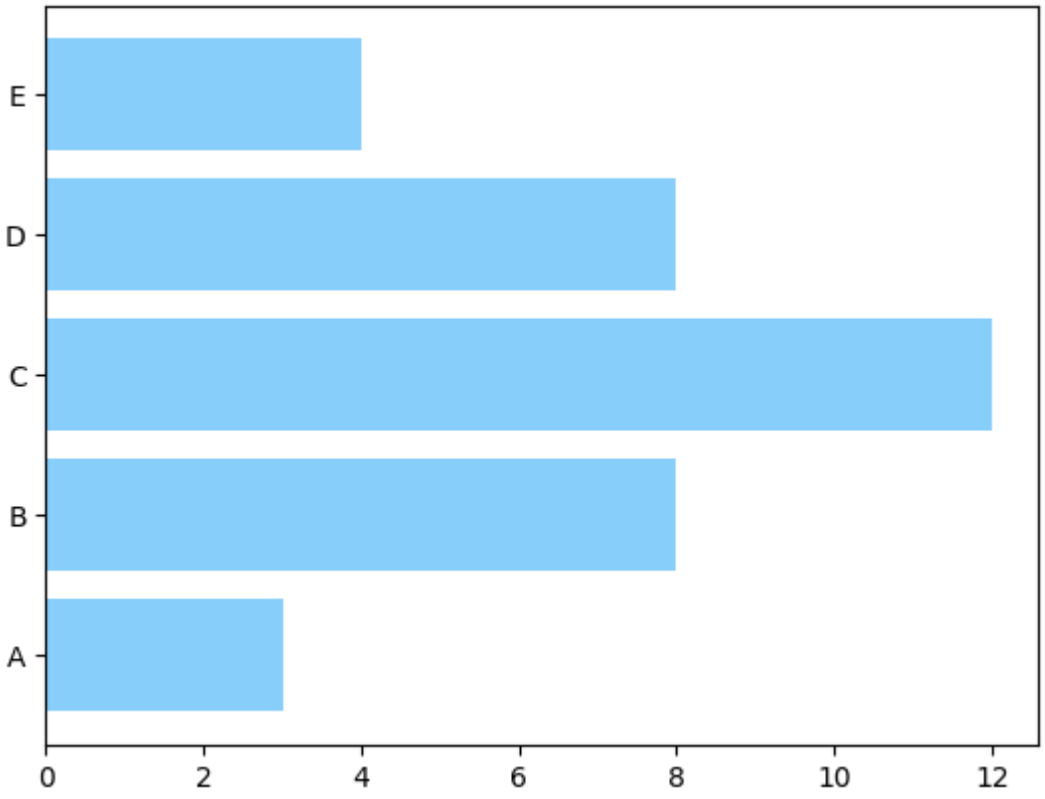
Bar Plot (Vertical)

In [46]:
```
x = np.array(["A", "B", "C", "D",'E'])
y = np.array([3, 8, 12, 8,4])

plt.bar(x,y,color='RoyalBlue')
plt.show()
```



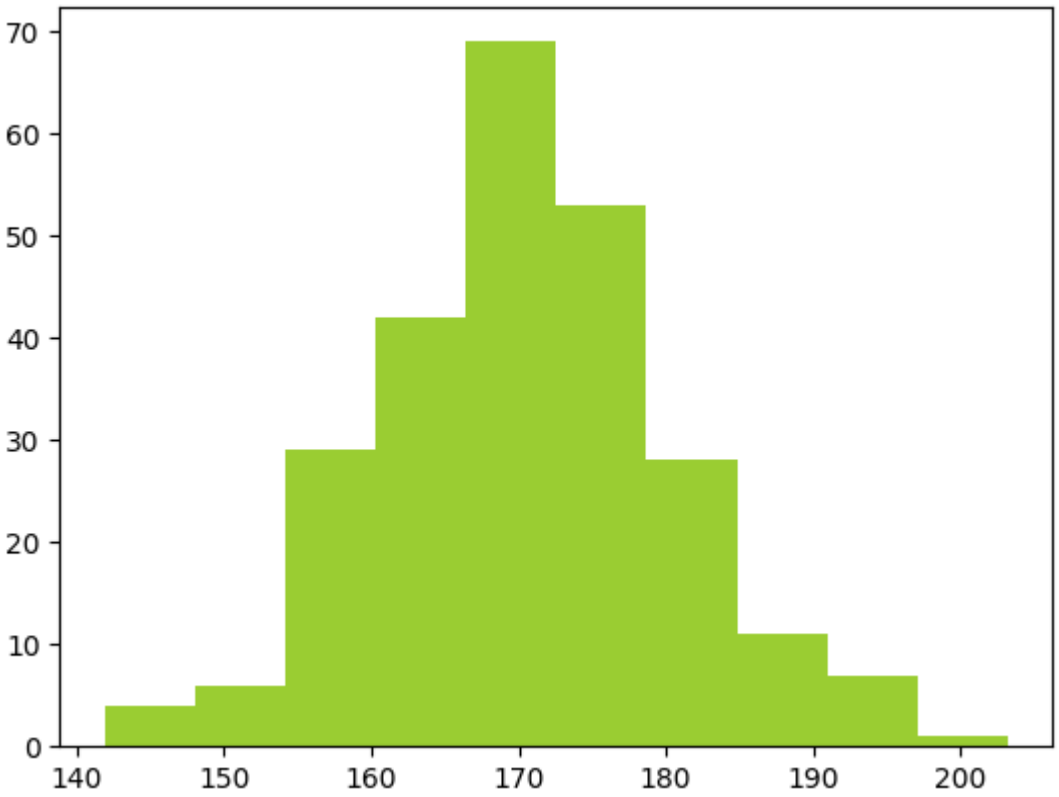
Bar Plot (Horizontal)

In [47]:
```
plt.barh(x,y,color='LightSkyBlue')
plt.show()
```



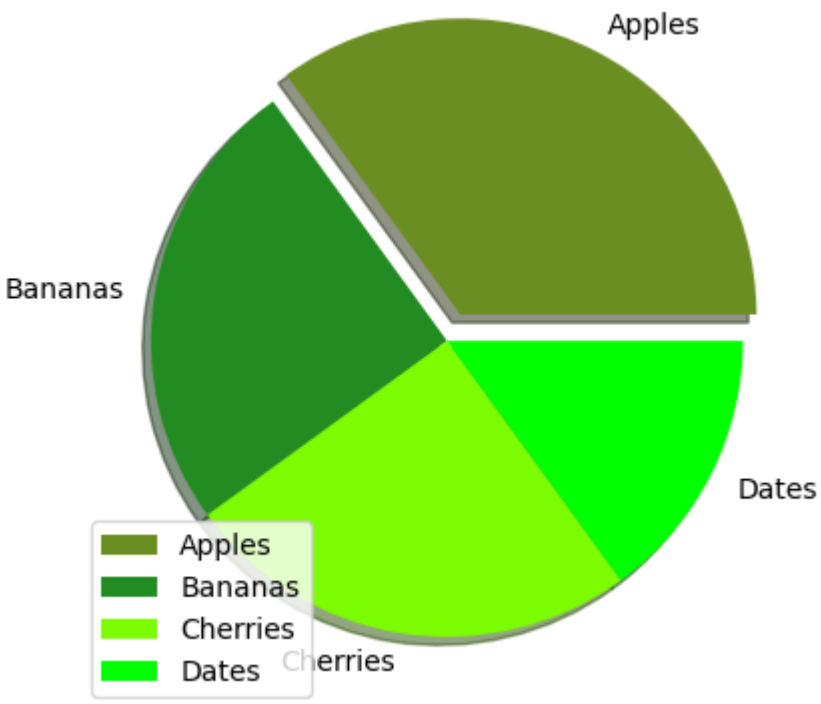
Histogram

In [36]:
```
x = np.random.normal(170, 10, 250)

plt.hist(x,color='YellowGreen')
plt.show()
```



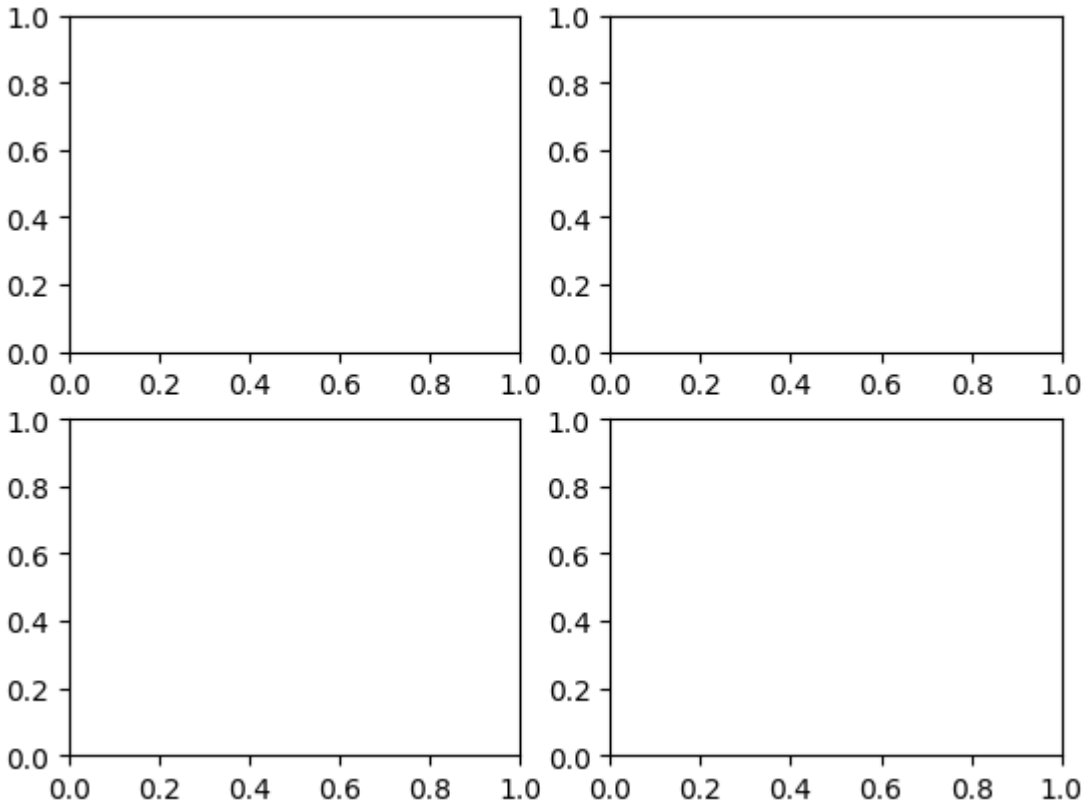
Pie Chart

In [64]:
```
y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
myexplode = [0.1, 0, 0, 0]
mycolors = ["OliveDrab", "ForestGreen", "LawnGreen", "Lime"]

plt.pie(y, labels = mylabels ,explode=myexplode,shadow = True,colors=mycolo
plt.legend()
plt.savefig('pie_chart.png')
plt.show()
```



In [4]:

```
# Import the matplotlib.pyplot submodule and name it plt
import matplotlib.pyplot as plt

# Create a Figure and an Axes with plt.subplots
fig, ax = plt.subplots(2,2)

# Call the show function to show the result
plt.show()
```

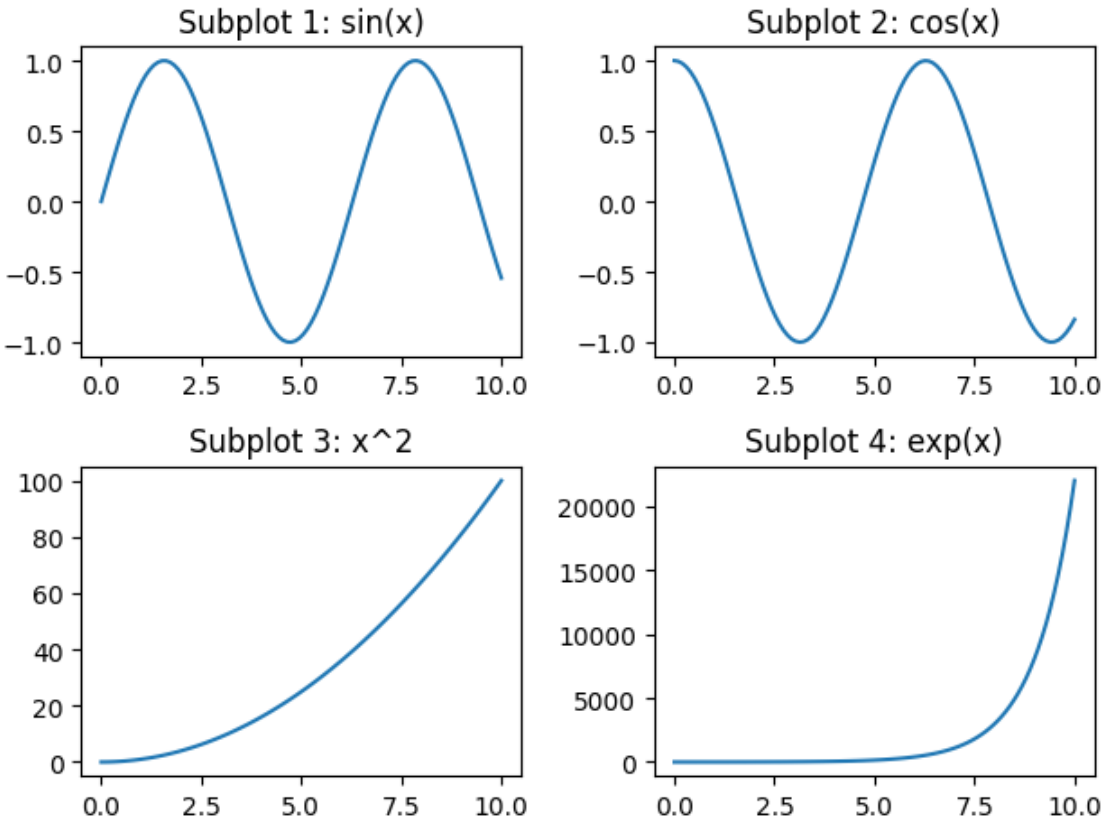


In [ ]:

```
ax.plot(x,y,marker='o',linestyle="--",color='r')
ax.set_xlabel('label')
ax.set_ylabel('label')
ax.set_title('label')
```

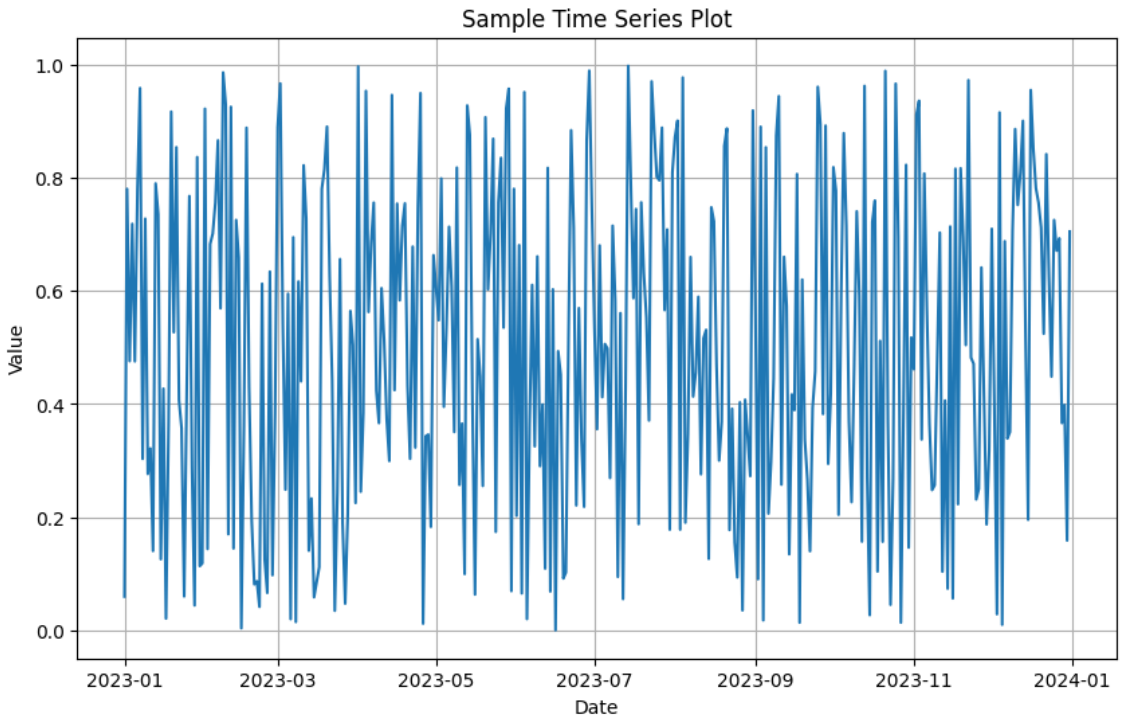
In [1]:

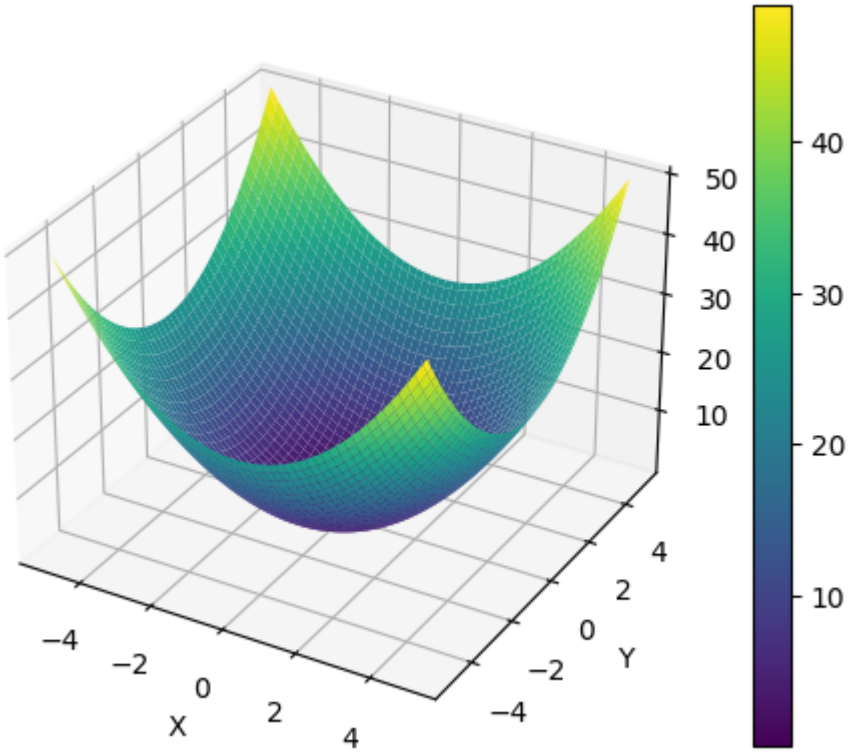
```
import matplotlib.pyplot as plt
import numpy as np

# Create sample data
x = np.linspace(0, 10, 100)
y1 = np.sin(x)
y2 = np.cos(x)
y3 = x**2
y4 = np.exp(x)

# Create a Figure and an Axes with plt.subplots
fig, ax = plt.subplots(2, 2)

# Add data to each subplot
ax[0, 0].plot(x, y1)
ax[0, 0].set_title('Subplot 1: sin(x)')

ax[0, 1].plot(x, y2)
ax[0, 1].set_title('Subplot 2: cos(x)')

ax[1, 0].plot(x, y3)
ax[1, 0].set_title('Subplot 3: x^2')

ax[1, 1].plot(x, y4)
ax[1, 1].set_title('Subplot 4: exp(x)')

# Adjust layout
plt.tight_layout()

# Show the plots
plt.show()
```


Subplot 1: sin(x)
Subplot 2: cos(x)
Subplot 3: x^2
Subplot 4: exp(x)
1.0
0.5
0.0
−0.5
−1.0
0.0
2.5
5.0
7.5
10.0
100
80
60
40
20
0
20000
15000
10000
5000

In [3]:

```
import matplotlib.pyplot as plt
import pandas as pd
import numpy as np
from datetime import datetime, timedelta

# Generate sample time series data
start_date = datetime(2023, 1, 1)
end_date = datetime(2023, 12, 31)
time_index = pd.date_range(start_date, end_date, freq='D')
data = np.random.rand(len(time_index))

# Create a DataFrame
df = pd.DataFrame({'Date': time_index, 'Value': data})

# Plotting the time series data
plt.figure(figsize=(10, 6))
plt.plot(df['Date'], df['Value'])
plt.title('Sample Time Series Plot')
plt.xlabel('Date')
plt.ylabel('Value')
plt.grid(True)
plt.show()
```



In [66]:

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

# Create a meshgrid of X and Y values
x = np.linspace(-5, 5, 100)
y = np.linspace(-5, 5, 100)
X, Y = np.meshgrid(x, y)

# Define the function to plot (in this case, a simple paraboloid)
Z = X**2 + Y**2

# Create a figure and a 3D axis
fig = plt.figure()
ax = fig.add_subplot(111, projection='3d')

# Create the 3D surface plot
surf = ax.plot_surface(X, Y, Z, cmap='viridis')

# Add labels and a colorbar
ax.set_xlabel('X')
ax.set_ylabel('Y')
ax.set_zlabel('Z')
fig.colorbar(surf)

# Show the plot
plt.show()
```