

# Day15\_\_Home\_\_Work\_\_On\_\_Matplotlib\_\_Basic

June 9, 2025

```
[ ]: # Install (if not installed)
     # !pip install matplotlib
```

```
[1]: # Import
     import matplotlib.pyplot as plt
```

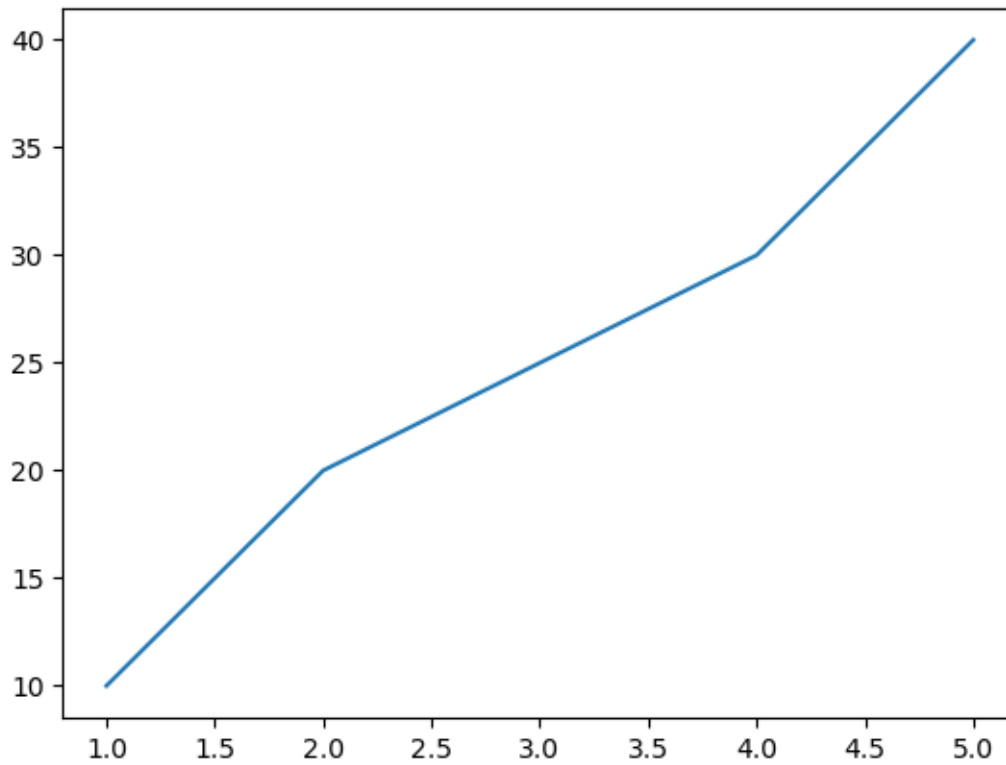
plt.plot() → Creates a simple line plot

plt.show() → Displays the plot

## My First Plot: Line Plot

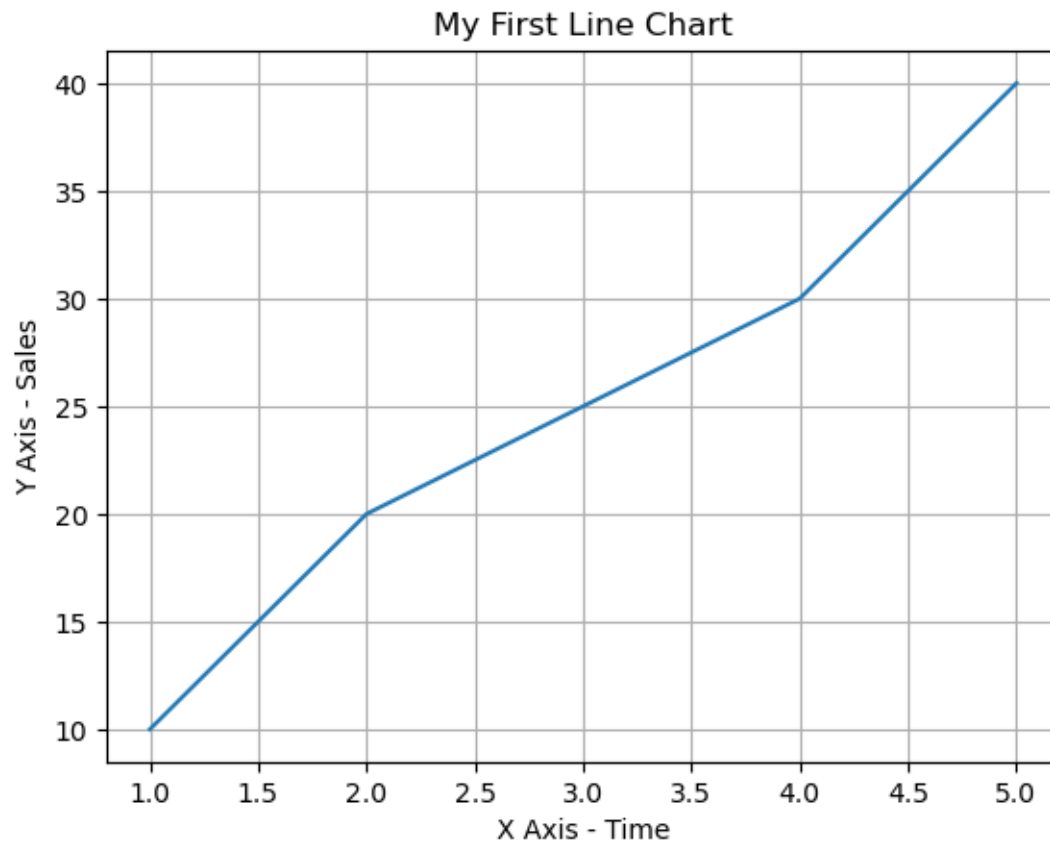
```
[2]: x = [1, 2, 3, 4, 5]
     y = [10, 20, 25, 30, 40]

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



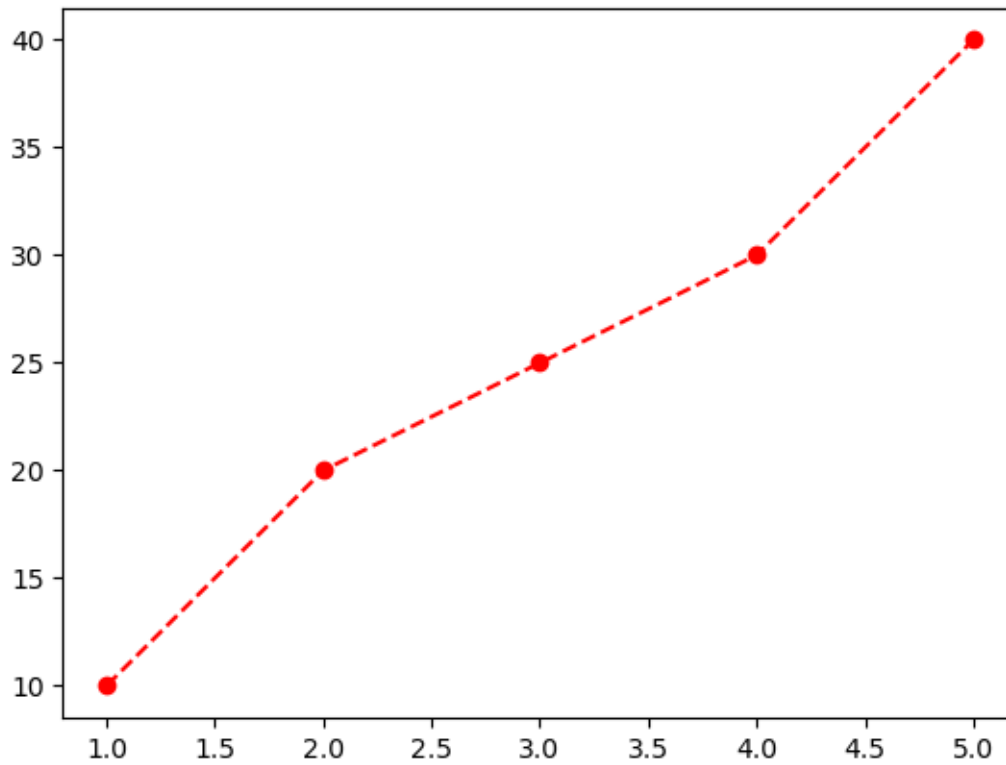
### Titles, Labels, and Grid

```
[3]: plt.plot(x, y)
plt.title("My First Line Chart")
plt.xlabel("X Axis - Time")
plt.ylabel("Y Axis - Sales")
plt.grid(True)
plt.show()
```



#### Customize Style (Color, Line, Marker)

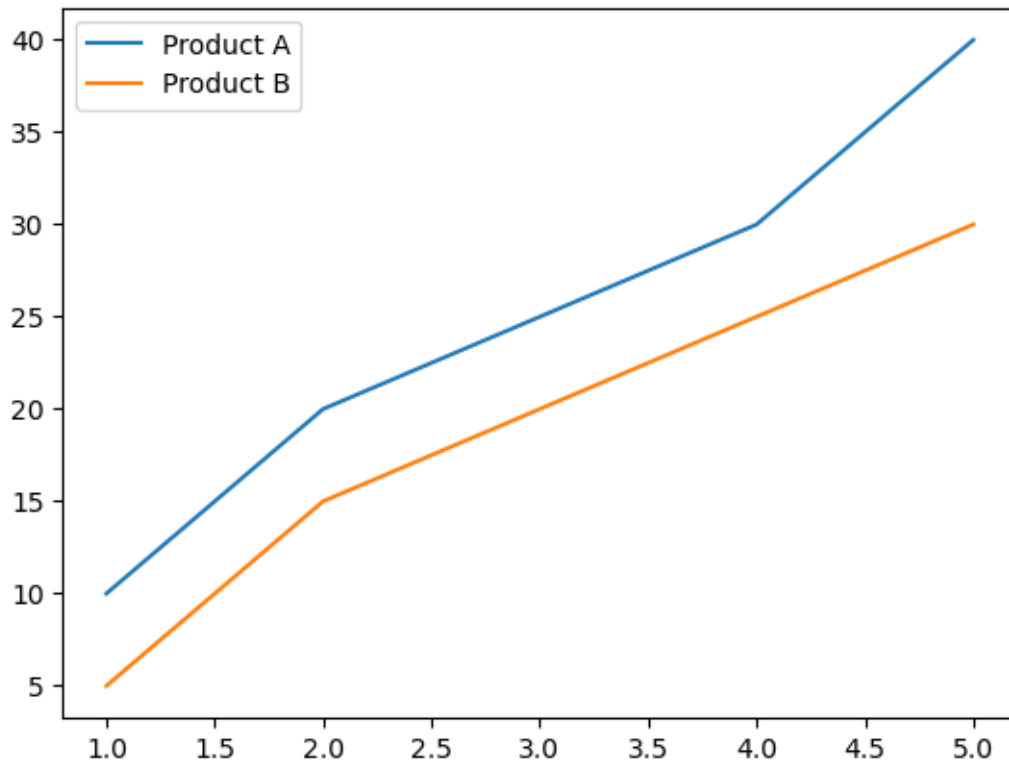
```
[4]: plt.plot(x, y, color='red', linestyle='--', marker='o')  
plt.show()
```



### Multiple Lines on Same Graph

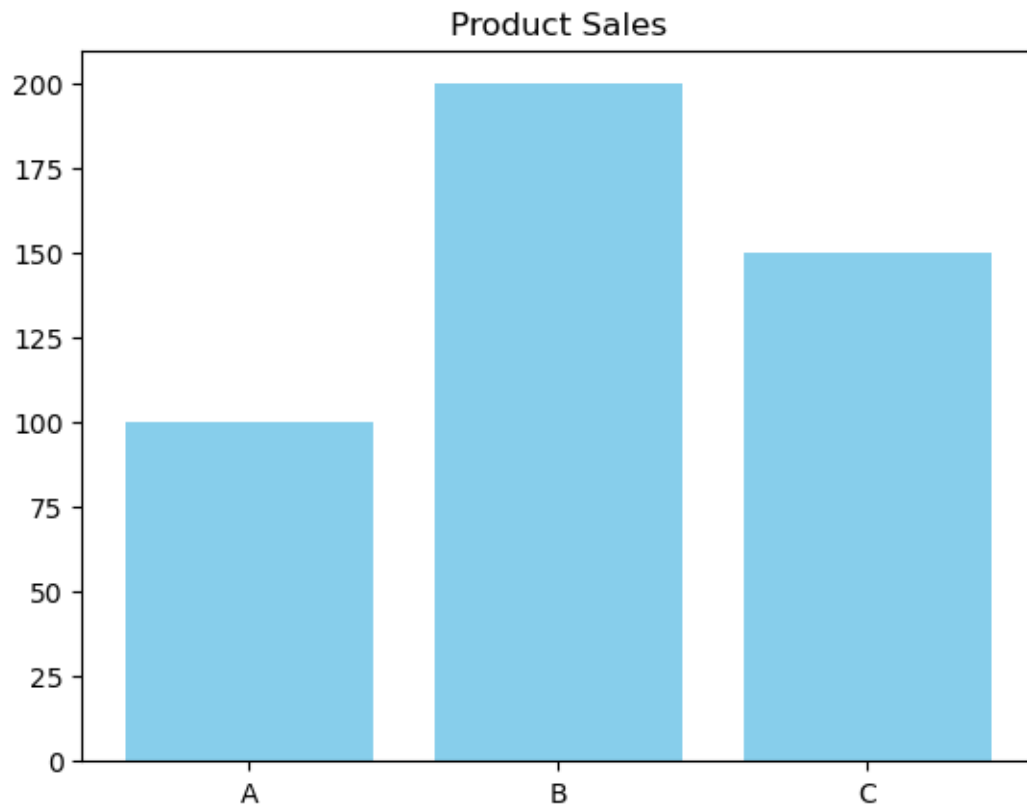
```
[5]: y2 = [5, 15, 20, 25, 30]

plt.plot(x, y, label='Product A')
plt.plot(x, y2, label='Product B')
plt.legend() # Show labels
plt.show()
```



### Bar Chart

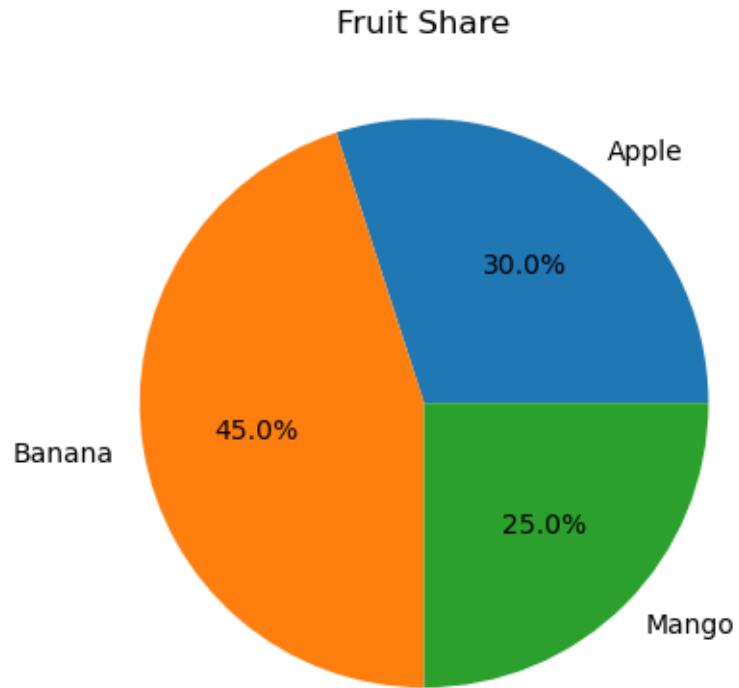
```
[6]: products = ['A', 'B', 'C']  
     sales = [100, 200, 150]  
  
     plt.bar(products, sales, color='skyblue')  
     plt.title("Product Sales")  
     plt.show()
```



### Pie Chart

```
[7]: sizes = [30, 45, 25]
labels = ['Apple', 'Banana', 'Mango']

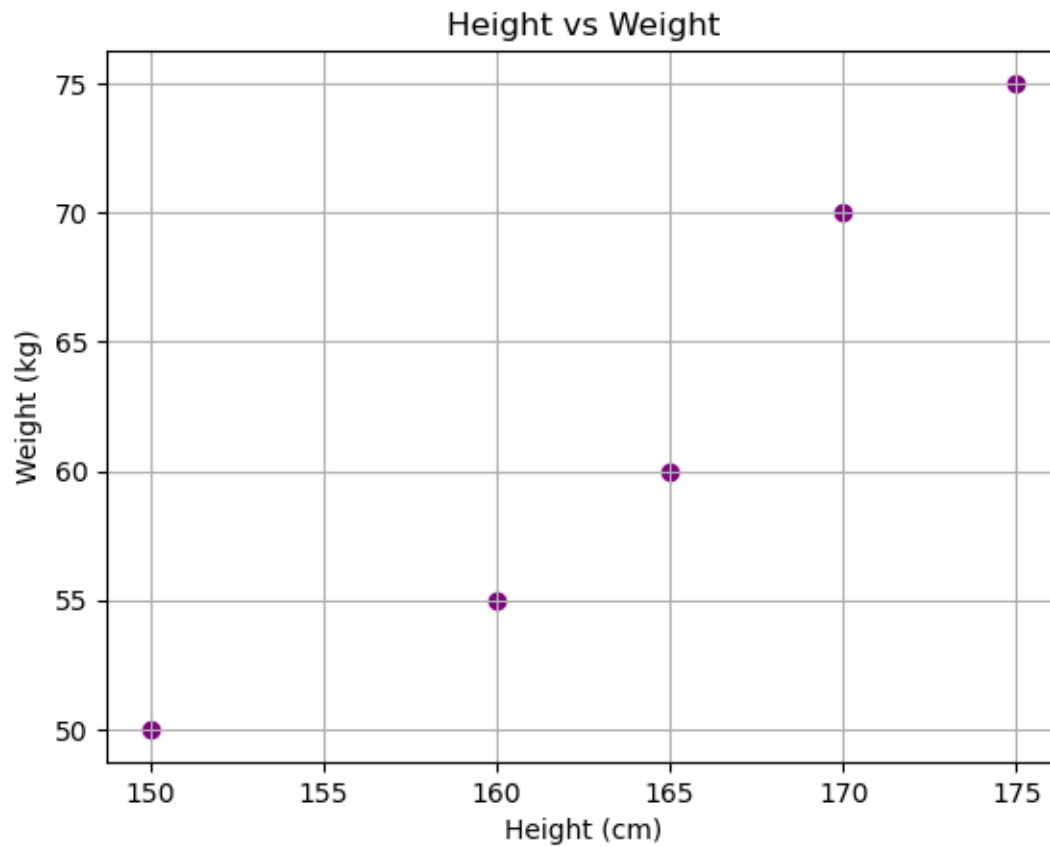
plt.pie(sizes, labels=labels, autopct='%1.1f%%')
plt.title("Fruit Share")
plt.show()
```



### Scatter Plot

```
[8]: height = [150, 160, 165, 170, 175]
weight = [50, 55, 60, 70, 75]

plt.scatter(height, weight, color='purple')
plt.title("Height vs Weight")
plt.xlabel("Height (cm)")
plt.ylabel("Weight (kg)")
plt.grid(True)
plt.show()
```

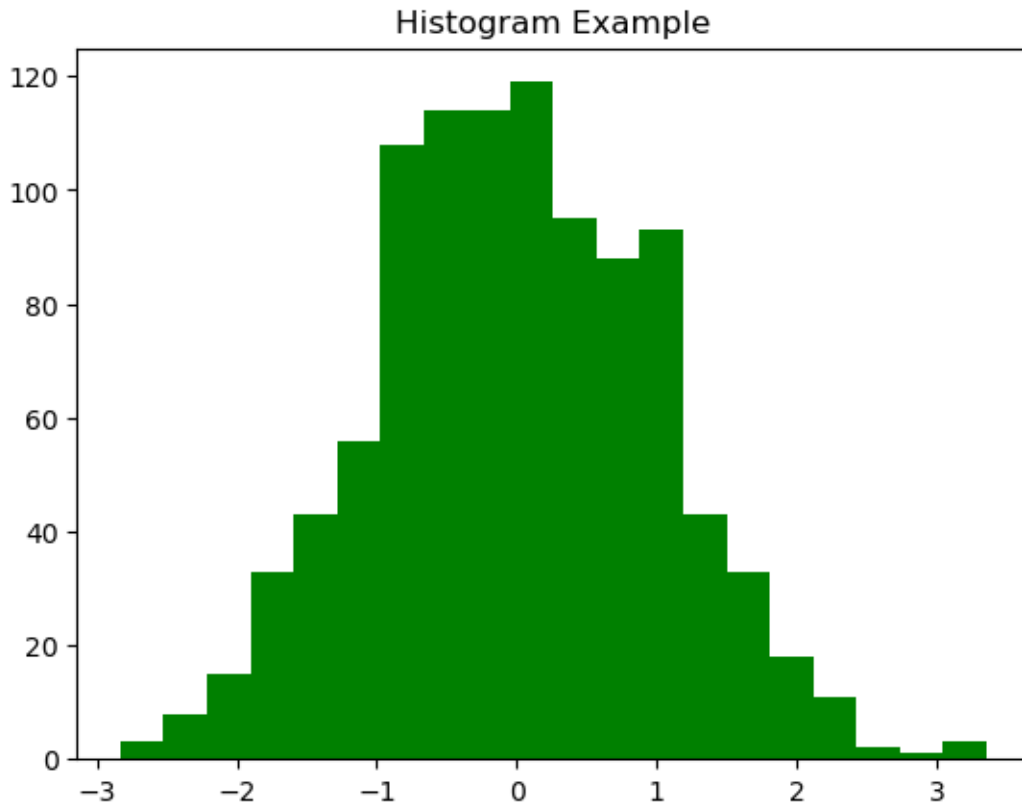


## Histogram

```
[9]: import numpy as np

data = np.random.randn(1000) # Random numbers
plt.hist(data, bins=20, color='green')
plt.title("Histogram Example")
plt.show()
```



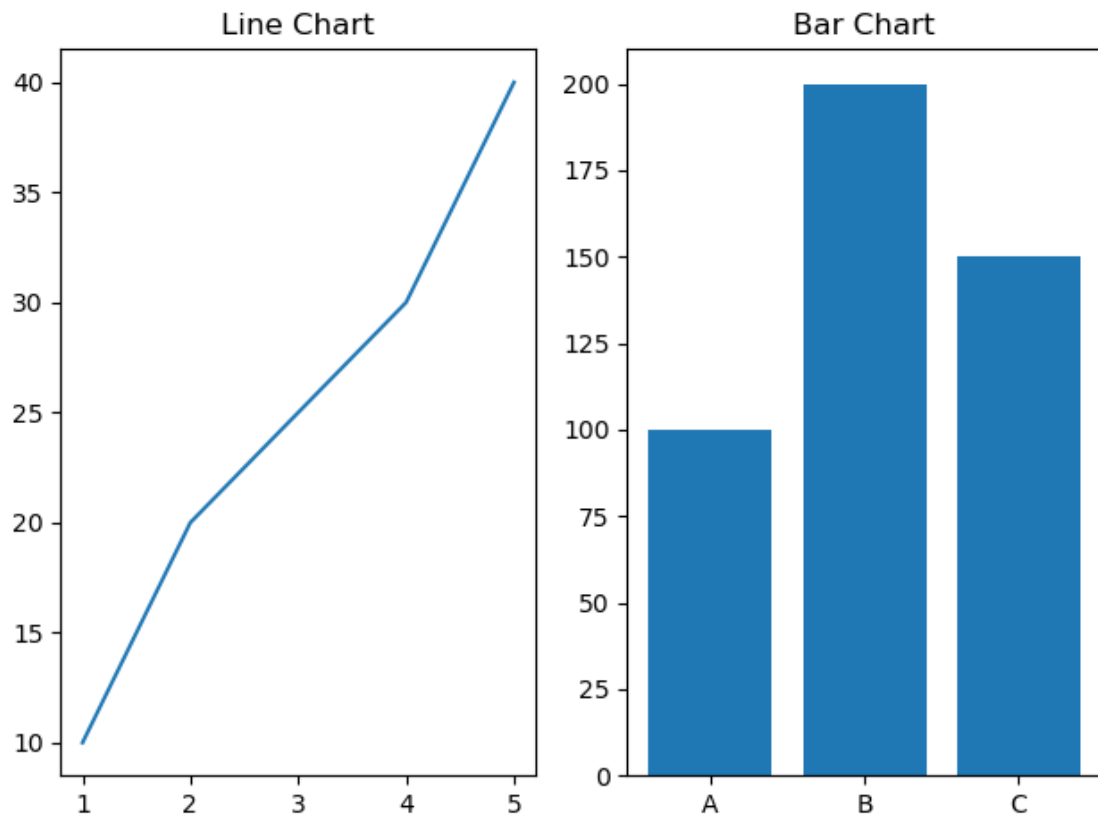


### Subplots (Multiple Graphs in One Window)

```
[10]: plt.subplot(1, 2, 1)
      plt.plot(x, y)
      plt.title("Line Chart")

      plt.subplot(1, 2, 2)
      plt.bar(products, sales)
      plt.title("Bar Chart")

      plt.tight_layout()  # Avoid overlap
      plt.show()
```



### Save the Plot as Image

```
[11]: plt.plot(x, y)
      plt.savefig("my_plot.png") # Saves to file
```

