import matplotlib.pyplot as plt

import numpy as np

Exercise 1: Plot a line

```
>>>  x = np.array([0, 6])
>>>  y = np.array([0, 250])
>>>  plt.plot(x, y)
>>>  plt.show()
```

Exercise 3: Plot with multiple points

```
>>>  x = np.array([1, 2, 6, 8])
>>>  y = np.array([3,8,1,10])
>>>  plt.plot(x, y)
>>>  plt.show()
```

Exercise 4: Plot without x points

```
>>>  y = np.array([3,8,1,10, 5, 7])
>>>  plt.plot(y)
>>>  plt.show()
```

Exercise 5: Plot with markers, Title and Labels

```
>>>  y = np.array([3,8,1,10, 5, 7])
>>>  plt.plot(y, marker = ‘x’)
>>>  plt.title("Mahe")
>>>  plt.xlabel("customers")
>>>  plt.ylabel("Sales")
>>>  plt.grid()
>>>  plt.show()
```

Exercise 6: Plot with markers , line , color

```
>>>  y = np.array([3,8,1,10, 5, 7])
>>>  plt.plot(y, ‘*:r’)
>>>  plt.show()
```

```
Line styles : ‘-‘ Solid , ‘:’ dotted, ‘–’ Dashed, ‘-.’
Dashed dotted line
```

Color reference : ‘r’ , ‘g’ , ‘b’ , ‘c’ , ‘m’ , ‘y’ , ‘k’, ‘w’

Exercise 7: Plot with marker size & marker color

```
>>> y = np.array([3,8,1,10, 5, 7])
>>> plt.plot(y, marker = 'o', ms = 20, mec = 'r', mfc=’b’)
>>> plt.show()
```

Exercise 8: Plot with Line style

```
>>> y = np.array([3,8,1,10, 5, 7])
>>> plt.plot(y, linestyle = ‘-‘)
>>> plt.show()
```

Exercise 9: SubPlot or Multiple plots

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

Exercise 10: Scatter plots

```
>>> x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
>>> y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
>>> plt.scatter(x, y)
>>> plt.show()
```

Exercise 11 : Two scatter Plots

```
>>> x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
>>> 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()
```

Exercise 12 : Bar Plots

```
>>>  x = np.array(["A", "B", "C", "D"])
>>>  y = np.array([3, 8, 1, 10])
>>>  plt.bar(x,y)
>>>  plt.barh(x, y) # for horizontal bars
>>>  plt.bar(x, y, color = "red") # with colors
>>>  plt.bar(x, y, width = 0.1) # bar width
>>>  plt.barh(x, y, height = 0.1) # Height
>>>  plt.show()
```

Exercise 14 : Pie Plots

```
>>>  y = np.array([35, 25, 25, 15])
>>>  plt.pie(y)
>>>  plt.show()
>>>  # with labels
>>>  mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
>>>  plt.pie(y, lables=mylabels)
>>> # With Explode
>>>  myexplode = [0.2, 0.3, 0.1, 0.2]
>>>  plt.pie(y, lables = mylabels, explode = myexplode)
```

Exercise 15 : Reading data from Excel using Pandas and plotting

```
>>>  import pandas as pd
>>>  f = pd.read_excel("test.xls",usecols=[0,1])
```

```
>>> col1 = f["TEMP"]
>>> col2 = f["HUM"]
>>> #plt.plot(col1,col2, '*-.b')
>>> #plt.scatter(col1,col2)
>>> #plt.pie(col1,col2)
>>> #plt.bar(col1,col2)
>>> plt.title("Mahe")
>>> plt.xlabel("Temperature")
>>> plt.ylabel("Humidity")
>>> plt.grid()
>>> plt.axis()
>>> plt.show()
```