Q1: What is Matplotlib? Why is it used? Name five plots that can be plotted using the Pyplot module of Matplotlib.

Matplotlib is a comprehensive library for creating static, animated, and interactive visualizations in Python. Matplotlib makes easy things easy and hard things possible. Create publication quality plots.

plt.scatter()

plt.bar()

plt.box()

plt.plot()

plt.hist()

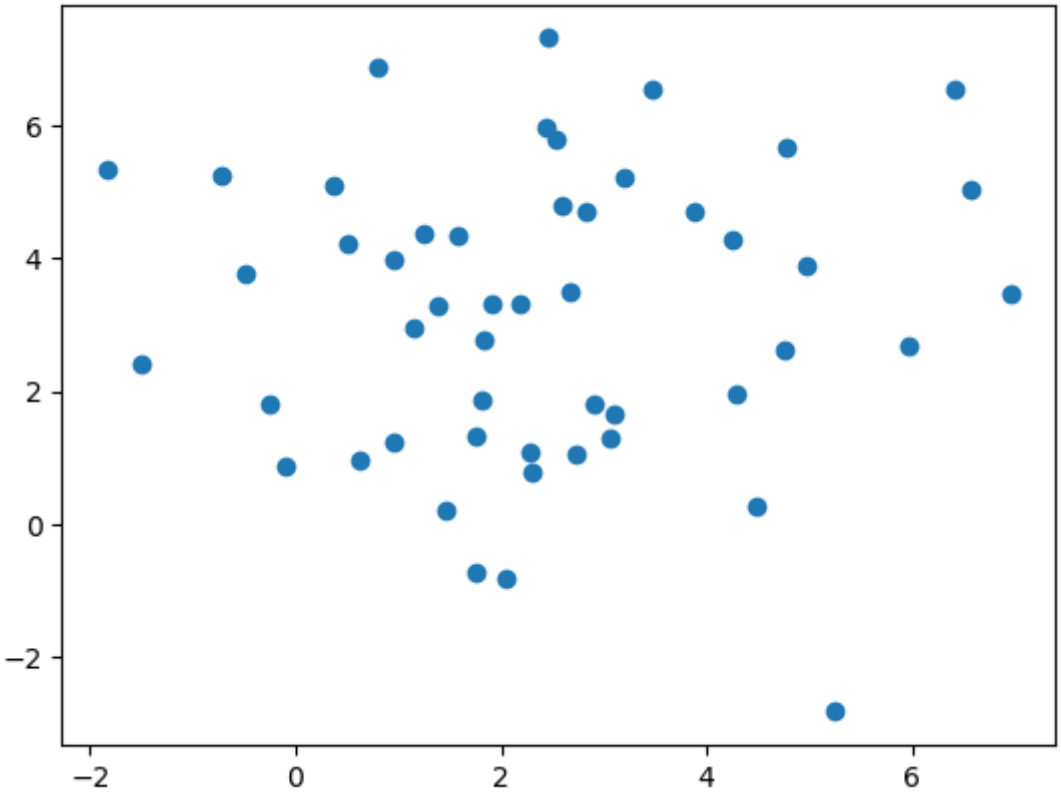
Q2: What is a scatter plot? Use the following code to generate data for x and y. Using this generated data plot a scatter plot.

A scatter plot is a diagram where each value in the data set is represented by a dot.

In [1]:

```
import matplotlib.pyplot as plt
import numpy as np
np.random.seed(3)
x = 3 + np.random.normal(0, 2, 50)
y = 3 + np.random.normal(0, 2, len(x))

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



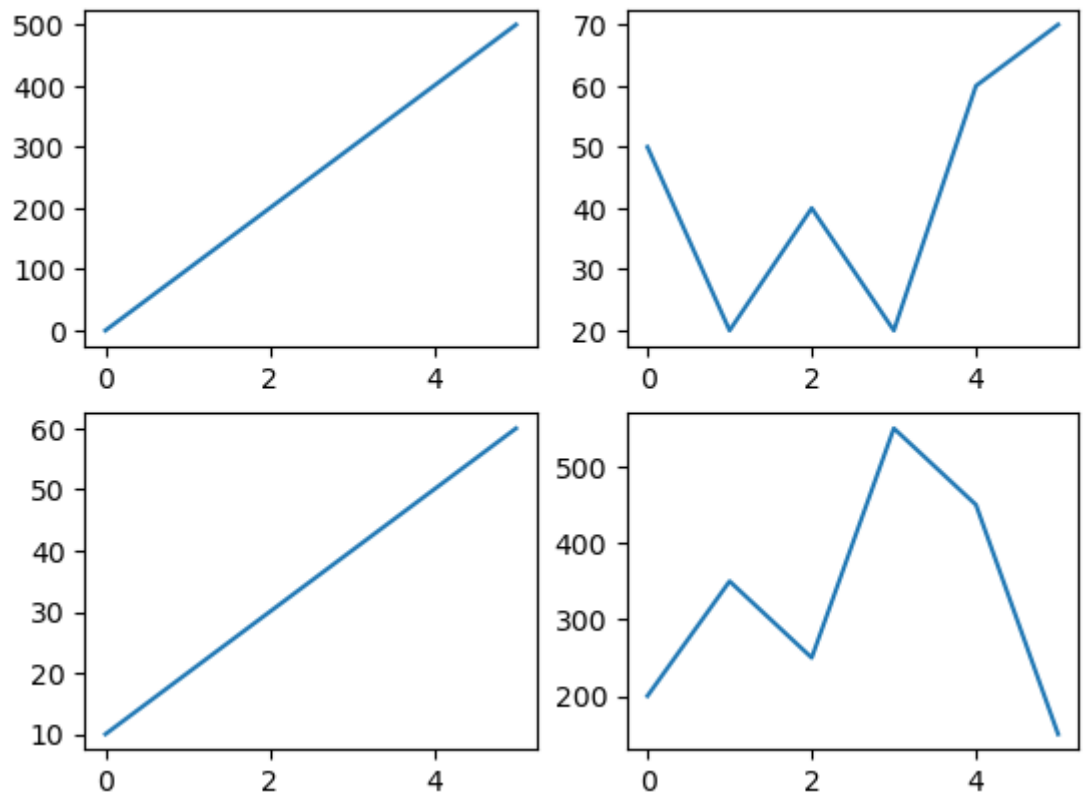
Q3: Why is the subplot() function used? Draw four line plots using the subplot() function.

With the subplot() function you can draw multiple plots in one figure:

In [2]:

```
import matplotlib.pyplot as plt
import numpy as np
x = np.array([0, 1, 2, 3, 4, 5])
y = np.array([0, 100, 200, 300, 400, 500])
x1 = np.array([0, 1, 2, 3, 4, 5])
y1 = np.array([50, 20, 40, 20, 60, 70])
x2 = np.array([0, 1, 2, 3, 4, 5])
y2= np.array([10, 20, 30, 40, 50, 60])
x3 = np.array([0, 1, 2, 3, 4, 5])
y3= np.array([200, 350, 250, 550, 450, 150])

plt.subplot(2, 2, 1)
plt.plot(x,y)
plt.subplot(2, 2, 2)
plt.plot(x1,y1)
plt.subplot(2, 2, 3)
plt.plot(x2,y2)
plt.subplot(2, 2, 4)
plt.plot(x3,y3)
plt.show()
```



Q4: What is a bar plot? Why is it used? Using the following data plot a bar plot and a horizontal bar plot.

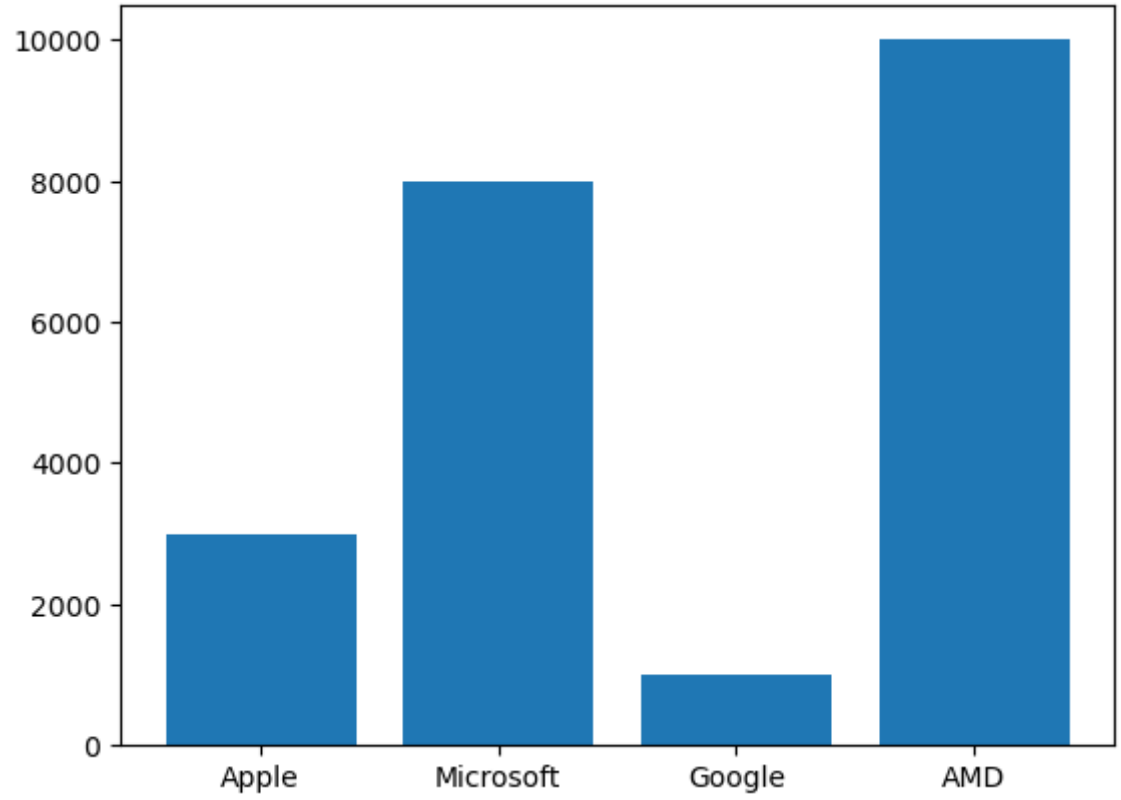
A bar plot or bar chart is a graph that represents the category of data with rectangular bars with lengths and heights that is proportional to the values which they represent.

In [3]:

```
import numpy as np
company = np.array(["Apple", "Microsoft", "Google", "AMD"])
profit = np.array([3000, 8000, 1000, 10000])
plt.bar(company,profit)
```

Out[3]:

```
<BarContainer object of 4 artists>
```



Q5: What is a box plot? Why is it used? Using the following data plot a box plot.

box1 = np.random.normal(100, 10, 200)

box2 = np.random.normal(90, 20, 200)

A Box Plot is also known as Whisker plot is created to display the summary of the set of data values having properties like minimum, first quartile, median, third quartile and maximum. In the box plot, a box is created from the first quartile to the third quartile, a vertical line is also there which goes through the box at the median.

In [4]:

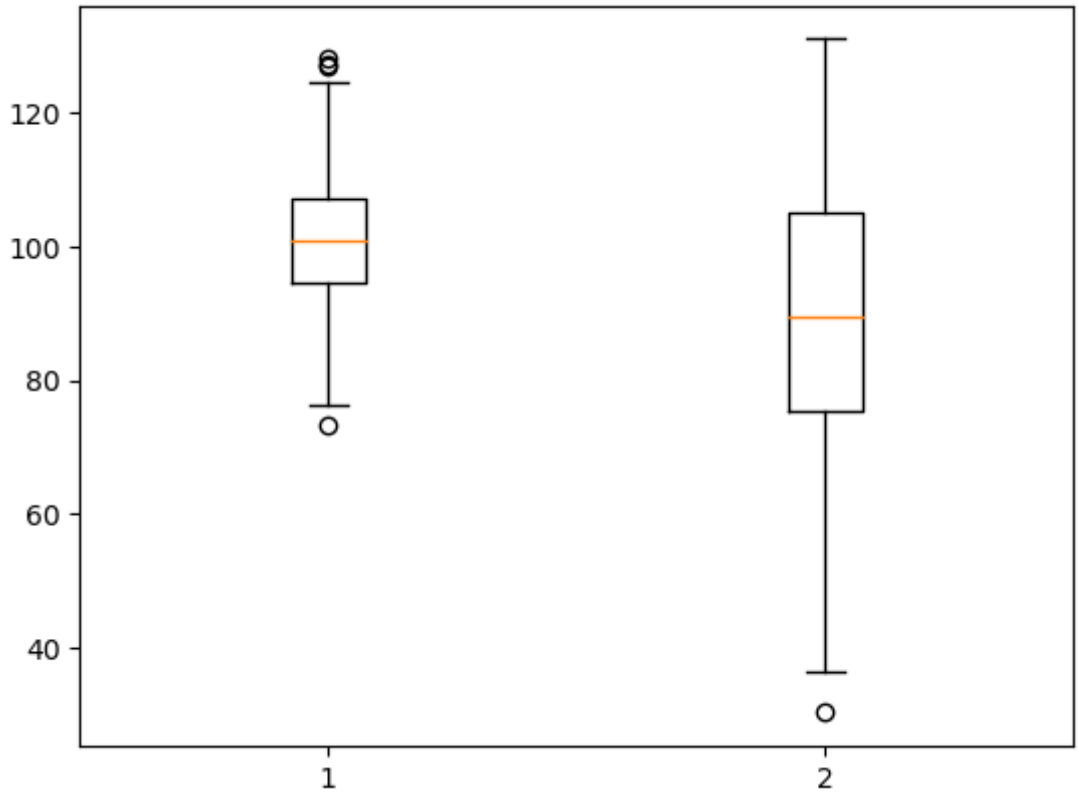
```
box1 = np.random.normal(100, 10, 200)

box2 = np.random.normal(90, 20, 200)

data = list([box1,box2])
plt.boxplot(data)
plt.show
```

Out[4]:

```
<function matplotlib.pyplot.show(close=None, block=None)>
```



In [ ]: