Q1

matplotlib :- It supports wide variety of graphs,and plots namely barchart histogram,powerspectra,error chart etc.It is used along with Numpy to provide an environment that is an effective open source alternative for matlab. It can also be used with graphics toolkits like PyQt and wxPython.

```python
#Q2
import numpy as np
import matplotlib.pyplot as plt
```

In [12]:

```python
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.title("RANDOM")
plt.xlabel("number")
plt.ylabel("number length")
plt.scatter(x,y)
plt.show()
```

In [16]:
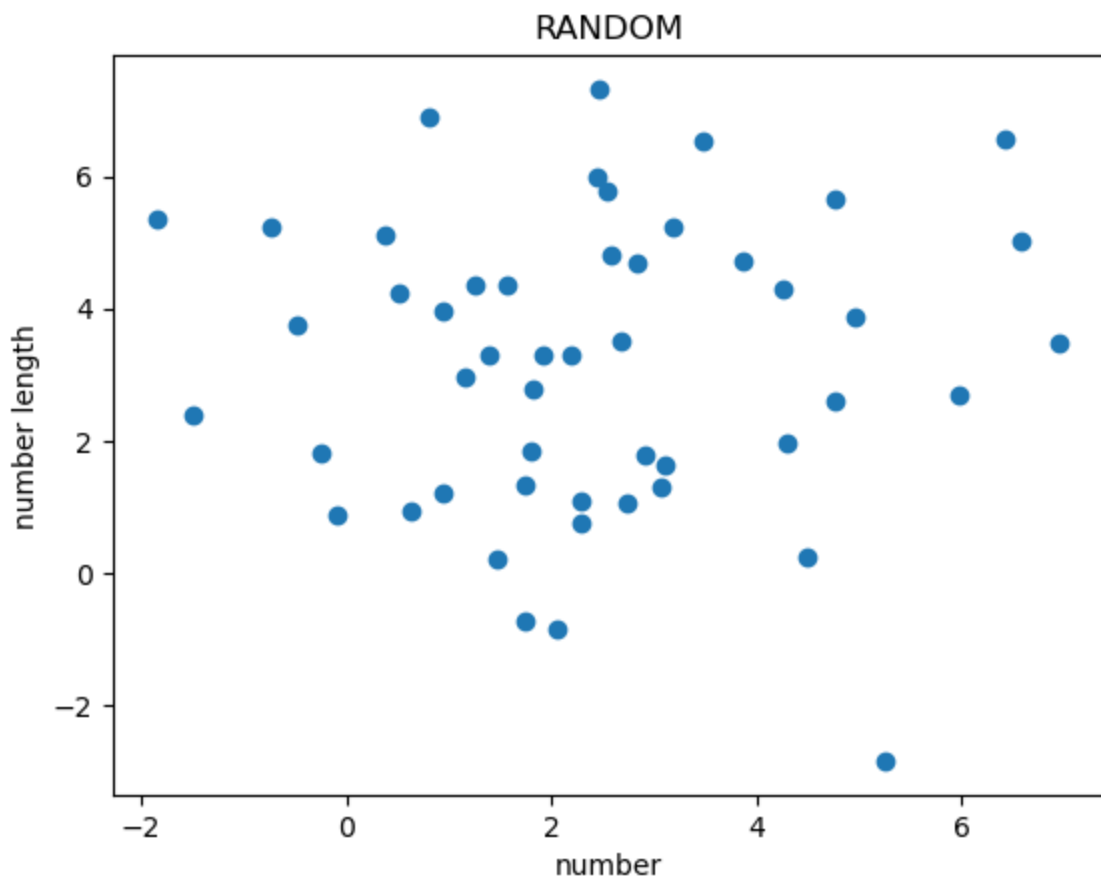
Scatter plots are used to plot data points on a horizontal and a vertical axis in the attempt to show how much one variable is affected by another. Each row in the data table is

represented by a marker whose position depends on its values in the columns set on the X and Y axes.

In [50]:
```python
#Q3


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])
z= np.array([0, 1, 2, 3, 4, 5])
e = np.array([50, 20, 40, 20, 60, 70])
g= np.array([0, 1, 2, 3, 4, 5])
r = np.array([10, 20, 30, 40, 50, 60])
u= np.array([0, 1, 2, 3, 4, 5])
t = np.array([200, 350, 250, 550, 450, 150])
fig, ax = plt.subplots(nrows=1, ncols=2)
ax[0].plot(x,y)
ax[1].plot(t,z)

plt.show()
#fig, ax = plt.subplots(2, 2)
#x = np.linspace(0, 8, 1000)
#ax[0, 0].plot(x, np.sin(x), 'g') #row=0, col=0
#ax[1, 0].plot(x, np.tan(x), 'k') #row=1, col=0
#ax[0, 1].plot(range(100), 'b') #row=0, col=1
#ax[1, 1].plot(x, np.cos(x), 'r') #row=1, col=1
#fig.show()
```
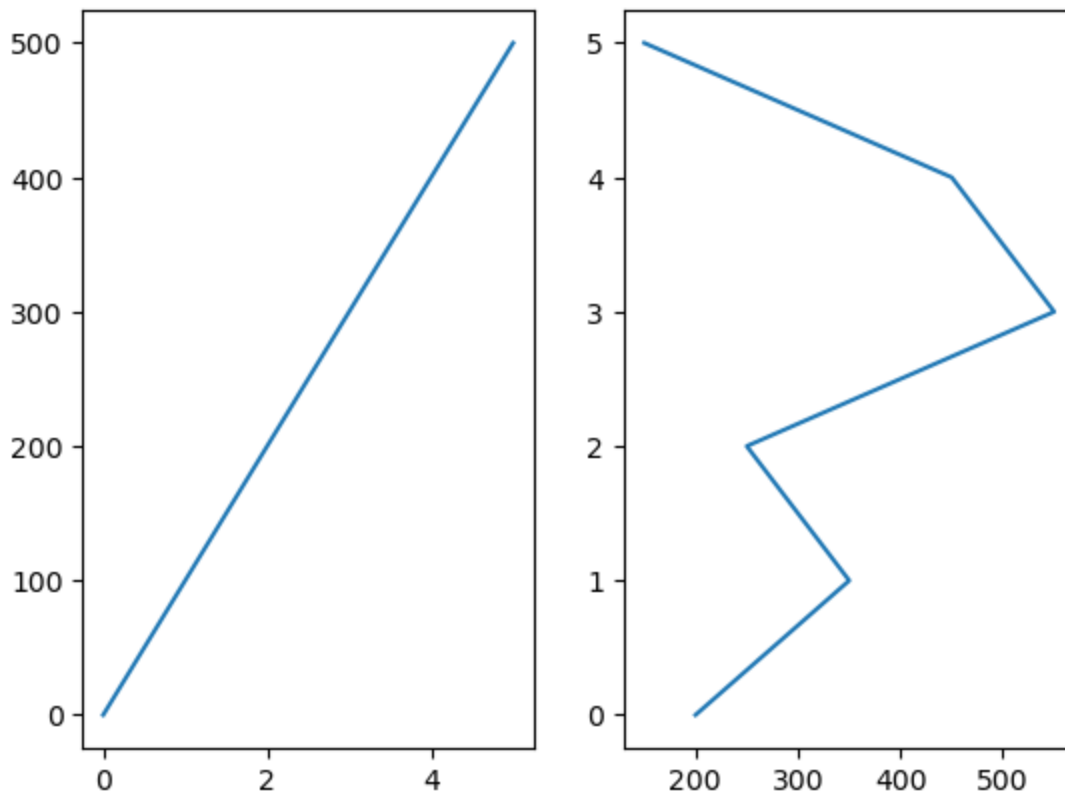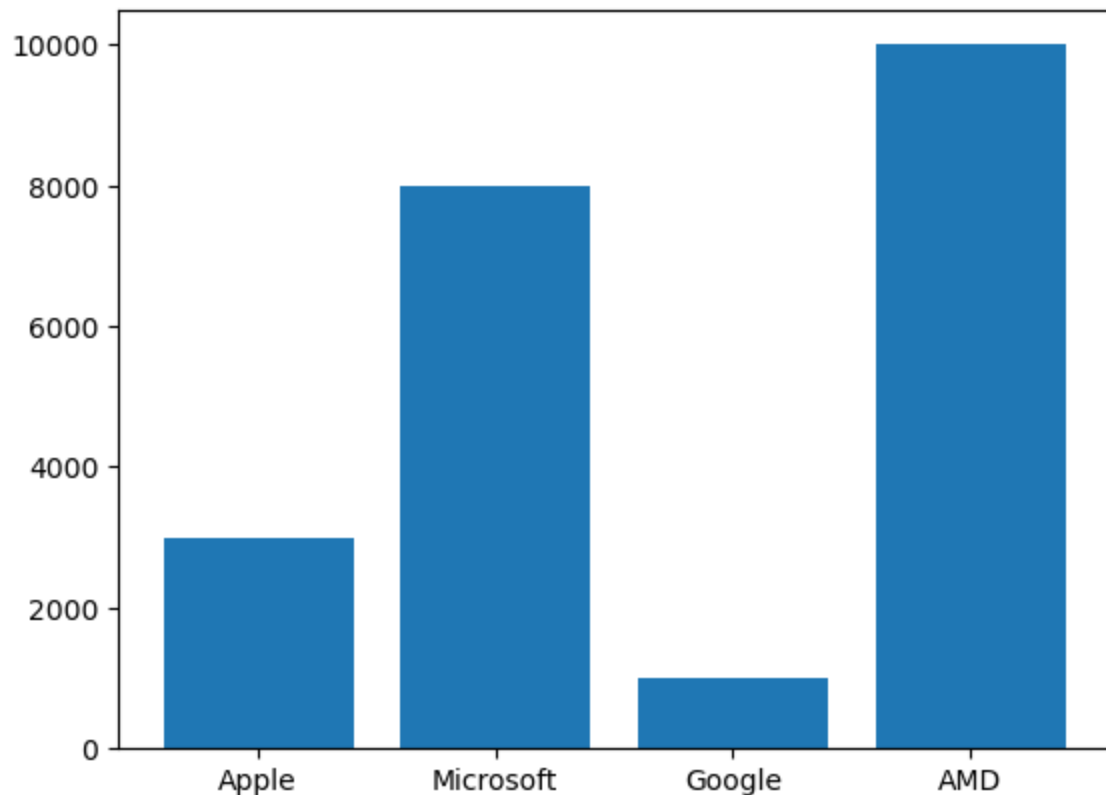
subplots method provides a way to plot multiple plots on a single figure. Given the number of rows and columns , it returns a tuple (fig , ax), giving a single figure fig with an array of axes ax .

In [27]:
```python
#Q4

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

Out[27]: <BarContainer object of 4 artists>

A bar chart or bar graph is a chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent.

In [38]:
```python
#Q5
box1 = np.random.normal(100, 10, 200)
box2 = np.random.normal(90, 20, 200)
data = [box1,box2]

fig = plt.figure(figsize =(10, 7))

# Creating axes instance
#ax = fig.add_axes([0,1])

# Creating plot
```
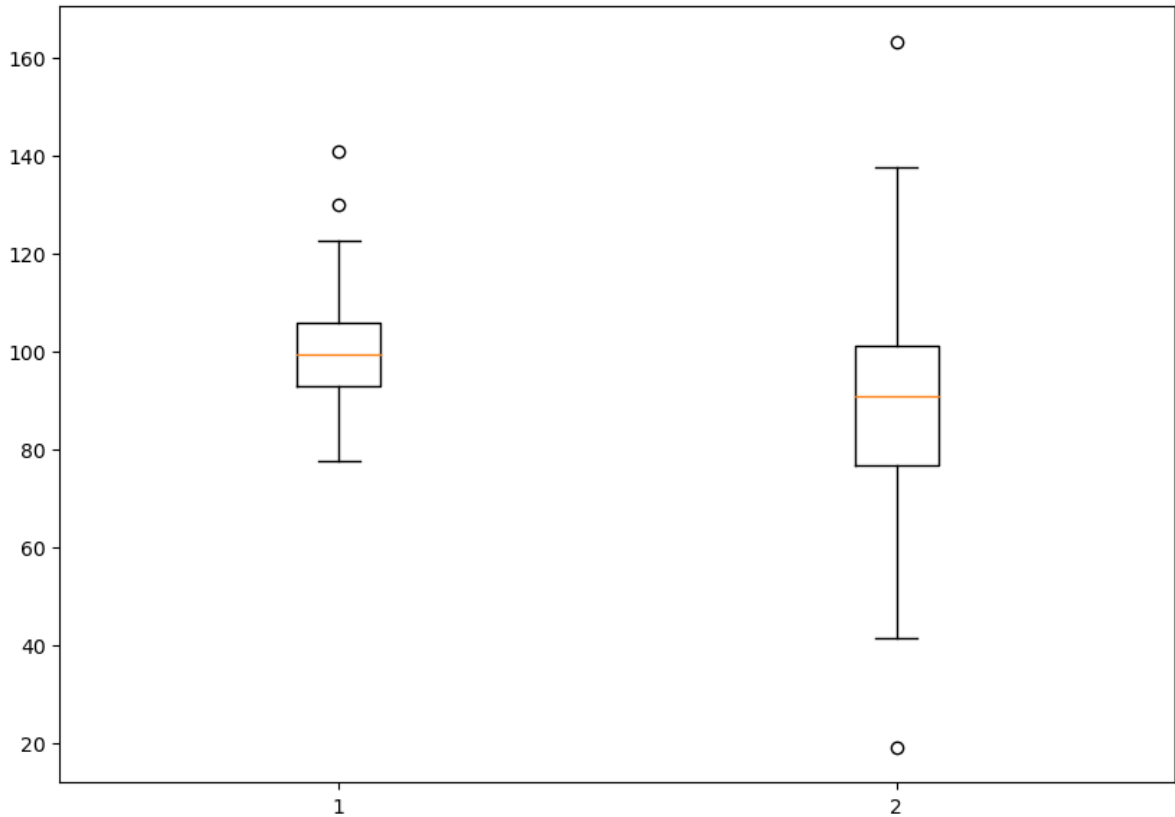
```python
# show plot
plt.show()
fig = plt.figure(figsize =(10, 7))
plt.boxplot(data)
#plt.boxplot(box2)
plt.show()
```

```
<Figure size 1000x700 with 0 Axes>
```


A box and whisker plot—also called a box plot—displays the five-number summary of a set of data. The five-number summary is the minimum, first quartile, median, third quartile, and maximum. In a box plot, we draw a box from the first quartile to the third quartile. A vertical line goes through the box at the median.

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In [ ]:
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In [ ]:
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