****

**Course : Encryption Theory**

**Name : Tareq khanfar**

**ID : 1200265**

**Details About Used Idea**

The Main idea of Signature is to ensure the data is received without any modification from third party .

In this task , i will use the MyAlgorithim to create signature and verify signature. If the sign. for NewFile equal orginal sign

Then will be Extract All Data from NewFile .

Otherwise , raise error Message .

MyAlgorithim i.e MyFunction :

This Function it take a PlainText Then Convert it to Binary Number

After that Find Number of One’s and Number of Zero’s .

Example :

Suppose that we have a TextFile contain the following Data “A”

The ascii code for it is (97)10  == (01100001)2

Answer :

Number Of Ones’ = 3 , Number of Zero’s = 5

Sign. Value = Number Of One\* Number of Zero’s = 3 \* 5 = 15

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Assume that there exist a hacker between Ali and BOB , changed The Data to “BA” .

When BOB is receiving the TextFile then start verify the File with orginal Signature ,, will be Not display any Plain Text because the Data is Not Correct .

The ascii code B = (99)10 = (0110001001100001)2

Number Of Ones’ = 6 , Number of Zero’s = 10

Sign. Value = Number Of One\* Number of Zero’s = 6\*10 = 60

Orginal Sign.Value =15 , and New Sign.Value = 50

**15 Not Equal 50 , so the Data is Not Correct .**