Assignment No - 1

Aim - Write a Java / c / c++ / python program that contains a string (char pointer) with a value Hellow World. the program should AND or and XOR each character in this string with 127 and display the result.

Theory -

a) String -

The string is the one-dimensional array of characters the string is terminated by a null ('\0') Each and every character in the array allocted one byte of memory and the last character must always be 0. The end of string is identified by using character ('\0') string are defined as an array of characters. the difference between a character array and a string is the string is terminated with a special character '\0'. declaring a string is as simple as declaring a one dimensional array. Below is the basic. square brackets can be used to acess elements of the string.

1. The declaration of string by char array for example.

```
char ch [9] = {'h', 'e', 'l', 'l', 'o', 'w', 'o', 'r',
                'l', 'd'};
```

As we know array index starts from 0, so it will be represented as in figure given below

0	1	2	3	4	5	6	7	8	9	10	11
h	e	l	l	o	w	o	r	l	d	\o	

while declaring string size is not mandatory so we can write the above code as given below

```
char ch [] = {'h', 'e', 'l', 'l', 'o', 'w', 'o',
              'r', 'l', 'd', '\o'};
```

2] The declaration of string by string by the string literal.

for example

```
char str [] = " helloworld ";
```

In such case '\0' will be appended at the end of the string by the compiler.

AND operation -

char str [] = " hellow world ";

In such case 'lo' will be appended at the end of the string by the compiler

AND operation -

The binary AND operation needs two inputs and one output. the inputs and one output. the inputs and result to a binary AND operation can only be 0 or 1. In binary AND operation if both the input are 1 then output will be 1 and if both inputs are 0 the output will be 1 and if both inputs are 0 the output will be 0. for two different inputs the output will be 0

Input		output
x	y	
0	0	0
0	1	0
1	0	0
1	1	1

XOR operation -

In XOR two inputs and one output in binary XOR (exclusive OR) operation. it

Pooja

is similar to ADD operation which takes two input and produces one result i.e one output the inputs and result to a binary XOR operation can only be 0 or 1 The binary XOR operation will always produces a 1 output if either of its inputs is 1 and will produces a 0 output if both inputs are 0 and 1

Input		output
x	y	
0	0	0
0	1	1
1	0	1
1	1	0

Algorithm -

1. Start
2. Take the input 'hellotworld' which is assigned to variable 'str'
3. perform AND and XOR operation between the string and 127
4 print the result
5 stop.