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H.Deepak
192210627

Fundamental of Computer
Assignment-2

1's Complement:

⇒ The 1's Complement is a mathematical operation that involves reversing all the bits in a binary number

⇒ It is used as a method to represent negative number in a system called signed magnetid notation

⇒ The 1's complement of a binary number is obtained by flipping all the 0s to 1s and all the 1s to 0s

Sample:

1101

1's complement : 0010

The 1's is changed to 0 and zero is changed to 1's

2's Complement

⇒ It is the most commonly used method in digital Computing for handling negative numbers and simplify arithmetic operations.

⇒ In the 2's complement representation, the most Significat bit (MSB), which is the leftmost bit, serves as the sign bit, with 0 representing a positive number and 1 representing a negative num

For Example:

Step 1

Change it to 1's complement:

```
  1 1 0 1 0 1 0 1
  0 0 1 0 1 0 1 0
        +       1
  ---------------
  0 0 1 0 1 0 1 1   → 2's complement
  ---------------
```

Step 2:

Add 1

⇒ The 2's complement representation ensures that there is a unique representation for 0 unlike one's complement.