10/9/205 Bitwise operator

& | ~ >> <<   formula (2^n)
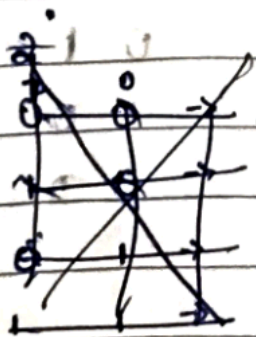
    8 + 4 + 2 + 1

2^3 2^2 2^1 2^0

1bit → 0, 1

2bit → → 0, 1, 2, 3

3bit → → 0, 1, 2, 3, 4, 5, 6, 7

4bit → → 0, 1, 2, 3 ... 15

2^0

0 → 0

1 → 1

2^1

2	9	
0	0	→ 0
0	1	→ 1
1	0	→ 2
1	1	→ 3

```
12 ->    1   1    0  0
 5 ->    0   1    0  1
logic 1 or   1   1    0  1  -> 13
```

```
12 =>    1   ,    0  0
 5 =>    0   1    0  1
logic & Not   0   1  0  0 -> 4
```

```
r  4        1   1    0  1
4  8        1       1  0  -> 1
  ->2           1  0  -> 2
                        3
```

```
1   1    0   1
    1   1    0  -> 1
        1   1  -> 2
                3
```

```
    1   1    0  1
    1   1  0   1  0
  1   1  0  1   0  0
  32  16
```

nested if else:

Syntax:

```
if (Cond1): # outer if
    if (Cond2): # inner if
        Statement of inner if
    else:
        Statement of inner else
else:
    Statement of outer else
```

example program:

```
n = int (input())

if (n >= 0):
    if (n > 0):
        print(" +ve")
    else:
        print(" zero")
else:
    print(" -ve")
```