Chapter 6:

Decimal to Binary – divide by 2 until quotient becomes 0

Binary to Decimal – Multiply from right to left in increasing order of 2 to the power 1,2,3,4,…

Common Number:

0 – 00

1 – 01

2 – 10

3 – 11

4 – 100

5 – 101

6 – 110

7 – 111

8 – 1000

9 – 1001

10 - 1010

Two’s Compliment:

Most Significant Bit (MSB) it is of great importance as it tells us about the sign of any number i.e it is positive or negative.

If MSB is 0 the number is positive

If MSB is 1 the number is negative

How to determine the MSB?  
int n=10;

Binary: 01010 this 0 here represents MSB.

When converting decimal to binary:

1. Convert to Binary form
2. Prefix with a 0
3. Ones compliment i.e change 0 with 1 and 1 with 0.
4. Add +1.

Int n=10;

1. 1010
2. 01010
3. 0101
4. 0101  
    +1

10110

When Converting binary to decimal

1. Ones compliment
2. +1

Chapter 7: Bitwise Operators

Bitwise & (and)

0 & 0 – 0

0 & 1 – 0

1 & 0 – 0

1 & 1 – 1

Bitwise | (or)

0 | 0 – 0

0 | 1 – 1

1 | 0 – 1

1 | 1 – 1

Bitwise ^ (XOR)