BIT MANIPULATION

011011

00110

Binary Number System

0 & 1

Binary Number System

0 & 1

Decimal to Binary (4)

Binary to Decimal (100)

Bit-wise Operators

Binary AND &

Binary OR |

Binary XOR ^

Binary One's Complement ~

Binary Left Shift <<

Binary Right Shift >>

Binary AND &

Rules 5 & 6 A = 0101 B = 0110

Binary OR |

Rules 5 & 6 A = 0101 B = 0110

Binary XOR ^

Rules 5 ^ 6 A = 0101 B = 0110

Binary One's Complement ~

Rules -5 A = 0101

Binary Left Shift <<

Rules

a << b = a * 2^b

5 << 2

A = 000101

Binary Right Shift >>

Rules

6 >> 1

A = 000110

a >> b = a / 2^b

Question 1

Check if a number is Odd or Even

Operations

Get ith bit

Set ith bit

Clear ith bit

Update ith bit

val = 0 or 1

Clear Last i bits

n = 1111, i = 2

Clear Range of bits

n = 100111010011, i = 2, j = 7

Question 2

Check if a number is a Power of 2 or not.

Question 3

Count Set Bits in a Number.

Fast Exponentiation

a^N

3^5

5^3