Class 06

Sunday, June 4, 2023 10:09 PM

Bitwise

int v = 13 → 8 + 4 + 1

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

1 1 0 1

32 bit

00000000 00000000 00000000 00001101

4B 4B

int v = 13 → 0000 1101

int p = -7 → 1111 1001

0000 1001 = 9

AND

OR

XOR

int r = v ∧ p

cout << r << endl;

v = 0 0 1 x 1 1 0 1

T = & 0 0 0 1 1 0 0 0

v & T = 0 0 0 x 0 0 0 0 > 0

T = 1 << 4

v = 0 0 1 0 1 1 0 1

~T = 1 1 1 0 1 1 1 1

v & (~T) = 0 0 0 1 1 0 1

x | 0 = x

x | 1 = 1

T = 1 << pos

$v \& (\sim T) = 0000\,1101$

$x \oplus 1 = \bar{x}$

$v = 00x0\,1101$

$T = 0011\,0000$

$00x0\,1101$

$T = 1 << pos$

$value = value \& (\sim T)$

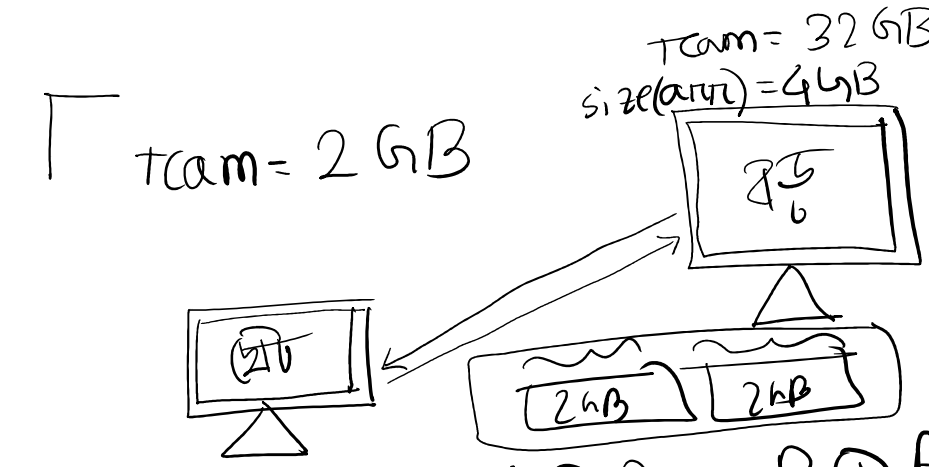
XOR

$0 \oplus 0 \rightarrow 0$

$1 \oplus 0 \rightarrow 1$

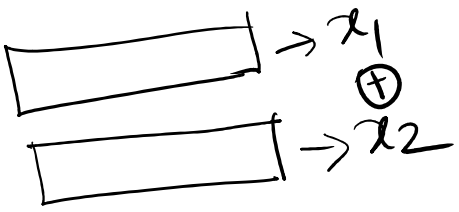
$0 \oplus 1 \rightarrow 1$

$1 \oplus 1 \rightarrow 0$



$\bar{2}\ \bar{1}\ \bar{2}\ \textcircled{3}\ \bar{1}$

$A \oplus B = B \oplus A$



= unique

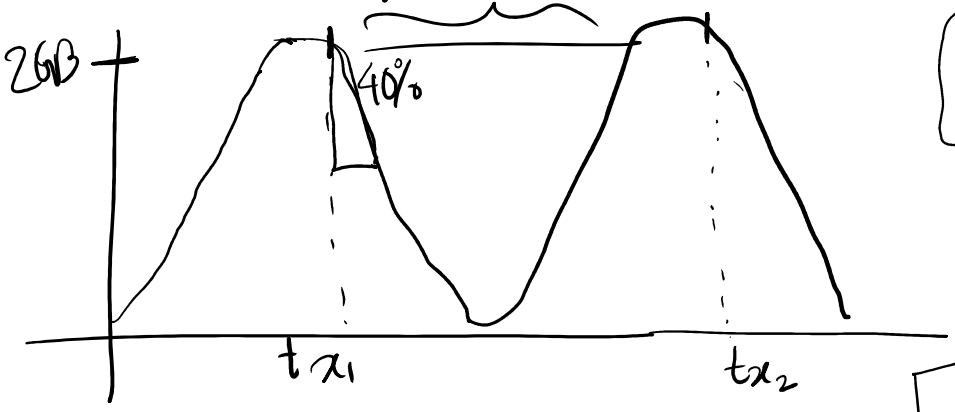
Socket

x_1 x_2

$x_1 \oplus x_2$

RAM = 2 GB

channel



Map Reduce

int v = 0001 0000

v-1 = 0000 1111

v & (v-1) = 0000 0000

v

v-1

2^x

16 = 10000

15 = 01111