Day 8 - Bitwise Tricks

01 July 2022 08:19

n = 0101 — 5 (0010)

set 1 to n'th bit

$n = n \mid (1 << 1)$

n = 1010 — 10 (1101)

set 0 to n'th bit

$n = n \,\&\, \sim(1 << 1)$

n = 0101 — 5 (0100)

Get n'th bit

$ans = n \,\&\, (1 << 2)$

n = 0101 — 5

n'th 1 if 0, 0 — 1

toggle

1010 ^ 0100 = 1110

0101 ^ 0100 = 0001

$n = n \wedge (1 << 2)$

set 0 to right bit

n = 0101 → 0100; 1010 → 1000; 1100 → 1000

$n = n \,\&\, (n-1)$

get right most 1's bit

n = 0101 → 0001; 1010 → 0010; 1100 → 0100

$n = n \,\&\, (-n)$

$n = n \,\&\, ((\sim n)+1)$

$n = n \,\&\, \sim(n-1)$

0101 — 5, 0001 — 1 → 0001

1010 & 0110 = 0010

0101 → 0110

0101 ← n, & 1011 ← -n = 0001

0101 → 1010 → 1011 = ~n + 1

0011 + 1 = 0100

1100 & 0100 = 0100

→ [2, 2, 5, 7, 5, 1, 3, 3, 1]

[2, 2, 5, 7, 5, 1, 3, 4, 3, 1]

ans ^ = 2

ans = 4 ✓

ans = 7 ✓

5 & -5

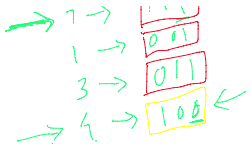
...0101, ~ 1010, + 1

(1)1111011 ← mem

-5 + 2: 11111011 + 010 = 11111101

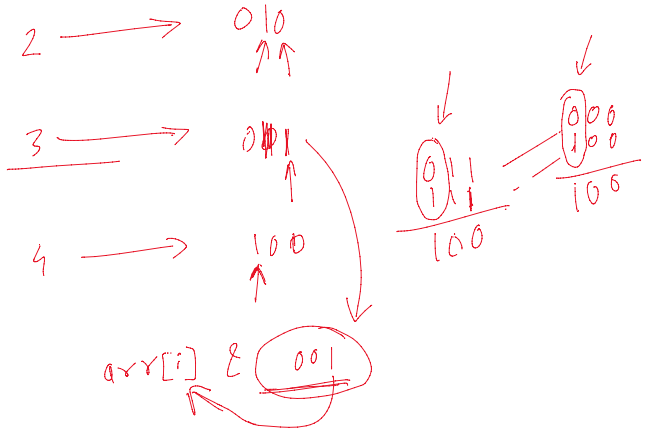
1s → 00000010 + 1 = 000011 → -3

00000100 + 1 = 00000101 = -5



D

ans = 7 ✓



(1)

a = 10
b = 5

swap

temp = a
a = b
b = temp

a = 5
b = 10