CPCFI

Lecture:

BITWISE OPEN ATVOWS

Unit:

S-PYNAMIC PROGRAMMING I

Instructor: Niescon

INTERCYTEMS -> BINARY

$$23 = 16 + \frac{7}{4} = 16 + \frac{4}{4} + \frac{3}{3} = 16 + \frac{4}{4} + \frac{2}{2} + 1$$

$$= 2^{4} + 2^{2} + 2^{1} + 2^{6}$$

$$= 10 | 1 | 1 | (2)$$

BINARY - INTUEBRER

$$|0||1| = 2^{4} + 2^{2} + 2^{0} = 16 + 4 + 2 + 1 = 23$$

$$2^{4} 2^{5} 2^{2} 2^{2} 2^{0}$$

WEICHL OPPENATIONS

4	B	! A	ALLB	AIIB	AMB
0	•	•	0	0	0
o	1	1	D	ı	Ĭ
1	o	0	0	i	1
		0	ı	1	O
1	•		·		

	B	!=	^
0	0	0	0
υ	l	ı	1
١	0	•	١
1	ı	D	٥

BITWISTE OPTENDATIONS

$$23 = 10101(2)$$
 $69 = 1000[0](2)$
 $23 88 69$

BITWISE SIMFTS

$$0 = 5 = 101(1)$$

$$0 = 3 = 011(1)$$

$$5 < < 3 = 101_{(1)} < 3 = 101000 = 40$$

$$5 < < 3 = 5 \cdot 2^3 = 40$$

$$128 = 1000000_{(1)} = 1 << 7 = \frac{1 \cdot 2^{7}}{}$$

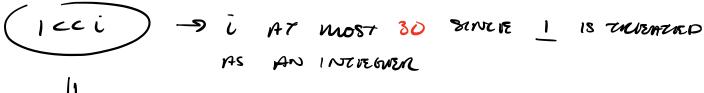
"FLOOK FUNCTION

$$\alpha = S = |O|(1)$$
 $b = 3 = |O|(1)$
 $S >> 3 = |O|(1) >> 3 = |O|(1)$
 $S >> 3 = |O|(1) >> 3 = |O|(1)$

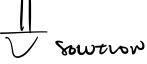
$$a = 23 = 1011|_{(2)}$$
 $\begin{cases} 23 >> 3 = 1011|_{(2)} >> 3 = 10 \text{ M/}_{(2)} = 2 \\ b = 3 = 011(1) \end{cases}$ $\begin{cases} 23 >> 3 = \frac{23}{2^3} \\ 23 >> 3 = \frac{23}{2^3} \end{cases} = \begin{bmatrix} \frac{23}{8} \\ \frac{2}{8} \end{bmatrix} = 2$

BIWARY REPRESENTATION OF A NUMBER

LIMPORTANT: OVERFLOW



0 000 00



IULL << i

BITSTETS

THE COMPUTER WORD STREE

Low 64

. WE UAN AT MUST NUMBER (1 << 63)

SOUTION ?

Lo BITSTETS - bitset < 64) a;

No promuteur

- . ~ WONGMEN BINARY MASK "
- · W STET WITH QUICK INTUENSTECTIONS "
- -> bool A[20] : 20 BYTHES
- -> bitset<20> A: 20 BITS //