

9/3/25

2's Complement Integers

DATA TYPE

ADD

3

SUB

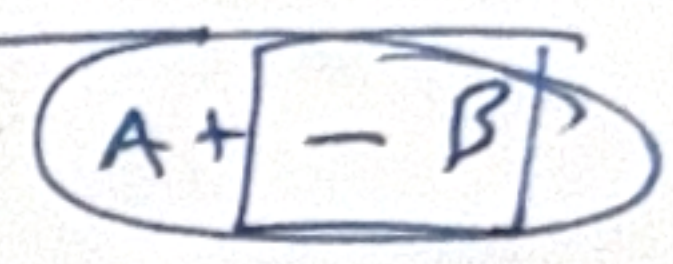
A - B

character type

ASCII

00011

A, B



(6.023) x 10²³

~~FLUAT~~

$$-8 \leq x \leq 7$$

A * 11

Logical Variables

$$-2^{15} \leq x \leq 2^{15} - 1$$

A + A + A + ...

7AM

WEEKDAY

11AM

SUN/RAIN

Truth Table



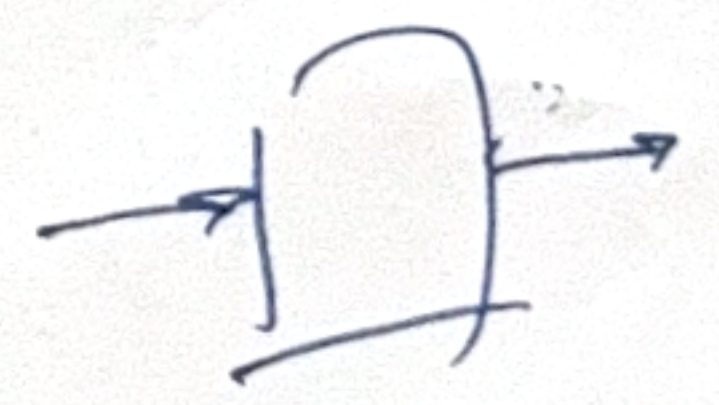
INPUT COMBINATIONS

7	11	WK	Wk	
0	0	0	0	0
0	0	0	1	0
1	0	1	0	1
1	0	1	1	1

A	OUT
0	1
1	0

COMPLEMENT
INVERTER

A	OUT
0	0
1	1



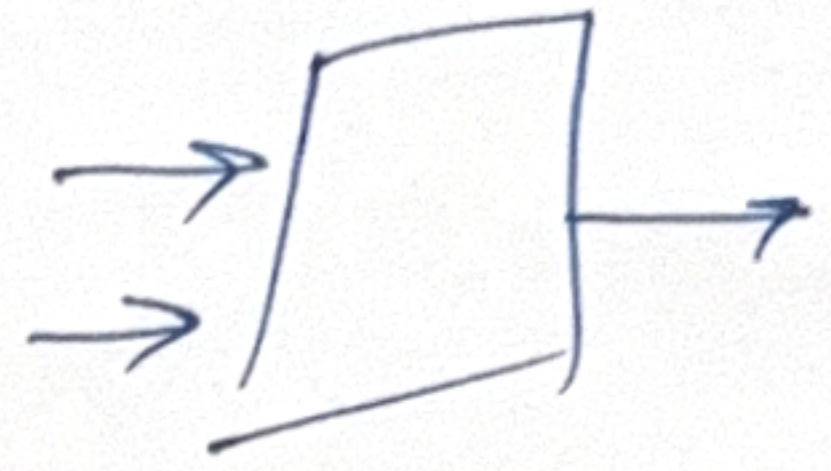
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2

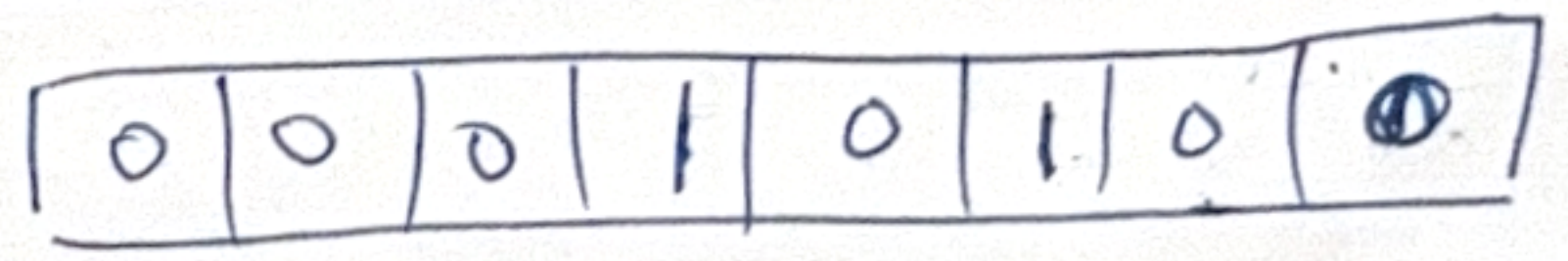
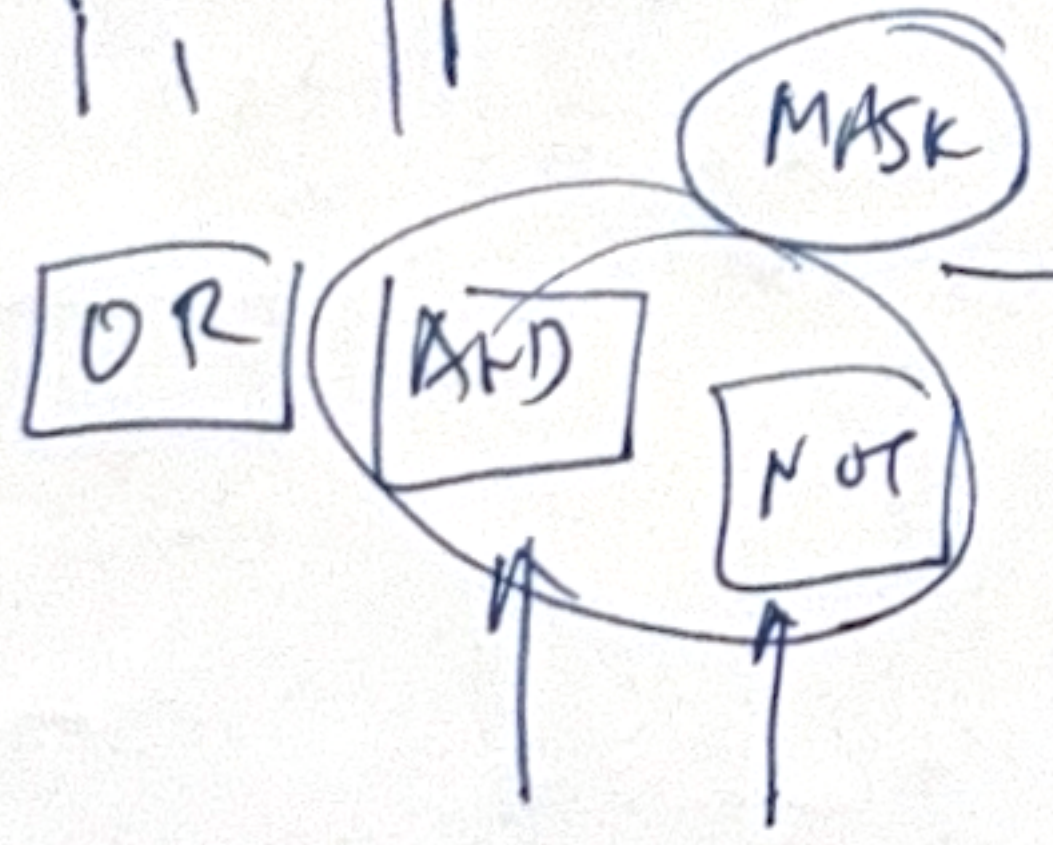
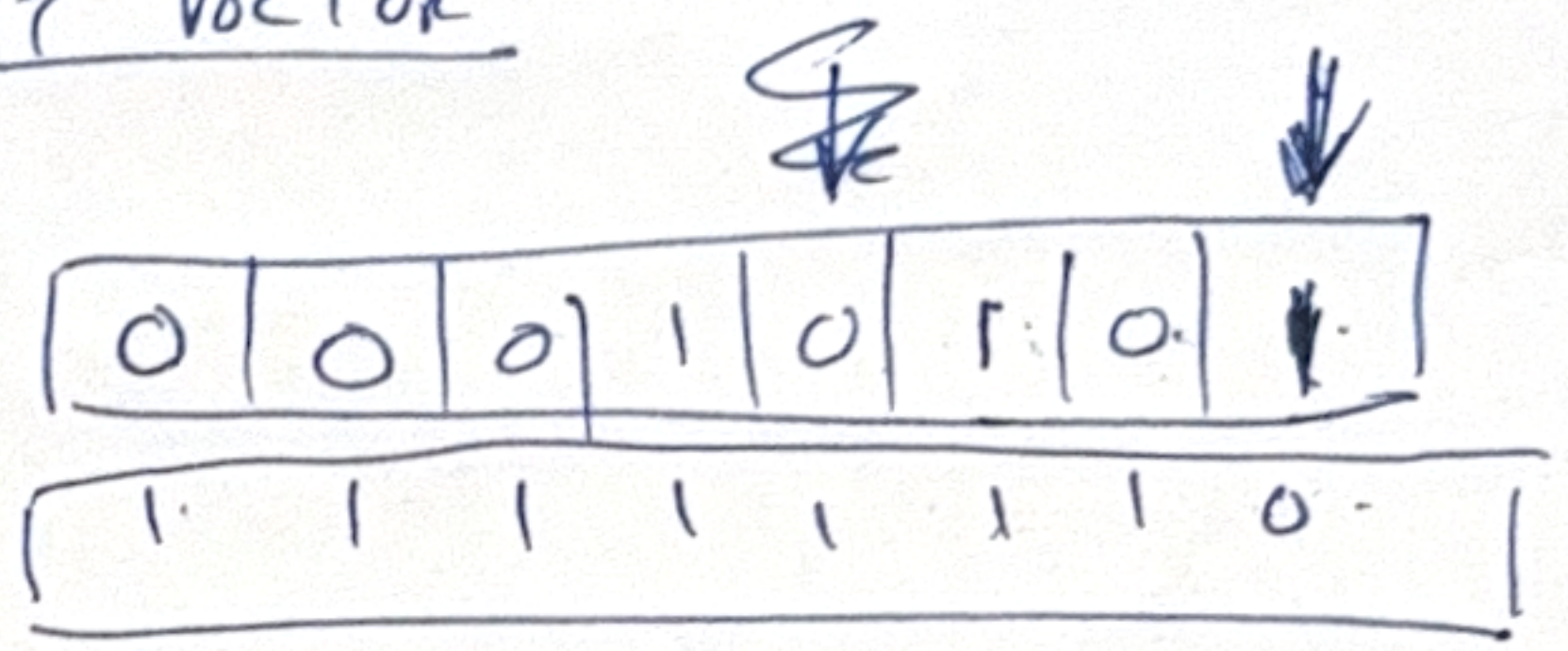
C	A	B	Output	
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	1	0
1	0	0	1	0
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

BIT

Bit Manipulation



BIT VECTOR



AND

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3

AND

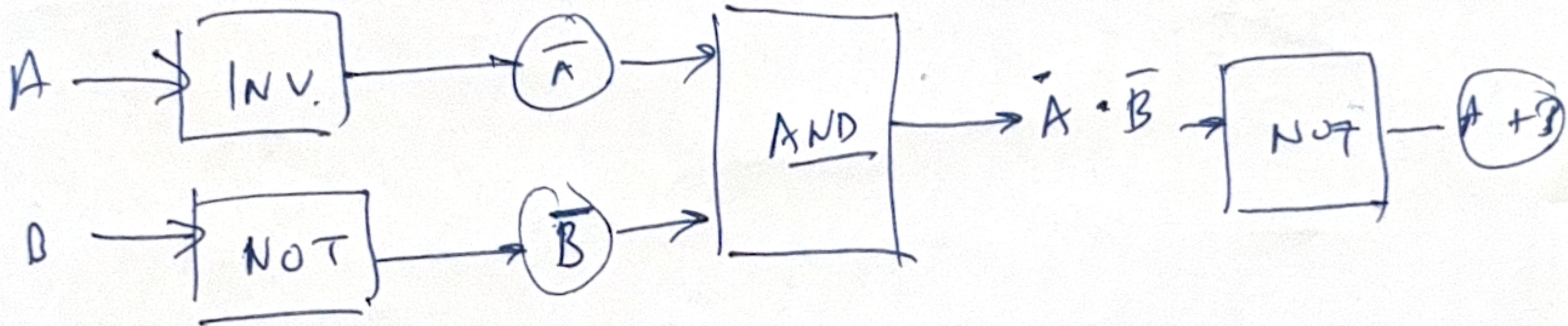
NOT

A	B	B	$\bar{B}$	$\bar{A}$	$\bar{B} \cdot \bar{A}$	OR
0	0	0	1	1	1	0
0	1	1	0	1	0	1
1	0	0	1	0	0	1
1	1	1	0	0	0	1

$$\overline{\bar{A} + \bar{B}} = A \cdot B$$

DE MORGAN
LAW

$$\overline{\bar{A} \cdot \bar{B}} = A + B$$



B' $\neg B$ $\bar{B}$

$B \cdot A$

BA

$A + B$

$A \vee B$

$A \cup B$

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4

HEXA DECIMAL

0101 1110 1011 1000
5 E B 8

101

1010 A

1011

1100

1101

1110

1111 F