CS & IT



ENGINEERING



Combinational Circuit

Lecture No. 9



By- CHANDAN SIR



TOPICS TO BE COVERED 01 FS

02 Serial Adder

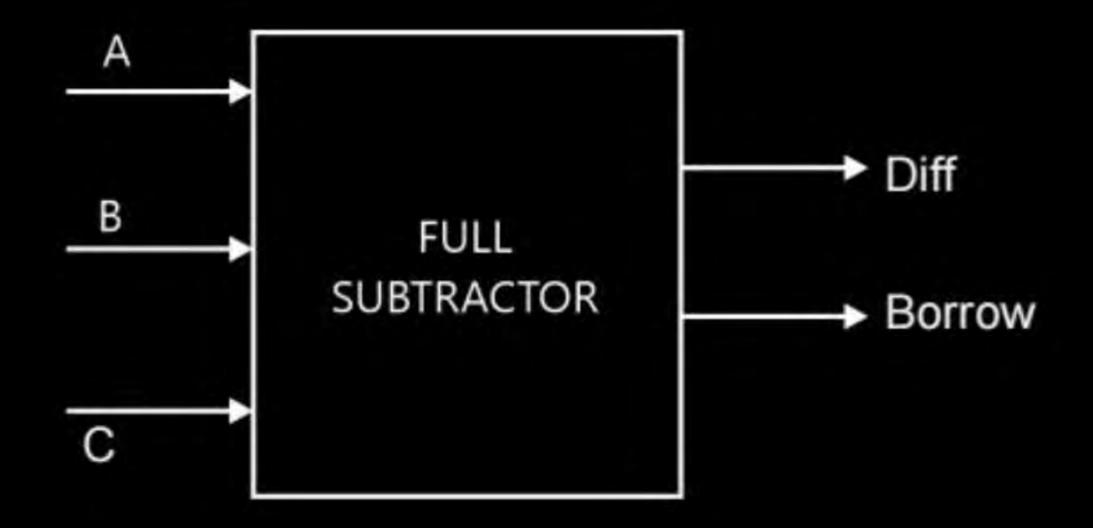
03 Parallel Adder

04 Question Practices

05 Discussion

FULL SUBTRACTOR





FULL SUBTRACTOR



(A-B)-C

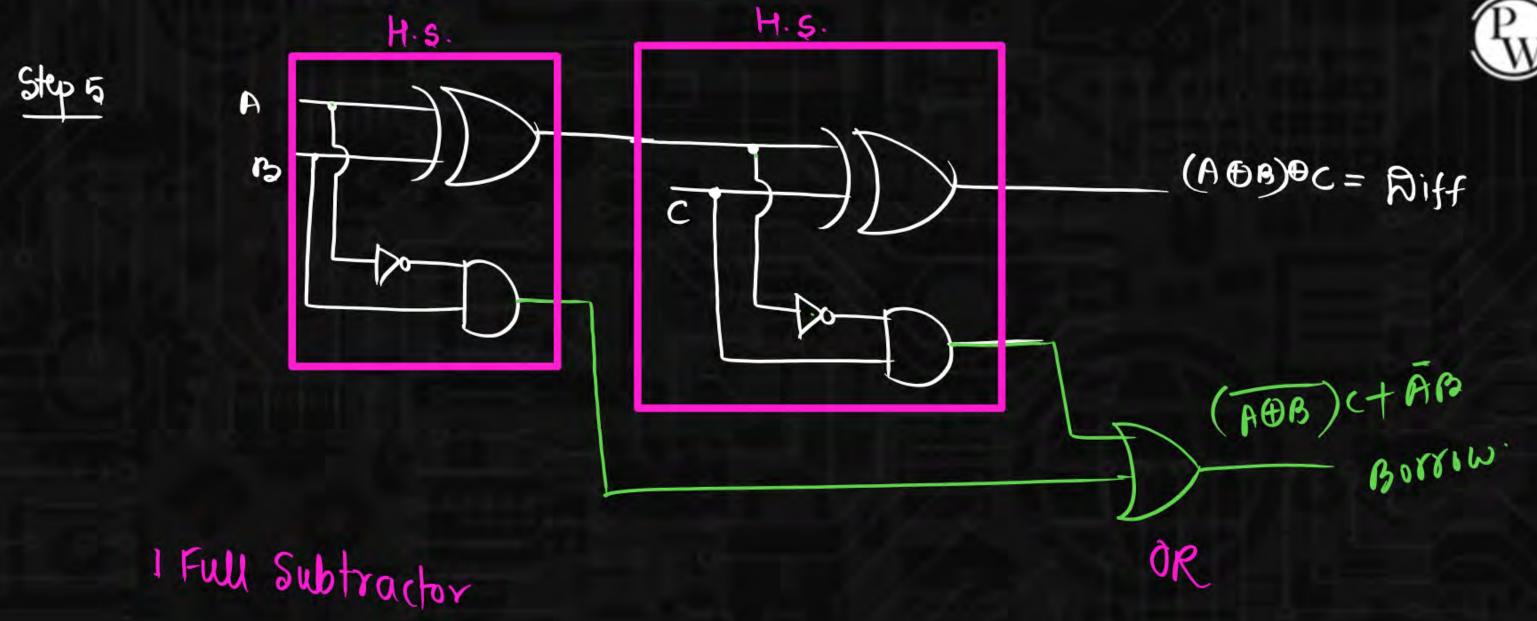
	INPUT			OUTPUT	
	A	В	С	Diff	Borrow
0	0	0	0	0	0
1	0	0	1	1	1
2	0	1	0	1	1
3	0	1	1	0	1
4	1	0	0	1	0
5	1	0	1	0	0
6	1	1	0	0	0
7	1	1	1	1	1

Pw

$$\beta$$
iff = $\geq m(1,2,4,7) = A \oplus B \oplus C$

$$Borrow = Sm(1,2,3,7)$$

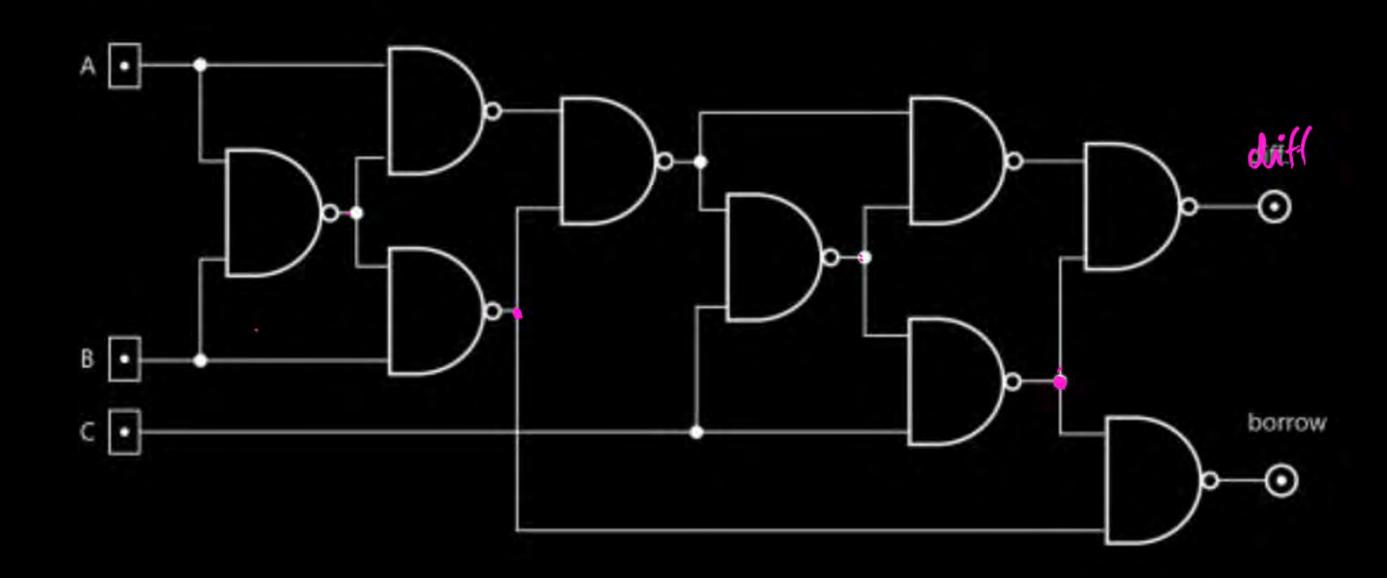
$$= (\bar{A}\bar{B} + AB) (+ \bar{A}B) (\bar{C}+C)$$



= ZHIST 1 OR GATE

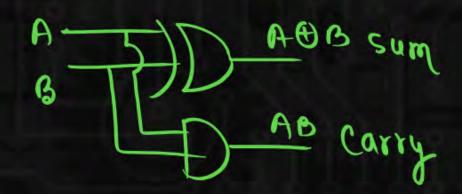
FULL SUBTRACTOR





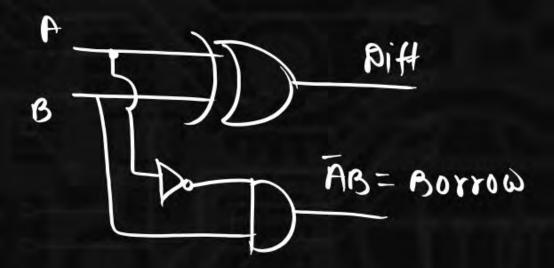
Sum = ABB

Carry = AB



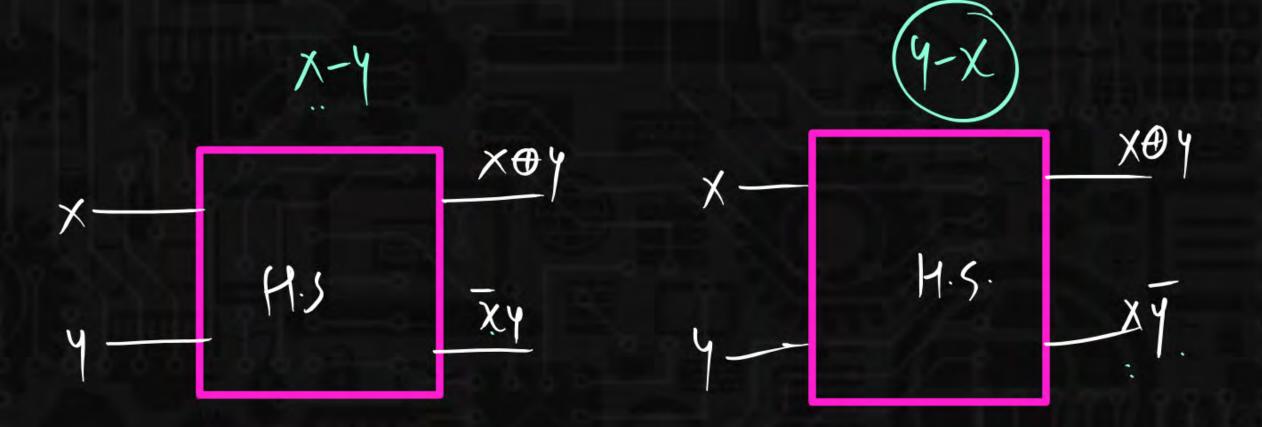
NAIND } (5)

H.S.









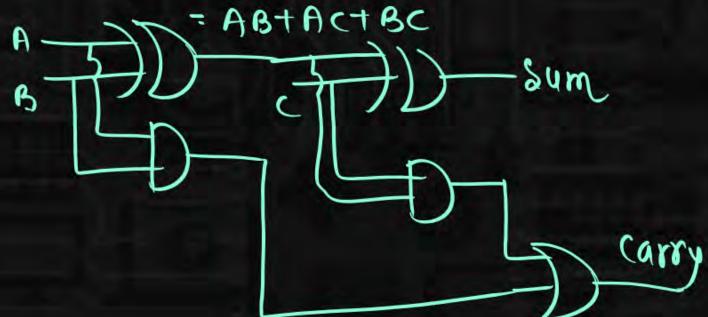


SUM=ABBOC

$$\alpha \gamma \gamma \gamma = \sum m(3,5,6,7)$$

$$= (ABB)C+AB$$

$$= AB+AC+BC$$



NAMD/NOR= 9

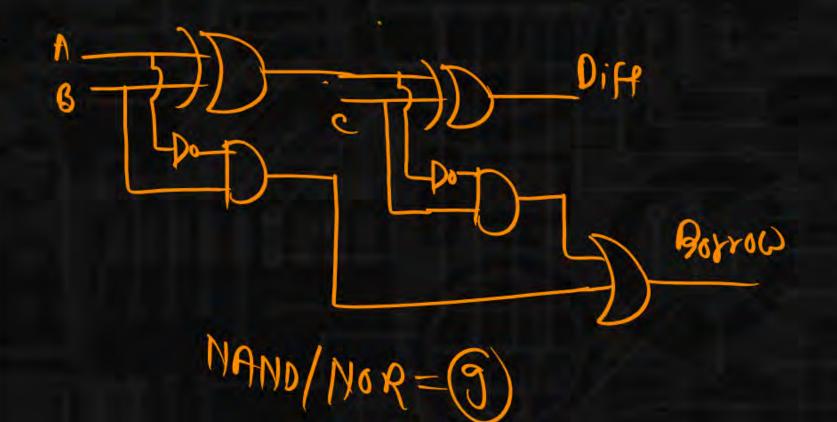




Mitt = ABBBC

Borrow=
$$\leq m(1,2,3,7)$$

= $(\overline{A} \oplus B) C + \overline{A} B$
= $\overline{A}B + \overline{A}C + BC$



SERIAL ADDER

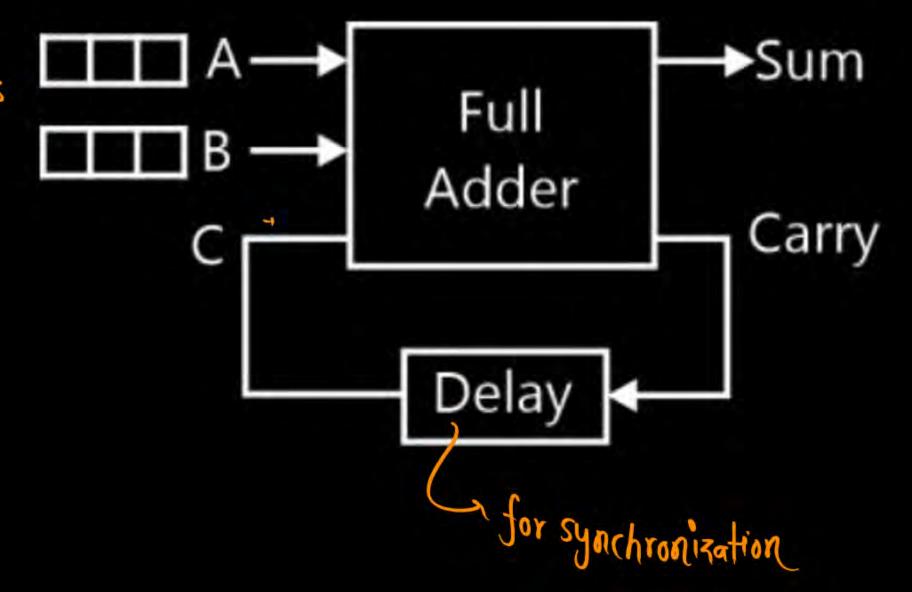
one by one addition"



Tet is slowest adder among all the adder.

h-> number of bits

Theray Helay of





Thank you



