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Course – CSE 231.L

LAB 05 Performance work

Operation	M	A	B	C	S4 S3 S2 S1
7+5	0	0111	0101	0	1100
4+6	0	0100	1010	0	1010
9 + 11	0	1001	1011	1	0100
15 + 15	0	1111	1111	1	1110
7 – 5	1	0111	0101	0	0010
4 – 6	1	0100	0110	0	1110
11 – 2	1	1001	0110	0	1001
15 – 15	1	1111	1111	0	0

Experimental data (4-bit Binary Adder-Subtractor)

Decimal Value	Binary Sum	Binary Sum	Binary Sum	Binary Sum	Binary Sum	BCD Sum	BCD Sum	BCD Sum	BCD Sum	BCD Sum
	C_{out}	Z_3	Z_2	Z_1	Z_0	C	S_3	S_2	S_1	S_0
0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	1	0	0	0	0	1
2	0	0	0	1	0	0	0	0	1	0
3	0	0	0	1	1	0	0	0	1	1
4	0	0	1	0	0	0	0	1	0	0
5	0	0	1	0	1	0	0	1	0	1
6	0	0	1	1	0	0	0	1	1	0
7	0	0	1	1	1	0	0	1	1	1
8	0	1	0	0	0	0	1	0	0	0
9	0	1	0	0	1	0	1	0	0	1
10	0	1	0	1	0	1	0	0	0	0
11	0	1	0	1	1	1	0	0	0	1
12	0	1	1	0	0	1	0	0	1	0
13	0	1	1	0	1	1	0	0	1	1
14	0	1	1	1	0	1	0	1	0	0

15	0	1	1	1	1	1	0	1	0	1
16	1	0	0	0	0	1	0	1	1	0
17	1	0	0	0	1	1	0	1	1	1
18	1	0	0	1	0	1	1	0	0	0
19	1	0	0	1	1	1	1	0	0	1

Experimental Data (BCD Adder)

Operations	A	B	Overflow Carry	SUM
9+0	1001	0000	0	1001
9+1	1001	0001	0	1010
9+2	1001	0010	0	1111
9+3	1001	0011	0	1100
9+4	1001	0100	0	1101
9+5	1001	0101	0	1110
9+6	1001	0110	0	1111
9+7	1001	0111	1	0000
9+8	1001	1000	1	0001
9+9	1001	1001	1	0010

Today's summery- Today we learned about binary addition and subtraction. Throughout the class, it was the most important lab of all time. We learned about some new concepts like half binary adders, full binary adders. How to add and subtract binary adders using ic diagram, Bcd addition & implementation of BCD adder using IC74293 & much more.