Lab 3-Homework

10-02-2020 CS 254-Digital Logic Design Lab

The following digital circuits must be designed using VHDL, and simulated and tested using Quartus.
The design should be **Behavioural.**

Q. Design a 4-bit arithmetic circuit which should have:

1. 4-bit adder-subtractor similar to the homework
2. 4-bit NAND logic function
3. 2-bit multiplier same as the homework

Inputs	Select line(S_1S_0)	Function	Output
A_{3-0}, B_{3-0}	00	Adder	Z_{4-0}
A_{3-0}, B_{3-0}	01	Subtractor	Z_{4-0}
A_{3-0}, B_{3-0}	10	NAND	Z_{3-0} (Rest zeros)
A_{1-0}, B_{1-0}	11	Multiplier	Z_{3-0} (Rest zeros)