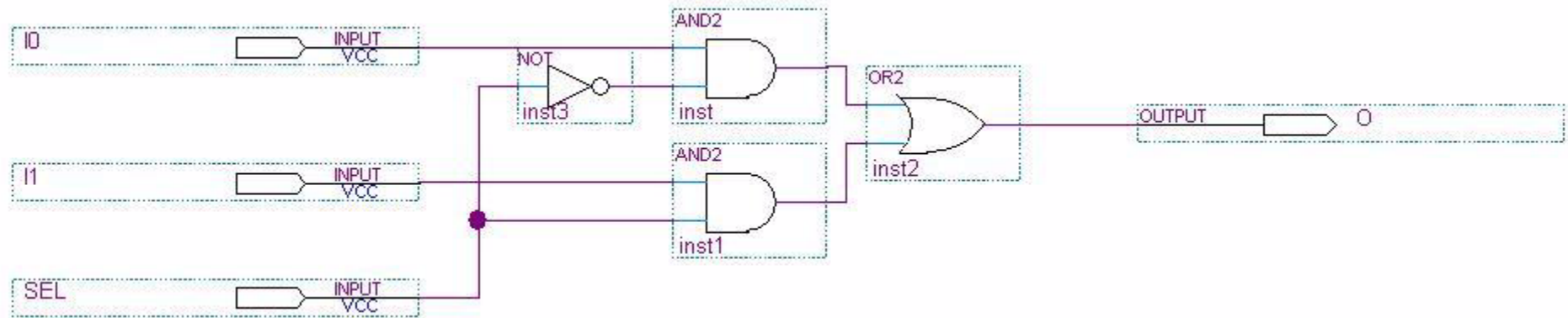# Lab-2

Multiplexers- Top level Representation of 8-bit Adder and Subtractor

After creating the .bdf please go to File/Create or Update/Create Symbol Files for Current file.

2-bit Multiplexer

- As you could see the above slide comprises of Multiplexer, and it can be used for many simple and complex logic circuits.
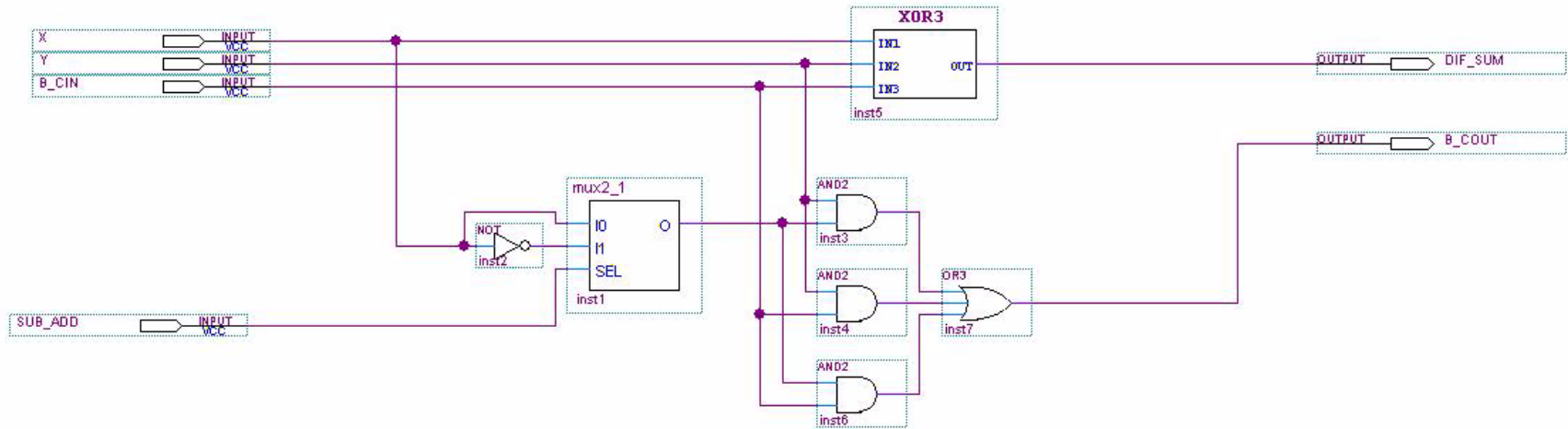
Truth Table

S0	S1	Y
0	0	I0
0	1	I1
1	0	I2
1	1	I3

So, final equation,

$Y = S0'.S1'.I0 + S0'.S1.I1 + S0.S1'.I2 + S0.S1.I3$

Full Adder Subtractor

We could use our primitive logic gate 3 input Exclusive OR gate and use one of our multiplexer that we have created.

Using the help of logic gates which are available in our primitive logic we can get the output of both sum and difference.

After creating the .bdf please go to File/Create or Update/Create Symbol Files for Current file.

Follow the same steps for 4-bit adder/ subtractor and 8-bit Adder Subtractor.