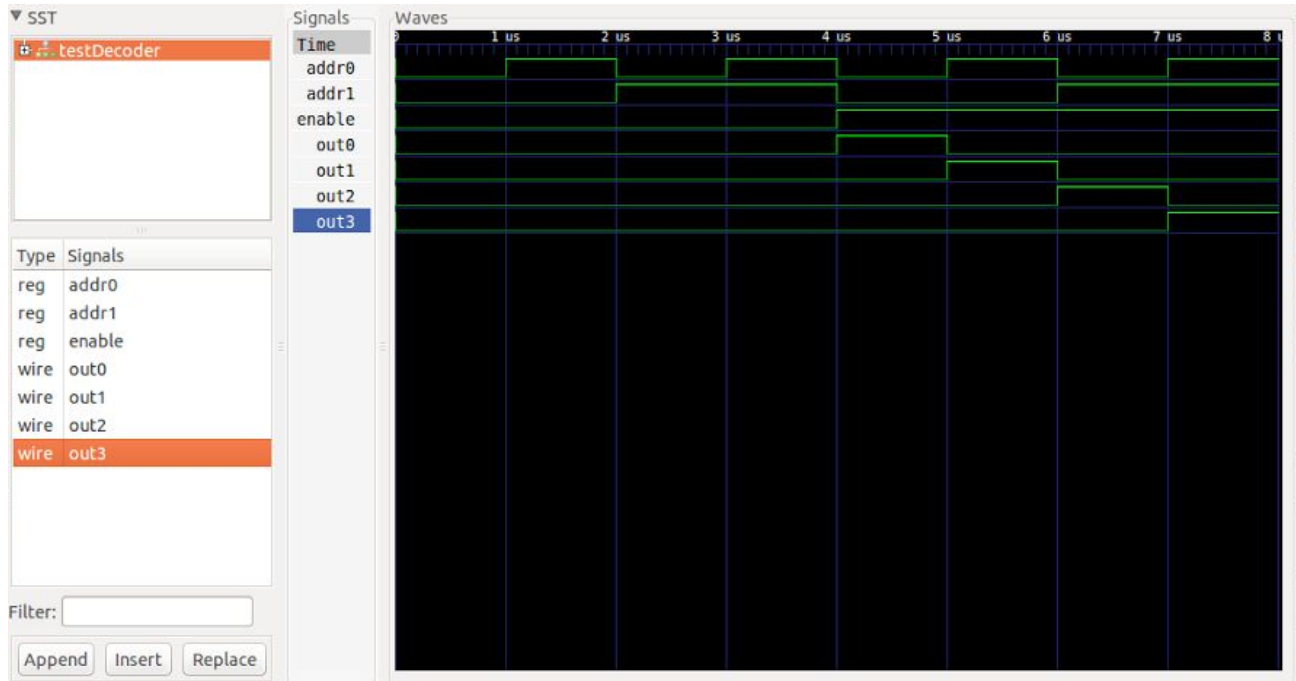CompArch HW2
Apurva Raman

Decoder:
Waveform:

Decoder Testbench:

En A0 A1| O0 O1 O2 O3 | Expected Output
0 0 0 | 0 0 0 0 | All false
0 1 0 | 0 0 0 0 | All false
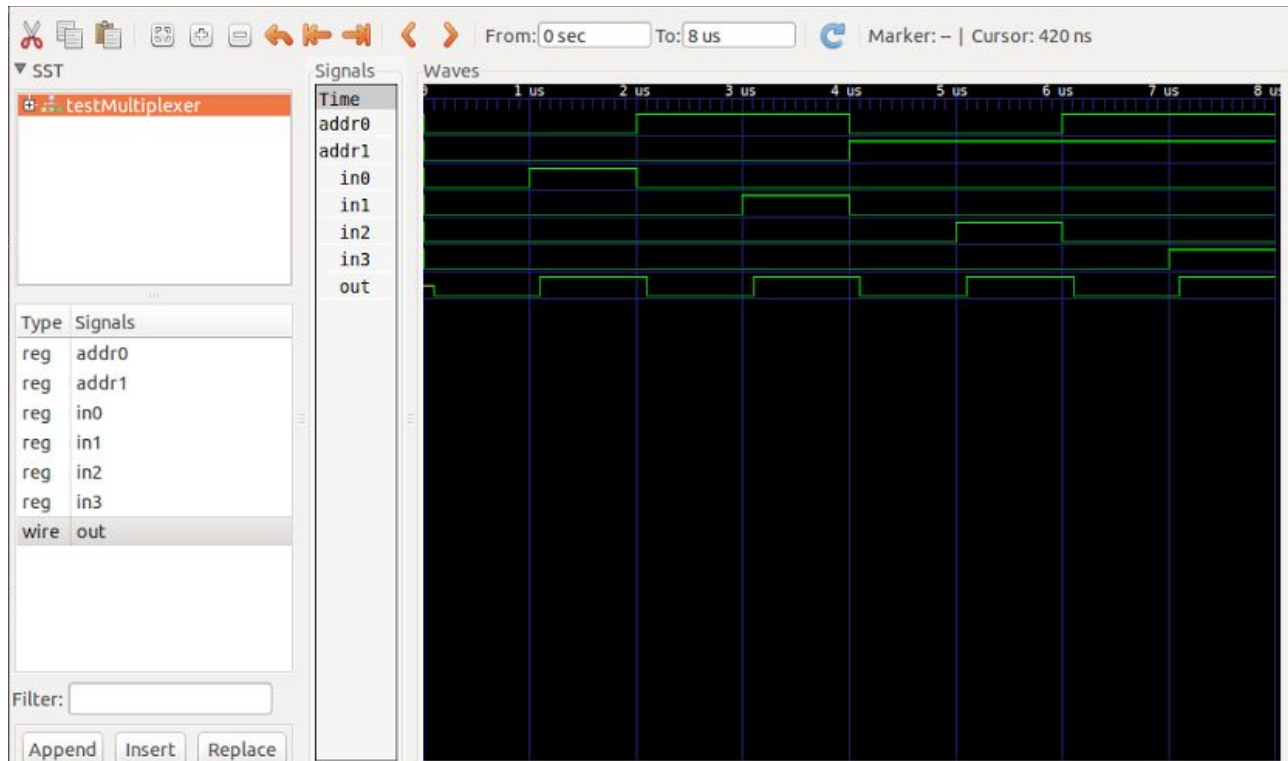0 0 1 | 0 0 0 0 | All false
0 1 1 | 0 0 0 0 | All false
1 0 0 | 1 0 0 0 | O0 Only
1 1 0 | 0 1 0 0 | O1 Only
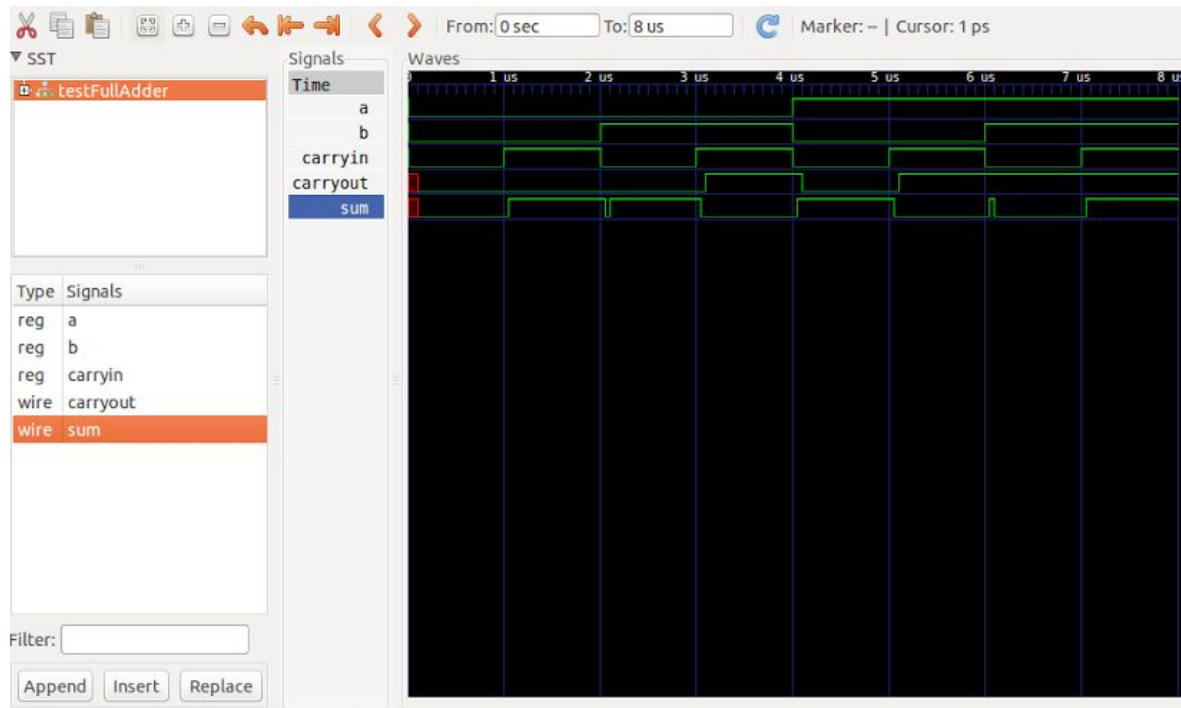1 0 1 | 0 0 1 0 | O2 Only

Mux:
Waveform:

Mux Testbench:

```
I0 I1 I2 I3 A0 A1 | Output  | Expected Output
0  0  0  0  0  0  |    0    |        0
1  0  0  0  0  0  |    1    |        1
0  0  0  0  1  0  |    0    |        0
0  1  0  0  1  0  |    1    |        1
0  0  0  0  0  1  |    0    |        0
0  0  1  0  0  1  |    1    |        1
0  0  0  0  1  1  |    0    |        0
0  0  0  1  1  1  |    1    |        1
```

Adder:
Waveform:

Adder Testbench:

A	B	Carryin		Sum	Carryout		Expected Output	
0	0	0	|	0	0	|	0	0
0	0	1	|	1	0	|	1	0
0	1	0	|	1	0	|	1	0
0	1	1	|	0	1	|	0	1
1	0	0	|	1	0	|	1	0
1	0	1	|	0	1	|	0	1
1	1	0	|	0	1	|	0	1
1	1	1	|	1	1	|	1	1