Basmala Moumneh
Student Number: 1006091676

1 to 6 Demultiplexer:

Data Input	Select Inputs			Outputs					
Data	S_2	S_1	S_0	Output0	Output1	Output2	Output3	Output4	Output5
Data	0	0	0	1	0	0	0	0	0
Data	0	0	1	0	1	0	0	0	0
Data	0	1	0	0	0	1	0	0	0
Data	0	1	1	0	0	0	1	0	0
Data	1	0	0	0	0	0	0	1	0
Data	1	0	1	0	0	0	0	0	1

6 to 1 Multiplexer:

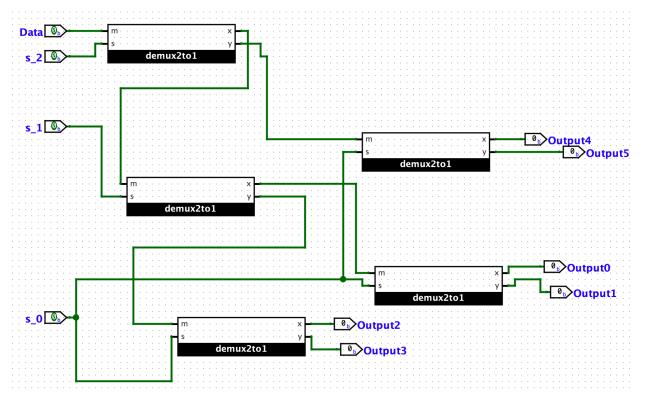| Select Inputs			Inputs						Output
S_2	S_1	S_0	Input0	Input1	Input2	Input3	Input4	Input5	Output0
0	0	0	1	0	0	0	0	0	Input0
0	0	1	0	1	0	0	0	0	Input1
0	1	0	0	0	1	0	0	0	Input2
0	1	1	0	0	0	1	0	0	Input3
1	0	0	0	0	0	0	1	0	Input4
1	0	1	0	0	0	0	0	1	Input5

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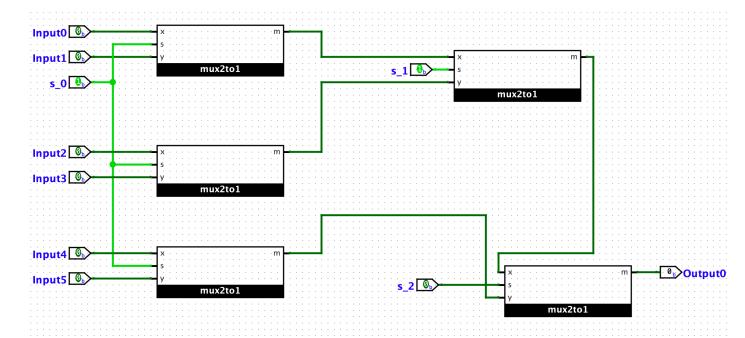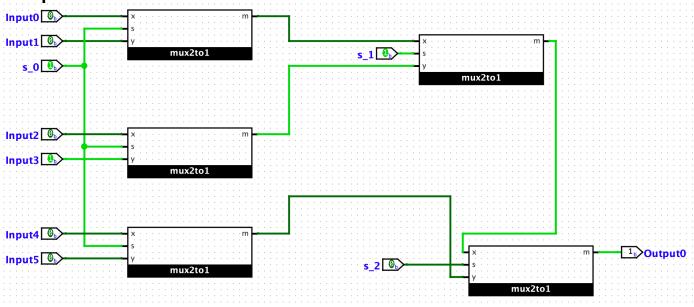
Circuits:

6 to 1 Multiplexer:

1 to 6 Demultiplexer:

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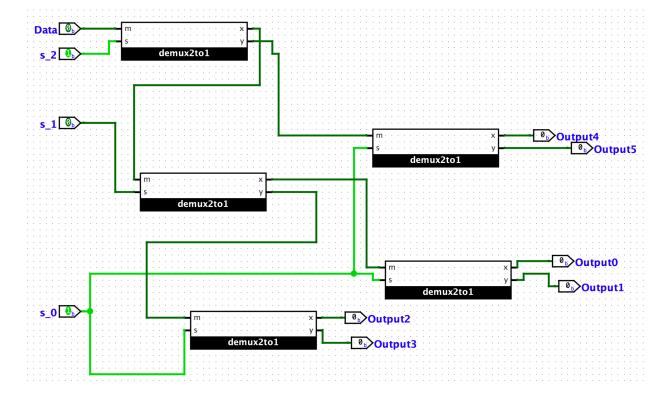## Screenshots of Correct Functionality:

6 to 1 mux – 011 (s_2 s_1 s_0)

→ **Input3 is 1**

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1 to 6 demux – 101 (s_2 s_1 s_0)

→ Data is 1