Episode 6.10 - Demultiplexers
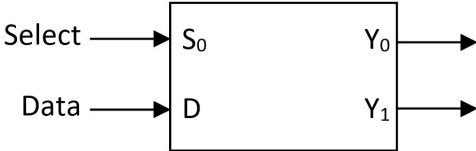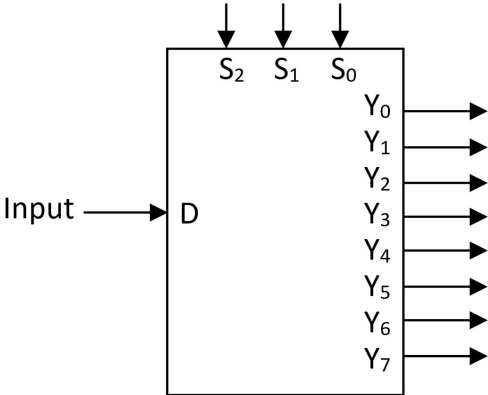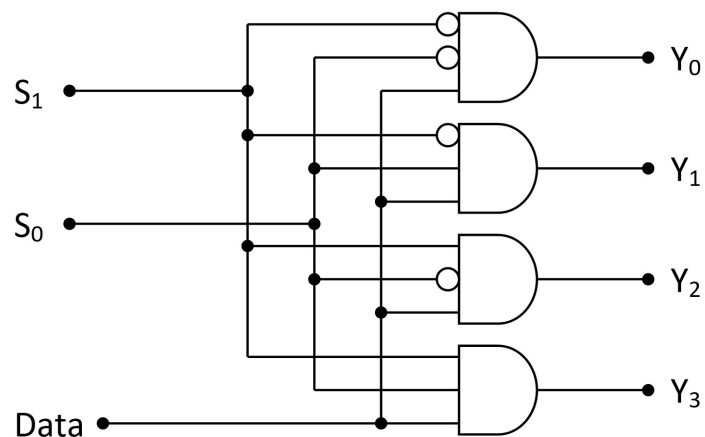
(Transcript URL: https://intermation.com/episode-6-10-demultiplexers/)

> **Show Description:** A demultiplexer takes a single data stream and routes it to a selected output channel, a bit like one of those old A-B printer switches we used to physically select which printer we were sending data to. In this episode, we show how to design one.

Podcast Timestamp	Supporting Details
2:08	*Block Diagram of a One-to-Two Demultiplexer* Select → S_0 Y_0 → Data → D Y_1 →
3:28	*Truth Table for an Active-High One-to-Four Demultiplexer*
5:44	*Block Diagram of a One-to-Eight Demultiplexer* S_2 S_1 S_0 Input → D Y_0 Y_1 Y_2 Y_3 Y_4 Y_5 Y_6 Y_7 →

Truth Table for an Active-High One-to-Four Demultiplexer

S_1	S_0	D	Y_0	Y_1	Y_2	Y_3
0	0	0	0	0	0	0
0	0	1	1	0	0	0
0	1	0	0	0	0	0
0	1	1	0	1	0	0
1	0	0	0	0	0	0
1	0	1	0	0	1	0
1	1	0	0	0	0	0
1	1	1	0	0	0	1

or

S_0	S_1	Y_0	Y_1	Y_2	Y_3
0	0	D	0	0	0
0	1	0	D	0	0
1	0	0	0	D	0
1	1	0	0	0	D

Podcast Timestamp	Supporting Details
5:58	***Complete Boolean Logic for an Active-High One-to-Four Demultiplexer*** S_1 S_0 Data → Y_0 Y_1 Y_2 Y_3
9:13	***Complete Boolean Logic for an Active-Low One-to-Four Demultiplexer*** S_1 S_0 Data → Y_0 Y_1 Y_2 Y_3