

N:1 Multiplexer

Data input : N-bit $Y = y_{N-1} \dots y_1 y_0$

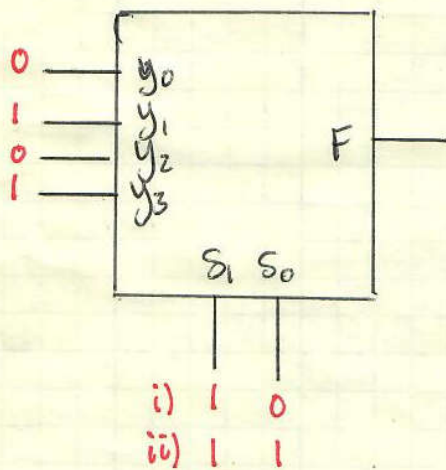
Data output : 1-bit F

Control : $\log_2 N$ bit $S = S_{\log_2 N-1} \dots S_1 S_0$

Status : None

Behavior : $F = y_S$

Ex: 4:1 Mux



Truth Table for 4:1 Mux - modified

S_1	S_0	F
0	0	y_0
0	1	y_1
1	0	y_2
1	1	y_3

$$F = S_1' S_0' y_0 + S_1' S_0 y_1 + S_1 S_0' y_2 + S_1 S_0 y_3$$

Building larger Mux from a collection of smaller muxes.

Ex: Build a 16:1 Mux from 4:1 Muxes

