

**Name:** mux\_3 (mux\_2\_to\_1)  
**Reference name:** mux\_2\_to\_1  
**Type:** Others.



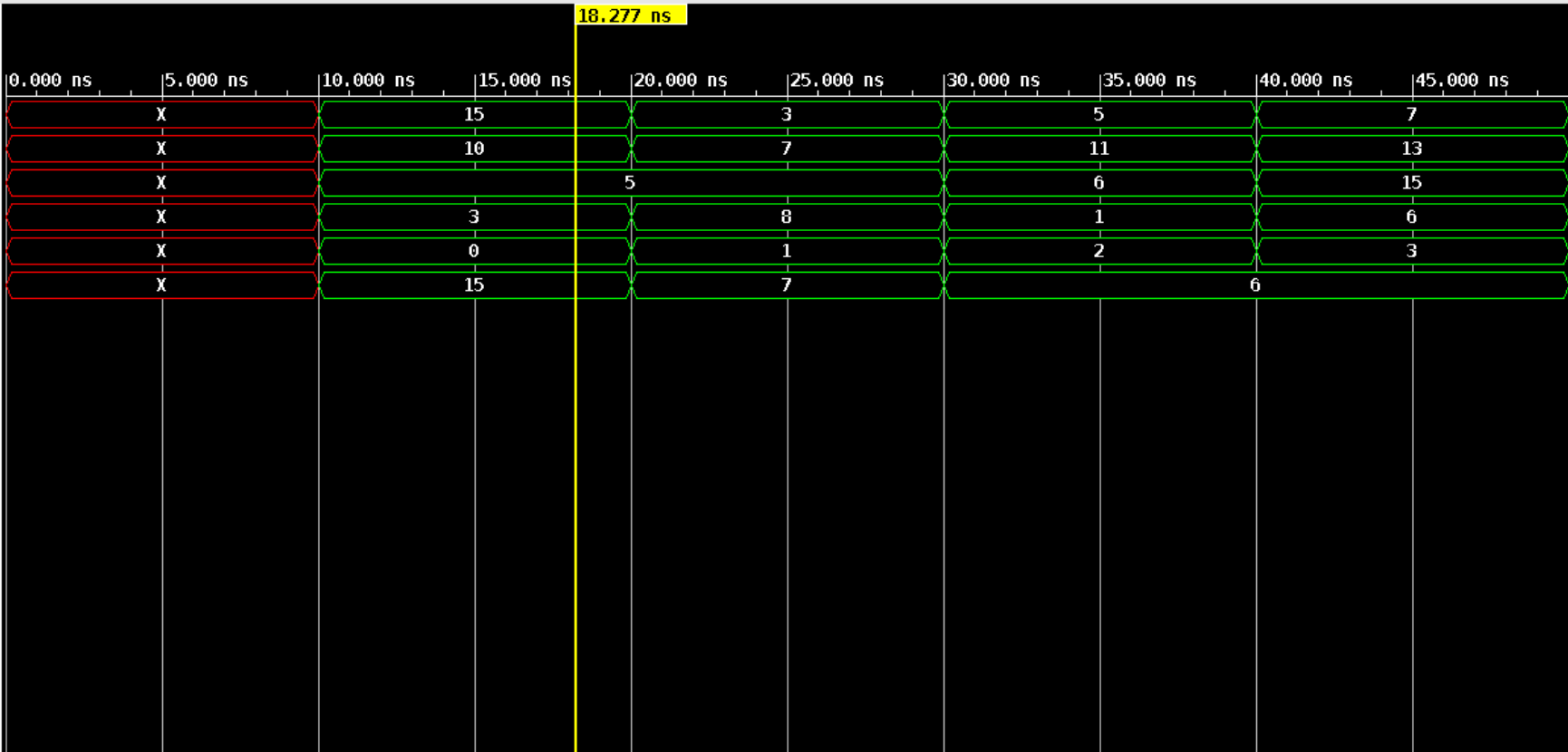
Scope

Sources

Objects

Protocol Instances

Name	Value
> a[3:0]	15
> b[3:0]	10
> c[3:0]	5
> d[3:0]	3
> sel[1:0]	0
> y[3:0]	15





# }

# }

# run 1000ns

Select line is Sel so now the output is y , where a , b , a , b are:

xx	x,	x	x	x	x
00	15,	15	10	5	3
01	7,	3	7	5	8
10	6,	5	11	6	1
11	6,	7	13	15	6

\$finish called at time : 50 ns : File "/home/itzzinfinity/Cozy Drive/100daysofRTL/day\_023/p

INFO: [USF-XSim-96] XSim completed. Design snapshot 'mux\_tb\_behav' loaded.

INFO: [USF-XSim-97] XSim simulation ran for 1000ns

launch\_simulation: Time (s): cpu = 00:00:06 ; elapsed = 00:00:06 . Memory (MB): peak = 9834



Type a Tcl command here

/home/itzzinfinity/Cozy Drive/100daysofRTL/day\_023/project\_1/project\_1.srscs/sources\_1/new/mux\_4to1.v



```
1  `timescale 1ns / 1ps
2  ////////////////////////////////////////
3  // Engineer: Anjan Prasad
4  // Create Date: 10/14/2024 06:16:57 AM
5  // Module Name: mux_4to1
6  ////////////////////////////////////////
7
8
9  module mux_4to1(
10     input [3:0] a,b,c,d,
11     input [1:0] sel,
12     output [3:0] y
13 );
14     wire [3:0] y1,y2;
15     mux_2_to_1 mux_1(a,b,sel[0],y1);
16     mux_2_to_1 mux_2(c,d,sel[0],y2);
17     mux_2_to_1 mux_3(y1,y2,sel[1],y);
18
19
20 endmodule
21
```

Toggle Column Selection Mode (Ctrl+Back Slash)

/home/itzzinfinity/Cozy Drive/100daysofRTL/day\_023/project\_1/project\_1.srscs/sim\_1/new/mux\_tb.v



```
1 `timescale 1ns / 1ps
2 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
3 // Engineer: Anjan Prasad
4 // Create Date: 10/14/2024 06:16:57 AM
5 // Module Name: mux_tb
6 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
7
8
9 module mux_tb;
10 reg [3:0] a,b,c,d;
11 reg [1:0] sel;
12 wire [3:0] y;
13
14 mux_4to1 DUT (a,b,c,d,sel,y);
15 initial begin
16     $display("Select line is Sel so now the output is y , where a , b , a , b are:");
17     $monitor("                %b                %d    %d    %d    %d", sel,y,a,b,c,d);
18     //repeat(10) begin
19     #10
20     //      a= $random %16 ;
21     //      b= $random %16 ;
22     //      c= $random %16 ;
23     //      d= $random %16 ;
24     //      sel = $random;
25
26
27     a= 4'd15 ;b= 4'd10 ;c= 4'd5 ;d= 4'd3 ;sel = 2'b00 ;
28     #10
29     a= 4'd3 ;b= 4'd7 ;c= 4'd5 ;d= 4'd8 ;sel = 2'b01 ;
30     #10
31     a= 4'd5 ;b= 4'd11 ;c= 4'd6 ;d= 4'd1 ;sel = 2'b10 ;
32     #10
33     a= 4'd7 ;b= 4'd13 ;c= 4'd15 ;d= 4'd6 ;sel = 2'b11 ;
34     #10
35     a= 4'd8 ;b= 4'd6 ;c= 4'd1 ;d= 4'd10 ;sel = 2'b11 ;
36 //end
37 $finish;
38 end
39 endmodule
```

/home/itzzinfinity/Cozy Drive/100daysofRTL/day\_023/project\_1/project\_1.srscs/sources\_1/new/mux\_2\_to\_1.v



```
1  `timescale 1ns / 1ps
2  //////////////////////////////////////
3  // Engineer: Anjan Prasad
4  // Create Date: 10/13/2024 06:16:57 AM
5  // Module Name: mux_2_to_1
6  //////////////////////////////////////
7
8
9  module mux_2_to_1(
10     input [3:0] a,b,
11     input sel,
12     output [3:0] y);
13
14     assign y = (~sel)?a:b;
15
16
17 endmodule
18
19
```