

3 to 8 decoder

8:14



edaplayground.com



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Doulos does not endorse training material from other suppliers on EDA Playground.

### Languages & Libraries

#### Testbench + Design

SystemVerilog/Verilog

#### UVM / OVM

None

#### Other Libraries

None

OVL

SVUnit

☐ Enable TL-Verilog☐ Enable Easier UVM☐ Enable VUnit

### Tools & Simulators

Icarus Verilog 12.0

#### Compile Options

-Wall -g2012

#### Run Options

Run Options

☐ Use run.bash shell script☒ Open EPWave after run☐ Show output file after run☐ Download files after run

### Examples

using EDA Playground

VHDL

Verilog/SystemVerilog

UVM

EasierUVM

SVAUnit

SVUnit

VUnit (Verilog/SV)

VUnit (VHDL)

TL-Verilog

e + Verilog

Python + Verilog

Python Only

C++/SystemC

210

testbench.sv

```
1 module
2   decoder3to8_df_tb();
3   reg a, b, c;
4   wire d0, d1, d2, d3, d4,
5         d5, d6, d7;
6
7   decoder3to8_df dut(a, b,
8                     c, d0, d1, d2, d3, d4, d5,
9                     d6, d7);
10
11   initial begin
12     $dumpfile("decoder3to8_df.
13               vcd");
14     $dumpvars(0,
15               decoder3to8_df_tb);
16     $monitor("t=%0t
17             abc=%b%b%b |
18             d0..d7=%b%b%b%b%b%b%b%b",
19             $time, a, b,
20             c, d0, d1, d2, d3, d4, d5,
21             d6, d7);
22
23     {a,b,c}=3'b000; #10;
24     {a,b,c}=3'b001; #10;
25     {a,b,c}=3'b010; #10;
26     {a,b,c}=3'b011; #10;
27     {a,b,c}=3'b100; #10;
28     {a,b,c}=3'b101; #10;
29     {a,b,c}=3'b110; #10;
30     {a,b,c}=3'b111; #10;
31
32     $finish;
33   end
34 endmodule
```

design.sv

```
1 module decoder3to8_df(
2   input a, b, c,
3   output d0, d1, d2,
4   d3, d4, d5, d6, d7
5 );
6
7   assign d0 = ~a & ~b & ~c;
8   assign d1 = ~a & ~b & c;
9   assign d2 = ~a & b & ~c;
10  assign d3 = ~a & b & c;
11  assign d4 = a & ~b & ~c;
12  assign d5 = a & ~b & c;
13  assign d6 = a & b & ~c;
14  assign d7 = a & b & c;
15 endmodule
```

Log

Share

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EPWave



From:

0s

To:

80s

Instructions:



Click on an edge to display a cursor. CTRL-click on another edge to display a second cursor.

Note: To revert to EPWave opening in a new browser window, set that option on your profile page.

Get Signals

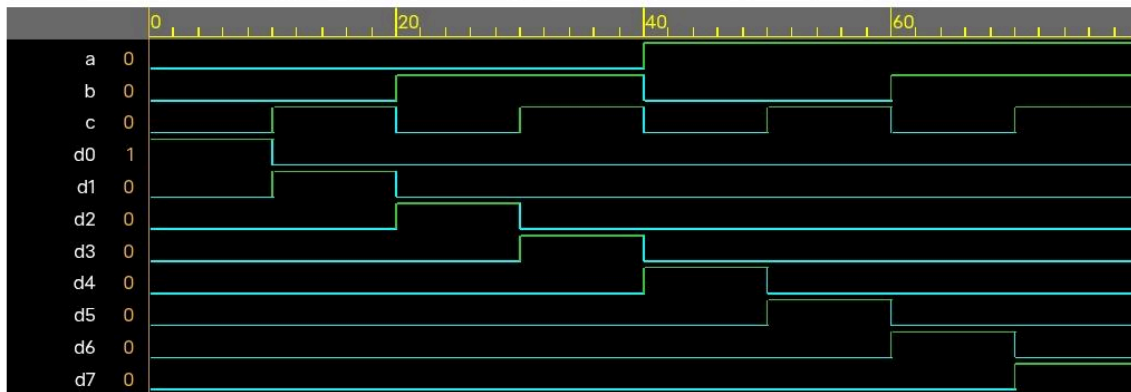
Radix ▾



100%

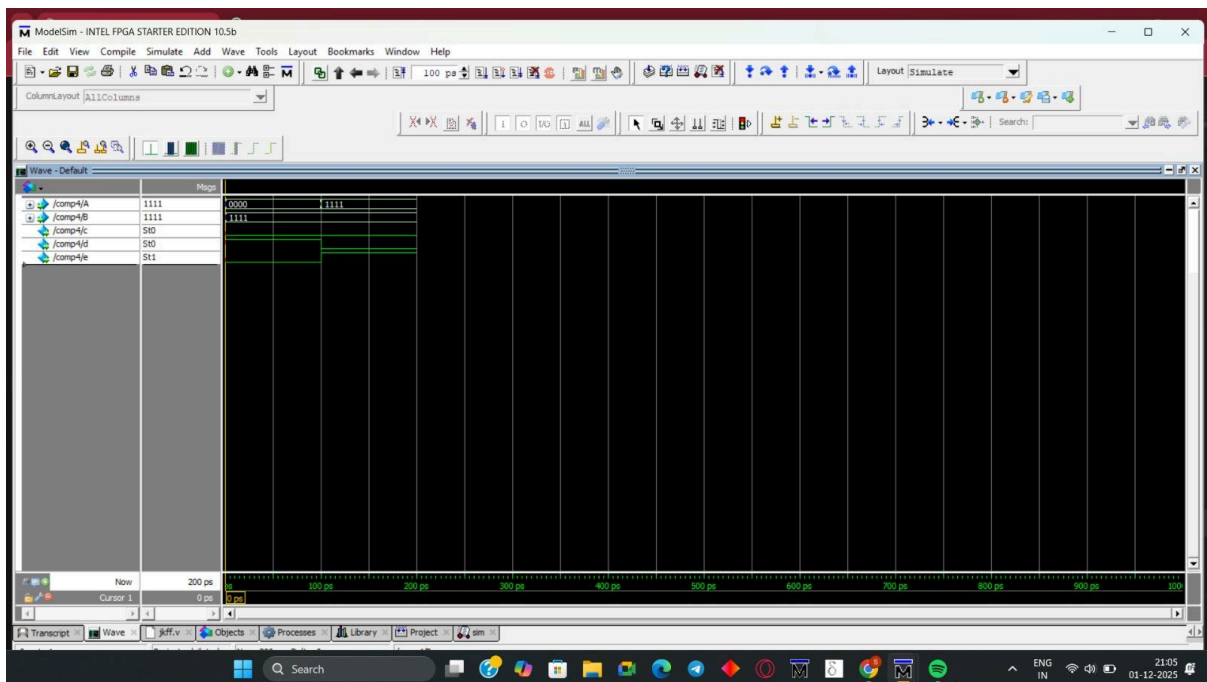
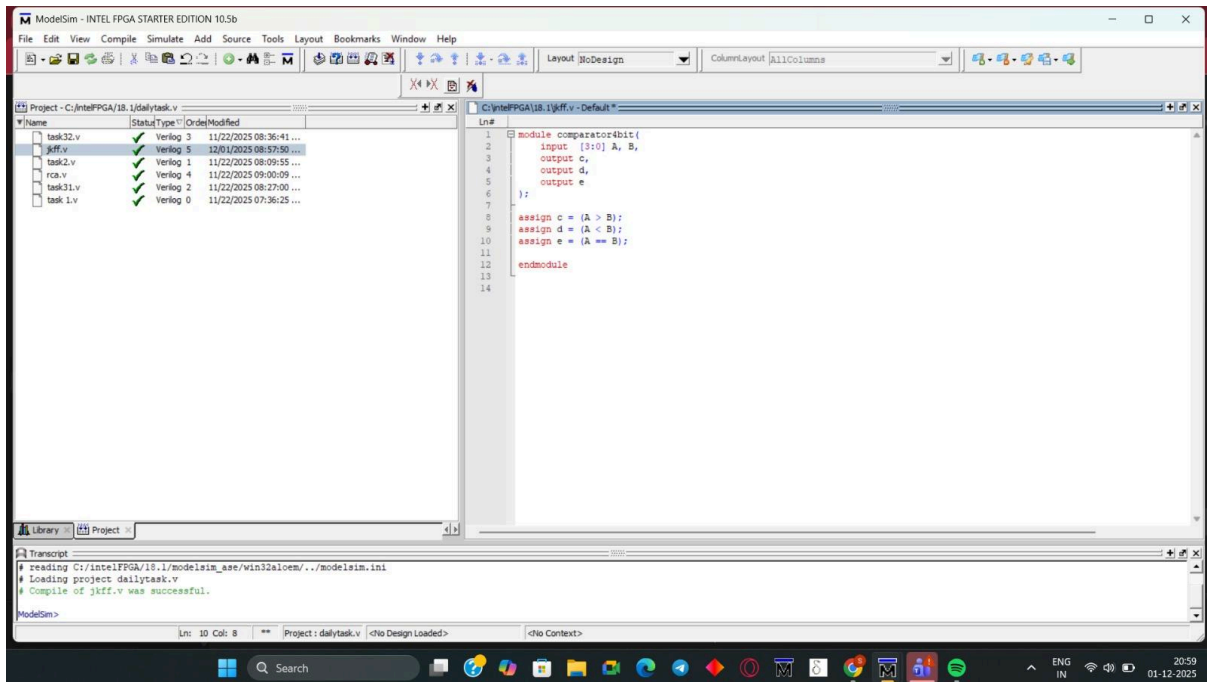


⚡ 0s

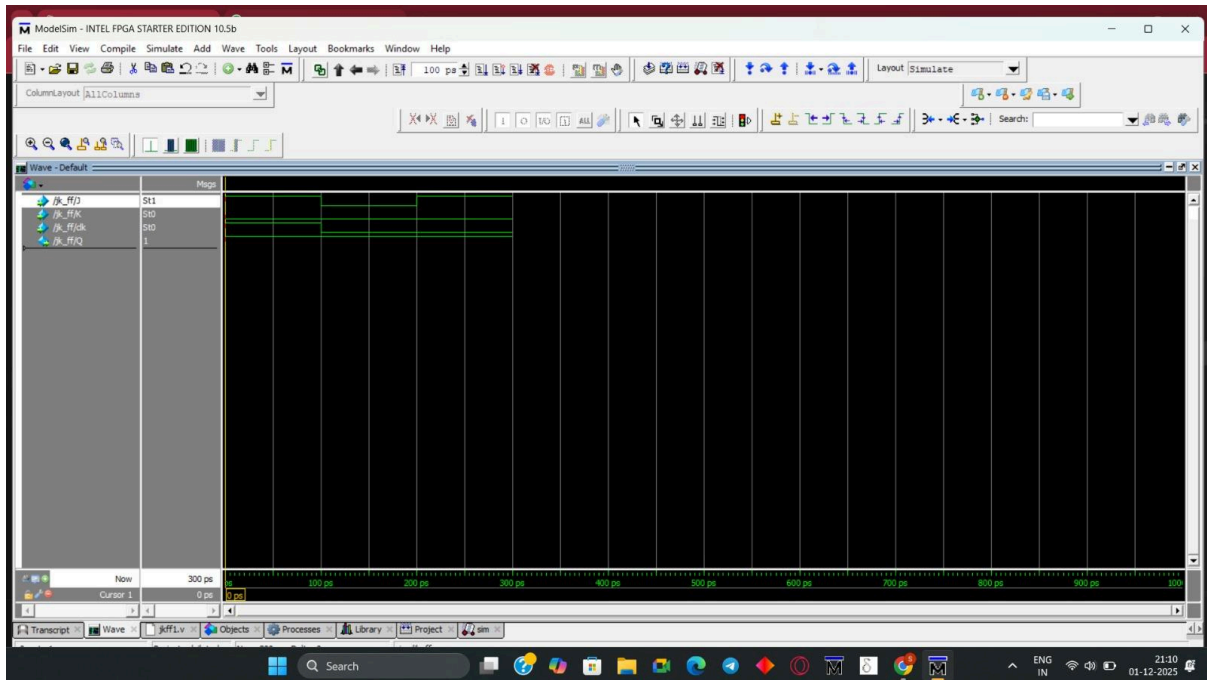
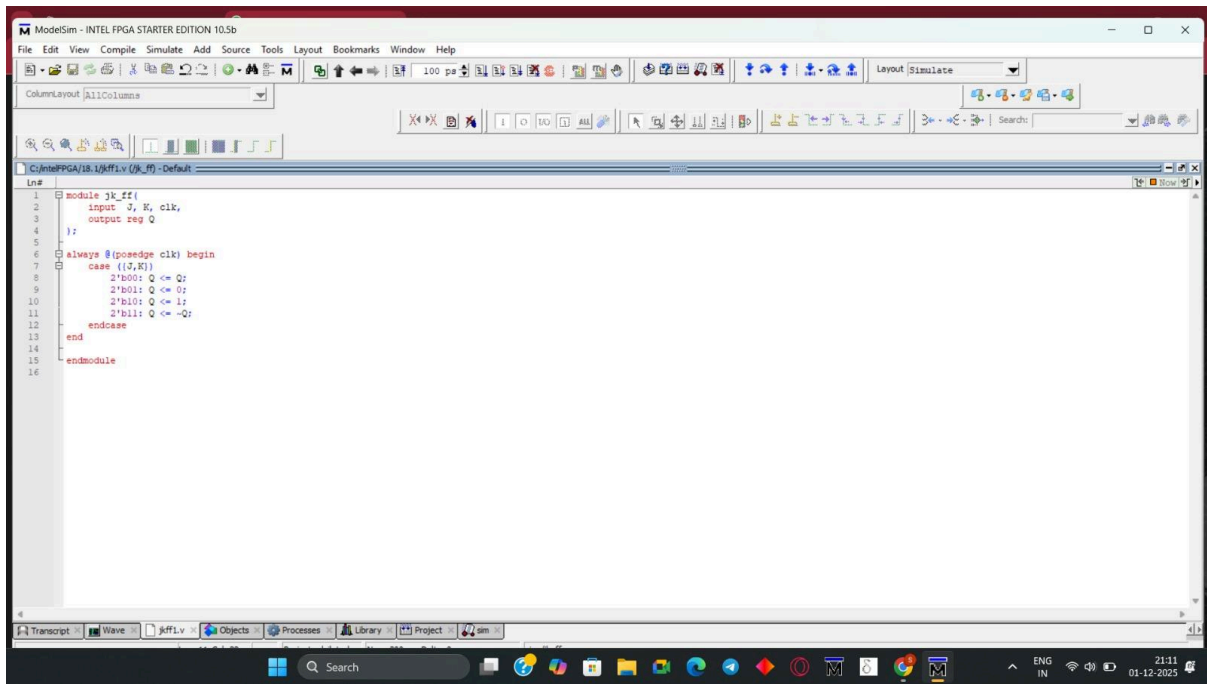


Note: To revert to EPWave opening in a new browser window, set that option on your profile page.

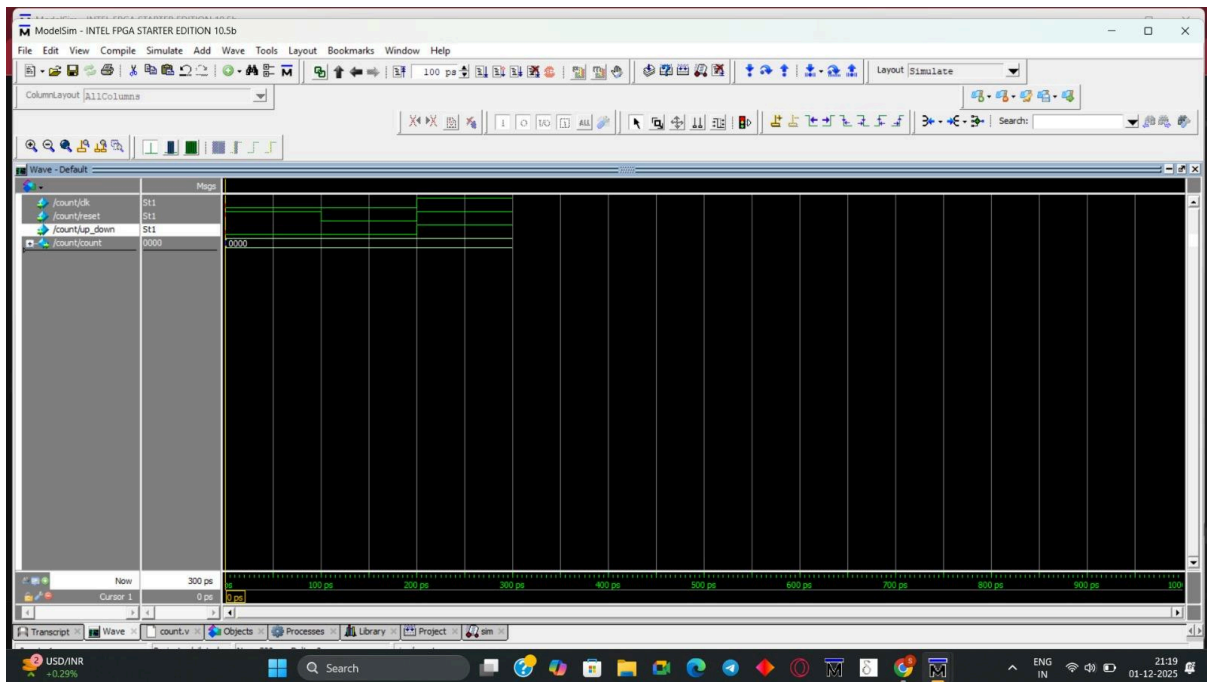
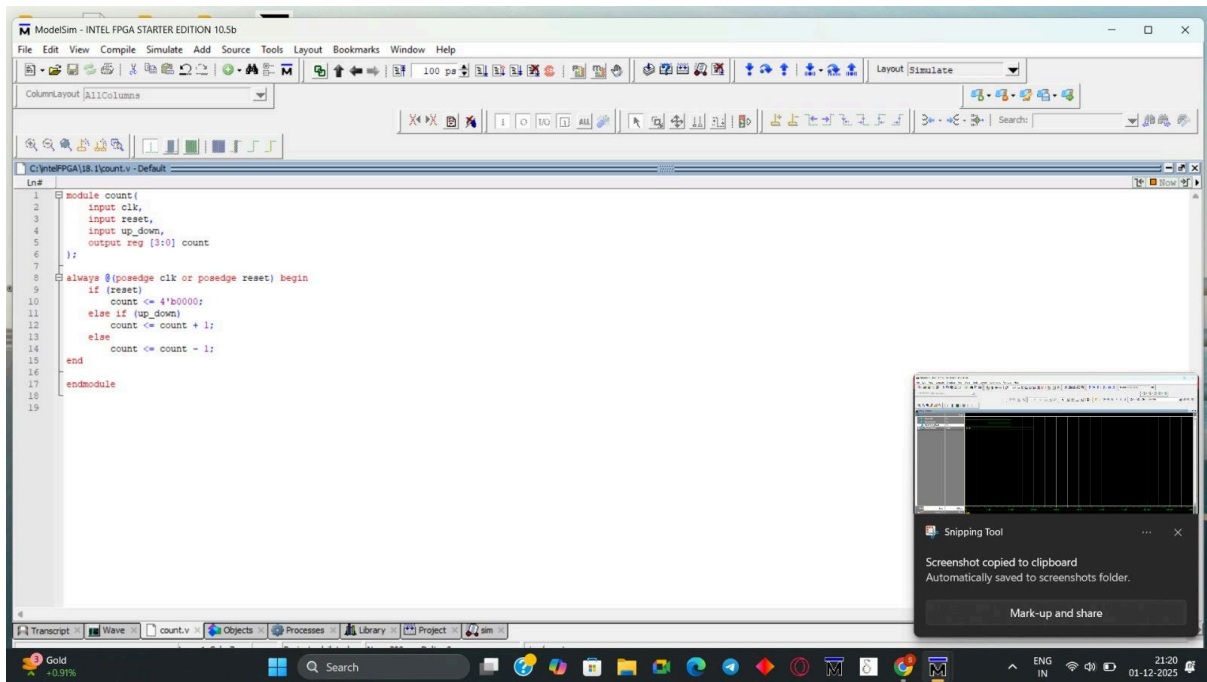
## 4 bit comparator



Jk ff



4 bit synchronous updowncounter



Led code

```

int LED = 13;
int delay_value = 500;

void setup() {
    pinMode(LED, OUTPUT);
}

void loop() {
    digitalWrite(LED, HIGH);

```

```
delay(delay_value);
```

```
digitalWrite(LED, LOW);
```

```
delay(delay_value);
```

```
}
```