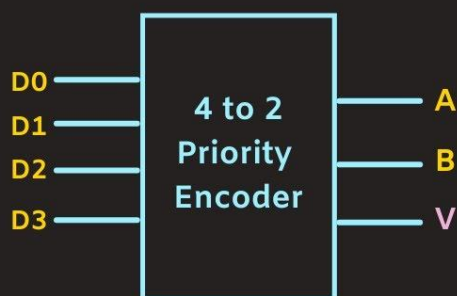


PRIORITY ENCODER

The priority encoder overcome the drawback of binary encoder that generates invalid output for more than one input line is set to high. The priority encoder prioritizes each input line and provides an encoder output corresponding to its highest input priority.

The priority encoder is widely used in digital applications. One common example of a microprocessor detecting the highest priority interrupt. The priority encoders are also used in navigation systems, robotics for controlling arm positions, communication systems, etc.

Priority Encoder Explained



Truth Table

D0	D1	D2	D3	A	B	V
0	0	0	0	X	X	0
1	0	0	0	0	0	1
X	1	0	0	0	1	1
X	X	1	0	1	0	1
X	X	X	1	1	1	1

RTL CODE:

```
module tla(input[3:0]y,output reg[1:0] a,output reg v);
```

```
always@(*)begin
```

```
  casex(y)
```

```
    4'b0000: begin
```

```
      a=2'bxx;v=1'b0;
```

```
    end
```

```
    4'b0001: begin
```

```
      a=2'b00;v=1'b1;
```

end

4'b001x:begin

a=2'b01;v=1'b1;

end

4'b01xx:begin

a=2'b10;v=1'b1;

end

4'b1xxx:begin

a=2'b11;v=1'b1;

end

endcase

end

endmodule

TEST BENCH:

module test;

reg [3:0]y;

wire [1:0]a;

wire v;

tla a1(y,a,v);

initial begin

\$dumpfile("dump.vcd");

\$dumpvars(1);

end

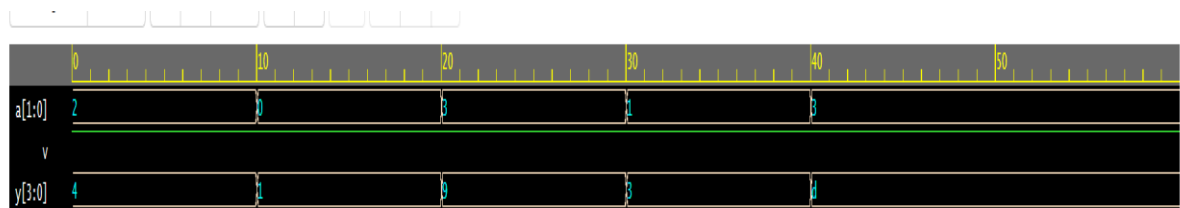
initial begin

repeat(10)begin

```

    y=$random;
    #10;
end
end
initial begin
    #60 $finish();
end
endmodule

```



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