

# RTL CODING

#DAY4

Yash Ekhande

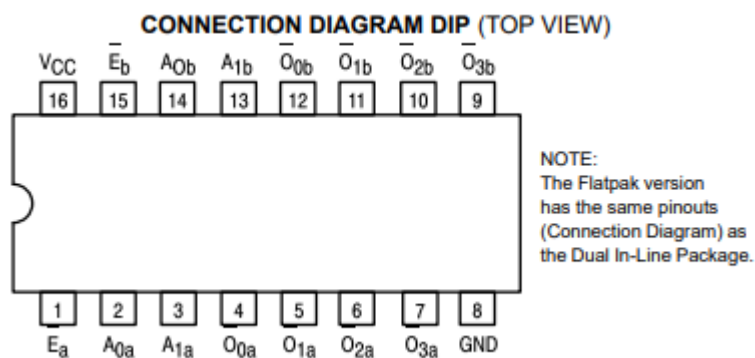
**Aim** - Implementation of IC 74139 which is a 2:4 Decoder.

**NOTE**- it has Active **LOW** Enable pin and output pins 3

## TRUTH TABLE

INPUTS			OUTPUT			
E	S1	S0	Y0	Y1	Y2	Y3
1	X	X	1	1	1	1
0	0	0	0	1	1	1
0	0	1	1	0	1	1
0	1	0	1	1	0	1
0	1	1	1	1	1	0
	MSB	LSB	MSB			LSB

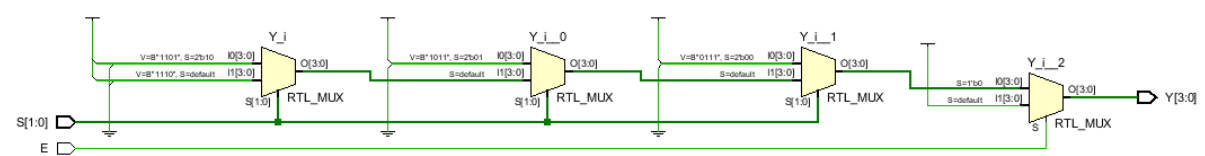
## PIN DIAGRAM



## CODE

```
20 ///////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
21 //This is IC74139 2 : 4 decoder . It has active LOW Enable and outputs.
22 //Yash Ekhande
23
24 module Ic_74139_dec(
25     input E,
26     input [1:0] S,
27     output reg [3:0] Y
28 );
29     always@(E or S )
30     begin
31         if( E==0)
32         begin
33             if( S==2'b00)
34
35                 Y=4'b0111;
36             else if(S==2'b01)
37                 Y=4'b1011;
38             else if(S==2'b10)
39                 Y=4'b1101;
40             else
41                 Y=4'b1110;
42         end
43     else
44         Y=4'b1111;
45     end
46 endmodule
47
```

SCHEMATIC



WAVEFORM

