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CSC 137

Project #2

```
Sequence to be detected: 1010
Input given: 01010101011010110111100010101

0 CLK: 0 Y: x RST: 0 Digit: 0
5 CLK: 1 Y: 0 RST: 0 Digit: 1
10 CLK: 0 Y: 0 RST: 0 Digit: 0
15 CLK: 1 Y: 0 RST: 0 Digit: 1
20 CLK: 0 Y: 0 RST: 0 Digit: 0
25 CLK: 1 Y: 0 RST: 0 Digit: 1
30 CLK: 0 Y: 0 RST: 0 Digit: 0
35 CLK: 1 Y: 0 RST: 0 Digit: 1
40 CLK: 0 Y: 0 RST: 0 Digit: 0
45 CLK: 1 Y: 0 RST: 0 Digit: 1
50 CLK: 0 Y: 0 RST: 0 Digit: 1
55 CLK: 1 Y: 0 RST: 0 Digit: 0
60 CLK: 0 Y: 0 RST: 0 Digit: 1
65 CLK: 1 Y: 0 RST: 0 Digit: 0
70 CLK: 0 Y: 0 RST: 0 Digit: 1
75 CLK: 1 Y: 0 RST: 0 Digit: 1
80 CLK: 0 Y: 0 RST: 0 Digit: 0
85 CLK: 1 Y: 0 RST: 0 Digit: 1
90 CLK: 0 Y: 0 RST: 0 Digit: 1
95 CLK: 1 Y: 0 RST: 0 Digit: 0
100 CLK: 0 Y: 0 RST: 0 Digit: 1
```

```
ghanaaccusado - PUTTY
GNU nano 2.9.3 File: mooredet1.nls.v
1 timescale 1ns/1ps
2 module mooredetector(digit, rst, clk, y);
3
4 input digit;
5 input clk;
6 input rst;
7
8 output reg y;
9
10 reg [2:0] cs, ns;
11
12 parameter S0 = 3'b000, S1 = 3'b001, S2 = 3'b010, S3 = 3'b100, S4 = 3'b101;
13
14 always @(cs or digit)
15 begin
16 case (cs)
17 S0: if (digit == 1'b1)
18 begin
19 ns = S1;
20 y = 1'b0;
21 end
22 else ns = cs;
23 S1: if (digit == 1'b0)
24 begin
25 ns = S2;
26 y = 1'b0;
27 end
28 else
29 begin
30 ns = cs;
31 y = 1'b0;
32 end
33 S2: if (digit == 1'b1)
34 begin
35 ns = S3;
36 y = 1'b0;
37 end
38 else
39 begin
40 ns = S0;
41 y = 1'b0;
42 end
43 S3: if (digit == 1'b0)
44 begin
45 ns = S4;
46 y = 1'b0;
47 end
48 else
49 begin
50 ns = S1;
51 y = 1'b0;
52 end
53 S4: if (digit == 1'b0)
54 begin
55 ns = S0;
56 y = 1'b1;
57 end
58 else
59 begin
60 ns = S3;
61 y = 1'b1;
62 end
63 default: ns = S0;
64 endcase
65 end
66 always @(posedge clk)
67 begin
68 if (rst)
69 cs <= S0;
70 else
71 cs <= ns;
72 end
73 endmodule
74
75 module mooredetector_tb;
76 reg digit, clk, rst;
77 wire y;
78
79 mooredetector uut(digit, rst, clk, y);
80
81 Get Help
82 Exit
83 WriteOut
84 Justify
85 Read File
86 Where Is
87 Prev Page
88 Next Page
89 Cut Text
90 Out Text
91 Cut Pos
92 To Spell
```

[illegible]

```
albert@ecs.cmu.edu ~ $ putty  
GPT nano 2.0.9 File: moreFINAL.v  
  
initial begin  
    rst=0;  
    clk=0;  
    digit=0;  
  
    $display("Sequence to be detected: 1010");  
    $display("Input given: 01010101010101011100010101");  
    counter[time,,,"CLK":clk,"Y":nb,"X","MUT":nb,"rst,"Digit":nb,digit];  
  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
    #0 digit=0;  
    #0 digit=1;  
end  
  
always  
#0 clk=clk;  
initial  
$IOO finishish;  
  
endmodule
```

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