

```
1
2 module overallFSM(clk, reset, spacebar, pipe, next, flag, done, start, draw, lvl1, lvl2,
  lvl3, writeEn, dead, timer_enable);
3
4   input clk, reset, spacebar, pipe, next, done, flag, dead;
5   output reg start, draw, lvl1, lvl2, lvl3, writeEn, timer_enable;
6   reg [10:0] current_state, next_state;
7
8   localparam startscreen = 10'd0,
9                  level1   = 10'd1,
10                  level2  = 10'd2,
11                  level3  = 10'd3,
12                  gameover = 10'd4,
13                  drawstart = 10'd5;
14
15   always @(*)
16   begin: state_table
17     case(current_state)
18       drawstart: next_state = done ? startscreen : drawstart;
19       startscreen: next_state = spacebar ? level1 : startscreen;
20       level1: next_state = pipe ? level2 : level1;
21       level2: next_state = next ? level3 : level2;
22       level3: next_state = flag ? drawstart : level3;
23       default: next_state = drawstart;
24     endcase
25   end
26
27   always@(*)
28   begin: logic
29
30     draw = 0;
31     lvl1 = 0;
32     lvl2 = 0;
33     lvl3 = 0;
34     start = 0;
35     writeEn = 0;
36     timer_enable = 0;
37
38     case(current_state)
39
40       drawstart: begin
41         draw = 1;
42         start = 1;
43         writeEn = 1;
44       end
45       startscreen: begin
46         start = 1;
47         timer_enable = 0;
48       end
49       level1: begin
50         lvl1 = 1;
51         timer_enable = 1;
52       end
53       level2: begin
54         lvl2 = 1;
55         timer_enable = 1;
56       end
57       level3: begin
58         lvl3 = 1;
59         timer_enable = 1;
60       end
61     endcase
62   end
63
64   always@(posedge clk)
65   begin: state_FFs
66     if (dead)
67       current_state <= drawstart;
68     else
69       current_state <= next_state;
70     end
71
72 endmodule
```