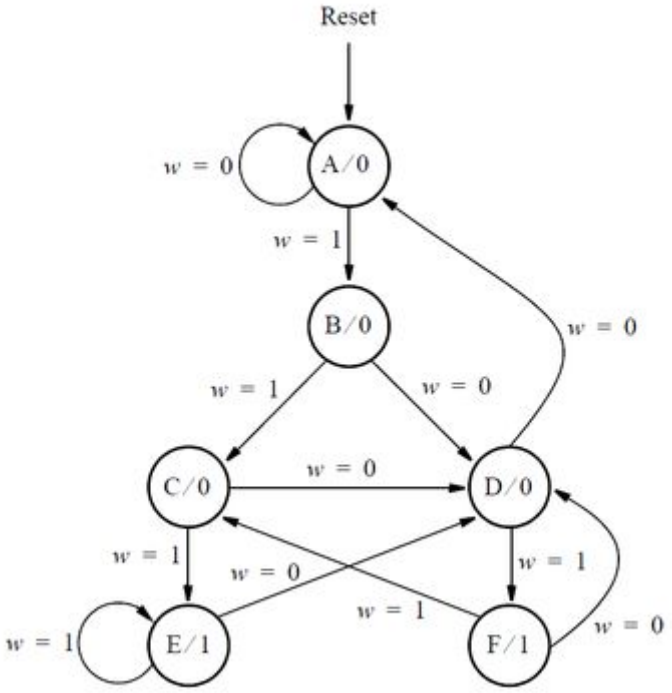
Exams/2012 q2b

The state diagram for this question is shown again below.



Assume that a one-hot code is used with the state assignment *y[5:0]* = 000001(A), 000010(B), 000100(C), 001000(D), 010000(E), 100000(F)

Write a logic expression for the signal *Y1*, which is the input of state flip-flop *y[1]*.

Write a logic expression for the signal *Y3*, which is the input of state flip-flop *y[3]*.

(Derive the logic equations by inspection assuming a one-hot encoding. The testbench will test with non-one hot inputs to make sure you're not trying to do something more complicated).

```
module top_module (
    input [5:0] y,
    input w,
    output Y1,
    output Y3
);
    //Y1 = state B
    assign Y1 = y[0] & w;
    //Y3 = state D Total 4 arrow head points into D , all 4 with w=0
    assign Y3 = ~w & (y[1]|y[2]|y[4]|y[5]);
endmodule
```