3:8 DECODER

DATAFLOW

module decoder(input s0, s1, s2, output d0, d1, d2, d3, d4, d5, d6, d7);

assign d0 = (~s0 & ~s1 & ~s2);

assign d1 = (~s0 & ~s1 & s2);

assign d2 = (~s0 & s1 & ~s2);

assign d3 = (~s0 & s1 & s2);

assign d4 = (s0 & ~s1 & ~s2);

assign d5 = (s0 & ~s1 & s2);

assign d6 = (s0 & s1 & ~s2);

assign d7 = (s0 & s1 & s2);

endmodule

BEHAVIORAL

module decoder(input [2:0] s, output reg [7:0] d);

always @(\*) begin

case(s)

3'b000: d = 8'b00000001;

3'b001: d = 8'b00000010;

3'b010: d = 8'b00000100;

3'b011: d = 8'b00001000;

3'b100: d = 8'b00010000;

3'b101: d = 8'b00100000;

3'b110: d = 8'b01000000;

3'b111: d = 8'b10000000;

default: d = 8'b00000000

endcase

end

endmodule