module encoder(Z, I, enable);

output[2:0] Z;

input[7:0] I;

input enable;

reg[2:0] Z;

always @\*

begin

if(enable)

begin

case(I)

8'h01:Z=3'b000;

8'h02:Z=3'b001;

8'h04:Z=3'b010;

8'h08:Z=3'b011;

8'h10:Z=3'b100;

8'h20:Z=3'b101;

8'h40:Z=3'b110;

8'h80:Z=3'b111;

endcase

end

end

endmodule

module tb\_encoder();

reg[7:0] I;

wire[2:0] Z;

integer i;

reg enable;

encoder UUT(Z,I,enable);

initial

begin

$monitor("I = %b", I, ", Z = %b", Z);

enable = 1'b1;

for (i=0; i<=7; i=i+1)

begin

I=2\*\*i;

#10

$display("\n\n");

end

end

endmodule

