module tb\_sequence\_111();

reg S,D1,D0,clk,reset;

wire Y,Q1,Q0;

reg Q10, Q00;

integer i;

reg[15:0] RAN;

sequence\_111 UUT(Y,Q1,Q0,S,D1,D0,clk,reset);

initial

begin

#10 $monitor("UUT | D1 =", D1, " ,D0 = ", D0, " ,S = ", S, ", clk = " , clk, " ,reset = ", reset, " ,Y = ", Y, " ,Q1 = ", Q1, " ,Q0 = " ,Q0);

reset = 1'b1;

Q10 = 1'b0;

Q00 = 1'b0;

RAN = 16'h8756;

for (i=0; i<=15; i=i+1)

begin

S=RAN[i];

D1=Q10;

D0=Q00;

clk = 1'b1;

#5

clk = 1'b0;

#5

Q10=Q1;

Q00=Q0;

end

end

endmodule

module tb\_ALU(); //test\_bench

wire[15:0] result;

wire flag;

reg [15:0] A,B;

reg [2:0] select;

integer i;

ALU UUT (result, flag, select, A, B);

initial

begin //checking for random values of A,B

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

begin

A=$urandom%2\*\*15;

B=$urandom%2\*\*15;

select=i;

$monitor("select = %b", select ," , first number = %b", A, " , second number = %b", B, ", result= %b", result, "flag =", flag);

#10;

$display("\n\n");

end

end

endmodule

