module myBoom(clk, rst, val, launch);

input clk, rst, val;

reg s1,s2,s3,s4,s5,s6,s7,s8,s9;

output launch;

assign launch = s9;

always@(posedge clk)

if (rst)

{s1,s2,s3,s4,s5,s6,s7,s8,s9}<=8'b10000000;

else

begin

s1<=s1&~val|s2&~val|s3&~val|s5&~val|s8&~val|s9&~val;

s2<=s1&val|s7&val;

s3<=s2&val|s6&val|s9&val;

s4<=s3&val|s4&val;

s5<=s4&~val;

s6<=s5&val;

s7<=s6&~val;

s8<=s7&~val;

s9<=s8&val;

end

endmodule