module binary\_to\_gray(gray, bin);

output[3:0] gray;

input[3:0] bin;

assign gray[3] = bin[3];

xor xor1(gray[2], gray[3], bin[2]);

xor xor2(gray[1], gray[2], bin[1]);

xor xor3(gray[0], gray[1], bin[0]);

endmodule

module tb\_binary\_to\_gray();

reg[3:0] bin;

wire[3:0] gray;

integer i;

binary\_to\_gray UUT(gray,bin);

initial

begin

$monitor("bin = %b", bin, ", gray = %b", gray);

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

begin

bin=i;

#10

$display("\n\n");

end

end

endmodule

