**Bin to One Hot code**

module binto\_onehot #(

parameter BIN\_W = 4,

parameter ONE\_HOT\_W = 16

)(

input wire [BIN\_W-1:0] bin\_i,

output wire [ONE\_HOT\_W-1:0] one\_hot\_o

);

assign one\_hot\_o = 1'b1<<bin\_i;

endmodule

**Test Bench Code**

module tb\_binto\_1hot();

localparam BIN\_W = 4;

localparam ONE\_HOT\_W = 16;

logic [BIN\_W-1:0] bin\_i;

logic [ONE\_HOT\_W-1:0] one\_hot\_o;

binto\_onehot #(BIN\_W, ONE\_HOT\_W) DAY8 (.\*);

initial begin

for(int i=0; i<32; i=i+1) begin

bin\_i = $urandom\_range(0, 4'hF);

#5;

end

$finish();l

end

initial begin

$dumpfile("day8.vcd");

$dumpvars(2, tb\_binto\_1hot);

end

endmodule

**Simulation**

