module binary\_to\_gray(data\_in, data\_out);

parameter a\_length=3;

integer i;

input [a\_length-1:0] data\_in;

output reg [a\_length-1:0] data\_out;

always@(\*)

begin

data\_out[a\_length-1]=data\_in[a\_length-1];

for(i=a\_length-2;i>=0;i=i-1)

data\_out[i]=data\_in[i+1]^data\_in[i];

end

endmodule