module bit32\_cla\_adder(a,b,cin,sum,cout);

input [31:0]a,b;

input cin;

output cout;

output [31:0]sum;

wire [7:0]pp,gg;

wire [7:0]carry;

cla\_adder c1(a[3:0],b[3:0],cin,pp[0],gg[0],sum[3:0]);

carries\_c4 cc4(pp,gg,cin,carry[0]);

cla\_adder c2(a[7:4],b[7:4],carry[0],pp[1],gg[1],sum[7:4]);

carries\_c8 cc8(pp,gg,cin,carry[1]);

cla\_adder c3(a[11:8],b[11:8],carry[1],pp[2],gg[2],sum[11:8]);

carries\_c12 cc12(pp,gg,cin,carry[2]);

cla\_adder c4(a[15:12],b[15:12],carry[2],pp[3],gg[3],sum[15:12]);

carries\_c16 cc16(pp,gg,cin,carry[3]);

cla\_adder c5(a[19:16],b[19:16],carry[3],pp[4],gg[4],sum[19:16]);

carries\_c20 cc20(pp,gg,cin,carry[4]);

cla\_adder c6(a[23:20],b[23:20],carry[4],pp[5],gg[5],sum[23:20]);

carries\_c24 cc24(pp,gg,cin,carry[5]);

cla\_adder c7(a[27:24],b[27:24],carry[5],pp[6],gg[6],sum[27:24]);

carries\_c28 cc28(pp,gg,cin,carry[6]);

cla\_adder c8(a[31:28],b[31:28],carry[6],pp[7],gg[7],sum[31:28]);

carries\_c32 cc32(pp,gg,cin,carry[7]);

assign cout=carry[7];

endmodule