FULL ADDER

module fulladder\_data\_flow( input A,input B,input Cin,output S, output Cout);

assign S = A^B^Cin;

assign Cout = (A&B)|(B&Cin)|(Cin&A);

endmodule

TESTBENCH

module fulladder\_data\_flow\_tb;

reg A, B, Cin;

wire S, Cout;

integer i;

fulladder\_data\_flow FA (.A(A),.B(B) ,.Cin(Cin), .S(S), .Cout(Cout));

initial

begin

{A,B,Cin} <= 3'b000;

for(i=1;i<20; i=i+1)

begin

$monitor($time, "\tA=%b\t B=%b\t Cin=%b\t S=%b\t Cout=%b", A, B,Cin, S,Cout);

#5{A,B,Cin} <= $random%8;

end

//always#5 {A,B,Cin}<=$random%8;

#45 $finish;

end

initial

begin

$dumpfile("dump.vcd");

$dumpvars(1);

#10000$finish;

end

endmodule