Ripple Cary Adder

1 message

ABHINAV M <23pmmt11@uohyd.ac.in> Thu, Mar 21, 2024 at 4:01 PM
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Code

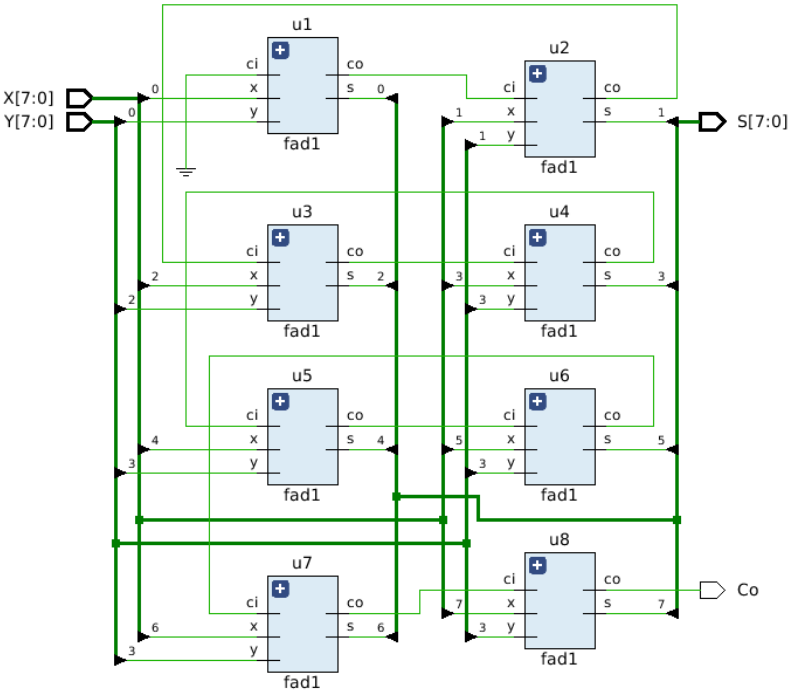
```
module fad1(input x, y, ci, output s, co);
  wire w1,w2,w3;
  xor G1(w1, x, y);
  xor G2(s, w1, ci);
  and G3(w2, w1, ci);
  and G4(w3, x, y);
  or G5(co, w2, w3);
endmodule

module rca(X, Y, S, Co);
 input [7:0] X, Y;
 output [7:0] S;
 output Co;
 wire w1,w2,w3,w4,w5,w6,w7;


 fad1 u1(X[0], Y[0], 1'b0, S[0], w1);
 fad1 u2(X[1], Y[1], w1, S[1], w2);
 fad1 u3(X[2], Y[2], w2, S[2], w3);
 fad1 u4(X[3], Y[3], w3, S[3], w4);
 fad1 u5(X[4], Y[3], w4, S[4], w5);
 fad1 u6(X[5], Y[3], w5, S[5], w6);
 fad1 u7(X[6], Y[3], w6, S[6], w7);
 fad1 u8(X[7], Y[3], w7, S[7], Co);
endmodule
```

TB

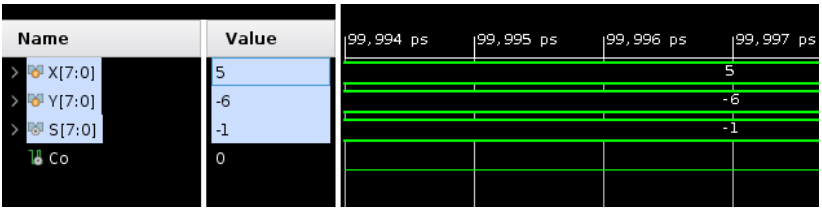
```
module tb_rca();
reg[7:0]X,Y;
wire [7:0]S;
wire Co;
rca uut(X, Y, S, Co);
    initial begin
        X=8'd5;
        Y=-8'd6;
```

```
        #100 $finish;
    end
endmodule
```

Elaborated Design



Waveform



Best,
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