FULL ADDER

x [1]

y [0]

Carry_In [0]

[1] S

[0] C
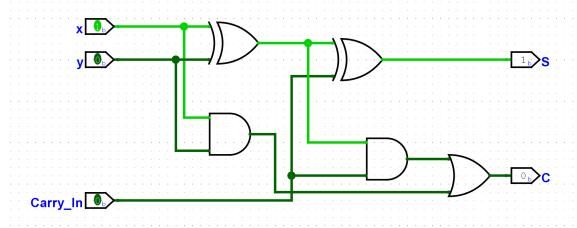
The Full Adder is a more complicated version of the half adder. It accounts for the carry in by assigning it as a variable. This means that you can have multiple full adders in sequence, and it will calculate the sum, and the carry out. The carry out gets inputted into the next full adder, and so on for how many data bits.

FULL ADDER TRUTH TABLE

Inputs			Outputs	
A	B	C_{in}	Sum	Carry
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1