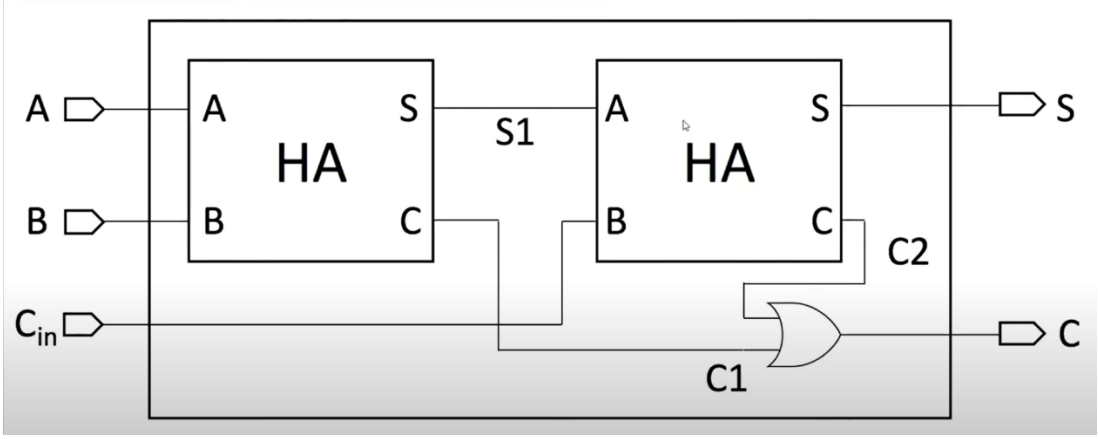
- I implemented the Full Adder by using 2 Half Adders and 1 OR gate. But before that I had to implement the half adder using a Xor and AND gate.

  HALF ADDER
  Xor (a=a, b=b, out=sum);
  And (a=a, b=b, out=carry);

- Then I opened the script file for a full adder and used 2 half adders and 1 OR gate.

  FULL ADDER
  HalfAdder (a=a, b=b, sum=sum1, carry=carry1);
  HalfAdder (a=sum1, b=c, sum=sum, carry=carry2);
  Or (a=carry1, b=carry2, out=carry);

- I've provided the diagram of the full adder implemented.




- The full adder takes 3 inputs; a, b, and c. the first half adder takes a=a and b=b as inputs and outputs the sum1 and carry1. The second half adder takes inputs as a=sum1 and b=c and output the sum and carry2. Then the OR gate takes 2 inputs; a=carry1 from 1st half adder and b=carry2 from 2nd half adder. Finally outputs out=carry. So, on the whole it takes 3 inputs and gives 2 outputs as sum and carry. I've loaded and ran the file in Nand Tetris and it worked perfectly. I've provided the page below.