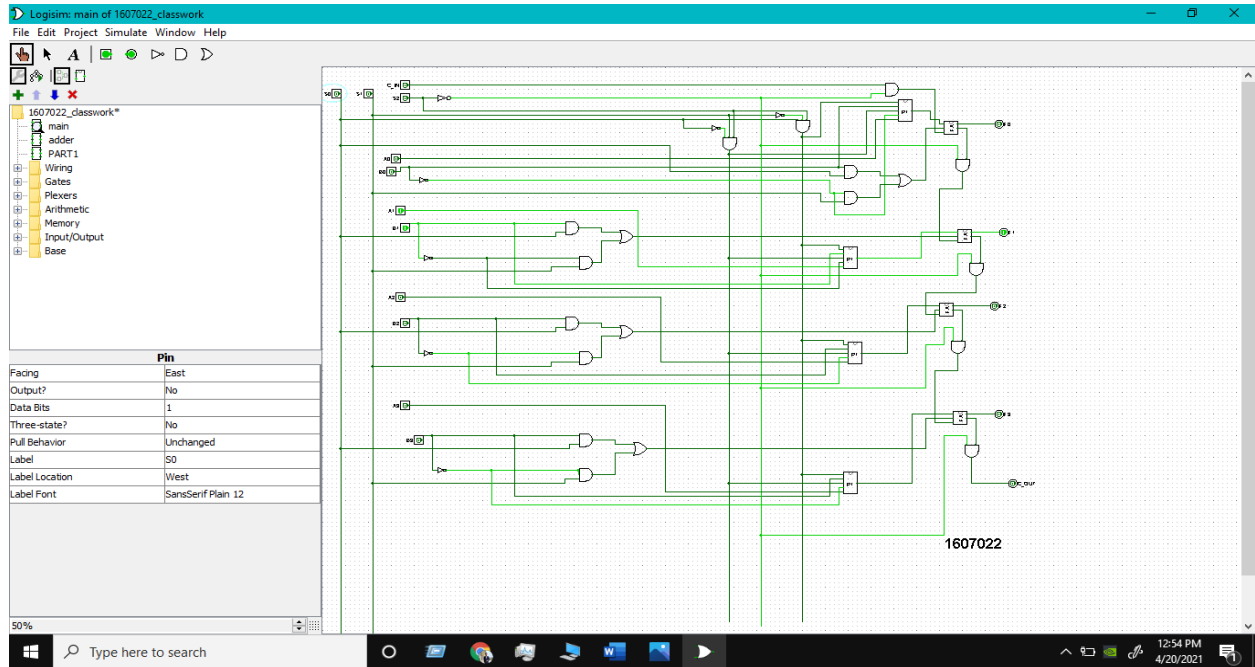


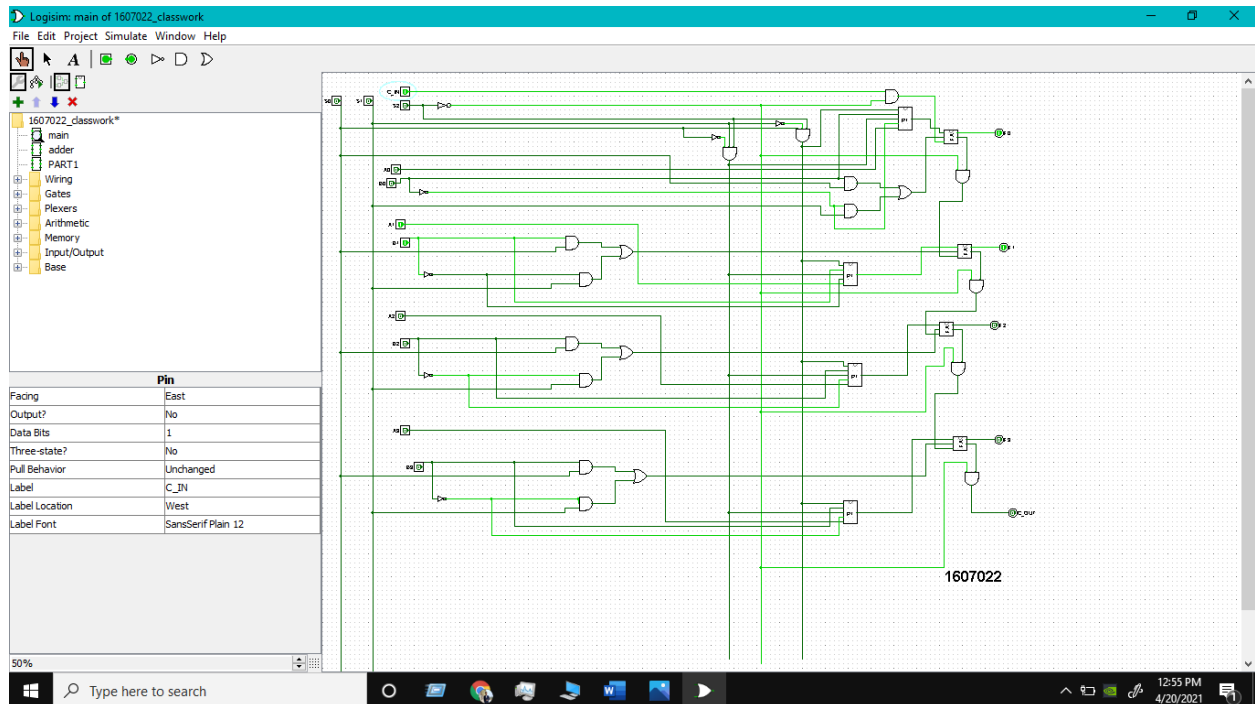
Result

My roll is 22. In $A0=0$, $A1=1$ and $B0=0$, $B1=1$ as Input.

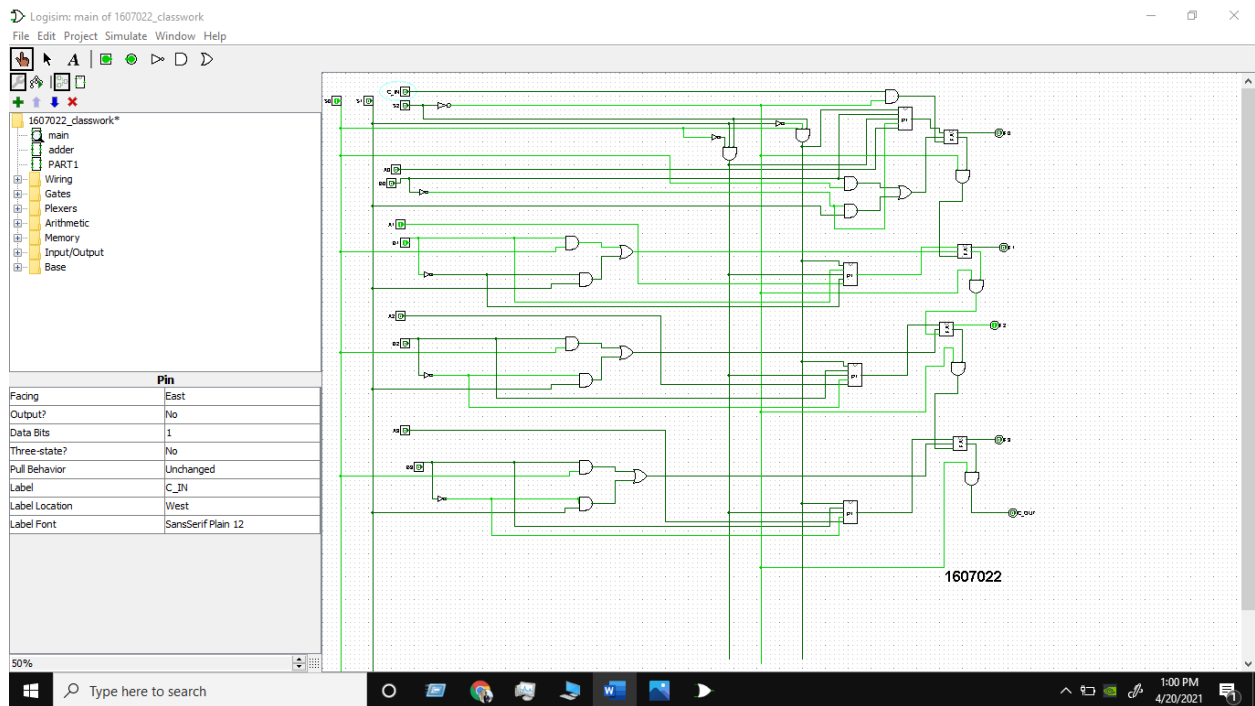
For $S0=0$, $S1=0$, $S2=0$, $C_{in}=0$, I get 0100. That means it transfer A (here input A = 2)



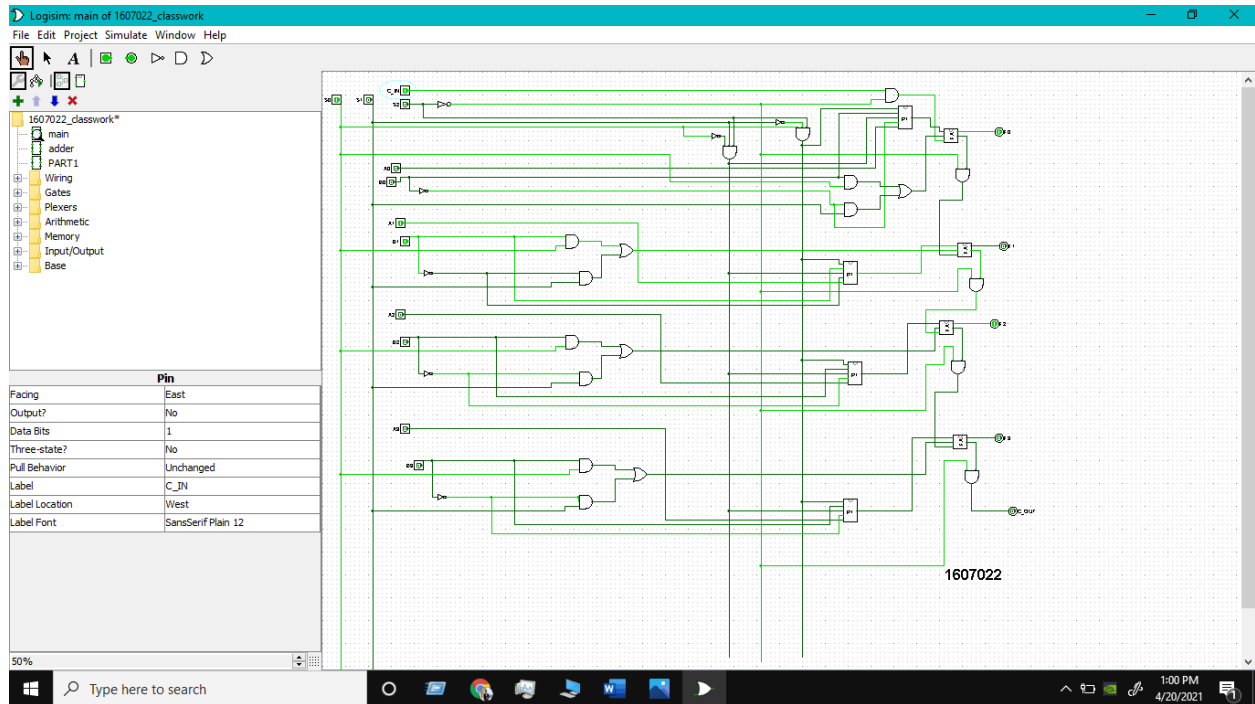
For $S0=0$, $S1=0$, $S2=0$, $C_{in}=1$, I got 11(Decimal =3). That means it increment A .



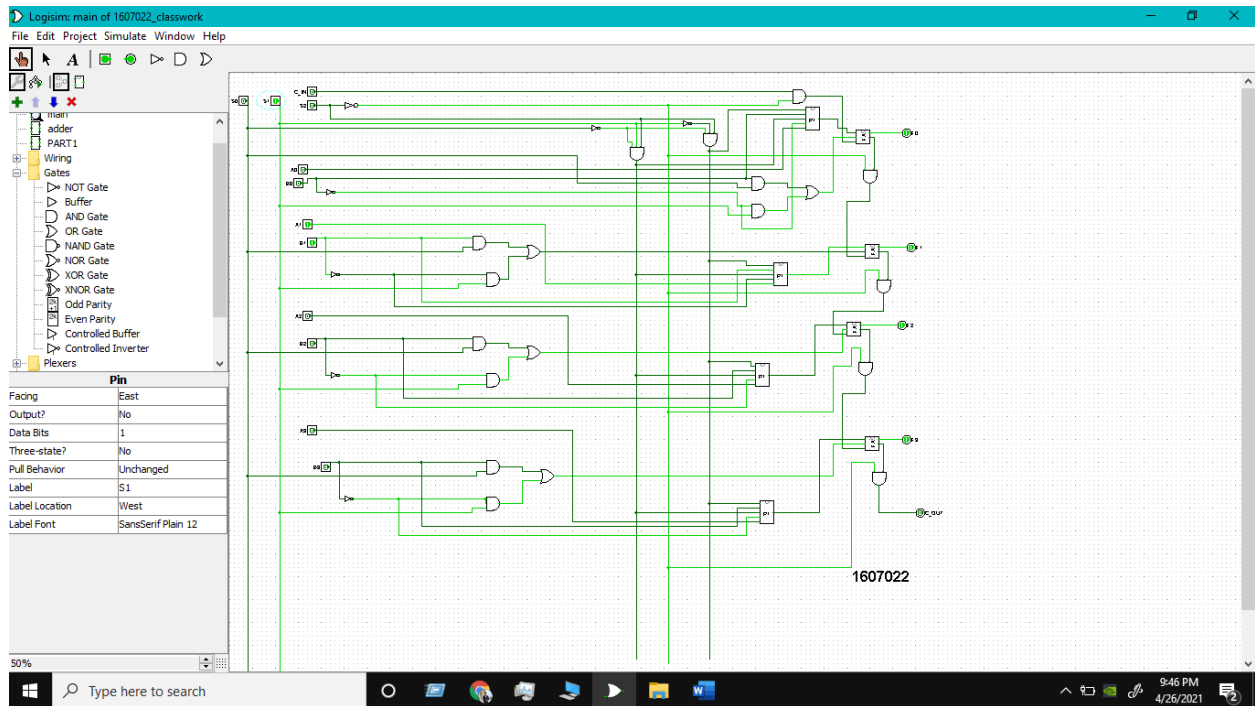
For $S_0=1, S_1=0, S_2=0, C_{in}=0$, I got 001(here, Lsb \rightarrow msb, Decimal =4). That means it adds A and B($2+2=4$)



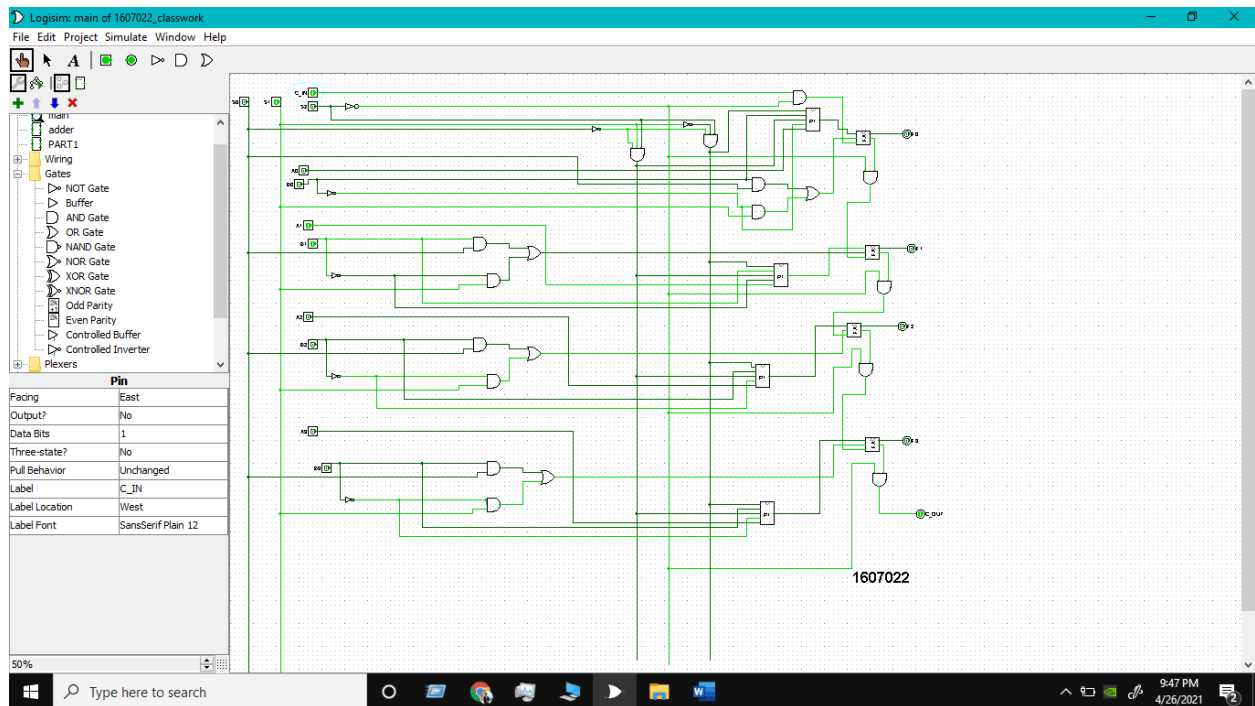
For $S_0=1, S_1=0, S_2=0, C_{in}=1$, I got 101(here, Lsb \rightarrow msb, Decimal =5). That means it adds A ,B and 1($2+2+1=5$)



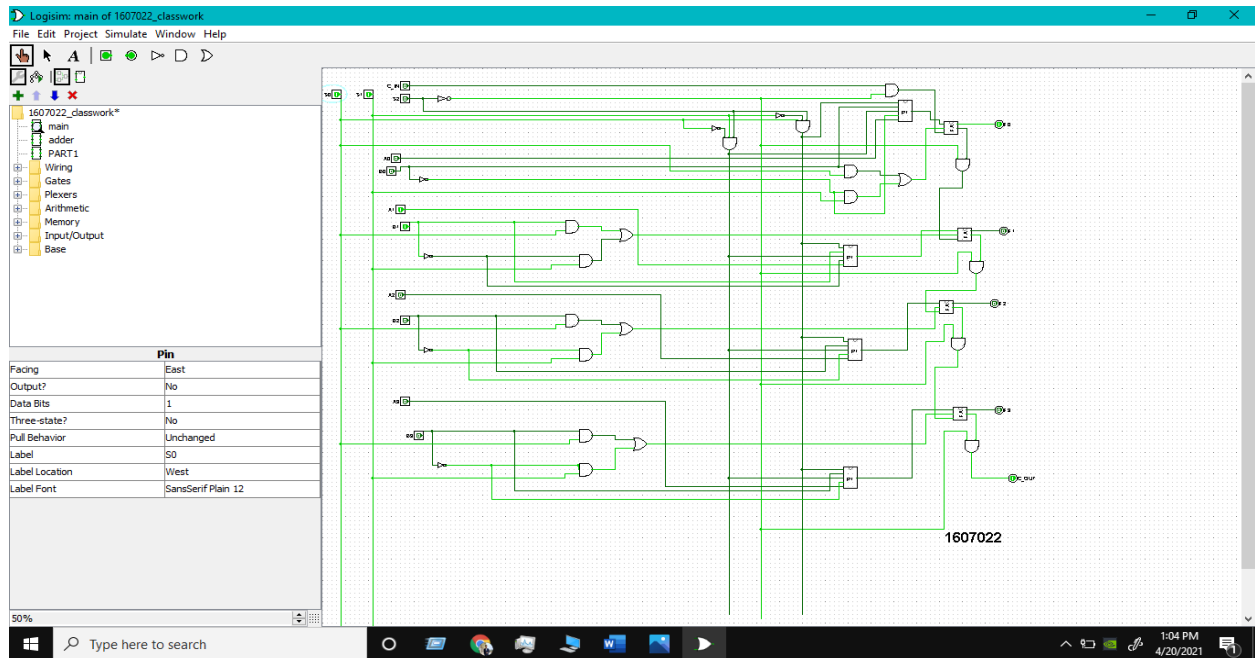
For $S_0=0, S_1=1, S_2=0, C_{in}=0$, I got 1111(Subtract with borrow). That means here A-B-1 operation happens.



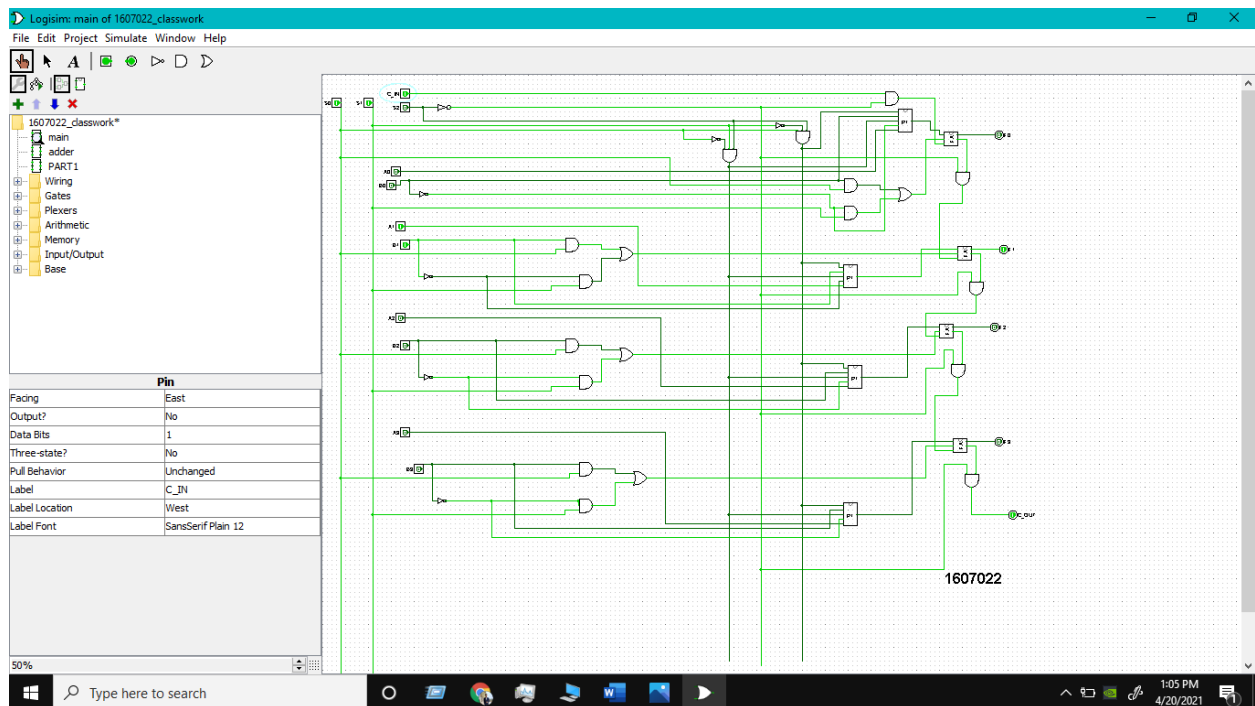
For $S_0=0, S_1=1, S_2=0, C_{in}=1$, I got 0000(Decimal=0). That means here A-B operation happens ($2-2=0$)



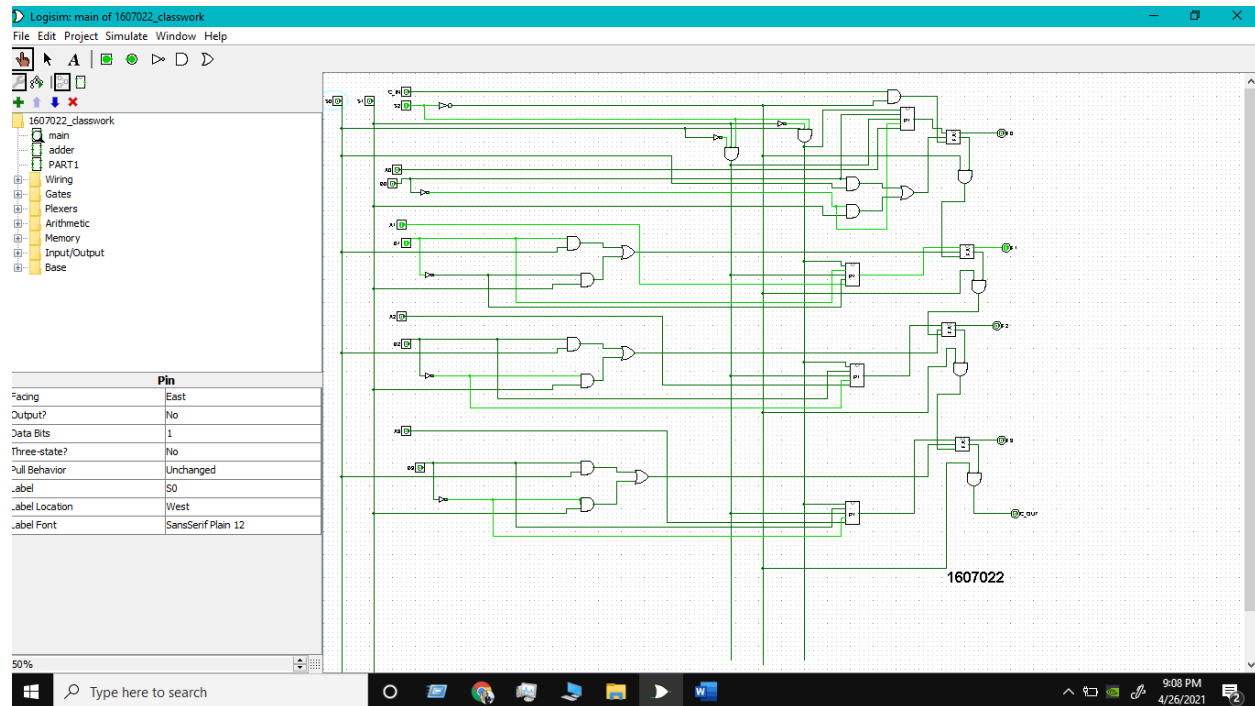
For $S_0=1, S_1=1, S_2=0, C_{in}=0$, I got 1000 (lsb \rightarrow msb, Decimal=1). That means here A-1 operation happens ($2-1=1$)



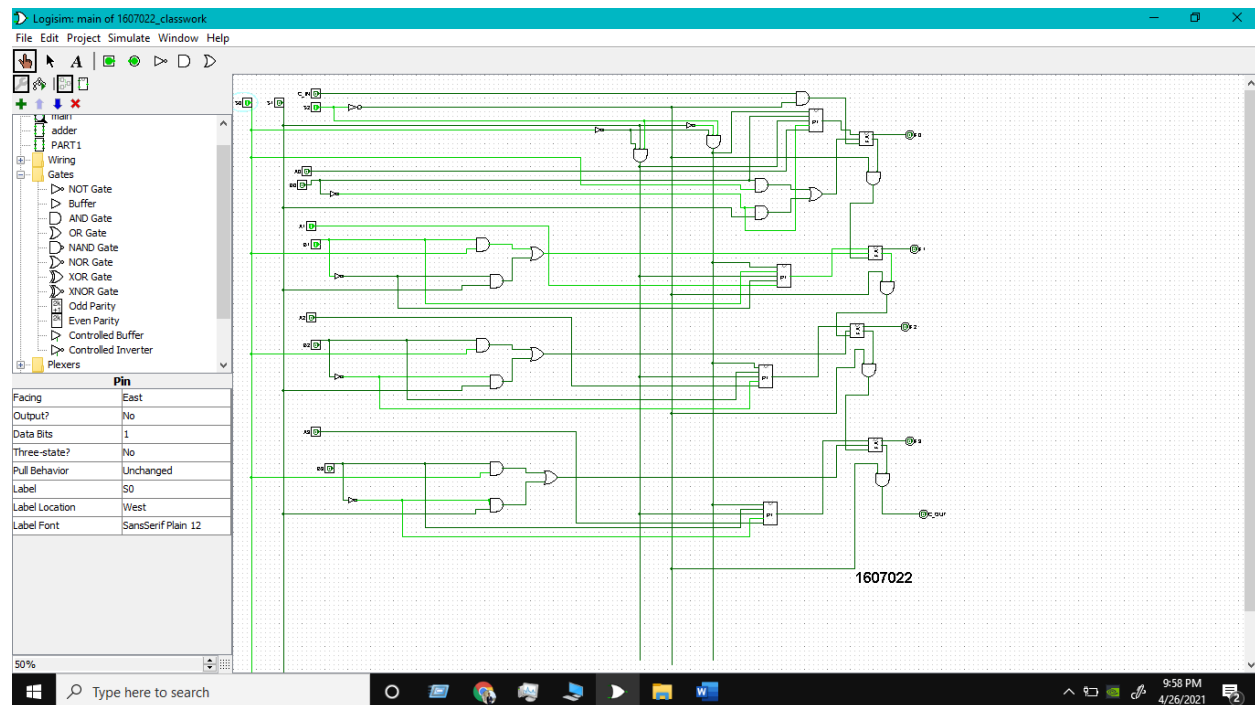
For $S_0=1, S_1=1, S_2=0, C_{in}=1$, I got 010 (Decimal=2). That means here transfer operation happens ($F=A$)



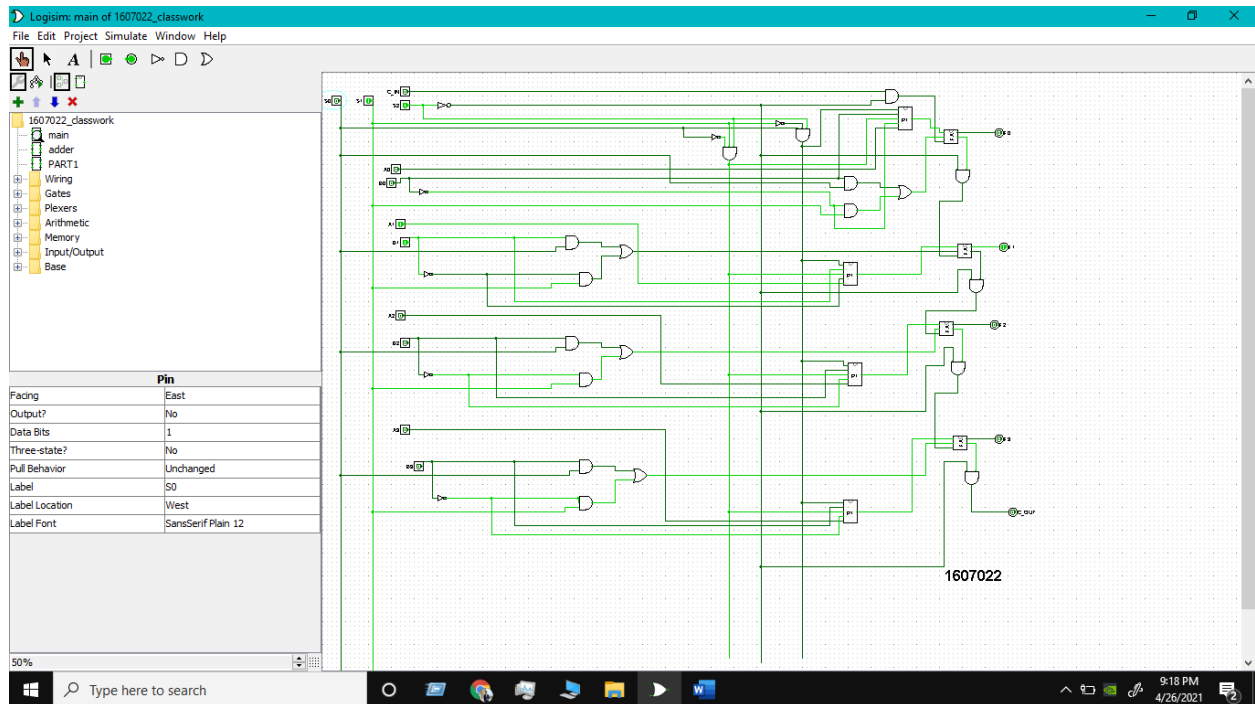
For $S_0=0, S_1=0, S_2=1, C_{in}=X$, I get 0100. So, the result is the output of the OR operation for the given values.



For $S_0=1, S_1=0, S_2=1, C_{in}=X$, I get 0000. So, the result is the output of the XOR operation for the given values.



For $S_0=0, S_1=1, S_2=1, C_{in}=X$, I get 0100. So, the result is the output of the AND operation for the given values.



For $S_0=1, S_1=1, S_2=1, C_{in}=X$, I get 1011. My binary value is 0100 (Decimal=2). So, the result is the complement of the given value.

