EEL 3701C: Digital Logic & Computer Systems
Revision **0**
Lab **2** Report: **MSI Circuits**

Bowman, Garrett
Class #: 11412
PI Name: Justin Rossiter
06/ 02/ 2021

REQUIREMENTS NOT MET

N/A

PROBLEMS ENCOUNTERED

Had trouble figuring out how to program but I got it finally with some help.

FUTURE WORK/APPLICATIONS

We will be learning how to use MSI components as well as the PCB board to simulate real chips.

PRE-LAB QUESTIONS OR EXERCISES

PRE-LAB REQUIREMENTS (Design, Schematic, ASM Chart, VHDL, etc.)

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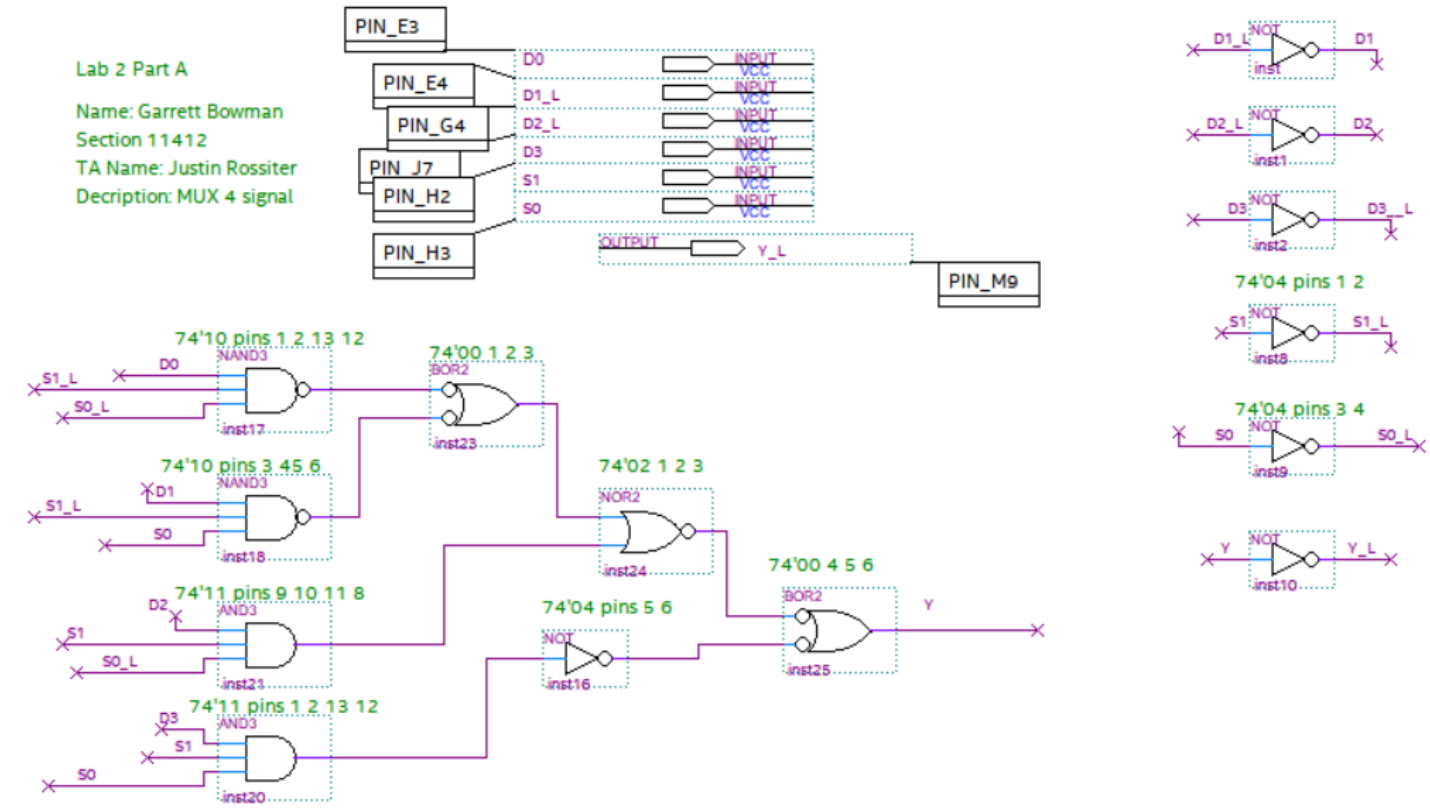
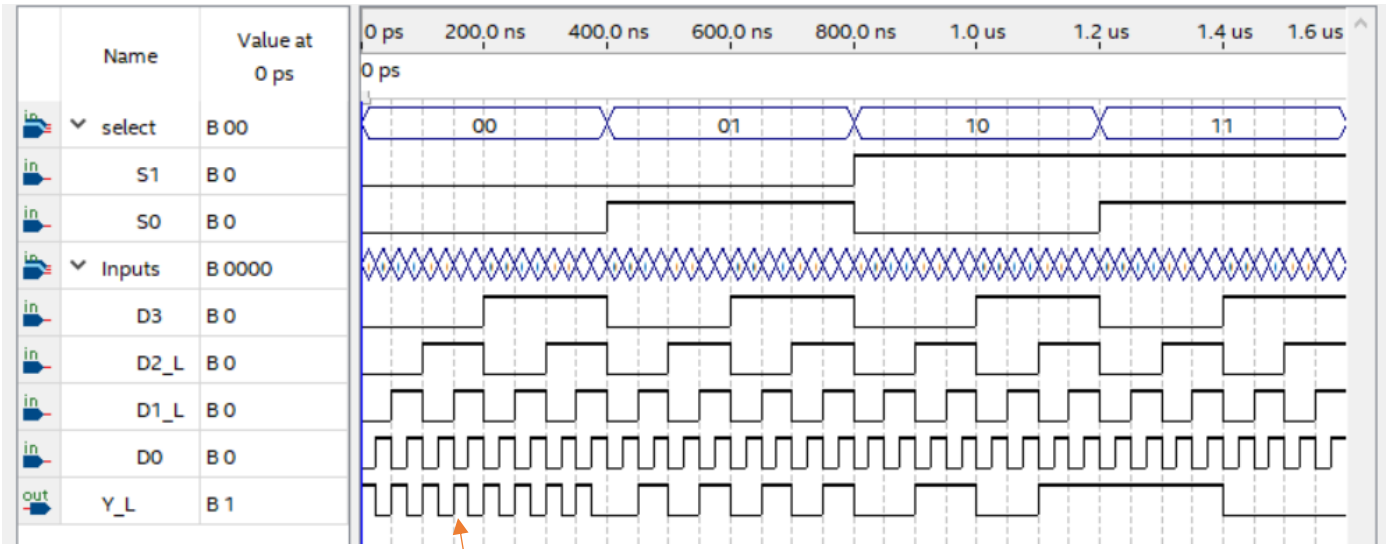




The only place that the inputs are reversed us when S1 and S0 are 0.

S_1	S_0	D_3	D_2	D_1	D_0	Y
0	0	X	X	X	0	0
0	0	X	X	X	1	1
0	1	X	X	0	X	0
0	1	X	X	1	X	1
1	0	X	0	X	X	0
1	0	X	1	X	X	1
1	1	0	X	X	X	0
1	1	1	X	X	X	1

S_1	S_0	D_3	D_2	D_1	D_0	Y
L	L	X	X	X	L	H
L	L	X	X	X	H	L
L	H	X	X	L	X	L
L	H	X	X	H	X	H
H	L	X	L	X	X	L
H	L	X	H	X	X	H
H	H	L	X	X	X	H
H	H	H	X	X	X	L

Sum of Products

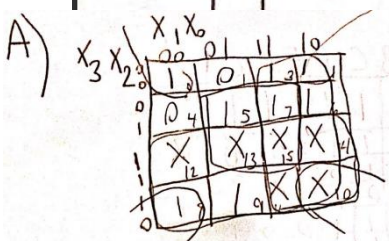
$$D_0 \bar{S_1} \bar{S_0} + D_1 \bar{S_1} S_0 + D_2 S_1 \bar{S_0} + D_3 S_1 S_0$$

Product of Sums

$$(D_0 + \bar{S_1} + \bar{S_0})(D_1 + \bar{S_1} + S_0)(D_2 + S_1 + \bar{S_0})(D_3 + S_1 + S_0)$$

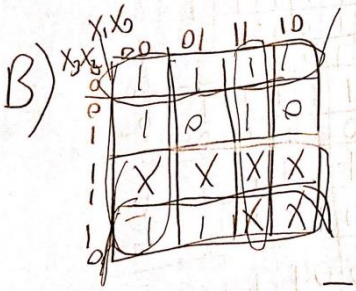
B.

A)



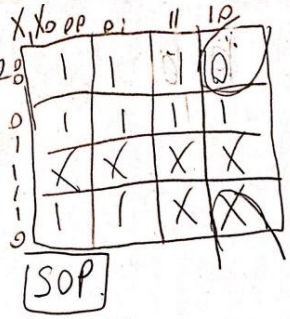
$F = X_1 + X_3 + \bar{X}_2 \bar{X}_0 + X_2 X_0$

B)



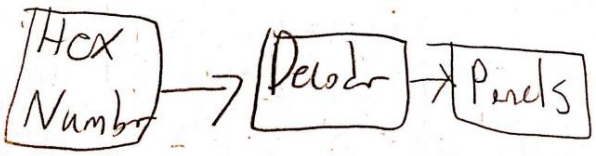
$F = \bar{X}_2 + \bar{X}_1 \bar{X}_0 + X_1 X_0$

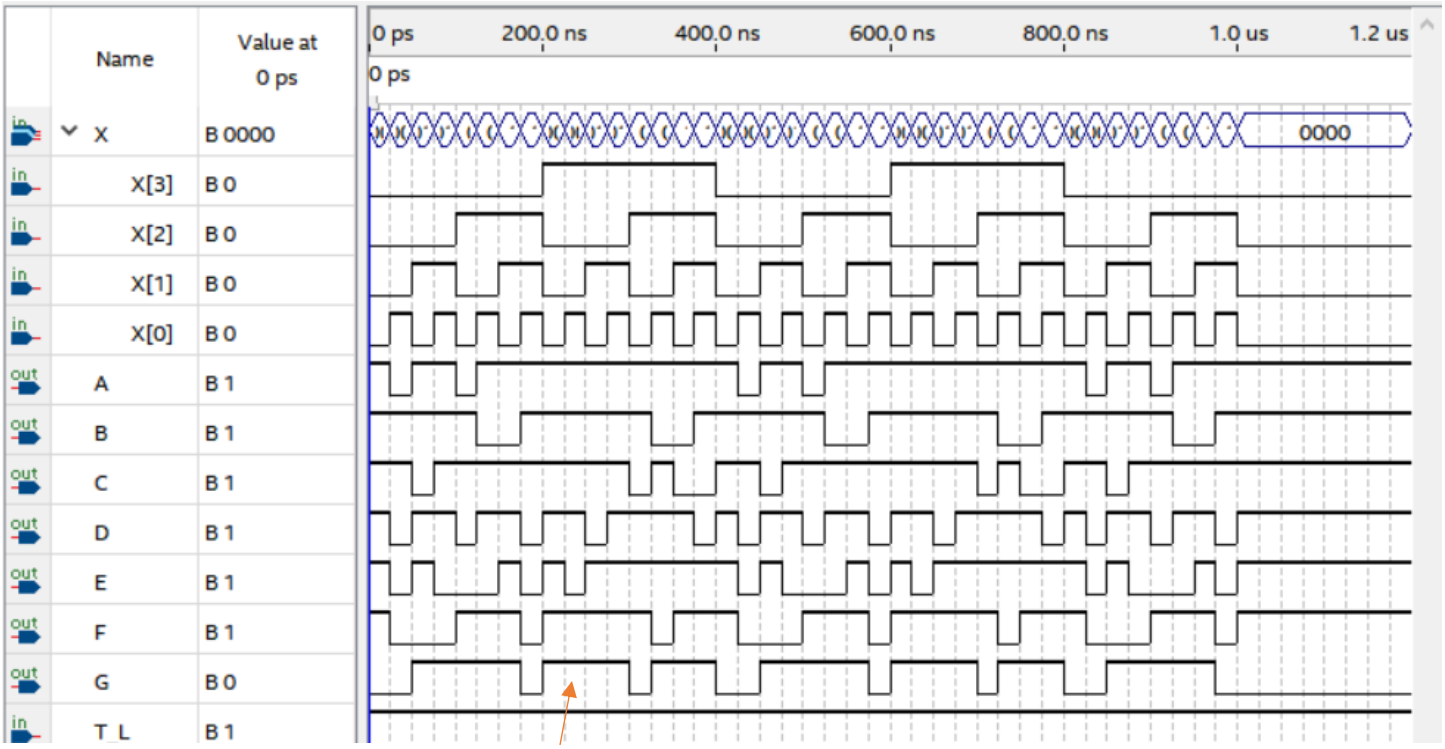
C)



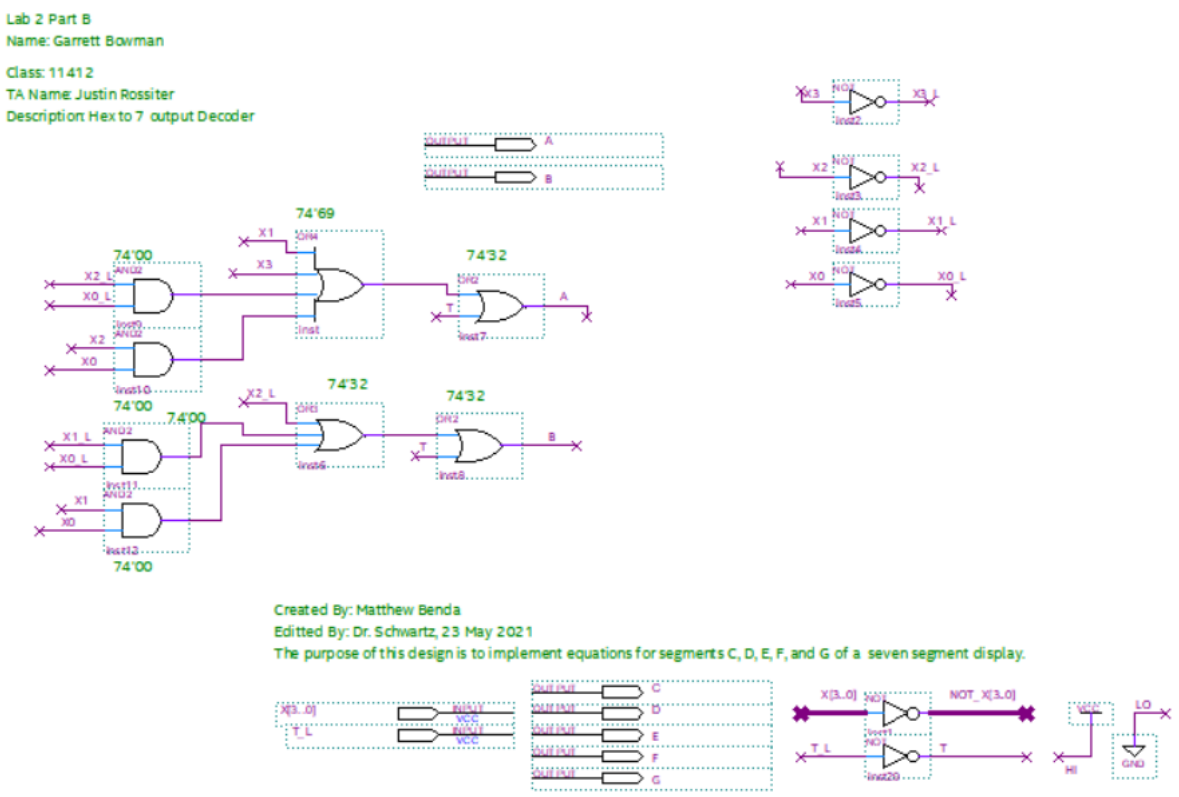
$SOP = X_2 + \bar{X}_1 + X_0$

Functional Box Diagram





This is where we get letters on the display.



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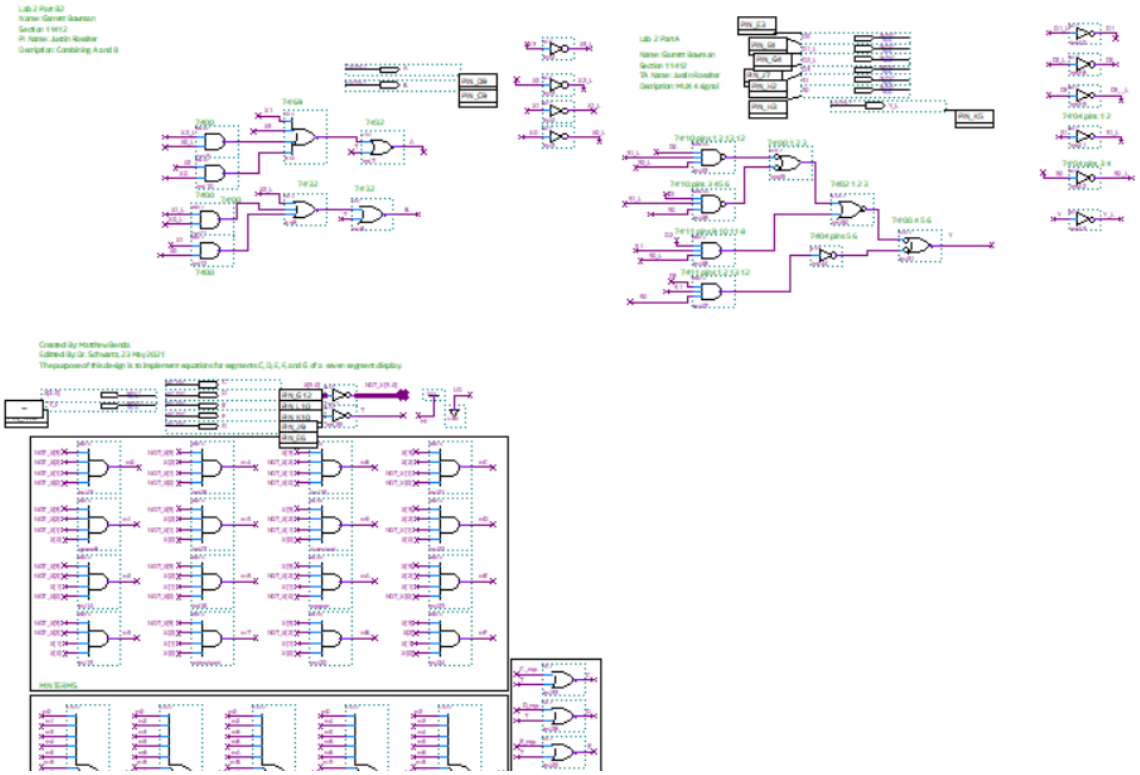

Combined A and B

C

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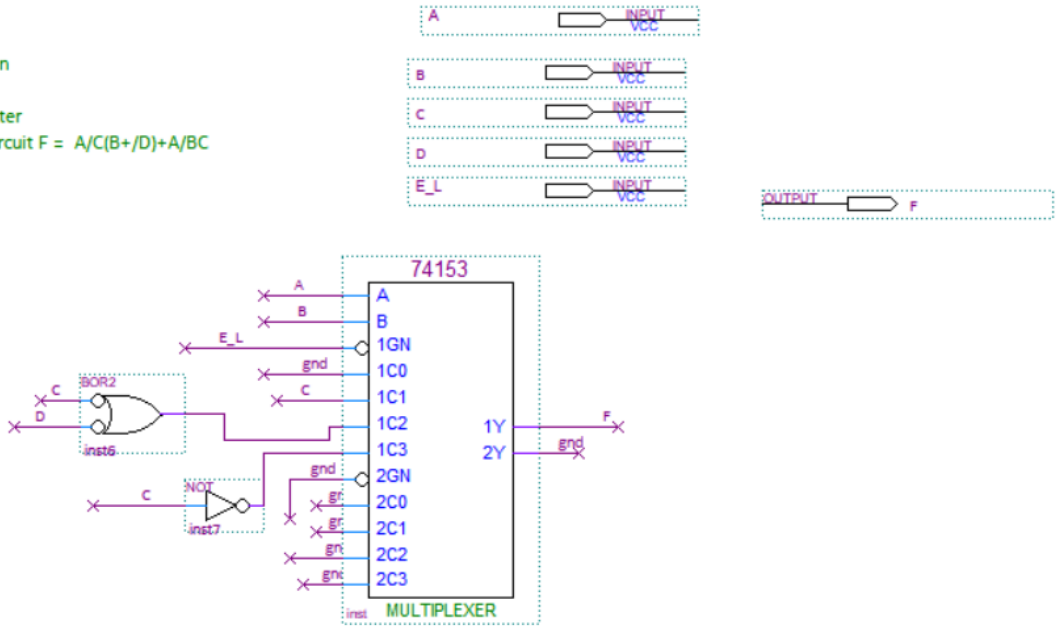
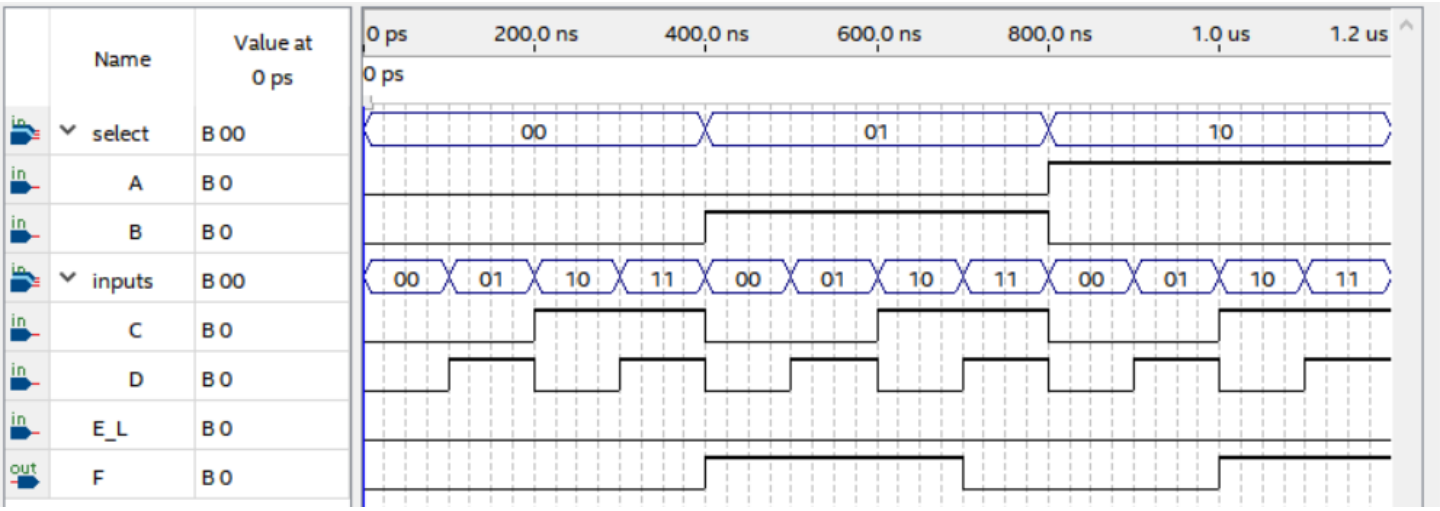
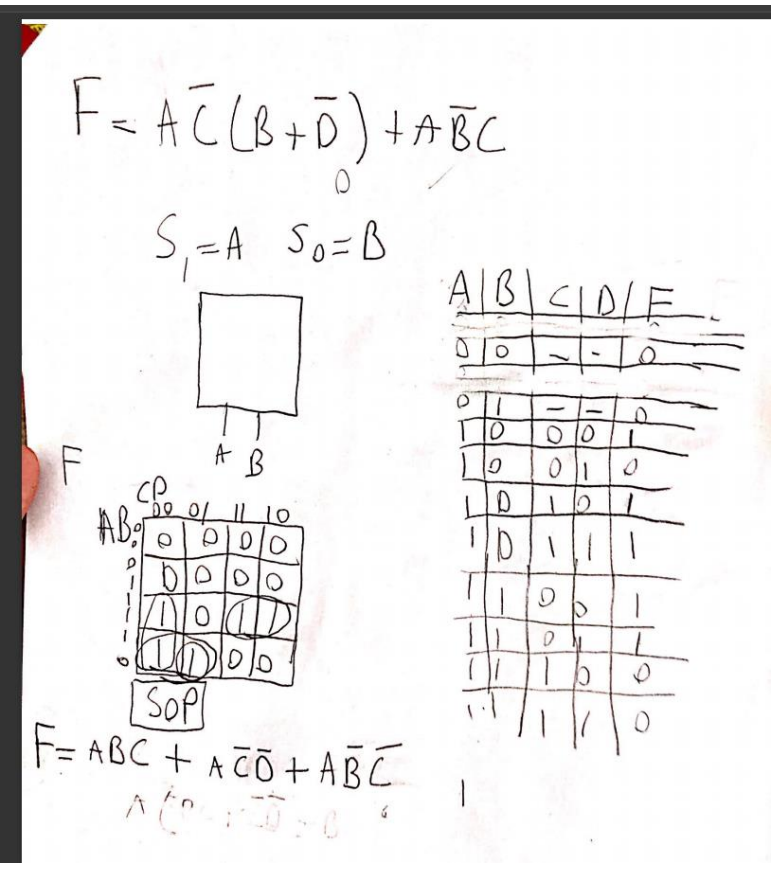
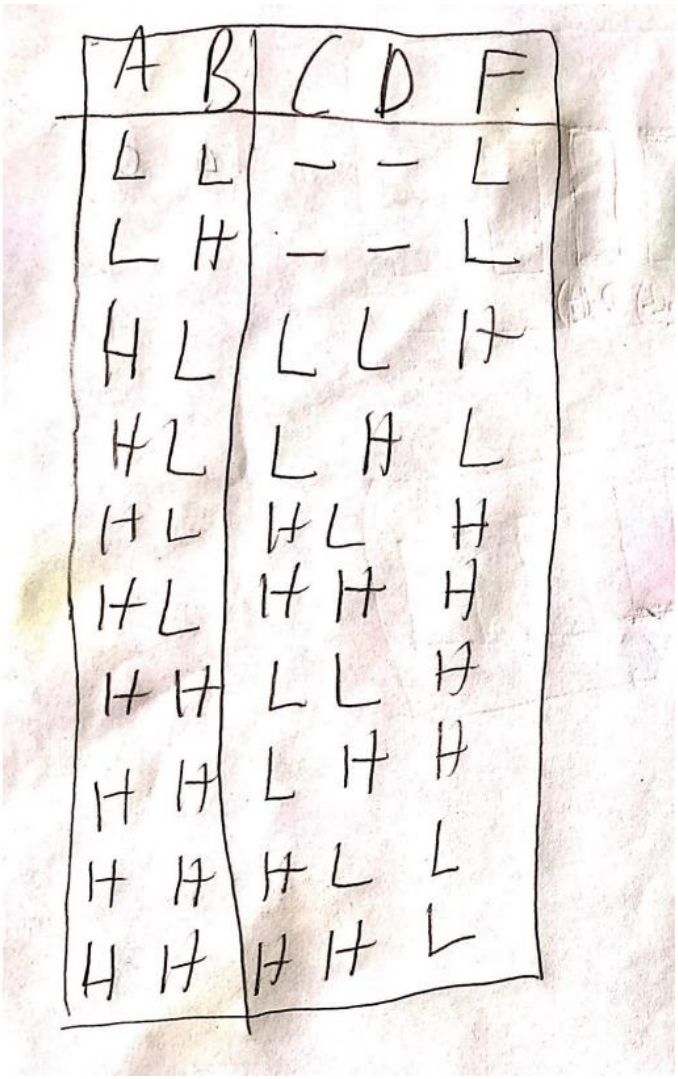
Lab 2 Part C
Name: Garrett Bowman
Section 11412
TA Name: Justin Rossiter
Description: 74'153 circuit F = A/C(B+/D)+A/BC






F = A C̄ (B + D̄) + A B̄ C
S1 = A S0 = B
A B C D F
F
CD
AB
SOP
F = ABC + AC̄D̄ + AB̄C̄


A B C D F