

Mini Project Report

Name and Student ID: _____

Lab Section: ____

Date: _____

Submission Instructions:

Prelab:

1. Complete the prelab
2. Submit this report with the prelab completed to Canvas **before** your lab starts

Lab:

1. Complete the lab according to the instructions
2. Take screenshots of your ModelSim waveform (note: to receive points your NetID has to be present in the screenshot) and insert them into this document.
3. Include screenshots of any related block design files or Verilog files in the report
4. Complete this report and reupload it to Canvas

PRELAB:

Read the Mini-Project lab document and complete as much of this answer sheet as you can before lab.

LAB:

4.0 Draw Uncle Bob's circuit below, using only AND, OR, and NOT gates.

5.0 Give the shorthand canonical SOP expression for Uncle Bob's circuit and write the Verilog code which implements this behavior:

$B(W, X, Y, Z) =$ _____

Verilog:

<<<Insert a screenshot of your Verilog file>>>

Part 5.0 Results:

To get full points, replace this screenshot with your results

- To find your NetID, open the start menu and search for "This PC". Then scroll down to reveal your NetID

**Example Screenshot
Replace Me!**

**Must show your
NetID and
verified waveform**

Mini Project Report

6.0 Truth table for Uncle Bob's function B and the 4-bit prime detector function P.

W	X	Y	Z	B	P
0	0	0	0		
0	0	0	1		
0	0	1	0		
0	0	1	1		
0	1	0	0		
0	1	0	1		
0	1	1	0		
0	1	1	1		
1	0	0	0		
1	0	0	1		
1	0	1	0		
1	0	1	1		
1	1	0	0		
1	1	0	1		
1	1	1	0		
1	1	1	1		

<div>P</div>		WX			
		YZ	00	01	11
	00				
	01				
	11				
	10				

Simplified SOP Expression:

P(W, X, Y, Z) = _____

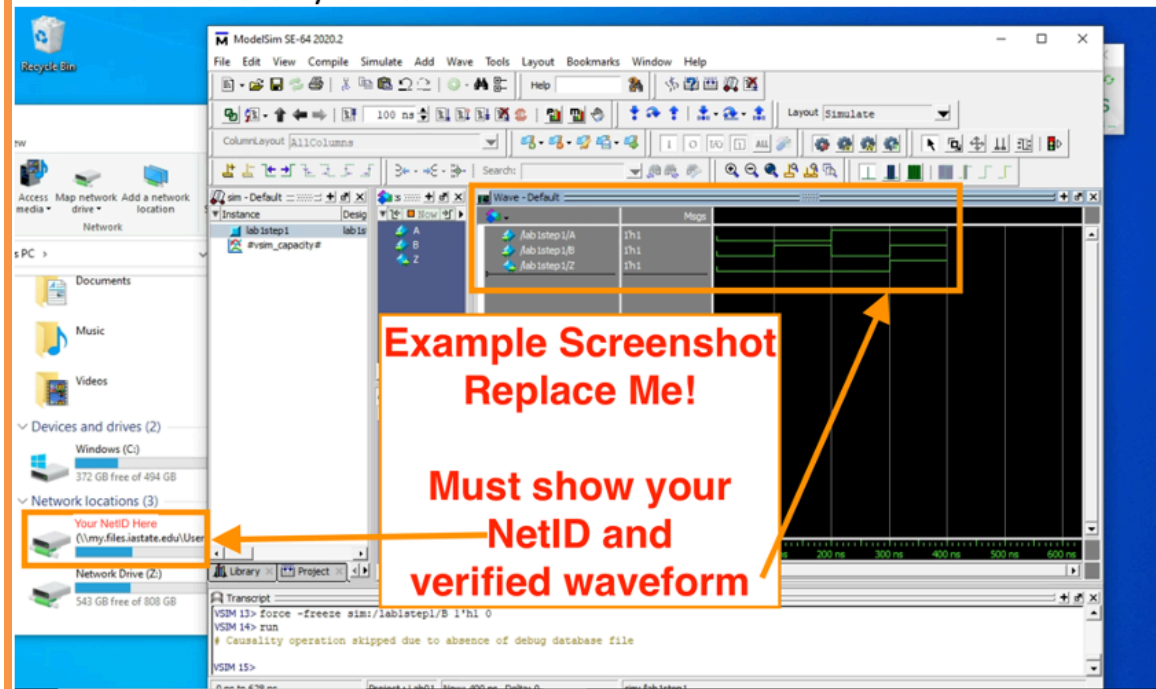
7.0 Give your implementation of the correct 4-bit prime detector circuit (**P**) below as either Verilog or a schematic (your choice). Then demonstrate the results:

<<<Insert a screenshot of your BDF/Verilog file here>>>

Part 7.0 results:

To get full points, replace this screenshot with your results

- To find your NetID, open the start menu and search for "This PC". Then scroll down to reveal your NetID



8.0 Design and implement a circuit that uses Uncle Bob's circuit but fixes his mistakes. Draw it below and demonstrate the results:

<<<Insert a screenshot of your circuit drawing here>>>

Part 8.0 results

To get full points, replace this screenshot with your results

- To find your NetID, open the start menu and search for "This PC". Then scroll down to reveal your NetID

