# Lab 1 Behavioral Report

Academic Integrity (more info @ https://aisc.uci.edu/): You are encouraged to discuss the labs at a high level, but the code/equations/simulations you come up with should be your own. By typing “yes” at the end of this question and filling in your name, you certify that the work you are turning in is your own work. Is the work you are turning in your own? **\_yes\_\_**

If you worked on any portion of your report or vhdl code with other students (discussion at high level & debugging; if more, please describe), please list their names here. Otherwise write “n/a”: **\_n/a\_\_\_**

Student Name: **Christopher Cyr**  
Student ID: 12436037  
Date Completed: 4/11/2022  
Time Spent: Reviewing Digital Design Material: 20 min  
 Design/Preparation Work: 5 min  
 VHDL Coding & Debugging: 1 hr

## Behavioral Overview

What % do you feel you completed on the lab? Be sure to list your general procedure of how you completed this lab & material (if any) you reviewed to help you complete this lab. Regardless of % stated, provide any details of difficulties (if any) you encountered during this lab. A few sentences are sufficient.

100%, but I forgot how to add sources to projects that had already been made so I had to figure that out. Also I have been coding in Python for so long I forgot to add semicolons at the end of each line.

My testbench simply tests the output for each of the 16 possible input combinations

## Lab 1 Truth Table

Provide your truth table for Lab 1 here. You can create a table in Word, Excel, or attach a picture of your truth table as long as it is legible and in the correct orientation.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fuel3 | Fuel2 | Fuel1 | Fuel0 | FuelWarningLight |
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

## Lab 1 Boolean Equation

Show the work you did to go from the truth table to your equation here (can be any equation that is valid, does not need to be minimal or in a particular form).

Fuel3’Fuel2’ = (Fuel3 + Fuel2)’

## Lab 1 Estimated Delay

This calculation will be more important in the next lab. For this lab, just list your estimated delay based on your Boolean equation here (you are not required to add the delay to the vhdl code for behavioral): 1.4 ns

## Lab 1 Behavioral Simulation Graph

Show a screenshot or multiple screenshots of your final graph here. You should crop it to the appropriate size so that it is legible.

