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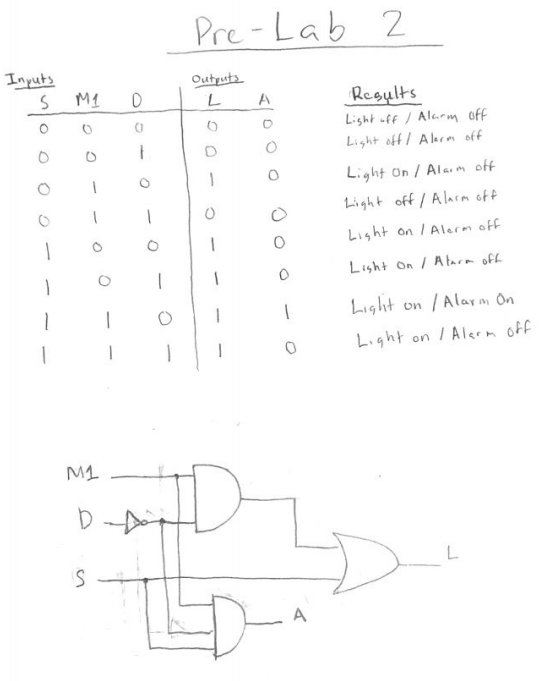
Lab 3

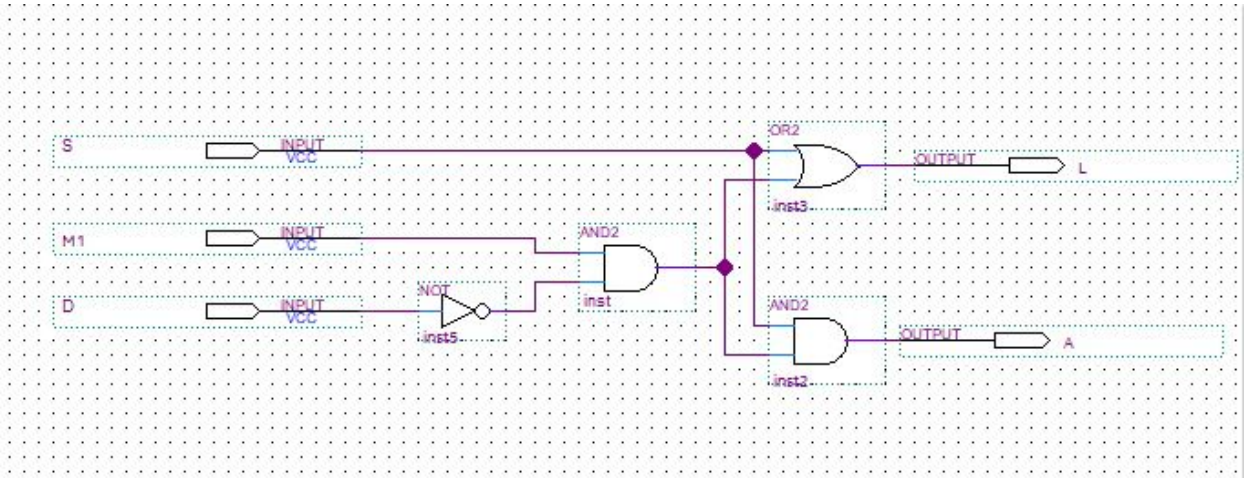
Introduction

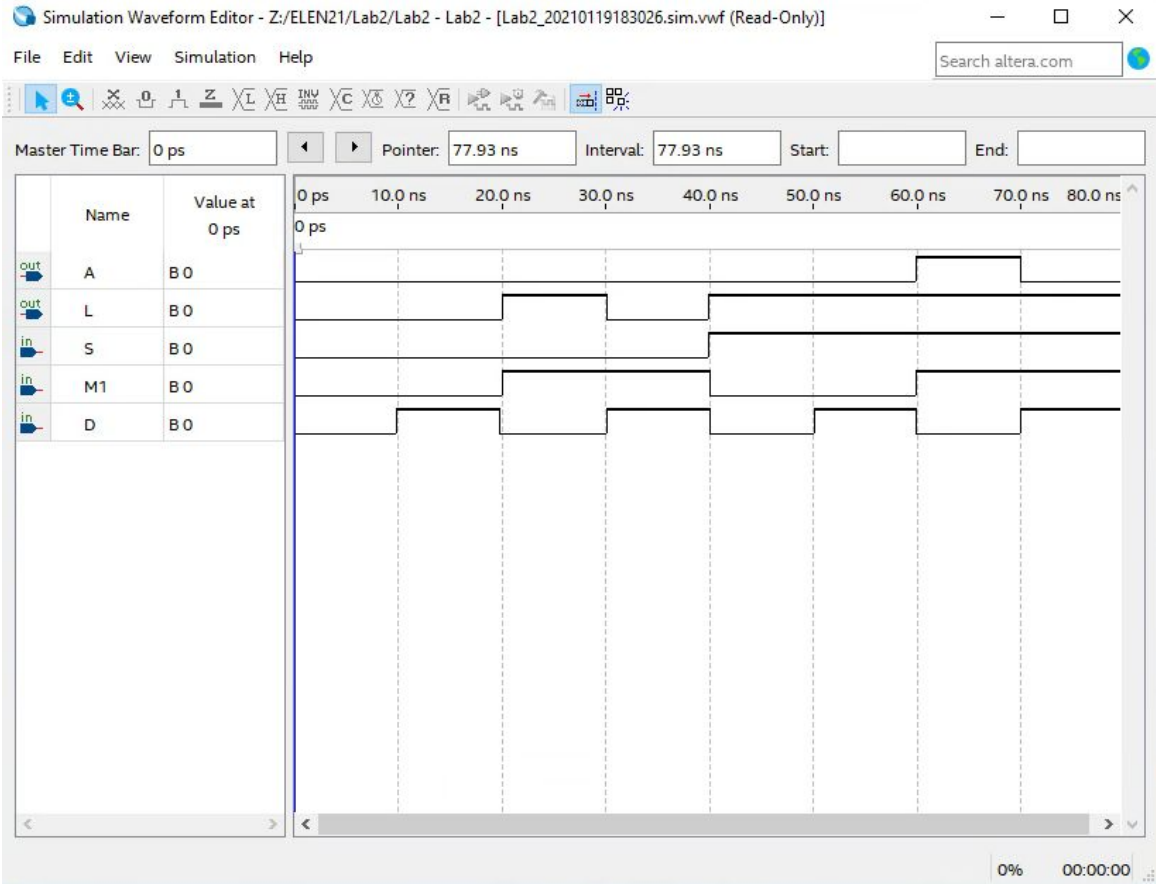
In the pre lab we designed a circuit that took three inputs (motion detector M1, disable switch D and a switch S). If the switch is on then the light turns on. If the motion detector is on while the switch is, then the alarm A is turned on and as well as the light L. The disable switch D, when on, disables the motion activated light and alarm. The light can still be turned on if the switch S is on. In the lab we created a simulation of the circuit to test on the different outcomes.

Procedure

First we created a new project and opened a new Block Diagram/Schematic File. Next, we imported the necessary inputs, outputs and gates needed to create our circuit into the File. After importing them, we named each element and connected them to each other to create our desired circuit. Once we finished creating the circuit, we compiled and tested each combination of inputs.







TA's Questions

1. When is the alarm on?
   The Alarm is on between 60 and 70 nanoseconds.
2. What is happening between 20 and 30 nanoseconds?
   Between 20 and 30 nanoseconds, the Alarm is off, Disabler off, Light on, Motion detector on and Switch is off.