



**Course Name:** EMBEDDED SYSTEMS I / III

**Course Number and Section:** 14:332:493:03

**Year:** Spring 2021

**Lab Report #:** 6

**Lab Instructor:** Philip Southard

**Student Name and RUID:** Jonathan Ely, 204006108

**Date Submitted:** April 29, 2021

**GitHub Link:**

## Purpose/Objective:

To create a Time and Date display using the RTCC and OLED PMODs.

## Theory of Operation:

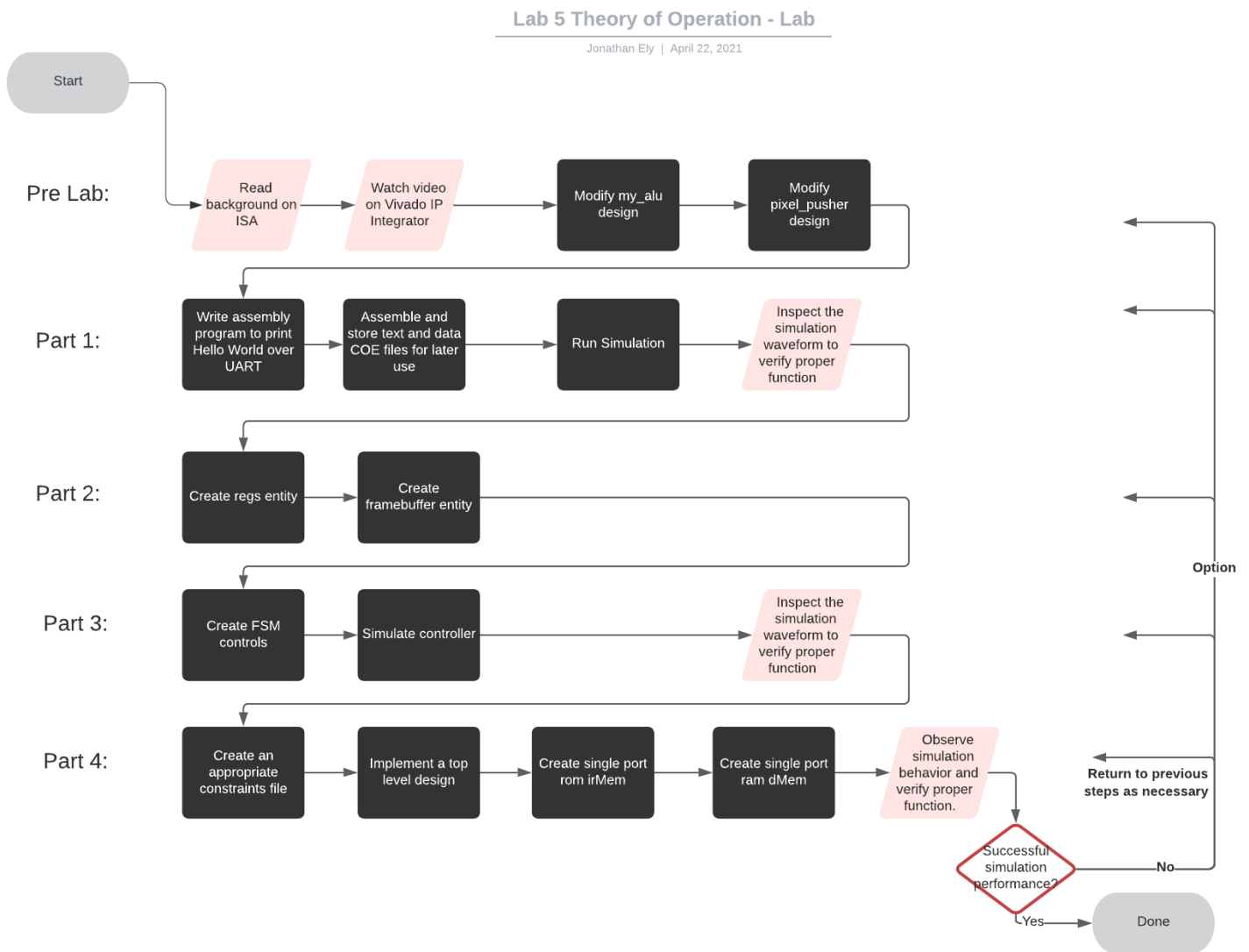


Figure 1: Theory of operation

## **Simulation Waveforms:**

## **Vivado Schematics:**

- a) Vivado Elaboration Schematic
- b) Vivado Synthesis Schematic
- c) Post- Synthesis Utilization Table
- d) On-Chip Power Graphs

The constraints file needs to include the regular clock pin as well as the pin assignments for the RTCC and OLED PMODs.

**Answers to Additional Questions and Extra Credit:**

There are no additional questions asked within the lab.

There is no Extra Credit question for this lab.

## **Conclusion:**

I was not able to complete this lab. My time spent on this lab mostly consisted of research into how to read from the RTCC PMOD on the Zybo board using I<sup>2</sup>C. The available documentation through the Digilent website and the Vivado Xilinx Help pages were outdated and not quite mappable to the update version of Vivado. These documents also used functions of Vivado not discussed in class.

## **Follow Up:**

Conceptually, the lab is very simple, but completing it required more resources than were available to me within the span of time it was assigned and due. Generally, time was the constricting resource. If more time were available to me during the end of this semester, I would have been able to dedicate more time to thoroughly understanding the I<sup>2</sup>C concepts required to connect the RTCC and OLED PMODs.