Leya Zeng
Tanish Arora

Lab 1: Schematic Drawing Exercises

Section 021
TA: Mohsen Karimi

2. Abstract

This Lab's main objectives are to getting familiar with :

- To gain experience with using Cadence-Design CIS on the workstation to create electronic schematics.
- This set of exercises provides the necessary skills for the further lab.

3. Procedure

Part 1:

1) Open Cadence Capture CIS ->File ->New -> Project -> Select Schematic.
2) Open Schematic -> Add Part through the Libraries -> Add Part 555alt, Repeat the same things and add about 3 Resistors R, 2 Capacitors (**C & C_elect**), IC (**IC1**) and 1 Vdc(**VDC**).
   Also add 2 grounds.
3) Add properties for all the parts placed : For R1 = 1k, R2 = 6.8k, R3 = 15k, C1= 0.01uF, C2 = 47uF, and Vdc = 9V.
4) Wire all the parts, Save the schematic.

Part 2A:

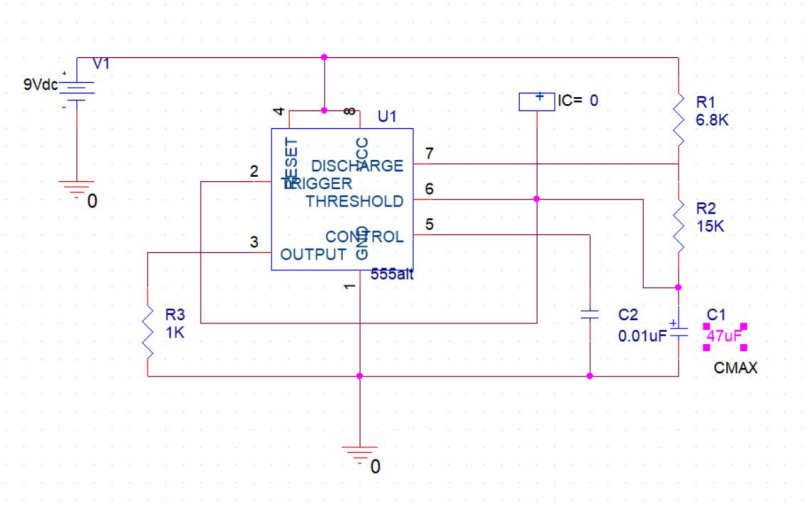
1) Open Cadence Capture CIS ->File ->New -> Project -> Select Schematic.
2) Open Schematic -> Add Part through the Libraries -> Add Part MC9S12DJ128BCPV, Repeat the same things and add about 10 Resistors R, two 4-bits LED bars (**LEDARR_IS_4**), and a function generator (**VCO_sqr**).Also add 2 grounds.
3) Wire all the parts as shown in the lab manual. Add the LED_Bars to Port (A9:A15)
4) Make the connections and Save the schematic

Part 2B:

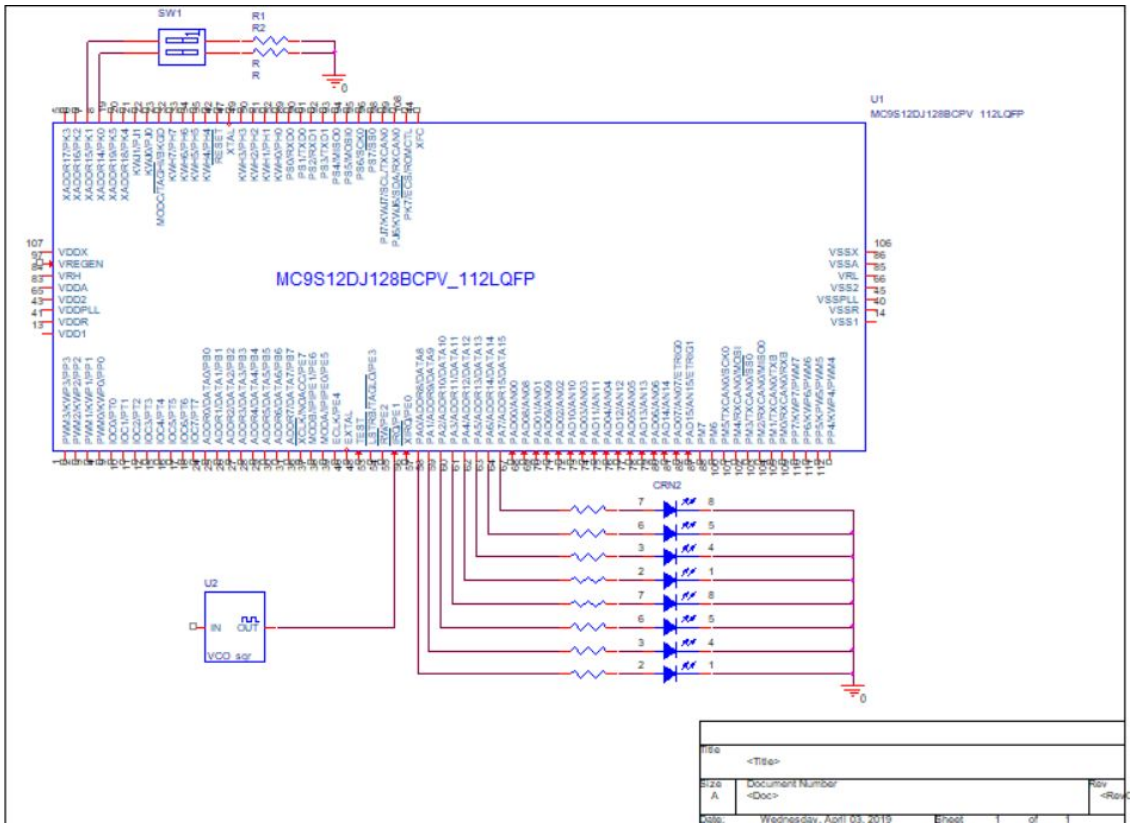
1) Open Cadence Capture CIS ->File ->New -> Project -> Select Schematic.
2) Open Schematic -> Add Part through the Libraries -> Add Part MC9S12DJ128BCPV, Repeat the same things and add about 10 Resistors R, two 4-bits LED bars (**LEDARR_IS_4**), and a function generator (**VCO_sqr**).Also add 2 grounds.
3) Wire all the parts as shown in the lab manual. Add the LED_Bars to Port (B0:B7)
4) Make the connections and Save the schematic.

4) Schematic Diagram :

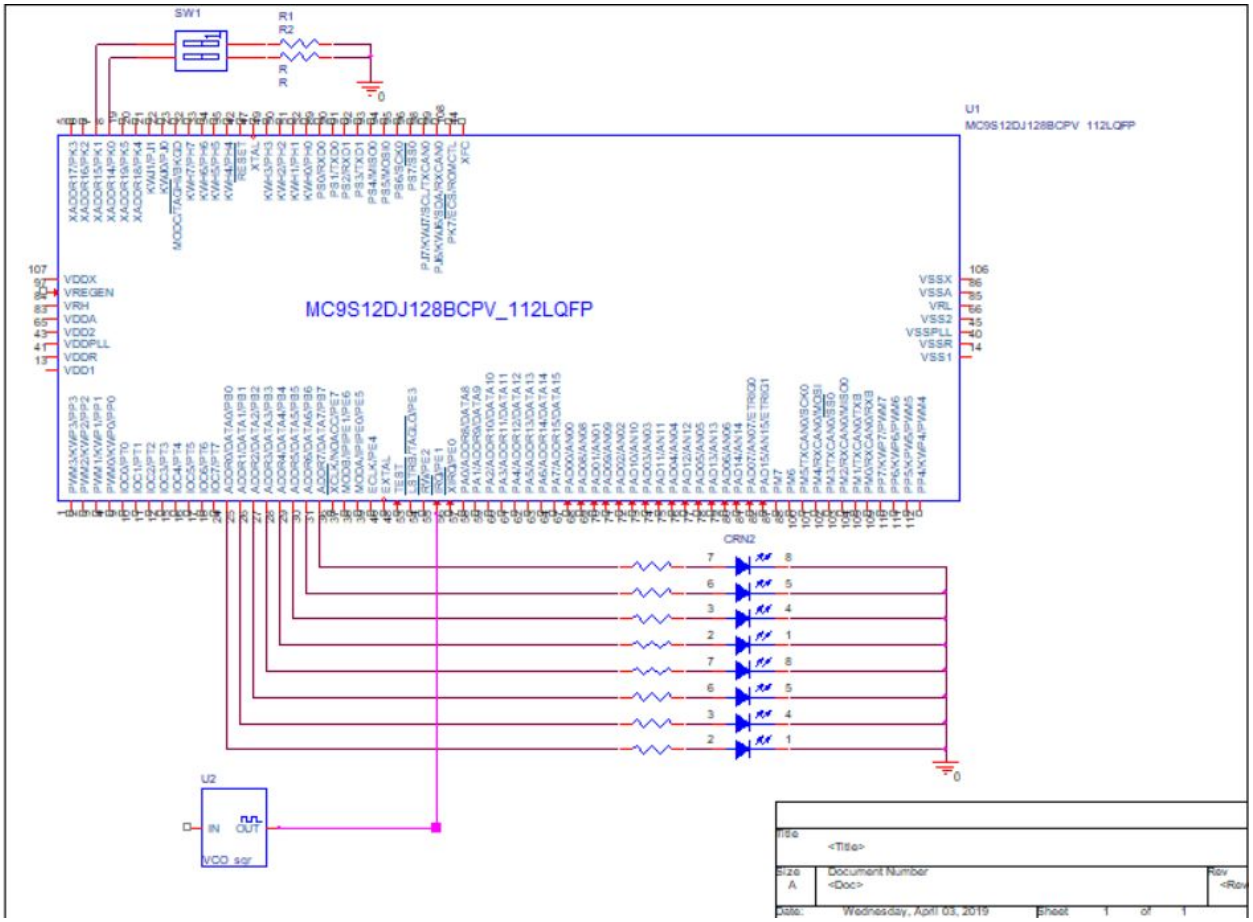
Part1;



Part 2A:



Part2B:



5 Problems Encountered:

There were no major problems with this lab. Everything was pretty straight forward and we were able to complete the lab before the lab period ended. The only hiccup we had was at the beginning when we were trying to add parts to the library but were not able to as there were some missing libraries, it was fixed by adding more libraries.

6. Conclusion:

In this lab, we worked with Cadence Capture in order to get started with the labs, and also to gain experience in creating schematics on the software so as to work on the future labs. We had so much fun in learning all the new things especially about the Part2A and 2B schematics.