Name: \_\_Replace with your name(s)\_\_\_\_

EID: \_\_Replace with your EID(s)\_\_\_\_\_

Semester: Spring 2024

Course: ECE445L

A) ***Objectives*:**

1. In a few sentences, describe the purpose of the lab and the features of your alarm clock.

B) ***Hardware Design Deliverables:***

1. Deliverable 1: Using **KiCad**, create a schematic for your design. Include a screenshot in the space below.

C) ***Software Design Deliverables:***

1. I have pushed my project to GitHub for grading (Check box if true).

D) ***Measurement Data:***

1. Deliverable 3: Time/Frequency domain output, and DAC characterization
2. Deliverable 4: Effective number of bits calculation
3. Deliverable 5: ISR processor utilization
4. Deliverable 6: Output Jitter
5. Deliverable 7: Power and noise characterization
6. Deliverable 8 (15pt EC): Additional Features

E) ***Analysis and Discussion Questions:***

1. Estimate how long the system would run on the 2600mA battery.
2. Estimate the power dissipated through the LDO regulator knowing the current draw from downstream components and voltage drop across the regulator.
3. Estimate the lifetime of the battery, knowing the storage capacity in mA-hours and the current draw.
4. Discuss the advantages and disadvantages of using an LDO versus a switching regulator.