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

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

Semester: Spring 2024

Course: ECE445L

A) ***Requirements Document:***

1. I have updated my PRD at the end of this lab report to reflect any loss of functionality from lab 3 during lab 4 development (Check box if true).

B) ***Objectives*:**

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

C) ***Hardware Design Deliverables:***

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

D) ***Software Design Deliverables:***

1. I have pushed my code to GitHub for grading (Check box if true).
2. Deliverable 2: System call graph including all endpoints that you added for this lab.

E) ***Measurement Data:***

1. Deliverable 3: data dumps, and jitter measurements
2. Deliverable 4: System in action
3. Deliverable 5: Power characterization
4. Deliverable 6 (5pt EC): Sensor interfacing

F) ***Analysis and Discussion Questions:***

1. Explain the differences between frames and iFrames.
2. Explain what console.log() is used for? Show how it is used on your Web App Page.
3. Explain how the functions are called from mqtt\_app.htm and executed in clock\_page.js?
4. In the client server paradigm, explain the sequence of internet communications sent from client to server and from server to client as the client saves data on the server. Assume the client already is connected to the Wi-Fi AP and the client knows the IP address of the server.
5. What is the purpose of the DNS?
6. What is the difference between UDP and TCP communication? More specifically when should we use UDP and when should we use TCP?

G) ***Project Requirements Document:***

1. Copy your PRD from lab 3 below. You must highlight any feature additions and ~~strikethrough~~ any features removed. At minimum, you must update text for sections II.I and II.V (AKA 2.1 and 2.5) if they have changed.
2. Overview
   1. Objectives: Why are we doing this project? What is the purpose?
   2. Process: How will the project be developed?
   3. Roles and Responsibilities: Who will do what? Who are the clients?
   4. Interactions with Existing Systems: How will it fit in?
   5. Terminology: Define terms used in the document.
   6. Security: How will intellectual property be managed?
3. Function Description
   1. Functionality: What will the system do precisely?
   2. Scope: List the phases and what will be delivered in each phase.
   3. Prototypes: How will intermediate progress be demonstrated?
   4. Performance: Define the measures and describe how they will be determined.
   5. Usability: Describe the interfaces. Be quantitative if possible.
   6. Safety: Explain any safety requirements and how they will be measured.
4. Deliverables
   1. Reports: How will the system be described?
   2. Audits: How will the clients evaluate progress?
   3. Outcomes: What are the deliverables? How do we know when it is done?