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Semester: Spring 2024

Course: ECE445L

A) ***Objectives*:**

1. In a few sentences, describe the purpose of the lab.

Purpose is to design an embedded system that can fit in an enclosure. We are building the Tpod, which is an Ipod like music player that stores song in an SD card, plays songs through headphones, and has touch display and can send messages over wifi. This lab builds the PCB for the system

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

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

A diagram of a circuit board

Description automatically generated

1. Deliverable 2: Using **KiCad**, create a Layout for your design. Include a screenshot in the space below.

A blueprint of a circuit board

Description automatically generated

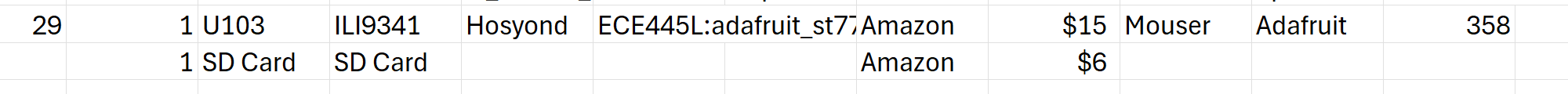
C) ***Software Design Deliverables:***

1. I have pushed my project to GitHub for grading (Yes/No):
2. Deliverable 3: System design diagram of the modules created.

A diagram of a computer hardware system

Description automatically generated

D) ***General Deliverables:***

1. Deliverable 4: Total cost estimate
2. I have updated the bill of materials (Yes/No):
3. 
4. Out of pocket costs: $21
5. Adjusted competition costs: $21
6. Deliverable 5: Description of tests added for lab 8

Wifi test – connect ESP to python server to test sending and receiving messages

Sound test – Testing potentiometer ADC input to control volume through software

LCD display test – Write drivers to display to create lines and text

Integration test – Make all 3 of these work at same time

1. Deliverable 6 (10pt EC): Discrete IC usage N/A
2. Deliverable 7 (10pt EC): Characterization of the system N/A

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

1. What is the required naming scheme of the PCB submitted to us for review and ordering?

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and same for pcb and schematic files