ECSE 444 Project Proposal Group 10

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I. Project Group Members

Our project group consists of three students, Chang Zhou (260779060) and Rintaro Nomura (260781007) from Computer Engineering, and Yuhang Zhang (260787441) from Software Engineering. We would collaborate using github and Airtable.

II. Description of Project

A. Motivation

There is a growing interest in the wearable devices that connect personal health management to the Internet of Things. For our project, we came up with an idea of a wearable device, UrPersonalTrainer (UTP), that tracks users' squat exercises. The UTP would monitor and record users' exercise information and generate a daily trainee report.

B. Planned Features

The Project block diagram is shown in Fig. 1, and our project has these following planned features:

1. Ability to monitor user's running speed and running time.
2. Ability to detect and record a user's body condition during exercises in terms of body temperature.
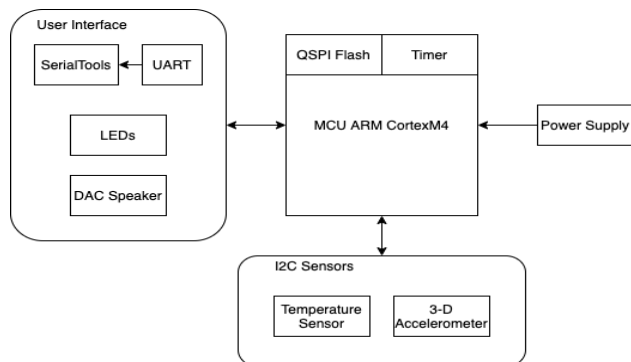3. Ability to generate a personal daily exercise report.

III. Project Milestones and Planned Timeline

A. Project Milestones and Work distribution

The project consists of four consecutive milestones:

1. The first milestone, ended on Nov, 8, is completing the design requirements of the UTP. For instance, the power supply UTP, specific functions required by the UTP, potential constraints, and solutions to these issues. Every member would work on this milestone together.
2. The second milestone, ended on Nov, 22, is implementing I2C sensors, UART, DACs, Flash, and subsystem tests. Each team member would take charge of a specific subsystem individually.
3. The third milestone, ended on Nov, 27, is merging subsystems and integrating specific features. Besides, we shall implement a reliable mobile power supply source for the UTP. Each team member would work on this milestone together.
4. The last milestone, ended on Dec, 07, is completing system testing and finalizing code and document. Each team member will work on this milestone together.
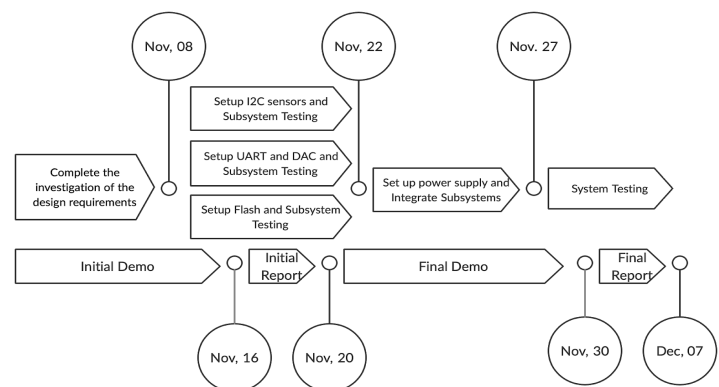
B. Planned Timeline

Fig. 1. Project Block Diagram

Fig. 2. Project Planned Timeline