ECET 430 - Prototype Plan - FitT

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Purpose

This document shows planned prototyping steps for the **FitT Fitness Tracker Demo Project**.

Prototype Alpha

Goals

Prototype Alpha will demonstrate to our (imaginary) project sponsor that we can show step counting on a display with readily available commercial components.

Type

This is a Proof-of-Concept prototype.

Scope

- Bring up our choice of STM32 controller on a nucleo dev board as our controller and get environment ready to program.
- Get motion readings from a 3-axis accelerometer as our motion sensor.
- Get output to an OLED display. Type is still to be determined, something available as a breakout board.
- Power will be from a wire, not yet portable.
- Demonstrate testing plan.

Timeline

Class demo in mid February.

Prototype Bravo

Goals

Prototype Bravo will demonstrate to our project sponsor that we can add heart beat sensing and battery power.

Type

This is a Proof-of-Concept prototype.

Scope

- Get heart beat readings from an optical HR sensor.
- Power the design from a rechargeable Li battery with breakout board charger/booster supply unit.
- Demonstrate testing plan.

Timeline

Class demo in end of February.

Prototype Charlie One

Goals

Prototype Charlie One will demonstrate all core functions in a working setup based on breakout boards.

Type

This is a works-as prototype.

Scope

- Display real time heart rate, step counts, timer with start/stop/clear buttons.
- Run off of battery with minimum defined battery life.
- Demonstrate testing plan.

Timeline

TBD

Prototype Charlie Two

Goals

Prototype Charlie Two will demonstrate the look and feel of the proposed final design.

Type

This is a looks-as prototype.

Scope

- Show a 3d printed shell with wrist strap.
- No electronics inside.
- Include display and buttons if possible
- Show plan to integrate electronics into shell.

Timeline

TBD

Prototype Delta

Goals

Prototype Delta will show the final product of custom electronics inside the custom shell.

Type

This is an engineering prototype.

Scope

- Show custom made PCB.
- Show PCB fitted into device.
- Demonstrate use cases and performance.
- Demonstrate testing plan.
- Show plan for future development.

Timeline

TBD