Audio Recording and Playback System

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01

Background

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- **Overview:** A password protected system which uses an accelerometer for input. After unlocking, both playback and recording modes are available. Separate locations are available to record into or playback from. Rotary encoders are used to select the location. System information displayed on an LCD and LED bar.
- **Primary Goal:** Audio recording and playback to specified references. Password protected by accelerometer.
- **System Functionality:** Features mic input, speaker output, accelerometer interfacing, LED bar output, LED status, LCD display, rotary encoders, and pushbuttons.
- **Purpose:** A system which allows the user to securely record and playback audio.

02

Development Process

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01 PROPOSAL

Created flowchart
Created circuit diagram
Submitted proposal for audio playback machine

02 CIRCUIT DESIGN

Designed electret mic circuit (tidu765 lab)
Designed speaker circuit (lm386 datasheet)

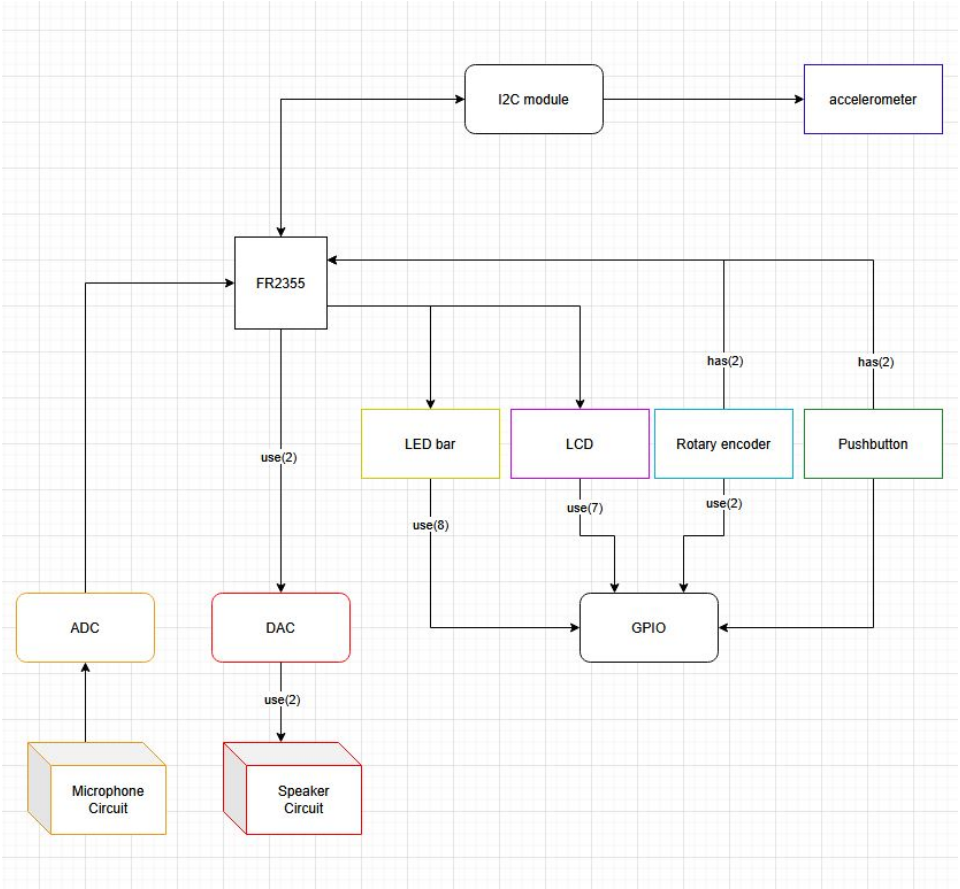
03 PROGRAMMING

LCD
LED bar
Speaker
Mic
Rotary Encoder
Pushbuttons
Accelerometer
Controller

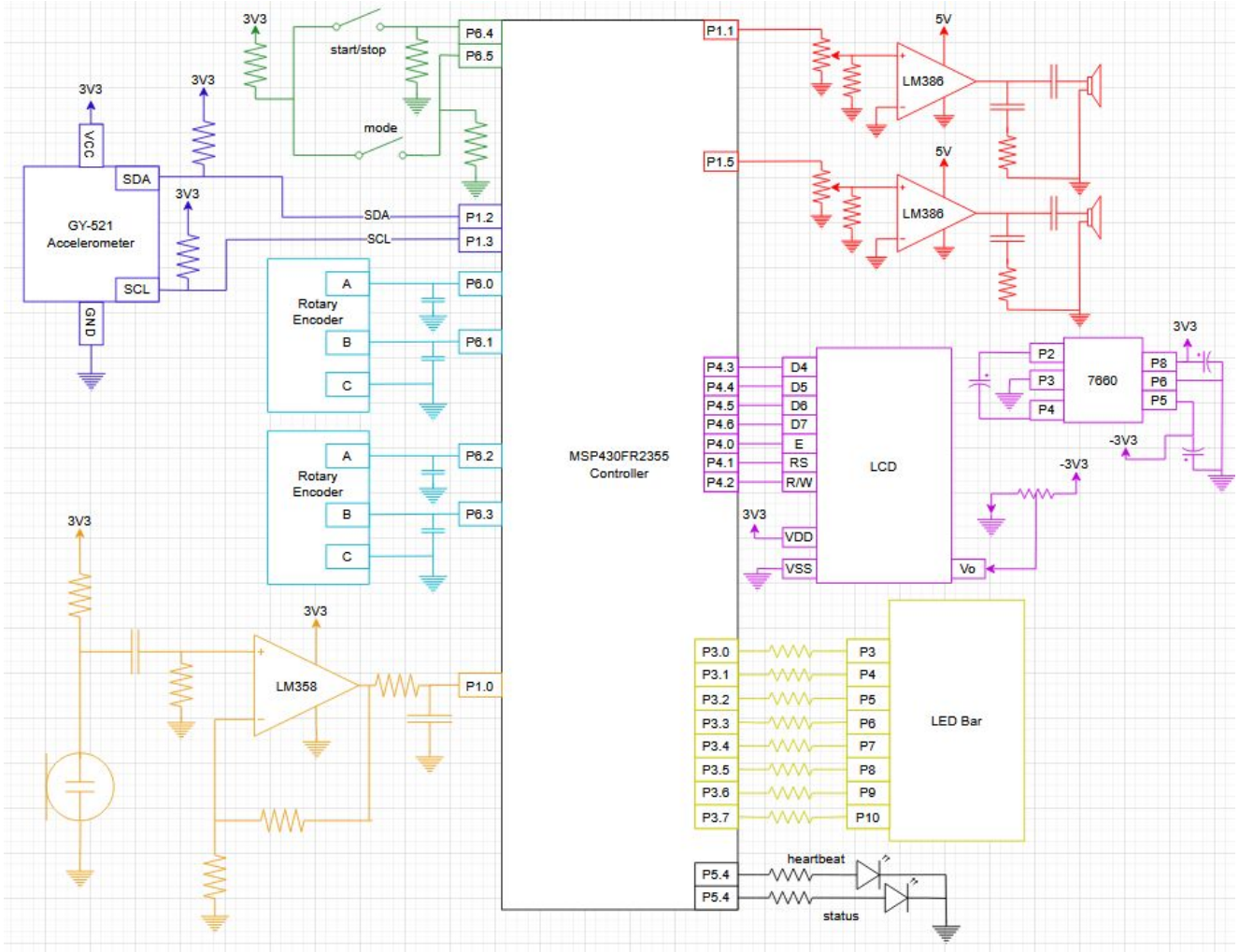
03

Development Documentation

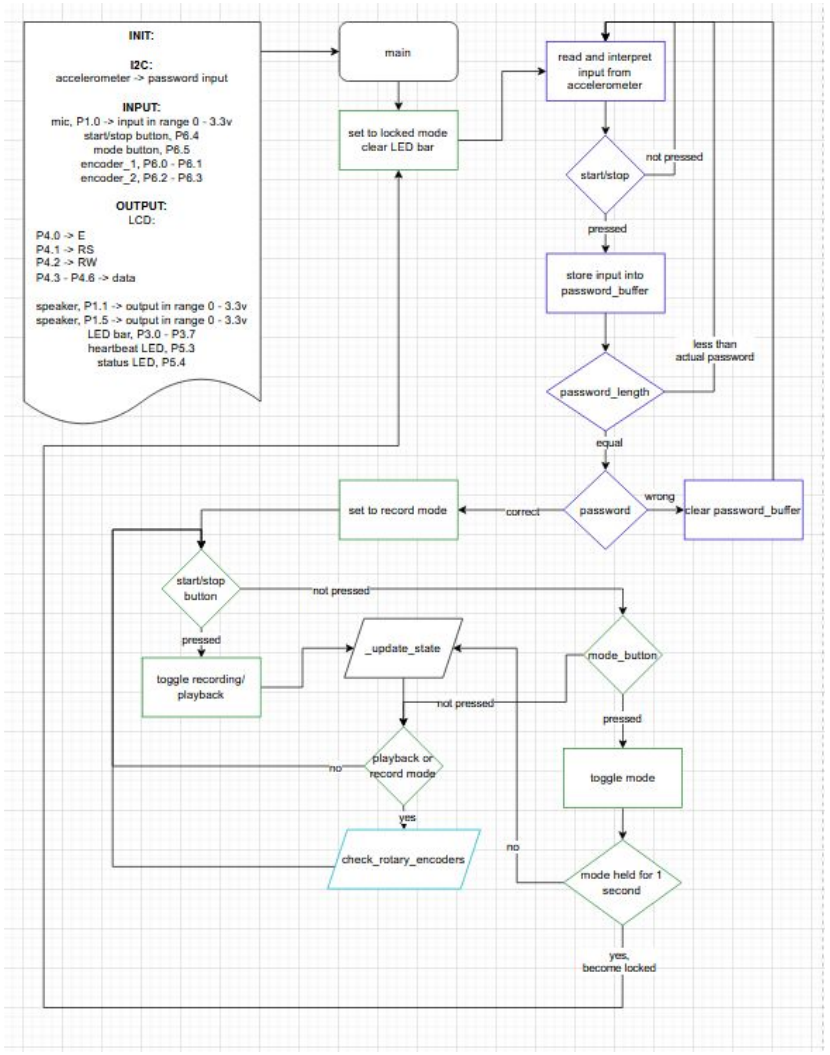
Software Architecture



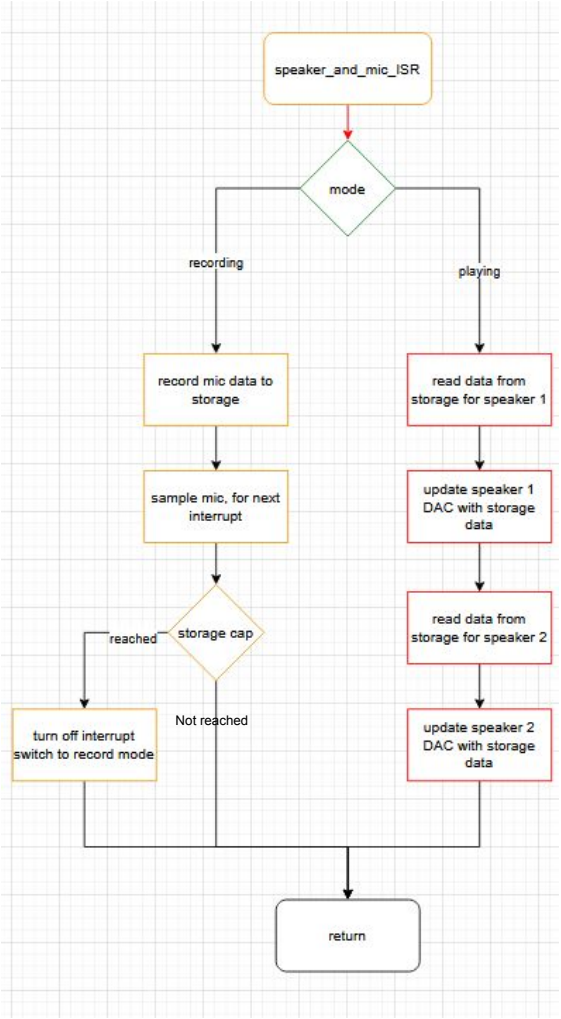
Circuit Diagram



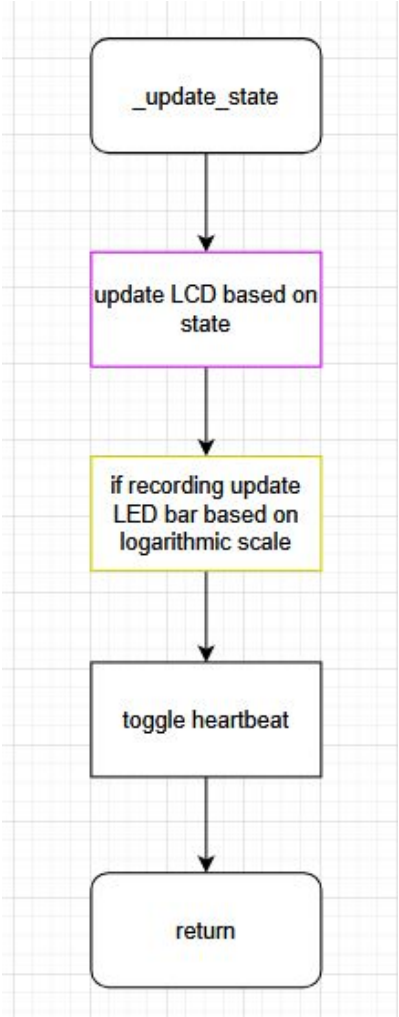
Controller Flowchart

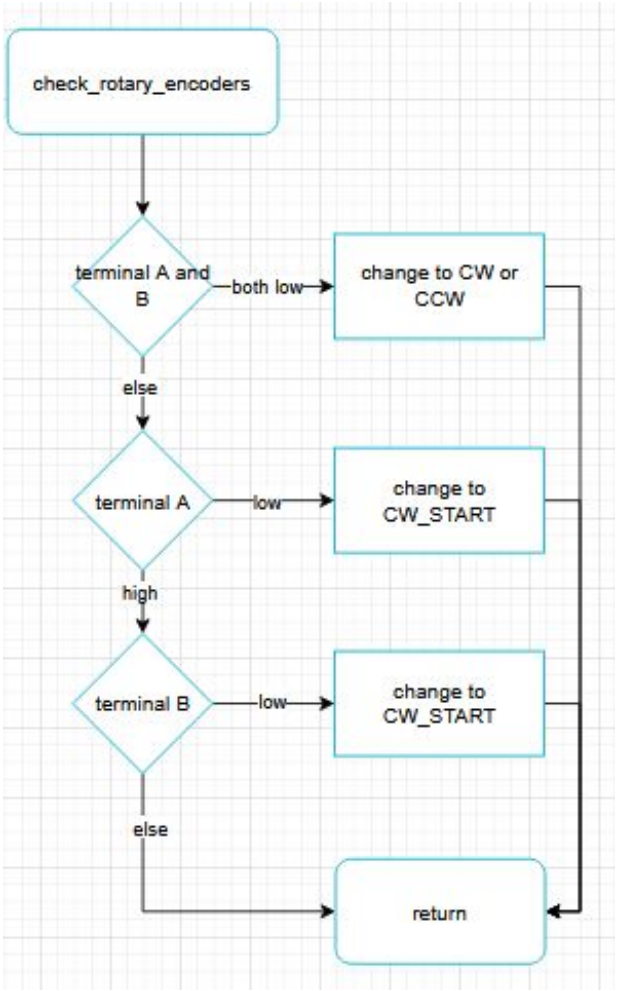


Speaker and Mic ISR Flowchart



Rotary Encoders / _update_state Flowchart





04

Demo

THANK YOU

final-project-sebastian-carpenter