Digital Alarm Clock
Sarah Brown

Time of Day	Display current time: hours, minutes, and seconds
Alarm Clock	Produce an alarm at a specific time and play a melody alarm notification. Melody alarm sound is the song Oklahoma
Stopwatch	Start, pause, and reset a stopwatch to display the elapsed time
LCD Display	Display time and other menu options on the LCD Display
Speaker	Plays notes produced via Digital-to-Analog Convertor
Serially Controlled Inputs and Output	Uses I2C to receive user inputs and to control LCD Display

Hardware Block Diagram

LPC1769

3.3V   5V

RTC → I2C → I2C Level Shifter → I/O Expander MCP23017 → Buttons

I/O Expander MCP23017 → LCD Display

RIT → DAC → AMP LM386 → Speaker

TIME: 02:53:46
B: Time   W: Alarm
G: Stopwatch
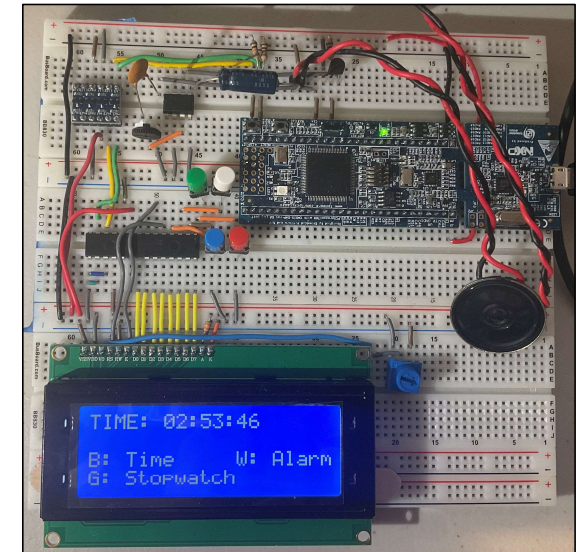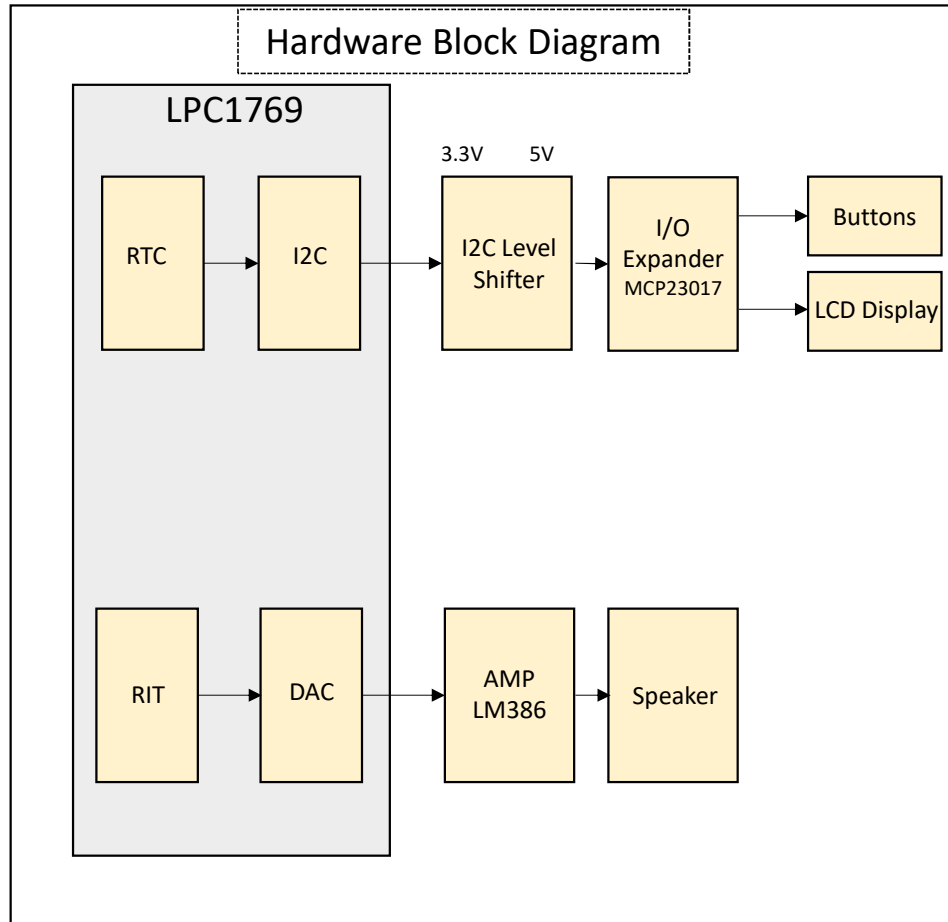
Project Summary

A prototype digital alarm clock that has various features. Serves as an overview of design knowledge gained over one semester.