Faculty of Engineering and Natural Sciences

Department of Computer Engineering

CMP3006 - Embedded Systems Programming
Term Project Report

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1 Alarm Clock Project

The main goal of this project is to build a simple alarm clock using Arduino Logic Board and other hardware components. Below is the description to achieve this and the methods used.

1.1 Hardware Components

- Arduino Uno board
- 1 x Potentiometer
- 1 x LCD screen
- 4 x Push Button
- 1 x Resistor
- 1 x Piezo Buzzer

1.2 Functionalities

- Current time (AM/PM and 24-H Mode)
- Alarm time (ON/OFF)
- Temperature (Celsius and Fahrenheit Mode)
- Display of the current Day (Mon/Tue/Wed.....)
- Potentiometer to Adjust Backlight
- Buzzer For the Alarm Sound

2 Project Description

There is 4 push-up buttons for controlling the system;

B1 is used for switching between modes in current time, B2 is used for setting the alarm ON and OFF, B3 Switching between temperature modes, B4 is used to snooze the alarm for 5 minutes.

2.1 Time and Alarm Setup

The current time and the alarm is currently set via altering the code.

•volatile int h = 01;
•volatile int m = 30;
Changing the variables above will allow you to setup the time.

•int alarm h = 01;
•int alarm m = 35;
Changing the variables above will allow you to setup the alarm.

2.2 Schematic

Tinker Cad Link: https://www.tinkercad.com/things/ioxIFNEUcsb

The figure below shows the circuit schematics which is built using Tinker Cad.

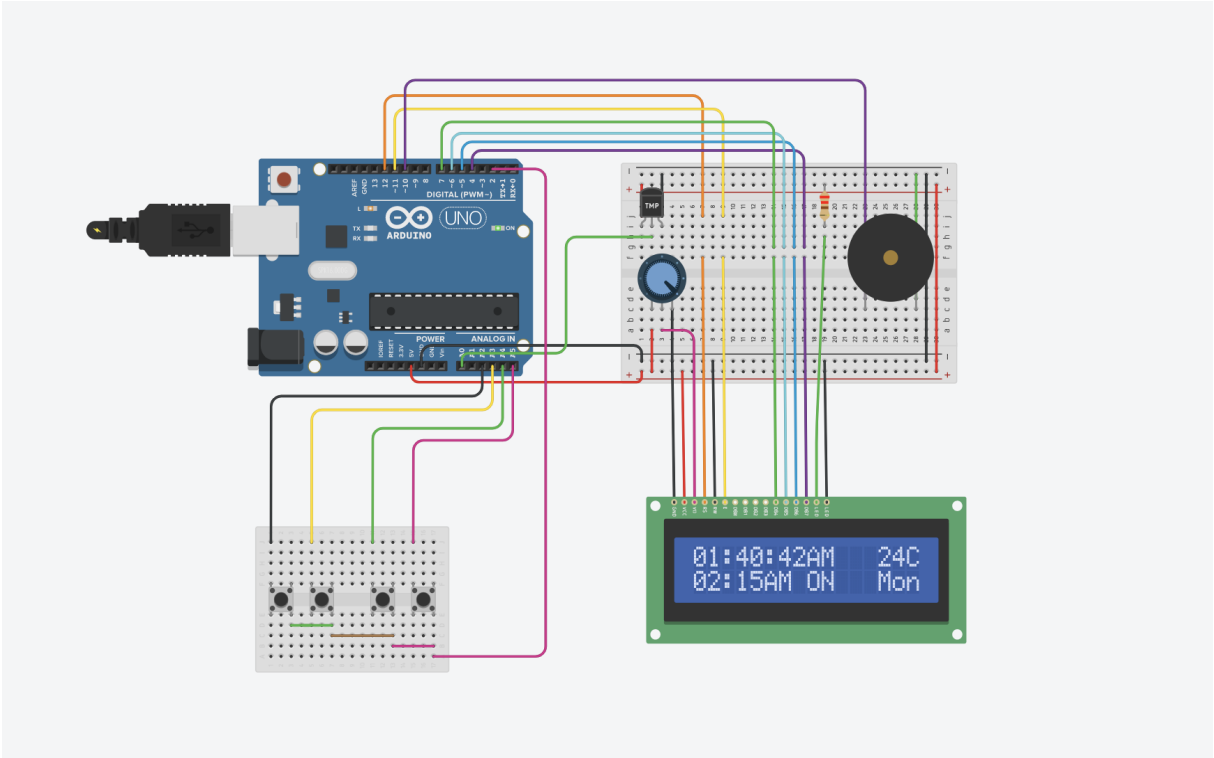

Figure 1: Circuit Schematic