**WHAT A TIME TO BE ALIVE**

**Created by Arjun Ganesan and Daniel Ngo**

**PROJECT SUMMARY**

**HOW IT WORKS**

**BREADBOARD CIRCUIT**

**SCHEMATIC**

The purpose of this project is to implement a digital clock that keeps track of the time of day and an alarm clock value, both of which are displayed on an LCD module and configurable by the user using a 4x4 keypad. When the alarm time is reached by the clock, a melody alarm sounds, and on the 00, 15, 30, and 45 minutes past the hour, the appropriate sections of the Westminster chimes are played. Configurable by the user using the multiplexed switch keypad, the time of day and the alarm time are displayed using an LCD module with a HD44780 controller. The LPC1769’s built in Timer, Alarm, and PWM modules are used to implement the time-of-day clock, the alarm clock, and the alarm and chimes sounds.

Below is a table of circuit functions and features, along with their point value and status:

|  |  |  |
| --- | --- | --- |
| **Feature** | **Points** | **Status** |
| Time of Day | 1 | Working |
| Alarm Clock | 1 | Working |
| Chimes | 1 | Working |
| Melody Alarm | 0.5 | Working |
| Serially Controlled Display (I2C) | 0.5 | Working |
| Character LCD w/ HD44780 | 0.5 | Working |
| Keypad | 0.5 | Working |
| TOTAL | 5 | Working |

Diagram

Description automatically generated

A picture containing text, electronics

Description automatically generated

