Dashboard LCD Design Project

Project Team: Kerui (Lead), Christopher Lee, Joshua Zhao

#### Fall 2017 - Spring 2018

Contents:

[Project Goal:](#_dl53l7kwlzv8)

[Overview of Project:](#_wnbm1cdrjfvi)

[Current Status:](#_ho1hk82jmwq1)

[Project Timeline:](#_oe9w9oldrbif)

[Components/Tools Needed for Project:](#_9kdbrwakwasz)

[Hardware Components:](#_w2p3e6yniahi)

[Software Components:](#_9ioxzb2stdqn)

[Special Tools Needed:](#_ru3476hr0kp4)

[Design Process/Decisions:](#_lsh993jzulux)

[Related Projects:](#_itr811v73g88)

[Regulations:](#_l5pd5wo6zom9)

[Links to Project (if not saved in folder)](#_ijd2ghnevucb)

# Project Goal:

Design and code the LCD interface for the dashboard to display the proper information for the driver.

## Overview of Project:

The LCD interface is part of the dashboard and displays relevant info to the driver, such as mph, battery current, voltage, and temperature. The LCD screen attaches to the dashboard PCB, which receives input from CAN bus and the light control board.

## Current Status:

We have finalized the layout of the screen and just need to add all the CAN input code and test the inputs from the PCB board.

## Project Timeline:

If a task will take longer than 3 hours (a worksession), try to break it down into sub-tasks that take less time.

Example:

|  |  |  |  |
| --- | --- | --- | --- |
| # | Task | # of Hours | Person(s) responsible |
| 1 | Learn CAN language | 5 | K., J., C. |
| 2 | Implement CAN inputs/outputs | 3 | K., J., C. |
| 3 | Test Error Messages | 3 | K., J., C. |
| 4 | Brake Message | 0.5 | K., J., C. |
| 5 | Forward Reverse? | 0.5 | K., J., C. |
| ~~6~~ | Test inputs from PCB | 1 | K., J., C. |
| 7 | Debug | ∞ | K., J., C. |
|  |  |  |  |
| 111. | Take off plastic wrap | 1< | J. |

## 

## Components/Tools Needed for Project:

### Hardware Components:

|  |  |  |  |
| --- | --- | --- | --- |
| Component (and purpose, if unclear) | Number in Stock | Specific Location | Anticipated Cost (if team doesn’t currently have) |
| Arduino | 1 | In a box |  |
| LCD Screen (Large) | 1 | Same box ^^^ |  |
| LCD Screen (Small) | 1 | unknown |  |
| USB/Micro USB cord | 1 | bag |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Software Components:

|  |  |  |  |
| --- | --- | --- | --- |
| File Name | Description | Link | Well-Documented? |
| THE\_FINAL\_FINAL\_SCREEN.ino | Code for LCD display layout | <https://github.com/nusolar/sc7-arduino-code/blob/sw-code/SWControls/LCDtest/TheFinalScreen/THE_FINAL_FINAL_SCREEN.ino> | debatable |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

### Special Tools Needed:

* Laptop with Aruduino Program Installed
* USB cable

## Design Process/Decisions:

* New project
* Layout of screen, what info should be included, etc
* Understanding/Learning CAN.

## Related Projects:

(Projects that this project depends on/Projects that depend on this project)

* MPPTs - Power point trackers that optimize the amount of solar energy being
* Battery pack
* BMS

## Regulations:

What rules relate to your project? Check out the race regulations here:

<http://americansolarchallenge.org/regulations/ascfsgp-2018-regs/>

## Links to Project (if not saved in folder)