



Team Lithium Lumberjacks

Team Standards

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Overview: The purpose of this document is to describe the team standards that will be utilized throughout the year. The document is broken down into sections to explain the different standards that will be used for each different section of the project.

Tools:

This section will cover the tools that will be used along with the expectations of how these tools will be used.

- **MSP430:** The MSP430 microcontroller will be the focal point of the project. We expect to use this to run the battery charger.
- **Soldering Iron:** This will be used for any circuit that requires soldering to make connections
- **KiCAD:** Will be used for PCB and circuit design
- **Code Composer Studio (CCS):** Will be used to code the MSP430. Will utilize C programming language with the possibility of Assembly Language for any specialty functions.
- **Solidworks:** Used to create designs to be 3D printed.
- **Makerbot 3D Printer:** Used to 3D print team designs to aid in the project
- **Arduino:** Possibly used to aid the MSP430.
- **PCB Milling Machine (Bantam tools):** Will be used to mill any PCBs throughout the project.

Design Files:

This section will cover how we will share and track design files, along with the standards of naming, editing, and commenting on these documents.

1. Documenting:

For our design files we will use CCS for coding the MSP430. Any circuit design will be done in KiCAD. These files will be shared via GoogleDrive or Discord.

2. Naming:

The naming conventions will be CamelCase (eg. TeamTwoDesignDocument) for all design documents. Any document draft must have **Draft** at the end of the file name. Once a document is complete it must have **Final** at the end of the file name. This will allow easy tracking of ready to use files compared to incomplete files.

3. Editing/Commenting:

For commenting on code files the team will use Code Composer Studio comments in the design file at the beginning of the file so they can be easily seen. Comments should be detailed so that the problem can be easily identified.

The editing rules will be as follows:

1. If a file is **Draft** status and shared with the team then edits can be made by any member as long as there is clear documentation of the edit that was done and why it was done.
2. For a file that is **Final** status no edits should be made. If at any time there is a **Final** file that a team member believes needs editing, the team can vote to move the file back to **Draft** status to allow for editings
3. If a **Final** status document does not work correctly when implemented then it will automatically be reverted to **Draft** so that it can be edited into a working document.

Issue Tracking:

This section will cover what we will use to track and assign tasks to team members and allow for monitoring of when projects are completed.

Our team will use different products to track the progress of our project. Our team will utilize Gantt Charts, Slack, and Discord. Gantt Charts will be used to create a detailed timeline of when projects should be started and how long they will take to be completed. Discord and Slack will be used as team communication devices, and to allow for project assigning and tracking throughout the project.

If at any time a better software is found to complete any of these tasks better than the aforementioned softwares, the team reserves the right to change to that software to be better suited to complete the project.

Word Processing and Presentation:

This section will cover our standards for word processing and how all deliverables and technical documents will look.

As a team it was decided that we will use a shared Google Drive to manage our documents. We will also use the included Google products (Docs, Slides, etc) to create all documents and presentations. The naming convention will be CamelCase (eg. TeamTwoDeliverable) to have a standardized naming convention. A draft document must have **Draft** at the end of the name, and a final document must have **Final** at the end of the document name.

For our documentation we will use Calibri font size 12. We will use standard one inch margins for all documents and have numbered pages with the page number at the bottom center of each page.

Composition and Review:

This section will cover the details of how we will compile and review our team deliverables. We will describe who will be the lead editor, and when items need to be delivered to the editor to be stitched together into one cohesive document.

The lead editor for our team will be: Hunter Browning

For deliverables that require all team members to write portions we have decided the following time frames will be used for turning sections over to the lead editor:

1. **A rough draft of the members section must be submitted to the lead editor 96 hours before the deliverable due date listed in BBlearn**
2. **A final draft of the members section must be submitted to the lead editor 48 hours after the rough draft (48 hours before the BBlearn due date) to allow the lead editor enough time to combine all parts into one cohesive document**

While Hunter Browning has volunteered to be lead editor for the team, as a team, the right is reserved to change lead editors for any given document throughout the year.