

Executive Summary

Our design project, a custom timer with four main components, was conceived in response to a need for a versatile, user-friendly timer system that can cater to a variety of uses, from casual cooking timers to precise industrial measurements. As a team, our goal was to create a system that integrated a counter, a 7-segment display, a speaker and amplifier, and a battery power supply into a convenient and durable enclosure.

The project was divided into two broad phases, with each team member assuming responsibility for two distinct "blocks." One member handled the Counter/7 Segment Display and the Enclosure design, while the other focused on the Speaker+Amplifier and the Battery power supply. This division ensured an efficient and balanced workload, with each member utilizing their individual strengths and skills.

Our approach to the project was iterative and collaborative, beginning with brainstorming and concept development. Following this, we moved into design and prototyping, creating preliminary versions of each component. We then entered a phase of testing and evaluation, after which we refined our methods based on feedback and results. This cycle of design, testing, and revision was repeated until we had a final product that met our high standards for performance and reliability.

In terms of the project timeline, we started with initial planning and concept development, and moved into design and prototype creation, followed by testing and revision. This process repeated over several iterations until we arrived at the final design. This was a continuous and dynamic process, with ongoing evaluation and design improvements based on feedback and test results.

Through this project, we learned a multitude of lessons. We learned the importance of effective communication and equitable work division, ensuring that each team member could contribute their strengths to the project. Additionally, we found that being open-minded in problem-solving and willing to adapt our ideas and designs based on feedback was crucial to our success. Lastly, we discovered the value of resilience and persistence, as we navigated unexpected challenges and refined our design to create a final product we were proud of.

In conclusion, this project was not just a successful engineering endeavor but also an enriching team-building experience. We developed a practical timer system and honed our problem-solving skills, resilience, and teamwork.

1.

Design

April 28

Block 1 check off documentation

- Does the block work, 25 pt
- How well does the block work, 50 pt
- Is documentation present, 25 pt
- Is documentation high quality, 50 pt

Does the block work? (0 or 25pts)

☐ 0 ☒ 25

How well does the block work? (0 to 50pts)

☐ 0 ☒ 50

Documentation present? (0 or 25 pts)

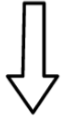
☐ 0 ☒ 25

Documentation of high quality and industry standard? (0 to 50 p...

☐ 0 ☒ 50

Extra Credit (up to 25pts)

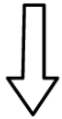
☐ 0 ☒ 25



Build

May 3

First block



2.

Design

May 12

Block 2 check off documentation

- Does the block work, 25 pt
- How well does the block work, 50 pt
- Is documentation present, 25 pt
- Is documentation high quality, 50 pt

Does the block work? (0 or 25pts)

☐ 0 ☒ 25

How well does the block work? (0 to 50pts)

☐ 0 ☒ 50

Documentation present? (0 or 25 pts)

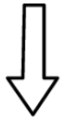
☐ 0 ☒ 25

Documentation of high quality and industry standard? (0 to 50 p...

☐ 0 ☒ 50

Extra Credit (up to 25pts)

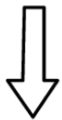
☐ 0 ☒ 25



Build

May 17

Second block



3.

Test

June 2

System verification documentation

System verification verification

- Does video exist, 35 pt
- Does the live demo work, 70 pt
- Does the live demo meet requirements, 70 pt

For each requirement, does a video exist and is it viewable? (0 or...

☐ 0 ☒ 35

For each requirement, does the live demo or the video show the...

☐ 0 ☒ 70

For each requirement, does the live demo or the video show the...

☐ 0 ☒ 70

Documentation present? (0 or 25 pts)

☐ 0 ☒ 25

Documentation of high quality and industry standard? (0 to 100...

☐ 0 ☒ 100

Extra Credit (up to 25 pts)

☐ 0 ☒ 25