

# i281e CPU

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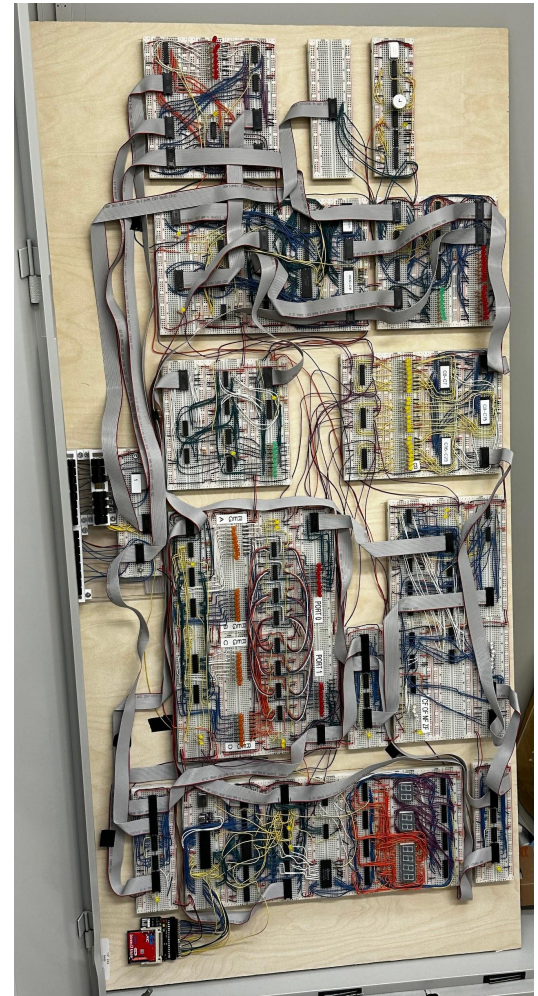
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# Project Overview

- Utilize the existing i281e CPU designed by previous senior design teams
- Design, test, and document 10 lab activities for a new class

## Stretch Goals:

- Create and implement outreach activities
- Assemble another i281e CPU on PCB and document the process



# IDEALS: Communication Honesty

## **Why are we performing this well?**

We effectively demonstrate this by communicating task hurdles and status as soon as we are aware of potential complications

## **Its relevance to your project**

It's important that we effectively communicate design progress and feasibility to each other as well as the client. Based on this communication, we can further improve our labs and speed up our work flow.

## **Your team's approach in this area**

To do this we set up a discord chat to keep on top of communications with each other. We also have a task list within GitLab to ensure that we stay on top of our tasks.

## **Why your team's approach upholds ethical and professional responsibilities**

Our team upholds ethical standards since our project is an educational one, it is important to follow the IEEE code of ethics and the university's code of ethics by setting a good example for the students who will be taking this course.

# IDEALS: Work Competence

## **Why are we performing this well?**

Milestones for our project are very organic already, each lab is its own milestone and our client has in mind ones that he wants completed and when. We have figured out a flow from the first lab to carry out and speed up the progress we make going forward.

## **Its relevance to your project**

We want our project to be completed in a timely manner and keeping in mind that our group needs to deliver this project with a quality that is sufficient to teach an undergraduate class. We also want the labs to be interesting and clear for students to execute which inherently includes well-written projects and well-built lab prototypes.

## **Your team's approach in this area**

When working to complete the first lab, we kept in mind what worked and what did not. This includes things such as building two circuits between the four of us, who tests the circuits and who documents which processes.

## **Why your team's approach upholds ethical and professional responsibilities**

Our team upholds ethical standards since our project is an educational one, it is important to follow the IEEE code of ethics and the university's code of ethics by setting a good example for the students who will be taking this course.

# Broader Context

	Beneficence	Nonmaleficence	Respect for Autonomy	Justice
Public Health, Safety & Welfare	Students will gain experience and learn from our labs	Students will learn in a safe and well-guided environment by the TAs and professor	We must make sure students are able to gain experience rather than just following instructions	We need to make a fair grading standard
Global, Cultural & Social	People from different backgrounds and universities can use our open source software	We need to make sure that our open source software is safe to use	We need to make sure that our instructions of our open source software is user-friendly and clear to read for all users	Making sure that our open source software is not plagiarized
Environmental	What students learn in this course may enable some of them to leverage their careers positively later	We need to keep in mind that we are using a lot of plastic materials and not use more than needed	We need to make sure that our project does not harm the environment and find optimal methods for better use of our resources without also being wasteful	Make sure the materials we source is from a respectable company and not wasted
Economic	Students are going to have to pay for materials, we need to make sure what they learn is worth the cost	Make sure students don't pay more than necessary	Keep in mind the cost burden to the department and individual students	Make sure students pay for what they use

# Broader Context Highlight

- The most important area in our project is public health, safety and welfare because we want the students to have an overall positive experience.
- We also want our students to learn and encourage them to look at similar materials that are beyond this class.
- With the help of the TAs, we want to motivate students to keep on working on their labs and understand the importance of of this course on a deeper level.
- With this class, we can make sure to set an ethical and educational standard for students

# Ethical Concerns

- Our main ethical concern is that we teach students through our labs rather than giving them steps they must follow
- We must keep in mind ways that we, as students, have learned the best while also conforming to departmental standards and meeting all the curriculum requirements
- Additionally, all the materials we use cost money, so any lab we create we must be minimize the eventual cost to students
- Most of our materials are sourced overseas so we also need to keep in mind the companies we are buying from

# Conclusion

- Students will have to pay for lab materials, we need to minimize that cost as much as possible
- We should make sure we don't waste materials or order more parts than necessary
- Students should actually learn from these labs rather than just following instructions so all the necessary materials should be self-contained



Questions?

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