

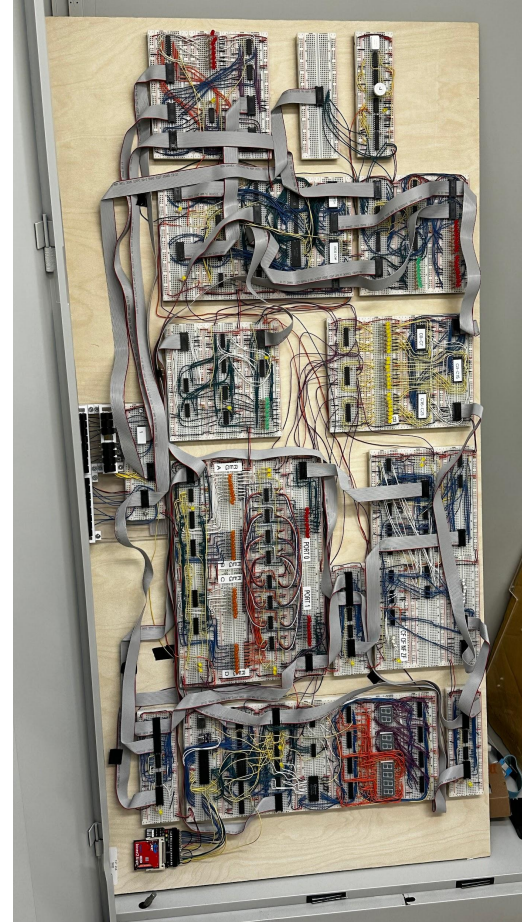
# i281 CPU

Ariana Dirksen, Gigi Harrabi, Tessa Morgan, Ethan Uhrich



# Project Overview

- Utilize the existing i281 CPU designed by previous senior design teams
- Assemble another microprocessor and document the process
- Design, test, and document 10 lab activities for a new class
- Create and implement several outreach activities
- Problem Statement - Design and implement a set of labs and activities based around the i281e CPU





# Project Statement

Use open source hardware and software designs for the existing CPU, OS, and simulator to implement a set of lab and outreach activities. Each activity needs to be of appropriate complexity such that it can be completed by an average student in a reasonable amount of time. Each must be tested by the team and documented with a detailed step-by-step documentation.



# User 1 - Students

- Students will have to complete the labs we come up with as a part of their class.
- Students might have trouble understanding the material.
- Students hear questions their classmates ask and material the professor covers.
- Students see lab materials and other student's approaches.
- Students could be overwhelmed by their workload and have trouble understanding course material.





## User 2 - TA's

- TAs will administer the labs and will need a deep understanding of the material
- Hear from students common questions
- See their and other TAs solutions
- Interact with the professor and relay their and students concerns back and forth





## User 3 - Professor

- Will have a set curriculum to teach each semester which the labs will follow
- Work with TAs to address student concerns
- See students in class and office hours
- Teach other classes and also conduct research, as such have a lot of other priorities and are quite busy





# User Needs

- Students need (a way) to learn about the i281e processor because they need to be able to build, comprehend and work with computers.
- TA needs (a way) to supplement learning for the student because they need to assist in the student's learning and comprehension while supporting their knowledge.
- Professor needs (a way) to teach about the i281e processor because they need to make their students understand the importance of the i281e processor so the students can grow their interest in engineering and perform better in future classes



# Conclusion

- Have three distinct user groups which all have their own needs and expectations
- Ultimately are designing this to meet the curriculum requirements provided by the professor
- Must also keep in mind our own experiences as TAs and students when documenting the activities





**Questions?**