i281 CPU

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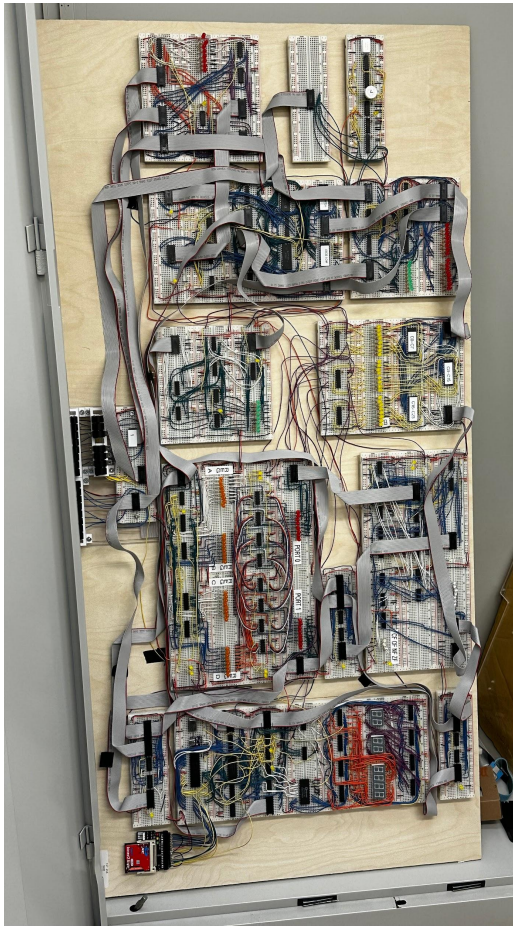
Project Overview

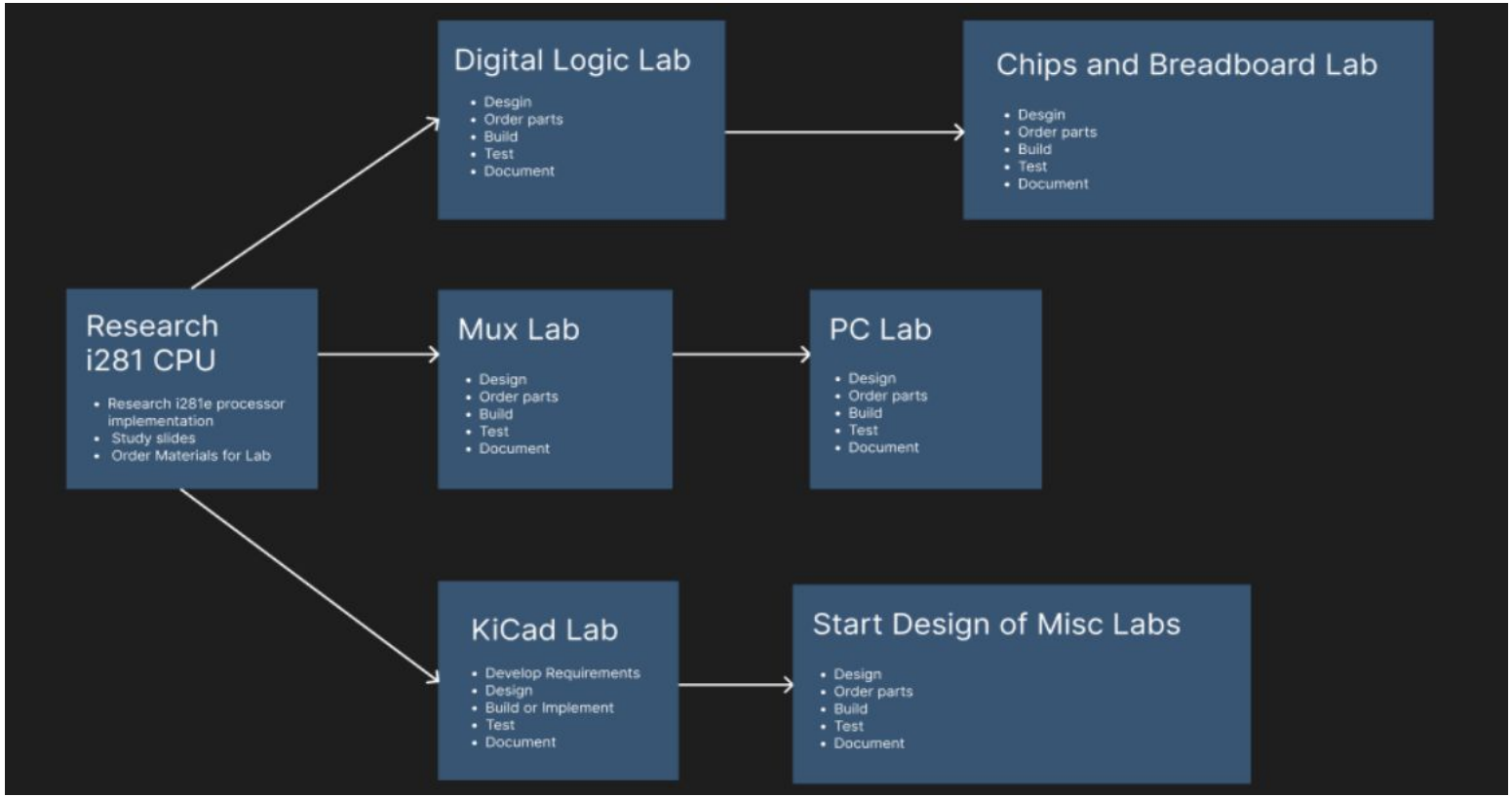
- Utilize the existing i281e CPU designed by previous senior design teams.
- Assemble parts for another microprocessor and document the process.
- Design, test, and document 10 lab activities for a new class.
- Create and implement several outreach activities.
- Problem Statement - Design and implement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



Project Management Style - Aigle

We are operating under Agile as our process for creating the labs requires us to revise our designs and the labs multiple times before they will be ready. Throughout our planning process we have already scrapped multiple lab ideas, so we're using Agile in order to adapt to changes as they appear. It's also imperative that we're able to jump from one task to the next whenever one is stalled in order to make sure that we are still working on our project.

Task Decomposition



Key Milestones

- Every Lab has six stages and each Lab will be a Milestone
  - Design Hardware Implementation
  - Order Parts for Implementation
  - Build Hardware Implementation
  - Test Hardware Implementation
  - Rough Draft of Lab Documentation
  - Final Draft of Lab Documentation

Metrics and Evaluations

- Design
  - Designs will be judged by feasibility and practicality of the lab in relation to the processor in order to be considered complete.
- Order Parts
  - Will be considered complete when ETG accepts order and all parts are ordered.
- Build Hardware
  - Will be completed when implementation based on design is built.

Metrics and Evaluations

- Test Hardware
  - Implementation will be accepted when mockup test return expected values. During this stage an implementation may have to be rebuilt and changed multiple times.
- Rough Draft of Lab Documentation
  - All parts of the lab must be written and accounted for. The written lab should only take students 2-3 hours to complete and all terms should be appropriately defined.
- Final Draft of Lab Documentation
  - Lab is considered complete and it ready to be used within the proposed class.

Key Risks and Risk Mitigation

- When ordering parts they may not be available and the design might have to substitute missing parts or be redesigned in order to work as intended.
- When testing implementations we may not get the desired results, so additional parts may have to be ordered to fix the implementation or the lab may have to be scrapped if it turns out to be unfeasible.
- When drafting the lab documentation explanations may have to use less technical terminology or teach technical terminology to make sense to the students.

Conclusion

- Because of the Agile approach we are able to adapt to the risks as they come up.
- When one Lab has to hold for parts ordering or an hardware issue, we can adapt and work on a different Lab.

Questions?