

Digital ASIC Fabrication:

Problem and Users

Team 12

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Project Overview

Problem Statement

- Undergraduate students rarely get the opportunity to create a custom digital ASIC (Application Specific Integrated Circuit) and gain experience with chip fabrication.

Project Goals

- Our project aims to give interested students experience in chip design and fabrication.
- We plan to build a chip framework that will hold small ASIC projects created by students in a co-curricular team.
- The chip framework will allow the students to have their designs fully implemented and synthesized.

Users

Undergraduate Students at Iowa State

- Freshmen–seniors
- Likely majoring in Computer or Electrical Engineering
- Curious about ASIC fabrication
- Participating in ISU Chip Fabrication Co-curricular Team

Graduate Students at Iowa State

- Research focus in ASIC fabrication
- Mentoring undergrad students in ISU Chip Fabrication Co-curricular Team

ECpE Professors at Iowa State

- Specialty in ASIC fabrication
- Leading the ISU Chip Fabrication Co-curricular Team

User Needs

- An undergrad students need to work on an ASIC project because they are interested in chip fabrication and want to gain experience.
- A graduate students need to complete their graduate project because they want to obtain their Master's degree and gain ASIC experience for their future career.
- A professor needs to provide hands-on experience for the ISU Chip Fabrication Co-curricular team because they want to help undergraduate students gain chip fabrication experience outside of class.

Conclusion

By creating our framework within the chip, we are giving more students the opportunity to gain chip fabrication experience while also being as efficient and cost effective as possible.