EE/CprE/SE 491 WEEKLY REPORT 02
Aug 23- Oct 6

Group number: **22**

Project title: **ReRAM Compute Asic Fabrication**

Client &/Advisor: **Cheng Wang & Henry Duwe**

Team Members/Role:

Ali Mannan
Tyler Kloser
Austin Miller
Vinicius Malaman Soares

- **Weekly Summary**

  - This past week we have been getting more accustomed to the open-source tools, which will probably continue for the duration of the project as we run into new issues or find easier methods of designing and testing. We have made progress on a 1-bit DAC / Inverter, passing DRC and LVS, along with getting a little more organized and finding relevant resources to aid in our project such as previous teams' repositories, documents and even some research articles.

- **Past week accomplishments**

  - Vinicius Malaman Soares: Open-source tools set up. Set up of a linux machine on an external hard drive. Individual meetings with Iowa State faculty for better understanding.
  - Tyler Kloser: Setup tool flow and creating document that summarizes past team's accomplishments.
  - Ali Mannan: Completed an initial layout view of the 1-bit DAC using the tools, with DRC and LVS passing. Pushed design files to Git.
  - Austin Miller: Got tools reliably set up (hopefully), git repo with tool setup and install made, requested VM for all of us to work on in case personal tools break

- **Pending issues**

- Tyler Kloser: Properly loading and understanding layouts in Magic
- Ali Mannan: N/A
- Austin Miller: check to make sure Xschem designs can be brought into Magic layout
- Vinicius Malaman Soares: Make designs with the skywaterpdk

Individual contributions

NAME	**Individual Contributions** *(Quick list of contributions. This should be short.)*	**Hours this week**	**HOURS cumulative**
Tyler Kloser	Compiling documents from past teams	6	18
Ali Mannan	Finished 1-bit DAC. First completed module of the project.	8	24
Austin Miller	Tools installation, previous projects research	8	22
Vinicius Malaman Soares	More research about ReRAM, tool setuip	6	17

- **Comments and extended discussion** *(Optional)*

- **Plans for the upcoming week**

  Unless the advisors suggest otherwise, we intend on beginning work on the TIA for the project, along with familiarizing ourselves with more functions of the open-source tools.

  - Ali Mannan: More layout work on the TIA
  - Tyler Kloser: Work with team on how to use Magic and help design the op-amp needed for TIA
  - Austin Miller: Mess with tools, design circuit for setting up and testing reram module (1T1R)
  - Vinicius Malaman Soares: Work with team on setting a plan for working on different designs in parallel.

- **Summary of weekly advisor meeting**
  - Determined goals for project
  - Discussed where to get more help for tools and design
  - Got questions answered about module design and redundancy
  - Discussed timing of having project ready by (April 7th tapeout)
  - Talked about the forming process and the bit-line/source-line/word-line
  - Setting up the ADC