
EE/CprE/SE 492 Status Report 6

04/03/2025 - 04/16/2025

Group number: ***sdmay25-33***

Project title: ***Interactive Embedded Systems Learning using the Prairie Learn Framework***

Client &/Advisor: ***Phillip Jones***

Team Members/Role:
Rachel Druce-Hoffman — Notetaker
Justin Cano — Technical Lead
Joey Krejchi — Quality Assurance
Caden Otis — Project Manager
Devin Alamsya — Consultant

- **Past week accomplishments**
    - Joey: I started with the big mistake of recreating my repository without pushing my local changes to the cloud repository, losing me all the work I did over the past week and a half. This was very unfortunate, however I was able to redo most of what I'd done quickly because I had done it so recently. I then began to reformat H9 Q4A so that it uses the format where users submit masks instead of writing the entire code from scratch.This week, I started with a redesign of the backend of H9Q4A to make it use the data structure used in a similar question in H7. There were some incorrect values in the data structure that I had to replace. After I got that working, I used the same data structure and code boilerplate to redesign Q4B. Finally, I worked on Q4C and randomized the length value in that question, and also fixed a couple of bugs in that program.
    - Caden: I continued to work on documentation. I first added onto Devin's documentation writeup on randomizing problems and explained how to go about problems that use the UART and GPIO registers. I then added onto my autograding documentation to explain how to use the CPRE288-GPIO.cpp/.h and gpio.py files to get the correct bit-state configuration for each GPIO register that was randomized. This week, I created documentation explaining the HWs that are currently implemented in PrairieLearn and what needs to be done for the remaining HWs. I also went more in detail for HW12 and explained the ARM autograder bug that we ran into last semester, hoping to make it easier for the next team to pick up where

we left off. I also went through the videos on the Youtube channel to see what videos could be improved and if we should create new videos as well.

- Devin: I worked on fixing the multiplexer drawing to fit the desired implementation of Dr. Jones. Then finished up the documentation for the drawing of a multiplexer. The hope is that this documentation can be detailed enough with drawing tools to help anyone who needs to draw anything using pla-drawing. I also started adding to the documentation of the old teams setting up PrairieLearn. I want to add how to run PrairieLearn on mac. This week I started to create video documentation for the documentation I've made in writing format. I started by updating the setup documentation with small changes to make it fully sdmay25-33's document. I also made a section to detail the changes I made from version 1 to version 2 of the document. I then did some research on the best way to make the video so it could be a screen capture tutorial with a voice over on top of the video. Settled on using mac's screenshot app to take the screen capture video and using voice memos to get my voice over audio. I will then put them together using iMovie and then upload the completed video to youtube. So far I've only filmed the videos. I made the video for the set up documentation of running PrairieLearn locally on a mac (with an apple chip), multiplexer drawing, and memory map creation. I've also started to write out scripts for the voice overs.
- Rachel: I went back to the three writeups I made, revised them, and edited the format to look more professional and to match the theme of last year's documentation. I then worked in the new Canvas page and was able to successfully use my script to edit grades, so it should work the same for professors. I then added a section to the Canvas writeup for ISU-affiliated pages. This week, I wasn't able to do much this week. I reviewed the youtube documentation and compiled an index of all writeups and all videos made, then determined which docs didn't have a video and which videos didn't have docs. There's potential for redundancy with all the setup documentation- some cover personal developer VM, some cover the production VM, and some cover both. This may be something we can look into to redo some videos or docs and make things more concise.
- Justin: Got access to the passwordstate from Service now and got added to the login list for Prairielearn. When I tried to sign in though I got an error about the callback link not being correct, so I emailed Service now about it and am awaiting a response. Worked on the SSO documentation from last years team. This week, I finally got SSO working for Prairielearn now that the redirect urls were updated to our domain. However, SSO did not fix the issue we were having with the course page not wanting to load. So I spent the week trying to rebuild Prairielearn using the current version of Prairielearn from Github rather than Mitch's version. I've had success getting a working version with the issue fixed following Mitch's documentation for modifying the source code to allow OIDC SSO to work, but the SSO isn't working properly now.

- **<u>Pending issues</u>**
  - Waiting for response from Dr. Rover on how/when to go about testing
  - Figure out how to print a message in the submission comments if the students' code doesn't compile due to forbidden functions (H2_Q5)

- Issue with the course not loading on Prairielearn with SSO.

- **Individual contributions**

NAME	Individual Contributions	Hours past 2 weeks	HOURS cumulative
Caden Otis	Added onto the randomization documentation to explain how to randomize UART and GPIO questions, and also added onto the autograding documentation for generating the correct answer for randomized GPIO registers. Created documentation to explain the current state of the HWs in PrairieLearn, and also looked through the videos made so far on the Youtube channel	10	62
Rachel D-H	Revised writeups. Changed format, added table of contents. Proved functionality of new Canvas page. Added to the Canvas writeup. Reviewed youtube videos. Compiled index of all documentation from us and previous groups, and what docs/vids are missing.	7	50.5
Justin Cano	Emailed and am waiting on response from Service now for an Error I'm getting. Worked on documentation. Got SSO working, but still having the issue where the course won't load in Prairielearn. Spent the week rebuilding Prairielearn to try and fix that issue.	12	57.5
Joey Krejchi	Redid a lot of my previous work and then reformatted HW9 Q4A. I changed H9Q4A to use the data structure created for a previous question, redesigned Q4B, and randomized Q4C.	13	57
Devin Alamsya	Fixed multiplexer drawing, finished multiplexer drawing documentation, starting documentation for running PrairieLearn on mac. Made changes to set up documentation, did research on video creation, filmed videos, made scripts for voice overs.	10	53

- **Plans for the upcoming week**
  - Joey: I will probably run through the entire HW9 set and see if there is anything that needs debugging. After that, I will look into some documentation tasks..
  - Caden: There isn't much documentation left to work on, so I will start focusing more on the Youtube channel and potentially start recording new videos, such as a video where I explain the autograding process for C-programming questions.
  - Devin: I will finish up my scripts, take my voice overs, put the videos together and edit where necessary, and then upload the three videos to our project's youtube channel.

    - Rachel: Continue working on documentation with everyone, with a focus on videos.
    - Justin: Keep working on trying to get a working version of Prairielearn with SSO.

- **Summary of weekly advisor meetings**
  For our advisor meetings, we have mainly shared with our advisor the documentation that we've been working on the past couple of weeks to help with the onboarding for the next team. During these past couple of advisor meetings, we ask our advisor for feedback on the documentation that we've made thus far and if the created documentation makes sense for people that aren't familiar with PrairieLearn. We've also been working on implementing HW 9 into PrairieLearn, and we've also been sharing our progress on that with our advisor and making sure that our autograding and randomization logic makes sense for CPRE 2880 students.