
EE/CprE/SE 491 WEEKLY REPORT 9

11/8/2024 - 11/14/2024

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

- **Weekly Summary**
  For this week, the team continued to work on the ARM autograder bug that we found a couple of weeks ago. We didn't figure out much with the bug, so we still need to look into that. We also made formatting changes to enhance questions that were already implemented from the previous team. In addition, we updated server setup documentation to give future teams a better idea on the server setup process.

- **Past week accomplishments**
  - Caden: I spent more time this week looking into the QEMU ARM autograder bug with Joey. We still didn't discover what was causing the bug, but we still believe it has to do with the UART portion of the autograder/code. Since I still didn't understand what was going on in the code, I spent a good chunk of time going through documentation on how the ARM autograder works to see where the UART functionality comes into play. I also looked a little bit into HW 12, problems 1a and 1b to see what needs to be done in order to randomize those questions.
  - Devin: Devin: Started to work on changing the question formats and generating random answer options for the 11 questions I mentioned in the previous week. I ran into a bug with the first one I tried to convert and spent quite a bit of time trying to figure it out before eventually just moving on. It has something to do with the "correct" value in the PrairieLearn multiple choice answers. It said it wasn't getting a

boolean value even though I was passing in a boolean value. Will continue to look at it in the coming week. Worked on 4 other questions and got the formats switched and the answer randomization set in place, just need to figure out what string I want to pass in to be the string that gets changed randomly to create more answer options.

- Joey: I worked on the ARM autograder bug with Caden. I started looking into how the ARM autograder works and did some research into how I can debug a QEMU process. There is documentation online on how that's done but I'm not sure if it will work for our application. I also created a test instance of the autograder container and exec'd into it to see if there is anything I can figure out there.
- Rachel: Researched Excalidraw, but documentation is very limited. I wasn't able to get it functional, I may keep trying as this seems to be better than the default PL drawing capability but this seems lower priority to me. Read about PL course and assessment access control. Began reading documentation for Canvas and PL interoperability; it seems very doable and we should reach out to someone to get a test ISU Canvas page to work on this.
- Justin: Created a script/powerpoint for the "Getting SSL Certificate from the University" tutorial video, updating old parts from 2 years ago. Went and recorded the video with my voice over. Started looking at other videos on the youtube channel that need to be updated and created a list of things that need to be changed. Started trying to integrate our OAuth app with ISU SSO.

- **Individual contributions**

NAME	**Individual Contributions**	**Hours this week**	**HOURS cumulative**
Caden Otis	Investigated the ARM autograder more with Joey. Looked into the documentation of the autograder itself to learn more about the UART functionality portion of it to potentially identify an issue with it, but I couldn't. Also spent some time looking into problem 1a and 1b of HW 12 to see what all needs to be done to randomize these questions.	6	38.5
Rachel D-H	Excalidraw, Access Control, Canvas	6	41.5
Justin Cano	Created a script for a documentation video. Recorded the video but haven't uploaded it to youtube yet. Started looking at other videos on the channel to find what else needs to be updated. Started attempting to integrate ISU SSO into PrairieLearn	6	34
Joey Krejchi	Worked on the autograder bug with Caden. I also learned more about the autograder setup and QEMU.	6	35.5
Devin Alamsya	Worked 5 questions that I wanted to reformat and randomize and ran into a bug with one of them and spent time trying to debug it.	6	32.5

- **Plans for the upcoming week**
    - Caden: Will continue to look into the ARM autograder bug and try to make some progress on fixing it. I will also work more on problem 1a of HW 12 and have that problem become randomized. If I have enough time, I will also see if I can then feed those randomized parameters into the ARM autograder so that it can generate the correct solution for each randomized variant of the problem.
    - Devin: In the coming week I will continue to work on the 11 questions. Will put a finishing touch on the 4 that I reformatted, hopefully fix the bug in the one I was struggling with, and then look to finish out the remaining 6 questions.
    - Joey: I will work a little more to try and fix the bug, although it is not going to be easy to solve. I will work with Caden on fleshing out the HW 12 questions so that we can have some deliverables on our end.
    - Justin: I plan to keep working on updating documentation and videos from previous years. Continue trying to integrate ISU SSO into our project.
    - Rachel: Determine and take steps to get a Canvas test course to practice linking with PL. Assist others on HW 12 and other questions as needed.

- **Summary of weekly advisor meeting**

  For this week's advisor meeting, we spent a lot of time discussing the bug we found previously with the ARM autograder and thinking about potential root causes for the bug itself. We also updated our advisor on improvements that we've made with question formatting. Lastly, our advisor mentioned that it is critical for us to come up with actions soon that we need to complete before the end of the semester. This will help us to define what the beta version of our project will look, which we plan on having CPRE 2880 students experiment with next semester.