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***EE/CprE/SE 492 Status Report 3***

***02/13/2025 - 2/26/2025***

***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***

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- **Past week accomplishments**

- Joey: I tested some of the changes pushed to main on other homework sets. Then I started on homework nine, where it seems there is some work to do. I started by brainstorming ideas for how to make the questions randomizable and autogradable since many of the questions are not. I began a document with my ideas that I will bounce off Dr. Jones. I then made some quick changes to HW3 that I had specified on the test plan document. Then I started more work on HW9. I sent an email to Dr. Jones with some questions about approaches and did some formatting changes to a few questions. I also brainstormed ways to improve on the existing homework.
- Caden: I first was able to get HW5\_Q1 to be fully randomizable and autogradable, so now each new variant of the question will have a randomized port, each wire will have a randomized path, and the randomized parameters are used in the autograding process to ensure the correct answers are always set. I also made fixes to HW5\_2B and HW5\_3. HW5\_2B had a typo in the question that needed to be fixed, and HW5\_3 needed an answer panel to show the correct answers upon submission and a link to be fixed. I also improved the question formatting a bit to make the problem look a little nicer. With these changes, HW5 should be done and ready to go for beta testing. I then fixed the entirety of HW 6. This involved me fixing two questions. The first question that I fixed was HW6\_1a, which was not fully autogradable. The problem had autograding capabilities since it is a matching question, but was set to be manually graded for some reason. I made a quick change

in order to make this question autogradable. I then fixed HW6\_1b which just had a small typo in the question. I then went through and thoroughly tested all questions in HW 7, where I found that quite a few questions didn't have autograding functionality. There were also some questions that required students to upload files, but the files have to be named with a specific name. This isn't mentioned in the questions themselves, so it would be a good idea to make that clear somewhere in the problem.

- Devin: I had a few issues this week that I spent a lot of time on. The main issue was with docker on my mac. I've been running prairielearn locally on my mac and not in a vm, and for whatever reason this past week, everything kinda came crashing down. I kept on getting a popup on my computer that said, "'com.docker.socket' was not opened because it contains malware." I had never received this before and didn't have a computer update or anything, it just happened. I looked up some stuff in online forums and tried to do some of the stuff they suggested, but had a hard time even uninstalling the current docker application I had installed so that I could reinstall it. Eventually I found a fix and got docker uninstalled and installed a new patched version so now I can get prairielearn working again on my mac. It has trouble opening HW1 in the assessments tab due to something in the infoAssessment.json. I tried looking into this for a bit but couldn't figure out why I couldn't get HW1 working, but I found I could work on the questions individually in the questions tab so that's what I did. Worked to make sure that HW 1 is up to par! Looked at H1\_Q3c, but I didn't work on it this week because I didn't have a large enough chunk of time to sit down and figure it all out. So I worked on H2\_Q3 and flipped the memory map vertically. I think it looks better that way but will double check with Dr. Jones. I moved on to work on HW8 and continued trying to test, break, and fix the questions that were currently put in place. I also looked at the actual HW8 file that Dr. Jones gave us to see what the questions were actually getting at. My H8\_Q1BC isn't running correctly on my local machine. It's having trouble finding the registerConfig folder. I will continue looking into that and should hopefully get it fixed by our meeting.

- Rachel: I updated the google form to include a couple more questions to hopefully get a wider range of helpful comments.  
[https://docs.google.com/forms/d/e/1FAIpQLSdtkdrRLKwa6T\\_UyIDVU3UzazORACN-gOJDVJ9\\_0F1g-ty5D-g/viewform?usp=dialog](https://docs.google.com/forms/d/e/1FAIpQLSdtkdrRLKwa6T_UyIDVU3UzazORACN-gOJDVJ9_0F1g-ty5D-g/viewform?usp=dialog)

I then updated the talkthrough script to include similar prompts. I created a one page instruction sheet for students to join the PrairieLearn instance and access assignments. I added these steps to the talkthrough script so we can help students in person. I continued my research into Canvas/PL and found that LTI, used to connect the two, has a free deprecated 1.1 version and a paid enterprise 1.3 version. Unfortunately we'd need to have the paid version for the grade auto update we want, but with the free version it seems we can still connect them but will have to download grades from PL and upload into Canvas. Better than manual entry but disappointing. I spent the second week working on the Canvas/grade problem. This involved a lot of research, but I couldn't figure out how to enable just LTI 1.1 (the free deprecated version) in our production server. I found Mitch on Github and

messed him to ask how he was able to use 1.1. I faced bugs when testing out manually uploading csv format grades to Canvas. I reached out to Dr. Duwe to ask about his scripts- he responded with a useful Python module that I should be able to use to code a program to parse the csv from PrairieLearn and edit student grades. This should effectively make the system as automated as is possible without LTI 1.3.

- Justin: I wasn't able to make homework 10 question 1 randomized as I believe it isn't possible to randomize any of the parameters for it, I will ask Dr. Jones about it in our meeting. Fixed the header error in the question and any grammatical errors I found. Question 2 is now randomizable. Since it seems that every question is being worked on/finished, I went back to updating the previous years documentation. I spent most of the second week taking a look at the previous years Prairielearn server to see if I can get Microsoft OAuth working. I tried copying their config files over to our server to see if that would work which unfortunately it did not. I then tried copying their entire source code from last year incase they changed something that they never pushed to git, but still no luck so far.

- **Pending issues**

- 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)
- Response from Dr. Jones on HW9 Q1

- **Individual contributions**

<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b>	<b><u>Hours past 2 weeks</u></b>	<b><u>HOURS cumulative</u></b>
Caden Otis	Fixed up HW5 by getting HW5_Q1 fully randomizable and autogradable, fixing a typo in HW5_Q2B, and adding an answer's panel to show the correct answers after an initial attempt has been made on HW5_Q3. Fixed up HW 6 to get it into a good working state for our beta version. I then thoroughly tested HW 7, where I found that the later half of the questions in HW 7 aren't autogradable but should be.	13	29
Rachel D-H	Updated form. Created instruction sheet. Updated talkthrough script. Canvas research/sandbox. LTI 1.1 research. CSV import testing. Messaged Mitch. Messaged Dr. Duwe. Read documentation Dr. Duwe provided.	12	25
Justin Cano	Fix homework 10 question 2 and part of question 1. Started working on updating documentation again. Looked at the previous years server and began trying to reverse engineer why OAuth isn't working.	11	24.5

Joey Krejchi	Tested homework changes in 1-6 and began brainstorming ideas for homework 9. Made final changes to HW3. Began brainstorming improvements to HW9 and implemented some easy fixes.	11	27
Devin Alamsya	Fixed docker issues on my mac, worked on HW1. Looked at H1_Q3c, fixed memory map of H2_Q3, worked on H8 and tried to test, break, and fix it.	10	26

- **Plans for the upcoming week**

- Joey: I will try to finish HW9 this week. One question that isn't autograded well will take some time to redo.
- Caden: I will be working on fixing up HW 7 with the issues that I found while testing it. For the most part, the fixes that I will need to make is to add autograding functionality to the later half of the questions in HW 7, and also make file uploading a little more clear.
- Devin: Continue working on H8 and fix up H1\_Q3c. This may take some time as I look into drawing new images.
- Rachel: Begin coding a program to automate grade updates in Canvas. I may send my Beta Test script rough drafts to Dr. Fila for comments. I still need to turn the PL instructions into a video.
- Justin: Keep attempting to get OAuth working by using the previous team's code.

- **Summary of weekly advisor meetings**

For our weekly advisor meetings, we have mainly been discussing our progress on the first 10 homeworks. We have had some questions on how to proceed with certain questions that aren't fully randomizable or autogradable, but we were quickly able to resolve these questions after talking to our advisor. Our meetings have pretty much involved us sharing our progress and sharing our concerns or questions with the previous teams' development of the questions. Our advisor has pointed out that we need to start doing documentation to help with the onboarding process for next year's team, so we will incorporate documentation into our weekly tasks pretty soon.