SE/EE/CPR E/CYB E 492 – sdmay24-33
PrairieLearn Senior Design Team
Week 3 Report

February 9 - February 24
Faculty Advisors: Phillip Jones

Team Members:

Chris Costa - *Role not yet assigned*
Matt Graham - *Role not yet assigned*
Mitch Hudson - Technical Lead
Carter Murawski - Note Taker
Tyler Weberski - Project Manager
Andrew Winters - *Role not yet assigned*

Summary for Progress this Week

- Continued development of the 288 assignments
- Worked on Final design document presentation
- Moved homeworks 1-3 to external review
- Moved homeworks 4, 7, and 9 to peer review
- Wrote Assembly Autograder writeup
- Corrected homeworks from peer review
- Reviewed homeworks in peer review

Past Week Accomplishments

- Continued development of the 288 assignments
- Worked on Final design document presentation
- Completed HW 10
- Wrote Okta Integration writeup
- Merged all branches back to master
- Corrected homework 2
- Reviewed homeworks 1, 4, 5, and 11
- Went through and peer review a lot of each others work
- Able to work through peer review with Advisor to finalize before showing off progress to TA

Pending Issues (from Git Issue Board)

- In Development
    - HW6
    - HW8
    - HW12
- Ready for Peer Review
    - HW10
    - Cleaning Up Template Questions
- Peer Review in Progress
    - HW4

    - HW5
    - HW7
    - HW9
    - HW11
- External Review in Progres
    - HW1
    - HW2
    - HW3

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Chris Costa	Week 1: Added extra auto-grading to hw2, prepped and finished hw9 for review, and reviewed hw5 comments. Week 2: Started working on hw 9 comments and review, worked on hw 5, and researched drawing in prairieLearn	6	67
Matt Graham	Week 1: Made changes to homework 3 from peer reviews for randomization and format, homework 3 is ready to go, cleaned up old demo code, added author tags to main json file Week 2: Reviewed homework 9, made changes from peer review of homework 5, researched pi pico emulator	12	74
Mitch Hudson	Week 1: Reviewed HW1 and HW5. HW 10: Merged into master HW 4: Split 3 into a and b, removed code editor in place of string inputs HW 11: Updated 6DE with randomization and autograding Removed old demo questions and templates to clean up the course repository. Created TA review doc Week 2: Wrote assembly autograder using QEMU Started process of adding ARM syntax highlighting to ACE editor Started process of adding ARM autograder to PrairieLearn repo Wrote HW12 question 2 Wrote assembly autograding writeup	33	172
Carter Murawski	Week 1: Helped finalize homworks 1-3 to be ready fot TA's. Discussed future emulator work. Week 2: Researched pi pico	7	63
Tyler Weberski	Week 1: Review HW1, and ready to send out to be review by TA's. Went through Git, and cleaned up/removed questions that I had previously made as tests to clean up. Finally	10	71

	started looking at the auto-drawing as I am moving to HW8 again, specifically looking at problem question 1 for HW8. Week 2: wrote hw5-q2 over with Prairie Learns drawing method that they recommend. Completely randomized all inputs for that drawing, and can identify inputs, outputs, and ports associated with the problem		
Andrew Winters	Week 1: wrote HW12 question 1, looked into starting 3 Week 2: wrote HW12 question 1, looked into starting 3	12	68

Comments and Extended Discussion

N/A

Plans for Coming Week

1) HWs for external review:

- Goal to have HWs 4, 7, and 9 ready for external review by next meeting.
- Provide a link to a nicely structured Google doc to allow external reviewers to easily provide the team with feedback

2) Technologies that need work:

- Drawing: Auto-drawing. For use in questions like **HW5.2** (drawing mostly done last year), **HW5.1** (will need some thought), **HW8.1** (ADC question looks straightforward once drawing technology is understood), and likely are other questions were this technology would be useful
  - Youtube link (see: second of two approaches): https://www.youtube.com/playlist?list=PLxBunBHKyhAdOXsxX1PimgDjUFbvVTM0K

- Auto-grading / Auto-generation for Assembly type questions, and C memory-map type questions:
  - Setting up a Docker image that supports Assembly auto-grading: https://www.youtube.com/watch?v=rN2Qdl52o48&list=PLxBunBHKyhAdOXsxX1PimgDjUFbvVTM0K
    - § Uses QEMU, and ARM cross-compiler
  - Current state from last year, and next steps: https://www.youtube.com/watch?v=VEqql1cvd88&list=PLxBunBHKyhAdOXsxX1PimgDjUFbvVTM0K

3) Microcontroller device emulation:

- Javescript-based Pi Pico emulator: for auto-grading non-configuration type microcontroller device questions.

Summary of Weekly Advisor Meeting

Advisor meeting Friday 2/16/24

- Look into java scrip in PL for image manipulation
- Integrate HW 3 Q3 with the cross compiler to be more flexable.
- Organize who is tacking on each challenge for next weeks.
- Keep getting more HW's ready for TA and peer review

Advisor meeting Friday 2/23/24

- Add random generation and autograding to HW 12
- Contact previous group for autodrawing
- Change randomization from I/O to ports and wires for HW 4 Q2
- HW5-Q5, fully randomize values in the PCTL and AFSEL registers
    - See if we can have users add text to a drawing
- Change value ranges for HW7 Q6

Broader Context

The effects of our broader context for our project have remained unchanged from section 4.4 of our Design Document. To demonstrate the positive effects of our project, we will be able to see the impacts of the PrairieLearn system on CPR E 288 students, TAs, and instructors. This will be seen through our external review process and once we hand off questions to students. We currently foresee no negative side effects of our project. If we do have these side effects, we intend to address them as a team between our student team members and advisor/client in an in-person meeting where each member gives their input and we democratically decide the appropriate actions to take.