EE/CprE/SE 491 WEEKLY REPORT 7

10/25/2024 - 10/31/2024

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 — General Team Member

- **Weekly Summary**

  The objective for this week was to continue to learn how to implement different kinds of questions into PrairieLearn and get the team's server ready to go. We spent time looking into the ARM assembly language and learning how to implement ARM based questions, getting our team's git repo linked to our PrairieLearn server, reformatting and fixing currently implemented problems, and more. The team is continuing to learn more about PrairieLearn and how we can improve where the previous team left off.

- **Past week accomplishments**
  - Caden: I looked into how HW 5, problem 2a dealt with students mistyping the GPIO variable register names. I found out that if a student mistypes a register name and submits their code, meaning they reference an unknown variable, the compiler won't build but will let the student know about their mistake. It'll even suggest the correct spelling of the register variable name. To somewhat prevent this, I added all of the variable register names into a multi-line comment in the c file that the student writes in. I also looked into how assembly code programs were constructed for HW 12, and learned a little bit about the QEMU Arm autograder. I also spent some time reviewing ARM assembly from CPRE 2880 since I haven't touched on it after the 2880.

- Devin: This past week I reformatted some of the sizing of the multiple choice options to make it more presentable to students using PrairieLearn. I also made documentation for the answer randomization technique that I made for the HW1_Q5. Looked at some material from CPRE 2880.
- Joey: I spent some more time reviewing ARM assembly language and tried out the questions made by the previous design teams in homework 12. Then I worked on remaking one of those questions from scratch and figured out what it took to do that. Finally, I started working on approaches to randomize the questions from homework 12.
- Justin: I got our git repo linked to the Prairielearn server so we can now start publishing our work onto the actual server. I then went and organized our git repo and filled the issue board with a list of issues that we need to get done. I then started updating the documentation from last year on server setup with more accurate information.
- Rachel: I got sick during my normal work days so I wasn't able to do as much. I did more with learning about pl-drawing, created a test question and watched/looked at the documentation for the element. Began watching documentation for ARM autograder.

o **Individual contributions**

NAME	Individual Contributions	Hours this week	HOURS cumulative
Caden Otis	Learned how problem HW 5, 2a deals with mistyped variable register names and added the register names in a multi-line comment to somewhat prevent students from mistyping those names. Also looked a little bit into the implementation of ARM assembly questions from the previous team. Also spent time reviewing ARM assembly from CPRE 2880.	5	27
Rachel D-H	Got sick. Watched Youtube drawing video. Watched ARM autograder video.	3	31.5
Justin Cano	Linked the git repo to prairielearn so now all changes can be put on the server. Filled out our issue board for our git repo. Worked on updating last years documentation for server setup.	4	24
Joey Krejchi	Reviewed topics from 2880, tested questions from previous design team, implemented an assembly language question, began looking at ways to improvise existing questions	5	24.5
Devin Alamsya	Reformatted question HW1_Q5, made documentation for the answer randomization technique used, looked at CPRE 2880 material. Had to go back home for a funeral so didn't get as much work done as I wanted to.	4	22.5

- **Plans for the upcoming week**
  - Caden: For the upcoming week, I will look into the QEMU ARM autograder more and try to get that setup on my VM. I will then try to implement a question from HW 12 to get practice with making a question that deals with taking in ARM assembly code as input and tests it via the ARM autograder.
  - Devin: Will look to do more work for the week after I get back from attending the funeral back home. Planning on looking at other questions to see if I can implement the answer randomization technique on it. I also want to make a youtube video for video documentation over teh answer randomization technique. Continue looking at more CPRE 2880 material.
  - Joey: I will work on improvements for existing ARM questions and push those changes to the Git repository.
  - Justin: Keep updating documentation from last semester. Hopefully get ISU SSO finally working.
  - Rachel: I plan to continue learning about tools and elements while polishing HWs 9 and 12.

- **Summary of weekly advisor meeting**

  For this week's advisor meeting, we continued to discuss our findings and what we've learned so far with PrairieLearn. We talked with our advisor about a bug that we ran into with how the previous team autograded one question from homework 12, as well as some problems that the team has created or improved. We also made sure to update our advisor on the state of our team server and some tasks that we've created for the issues board of our git repository. We also talked a little bit about our access token, which allows us to link our git repository to PrairieLearn. Our advisor was concerned about the access token's expiration date, and suggested we look into somehow extending the expiration date to prevent our access token from expiring and causing future teams to not access our work.