

CIS 4250 – Software Design V
Instructor: Prof. S. Scott
Individual Accountability Report (IAR) Template

Note. Refer to the Project Manual for detailed instructions for IAR submissions.

Individual Accountability Report (IAR) Template

The following questions **MUST** be included and answered completely for each submitted IAR.

IAR must be submitted one of the following file formats: text or PDF.

Q1. Student Name: Corey Martin

Q2. Student ID: 1158792

Q3. Associated Team Deliverable: Final Sprint + Application Demo

Q4. Team #: 4

Q5. What were the main technical or methodological knowledge, skills and/or abilities (KSAs) that were required to complete this team deliverable? What prior courses or experiences (e.g. co-op, group project, etc.) from your Software Engineering degree did you draw on for these KSAs? (bulleted list is preferred):

- Selenium testing
- Async programming
- Typescript
- Gitlab CI/CD
- Jest testing
- Node Configuration
- Firebase

Q6. What was your existing level of experience with these topics/skills before your team began working on this deliverable? (1-2 sentences):

From my work during the previous sprint I learned a significant amount about setting up Selenium tests, node configs and CI/CD, I also have experience working with jest in Python from my co-op. I had little experience with async coding and writing selenium tests before this sprint, I had no experience with firebase as none of my previous contributions required it.

Q7. Comment on your individual KSAs learning during this deliverable, and what additional learning may be needed to understand or be more competent with these topics / tasks in the future?

Gitlab CI/CD was my biggest weakness with both this sprint and the previous one. I managed to learn enough about Selenium and Jest in order to get the tests working for each of my group members, but I was unable to find a working configuration which would allow selenium to run

properly on a Gitlab pipeline. I learned that in order to do so I would need to learn how to create custom docker images, or learn to create a pre-commit pipeline which runs locally. Learning more about async code may have allowed me to write more stable and readable tests, if I knew more about firebase I could have made the tests more modular and rely less on the websites frontend.

Q8. What specific contributions did you make to this team deliverable? This should include technical or project management contributions.

For this deliverable I created selenium tests for all of the functionality in our website, this included creating a new account, logging in and out in addition to tests for study mode and the glossary. I tried to set up a CI/CD pipeline and created a configuration which would have worked if the Gitlab server was able to run the web driver used by Selenium. I also helped the other team members to setup their own selenium environments so that the tests could be run by anyone.

Q9. With whom did you collaborate for any of the above contributions (be specific – saying “all team members” is not sufficient. State which parts you worked on with whom)?

I worked with Matthew mostly in order to get the tests working for other group members, once we found a configuration that worked for him everyone else was able to get it working without any added changes. I also worked with Matthew to make tests which required a new account to be created using the frontend, then delete the user from firebase. After I completed the tests I had each group member look at the list of tests I had created to make sure there weren't any other major tests that needed to be added.

Q10. Comment on how well you managed your time over the time period allocated in the Course timetable to this team deliverable (i.e. the time between the prior team deliverable to this team deliverable).

I managed my time on this deliverable much better than previous ones. I made continual progress over the course of the sprint and had everything ready before our group met to wrap up everything. I found that this made things much easier, as if I hadn't given myself time to finish everything I would have been waiting on other group members to help me figure out how to integrate my code with their tests with no time left.

Post-Mortem

1.

My main contributions to the project as a whole were the Glossary page and the Selenium and Jest environments. I also made some contributions to investigating bugs, eg. Our NEXT config was causing the program to fail occasionally or output errors to the frontend. I also contributed to

the overall design of the project, and contributed to the decision making process involved in most components of the application.

I think the biggest contribution I made was the selenium test environment which I worked on in both sprints 3 and 4, during sprint 3 I learned that setting up jest and selenium within node is not nearly as simple as I expected. I ended up spending almost the entire sprint just trying to set up the environment, which led me to learn a significant amount about how configs are set up and interact between node, jest, selenium, nextjs, and React. I managed to get it working though, and then implemented all the tests which were needed in sprint 4.

I could have improved my contribution to the Glossary page if I had spent more time designing a paper prototype or getting feedback on the UI. I also could have made the testing environment more useful to the team if I had discussed the idea of implementing test-driven design for new components once the environment had been set up. I also could have done more research on testing libraries and found one that was more likely to work on the gitlab, which would have made setting up a pipeline possible.

2.

I learned a significant amount of new skills during this course, many of which I did not have any experience with at the beginning of the course. Prior to this project I had some experience with typescript, but not with any of its more language-specific functions like interfaces. I also had very little experience with CI/CD, Firebase, async programming and Node. I had some experience with react, jest and selenium from previous work-terms/courses.

I had to learn a deep understanding of Node and typescript for everything I did during this project. I learned a bit about FireBase and async programming, although I didn't develop much new knowledge about either. I developed the most knowledge about Node, Jest, Selenium, and React, and how they handle configs, packages and work on different machines. I believe after completing this project I would be able to implement the same testing setup that I did in a few days rather than multiple weeks. I used a significant amount of Jest and Selenium tests, but I already had a relatively high understanding of each so I would say I improved marginally. I learned a significant amount about creating CI/CD pipelines, and I believe I would have successfully implemented one if I had not run in to the issues with selenium.

I am assessing my skill level of each described skill based on how difficult I found it to understand what I was doing on an in-depth level. For example, when writing code sometimes it is possible to get the desired result without understanding everything that is happening behind the scenes. For each of the skills described here anything that I said I had a significant improvement in meant that I feel as if I now understand not just how to get things working but also understand the proper and cleanest way to do so.

3.

I did not contribute significantly to written deliverables or demo planning as they were mostly done by 1-2 members with contributions taken from the rest of the group, but I made sure to contribute what I needed to so that my other work would be properly documented. I made sure to

pay attention to group communications so that I would be available if needed for filling out each written deliverable.

I contributed a significant amount to project planning. I had many ideas for features to add to the website and I participated actively in discussions about new features. I was also very active at working when the group was together during lab times so that I could easily get answers whenever I reached a point I was unsure about.

In terms of project coordination most of our group just focused on their own issues then would meet at the end of the sprint to coordinate everything after the fact. However I still managed to contribute to group coordination by keeping in touch with our group and paying attention to messages from other group members.

Overall in terms of leadership I think Matthew played the biggest role in keeping the team on track and making sure team deliverables were completed. I showed some leadership in how I helped drive conversations about which features to implement and how to implement them, including putting forth many ideas that we didn't end up implementing.