

Reflection

A team of five students worked on a secure system which allowed users to access data in a remote repository and do CRUD operations. The security of the system has been done mainly through authentication and authorization.

Our first Team members' contact was through a social media group where everyone could know their teammates and their level of coding competency. Then a team leader was selected and work on the 'team contract' started. To start the contract, a joint Google account was created by the team leader and the contract document was created and saved in Google Drive. Everyone added contents to the document. As stated on the contract, the goal of the project was designing and implementing an application that provided a secure repository for an organisation with domain-specific requirements. To accomplish the goal, some general and technical requirements were considered. For general requirements, 'time management' and 'team communication' played the key roles and for technical part, 'programming skills', 'UML diagrams' and 'system analyses' were the important ones. Role sharing and expectations were also considered. After submission of the contract, the next step was creating a design document. So, team members participated in different skype meeting to discuss different aspects of the project. At last, work on design part started and everyone worked on a specific part of the document. As expected, the design document was created based on the contract document and the details of the contract were represented in design document; For example, UML diagrams mentioned in contract document extended to class and sequence diagrams in design document. After the submission of the design document, it was time for the team to start implementation of codes based on the design document. So, after various meetings, the team decided to divide the project into modules. The modules included authentication, authorization, crud, event monitoring and database. Every member of the team selected one. The next step was a GitHub page; So, one of the team members created a repository in their GitHub account for code sharing. At the end of project, making a demo was another task to show the progress of the project to the tutor. Again, every member of the team collaborated on that. After this stage, the project was ready for submission.

Any project is like a journey starting from one point and ending to another point. But the main point is the gains everyone makes in the journey. In every journey,

everyone meets new people, experiences good/bad things and learns new things. In other words, doing a project is a fully-fledged learning from start to the end.

For me, not only the project but also the module itself paved the way for more learning. From module side point of view, I could gain knowledge about secure software design and development concepts like system architectures (Monoliths/Microservices), Cryptography and its use in operating systems, Linters and its use in testing, and software security. I could also experiment with Flask, advanced Python, REST APIs and SQLite. From project side point of view, participating in meetings regularly and taking part in decision makings about every part of the project were rewarding. I really enjoyed writing some parts of contract document including 'accomplishing the goals' and 'Consequences. I also wrote some parts of design document including 'Introduction' and 'Design Considerations' and created a sequence diagram of the system. Writing CRUD part of the module was challenging but, in the meantime, it pushed me to more learning experience which was very fulfilling.

Although everyone was supposed to do coding of a specific module in the project, but the expert of our team helped everyone in coding and this experience was very precious to every member of the team. For me with a JavaScript background, learning different aspects of Python coding in each module of our project and then connecting those modules were very fulfilling while challenging especially in connecting modules together.

Every project like every journey will be finished one day and the traveler is not the same person at the end of the journey. They have flourished and this flourishing experience means new start and new start means new learning.