

UNIVERSITY OF SUNDERLAND
FACULTY OF TECHNOLOGY - COMPUTER SCIENCE
INDUSTRIAL PLACEMENT - MONTHLY LOG



**University of
Sunderland**

MONTH: MARCH

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What have I been doing?

I have been working with my Team on our Data Capturing Application as we proceeded to the second sprint of our project. Having established the virtual environment and set up the Python framework (Django) with its dependencies in the first month, our next task was to address the front-end dynamics of the application. We dedicated the first week to working on the web page theme installation. This is very essential in building the landing page with the necessary functionality, aesthetics, user experience and scalability. To achieve this, we explored the use of Bootstrap. This is an open-source front-end framework, with a collection of pre-loaded HTML, CSS, and JavaScript components used for styling web applications. Before this time, I had a limited acquaintance with how Bootstrap works. Therefore, I immersed myself for a few days in reading the Bootstrap documentation and also watched highly recommended YouTube videos to understand its concepts.

The next Sprint Backlog was to deal with the configuration of the Login Page. This is where the users (Durham Police Officers) will be required to have access to the application with their credentials. To set up a good user authentication and access control mechanism, an active directory is needed. This is not just for security, but also to ensure compliance with regulatory requirements. This was a challenge we had to navigate, given that we had no access to the directory from the Police Department. However, we decided to simulate the process, which upon the completion of the project, the Police could then integrate the directory into the application and onboard new users through the super admins.

Fuelled by my newfound passion for agile project management using Scrum, I decided to take a Scrum Master Certification which I duly passed. This was primarily to broaden my knowledge in the course and help my team achieve our project deliverables while conforming to the professional standards of Agile project management. Also, I am using this project as a springboard to bigger projects that I will get to manage and be a part of in the near future and being a certified Scrum Master will help with the required expertise needed by various organizations.

Finally, we worked on the design of the data collection web forms. This is very critical to our project objectives as the key solution we were required to provide was digitalizing the paper-based data-capturing process of the Police which was susceptible to adverse weather conditions

and other factors. Therefore, we needed to replicate the components of the sample forms that were provided in the Project Brief. Using a demo user to test the functionality of the forms, we verified it successfully saved on the database, which will be managed by super administrators, preferably the senior police officers.

What problems did I encounter?

The first challenge the team encountered in this phase was when we discovered that we had erroneously pushed the completed project in Sprint 1 alongside the Django-created Secret Key to the team's GitHub repository. This is a security risk that not only makes our work prone to misuse if accessed by a third party but also negates best practices that require keeping sensitive information from our code spaces.

Also, I had issues trying to git clone from our team's repository to my local repo so I could work on the theme installation with other members of the team. Having initiated the request by entering the relevant commands and login details, it kept returning an error message, and this was worrisome because I could not proceed with the project and perform the task assigned to me within the stipulated timeline.

How did I solve them?

A team member observed the issue we had with the secret key during one of our Standup Meetings and we had an extensive deliberation on how best we could troubleshoot the current challenge. The first line of action was to invalidate the current secret key to prevent any unauthorized access to our Django application. This required us to create a new repository where all the members were added again as collaborators. We then made significant adjustments to our app settings by creating a `.gitignore` file. This file specifies unintentionally tracked files that Git should ignore and also helps prevent sensitive information like passwords, API keys, etc, from being exposed. Then we encrypted the newly generated secret key into a Django environment (`.env`) file and listed it to the `.gitignore` file. This helped prevent it from being accidentally committed to the version control going forward.

I resolved my Git clone challenge by thoroughly reading through the Git documentation and researching online to get a better insight into how Git works. I was able to detect what was wrong with the command as I needed to include `pip install Django-environ` to rectify the error message I had been encountering in my Mac Terminal. I did that and the issue was resolved. My troubleshooting attempts also led me to discover an optional way of using the VS code editor to clone a repository by connecting it to GitHub which is easier to implement.

How could I have improved my performance?

One of the ways I feel I could have achieved more results is by leveraging the potency of community forums and technical blogs. I have not been really in this aspect, knowing full well that these forums provide diverse perspectives on issues by fellow developers and IT experts. They also help with troubleshooting and efficiently solving errors and bugs through experience, as well as assisting members to stay up to date with industry trends and techniques. For

instance, the git clone issue I had may have been easily solved by gleaning from the resources embedded in community forums and technical blogs.

Task prioritization is also another area for continuous improvement for me to achieve my assigned jobs on the project. This will allow me to meet deadlines and milestones while also enhancing my decision-making process. I believe that there are and will always be areas for one to improve in the course of developing a placement project such as this.

What did I learn?

One of the key learning points for me is the sharp improvement in my technical skills as I have progressed through this project. I now have a better knowledge of the Django framework by understanding its dynamics concerning the user authentication system and defining models that helped create tables in the database (for users to make inputs into the various fields on the application). The Django Admin Site is a powerful tool that we use for securely managing and interacting with the application data. Also, I have become fairly adept with the use of front-end technologies such as Bootstrap which is widely used by developers and is popular for its reliability. It has also enhanced my appreciation of web applications I have had to research in the course of this project, boosting my creativity in web design.

I have further honed my project management skills in the last few weeks. Having enrolled and gotten certified in an intensive Instructor-led training program that lasted for days, I learned the tenets of the Scrum Handbook, a practical understanding of the functions of a Scrum Master, and how to work with the Scrum team in delivering a project that not only appeals to the users in terms of aesthetics and functionalities but also delivers superior value to the relevant stakeholders. I have also been well-equipped with project management tools and techniques. This includes but is not limited to Jira, Kanban, Burndown charts, task tracking, team communication and effective time management.

Lastly, working on this web application project has provided me with valuable hands-on experience in implementing security best practices to protect sensitive data. This is more emphasized by the fact that we are designing an application for a law enforcement unit and security is a focal point. In the past few weeks, I have strengthened my understanding of back-end configurations for features such as authorization, authentication, error handling, and logging through the web framework. And as the project progresses, I am very optimistic that this will get better.

Date of initial/review/exit meeting: 28/03/2024

Signed Student.......... Signed Work Supervisor.....