

Final Project Diary

Student: Redon Ferizi (21358591) (Redon.ferizi.2022@mumail.ie)

Specification

- Weekly diary entry
- Update for each day
- Reflection on the week section
- You need to keep a record of what you have learnt and the tasks you have been working on and have completed. Experience of Team work should also be included.

Week 1: Settling Back and Starting the Final Year Project

This week marked my return to college, which came with many adjustments. Along with moving to a new town closer to campus, I had a full schedule of lectures, including a long first day from 9 am to 4 pm. While the transition was hectic, I also started focusing on my final year project.

I found out from friends that the project bank was made available, and students could now view potential projects on the Maynooth University website. To accept a project, we were required to meet with lecturers, so I began looking through the options. However, I felt a lot of pressure as many projects were already being taken, which led to feelings of anxiety and imposter syndrome, especially since I couldn't immediately find a project that aligned with my interests.

While sitting in the lab with a mate after lectures, we were discussing how crowded the parking situation on campus was, which sparked the idea to create a project based on solving this issue. I recalled seeing a few lecturers open to students proposing their own projects, so I emailed some of them with my concept. Dr. Aiden Mooney was the first to respond and showed interest in my idea. I remembered him from my first-year CS161 Intro to Computer Science class, and we set up a meeting to discuss my proposal.

Before the meeting, I prepared a document outlining my initial ideas for a parking check-in/check-out system. My initial thought was a mobile app that students could use to check in and out of parking spaces. However, I realized not many would use the check-out feature, as there was no incentive. I considered location-based check-out options and shared these variations with Dr. Mooney during our meeting. He suggested that a web app might reach a larger audience and raised a key point about ensuring accuracy, even if only a few users were utilizing the system. We also discussed adding a feature where users could indicate how busy a parking lot is upon arrival.

After reflecting on the meeting, I had some second thoughts and wondered whether I should have chosen a more structured project where guidance would be clearer. However, I decided to stick with my idea and began preparing by familiarizing myself with the necessary technologies. I downloaded JetBrains WebStorm and successfully linked it with my GitHub repository after a bit of troubleshooting. I also set up initial folders and documentation, including brainstorming ideas and writing a project report to get back into the routine of reporting and planning.

Week 2: Brainstorming and Balancing Responsibilities

This week, I didn't make significant progress on my final year project due to other duties at home that required most of my attention. Additionally, I focused on catching up with some lecture material and continued exploring options for my project. Despite feeling some pressure from seeing other students dive deep into their projects, I knew my priorities at home were more important, and I still made small steps forward.

I brainstormed ideas and bounced some off my friends, which was helpful for refining my project direction. I also watched some videos about integrating a map using Python, which looked particularly interesting. The idea was to add pins or markers to a map (or a picture imported from Google Maps), which could be filled with data. I considered applying this concept to a map of Maynooth for my project, but I had already set up WebStorm, not Python, for my development environment.

Although I didn't work much on the technical side this week, I still chipped away at ideas and concepts. I also reminded myself that with the way I've structured my modules—6 in the first semester and only 2 in the second semester—I'll have more free time later in the year to focus more intensively on the project.

Week 3: Testing Frameworks and Designing Wireframes

This week, I really focused on my project. I had initially planned to meet with the lecturer guiding me, but due to a missed email, we couldn't coordinate our schedules. However, we've now set a recurring meeting for next week to ensure we stay on track.

In the meantime, I spent a lot of time researching and testing various frameworks that could be useful for completing my project. I tested Angular, React, Bootstrap, and plain JavaScript/HTML. I eventually settled on Bootstrap because of its simplicity and flexibility. The components in Angular felt too complicated for my needs, while Bootstrap allowed me to easily import what I needed to make the page look good.

With Bootstrap, I was able to set up a nice index page that included a graph showing the busiest times for parking, a heading, and check-in/check-out buttons. However, I quickly realized I had jumped too far ahead without a clear design plan, so I paused and decided to create a wireframe for the project to better visualize the layout.

I found a drag-and-drop wireframe maker online, which made the design process much smoother. Creating the wireframe reminded me of my time at ESB, especially the use of headers, hero blocks, and three-column blocks. The wireframe included a header, a hero section with a left-aligned photo, H1 and P tags on the right, and two call-to-action buttons for checking in and out. Below that, I left space for the graph, which could later be refined.

The wireframe approach helped me realize that I could include a dropdown bar for selecting different car parks, allowing users to see how busy each one is and when it might be free. Additionally, after talking with a peer, I got the idea to upload my weekly diary entries to my GitHub repository, so my lecturer can easily track my progress and catch up on what I've been working on.

Week 4: Adding Interactive Maps and Backend Setup

This week marked a major leap forward in my project, but it didn't come without challenges. After developing the wireframe last week, I tried to translate it into a working layout on my site. While I didn't manage to perfectly match the design, I discovered something called Leaflet, which allowed me to integrate an interactive map into my project—a feature I'd been particularly concerned about.

Getting the interactive map set up and working was a significant relief, as it had been one of the most complicated aspects I anticipated. I configured the map to focus on Maynooth, which was a major achievement. Being able to see it in action felt like a breakthrough after a lot of trial and error. This was a high point in my week, giving me the momentum to continue pushing forward.

In addition to the map, I also began setting up the backend, which turned out to be far more challenging than I initially thought. I spent a significant amount of time establishing a MongoDB database and building the necessary backend infrastructure. This included creating directories for backend functionality, setting up environment files (.env), writing the seed script (seed.js), and getting the server running via server.js and package.json. I also structured the backend folders correctly, which involved learning the intricacies of backend development, as this was still relatively new territory for me.

Debugging became the theme of the week, as almost every step in setting up the backend came with its own set of problems. The process of connecting MongoDB to my application was particularly difficult, as I ran into multiple errors related to configuration, database connections, and package dependencies. In some cases, I had to repeatedly check my code and research various issues online. Even something as simple as getting my live server to run was challenging. I had to kill processes running on certain ports and restart the server multiple times. It felt like a constant back-and-forth between fixing one issue and encountering another.

These repeated debugging sessions were exhausting and, at times, demoralizing. I spent hours staring at error logs, reconfiguring files, and testing different setups, only to see things still not functioning as expected. It was hard to stay motivated when progress felt slow, and I started to feel the pressure of falling behind.

However, the silver lining was finally getting the interactive map working smoothly on my site. That moment was a huge win for me because it was the feature I'd been most anxious about. With the map integrated successfully, I was able to create a new page where the map is displayed once the "Check In" button is pressed. I also spent some time fine-tuning the site's appearance with CSS, making sure everything looked cleaner.

In summary, while the week was tough and at times demoralizing due to the extensive debugging, seeing the interactive map come to life was a huge relief and gave me a renewed sense of confidence in moving forward with the project.