

South East Technological University

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Ollscoil Teicneolaíochta an Oirdheiscirt



Fleet Management Project

Final Report

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Academic Year: 2022/2023

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## Introduction

This report will be the final document produced for this project. The objective of the project was to develop an application and thus develop new skills and a better understanding of the development process. The project was proposed by Joseph and was undertaken by this report's author.

To that end the report starts out by providing a reminder of the purpose behind the project. Providing the details that were given at the project proposal stage. Followed by the learning outcomes that came from such hands-on work. Then finishing with a reflection on how things went throughout the project.

## Project Description

“A company manages company transport fleets (cars and/or trucks) and supplies tyres and spare parts. It is currently managed manually. When a car breaks down they contact the company who arrange new parts and/or tyres for the vehicle and arranges to get it fixed in the nearest garage. They want an App that drivers can use to record incidents and automatically have the nearest garage contacted. The server should record all incidents and track all vehicles of all client companies.” [1]

This project was aimed at creating an application that could be used by drivers, fleet managers and garage operators to facilitate vehicle repair. Without the company Daly Tyres needing to have any input. Wishing only for the only time that would have to infer being when the garages have to order any parts needed for such repairs.

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## Outcomes

At the start of the project I had intended to use Xamarin as my cross-platform development framework and MySQL for my database. In the end neither of these came to pass as I discovered that Xamarin was no longer being supported in the VS Code IDE. This forced a change over to Flutter. What I had considered to be the second best option of the multiple I had previously researched.

From my use of Flutter I have learnt both how to install all the necessary packages to get the language working, I have also learnt a new programming language. Flutter is not a language I had any prior experience with. However It was similar enough to other languages that I have used in the past so that I was not starting from scratch.

The same can not be said for NoSQL. After failing to connect to the MySQL database I quickly searched for an alternative. The answer was Firebase. It took a long time to get a grasp on how this database manager worked and even longer to try and understand NoSQL. In the end though I was able to produce three collections containing documents for each vital aspect of the application.

This project has enabled me to gain knowledge on two previously experienced technologies. It has definitely been beneficial to my learning and will hopefully continue on into the future.

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## Reflection

When faced with challenges at the start and near the end of the project I tried to persevere. Wanting to stick with a method and keep trying to make it work. However, this may have produced a counterproductive approach, sometimes it's essential to act quickly and move on to other solutions. But instead I spent more than two weeks trying to find a solution to the MySQL connection problem. Not wanting to throw away all the work previously done to produce the database layouts and risk losing momentum.

The same can be said for when I had to change cross-platform development platforms. When I realised that Xamarin was not working I didn't immediately think of the alternatives. Instead sitting on the issue some more before deciding to use Flutter. This is a hindrance in the development process.

Overall I wish I had reacted just that little bit faster when making decisions. Instead of spending days after with no progress before finally deciding to make a move.

However despite these negatives I believe that as a software programming student being moved from my comfort zone and that I have greatly benefited from using Flutter and Firebase in my project Flutter is a powerful and flexible open-source mobile application development framework. With it I had the choice of developing for multiple different platforms. Platforms such as iOS, Android or Chrome. All while using a single codebase.

Firebase, on the other hand, is a cloud-based mobile and web application development platform. The in-built tools such as the authenticate feature made using it that much easier. Once connected it was easy to operate for users. Issues only arose from my lack of experience with a NoSQL database. Something that the Firebase documentation was very useful against.

In conclusion, I wish I had made great progress in the development of the application. My none-commitment to changing platforms definitely had a negative effect. However because of the fact that together these two tools worked very well with one another, I would not mind working with them sometime in the future again.

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## References

1. Joseph Kehoe (2022). SE Projects 2022-2023. [Available] on SE Project Year 4 Teams group.