**X00161872 – Elijel De La Cruz**

**Project Research Document**

**Dublin Bus RealTime Website**

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**Detailed Discussion**

The project idea proposed is a Dublin Realtime Website, which will have an updated design, that is easy to navigate through and look at, and will allows users to go in and check various of information that they are looking for, regarding their trip on the Dublin Bus.

This app targets all age groups all around Dublin, having a simple to look at UI will allow teens, adults, and senior citizens to easily access and gather the information they need for the bus they are waiting for or check for which bus goes to their desired location. User Experience is key as it enables users to easily check and find their stop and see how long they will have until their bus will arrive. This will encourage users to plan out their trips effectively and efficiently to prevent them from missing an important bus that they need to catch to get to specific places, such as work or school.

The system will allow users to able to retrieve various of information such as Route Lists of all available Dublin Buses, their route information, the full timetable for the bus they are searching for and the bus stop information. There will also be a Real-Time bus information available for the users to check for the bus they are waiting for currently to see when it is expected to arrive. The app will also have a map option, which will use google map’s system, to allow the user to see where the stop they are looking for is.

The system will also allow users to create their own account, in order to access the FAQ chatbot that will answer any simple question that the user may have in mind regarding news about Dublin Bus, are buses wheelchair friendly or per friendly, etc.

**Existing Applications in this domain**

From researching about the proposed system, there are three major applications similar to the proposed project:

* Real Time Ireland
* Dublin Bus
* Next Bus

All apps are similar to the proposed project, showcasing the realtime information regarding Dublin Bus to users. Each app also has different map interfaces, GUI and some even has missing information that is needed by some users.

Some apps do lack aspects, such as Real Time Ireland not having a proper estimate retrievable timetable for the mon-sun, which limits to user having to only see their estimated timetable for the next 1 to 2 hours.

Dublin Bus app has an-outdated map which seems ok as it pinpoints where the stops are but at the same time it is impractical as the user is not able to see their own location, which is vital in order to find out where they are and how far they are from their stop.

Next Bus GUI is quite confusing at times, especially when the user is trying to determine which bus side, they need to look at in order to get to their destination.

**Platform, Technologies and Libraries**

The platform the project will be using is Django, along with Django REST that will allow the system to pull the data from various of different APIs in order to create the proposed project. I will be using GTFS-REALTIME API: this will allow the system to GET data and showcase the Dublin bus information. The Project will also use Google Map’s API to showcase the user’s bus stop location along with their current location.

A FAQ Chatbot Django Library that will allow users to ask questions to the bot. A Django-user-account library, that will allow users to sign up, sign in, reset password, etc in order to access the bot.

The project will be using SQLlite to store it’s Database, regarding information such as Dublin bus stop information, and user details.

The project will be using Heroku to host the website, it is a free and Django compatible. The project will be pushed and committed to GitHub regularly every update and iteration.

**The risks**

The main risks of this project is being heavily dependent on the National Transport Ireland API. This whole webapp’s key functionality is based off gathering information from the Dublin Bus API, and if it fails to do so, the website would then crash and not be functional at all for the user.

Almost every single interaction that the user will make from the website will be pulled from the Dublin Bus API, and if it fails to do so, the user will be unable to retain and find information about their bus and therefore lead to them either using another app instead or missing their bus.

Another risk would be the chatbot not getting the information that the user has selected to ask. With this functionality not working, the user will not be able to find their FAQ, which is very inconvenient if they have a question regarding the website, bus policies, etc.