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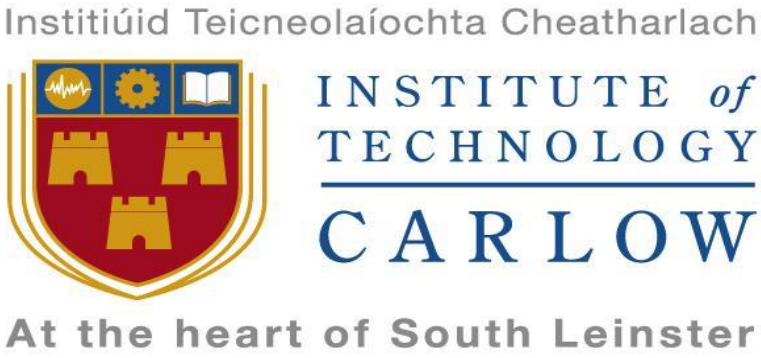
Vision document



Department of Computing and Networking

Software Development Degree

Project name: MaaP (Message as a Platform)

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1. Problem description

Many of us probably have used messaging platforms such WhatsApp, Messenger or Viber. Well, when it comes to data privacy most of the user's data such, pictures, messages and other information is saved in the app's infrastructure and is owned by them. The goal of this project is to build an open-source, self-hosted messaging platform, where users can choose to run the platform on their own infrastructure and own the data. The main objectives of the application are to allow the user to:

- Authenticate.
- Send and receive messages to a service which can communicate with multiple messaging services and allows the multiple services push notifications back to the service that they have subscribed to.

2. Solution

The main objectives of the application are to create independent services known as "micro-services ". These micro-services are defined as follows:

- Authentication service i.e. signup, login, and logout. The user should send multiple types of messages: e.g. images, maps, videos etc. these messages are to be sent to a service and allows the multiple services push notifications back that they have subscribed to.
- When a user receives messages, they should receive messages via Push notifications.
- They should receive messages that are sent by services.
- An Integration service that would allow developers to register their own service to the platform and allowing the developer to enable/disable the service when they wish. The subscription service will allow the user to subscribe to a service and unsubscribe from that service and allow that service to send a push notification to them.
- A user will able to download the application and will be able to run the application on their own infrastructure and own the data.

3. Target audience

The application will appeal to any android phone user interested in send and receive instant messaging. The application will open sourced, companies will able to get the source code from GitHub and they will able to modify it and run the application on their own infrastructure, allowing them to have a complete control on the data of the application. Companies can integrate other services for example. A College has an idea of a service that allows teacher and students to send and receive messages but simultaneously, the college wants to own the data of the application. Well, this application is here at the right place at the right time.

5. Measuring success

In order for this project to be considered successful, an application must be produced using Android or another interface without referring to any documentation outside of the user interface. The architecture of the project will develop in “Micro-services” and the data of the application will be owned by the person who downloads the source code. The source code produced as part of this project will be publicly available on GitHub. In long term, the interest will be measured in a number of downloads and forks.

6. Learning Objectives

The learning objectives of this project are to develop my programming skills, application development skills and to learn about messaging as a platform. Documentation skills, testing are essential skills to learn in the world of software development so I am hoping to learn these skills. Other skills I will discover later.

7. Proposed technologies

The proposed technologies for the development of frontend and backend are:

Front-end

Java: is a programming language and computing platform first released by Sun Microsystems in 1995. Java will be used for the development of the android app for the project.

Cordova: formerly called as Phonegap is a platform to build Native Mobile Applications using HTML5, CSS and JavaScript. Other front technologies will be discussed in the research manual.

Back-end

For the backend, the following languages and technologies will be used:

Node.js: is a platform built on Chrome's JavaScript runtime for easily building fast and scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient, perfect for data-intensive real-time applications that run across distributed devices.

Python: is an interpreted, object-oriented, high-level programming language with dynamic semantics. Python is a high-level built in data structures and its simple, easy to learn syntax emphasises readability and therefore reduces the cost of program maintenance.

Hypertext Pre-processor: Known as PHP and it's an open source general-purpose scripting language that used as a server side language.

The proposed database for this project would be the MongoDB or MySQL. Development tools that will be used for the development of this application such Eclipse, Intellij and android studio are proposed and they will be explained in more details in the research manual.

The decision that will be made with regard to which platform I will be developing the application on will depend on research result. Each of the stated technologies above and other to come will be researched accordingly and the final decision will be taken.