Introduction

The problem this project aims to solve is that on graduation day, among the chaos and the crowds, it can be difficult to find other students and staff who you would like to talk to. This day for many could be the last opportunity to talk to those who you have connected with over the previous years. The solution Graduation Gathering hopes to provide is a real-time location sharing platform from which students and staff will be able to share their location and find those who they have connected with.

In order to connect as many students and staff as possible, Graduation Gathering must be available on both iOS and Android whilst providing safeguards so that the system cannot be abused. I intend to achieve this by restricting the use of the app to exclusively students and staff of the University of Portsmouth and only enabling location sharing on graduation day itself and in areas that are related to graduation. I also intend to ensure that users can clearly manage who has permission to see their location so that they can be sure that their location is only shared with those who they intend to share it with. Due to the nature of sharing your real-time location, the safety of the users is my first priority when making this application.

The idea of an app that has the ability to help people find one another is obviously not new, any messaging app can be used by individuals to arrange to meet up. However, this is extremely time consuming when done on a large scale and the chaos of graduation day would most likely lead to most of these messages not resulting in a meet up. Graduation Gathering would solve this problem by allowing users to select who they want to see the location of ahead of time, and then on the day they would just use the app to quickly find the other users.

For Graduation Gathering to be successful in its use, it will need to be both accurate in its location sharing and to be user friendly. Graduation Gathering is intended to only be used for a short time and so the UI must be intuitive or the user will simply not use the app.

This will require a system that has both the capability to display a map of Portsmouth and the locations of the users on said map, as well being able to handle location sharing for a large number of simultaneous users. This location sharing creates a problem as for the tracking to be accurate the locations of users will need to be updated very frequently and so the server will be called very often by the users clients. At the time, due to the nature of all the users having the potential to be sharing their locations with each other, the server must store the location data in a single place. The combination of these two factors means that all of the large number of frequent requests must, at some point, access the same point on the server making the server more likely to fail.