

Technical Architecture

1 – Use Cases

Title	Display map
Primary Actor	User
Scope	System
Level	Summary
Story	The application will display the map for the user, and checks if GPS is enabled before displaying map. If GPS is not enabled, a message will be shown to the user. If the GPS is enabled, the application will display the map and center it on the user's current location.

Title	Show Churches
Primary Actor	User
Scope	Component
Level	User goal
Story	The application uses the user's current location and shows in the map the nearest Churches. The user can then select a Church to get more options.

Title	Search Churches
Primary Actor	User
Scope	Component
Level	User goal
Story	The user can search for a Church by name or by city/county. The application then displays the results in a list. The user can then select a Church for more options.

Title	Show Mass Times
Primary Actor	User
Scope	Component
Level	Sub function
Story	When a Church is selected, one of the options is to show the Mass times for the selected Church.

Title	Set notifications
Primary Actor	User
Scope	Component
Level	Sub function
Story	The user can set notifications that are going to remind the user about the next Mass.

Title	Register
Primary Actor	User
Scope	System
Level	User goal
Story	The user creates a new account in our database.

Title	Log In
Primary Actor	User
Scope	System
Level	User goal
Story	The user can log in to an existing account.

Title	Add to favourites
Primary Actor	User
Scope	Component
Level	Sub function
Story	This option is only visible to registered users. The user can add Churches to a Favourites section. This information is stored in the Cloud, so that the user is able to restore their settings on another device.

Title	Post pictures
Primary Actor	User
Scope	System
Level	Summary
Story	When a Church is selected, the user can post pictures of that particular Church, so that other users are able to see what the Church looks like.

2 – Technical Architecture

2.1 Software Components

I will be using Azure to host this application and to make use of its Database services. For the Database, I plan to use SQL, which contains integration with Azure.

My application will be developed for Android, and then it will be developed for iOS. This is going to be possible because I will be developing my application using Apache Cordova, which is a platform for building native mobile applications using HTML, CSS and JavaScript.

2.2 Platform libraries

For the Database, SQL will be the language I am going to be using for this project. I am very familiar with the language; therefore, this is an advantage for this application.

Since my application is going to be developed through Apache Cordova, I am not going to be using much of the native application code. In other words, if I was to develop my application for Android and then for iOS, I would have to use Java for the Android, and Objective-C for iOS. Apache Cordova simplifies that for the developer, and the application can be built with just HTML, CSS and JavaScript. This is possible due to the fact that the API on the Apache Cordova uses JavaScript to access functions such as camera or accelerometer, and because JavaScript APIs are basically the same on device platforms, the app should be portable to other devices with minimal changes.

2.3 Distribution and Deployment

My application will use Cloud services. The Cloud service is going to be hosted by Azure, and this is a good advantage for the project since Azure supports SQL.

Since this application will be developed through Cordova, HTML, CSS and JavaScript is going to be used. The application is going to be session less, which means that scalability is possible and the application will save server resources, which means that I do not need to allocate memory on the server side, and this contributes to scalability.

The application will have a secure server where the user will register and log in. I am not sure about any certificates or authentication, but this will be changed during the development of this application and I will update this part of the document.

2.4 Risks

The main risk of this project is the communication between the client (the user) and the server. In order to get this communication working, a little bit of word and coding is necessary.

Since data will be stored in a Database in a Cloud service, another risk is the possibility of the client not being able to reach or retrieve data from the server. This comes back on the communication issue, which is the main risk of this project now. Getting this communication to work with no or minimal problems will be a challenge for this project.

3 – Prototype

3.1 Prototype Deliverable for week 8

- Display Map
- Show Churches
- Search Churches

3.2 Prototype Deliverable for week 11

- Set notifications
- Show Mass times
- Register
- Log in

My strategy for testing will be the same throughout the whole development of this application. Since the focus of this project will be on the Android development, I will be using an Android Simulator and my mobile phone, which is Android, to deploy and test my application. I will have to research a little bit more about creating a Virtual Machine to run a Mac OS so that I can test my application for the iOS system.