Research & Technology

Journey Organiser
<3.0>

University of Kent

Version	Date	Author	Approved by	Description
1.0	18/10/2015	Mateusz Maly	-	First version of the research and technology document
2.0	03/11/2015	Jan Gucwa	-	Added some information to sections 3 and 4.

3.0	02/03/2015	Mateusz Maly	Mateusz Maly Jan Gucwa	Changed the format and style. Added section 5

1. Introduction

1.1 Purpose

This Document serves as justification of the technologies and APIs used in the project. The following areas should be discussed in the document:

- Languages used for the implementation of the app, Website and the server.
- Alternative languages.
- Research of available technologies and APIs.
- Research of obstacles that the project may face.

2. Languages

2.1 Java

The main reason why Java has been chosen for implementation of the server is because all members of the project have used it before. Each member has written numerous programs in Java throughout university projects. Chief software engineer has a year of experience working with Java and we want to use that advantage.

Another reason why we decided to use Java is the popularity of the language. Most devices will be able to run programs written in Java.

2.2 Android

One of the reasons why Android was chosen as our app platform is that most group members have Android phones, therefore, development and testing will be easier.

One of the disadvantages of developing apps for IOS is the developer subscription fee. The cost of setting up the developer account is $100 annually. (Apple, u.d)

Through our research we have found the market share for smartphones, which clearly indicates that Android is the most popular choice. (idc, 2015)

2.3 HTML, CSS, PHP & JavaScript

Those four languages are a standard for web development. Their simplicity and our prior knowledge and experience in using them will allow us to progress faster.

3. Alternative Languages

3.1 Python

Python programs will run faster than Java programs, which need to be run inside a virtual machine. Python uses dynamic typing, which allows you to change the type of a variable. Most programmers agree that Python is easier to learn than Java (Kasia Mikoluk, 2013).

3.2 Swift

IOS is an alternative platform that could be used to develop the app.

4. Research

The following APIs are considered to be used in the application:

- Transport for London: https://api.tfl.gov.uk/
- Network rail : https://datafeeds.networkrail.co.uk/
- Google: https://developers.google.com/maps/web-services/overview
- Rome2Rio: https://free-dashboard.rome2rio.com/

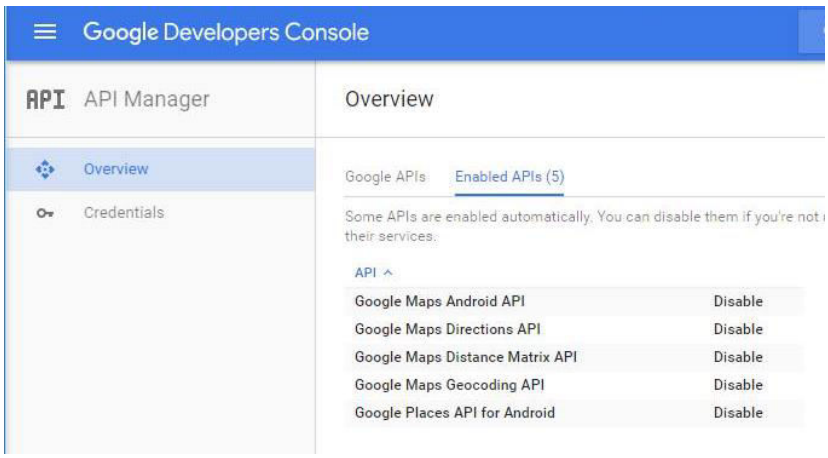

Figure 1 Google APIs in the project

5. Other

5.1 API level

Originally the app has been using API level 16, however, due to many difficulties we have decided to increase the API level to 21. Through our research we have confirmed that the number of users using older API levels is low. Statistics show us that there about 13 % of Android phones are still using API level 16 or below and more than 60 % are using 19 or above. (Android, u.d.)

Another reason why we chose to increase our API level to 21 was that Android developers have added a lot of useful tools in the later updates such as the material design. Better time and date pickers have also been implemented which has helped us and improved the performance of our app.

Bibliography

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