Project 164: Location Based iOS Application

Initial Project Plan

This initial project plan documents the project title, a description of the project and its aims and objectives along with a work plan, outlining dates of key deliverables and milestones for the project.

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CM3203: One Semester Individual Project (40 Credits)

Project Description

Tourism in the UK is a growing industry with more people visiting the country year after year. VisitBritain's tourism forecast for 2016 is for 36.7 million visits, an increase of 3.8% on 2015; and £22.9bn in visitor spending, an increase of 4.2% on 2015 [1]. Therefore, I have decided to implement an application that can support this influx of tourists during their many visits to the country.

For my Final Year Project, I intend to create an iOS mobile application which provides the user with information based on their current location. The application will access geographical and contextual information about the phone to provide the user with information, primarily using the phone's GPS (Global Positioning System) location. The GPS coordinates the application retrieves can then be used to provide the user with lots of different information related to their position. Types of information provided will include the user's current address, co-ordinates and altitude which would then be pin plotted onto a map of the area. The application will also display weather forecast information for that location as well as businesses in the surrounding area. They may also be able to retrieve Tweets send from near that location as well as many other potential features. The application will essentially take the form of an 'Information About My Location' program which allows the user to view a wide variety of information corresponding to their current location.

During my preliminary research into the market for similar applications, the most similar one found was an application called 'Around Me'. This application uses GPS co-ordinates to provide the user with a complete list of all the businesses in the category the user selects. Categories include bars, restaurants, hospitals, hotels etc. This differs from my application however, in that 'Around Me' only provides information on local businesses, it does not have the extended functionality of my application in that it does not provide weather information or Tweets sent from near that location. It only displays businesses based on the category chosen by the user, whereas my application aims to provide the user with a variety of information about that location.

PROJECT AIMS & OBJECTIVES

The project has a number of aims and objectives which I have split up into primary objectives and secondary objectives for the project.

Primary Aims & Objectives

The main aim of the project is that it needs to be able to gather geographical data about user's location and use this to display a variety of information to the user about their current location. The primary aspects of this aim include:

- **GPS Co-ordinates** – the application will need to be able to access the user's GPS location co-ordinates and plot these on a map of the area. It will also need to access these details in order to provide the user with the rest of the location specific information.
- **Weather Information** – the application will use the phone's GPS location details to provide the user with information about the weather in that particular area.
- **Businesses Nearby** – the application will also use the device's GPS details to inform the user of businesses located near them which may be of interest such as shops, restaurants and hotels etc.

Another aim of the project is to design and implement an effective user interface for the application to ensure it is easy to use and displays information suitably. The main aspects of this objective include:

- **Easy to Use Interface** – the application's user interface will need to be as intuitive as possible to ensure it is easy to use. This means having a logical navigation system in place to allow them to transition between different screens sensibly and with ease in order to view different pieces of information about the location.
- **Information Displayed Suitably** – the application should display all information in the user interface clearly and with suitable formatting to ensure information is easy to read and accessible for the user. This means having their location plotted on a map, businesses nearby in a list etc.

Secondary Aims & Objectives

The application's functionality could be developed and extended to include lots more information related to the user's location such as Tweets sent from near their location, photographs taken near that area and many other extra features.

- **Tweets Sent Near the Location** – the application may also be able to display the user with Tweets sent from near their location. This could provide them with an interesting insight into the thoughts and behaviours of people near that area as well events that may be going on around them. This is however a secondary objective of the project, so will only be developed if there is sufficient time during the course of the project to implement such a feature.
- **Photos Taken Near the Location** – the application may also be able to display a range of photographs taken near the user's current location to the user. This could provide them with exciting sights they may wish to see or landmarks near the area which may be of interest to them.

Project Ethics

Given the aims and scope of the project, I believe there are no specific ethical issues that would fall under Cardiff University's Code of Ethics Policy. Therefore, no ethical approval should be required with regards to any aspect of the project.

Project Work Plan

I have split the project work up into six main sections; initial project plan, research, design, implementation, testing and lastly the final report. I have included a Gantt chart in this document to illustrate how I intent the project to progress. However, below is a brief weekly summary of what tasks will be carried out during which weeks of the semester.

Week 1 – Initial Project Plan

1) Write first draft of initial project plan
2) Hold initial supervisor meeting to discuss the plan
3) Revise plan and submit final version

Week 2 – Research

1) Research and find material related to project
2) Identify appropriate tools to use

Week 3 – Design

1) Design user interface and produce mock ups
2) Design navigation flow between screens of the application

Week 4 to 8 – Implementation

1) Implementation of GPS Co-ordinates and Basic UI
2) Implementation of Weather Information
3) Implementation of Businesses Nearby

Week 9 – Testing

1) Write up test cases
2) Complete test cases
3) Perform basic user testing

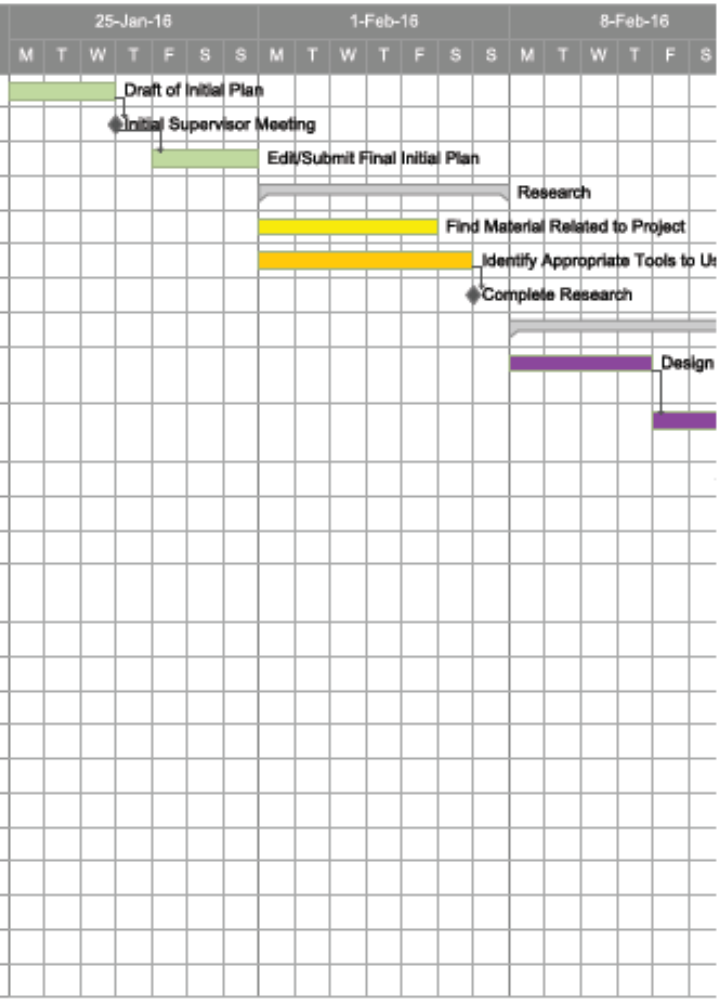
Easter Break – Final Report

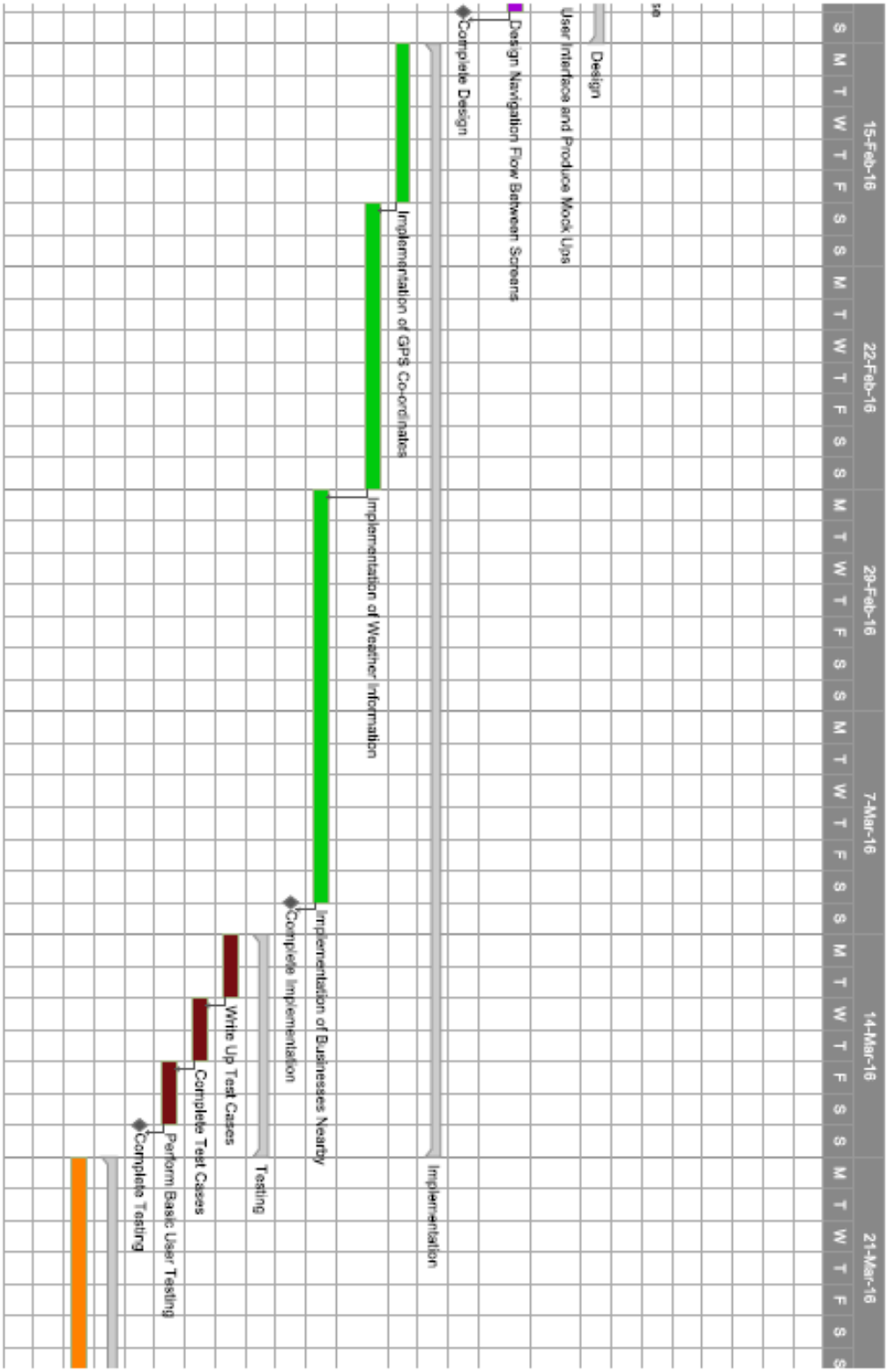
1) Write up first draft of Final Report
2) Refine Draft and Submit Final Report

By writing up the report over the Easter Break and finalizing the project details then this will provide me with two weeks reserved after Easter incase areas of the project run over. I will also meet up with my supervisor at least once every two weeks, if not once a week during the project. This will enable me to discuss any issues I may be facing as well as to ensure good progress is made. I will also complete notes and write ups on various aspects of the project such as why certain tools were used or decisions made that affect the project for use in the final report.

Location Based iOS Application

	Task Name	Start Date	End Date	Duration
2	Draft of Initial Plan	01/25/16	01/27/16	3d
3	*Initial Supervisor Meeting*	01/28/16	01/28/16	~0
4	Edit/Submit Final Initial Plan	01/29/16	01/31/16	3d
5	**Research**	02/01/16	02/07/16	7d
6	Find Material Related to Project	02/01/16	02/05/16	5d
7	Identify Appropriate Tools to Use	02/01/16	02/06/16	6d
8	*Complete Research*	02/07/16	02/07/16	~0
9	**Design**	02/08/16	02/14/16	7d
10	Design User Interface and Produce Mock Ups	02/08/16	02/11/16	4d
11	Design Navigation Flow Between Screens	02/12/16	02/13/16	2d
12	*Complete Design*	02/14/16	02/14/16	~0
13	**Implementation**	02/15/16	03/20/16	35d
14	Implementation of GPS Co-ordinates	02/15/16	02/19/16	5d
15	Implementation of Weather Information	02/20/16	02/28/16	9d
16	Implementation of Businesses Nearby	02/29/16	03/12/16	13d
17	*Complete Implementation*	03/13/16	03/13/16	~0
18	**Testing**	03/14/16	03/20/16	7d
19	Write Up Test Cases	03/14/16	03/15/16	2d
20	Complete Test Cases	03/16/16	03/17/16	2d
21	Perform Basic User Testing	03/18/16	03/19/16	2d
22	*Complete Testing*	03/20/16	03/20/16	~0
23	**Final Report**	03/21/16	04/19/16	30d
24	Write Up First Draft of Final Report	03/21/16	04/03/16	14d
25	Refine Draft and Submit Final Report	04/04/16	04/18/16	15d
26	*Complete Final Report*	04/19/16	04/19/16	~0




15-Feb-16
22-Feb-16
29-Feb-16
7-Mar-16
14-Mar-16
21-Mar-16
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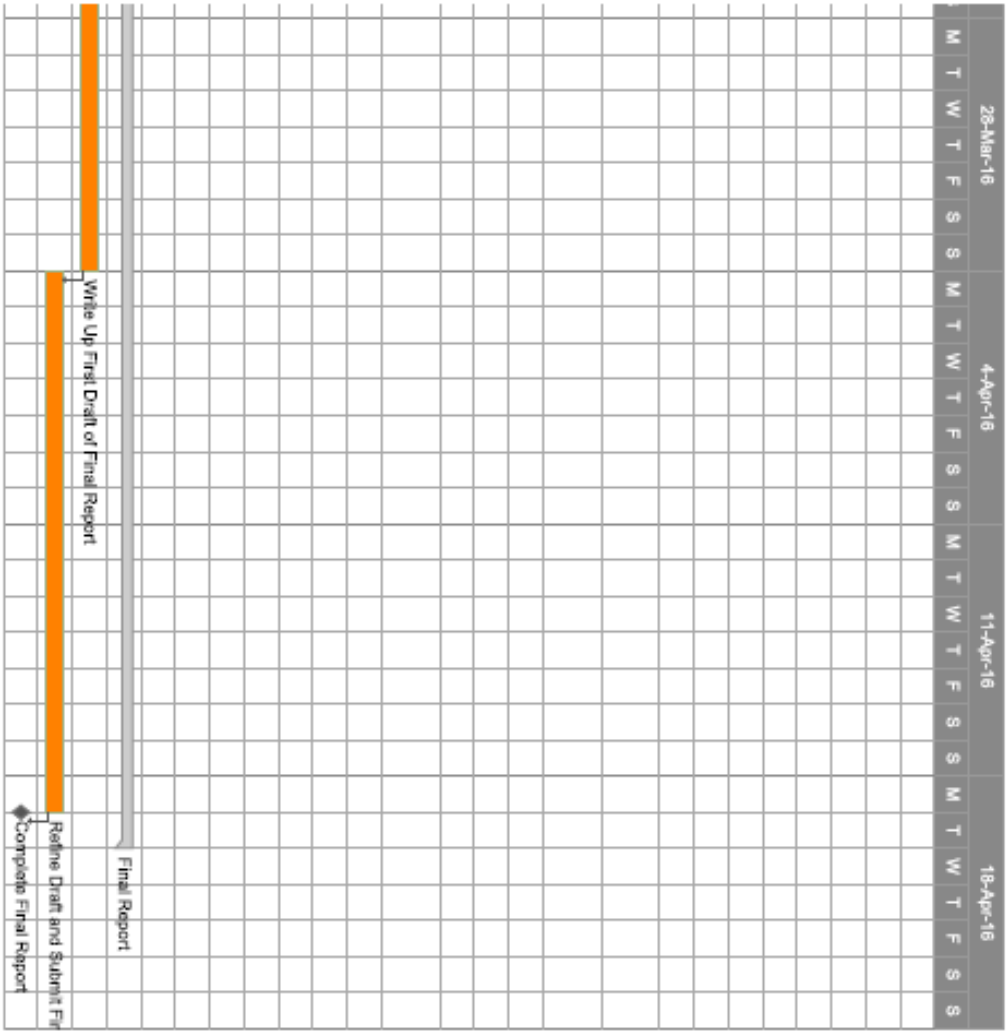
Design
User Interface and Produce Mock Ups
Design Navigation Flow Between Screens
Complete Design
Implementation of GPS Co-ordinates
Implementation of Weather Information
Implementation of Businesses Nearby
Complete Implementation
Implementation
Testing
Write Up Test Cases
Complete Test Cases
Perform Basic User Testing
Complete Testing


28-Mar-16
4-Apr-16
11-Apr-16
18-Apr-16
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Write Up First Draft of Final Report
Final Report
Refine Draft and Submit Fir
Complete Final Report

Project Risks & Mitigation

There are many potential issues that could arise during the course of the project. Some of the most likely risks have been discussed below along with the mitigation techniques put in place in order to avoid these risks or make their impact on the project as small as possible, should they arise.

Minimal Experience

I currently have very little experience in the mobile computing field and have never developed an iOS application before. There is therefore a risk that I may have underestimated the time it will take to develop the application or even that I will not be able to implement certain aspects of the project due to lack or experience.

In order to combat this issue, I have ensured that extra time is available after the Easter break which can be used to make up for this extra time taken, should an area of the project run over its estimation time.

Hardware/Software Malfunction

During the course of the project the hardware or software I am using to develop my application could malfunction in some way, hindering the progress of the project.

In order to mitigate this risk I will ensure all files are backed up regularly using multiple backup copies so should a problem occur, only minimal data or progress will be lost. Should my laptop breakdown, the University computers are also available for my use so no development time should be lost if this problem did arise.

Extenuating Circumstances

There are also a number of incidents or personal situations that could occur during the project which may halt progress such as illness or family matters like a bereavement etc. The extra time put aside could then be used in these circumstances to hopefully avoid losing control of the project and keeping it on track for a successful completion.

The university also provides extenuating circumstances applications to guide students and aid them through these difficult situations so hopefully should an incident occur, the student will be well supported.