Group Project 07 Project Plan

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Contents

1 INTRODUCTION

1.1 Purpose

This document displays how the project will be completed and any risks involved. It outlines the requirements specified by the client as a series of documents.

1.2 Scope

This document should be read by all members of the group. It contains a list of tasks, the schedule and risks involved in the project. It details what the application and server will be required to do. It also gives an overview of the whole software - the Use Case diagrams, UML diagrams, the UI of the website and the navigation overview of Android application and the website. The Gantt chart gives an idea of our milestones and describes what tasks are assigned to every member of the group. The document doesn't give any specifics about the classes in the application, doesn't cover any information about the database connection and it doesn't provide information about the website. These will be covered in the design specification.

1.3 Objective

- List the platforms to be used for the project
- Provide a task schedule for the project
- Provide a description of how the application and website will be used.
- Provide a list of risks and how to reduce their effects
- Provide an idea of the UI for the Android application and the website
- Provide a description of how the application and website can be navigated

2 PROJECT OVERVIEW

The proposed system is an application running on the Android operating system that will be used to record walks for a particular user. The application will allow the user to start a recording of a new walk and add points of interest to that walk and save the walk. The website will allow the user to view the walks they uploaded, with all the information associated with it, like points of interest with the photos and descriptions on the map, short and long description of the walk itself and the entire path the user recorded.

2.1 Platforms

2.1.1 Android

As stated by the client, the operating system used will be Android. This will be developed for mobile devices. The operating system version will be 4.2. This is because we have a few devices running on that operating system, so it is just the most convenient one.

2.1.2 HTML 5

The website will be built using HTML 5 alongside CSS 2 and CSS 3. This will allow the latest version of HTML to be used for the website. We are going to use Google Maps, which requires the latest version.

2.1.3 PHP

PHP will be used to handle the communication between the mobile device and the server. It will be run server side and is understood to a working level by the web programmers.

2.1.4 MySQL

The database will be built using MySQL. It shall store information about each walk and the walk themselves. Information stored will include all points of interest added, their associated long and short descriptions and any pictures taken.

2.1.5 Google Maps API

This API gives us all the features we need. OpenSpace API gives some additional ones like offline use, but we decided that it is not really required in our project, so we decided that Google Maps is just easier to work on.

2.2 Target Audience

This application is aimed at Second Year Computer Science students. Precautions had to be taken while designing the user interface to prevent the user from having to navigate through too many screens.

2.3 System Overview

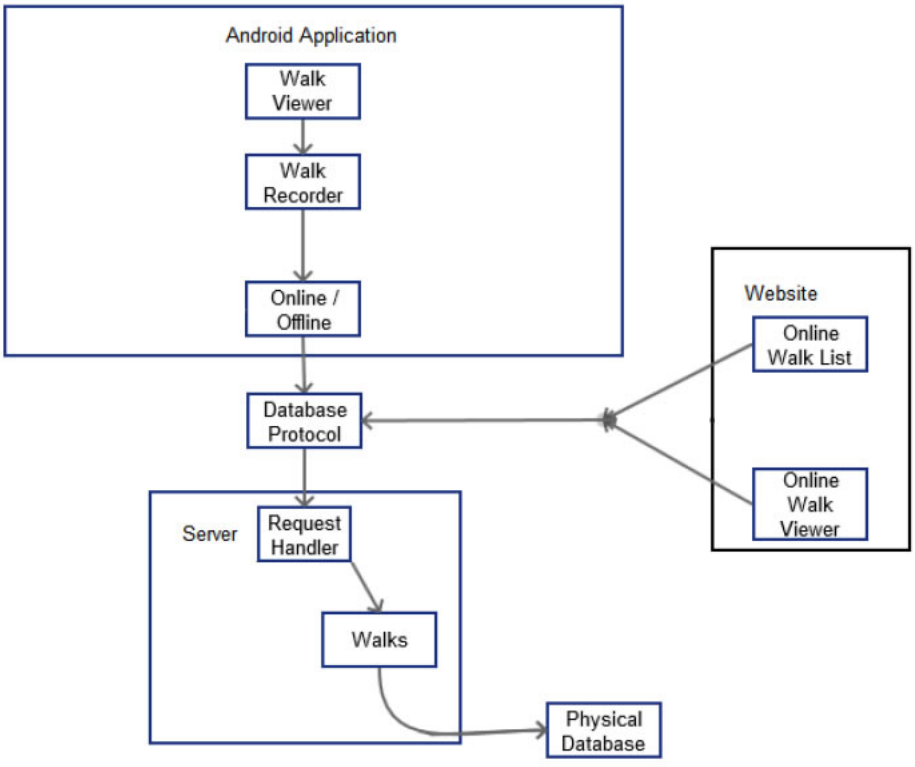

Figure 1: System Overview

2.3.1 Android Application

This is the application. All modules here are running on the mobile device

2.3.2 Online Offline

This module handles the location where data is stored. If the user is not connected to the internet they receives an error message saying that they won't be able to upload the walk.

2.3.3 Walk Screen

This module handles the displaying options about the walk, like cancelling it, adding points of interest or uploading it.

2.3.4 Walk Recorder

This module handles the storage of points of interest, the time taken for a walk and the walks location during recording.

2.3.5 Local Database

This module stores all locally saved walks and maps cache. It handles the retrieval and uploading of walks to the server.

2.3.6 Database Protocol

This module handles the conversion of database request to their required language such as from POST to HTTP for the website.

2.3.7 Server

This is the server that handles all requests between the database, website and android application

2.3.8 Request Handler

This module deals with linking data between users

2.3.9 User Walks

This module handles the retrieval and presentation of the walks uploaded by the user.

2.3.10 Physical Database

This is the machine where all request are handled

2.3.11 Website

This module serves as the control for everything on the website

2.3.12 Online Walk List

This module handles all lists being displayed to anyone on the website.

2.3.13 Online Walk Viewer

This module handles the conversion of data into visual form for browser based viewing of walks.

3 USE CASE

3.1 Android

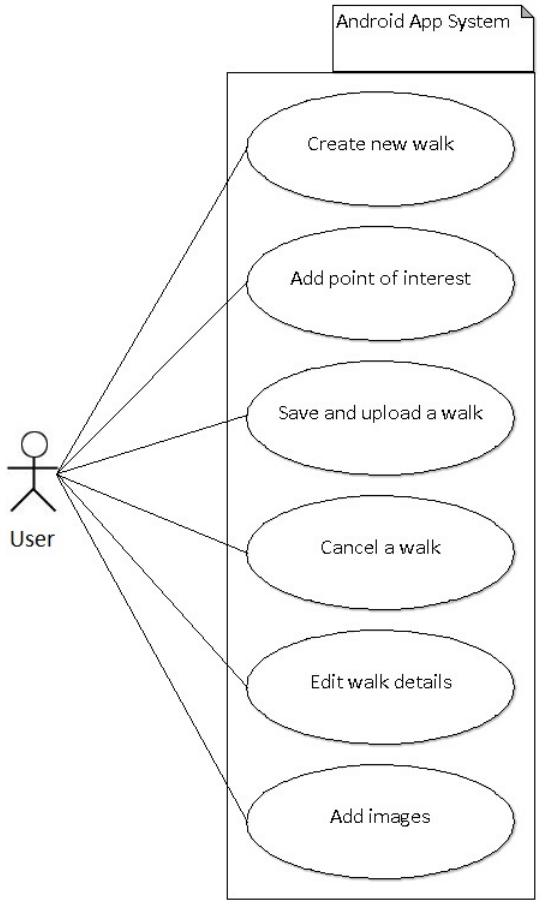

Figure 2: Android Use-Case diagram

3.2 Website

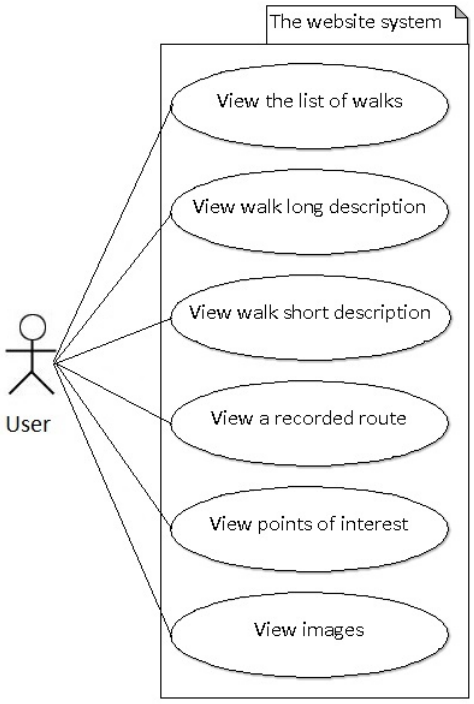

Figure 3: Website Use-Case Diagram

3.3 Interaction System

TODO

The diagram above represents the interaction of the whole system. The user interacts with both Android application and the website. The walks recorded by the user along with all the other information like description and the photos, are stored in the database and can be easily accessed later via the website or locally. Every action that creates or adds data is stored in the database. The Android application uploads walks to the server, which deals with the information and inserts it appropriately in the database. The Android application does not have a direct link to the website.The website also pulls a list of walks from the database. The website will also list all the information associated to one singular walks, such as Long description, short description, any pictures. This will then be displayed appropriately on the website.

3.4 Descriptions

Diagram Name	Use case name	Description
Android	Create new walk	Allows the user to start recording a new walk
	Add a point of interest	The user must add points of interest on the walk. This includes a short description, an optional long description and optional images. A timestamp is automatically taken when a point of interest is saved
	Save and upload a walk	When the user has finished their walk they will click the finish the walk button, this will then upload the walk to the server where it will be processed.
	Cancel a walk	If the user wishes to end their walk then they can click the cancel button. This will cancel any recorded data associated with the current walk.
	Edit Walk Details	The user will be able to edit any information associated with the current walk. This could be a point of interest, or the title of the whole walk. The information about the walk, in which they're editing, has to be shown to the user.
	Add Images	The user can take a picture of a location and add it to the walk. Alternatively, they can add a picture from their photo library. The user should be also able to upload multiple images to any given point of interest.
Website	View the list of walks	This will show a list of the walks in the database that multiple user has uploaded to the server. They will be displayed in a list form on the website.
	View walk long description	Once a walk has been selected from the list of walks it will tell the user what the long description associated to that walk is. This will also appear, in the google maps popup.
	View walk short description	Once a walk has been selected from the list of walks it will tell the user what the short description associated to that walk is. This will also appear, in the google maps popup.

	View a recorded route	When the user selects the walk from the list of walks screen, then it should show the user the route they have walked. This will be shown on the map as a trail. Each of the points of interest along the walk will be located with a marker.
	View points of interest.	When the user views the walk and it has a series of points of interests, they will be shown on the map as a marker value. The user will then be able to click on the marker; there will then be a popup showing the walk title, description for that POI. Along images inside the popup, this allows the option for multiple images.
	View images.	When the user selects a walk they will be able to see all the images associated with the walk on the side. If they wish to see where the images comes from, the images will be associated with a given marker on the map.

4 ANDROID USER INTERFACE DESIGN

4.1 Start Screen

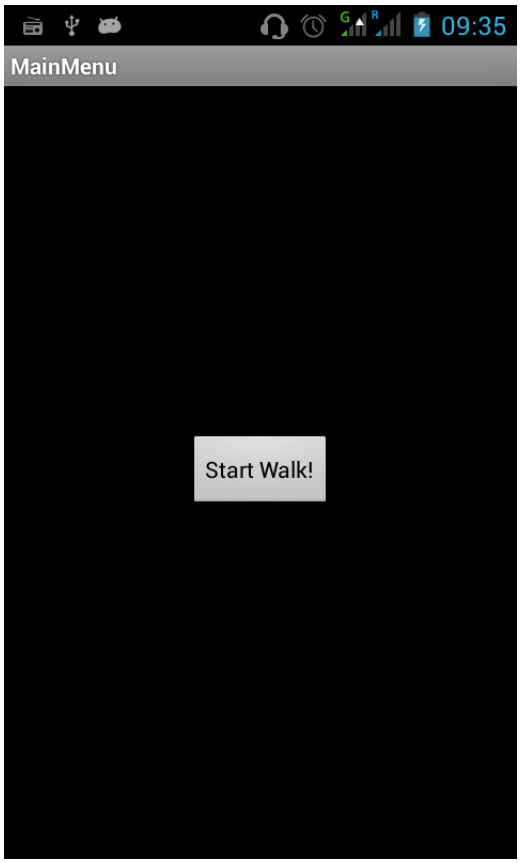

Figure 4: Start Screen

Displays only the program name, logo and group name. Tap to continue to main menu. This screen may be replaced with a tutorial or help screen on first launch.

NAVIGATION

Start → Main Menu (Fig. 4.2)

4.2 New Walk Screen

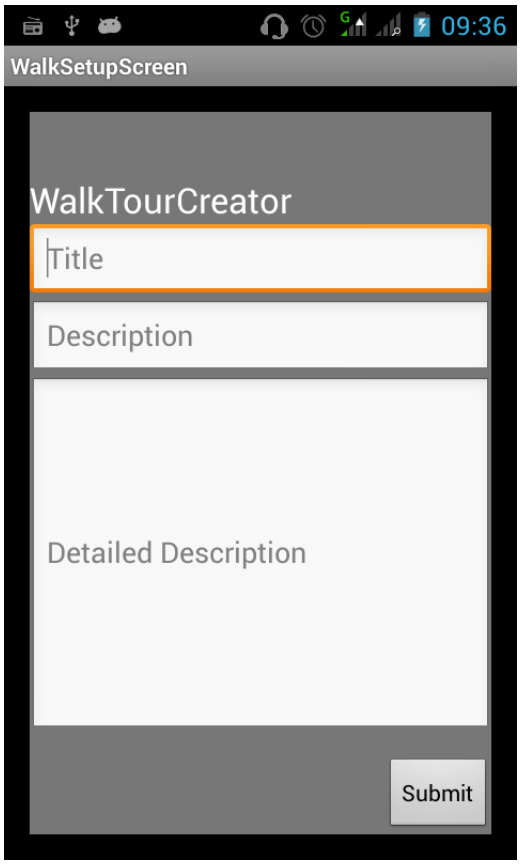

Figure 5:

This is the walk creation screen. It allows a short and long description to be added to a walk.

NAVIGATION

Back → Main Menu (Fig. 4.2)
Start Walk → Recording Window (Fig. 4.4)

4.3 Recording Screen

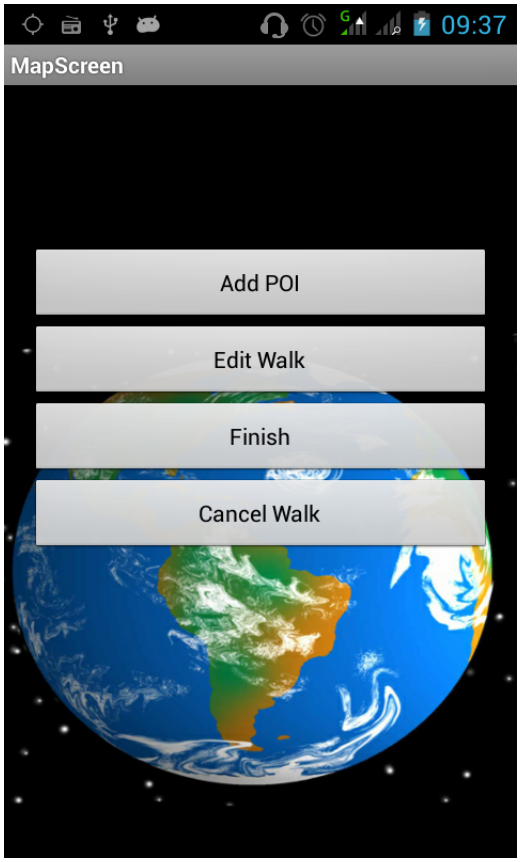

Figure 6:

This screen only displays the map around the users current location. When a point of interest is added, it will be displayed as a pin on this screen. The options button will allow the user to sign in/logout. When viewing a walk, only the option button and the swipe menu will be available. Pinch zoom may be used instead of button zoom. If the user taps the pause button, the recording will pause. If the user taps it again, the recording will resume. Holding down the button will stop the recording and take the user to the walk complete screen. The options menu will allow the user to exit the walk without saving.

NAVIGATION

Option → Option Menu
Add Point of Interest → New Point of Interest Screen (Fig. 4.9)
Stop → Walk Complete (Fig. 4.12)
Swipe left across screen → Locations on Walk List (Fig. 4.11)

4.4 New Point Of Interest

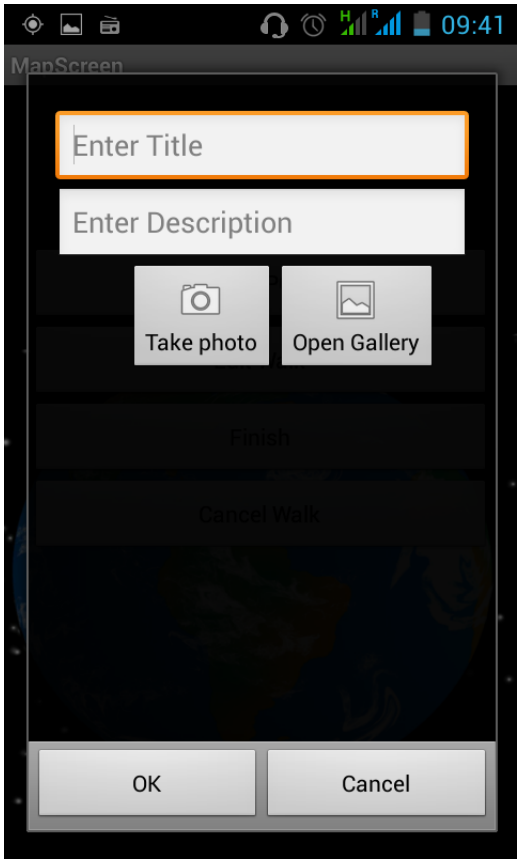

Figure 7: Add Point Of Interest

This screen is used to add a point of interest. It will appear semi-transparent over the map. Adding images will open a dialogue asking whether to go to the photo library or the camera app, allowing images to be added. Images will appear between the short and long description and can be removed from here. Pressing save stores the point of interest but can be re-

moved later.

NAVIGATION

Cancel → Recording screen with walk (Fig. 4.10) or Recording screen (Fig. 4.9)

Add Image → Dialogue for Camera or Photo Library

Save → Recording screen with walk (Fig. 4.10) or Recording screen (Fig. 4.9)

4.5 Edit Information Walk Screen

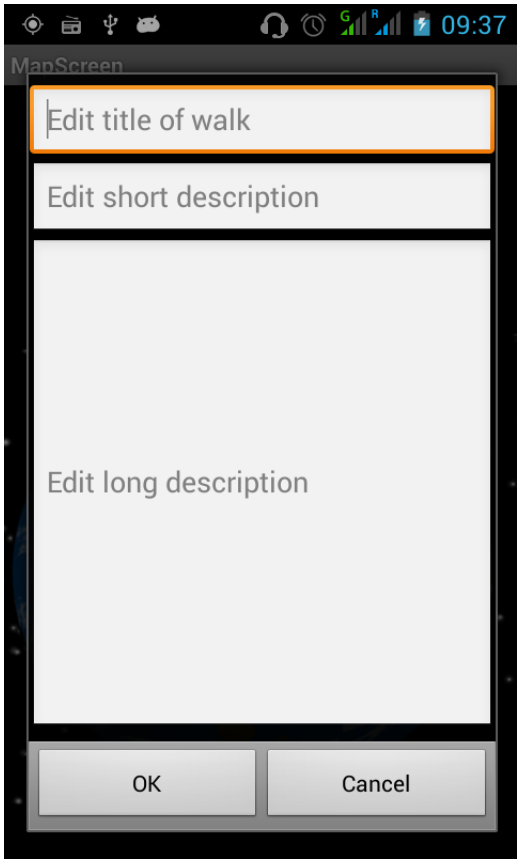

Figure 8: Edit Walk

TODO WRITE THIS BIT

4.6 Walk Complete

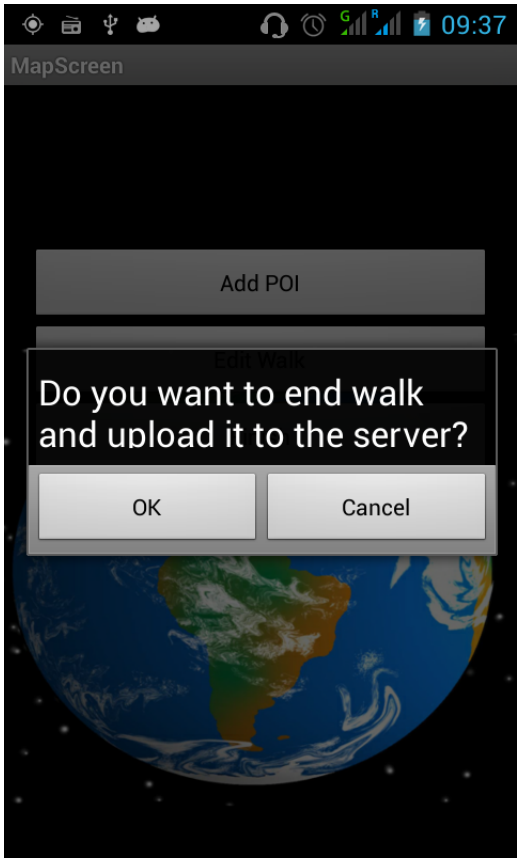

Figure 9: Upload Walk

This screen allows the user to save a walk. If upload is pressed, the walk is saved then uploaded to the server provided the user is signed in. This screen should be unavailable if there are no points of interest to prevent uploading or saving an empty walk. This screen also shows the time taken to complete a walk, the name of the walk, the number of points of interest added and the location of the walk.

NAVIGATION

Cancel → Recording Screen with walk (Fig. 4.10)
Save → View My Walks Screen (Fig. 4.3)
Upload → View My Walks Screen (Fig. 4.3)

4.7 Cancel A Walk

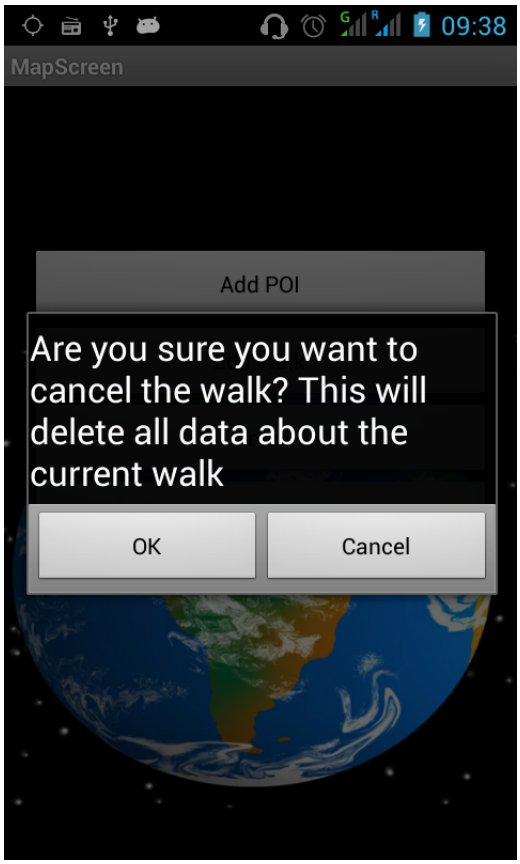

Figure 10: Cancel A Walk

TODO

5 WEBSITE USER INTERFACE DESIGN

5.1 Home Page

Figure 11: Website Home Page

This is the homepage of the website. From here the user can find information about the application and a link to where the mobile application can be downloaded. They can also log-in or register via this page and can view walks.

NAVIGATION

Log-in → Log-in Page (Fig. 5.3)
Register → Registration Page (Fig. 5.4)
View Walks → View Walks Page (Fig. 5.2)

5.2 View Walks Page

Figure 12: View Walks Page

The user can view all uploaded walks via this screen. From here the user can see a small map overview of the walk and the short description of the points of interest. If the user is signed in, they can view their walks from this page.

NAVIGATION

Click on Walk → Walk Page (Fig. 5.6)
Log-in → Log-in Page (Fig. 5.3)
Register → Registration Page (Fig. 5.4)
View My Walks → View My Walks Page (Fig. 5.5)
Home → Home Page (Fig. 5.1)

5.3 Walk Page

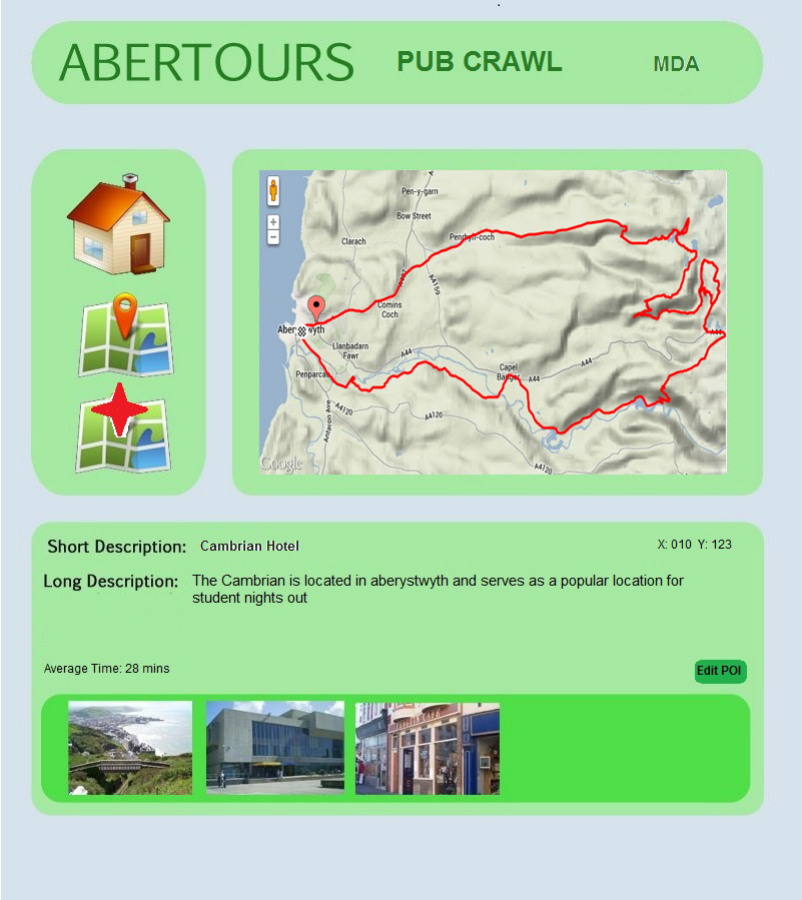

Figure 13: Walk Page

This page displays a map overview of the walk, the average time taken to complete the walk and the long and short descriptions. The first image from every point of interest is displayed at the bottom of the screen.

NAVIGATION

Click on Image → Point of Interest Image Page (Fig. 5.8)
Click Pin on Map → Point of Image Selected Page (Fig. 5.7)
Delete Walk (if owner) → View Walks Page (Fig. 5.2)
View Walks → View Walks Page (Fig. 5.2)

Register → Registration Page (Fig. 5.4)
Log-in → Log-in Page (Fig. 5.3)
Home → Home Page (Fig. 5.1)
Sign out (if logged in) → View Walks Page (Fig. 5.2)

5.4 Point Of Interest Selected Page

Figure 14: Point Of Interest Selected

Clicking on a pin on the map opens this page. The selected pin is also highlighted. The page displays the average time taken from the start of the walk to arrive at this point of interest. If there are any images taken from this point of interest, the user is can view them. If the user owns this walk,

they will be able to edit the descriptions and add more images. The latitude and longitude of this point of interest is also displayed opposite the short description.

NAVIGATION

Edit POI → Edit Point of Interest Page (Fig. 5.9)
Delete Walk (if owner) → View My Walks Page (Fig. 5.5)
Click on Image → Point of Interest Image Page (Fig. 5.8)
Click Pin on Map → Point of Image Selected Page (Fig. 5.7)
View Walks → View Walks Page (Fig. 5.2)
Register → Registration Page (Fig. 5.4)
Log-in → Log-in Page (Fig. 5.3)
Home → Home Page (Fig. 5.1)
Sign out (if logged in) → View Walks Page (Fig. 5.2)

5.5 Point Of Interest Image Page

Figure 15: Clicking an Image associated with a walk

This simply enlarges the image clicked. Clicking outside the box minimizes the image back into the tray.

NAVIGATION

Click Outside Image → Previous Page

6 NAVIGATION OVERVIEW

6.1 Android

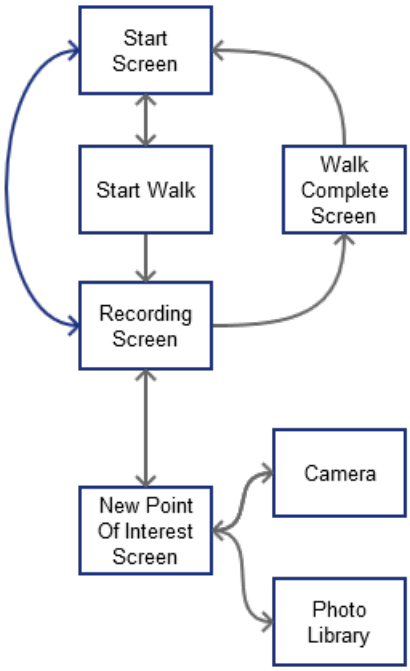

Figure 16: Android Navigation

Start screen is the entry point. All navigation is done via buttons and icons unless otherwise stated

6.2 Website

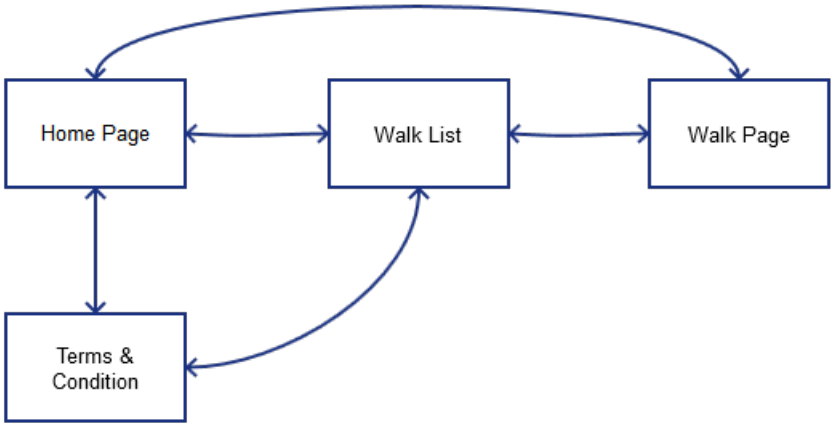

Figure 17: Website Navigation

Home page is the entry point. All pages link back to the home page

7 GANTT CHART

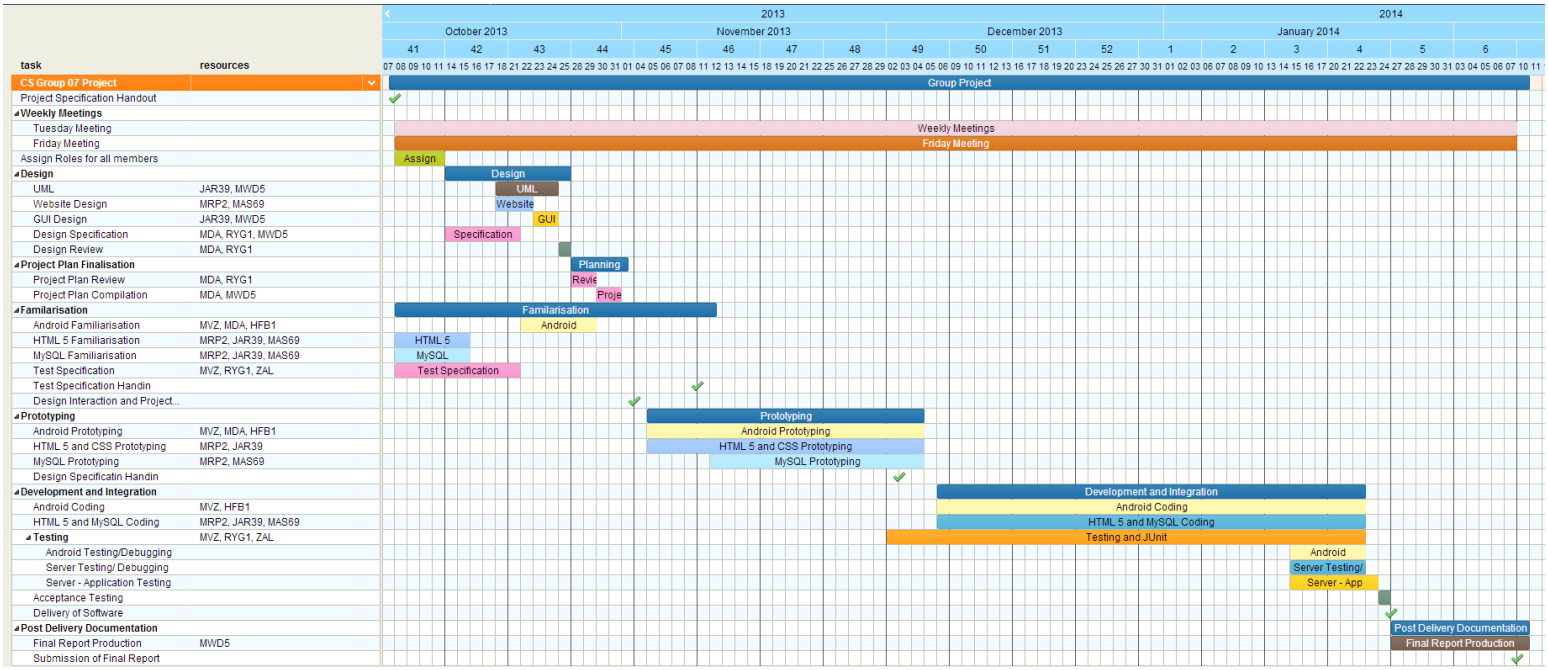

Figure 18: Gantt Chart

8 RISK ASSESSMENT

Event	Risk	Mitigation
Git Downtime	Low	All work should be backed up on multiple devices, preferably the University of Aberystwyth M: Drive and local backup locations.
Absence of Team Leader	Low	The deputy team leader will take up responsibilities as required.
QA Manager Absence	Low	Team leader or deputy team leader will take up responsibilities as required.
Poor Quality Work	Low	All work must be verified and monitored by both the QA Manager and the Team Leader. Deadlines for tasks are given before official deadlines to provide a window in which work is brought up to standard.
Problems with Maps API	Medium	In the event of inability to use the OpenSpace API, Google Maps API will be used due to its wide use.
Absence of Team Member	Medium	In the absence of any member, work will proceed as normal. All members should notify the group leader if they will be absent at the next meeting. Any absent member should read the minutes of the last meeting and any other documents produced. Continued unauthorized absence will result in warnings then penalties.
Project Off Schedule	Medium	Members are required to stick to the schedule and provide weekly reports on all project related tasks throughout the week. In the event of failure to stick to the schedule, tasks must be revised to bring project back on schedule.
Server Downtime	Medium	Website and server development should be done locally and added to the university server regularly. In the event of downtime, work should proceed as normal locally. A local LAMP or similar server may be used for testing
Unrequired Features	Medium	Extra features should not be a priority and should not be added unless the final product meets the required specification. A copy of the final product must be used for adding any extra features.

Lack of knowledge of platforms	Medium	In the event of any team member being unable to do work due to not knowing how to perform a task on the platform, the team leader must be notified. Any members capable who know how to proceed will be assigned to performing that task. All members are required to gain as much knowledge about the API and languages during the familiarisation stage.
Member Unable to Continue Project	High	If for any reason a member is unable to continue the project, tasks will be reshuffled to accommodate the change. Multiple members are assigned similar tasks to help reduce the risk in such an event.
Loss of Data	High	Users are required to regularly backup data. If for any reason data is not backed up and is lost, the group leader must be notified immediately and more work must be done to bring the project back on schedule. Tasks may be reprioritised to ensure deadlines are met.
Change in Requirements	High	If requirements are changed by the client, a meeting will be called immediately to meet the new requirements. Regular communication between the client and the team leader is required.
Hardware Incompatibility	High	The application must be thoroughly tested on at least 2 android mobile devices. Tablet compatibility is not required. In the event of hardware incompatibility or related issues, extensive debugging and testing must be done and the team leader must be notified immediately.
Application Server Incompatibility	High	The application should send data in the format specified. The server must be able to parse the data accurately. In the event of incompatibility, android and server side debugging must be done to determine the cause of the incompatibility.

9 DOCUMENT HISTORY

Version	CFF No.	Date	Section Changed From Previous Version	Changed by
1.0	N/A	28/10/13	Original draft of document written by Mosopefoluwa David Adejumo	MDA
1.1	N/A	31/10/13	Added new screens. Updated project overview	MDA
1.2	N/A	31/10/13	Updated Android user interface	MDA
1.3	N/A	2/11/13	Updated Android user interface and description. Added Website User Interface Description Added Gantt chart. Added Navigation overview Updated risk assessment	MDA
1.4	N/A	2/11/13	Added use case and descriptions. Added system overview. Updated project overview	MDA
1.5	N/A	2/11/13	Updated system overview. Updated use case. Updated UI descriptions	MDA
1.6	N/A	3/11/13	Updated Fig. 5.3 and Fig 5.4 images. Added interaction system diagram and description. Moved risk assessment to item 8	MDA
1.7	N/A	4/11/13	Updated Interaction System and replaced image. Corrected config ref number	MDA
1.8	N/A	6/11/13	Updated Gantt chart.	MDA
1.9	N/A	13/02/14	Re-wrote the document in LaTeX.	RYG1
2.0	N/A	13/02/14	Added updated images to file	RYG1