PROJECT PLAN: GROUP 12

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Config Ref: SE_12_PP_01
Date: 29/01/2014
Version: 1.1
Status: Final

Table of Contents

1. INTRODUCTION

1.1 Purpose of this Document

This document is here to ensure that the application we intend to build, a walking tour creator application for android, fully meets the requirement specification, as given by the client. It will help make sure that we cover all necessary features and that a quality product in produced.
This document will also outline how parts of the application will interact, along with how the user interface will actually look. As well as this, the document will highlight the project schedule, showing the major tasks to be completed, along with when each task needs to be achieved by. This will be displayed in the form of a Gantt chart.

1.2 Scope

This document should be read by the client, with reference to the requirement specification to ensure that what we intend to build meets what they expect us to build.
This document contains the following sections:

Overview of the proposed system: This section will show how both the web and phone applications will run and what will include descriptions on the functionalities of the system.

Use Case diagrams: This will show how every part of the program will interact and the links that must be in place for successful operation.

User interface design: This section will show how the finished application will look, as well as giving an idea of how it will feel to use. It will help ensure that the navigation and use of the app is simple, but suitable.

Gantt chart: In this section the major tasks will be made clear, along with when each task needs to be started and completed.

Risk analysis: This section stands to outline the possible problems we may encounter throughout this project, and how these problems can be avoided or solved.

1.3 Objectives

This document is here to show our preliminary plan for the proposed system and show that we have interpreted and understood the clients requirement specification.
The objectives this document has are:

- To give an summary of the project and the procedures, technologies and languages we will be using.
- To show the how each main part of the project with join together and interact.
- To display what we aim for the user interface to include, as well as how it will look when finished.
- To give a plan, with a schedule, of the tasks and milestones that need to be accomplished throughout the project.
- To highlight and understand possible issues with the project, and avoid them

where feasible.

2. OVERVIEW OF THE PROPOSED SYSTEM

2.1 Overview of the web system

PHP - Phone will upload all data to a HTML file for a PHP file to parse from. PHP files will be able to create a connection to our database at db.dcs.aber.ac.uk or any other server capable of PHP and MySQL, and pass all relevant items of information into the tables according to the needs of the data. The phone can upload data using a combination of POST data retrieved from a HTML file and used through a PHP page. During use of the system the information posted to the HTML page from the phone will be used to INSERT INTO the tables for paths and points.

MySQL – Connect to dcs.db.aber.ac.uk or other server, allows information to be stored and retrieved for later use. A dummy database will be used to store false data for retrieval and allow us to commit tests to train our real database before use. Series of queries will be required to make use of the database. Must include fields for point descriptions, names, latitude, longitude, images associated with the point of interest, and path associated with the point, and in what order the point occurs. This will allow for a correct line to be plotted on the map, based on where the person walked.

HMTL – HTML code will be used to embed PHP code which can then be used to add functionality to the website itself.

CSS – CSS code will be used to make the website look more professional and eye-catching.

Google map – the website will have a Google map which will allow the user to see the whole walk. The map will be displayed as soon as the user accesses the website and each tour will be shown after selecting in from the drop down menu, as described below.

Drop down menu – User will be able to select a tour from the drop down list. User will then have to press select in order for the tour to load onto the Google map.

Connectivity – Phone must automatically acknowledge a loss in connection to either Mobile or WiFi services. If lost during an attempted retrieval or transmission of information. If unsuccessful then prompt the user a failed attempt at transfer, or return confirmation upon success. Must also store transmission information for return of connectivity, so a post can be made on the user's request.

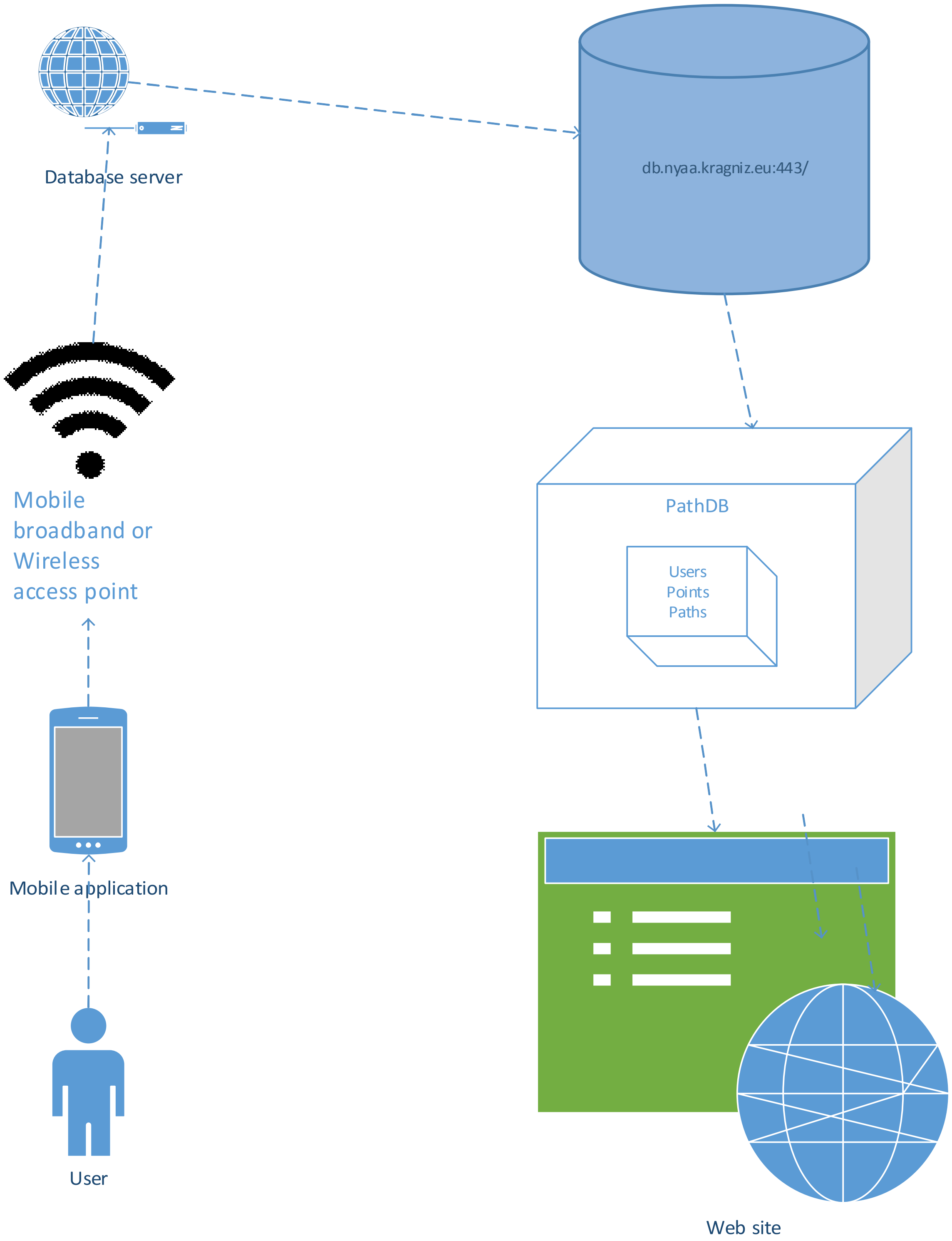


Figure 1: Deployment Diagram

2.2 Overview of the Android system

The android application is expected to have the following:

Uploading Walks

Users may select a walk to upload to the server. The entire data contained within the walk is synchronised with the database on the server.

Recording Walks

Users, while recording their walks will store information as local data on the hand-held device. This prevents any information from being lost due to a connectivity error. Users will also be able to record walks offline due to this feature. Users will be able to take photos, choose significant landmarks and write descriptions about each walk here.

Local Walk Data

This is where walk information will be stored before the walk information such as Walk name, Journey time and the Descriptions of the walk has been sent to the database. This is important in case of a connectivity failure to prevent.

Editing Walks

User may change details about their walks before finally sending the information to the server. Here they can add a large description to their walk and can delete any walks they are unhappy with. The locations within a tour will be shown as a list. The user will be able to click on each one of these which will then bring up the details of that location which can be edited.

These will be explained further in the user interface design section.

3. USE CASE DIAGRAMS

3.1 Android use case

Figure below shows the use case diagram for the android client. It describes the functions that the user will be allowed to use on the android app and a description of what each function does.

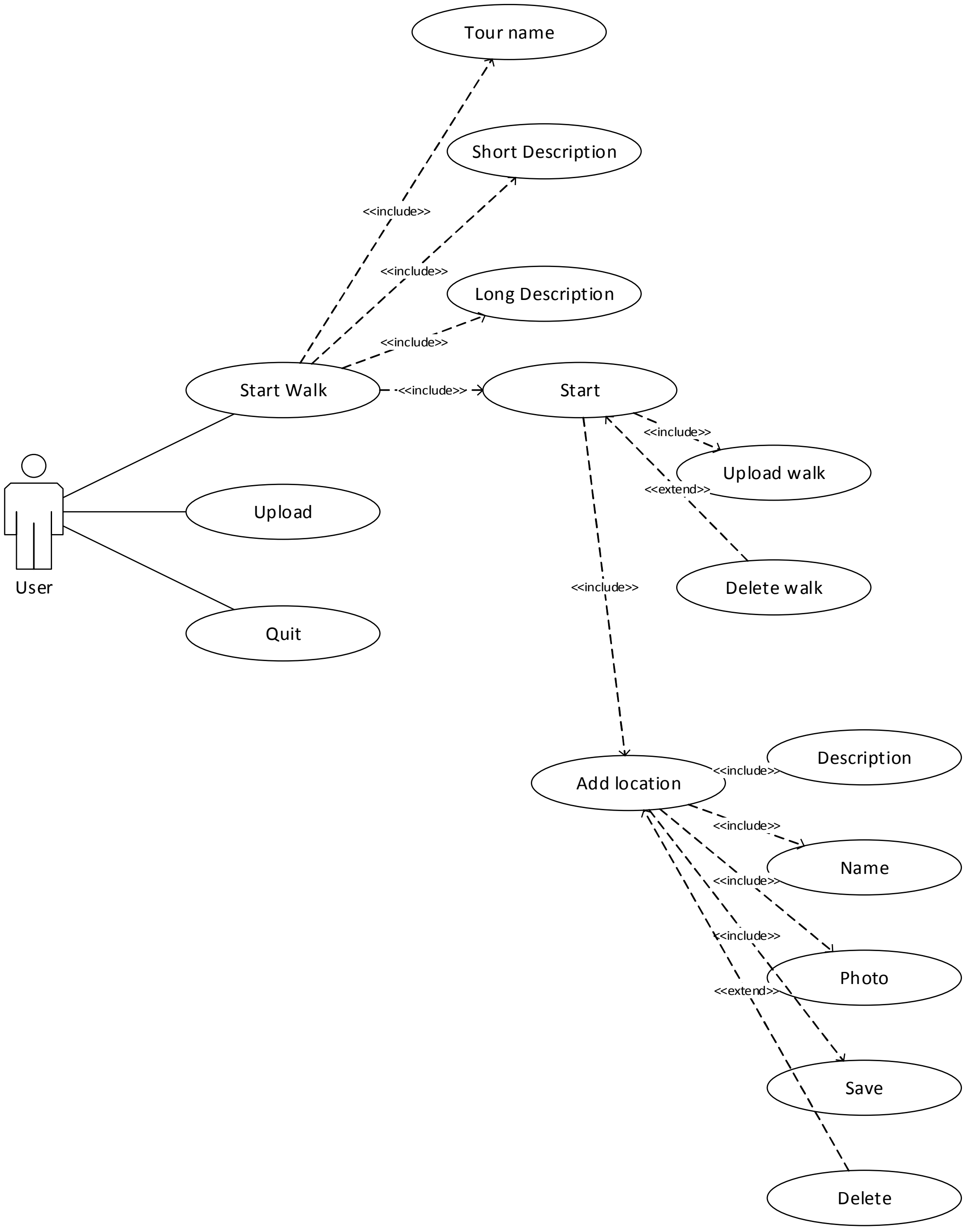


Figure 2: Deployment Diagram

Record new walk

When a new walk is selected the user will be asked to enter information about the walk such as the walk name and a short description. When the user confirms the information inputted a snapshot of the time and GPS location will be taken and a request will be stored locally on the device.

Add point of interest (location)

When the user adds a point of interest a location description, name will be asked for. The lat and long co-ordinates as well as a time stamp of that location will be recorded and stored. The user will then be given a choice to take a photo for that location. This will be stored locally before uploading to the server.

Save/Upload walk

When the walk is complete and the user saves the walk then they will be asked for a long description of the walk and the user has checked and confirmed the information all the data will be sent to the data base. If no connection can be made then a message will appear warning the user that it could not connect to the server. If a successful connection is made, a request will be sent to the server to add the local information to the database. The server will then return a token of 1 or 0. If Successful the local data will be removed otherwise a warning will tell the user that there was an error with the server and to try later and keep the local data stored to the device.

Edit walk

The user will be given the option to review a walk. A list of locations within a walk will be shown. User will then be able to click on each location edit its details.

Cancel walk

If the recording is cancelled the data stored locally on the device will be removed, a message will notify the user that the walk has been cancelled. User will be able to cancel the current walk and start a new one.

3.2 Web use case

Below describes the interactions the client program has with the server. It does not describe the
administrative functions, since these will probably be performed by a special, direct client. Note: Although there is a little figure of a person on the diagram, this is actually two programs talking to each other.

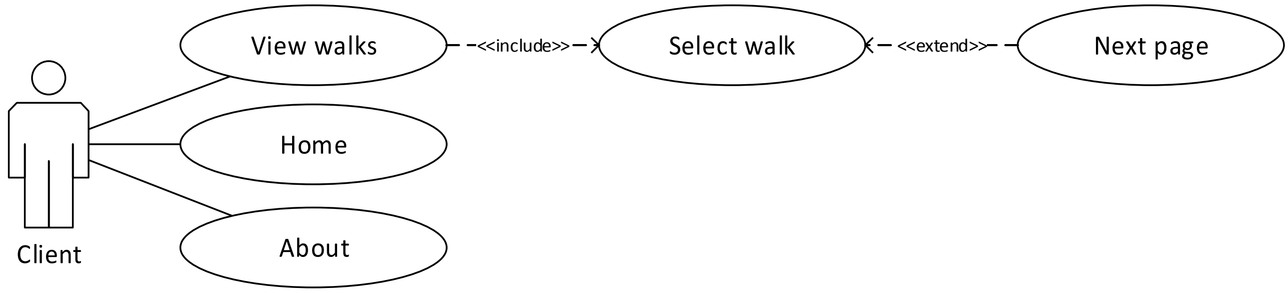


Figure 3: Use Case diagram for the web side of the system

Drop down list

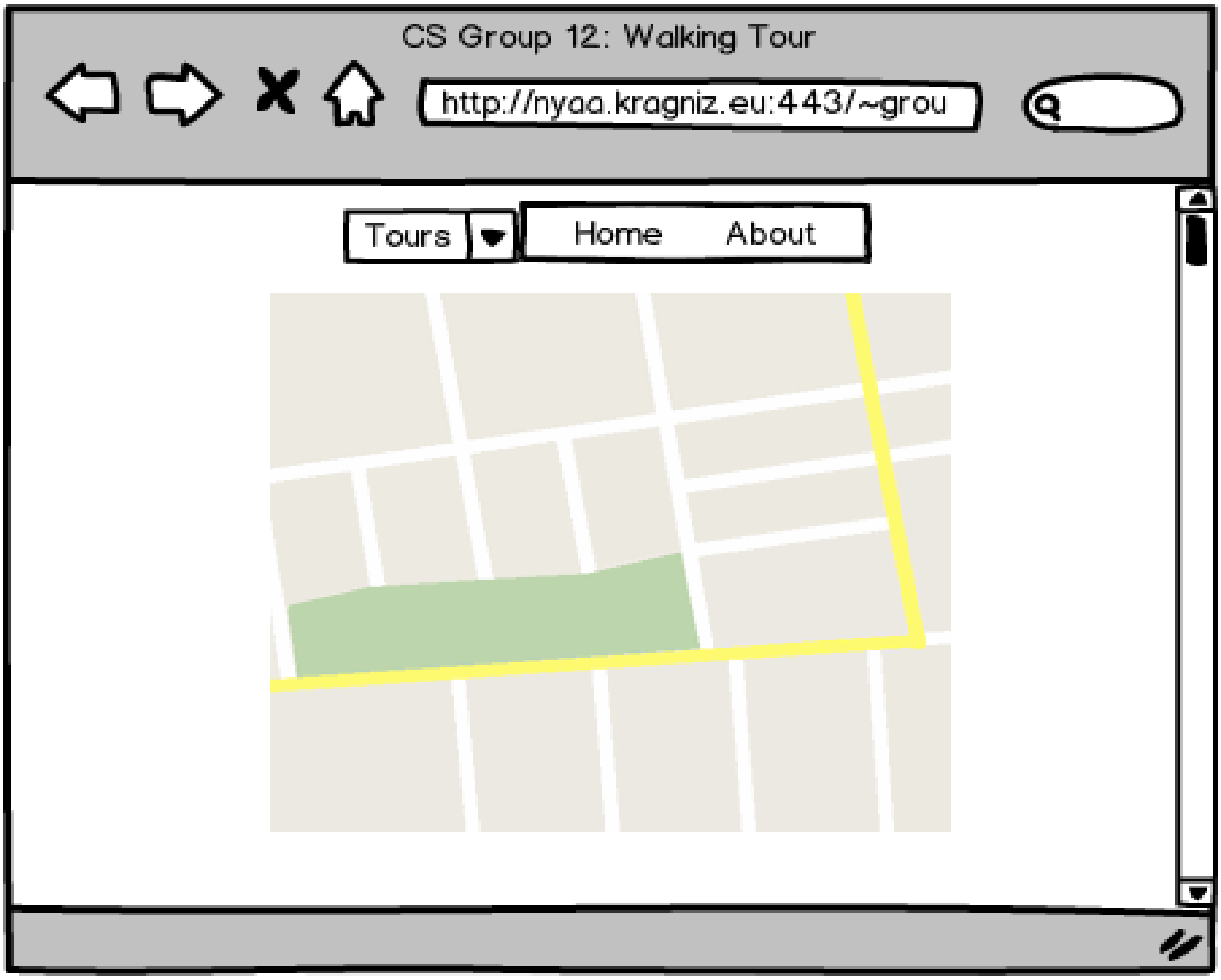
A drop down list will allow the user to search through the walks created. Once selected a walk from the list, the user will press select and a given walk will be loaded onto the Google map. A number of locations will then show on the Google map.

Google map

A google map will be provided which will show the locations and way-points within each tour. These will be joined by a line, based on where the user walked. The locations will be joined in the order of how the user accessed them.

4. User Interface Design

4.1 Web user interface



CS Group 12: Walking Tour

http://nyaa.kragniz.eu:443/~grou

Figure 4: Mock up screen for the web application

4.2 Android User Interface

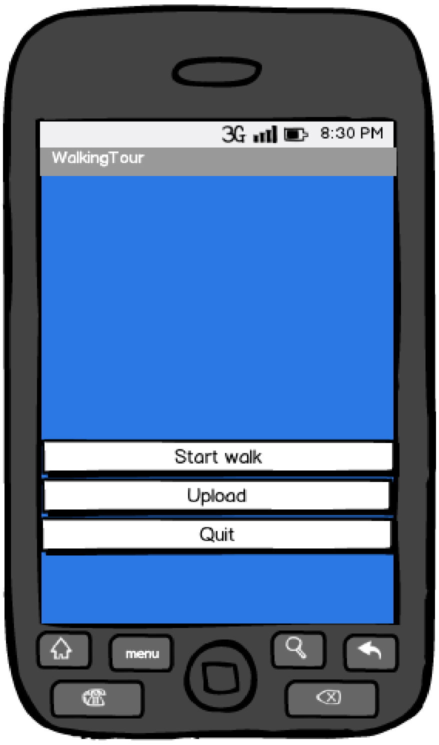


Figure 5: Home Screen

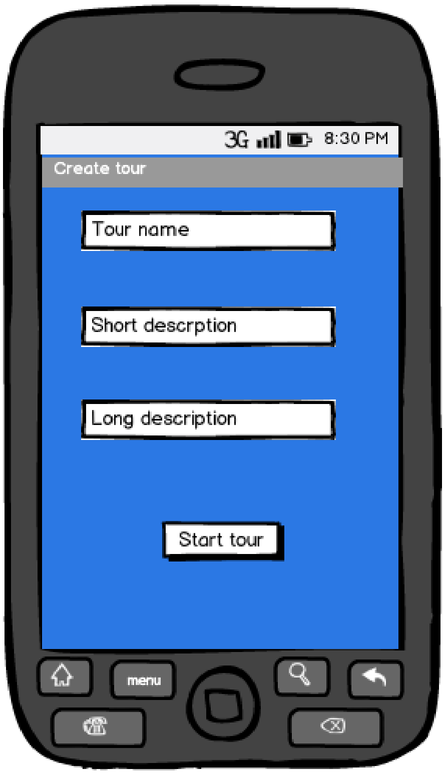


Figure 6: Create Tour Screen

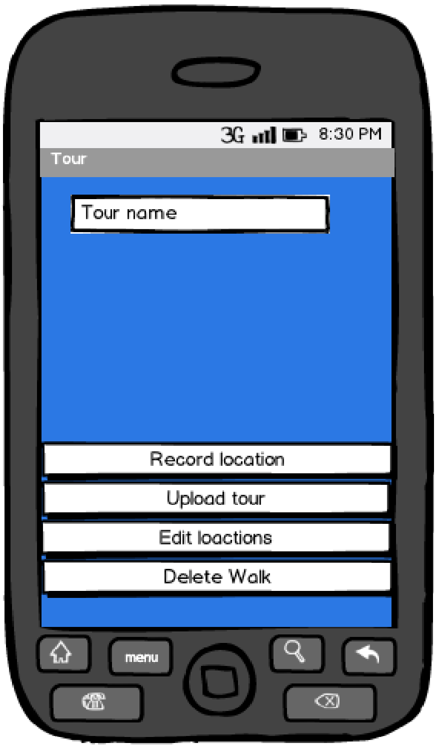


Figure 7:Start Tour Screen

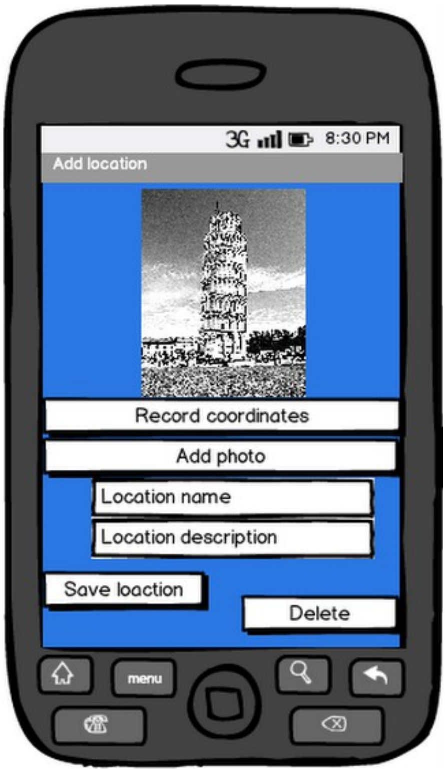


Figure 8: Add Location Screen

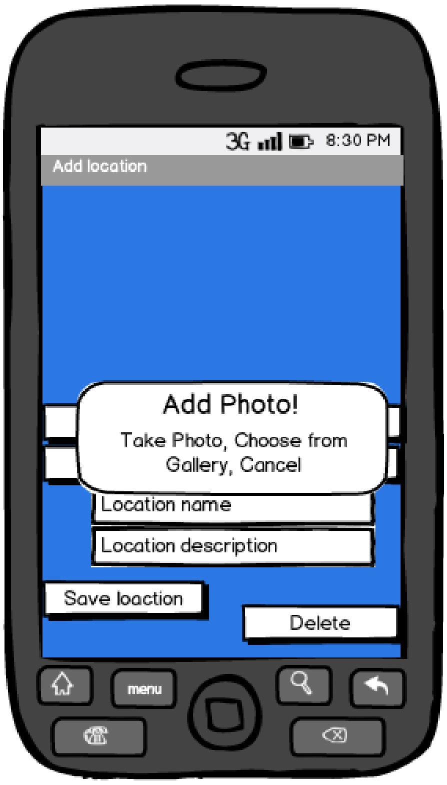


Figure 9: Add picture screen

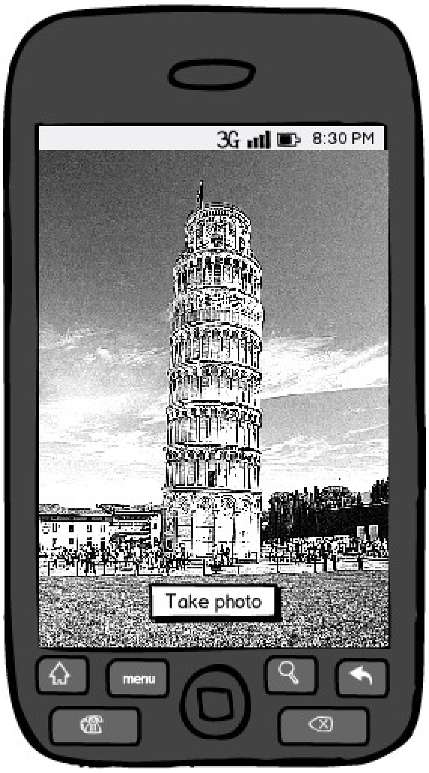
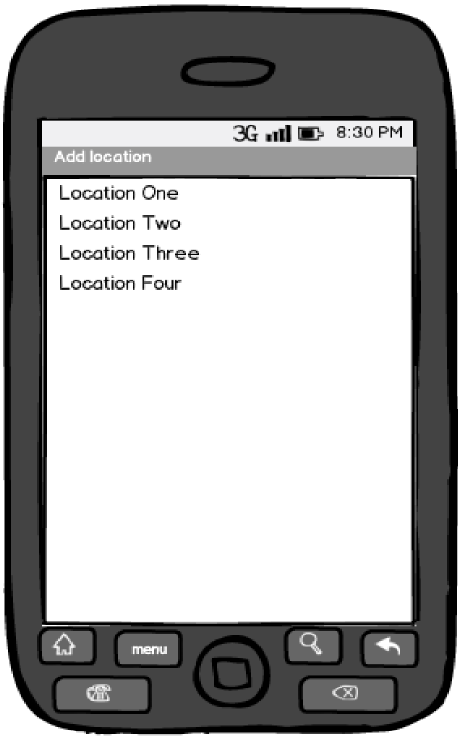


Figure 10: Taking pictures



Add location

Location One

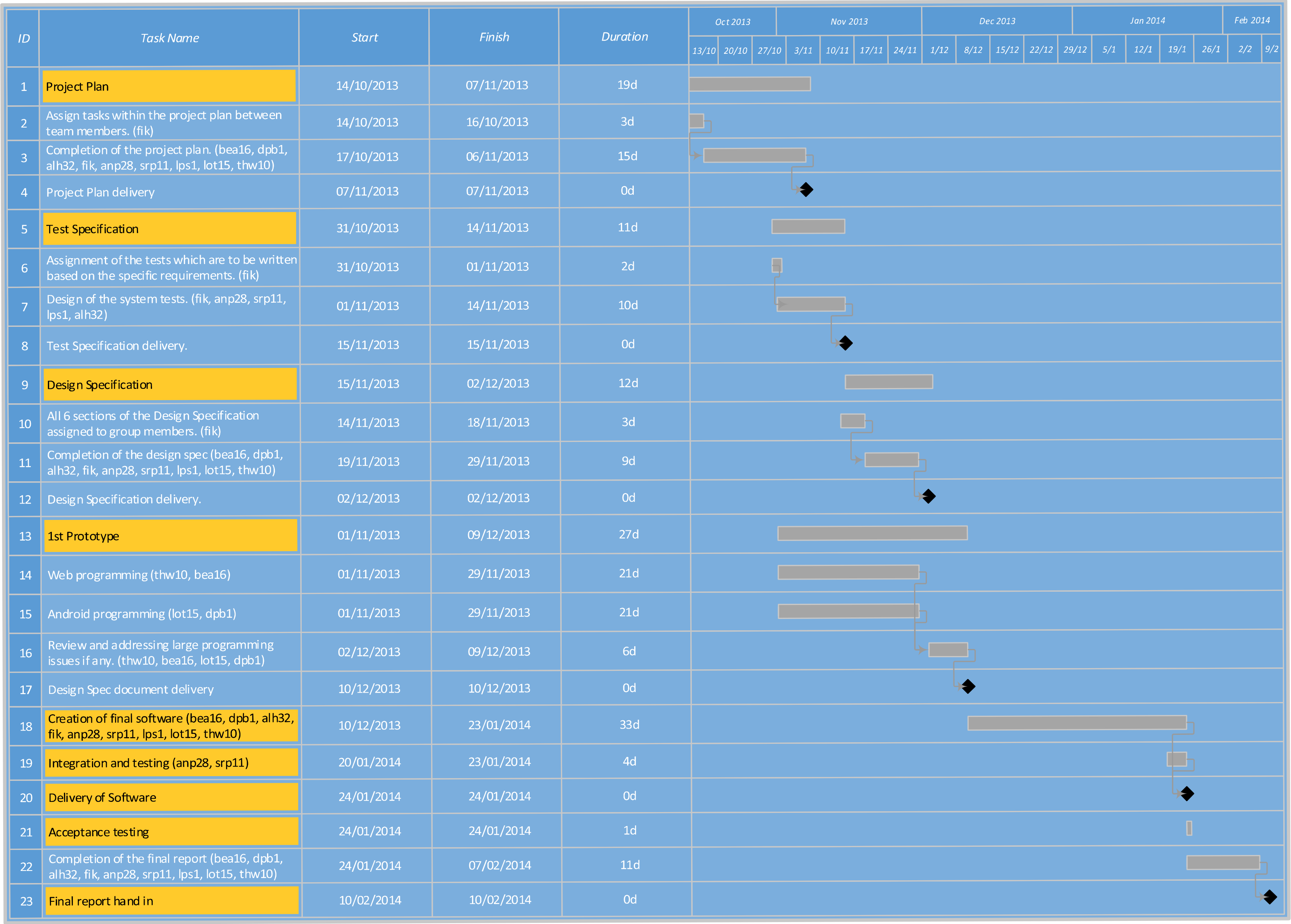
Location Two

Location Three

Location Four

Figure 11: Edit locations

5. GANNT CHART



ID	Task Name	Start	Finish	Duration
1	Project Plan	14/10/2013	07/11/2013	19d
2	Assign tasks within the project plan between team members. (fik)	14/10/2013	16/10/2013	3d
3	Completion of the project plan. (bea16, dpb1, alh32, fik, anp28, srp11, lps1, lot15, thw10)	17/10/2013	06/11/2013	15d
4	Project Plan delivery	07/11/2013	07/11/2013	0d
5	Test Specification	31/10/2013	14/11/2013	11d
6	Assignment of the tests which are to be written based on the specific requirements. (fik)	31/10/2013	01/11/2013	2d
7	Design of the system tests. (fik, anp28, srp11, lps1, alh32)	01/11/2013	14/11/2013	10d
8	Test Specification delivery.	15/11/2013	15/11/2013	0d
9	Design Specification	15/11/2013	02/12/2013	12d
10	All 6 sections of the Design Specification assigned to group members. (fik)	14/11/2013	18/11/2013	3d
11	Completion of the design spec (bea16, dpb1, alh32, fik, anp28, srp11, lps1, lot15, thw10)	19/11/2013	29/11/2013	9d
12	Design Specification delivery.	02/12/2013	02/12/2013	0d
13	1st Prototype	01/11/2013	09/12/2013	27d
14	Web programming (thw10, bea16)	01/11/2013	29/11/2013	21d
15	Android programming (lot15, dpb1)	01/11/2013	29/11/2013	21d
16	Review and addressing large programming issues if any. (thw10, bea16, lot15, dpb1)	02/12/2013	09/12/2013	6d
17	Design Spec document delivery	10/12/2013	10/12/2013	0d
18	Creation of final software (bea16, dpb1, alh32, fik, anp28, srp11, lps1, lot15, thw10)	10/12/2013	23/01/2014	33d
19	Integration and testing (anp28, srp11)	20/01/2014	23/01/2014	4d
20	Delivery of Software	24/01/2014	24/01/2014	0d
21	Acceptance testing	24/01/2014	24/01/2014	1d
22	Completion of the final report (bea16, dpb1, alh32, fik, anp28, srp11, lps1, lot15, thw10)	24/01/2014	07/02/2014	11d
23	Final report hand in	10/02/2014	10/02/2014	0d

Figure 11: Gantt Chart

6. Risk Analysis

6.1 Preliminary risk analysis

Risk	Probability	Effects	Strategy
Loss of team member	Low	Serious	Reorganise team with more overlap of duty of each member.
Illness of team member	Moderate	Serious	Reorganise team with more overlap of duty of each member for the period of member illness.
Documentation incomplete/late	Low	Series	Aim to complete parts of documentation well in advance of deadline. If problems occurs contact team members so that they can help to complete / fix errors.
Scale of Project underestimated	Low	Catastrophic	Produce project plan detailing the scale and scope of proposed system.
Requirement change	Low	Tolerable	Communicate with client. Communicate with group / project leader. Re-arrange project to incorporate feature making sure that it does not interfere with project deadline.
Loss of Project Leader	Low	Serious	Restructure team & reorganise duties with more overlap.

Figure 12: Preliminary risk assessment table

6.2 Life-cycle risk analysis

Risk	Probability	Effects	Strategy
Feature Creep	Moderate	Tolerable	Adhere to design documents. If problems occur the development team should communicate with the project leader.
Version control errors due to naivety	High	Tolerable	Make sure that the version control expert fully trains each member of the team & that they understand proper Git use.
Loss of source code	Low	Catastrophic	Use a repository, have multiple backups. Contact project manager if does occurs.
Android Cross Platform Development Issues	Moderate	Tolerable	Agree on specific Android version that the development team will use.
Parts of system late or incomplete	Moderate	Serious	Adhere to Gantt chart and try to complete well in advance of deadline. Communicate with project leader /

			team.
Parts of system defective	Moderate	Serious	Use proper testing strategies, e.g. Black-box / whitebox. Communicate with team to daft members in to help with fault finding.

Figure 13: Life-cycle assessment table

6.3 Operational risk analysis

Risk	Probability	Effects	Strategy
Database performance	Low	Serious	Investigate database performance, specifically MySQL vs. PostgreSQL.
Unresponsive UI - outlined in performance requirements (PR1).	Moderate	Serious	Investigate design patterns for responsive Android design.
Unable to send walk via HTTP POST or formatted to MIME specification outlined in functional requirements (FR6).	Low	Serious	Investigate the Multipurpose Internet Mail Extension standard in conjunction with PHP's $_POST superglobal.
Unable to obtain GPS coordinates.	Low	Serious	Investigate android.location API, specifically the LocationManager class.
GPS consumes too much battery.	Moderate	Tolerable	Investigate Location Strategies especially Network Location Provider.
UI may not be intuitive to regular computer users as outlined in External Interface Requirements (*EIR1).*	Low	Serious	Test UI, gather & incorporate feedback from test users.

Figure 14: Operational risk assessment table

7 REFERENCES

[1] Software Engineering Group Projects. Design Specification Standards. C. J. Price, N.W.Hardy and B.P.Tiddeman. SE.QA.05A. 1.7. Release.

APPENDICES

Document history

Version	CCF No.	Date	Changes made to the document	Changed by
0.1	N/A	31/10/13	N/A Original draft.	fik
0.2	N/A	07/11/13	Changes/updates to each section of the document.	fik
1.0	#7	27/01/14	Corrected major formatting issues.	LPS1
1.1	#9	29/09/14	Updated and inserted use case for both Android and web.	LPS1