Group Project Reserve Plant Species

October 27

2014

Project Plan

Group 10

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Contents

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1 Introduction 2

1.1 Scope 2

1.2 Objectives 2

2 Overview 2

2.1 Operating Systems and High Level Architecture 2

2.2 Android App. Architecture 2

2.3 Web Server and Maintenance 3

3.1 Use Case Descriptions 5

4 User Interface 6

4.1 RPSR view Web Interface 6

4.2 RPSR rec Android Application 8

5 Gantt Chart 11

6 Risk Analysis 13

Risk Frequency Key 14

Risk Severity Key 15

References 15

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1 Introduction

In this document we are to discuss problems that we may encounter during the project and how we are going to negate them. This document will also include a Gantt chart that will show what parts of the project will be worked on and when.

1.1 Scope

The scope of this document is to show the overview of the project highlighting main points. Demonstrate preliminary designs that have been drawn up a Gantt chart to show what parts of the project are being worked on and when. Finally a risk assessment to analyse any problems we may encounter and how we are going to negate them. [1]

1.2 Objectives

Our main objectives with this document are as follows:

1.1.1 Use case Diagrams – Presents the project and the way it works through the diagrams

1.1.2 User Interface – Explains how the system works and what each page does

1.1.3 Gantt chart – Sets certain goals and milestones for the team to keep in mind

1.1.4 Risk Assessments – Gives awareness of possible risks involved in the process of the project making

2 Overview

2.1 Operating Systems and High Level Architecture

The main operating system and languages for the project.

2.1.1 PHP

PHP is the coding language used on the web server side end to create the plant recording website.

2.1.2 Java

Java is the main coding language being used because Android only uses Java for it's apps. Therefore it is required to use java because of the Android side of the project.

2.1.3 SQL

The database programming language used to create and hold all the relevant data added by the android application and the website data through the use of a relational database management system.

2.1.4 Android

The mobile operating system based off of linux which will be used as the main mobile operating system for the application.

2.2 Android App. Architecture

The android app. will be started by touching the app. icon and will then present the user with the options specified in the specification.

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2.2.1 Start-up Session on android device

The user will be given a prompt to register their details with the server. Once completed the user will be able to records their observations. There will be a chance to record at another site again without the need to re-register the information.

2.2.2 Registration about web visit

Every time the user starts the app. the option to register will be available to them; once registered the user can repeatedly record at other sites.

2.2.3 Species recording feature

The species entered will be added to a drop down list of an already existing list on the database side.

2.2.4 Species details feature

The species details feature requires the user to add the abundance of the species as well as a text block to comment on the species. There will be an option to take a photo of the plant species from the android app. using the device camera. There will be an option to show the location of the species via the android application through the devices GPS function.

2.2.5 Editing of Plant Record feature

The ability of the user to delete any records from one species as well as the ability to delete whole recordings of user made records; the ability to change any existing information in existing species records.

2.2.6 Record Capture to be sent to Server

The recordings will be sent to the database through a formatted Multipurpose Internet Mail Extensions message and sent to the server via a HTTP post to the predefined URL. Sent data will include the information about the visit and the information about each species being recorded.

2.3 Web Server and Maintenance

The maintenance of the website, app. and database.

2.3.1 Reserve Data Maintenance

The reserve on the database should include the users name on one, the OS location on a grid on and the textual description.

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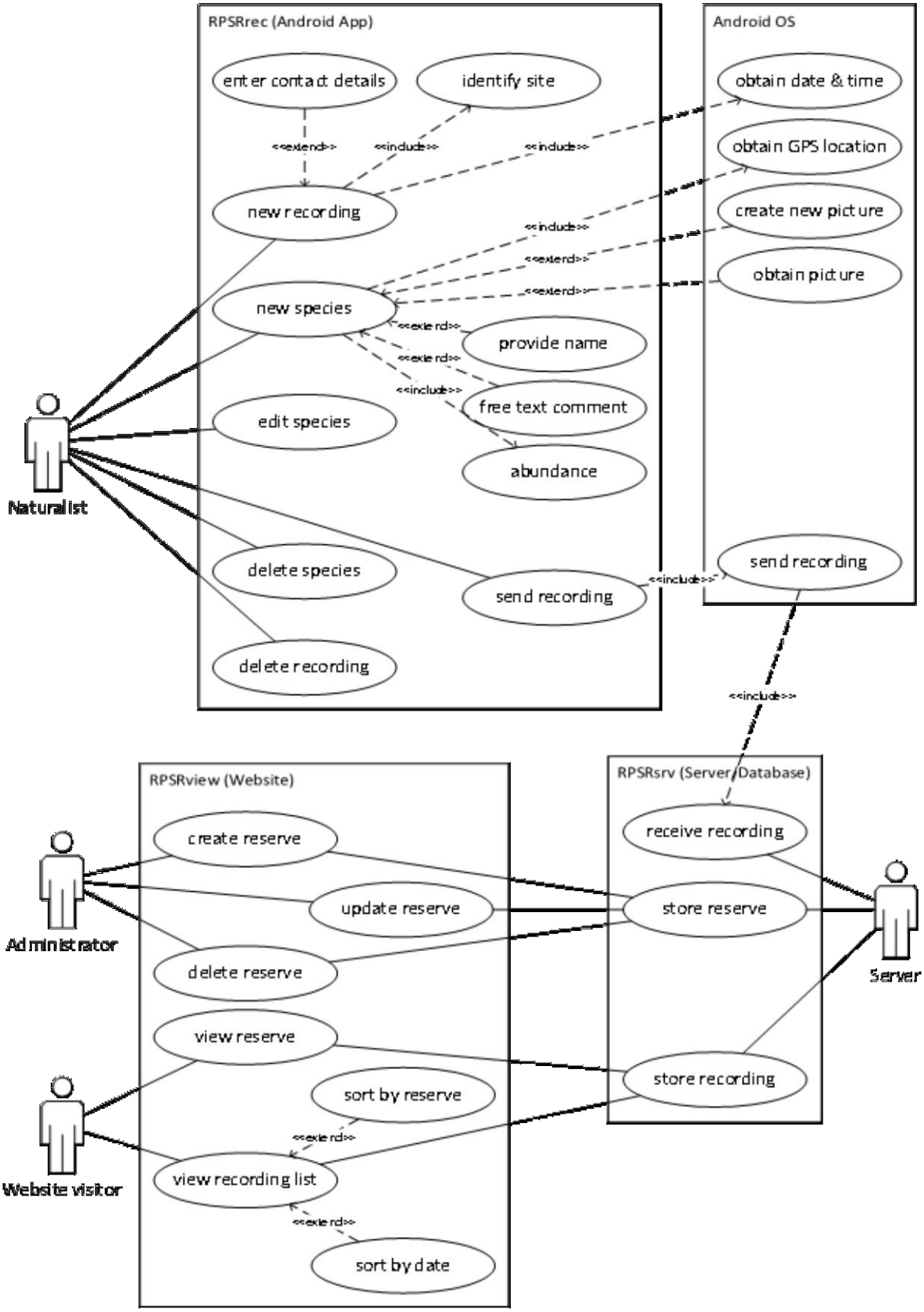

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3.1 Use Case Descriptions

ANDROID APP USER / NATURALIST		
New visit	FR1	The user will be able to create a new visit.
Identify site	FR2	When creating a new recording, the user will have to identify the site at which the recording will be made.
Enter contact details	FR2	When creating a new recording for the first time, the user will be prompted to enter contact details.
New species	FR3	User will be able to select the species from a provided list.
Provide name for species	FR3	In case the species is not in the provided list, the user will be able to provide a name.
Abundance	FR4	The user will be able to select a value of the "DAFOR" scale.
Free text comment	FR4	The user will be able to add an optional free text comment.
Photo of specimen/scene	FR4	The user will be able to select two photos from their photo gallery or use the camera on the android phone to make photos of the specimen and the general scene.
Edit species	FR5	The user will be able to edit details of any recorded species.
Delete species	FR5	The user will be able to delete any recorded species.
Delete visit	FR5	The user will be able to delete a whole recorded visit.
Send recording	FR6	The user will be able to send the recording of the whole visit including all its species when possible, this includes the information from (FR2, FR3 & FR4).

ANDROID OS / USERS PHONE		
Obtain date and time	FR2	The users phone will provide the date and time needed to complete the information for the visit record.
Obtain GPS data	FR4	The users phone must be able to obtain the GPS coordinates, needed for the typical location of a species.
Create new picture	FR4	The phone will make it possible for the user to shoot a picture using the integrated camera.
Obtain picture	FR4	The phone will make it possible for the user to select an existing picture from its gallery.
Send information	FR6	The phone will be able to send the information of the recordings when network communication is available.

SERVER / DATABASE		
Receive recording	FR7	The server should be able to receive recordings sent from android devices.
Store recording	FR7	The server should be able to store user submitted recordings with all of the relevant data.
Store reserve	FR8	The server should be able to store information about nature reserves in a database.

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ADMINISTRATOR		
Create Reserve	FR8	The administrator should be able to add new nature reserves to the database.
Update reserve	FR8	The administrator should be able to update information about nature reserves in the database.
Delete reserve	FR8	The administrator should be able to delete nature reserves from the database.

WEBSITE VISITOR		
View reserve	FR8	The user should be able to view all of the nature reserves currently stored in the database.
View recording list	FR9	The user should be able to view all recordings currently stored in the database.
Sort by reserve	FR9	The user should be able to find all of the recordings taken at a specified nature reserve.
Sort by date	FR9	The user should be able to sort the recordings in date order.

4 User Interface

4.1 RPSR view Web Interface

The client wanted a website for the Reserve Plant Species Recording called RPSR view (not to be confused with RPSR rec. – the Android application). With two foundational functions:

Addition and maintenance of records of reserves;
Viewing of species records for reserves.

We have come up with the solution being a very basic PHP based web site. The home page will be a list of all plants on the database, with an image of the plant, name, occurrence, status on the DAFOR scale, and a short summary.
The second page will be allowed to manage existing records, add new records and delete records. Its database will use MySQL. To access this page the user must login using an ID and a password.
There will be a third web page, which will only be shown if the user tries to access the 'manage' page without logging in.

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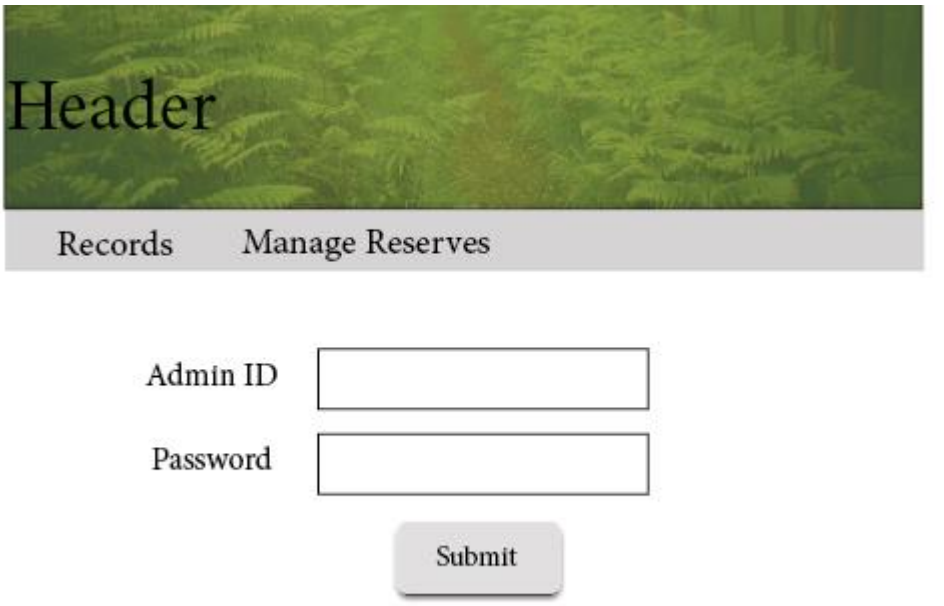
The page above is the first page users will see when they visit the web site. At the top right, there is an option to authenticate and log in to the web page to allow managing of the records. However, for regular users, there is the option to browse through the current records, without having to use a login.



The second page will consist of forms and text boxes to add text. The first one form will allow addition of an image file. Followed by a text box to enter the name of the plant (this will also be the primary key on the database), which will be used to identify the records. The occurrence textbox will be able to contain multiple values. The Status will have a form, to let users choose from a number of

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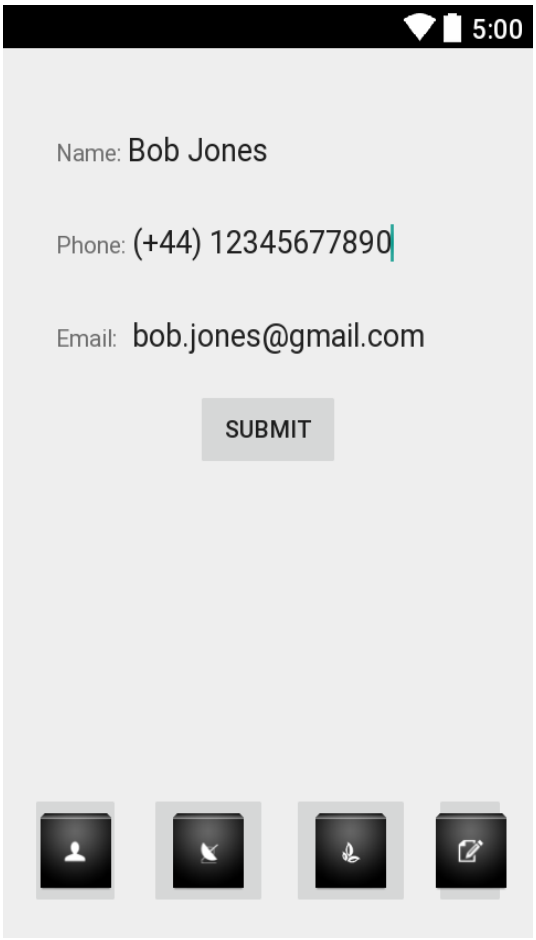
options. It will be using the DAFOR scale to identify the abundance or rarity of the plant. It will allow the user to choose from the following:
D- Dominant
A- Abundant
F- Frequent
O- Occasional
R- Rare
Finally, the summary will let the user enter a short description of the plant.
The final page will only occur if someone tries to click the 'Manage Records' button on the navigation bar, without being logged in. It will inform the user that they have to be logged in to access the management page and prompt them to enter a user ID and Password if they are authorized. Alternatively the navigation bar will allow them to go back to the 'List of Records' page to view the records without logging in.
We decided that for the purpose that the client wanted, this web site is more than sufficient. The Android application will have further options and will be the main point of interaction. The web site is mainly going to be used to manage the records.

4.2 RPSR rec Android Application

The user interface (UI) is designed with the aim to make it easy and quick for the user to record their findings. We are also planning on implementing the swipe action to move from page to page.



4.2.1 Start-up

This is the first page the user will ever see. This page will automatically appear when the application is run for the first time. After the first run the user will not be prompted to insert their details. The aim of this page is to store the user details so that it can be sent with every record they upload. The user still has the ability to change this information at any time by simple tapping the user details icon at the bottom of the application. Alternatively they can press the appropriate edit button available in the summery page. Pressing the submit button will save the details locally on the device. This information is not sent to any database.

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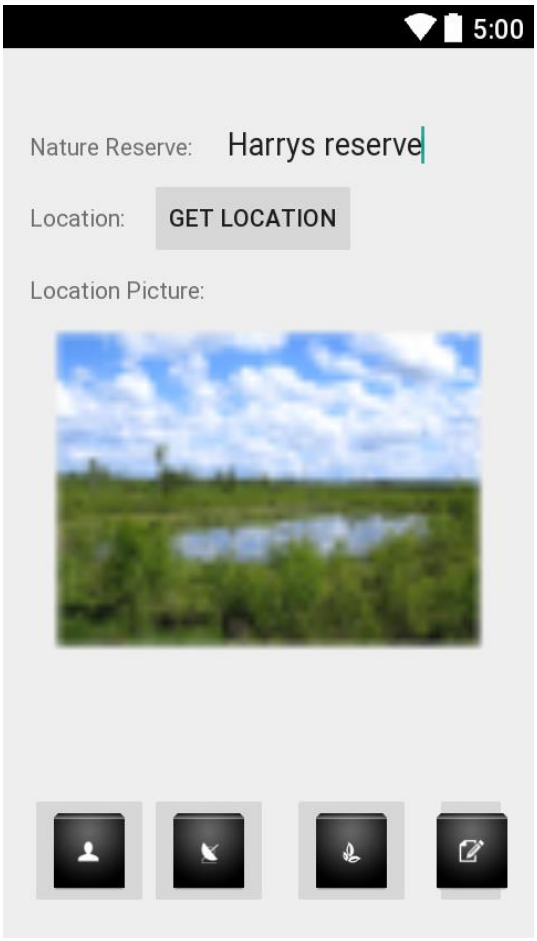

4.2.2 Location

The location page is the page that comes after the user details page. This page will technically be the home page for the application. This page will be the first page to appear to the user after the first load of the application. We have decided to make it the first page so that the user can quickly fill in data rather than have to go through a bunch of options before they can insert data. This page will contain details about the reserves location.

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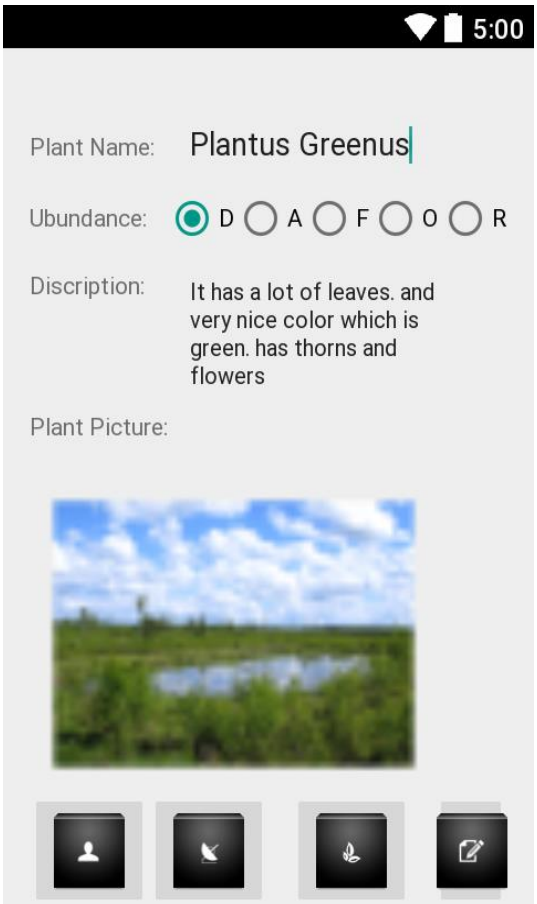
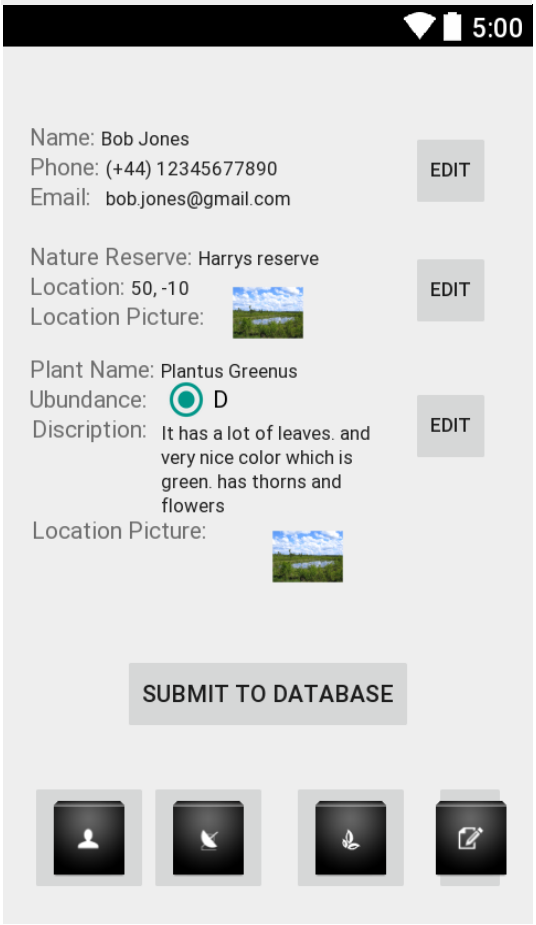


4.2.3 Plant info

The plant information page comes after the location page, it contains details about the plant.



4.2.4 Summary

This is the last page for this application. It allows the user to view all the data that will be inserted in the record. As well as allowing them to see the data it also has edit buttons next to each section so that the user can be redirected to the page immediately to edit the data that needs changing. The submit button will send the record to the database.

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5 Gantt Chart

Task	Duration	7 Oct 14	14 Oct 14	21 Oct 14	28 Oct 14	4 Nov 14	11 Nov 14	18 Nov 14	25 Nov 14	2 Dec 14	9 Dec 14
Semester One											
Product Specification Handout											
Roles Assigned											
Weekly Meetings											
Use Case Diagrams											
Website UI Design											
Android UI Design											
Risk Analysis											
Introduction											
Overview											
Project Plan Hand In											
Web Programming											
Java Programming (Android)											
Test Specification Hand In											
Design Specification Hand In											
Prototype											
Semester Two											
Integration/Testing Week											
Deliver Software On Disc											
Acceptance Testing											
Hand In Final Report											

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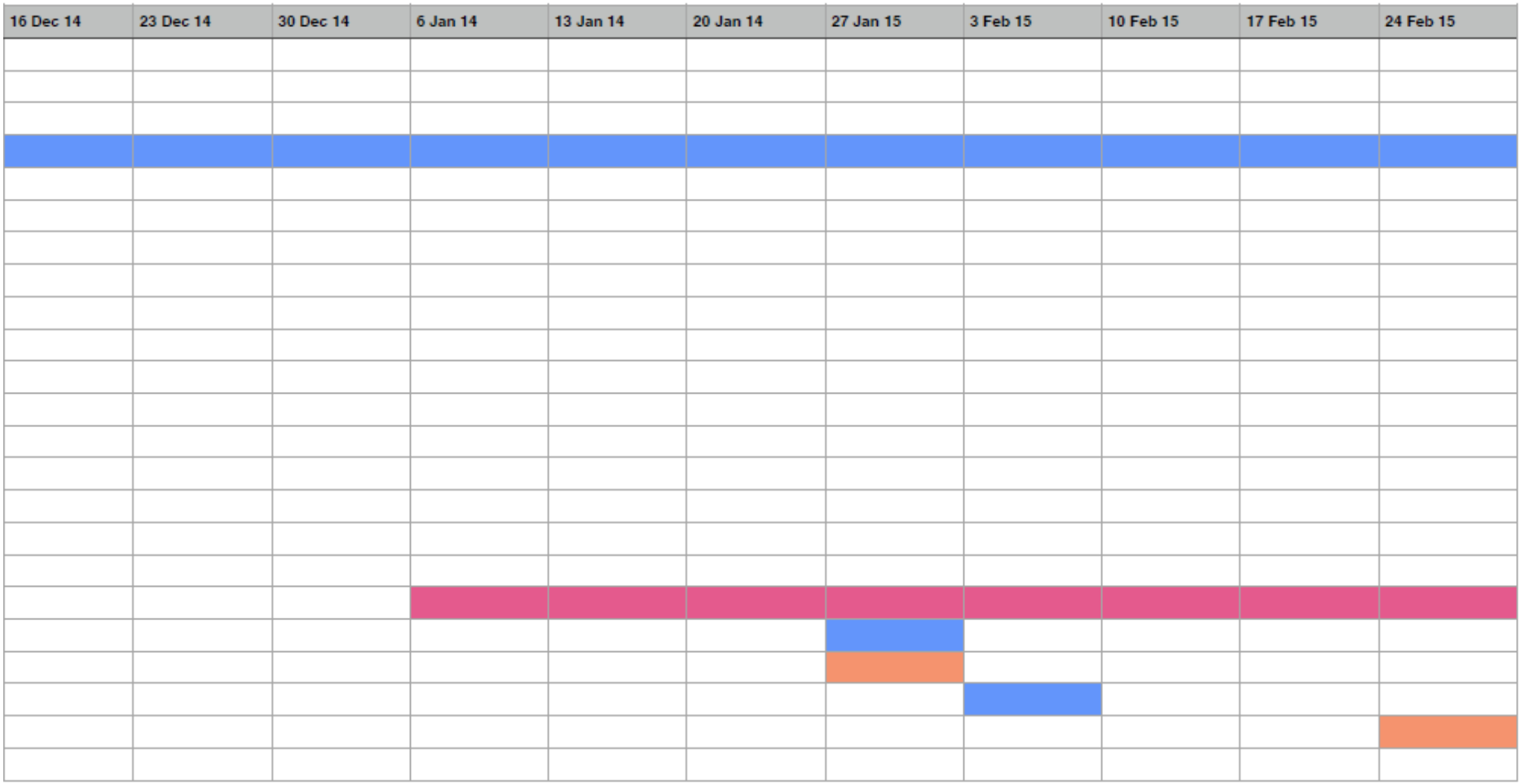

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6 Risk Analysis

Event	Effects	Risk Frequency Level	Risk Severity Level	Mitigation
Continuous Risks				
Illness or other unexpected circumstances	Task assigned to team member may not be completed.	Medium	Medium	Team must be notified as soon as possible, so project does not fall behind on deadlines or finishing work.
Absence of team member	Task assigned to team member may not be completed. Also may miss important info/actions.	Medium	Medium	Make sure all meeting are planned in advance. All absences need to be explained and the absent member must catch up on what was missed.
Management Risks				
Team members lacking in skill needed for a particular task	Task may take longer or not completed.	Low	Medium	Set small tests, to see who has which skills.
Unrealistic estimates	Run out of time. Deadlines not met.	Low	Medium	Better organisation of team members and tasks. Should not be over ambitious.
Project progress has insufficient monitoring	Team members not knowing what to do. Overlapping tasks.	Low	High	Regular meetings. Regular uploads to Github. Checking progress on each task.
Unclear task milestones	Too much or too little of a certain task may be completed	Low	High	Meetings to discuss task milestones.
Not enough communication with team members	Team members not knowing what to do.	Medium	High	Regular meetings and monitoring.

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Technical Risks				
Obtaining the GPS coordinates of the Android OS might be difficult to implement	Hinder progress of task. Prevent software working as intended.	Low	High	A meeting to discuss the problem and steps to overcome it e.g. tasking someone to focus on researching and implementing databases in android.
Sending/uploading the data from the Android device to our server/database might be difficult to implement	Hinder progress of task. Prevent software working as intended.	Low	High	A meeting to discuss the problem and steps to overcome it e.g. tasking someone to focus on researching and implementing databases in android.
Database server could be offline	Data would not be able to be added to the database. Website would not be functional.	Low	High	Display to user specifying problem until all is solved.
Github inaccessible	Tracking progress of project and retrieving/sending recent documents would be hindered.	Low	Medium	Use other services to share/receive documents e.g. Skype, email.

Risk Frequency Key

Low- unlikely to occur.

Medium- moderate likelihood to occur.

High- high likelihood to occur.

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Risk Severity Key

Low- minor impact on project progress.

Medium- moderate risk to the progress of the project.

High- severe risk to the progress of the project.

References

[1] Software Engineering Group Projects: General Documentation Standards. C. J. Price, N. W. Hardy. SE.QA.03. 1.7 Release

Version	Date	Changes Made	Changed by
1.0	23.10.2014	Original Document	cpm6
1.1	28.10.2014	Updated Use Case descriptions as the web descriptions were missing.	cpm6
1.2	22.01.2015	Updated Document to match the requirements	cpm6, sit10

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