

CS221 Group Project

Test Specification

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1 Introduction

1.1 Purpose of this Document

This document describes the test specification and procedure for the Reserve Plant Species Recording project (“RPSR”). The document will give a guide on the main stages of testing. Team members are to read this document and confirm that the test specification is understood, and sets out sufficient testing requirements. This document will give a guide to what the expected outputs of each stage in the project are.

1.2 Scope

This test specification aims to provide information about what in the project needs to be tested for the RPSR. As well as the expected results from these tests.

1.3 Objectives

The objectives of this document are:

- To provide all the developers a document that can be looked up to make sure they understand what is needed
- To make sure that all the developers can expect the same goals
- To make sure that once a task has been completed it matches with the expected result
- To make sure that the project is kept to the requirements stated in the brief
- To make sure we know what we will need to check when we finish the project

2 TestPlan

2.1 Android User

Individual Module Testing will be left to the coder, and tests should be written before the coding is done.

Test Ref	Req	Test Content	Input	Output	Pass
SE-F-001	FR1	Startup of Software	Touch App logo	Botany App should open	Android app opens to the users activity.
SE-F-002	FR2	Valid username allows user to login	Enter valid username of size 3<Username<10 e.g Alexander	No error message appears	App proceeds to specimen activity.
SE-F-003	FR2	Invalid username does not allow user to login	Enter username that is outside of the required length eg “ab” or “asdfghjklqw” 10	App should display an error indicating correct lengths	An error message in a box should pop up saying that the username has to be between 3 and 10 characters long.
SE-F-004	FR2	Empty Username is not accepted	Have the username empty	An error message shows next to the input	User is told of the error and the app does not proceed
SE-F-005	FR2	Valid phone number is accepted	Enter a valid phone number e.g. 07808369246	Along with a valid email and username the user can go to the next part of the app	An error message does not show next to the input and the user moves on
SE-F-006	FR2	Empty phone number is not accepted	Have the phone number empty	An error message shows next to the input	User is informed of the error and the app does not proceed
SE-F-007	FR2	Invalid phone number is not accepted	Enter an invalid phone number e.g “a”	An error message shows next to the input	User is informed of the error and the app does not proceed
SE-F-008	FR2	Valid email is accepted	Enter a valid email address e.g. this@that.com	Along with a valid phone number and username the user can go to the next part of the app	The app proceeds to the specimen adder activity

SE-F-009	FR2	Empty Email is not accepted	Have the email address empty	An error message shows next to the input	User is informed of the error and the app does not proceed
SE-F-010	FR2	Invalid email is not accepted	Enter an invalid email address e.g. this@that	An error message shows next to the input	User is informed of the error and the app does not proceed
SE-F-011	FR2	App gets the GPS information from the phone	User waits for valid GPS signal	Message is shown to say that a valid GPS signal has been found	User is allowed to move on without entering a site name
SE-F-012	FR2	Site name is accepted	User enters the name of the site e.g Aberystwyth	No error is displayed, the app moves to the specimen adder	User is allowed to move on
SE-F-013	FR3	Latin name auto-completes	User enter the first four letters of a latin name e.g. gara	A list of all the Latin names with the input appears	All the Latin names that appear all have the input in them
SE-F-014	FR4	Plant photo button works	User touches the plant photo button	User's phone goes to the inbuilt camera	User able to take picture with inbuilt camera
SE-F-015	FR4	Site photo button works	User touches the site photo button	User's phone goes to the inbuilt camera	User able to take picture with inbuilt camera
SE-F-016	FR4	Plant photo is saved	User takes a plant photo	Picture is taken and takes the place of the plant photo button	The photo is saved, and ready to be submitted
SE-F-017	FR4	Site photo is saved	User take site photo	Picture is taken and takes the place of the site photo button	The photo is saved ready to be submitted
SE-F-018	FR4	User not allowed to add a non-image file when prompted for a picture of a plant.	Attempt to enter a non-image file to the database.	Message states that the file is not an image file.	Does not enter to database. Returns to input page.

SE-F-019	FR4	User not allowed to add a picture of a plant to the database if over 10MB	Attempt to enter an absurdly large image file to the database (e.g 20MB).	States that the file exceeds filesize limits.	Does not enter to database. Returns to input page.
SE-F-020	FR4	User allowed to edit abundance	User slides the abundance slider	The abundance slider moves	The abundance is changed and recorded
SE-F-021	FR3	User allowed to add a plant name to the database.	Enter plant name to the database via android app.	States that plant details are successfully added to the database.	Plant details successfully added to the database.
SE-F-022	FR4	User allowed to add Species Details.	Enter Species Details to the database via android app.	States that plant details are successfully added to the database.	Plant details successfully added to the database.
SE-F-023	FR4	User not allowed to enter invalid Species Details to the database.	Enter invalid Species Details to the database via android app.	App states that the details entered are invalid.	Does not enter to database. Returns to input page.
SE-F-024	FR4	User allowed to add a picture of a plant to the database.	Enter a plant picture to the database via android app.	States that plant picture is successfully added to the database.	Plant picture successfully added to the database.
SE-F-025	FR6	Application should know whether it is connected to the internet, and that it is able to send records to the database. If not, the data is stored in local storage.	Attempt to do SE-F-004/5/7/10 whilst connected to the internet.	Pop-up states that records successfully sent to the database.	Successfully sends records to the database.

SE-F-026	FR6	Application should know whether it is connected to the internet, and that it is able to send records to the database. If not, the data is stored in local storage.	Attempt to SE-F-004/5/7/10 whilst not connected to the internet.	Pop-up states that the app is not connected to the internet and that the records were stored in local storage.	Stores the records on local storage.
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2.2 Website User

Individual Module Testing will be left to the coder, and tests should be written before the coding is done.

Test Ref	Req	Test Content	Input	Output	Pass Criteria
SE-F-030	FR8	Editing reserve with one value changed	Grid reference change.	Reserve grid reference updated	Reserve data is able to be edited providing valid data.
SE-F-031	FR8	Edit all of the values of a reserve	All data changed to new valid data.	Reserve data updated	Reserve data is able to be edited providing valid data.
SE-F-032	FR8	Edit reserve with black field	Remove data for one field and submit.	Reserve was not updated	Reserve data is able to be edited providing valid data and all fields filled.
SE-F-033	FR8	Add reserve name	Input reserve name for field.	Reserve name added	Reserve data is able to be added providing valid data and all fields filled.
SE-F-034	FR8	Add OS grid reference	Input 8 digit OS grid reference.	Grid reference was added	Reserve data is able to be added providing valid data and all fields filled.
SE-F-035	FR8	Add reserve description	Input reserve description.	Description was added	Reserve data is able to be added providing valid data and all fields filled.
SE-F-036	FR9	View reserve specimens	Click on view reserve button.	User is taken to the plant specimens page where only the reserve specimens contained within the reserve are displayed	Specimens that are contained within reserve are displayed.

SE-F-037	EF1	Authentication	Log in using correct password.	Authentication session is created giving user administrative privileges. A message displays valid password.	Password session is created and a successful login message is displayed.
SE-F-038	EF1	Authentication Error	Log in using incorrect password.	A message displays incorrect password.	Password session is not created, and incorrect login message is displayed.
SE-F-039	EF1	Authentication logout	Logout link is clicked.	Session is destroyed and login message is displayed.	Session is destroyed and login message is displayed.
SE-F-040	EF1	Authentication granted privileges	User has successfully logged on	User is given access to delete remove and add specimens and reserves.	Session is destroyed and login message is displayed.
SE-F-041	EF2	Add species name	Input species name	Species name is added to the record	Species name is added to the species record.
SE-F-042	EF2	Add species location	User selects a reserve location	Reserve is identified with the species	Once reserve is selected, the specimen is identified with the reserve .
SE-F-043	EF3	Add specimen abundance	User selects a abundance according to the DAFOR scale	Abundance is recorded to the specimen	Abundance from the DAFOR scale is recorded to the specimen .
SE-F-044	EF3	Add comment	User inputs comment	The comment is recorded	Comment is recorded to the specimen .
SE-F-045	EF3	No comment	No input	Comment is left as NULL	Specimen comment is left null .
SE-F-046	EF3	No image	No images are inputted	Image is not uploaded for the specimen	Specimen is recorded without an image .

SE-F-047	EF3	PNG image	PNG image is uploaded	PNG image is uploaded	PNG image is recorded to the specimen .
SE-F-048	EF3	GIF image	GIF image is uploaded	GIF image is uploaded	PNG image is recorded to the specimen .
SE-F-049	EF3	JPEG image	JPEG image is uploaded	JPEG image is uploaded	JPEG image is recorded to the specimen .
SE-F-050	EF3	Non-image type	txt file is uploaded	file is not uploaded	File is not uploaded .
SE-F-051	EF4	Delete specimen	Delete specimen button is clicked	Specimen is deleted	Once clicked, the specimen is deleted.
SE-F-052	EF4	Edit specimen	Specimen field is edited	Specimen field in question is edited	Specimen field is edited and is recorded to the specimen ID .
SE-F-053	Features	Simple search bar	Inputted species name	User is taken to the specimen page with results displayed	Once submitted, user is shown specimens that match the search criteria .
SE-F-054	Features	Advanced search bar with species name option selected	Species name with species selected	Results with specimen name displayed	Search results with matching criteria displayed only.
SE-F-055	Features	Advanced search bar with location option selected	The location input with location option selected	Results with inputted location displayed	Search results with matching criteria displayed only.
SE-F-056	Features	Advanced search bar with date option selected	Recording date input with date option selected	Results matching input and option displayed	Search results with matching criteria displayed only.
SE-F-57	Species sorting	Each sorting option selected	Sorting option is selected with sorting criteria	Table results are displayed and sorted to the matching criteria	Once the sorting method is chosen, the results are sorted.
SE-F-058	Features	Google Map	Correct latitude and longitude	Map displays location on a Google maps	Google map should show the location of the specimen.

SE-F-059	Features	Google Map	Incorrect latitude and longitude	Map displays nothing	Google map should show the location of the specimen.
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Test Ref	Browser	Results
SE-F-060	Chrome	Displays the website perfectly and all functionality works on it.
SE-F-061	Firefox	Displays as it should mostly, apart from the about page due to an incompatibility with columns. Functions as it is supposed to.
SE-F-062	IE	Displays correctly, apart from that the default images are not displayed. Functionality still correct.

2.3 Server

Individual Module Testing will be left to the coder, and tests should be written before the coding is done.

Test Ref	Req	Test Content	Input	Output	Pass Criteria
SE-F-045	FR7	Server allows an addition of a valid record via a POST request)	Valid JSON-formatted record via POST	Returns status code 200 OK and ID of the record	Status code 200 OK and record present in the database
SE-F-046	FR7	Server does not allow an addition of an invalid record via a POST request)	Invalid JSON-formatted record via POST	Returns status code 400	Status code 400 and record not present in the database
SE-F-047	FR7	Server allows an addition of a file resource via a POST request	A binary file via POST	Returns status code 200 OK and ID of the resource	Status code 200 OK and file present on server
SE-F-048	FR7	Server allows client to get a specimen with a specified specimen ID that does exist	A POST request with the desired ID specified	Returns status code 200 OK and a JSON-formatted specimen	Status code 200 OK and a valid JSON-formatted specimen
SE-F-049	FR7	Server does not allow the client to get a specimen with a specified specimen ID that does not exist	A POST request with the desired ID specified	Returns status code 400	Status code 400, nothing returned
SE-F-050	FR7	Server allows client to get a file resource with a specified resource ID that exists	A POST request with the desired ID specified	Returns status code 200 OK and a file	Status code 200 OK and the desired file
SE-F-051	FR7	Server does not allow the client to get a file resource with a specified resource ID that does not exist	A POST request with the desired ID specified	Returns status code 400	Status code 400 no file returned

SE-F-052	FR7	Server allows client to get a number of specimens based on a specified offset and range	A POST request with desired offset and range	Returns status code 200 OK, desired number of specimens starting from desired offset are returned as a valid JSON-formatted specimen	Status code 200 OK and an array of valid specimens, limited by desired range and offset
SE-F-053	FR7	Server allows client to get a number of specimens based on a specified search value by name, user, location, reserveID	A POST request with desired search value and search type	Returns status code 200 OK, only desired specimens based on search value and search type are returned as a valid JSON-formatted specimen array	Status code 200 OK and an array of valid specimens, limited by search value and search type
SE-F-054	FR7	Server allows client to get a number of specimens based on a specified search value by name, user, location and searched by reserveID	A POST request with desired search value and search type and specified reserveID	Returns status code 200 OK, only desired specimens based on search value, search type and reserveID are returned as a valid JSON-formatted specimen array	Status code 200 OK and an array of valid specimens, limited by search value, search type and reserveID
SE-F-055	FR7	Server allows client to get a number of specimens ordered by ascending or descending and values name, user, abundance, location	A POST request with desired order method and order type	Returns status code 200 OK, all specimens ordered by desired order method and order type are returned as a valid JSON-formatted specimen array	Status code 200 OK and an array of valid specimens, ordered by desired order type and order value

SE-F-056	FR7	Server allows client to get a number of specimens based on a specified search value by name, user, location, reserveID and ordered by ascending or descending and values name, user, abundance, location	A POST request with desired search value, order type, order method and order value	Returns status code 200 OK, only desired specimens based on search value and search type are returned as a valid JSON-formatted specimen array ordered by desired order type and order value	Status code 200 OK and an array of valid specimens, limited by search value and search type, ordered by order method and order type
SE-F-057	FR7	Server allows client to get a number of specimens based on a specified search value by name, user, location and searched by reserveID and ordered by ascending or descending and values name, user, abundance, location	A POST request with desired search value, reserveID, order method and order value	Returns status code 200 OK, only desired specimens based on search value, search type and reserveID are returned as a valid JSON-formatted specimen array ordered by desired order type and order value	Status code 200 OK and an array of valid specimens, limited by search value and search type, ordered by order method and order type
SE-F-058	FR7	Server allows client to get a number of specimens, filtered by record location name	A POST request with the desired location name specified	Returns status code 200 OK and a JSON-formatted array of relevant records found	Status code 200 OK and an array of valid relevant records with same or similar location name
SE-F-059	FR7	Server allows client to remove a specified specimen with a specified valid specimen ID	A POST request with the desired specimen ID to be deleted	Returns status code 200 OK	Status code 200 OK and the specimen is removed from the database

SE-F-060	FR7	Server does not allow client to remove a specified specimen with a specified specimen ID that is invalid	A POST request with the desired specimen ID to be deleted	Returns status code 400	Status code 400 and the specimen is not removed from the database
SE-F-061	FR7	Server allows client to edit a specified specimen with a specified valid ID	A POST request with the desired ID and a JSON-formatted specimen	Returns status code 200 OK	Status code 200 OK and specimen is changed in the database
SE-F-062	FR7	Server does not allow client to edit a specified specimen with a specified invalid ID	A POST request with the desired ID and a JSON-formatted specimen	Returns status code 400	Status code 400 and specimen is not changed in the database
SE-F-063	FR7	Server does not allow client to enter any malicious data into the database	A POST request with malicious data	Returns status code 500	Status code 500 and no data is affected in the database

3 Test Result Reporting

3.1 Report

Details of test results are to be maintained in the group github, under TestReports. Module tests are to be maintained in the ModuleTests folder, and System tests in the SystemTests folder.

4 References

4.1 Reference

- General Documentation Standards : C. J. Price, N.W.Hardy & B.P.Tiddeman (2014-09-23) SE.QA.03 1.7
- Test Procedure Standards : C. J. Price, N.W.Hardy and B.P.Tiddeman (2014-09-23) SE.QA.06 1.8

5 Document History

Version	Edit	Date	Persons
0.1	Initial Version	November 10 2014	nid21
0.2	Review and moving inline with template	November 28 2014	nid21
0.3	Updated spec for changed API methods	January 22 2015	msh4
0.4	Updated with more detailed Android Tests	November	nid21