

Biological Sample Database Project

Test Manual

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The University of Western Australia

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Objectives

The objective of this document is to set up a sequence of testing to check and test the project's robustness, to ensure our product will keep a low failure rate when our client actually put it into work. Overall Test will combine automatic test and manual test. Most of the unit tests and integration test will be done by test script, while system test will be done by manually.

Test Summary

This document will focus on the accuracy and ease of use of the data search function, the completeness of the database, the timeliness of data updates, and data security around the logging function, and test the sanity of user management designed for administrators. Since the project is designed without the server hosting the website, there are no web security tests designed for the website server. However, it is strongly recommended that after the project is officially launched, the follow-up operation and maintenance personnel further improve the security of the server, such as encrypting data.

Many functions are still under discussion when this manual is written, but this test manual will still include tests around these functions to be implemented, and more functions may be added to this project in the future. New tests will be designed and added after the functions are implemented. .

Test Strategy

In this test manual, we will focus on testing several major subsystems of the project: including the search function, web page, database, user management system, operation log, and at the end, test the project as a whole. For the search function, we will test whether the search function can accurately query the expected value and the response speed of the search, and most of this part will be completed by the test script. The test of the web page will focus on testing whether the web page is complete and error-free, and this part will be done manually. The addition, deletion, and edition of data through the website will also be part of the test project. Also, after all, activities are performed, the operation log will be checked to see that all operations are recorded correctly. As the last of the test, the project as a whole will be manually tested to simulate user usage.

Test Cases

Test A: Website

Test A will revolve around testing the website, and the test will focus on the web page itself.

Test specification

This test will basically be based on checking the elements of the web page and whether the web page responds as expected. This part of the test will be checked manually.

Test Description

case_id	test_project	precondition	test_step	expected_outcome
W-01	Test Dashboard buttom	Website opened	Manually Click on Dashboard buttom	Dashboard webpage will be shown on right-side
W-02	Test Inventory buttom	Website opened	Manually Click on Inventory buttom	Inventory webpage will be shown on right-side
W-03	Test People buttom	Website opened	Manually Click on People buttom	People webpage will be shown on right-side
W-04	Test Rooms buttom	Website opened	Manually Click on Rooms buttom	Rooms webpage will be shown on right-side
W-05	Test Containers buttom	Website opened	Manually Click on Containers buttom	Containers webpage will be shown on right-side
W-06	Test Samples buttom	Website opened	Manually Click on Samples buttom	Samples webpage will be shown on right-side

Test Analysis Report

This part of the test report will contain test ids for successful tests, and test ids for failed tests. And record the test results of failed tests for developers to debug.

Test B: Search Function

Test whether the search function meets the design requirements

Test specification

The test will focus on the speed of the search function and how accurate the search function is. This part of the test will be checked automaticly.

Test Description

case_id	test_project	precondition	test_step	expected_outcome
S-01-1	Ignore capitalization	Open the web and type in search bar	user search "hyBrideOma"	system provide result: "Hybridoma" from database
S-01-2	Ignore capitalization	Open the web and type in search bar	user search "1.8ml"	system provide result: "1.8ML" from database

case_id	test_project	precondition	test_step	expected_outcome
S-02-1	Fuzzy search (1-2 letter typo tolerance)	Open the web and type in search bar	user search "ZZbrideoma"	system provide result: "Hybridoma" from database
S-02-1	Fuzzy search (more space mistake tolerance)	Open the web and type in search bar	user search "1.8 ml"	system provide result: "1.8ML" from database
S-02-3	Fuzzy search (no tolerance to number)	Open the web and type in search bar	user search "2.8ML"	no result provided since there is no matching data
S-02-4	Fuzzy search (no tolerance to units)	Open the web and type in search bar	user search "1.8CC"	no result provided since there is no matching data
S07	search suggestion	Open the web and type in search bar	user type "4G2 Hybridoma (From 2018)" into search bar	we expect to see suggestion: " 4G2 Hybridoma (From 2018) ~3.2X10^6 [1.8ML] Batch 1 2021" and "4G2 Hybridoma (From 2018) ~2.9X10^6 [1.8ML] Batch 2 2021" under search bar

Test Analysis Report

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Test C: User Management System

In this part, the test will focus on testing the reliability of the user management system (UMS in short) to ensure that the management system will not have errors during actual use.

Test specification

We will simulate some operations of administrators and ordinary users to test whether the user management system works as expected. This part of the test will be manual

Test Description

case_id	test_project	precondition	test_step	expected_outcome
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case_id	test_project	precondition	test_step	expected_outcome
UMS-01	Password reset	login UMS as admin	press passwd reset button	pop up window for entering new passwd
UMS-02	Password reset	login UMS as regular user	press passwd reset button	pop up window for entering new passwd
UMS-03-1	Password reset (success)	pop up window for entering new passwd	enter a valid new passwd and press enter	pop up window says success
UMS-03-2	Password reset (fail for not valid new passwd)	pop up window for entering new passwd	enter a invalid new passwd and press enter	pop up window says not valid passwd
UMS-03-3	Password reset (fail for entering same passwd as current)	pop up window for entering new passwd	enter current passwd and press enter	pop up window says passwd is the same
UMS-04-1	setting usr as group "staff"	login UMS as admin	press group button besides user's id and select group staff	usr's group will change to staff after operation
UMS-04-2	setting usr as group "student"	login UMS as admin	press group button besides user's id and select group student	usr's group will change to student after operation
UMS-05	adding new usr	login UMS as admin	press add new usr button and enter usr's id	pop up window says new usr added, and new usr will appear in usr list
UMS-06	remove usr	login UMS as admin	press remove usr button besides usr's id	pop up window says usr removed, and usr will disappear from usr list

Test Analysis Report

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Test D: Database

The test around database will be to test the reliability and ease of use of the database for users

Test specification

In this part, the test will revolve around the import of new data in the database and the addition, deletion and modification of existing data.

Test Description

case_id	test_project	precondition	test_step	expected_outcome
D-01	adding new data file into system	no precondition	create a new excel file in system	the data in new file can be checked in system immediately
D-02-1	add new data line in current system (success)	login to a privileged account	press add button on webpage	pop up a window for entering details of new data
D-02-2	add new data line in current system (fail)	login to a non-privileged account	press add button on webpage	pop up a window says not permitted to make change
D-03-1	remove data from current system (success)	login to a privileged account	press remove button besides the data line	pop up a window for double checking and data will be deleted after double checked
D-03-2	remove data from current system (fail)	login to a non-privileged account	press remove button besides the data line	pop up a window says not permitted to make change
D-04-1	edit data line in current system (success)	login to a privileged account	press edit button besides the data line	pop up a window for editing details of data

case_id	test_project	precondition	test_step	expected_outcome
D-04-2	edit data line in current system (fail)	login to a non-privileged account	press edit buttom besides the data line	pop up a window says not permitted to make change

Test Analysis Report

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Test E: Log

The log has always been one of the functions that customers care about most, so the log will record the behavior of all users as detailed as possible.

Test specification

We will manually simulate most of the user's actions, and then check that the log records the actions correctly

Test Description

case_id	test_project	precondition	test_step	expected_outcome
L-01	Log example for user successful login	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example)	login as 23001234 with correct passwd	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, login, "login success"
L-02	Log example for user failed login due to wrong passwd	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example)	login as 23001234 with wrong passwd	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, login, "login fail, wrong passwd"
L-03	Log example for user failed login	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example)	logged as helloworld	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, helloworld, login, "login fail, account not exist"

case_id	test_project	precondition	test_step	expected_outcome
L-04	Log example for user logout due to account not exist	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) logged in as 23001234	logout	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, logout, "logout success"
L-05	log example for user searching	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) logged in as 23001234	search	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, search, "The SQL Query"
L-06	Log example for user editing	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) logged in as 23001234	edit data	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, edit, "The SQL Query"
L-07	Log example for user adding line	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) logged in as 23001234	adding data	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, add, "The SQL Query "
L-08	Log example for remove data from database	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) logged in as 23001234	remove data	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, remove, "The SQL Query"
L-09	Log example for admin add new accounts	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) login as 23001111 (admin)	adding new user 23001234	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001111(admin), userchange, "user 23001234 has been created"

case_id	test_project	precondition	test_step	expected_outcome
L-10	Log example for admin delet account	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) login as 23001111 (admin)	deleting usr 23001234	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001111, usrchange, "user 23001234 has been deleted"
L-11	Log example for reset password	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) logged as 23001234	reset passwd	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, usrchange, "user 23001234 password has been reseted"

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Test F: Overall Testing

In this step, the test will simulate a normal user to use the system

Test specification

There will be no new operations in this part, but the operations in the previous steps will be combined to simulate the user's daily operations

Test Description

case_id	test_project	precondition	test_step	expected_outcome
OT-01	simulate usr login and messing around with website	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example)	L-01, W- 02, W-06, W-04	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, login, "login success" and no error pop up

case_id	test_project	precondition	test_step	expected_outcome
OT-02	user search and edit target data	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) logged in as 23001234	S-03, D-04-1, L-06	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, edit, "The SQL Query" and data does changed
OT-03	user reset its passwd and then signout	working on device with ip_address 192.168.4.128(as example) at time [22:52 10/08/2022] (as example) logged in as 23001234	W-03, UMS-03-1, L-11, L-04	In log, new line added: "[22:52 10/08/2022], 192.168.4.128, 23001234, usrchange, "user 23001234 password has been reseted", "[22:52 10/08/2022], 192.168.4.128, 23001234, logout, "logout success"

Test Analysis Report

This part of the test report will contain test ids for successful tests, and test ids for failed tests. And record the test results of failed tests for developers to debug.