**Test Record**

**Team Collaboration System for Mobility Water Monitoring**

**By**

**Mr. Peerapong Chompootepa 542115044**

**Mr. Worrasete Tansurat 542115056**

**Department of Software Engineering**

**College of Arts, Media and Technology**

**Chiang Mai University**

**Project Advisor**

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**Ms.Siraprapa Wattanakul**

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**\*SW = Ms.Siraprapa Wattanakul**

**\* PC = Mr.Peerapong Chompootepa**

**\* WT = Mr.Worrasete Tansurat**

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# Chapter 6-1 | Introduction

## 6.1 Purpose

The purpose of that test record for Team Collaboration System for Mobility Water Monitoring is for recording the actual result and pass/fail criteria of each test case that have design in the test plan and executed. It uses to check expect output and actual output.

This document will include Unit Testing Record which contains Test date, Person who responsibility of Testing Record and Testing Record Table.

Test Record is a document, which recording the actual result of each test case that have designed in the test plan.

## 6.2 Acronyms and Definitions

**Acronyms**

URS = User Requirement Specification

SRS = System Requirement Specification

UI = User Interface  
 UTC = Unit Test Case  
 STC = System Test Case

WT=Worrasete Tunsurat

PC=Peerapong Chompootepa

**Definitions**

Feature Transformation of input parameters to output parameters based on a specified algorithm. It describes the functionality of a produce in the language of the product. Used for requirements analysis, design, coding, testing or maintenance. [IEEE90]

Design The period of time in the software life cycle during which the designs for architecture, software component, interfaces and data are created, documented, and verified to satisfy requirements. [IEEE90]

IEEE Institute for Electrical and Electronics Engineers. Biggest global interest group for engineers of different branches and for computer scientists. [IEEE90]

Requirement (1) A condition or capability needed by a user to solve a problem or achieve an objective. (2) A condition or capability that must be met or processed by system or system component to satisfy a contract, standard, specification, or other formally imposed document. (3) A documented representation of a condition or capability as in definition (1) or (2). [IEEE90]

Specification Precise description of an activity or work product which serves as basis or input for further activities or work product. A specification can comprise requirements to a product and how they will be solved. Different parts of a specification (e.g. what is to be done, how it will be done) must not be mixed. [IEEE90]

White box testing Testing process that focus on internal structure. The tester should know the code inside the program and test it through the code and determines the appropriate outputs.

Black box testing Process, device or system that focus on input, output and transfer characteristics without knowledge about it internal structure.

Unit Testing A level of the software testing process where individual units/components of a software/system are tested. The purpose is to validate that each unit of the performs as designed.

System testing A level of the software testing process where a complete, integrated system/software is tested. The purpose of this test is to evaluate the system's compliance with the specified requirements.

# Chapter 6-2 | Test Plan and Test Procedure

## 2.1 Test Objective

The objectives of testing Emergency Information on Mobile project are:

1. All bugs or defects are detected.
2. Those bugs or defects are fixed.
3. Functions and user interface covered the requirements.
4. All functions and features that are define in progress 1, must be follow in project plan.

## 2.2 Scope of testing

Team collaboration system for mobility water monitoring will test by white-box and black-box testing techniques that are unit testing and system testing and record the test results in the test record.

## 2.3 Test Duration

|  |  |
| --- | --- |
| **Progress** | **Date and Duration** |
| Progress Report I | **Perform Date:** 5th February 2015 – 15th February 2015 (Unit and System Test) **Duration:** 10 days |
| Progress Report II | **Perform Date:** 15th April 2015 –  1st May 2015 (Unit and System Test) **Duration:** 10 days |
| Progress Report III | **Perform Date:** 29th April 2015 –  15th May 2015 (Unit and System Test) **Duration:** 10 days |

## 2.4 Test Responsibility

|  |  |
| --- | --- |
| **Item** | **Responsibility** |
| Unit test of web application | WT, PC |
| Unit test of mobile application | WT, PC |
| Record unit test of web application | WT, PC |
| Record unit test of mobile application | WT, PC |
| System test of web application | WT, PC |
| System test of mobile application | WT, PC |
| Record system test of web application | WT, PC |
| Record system test of android application | WT, PC |

## 

## 2.5 Test Strategy

Team collaboration system for mobility water monitoring test strategy will be follow by:

1. Design test case for each feature.
2. Prepare test data for each feature.
3. Determine expected results.
4. Perform testing on individual features.
5. Result of testing will be record.
6. Record the actual testing result.

## 2.6 Result of Testing

In the test record the test result will separate into two parts, which are:

1. Actual output: The actual outputs that are performed by each test case.
2. Pass/Fail criteria:
   1. Pass: The result of actual is same like expected result.
   2. Fail: the result of actual result is not same like expected result.

## 2.7 Test Environment

### 2.7.1 Hardware

* **Computers**
  + HP Probook 4530s
    - Processor: Intel® Core™ i5-2430M CPU @ 2.40GHz 2.40GHz
    - RAM: 8.00 GB
    - Operating System: Windows 7 Ultimate
  + Asus K550J
    - Processor: Intel® Core™ i7-2410M CPU @ 3.5GHz 2.30GHz
    - RAM: 4.00 GB
    - Operating System: Windows 7 Ultimate
* **Mobile phones:** Android Operating System
  + Samsung Galaxy Ace Plus S7500
    - CPU: Quad-core 1.0 GHz Cortex-A7
    - RAM: 1.0 GB
    - Operating System: Android 2.3 Gingerbread

### 2.7.2 Software

* Eclipse
* Google chrome
* Android ADT

# Chapter 6-3| Unit Testing Record

## 3.1 Web Service Part

**3.1.1 Class name for testing**: Authen

**Unit Test Case 1 (UTC-01):** test\_login(): void

**Test date:** 07/03/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- | --- |
| **Username** | **password** | **Boolean** | **Boolean** |
| **1** | Test login in true case with both correct username and password | win@gmail.com | hahaha | True | True | Pass |
| **2** | Test login in false case with correct username and incorrect password | win@gmail.com | 12345 | False | False | Pass |
| **3** | Test login in false case with incorrect username and correct password | earth@gmail.com | hahaha | False | False | Pass |
| **4** | Test login in false case with both incorrect username and password | earth@gmail.com | 12345 | False | False | Pass |

**3.1.2 Class name for testing**: Team

**Unit Test Case 2 (UTC-02):** test\_getTeam(): void

**Test date:** 11/03/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **team\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of teams in array list | Null | 3 | 3 | Pass |

**Unit Test Case 3 (UTC-03):** test\_getTeamById(): void

**Test date:** 11/03/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | **Expected Result** | | |
| --- | --- | --- | --- | --- | --- |
| **team\_id** | **Array List** | | |
| **team\_id** | **team\_name** | **team\_leader(user\_id)** |
| 1 | Test gets the detail of team in array list by team id | 4 | 4 | Team 021 | 3 |

| **Case** | **Actual Result** | | | **Pass/Fail** |
| --- | --- | --- | --- | --- |
| **Array List** | | |
| **team\_id** | **team\_name** | **team\_leader(user\_id)** |
| 1 | 4 | Team 021 | 3 | Pass |

**Unit Test Case 4 (UTC-04):** test\_newTeam(): **void**

**Test date:** 11/03/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| **Size of Array List** | **Size of Array List** |
| 1 | Test adds new team to the array list | $data , $add\_data | 2 | 2 | Pass |

**Unit Test Case 5 (UTC-05):** test\_deleteTeam(): void

**Test date:** 11/03/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **team\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test deletes a team in array list by team id. Array list contains three teams | 4 | 2 | 2 | Pass |

**3.1.4 Class name for testing**: Project

**Unit Test Case 6 (UTC-06):** test\_getProject(): void

**Test date:** 12/03/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| **project\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of projects in array list | Null | 4 | 4 | Pass |

**Unit Test Case 7 (UTC-07):** test\_getProjectById(): void

**Test date:** 12/03/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | **Expected Result** | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | |
| **project\_id** | **project\_id** | **team\_id** | **project\_name** | **project\_desc** | **project\_created\_date** |
| 1 | Test gets the detail of project in array list by project id | 1 | 1 | 1 | SIA1 | Water quality site 1 | 2014-07-22 21:18:10 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Case** | **Actual Result** | | | | | **Pass/Fail** |
| **Array List** | | | | |
| **project\_id** | **team\_id** | **project\_name** | **project\_desc** | **project\_created\_date** |
| 1 | 1 | 1 | SIA1 | Water quality site 1 | 2014-07-22 21:18:10 | Pass |

**Unit Test Case 8 (UTC-08):** test\_getProjectAssign(): void

**Test date:** 12/03/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | | | | |
| **Array List** | | | | |
| **user\_id** | **location\_id** | **team\_id** | **location\_name** | **user\_id** | **status\_id** |
| 1 | Test gets the detail of assigned project in array list by user id | 2 | 1 | 1 | place1 | 2 | 7 |

| **Case** | **Actual Result** | | | | | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | |
| **location\_id** | **team\_id** | **location\_name** | **user\_id** | **status\_id** |
| 1 | 1 | 1 | place1 | 2 | 7 | Pass |

**Unit Test Case 9 (UTC-09):** test\_newProject(): void

**Test date:** 12/03/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **Size of Array List** | **Size of Array List** |
| 1 | Test adds new project to the array list | $data , $add\_data | 2 | 2 | Pass |

**Unit Test Case 10 (UTC-10):** test\_deleteProject(): void

**Test date:** 12/03/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **project\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test deletes a project in array list by project id. Array list contains two project | 2 | 1 | 1 | Pass |

**Unit Test Case 11 (UTC-11):** test\_getWater(): void

**Test date:** 05/05/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **project\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of water parameters in array list | Null | 2 | 2 | Pass |

**Unit Test Case 12 (UTC-12):** test\_getWaterById(): void

**Test date:** 05/05/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | | | | | | |
| **Array List** | | | | | | |
| **water\_id** | **water\_id** | **project\_id** | **location\_id** | **user\_id** | **water\_rgb** | **water\_parameter** | **water\_status** |
| 1 | Test gets the detail of water parameter in array list by water id | 1 | 1 | 1 | 1 | 2 | 6b3421 | PH | 8 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Case** | **Actual Result** | | | | | | | **Pass/Fail** |
| **Array List** | | | | | | |
| **water\_id** | **project\_id** | **location\_id** | **user\_id** | **water\_rgb** | **water\_parameter** | **water\_status** |
| 1 | 1 | 1 | 1 | 2 | 6b3421 | PH | 8 | Pass |

**Unit Test Case 13 (UTC-13):** test\_getWaterResult(): void

**Test date:** 08/05/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| **result\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of water results in array list | Null | 3 | 3 | Pass |

**Unit Test Case 14 (UTC-14):** test\_getWaterResultById(): void

**Test date:** 08/05/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | **Expected Result** | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | |
| **result\_id** | **result\_id** | **water\_id** | **result\_parameter** | **water\_rgb** |
| 1 | Test gets the detail of test result in array list by result id | 1 | 1 | 1 | 1 | FFFFFF |

| **Case** | **Actual Result** | | | | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| **Array List** | | | |
| **result\_id** | **water\_id** | **result\_parameter** | **water\_rgb** |
| 1 | 1 | 1 | 1 | FFFFFF | Pass |

## 

## 3.2 Mobile Part

**3.2.1 Class name for testing:** MainActivity

**Unit Test Case 15 (UTC-15):** testLogin(): void

**Test date:** 22/04/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | | **Expected Result** |
| --- | --- | --- | --- | --- |
| **Username** | **Password** | **Size of Array List** |
| 1 | Test gets size of users in array list | Null | Null | 3 |
| 2 | Test gets size of users in array list with correct username and password | steve@gmail.com | 1234 | 1 |
| 3 | Test gets size of users in array list with correct username and incorrect password | steve@gmail.com | 123456 | 0 |
| 4 | Test gets size of users in array list with incorrect username and correct password | stevesss@gmail.com | 1234 | 0 |
| 5 | Test gets size of users in array list with incorrect username and incorrect password | stevesss@gmail.com | 123456 | 0 |

| **Actual Result** | **Pass/Fail** |
| --- | --- |
| **Size of Array List** |
| 3 | Pass |
| 1 | Pass |
| 0 | Pass |
| 0 | Pass |
| 0 | Pass |

**Unit Test Case 16 (UTC-16):** getUser(): void

**Test date:** 22/04/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | |
| --- | --- | --- | --- |
| **Username** | **Password** |
| 1 | Test gets the detail of user in array list by a username and password | steve@gmail.com | 1234 |

| **Case** | **Expected Result** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | | | |
| **user\_id** | **user\_name** | **user\_email** | **user\_pass** | **user\_tell** | **user\_status** | **is\_admin** |
| 1 | 2 | Steve Job | steve@gmail.com | 1234 | Null | 1 | 0 |

| **Case** | **Actual Result** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | | | |
| **user\_id** | **user\_name** | **user\_email** | **user\_pass** | **user\_tell** | **user\_status** | **is\_admin** |
| 1 | 2 | Steve Job | steve@gmail.com | 1234 | Null | 1 | 0 |

**3.2.2 Class name for testing:** FragmentMap

**Unit Test Case 17 (UTC-17):** getProject(): void

**Test date:** 22/04/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| **project\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of projects in array list | Null | 4 | 4 | Pass |

**Unit Test Case 18 (UTC-18):** getProjectById(): void

**Test date:** 22/04/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** |
| --- | --- | --- |
| **project\_id** |
| 1 | Test gets the detail of project in array list by project id | 1 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Case** | **Expected Result** | | | | | | | | | |
| **Array List** | | | | | | | | | |
| **project\_id** | **project\_name** | **project\_desc** | **project\_created\_date** | **team\_id** | **team\_name** | **team\_leader (user\_id)** | **leader\_name** | **user\_id** | **user\_name** |
| 1 | 1 | SIA1 | Water quality site 1 | 2014-07-22 21:18:10 | 1 | Apple team | 3 | Tim Cook | 2 | Steve Jobb |

**Unit Test Case 19 (UTC-19):** getProjectAssign(): void

**Test date:** 22/04/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **user\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of assigned projects in array list by user id | 2 | 2 | 2 | Pass |

**3.2.3 Class name for testing:** FragmentMap

**Unit Test Case 20 (UTC-20):** getProjectLocation(): void

**Test date:** 01/05/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **location\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of locations in array list | Null | 3 | 3 | Pass |

**Unit Test Case 21 (UTC-21):** getProjectLocationById(): void

**Test date:** 01/05/2015 **Tested by:** Worrasete Tansurat

|  |  |  |
| --- | --- | --- |
| **Case** | **Description** | **Input** |
| **location\_id** |
| 1 | Test gets the detail of location in array list by location id | 1 |

| **Case** | **Expected Result** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | | | | |
| **project\_id** | **project\_name** | **team\_id** | **team\_name** | **team\_leader** | **leader\_name** | **location\_id** | **location\_name** |
| 1 | 1 | SIA 1 | 1 | Apple team | 3 | Tim Cook | 1 | place1 |

| **Case** | **Expected Result** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | | | |
| **user\_id** | **user\_name** | **status\_id** | **loc\_status\_desc** | **location\_lat** | **location\_long** | **date\_time\_statuschg** |
| 1 | 2 | Steve Job | 7 | Recollect | 18.7894 | 99.0037 | 2015-05-22 15:55:32 |

| **Case** | **Actual Result** | | | | | | | | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | | | | |
| **project\_id** | **project\_name** | **team\_id** | **team\_name** | **team\_leader** | **leader\_name** | **location\_id** | **location\_name** |
| 1 | 1 | SIA 1 | 1 | Apple team | 3 | Tim Cook | 1 | place1 | Pass |

| **Case** | **Actual Result** | | | | | | | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | | | |
| **user\_id** | **user\_name** | **status\_id** | **loc\_status\_desc** | **location\_lat** | **location\_long** | **date\_time\_statuschg** |
| 1 | 2 | Steve Job | 7 | Recollect | 18.7894 | 99.0037 | 2015-05-22 15:55:32 | Pass |

**Unit Test Case 22 (UTC-22):** getProjectLocationAssign(): void

**Test date:** 01/05/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| **user\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of assigned locations in array list by user id | 2 | 2 | 2 | Pass |

**3.2.4 Class name for testing:** FragmentPicture

**Unit Test Case 23 (UTC-23):** test\_getWater(): void

**Test date:** 05/05/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- |
| **water\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of water parameters in array list | Null | 2 | 2 | Pass |

**Unit Test Case 24 (UTC-24):** getWaterById(): void

**Test date:** 05/05/2015 **Tested by:** Worrasete Tansurat

| **Case** | **Description** | **Input** |
| --- | --- | --- |
| **water\_id** |
| 1 | Test gets the detail of water parameter in array list by water id | 1 |

| **Case** | **Expected Result** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | | | |
| **location\_id** | **location\_name** | **project\_id** | **user\_id** | **user\_name** | **water\_image** | **water\_rgb** |
| 1 | 1 | place1 | 1 | 2 | Steve Jobb | IMG\_20150527\_201418.jpg | 6b3421 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Case** | **Expected Result** | | | | | |
| **Array List** | | | | | |
| **water\_parameter** | **water\_id** | **water\_value** | **water\_date** | **water\_status** | **loc\_status\_desc** |
| 1 | PH | 1 | 0.0 | 2015-06-03 21:23:24 | 8 | Finish |

| **Case** | **Actual Result** | | | | | | | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | | | |
| **location\_id** | **location\_name** | **project\_id** | **user\_id** | **user\_name** | **water\_image** | **water\_rgb** |
| 1 | 1 | place1 | 1 | 2 | Steve Jobb | IMG\_20150527\_201418.jpg | 6b3421 | Pass |

| **Case** | **Actual Result** | | | | | | **Pass/Fail** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Array List** | | | | | |
| **water\_parameter** | **water\_id** | **water\_value** | **water\_date** | **water\_status** | **loc\_status\_desc** |
| 1 | PH | 1 | 0.0 | 2015-06-03 21:23:24 | 8 | Finish | Pass |

**Unit Test Case 25 (UTC-25):** addWater() : void

**Test date:** 05/05/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | | | | | | | | | | | **Expected Result** |
| **location**  **\_id** | **water**  **\_id** | **project**  **\_id** | **user**  **\_id** | **water\_**  **image** | **water**  **\_rgb** | **water\_**  **parameter** | **water\_**  **value** | **water**  **\_date** | **water\_**  **status** | **loc\_status**  **\_desc** | **Size of Array List** |
| 1 | Test adds new water parameter into array list | 1 | 3 | 1 | 2 | Null | FFFFFF | KM | 0 | Null | 1 | Initial | 3 |

|  |  |
| --- | --- |
| **Actual Result** | **Pass/Fail** |
| **Size of Array List** |
| 3 | Pass |

**Unit Test Case 26 (UTC-26):** deleteWater() : void

**Test date:** 05/05/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **water\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test removes water parameter from array list | 1 | 1 | 1 | Pass |

**3.2.5 Class name for testing:** FragmentPicture

**Unit Test Case 27 (UTC-27):** getWaterResult() : void

**Test date:** 07/05/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **result\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of water results in array list | Null | 3 | 3 | Pass |

**Unit Test Case 28 (UTC-28):** getWaterResultById(): void

**Test date:** 07/05/2015 **Tested by:** Worrasete Tansurat

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | **Description** | **Input** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| **result\_id** | **Size of Array List** | **Size of Array List** |
| 1 | Test gets size of water result in array list by result id | 1 | 1 | 1 | Pass |

# Chapter 6-4| System Testing Record

**Feature 1: Authentication and member management system**

**System Test Case 01 (STC-01):** Administrator, Team leader, and Collector can log in to the system on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test Case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass**  **/Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User inputs valid e-mail and password. | The system allows a user to access the application. | The system allows a user to access the application. | Pass | - |
| 2 | User inputs invalid E-mail and valid password, then clicks “Login” button. | The system shows error message” Invalid e-mail or password” and returns to the login page. | The system shows error message” Invalid e-mail or password” and returns to the login page. | Pass | - |
| 3 | User inputs valid e-mail and invalid password, then clicks “Login” button. | The system shows error message “Invalid e-mail or password” and returns to the login page. | The system shows error message “Invalid e-mail or password” and returns to the login page. | Pass | - |
| 4 | User inputs invalid e-mail and password, then clicks “Login” button. | The system shows error message “Invalid e-mail or password” and returns to the login page. | The system shows error message “Invalid e-mail or password” and returns to the login page. | Pass | - |
| 5 | User inputs empty e-mail and valid password, then clicks “Login” button. | The system shows error message “Invalid e-mail or password” and returns to the login page. | The system shows error message “Invalid e-mail or password” and returns to the login page. | Pass | - |
| 6 | User inputs valid e-mail and empty password, then clicks “Login” button. | The system shows error message “Invalid e-mail or password” and returns to the login page. | The system shows error message “Invalid e-mail or password” and returns to the login page. | Pass | - |

**System Test Case 02 (STC-02):** Administrator, Team leader, and Collector can logout from the system on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass**  **/Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User wants to logout from the system. | The system shows the login page and allow user to input E-mail and password. | The system shows the login page and allow user to input E-mail and password. | Pass | - |

**System Test Case 03 (STC-03):** Team leader and Collector can log in to the system on a mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test Case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User inputs e-mail and password, then clicks “Login” button. | The system shows  Email: “steve@gmail.com”  Password: “⚫⚫⚫⚫” on the screen | The system shows  Email: “steve@gmail.com”  Password: “⚫⚫⚫⚫” on the screen | Pass | - |
| 2 | User inputs valid e-mail and password, then clicks “Login” button. | The system allows user to access the application. | The system allows user to access the application. | Pass | - |
| 3 | User inputs invalid e-mail and valid password, then clicks “Login” button. | The system shows error message “Invalid e-mail or password” and returns to the login page. | The system shows error message “Invalid e-mail or password” and returns to the login page. | Pass | - |
| 4 | User inputs valid e-mail and invalid password, then clicks “Login” button. | The system shows error message “Invalid e-mail or password” and returns to the login page. | The system shows error message “Invalid e-mail or password” and returns to the login page. | Pass | - |
| 5 | User inputs invalid e-mail and password, then clicks “Login” button. | The system shows error message” Invalid e-mail or password” and returns to the login page. | The system shows error message” Invalid e-mail or password” and returns to the login page. | Pass | - |
| 6 | User inputs empty e-mail and valid password, then clicks “Login” button. | The system shows error message “Invalid e-mail or password” and returns to the login page. | The system shows error message “Invalid e-mail or password” and returns to the login page. | Pass | - |
| 7 | User inputs valid e-mail and empty password, then clicks “Login” button. | The system shows error message “Invalid e-mail or password” and returns to the login page. | The system shows error message “Invalid e-mail or password” and returns to the login page. | Pass | - |
| 8 | User inputs empty e-mail and password, then clicks “Login” button. | The system shows error message “Invalid e-mail or password” and returns to the login page. | The system shows error message “Invalid e-mail or password” and returns to the login page. | Pass | - |

**System Test Case 04 (STC-04):** Team leader and Collector can logout from the system on a mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User wants to log out form the system. | The system shows the confirmation popup “Do you want to logout?” and also shows “Cancel” button and “Yes” button. | The system shows the confirmation popup “Do you want to logout?” and also shows “Cancel” button and “Yes” button. | Pass | - |
| 2 | After user clicks “Log out” button, user confirms to log out from the system by click “Yes” button. | The system shows the login page and allow user to input E-mail and password. | The system shows the login page and allow user to input E-mail and password. | Pass | - |
| 3 | After user clicks “Log out” button, user want to cancel to log out from the system by click “Cancel” button. | The system hides the confirmation popup. | The system hides the confirmation popup. | Pass | - |

**System Test Case 05 (STC-05):** New collector can send register request to the administrator on a mobile application requesting to be a member.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User completes all the provided input text boxes like the test data, then clicks “Register” button. | The system shows the message “Registered Successfully”. | The system shows the message “Registered Successfully”. | Pass | - |
| 2 | User inputs wrong e-mail format, then clicks “Register” button. | The system shows the error message “E-mail must be an email format. | The system shows the error message “E-mail must be an email format. | Pass | - |
| 3 | User inputs wrong format of telephone number, then clicks “Register” button. | The system shows the error message shows “Telephone number must be a numeric only”. | The system shows the error message shows “Telephone number must be a numeric only”. | Pass | - |
| 4 | User inputs blank data on name field, then clicks “Register” button. | The system shows the error message shows “Please fill in all required fields”. | The system shows the error message shows “Please fill in all required fields”. | Pass | - |
| 5 | User inputs blank data on password field, then clicks “Register” button. | The system shows the error message shows “Please fill in all required fields”. | The system shows the error message shows “Please fill in all required fields”. | Pass | - |
| 6 | User inputs blank data on e-mail field, then clicks “Register” button. | The system shows the error message shows “E-mail must be an email format”. | The system shows the error message shows “E-mail must be an email format”. | Pass | - |
| 7 | User inputs blank data on telephone field, then clicks “Register” button. | The system shows the error message shows “Telephone number must be a numeric only”. | The system shows the error message shows “Telephone number must be a numeric only”. | Pass | - |
| 8 | User want to cancel to register. | The system hides the popup and shows login page. | The system hides the popup and shows login page. | Pass | - |

**System Test Case 06 (STC-06):** Administrator can view list of new collector requests sorted by date on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User can view a list of the new collector request. | The system displays list of new account request contains such as a name, email, and telephone number with the “Approve” and “Decline” buttons behind each account. | The system displays list of new account request contains such as a name, email, and telephone number with the “Approve” and “Decline” buttons behind each account. | Pass | - |

**System Test Case 07 (STC-07):** Administrator can search a new collector request by using new collector name on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User inputs keyword matching with the name of new collector request in database. | The system shows list of new collector request that includes the word “Worrasete” on the screen. | The system shows list of new collector request that includes the word “Worrasete” on the screen. | Pass | - |
| 2 | User inputs some keyword matching with the name of new collector request in database. | The system shows list of new collector request that includes the word "Worr" on the screen. | The system shows list of new collector request that includes the word "Worr" on the screen. | Pass | - |
| 3 | User inputs keyword not matching with the name of new collector request in database. | The system shows message “No matching records found”. | The system shows message “No matching records found”. | Pass | - |

**System Test Case 08 (STC-08):** Administrator can select to approve or decline new member on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User wants to approve the registered account. | The system shows popup asking for confirmation “Do you want to approve?” with “Cancel” and “OK” buttons. | The system shows popup asking for confirmation “Do you want to approve?” with “Cancel” and “OK” buttons. | Pass | - |
| 2 | After user clicks “Approve” button, user confirms to approve the registered account. | The system removes the name of selected as a member from user interface and the system updates user status in the database. | The system removes the name of selected as a member from user interface and the system updates user status in the database. | Pass | - |
| 3 | After user clicks “Approve” button, user cancels to approve the registered account | The system hides the popup and redirects to new collector list page. | The system hides the popup and redirects to new collector list page. | Pass | - |
| 4 | User wants decline the registered account out of the system. | The system shows popup asking for confirmation “Do you want to decline?” with “Cancel” and “OK” buttons. | The system shows popup asking for confirmation “Do you want to decline?” with “Cancel” and “OK” buttons. | Pass | - |
| 5 | After user clicks “Decline” button, user confirms to decline the registered account. | The system removes the name of selected as a member from user interface and deletes an account out of the database. | The system removes the name of selected as a member from user interface and deletes an account out of the database. | Pass | - |
| 6 | After user clicks “Decline” button, user cancels to decline the registered account. | The system hides the popup and redirects to new collector list page. | The system hides the popup and redirects to new collector list page. | Pass | - |

**System Test Case 09 (STC-09):** Administrator can create a team which contains a team name, team leader and team members on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User completes all step of input data, then clicks “Save” button. | The new team will be created in the database. | The new team will be created in the database. | Pass | - |
| 2 | User completes input data and inputs blank the text box of team name, then clicks “Save” button. | The system shows error message “Please input team name more than 6 characters”. | The system shows error message “Please input team name more than 6 characters”. | Pass | - |
| 3 | User completes to input data but does not choose any member, then clicks “Save” button. | The system shows error message “Please select members”. | The system shows error message “Please select members”. | Pass | - |
| 4 | User completes input data but does not choose a team leader, then clicks “Save” button. | The system shows error message “Please select the team leader”. | The system shows error message “Please select the team leader”. | Pass | - |
| 5 | User inputs a team name less than 6 characters, then clicks “Save” button. | The system shows error message “Please input team name more than 6 characters”. | The system shows error message “Please input team name more than 6 characters”. | Pass | - |
| 6 | User inputs the duplicate name of team existing in the system, then clicks “Save” button. | The system shows error message “Team name is already”. | The system shows error message “Team name is already”. | Pass | - |
| 7 | User cancels to create a team. | The system redirects to the team list page. | The system redirects to the team list page. | Pass | - |

**System Test Case 10 (STC-10):** Administrator and Team leader can view list of team sorted by team name on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | Administrator can view a list of all team. | The system displays list of all teams with the “View”, “Edit”, and “Remove” buttons behind each row. | The system displays list of all teams with the “View”, “Edit”, and “Remove” buttons behind each row. | Pass | - |
| 2 | Team leader can view list of a team. | The system displays list of a teams that he is a team leader with the “View” and “Edit”, buttons behind each row. | The system displays list of a teams that he is a team leader with the “View” and “Edit”, buttons behind each row. | Pass | - |

**System Test Case 11 (STC-11):** Administrator and Team leader can search the team by using team name on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User inputs keyword matching with the name of team in database. | The system shows list of team that includes the word “Apple01” on the screen. | The system shows list of team that includes the word “Apple01” on the screen. | Pass | - |
| 2 | User inputs some keyword matching with the name of team in database. | The system shows list of team that includes the word "ple" on the screen. | The system shows list of team that includes the word "ple" on the screen. | Pass | - |
| 3 | User inputs keyword not matching with the name of team in database. | The system shows message “No matching records found”. | The system shows message “No matching records found”. | Pass | - |

**System Test Case 12 (STC-12):** Administrator and Team leader can modify the selected team information on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User completes all step of input data, then clicks “Save” button. | The new team will be created in the database. | The new team will be created in the database. | Pass | - |
| 2 | User completes input data but blank the text box of name, then clicks “Save” button. | The system shows error message “Please input team name more than 6 characters”. | The system shows error message “Please input team name more than 6 characters”. | Pass | - |
| 3 | User completes input data but does not choose any member and click “Save” button. | The system shows error message “Please select members”. | The system shows error message “Please select members”. | Pass | - |
| 4 | User completes input data but does not choose a team leader. | The system shows error message “Please select the team leader”. | The system shows error message “Please select the team leader”. | Pass | - |
| 5 | User inputs a team name less than 6 characters. | The system shows error message “Please input team name more than 6 characters”. | The system shows error message “Please input team name more than 6 characters”. | Pass | - |
| 6 | User cancels to modify a team | The system redirects to the team list page. | The system redirects to the team list page. | Pass | - |

**System Test Case 13 (STC-13):** Administrator and Team leader can view the selected team information includes a team name, team leader name, and list of members on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User can view the selected team information. | The system shows window of a team details includes a team name, team leader name, and list of members. | The system shows window of a team details includes a team name, team leader name, and list of members. | Pass | - |

**System Test Case 14 (STC-14):** Administrator can remove a team out of the system on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User wants to remove a team by click ““Remove” button. | The system shows the confirmation popup “Do you want to delete?” and also shows “Cancel” button and “OK” button. | The system shows the confirmation popup “Do you want to delete?” and also shows “Cancel” button and “OK” button. | Pass |  |
| 2 | After user clicks “Remove” button, user confirms to remove the team by click “OK” button. | The system removes the team out of the user interface and deletes the team in the database. | The system removes the team out of the user interface and deletes the team in the database. | Pass |  |
| 3 | After user clicks “Remove” button, user wants to cancel to remove the team by click “Cancel” button. | The system hides the confirmation popup and redirects to team list page. | The system hides the confirmation popup and redirects to team list page. | Pass |  |

**System Test Case 15 (STC-15):** Administrator, Team leader, and Collector can edit profile information which includes a name, password and telephone number on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User completes all steps of input, then clicks “Save” button. | The system updates the new profile of user in the database. | The system updates the new profile of user in the database. | Pass | - |
| 2 | User inputs blank data on name field, then clicks “save” button. | The system shows the error message will show “Please input name” | The system shows the error message will show “Please input name” | Pass | - |
| 3 | User inputs blank data on password field, then clicks “Save” button. | The system shows the error messages “Password and confirm password not match”. | The system shows the error messages “Password and confirm password not match”. | Pass | - |
| 4 | User inputs blank data on confirm password field, then clicks “Save” button. | The system shows the error messages “Password and confirm password not match”. | The system shows the error messages “Password and confirm password not match”. | Pass | - |
| 5 | User inputs blank data on telephone field, then clicks “Save” button. | The system updates the new profile of user in the database. | The system updates the new profile of user in the database. | Pass | - |
| 6 | User inputs the password does not match with the confirm password | The system updates the new profile of user in the database. | The system updates the new profile of user in the database. | Pass | - |
| 7 | User cancels to edit profile. | The system redirects to project list page | The system redirects to project list page | Pass | - |

**Feature 2: Project management**

**System Test Case 16 (STC-16):** Administrator can create the project includes a project name, project description, and team on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User wants to create the project by click “New Project” button. | The system provides a text box to input the project name, project description and a combo box to select the team to do the project. | The system provides a text box to input the project name, project description and a combo box to select the team to do the project. | Pass | - |
| 2 | User completes the all text boxes and selects the team, then clicks “Save” button. | The system creates new project into database and shows list of new project on project list page. | The system creates new project into database and shows list of new project on project list page. | Pass | - |
| 3 | User completes the all text boxes and selects the team but inputs the project name less than 6 characters, then clicks “Save” button. | The system shows error message “Please input project name more than 6 characters” on the screen. | The system shows error message “Please input project name more than 6 characters” on the screen. | Pass | - |
| 4 | User inputs blank the text box of project name, then clicks “Save” button. | The system shows error message “Please input project name” on the screen. | The system shows error message “Please input project name” on the screen. | Pass | - |
| 5 | User inputs blank the text box of description, then clicks “Save” button. | The system creates new project into database and shows list of new project on project list page. | The system creates new project into database and shows list of new project on project list page. | Pass | - |
| 6 | User deselects the team to do the project, then clicks “Save” button. | The system shows error message “Please select the team” on the screen. | The system shows error message “Please select the team” on the screen. | Pass | - |
| 7 | User inputs the duplicate name of project existing in the system, then clicks “Save” button | The system shows error message “Project name is already”. | The system shows error message “Project name is already”. | Pass | - |
| 8 | Use cancels create the project | The system redirects to the project list page. | The system redirects to the project list page. | Pass | - |

**System Test Case 17 (STC-17):** Administrator can remove the project out of the system on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User wants to remove the project. | The system shows the popup message “Do you want to remove the project?” with “OK” and “Cancel” buttons. | The system shows the popup message “Do you want to remove the project?” with “OK” and “Cancel” buttons. | Pass | - |
| 2 | After user clicks “Delete” button, user confirms to remove the project by clicks “OK” button. | The system removes the project out of the system and shows the project remaining on project list page. | The system removes the project out of the system and shows the project remaining on project list page. | Pass | - |
| 3 | After user clicks “Delete” button, user wants to cancel to remove the project by clicks “Cancel” button. | The system hides the popup and redirects to project list page. | The system hides the popup and redirects to project list page. | Pass | - |

**System Test Case 18 (STC-18):** Administrator can view list of all project sorted by created date of the project on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User can view list of all project. | The system displays list of all projects with the “View”, “Edit”, and “Delete” buttons behind each row. | The system displays list of all projects with the “View”, “Edit”, and “Delete” buttons behind each row. | Pass | - |

**System Test Case 19 (STC-19):** Team leader and Collector can view list of the involved projects sorted by created date of the project on a web application and mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | On a web application; team leader wants to view list of project. | The system displays list of involved project list with the “View” and “Edit” buttons behind each row on project list page. | The system displays list of involved project list with the “View” and “Edit” buttons behind each row on project list page. | Pass | - |
| 2 | On a web application; collector wants to view list of project. | The system displays list of involved project list with the “View” button behind each row on project list page. | The system displays list of involved project list with the “View” button behind each row on project list page. | Pass | - |
| 3 | On a mobile application; team leader wants to view list of project. | The system displays list of involved project on project list page. | The system displays list of involved project on project list page. | Pass | - |
| 4 | On a mobile application; collector wants to view list of project. | The system displays list of involved project on project list page. | The system displays list of involved project on project list page. | Pass | - |

**System Test Case 20 (STC-20):** Administrator, Team leader and Collector can search the project by using project name on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User inputs keyword matching with the name of project in database. | The system shows “Apple01” project on the screen. | The system shows “Apple01” project on the screen. | Pass | - |
| 2 | User inputs some keyword matching with the name of project in database. | The system shows list of project that includes the word "Project" on the screen. | The system shows list of project that includes the word "Project" on the screen. | Pass | - |
| 3 | User inputs keyword not matching with the name of project in database. | The system shows message “No matching records found”. | The system shows message “No matching records found”. | Pass | - |

**System Test Case 21 (STC-21):** Administrator can modify the project information includes editing project name, editing project description, and changing a team on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User wants to create the project by click “New Project” button. | The system provides a text box to input the project name, project description and a combo box to select the team to do the project. | The system provides a text box to input the project name, project description and a combo box to select the team to do the project. | Pass | - |
| 2 | User completes the all text boxes and selects the team, then clicks “Save” button. | The system creates new project into database and shoe list of new project on project list page. | The system creates new project into database and shoe list of new project on project list page. | Pass | - |
| 3 | User completes the all text boxes and selects the team but input the project name less than 6 characters, then clicks “Save” button. | The system shows error message “Please input project name more than 6 characters” on the screen. | The system shows error message “Please input project name more than 6 characters” on the screen. | Pass | - |
| 4 | User inputs blank the text box of project name, then clicks “Save” button. | The system shows error message “Please input project name” on the screen. | The system shows error message “Please input project name” on the screen. | Pass | - |
| 5 | User inputs blank the text box of description, then clicks “Save” button. | The system creates new project into database and show list of new project on project list page. | The system creates new project into database and show list of new project on project list page. | Pass | - |
| 6 | User deselects the team to do the project, then clicks “Save” button. | The system shows error message “Please select the team” on the screen. | The system shows error message “Please select the team” on the screen. | Pass | - |
| 7 | User cancels to create the project. | The system redirects to the project list page. | The system redirects to the project list page. | Pass | - |

**System Test Case 22 (STC-22):** Administrator can view detail of selected projects information which consisting of map with assigned pins and location information on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User can view the selected project. | The system shows project which contains map and location information (place name, user, latitude, longitude, status, assigned date, and detail) of the selected project on project information page. | The system shows project which contains map and location information (place name, user, latitude, longitude, status, assigned date, and detail) of the selected project on project information page. | Pass | - |

**System Test Case 23 (STC-23):** Team leader and Collector can view detail of selected projects information which consisting of map with assigned pins and location information of the selected project on a web application and mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | On a web application; user can view the selected project that they are a team leader. | The system retrieves all location information of every collectors and displays project information page that has a map with a pin and a list of the location information consisting of place name, collector name, latitude, longitude, status of collecting(Initial, Pending, Recollect, Finish), and update date. | The system retrieves all location information of every collectors and displays project information page that has a map with a pin and a list of the location information consisting of place name, collector name, latitude, longitude, status of collecting(Initial, Pending, Recollect, Finish), and update date. | Pass | - |
| 2 | On a web application; user can view the selected project that they are a collector. | The system retrieves only location information that was assigned by team leader of selected project and displays project information page that has a map with a pin and a list of the location information consisting of place name, collector name, latitude, longitude, status of collecting(Initial, Pending, Recollect, Finish), and update date. | The system retrieves only location information that was assigned by team leader of selected project and displays project information page that has a map with a pin and a list of the location information consisting of place name, collector name, latitude, longitude, status of collecting(Initial, Pending, Recollect, Finish), and update date. | Pass | - |
| 3 | On a web application; user can view the selected project that they are a team leader. | The system retrieves all location information of every collectors and displays project information page that has a map with a pin and a list of the location information consisting of place name, collector name, latitude, longitude, status of collecting(Initial, Pending, Recollect, Finish), and update date. | The system retrieves all location information of every collectors and displays project information page that has a map with a pin and a list of the location information consisting of place name, collector name, latitude, longitude, status of collecting(Initial, Pending, Recollect, Finish), and update date. | Pass | - |
| 4 | On a web application; user can view the selected project that they are a collector. | The system retrieves only location information that was assigned by team leader of selected project and displays project information page that has a map with a pin and a list of the location information consisting of place name, collector name, latitude, longitude, status of collecting(Initial, Pending, Recollect, Finish), and update date. | The system retrieves only location information that was assigned by team leader of selected project and displays project information page that has a map with a pin and a list of the location information consisting of place name, collector name, latitude, longitude, status of collecting(Initial, Pending, Recollect, Finish), and update date. | Pass | - |

**System Test Case 24 (STC-24):** Administrator can view list of water parameter of the selected member sorted by date on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User can view list of water parameter. | The system shows list of selected parameter including parameter name, predicted result, status, and date of update status on parameter list page. | The system shows list of selected parameter including parameter name, predicted result, status, and date of update status on parameter list page. | Pass | - |

**System Test Case 25 (STC-25):** Team leader and Collector can view list of water parameter of the selected member sorted by date on a web application and mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test No.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | On a web application; Team leader can view list of water parameter. | The system shows list of parameter list including parameter name, predicted result, status, and date of update status on parameter list page. | The system shows list of parameter list including parameter name, predicted result, status, and date of update status on parameter list page. | Pass | - |
| 2 | On a web application; Collector can view list of water parameter. | The system shows list of parameter list including parameter name, predicted result, status, and date of update status on parameter list page. | The system shows list of parameter list including parameter name, predicted result, status, and date of update status on parameter list page. | Pass | - |
| 3 | On a mobile application; Team leader can view list of water parameter. | The system shows list of parameter list including parameter name, predicted result, status, and date of update status on parameter list page. | The system shows list of parameter list including parameter name, predicted result, status, and date of update status on parameter list page. | Pass | - |
| 4 | On a mobile application; Collector can view list of water parameter. | The system shows list of parameter list including parameter name, predicted result, status, and date of update status on parameter list page. | The system shows list of parameter list including parameter name, predicted result, status, and date of update status on parameter list page. | Pass | - |

**Feature 3: Map location management**

**System Test Case 26 (STC-26):** Team leader can assign work location on Google map to each collector on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User completes all the provided input text boxes and do all steps like the test data, then click “Save” button. | The system adds the assignment to the team member in the database and displays the new assignment in the list below of Google Maps and also add a new marker on Google maps. | The system adds the assignment to the team member in the database and displays the new assignment in the list below of Google Maps and also add a new marker on Google maps. | Pass | - |
| 2 | User completes all steps like the test data but inputs blank the name of place, then clicks “Save” button. | The system displays popup message “Please input place name” on the screen. | The system displays popup message “Please input place name” on the screen. | Pass | - |
| 3 | User cancels to assign work. | The system hides the assignment window and marker disappear. | The system hides the assignment window and marker disappear. | Pass | - |

**System Test Case 27 (STC-27):** Team leader and Collector can view the direction to the selected location on Google Maps on a mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User enables the direction of assigned location. | The system obtains the shortest direction from Google maps and displays the assignment location using a blue line on Google maps. | The system obtains the shortest direction from Google maps and displays the assignment location using a blue line on Google maps. | Pass | - |
| 2 | User disables the direction of assigned location. | The system hides the direction on Google maps. | The system hides the direction on Google maps. | Pass | - |

**System Test Case 28 (STC-28):** Team leader and Collector can view location information of each assigned pin on selected project by pressing on the pin on a mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User can view information of other location on each pin. | The system displays information of selected pin consisting of place name, collector name, and date of update on Google maps. | The system displays information of selected pin consisting of place name, collector name, and date of update on Google maps. | Pass | - |

**Feature 4: Water parameter calculation**

**System Test Case 29 (STC-29):** Collector can add water parameter to collect the test data on a mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User inputs complete the name of parameter, then clicks “Save” button. | The system displays “pH” on the screen and create new parameter shows on the parameter list page. | The system displays “pH” on the screen and create new parameter shows on the parameter list page. | Pass | - |
| 2 | User inputs blank the name of parameter, then clicks “Save” button. | The system shows error message “Please input parameter more than 1 character” on the screen. | The system shows error message “Please input parameter more than 1 character” on the screen. | Pass | - |
| 3 | User cancels to create a new parameter by click “Cancel” button. | The system hides the pop-up for create parameter and redirects to the parameter list page. | The system hides the pop-up for create parameter and redirects to the parameter list page. | Pass | - |

**System Test Case 30 (STC-30):** Collector can delete water parameter on a mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User wants to delete a water parameter by click “X” button behind each water parameter. | The system shows the pop-up “Do you want to delete?” with “Yes” and “Cancel” button. | The system shows the pop-up “Do you want to delete?” with “Yes” and “Cancel” button. | Pass | - |
| 2 | After user clicks “X” button, user confirms to delete a water parameter by click “Yes” button. | The system removes water parameter out of the database and updates the information and also displays the water parameter remaining in the system on parameter list page. | The system removes water parameter out of the database and updates the information and also displays the water parameter remaining in the system on parameter list page. | Pass | - |
| 3 | After user clicks “X” button, user cancels to delete a water parameter by click “Cancel” button. | The system hides the pop-up and shows parameter list page. | The system hides the pop-up and shows parameter list page. | Pass | - |

**System Test Case 31 (STC-31):** Collector can choose the image from camera roll or take a new photo to collect RGB value with the test result on a mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User can choose the image from camera roll. | The system provides camera roll for selecting the image. | The system provides camera roll for selecting the image. | Pass | - |
| 2 | After user chooses icon to selects the image from camera roll, user selects the image on camera roll, then clicks “Save” button. | The system redirects to parameter information page with the image for collecting RGB value consisting of date and time. | The system redirects to parameter information page with the image for collecting RGB value consisting of date and time. | Pass | - |
| 3 | User can take a new photo. | The system provides camera window for take a new photo. | The system provides camera window for take a new photo. | Pass | - |
| 4 | After user chooses icon to take a new photo, user takes a new photo, then clicks “Save” button. | The system redirects to parameter information page with the image for collecting RGB value. | The system redirects to parameter information page with the image for collecting RGB value. | Pass | - |

**System Test Case 32 (STC-32):** Collector can input data to let the system calculate the test result based on standard color scale on a mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User completes all step of calculation process, then clicks “Calculate” button. | The system sends the data to calculating component and returns test result from chemical analysis shows on user interface.  Ex. ValuleTest: “6”  RGBtest: “FF6875” | The system sends the data to calculating component and returns test result from chemical analysis shows on user interface.  Ex. ValuleTest: “6”  RGBtest: “FF6875” | Pass | - |
| 2 | After test no.1, user clicks “Clear” button. | The system removes value of test result in the database and removes out of the user interface.  Ex. ValuleTest: “”  RGBtest: “FF6875” | The system removes value of test result in the database and removes out of the user interface.  Ex. ValuleTest: “”  RGBtest: “FF6875” | Pass | - |
| 3 | User touches on the band and inputs blank value, then clicks “+” button | The system shows error message “Please insert value”. | The system shows error message “Please insert value”. | Pass | - |
| 4 | User inputs value of band less than 2 value, then clicks “Calculate” button. | The system shows error message “Minimum is 2 values”. | The system shows error message “Minimum is 2 values”. | Pass | - |
| 5 | User completes all step of calculation process, then clicks “Cancel” button. | The system redirects to parameter list page. | The system redirects to parameter list page. | Pass | - |

**Feature 5: Parameter result tracing**

**System Test Case 33 (STC-33):** Administrator can view detail of test result of selected water parameter on a web application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User can view the test result. | The system displays detail of water parameter consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result on parameter information page. | The system displays detail of water parameter consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result on parameter information page. | Pass | - |

**System Test Case 34 (STC-34):** Team leader and Collector can view detail of test result of selected water parameter on a web application and mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | On a web application; Team leader can view the test result. | The system displays information of test result consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result with the “Recollect” and “Finish” buttons for review the test result on parameter information page. | The system displays information of test result consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result with the “Recollect” and “Finish” buttons for review the test result on parameter information page. | Pass | - |
| 2 | On a mobile application; Team leader can view the test result. | The system displays information of test result consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result with the “Recollect” and “Finish” buttons for review the test result on parameter information page. | The system displays information of test result consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result with the “Recollect” and “Finish” buttons for review the test result on parameter information page. | Pass | - |
| 3 | On a web application; Collector can view the test result. | The system displays information of test result consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result on parameter information page. | The system displays information of test result consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result on parameter information page. | Pass | - |
| 4 | On a mobile application; Collector can view the test result. | The system displays information of test result consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result on parameter information page. | The system displays information of test result consisting of name of parameter, predicted result with the RGB value, status and image with data that used to calculate the test result on parameter information page. | Pass | - |

**System Test Case 35 (STC-35):** Team leader can mark status of the selected water parameter to “Recollect” on a web application and mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User updates status for recollecting on test result. | The system redirects to parameter list page and change the status in database, then displays status “Recollect” on the screen. | The system redirects to parameter list page and change the status in database, then displays status “Recollect” on the screen. | Pass | - |
| 2 | User cancels to update status for recollecting. | The system redirects to parameter list page. | The system redirects to parameter list page. | Pass | - |

**System Test Case 36 (STC-36):** Team leader can mark status of the selected water parameter to “Finish” on a web application and mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User updates status to finish on test result. | The system redirects to parameter list page and change the status in database, then displays status “Finish” on the screen. | The system redirects to parameter list page and change the status in database, then displays status “Finish” on the screen. | Pass | - |
| 2 | User want to cancel to update status for finishing. | The system redirects to parameter list page. | The system redirects to parameter list page. | Pass | - |

**Feature 6: Messaging system**

**System Test Case 37 (STC-37):** Team leader and Collector can send the message to each other via group message within the team on a mobile application.

**Tested by:** Peerapong Chompootepa, Worrasete Tansurat

**Test case:**

| **Test no.** | **Description** | **Expected output** | **Actual output** | **Pass/**  **Fail** | **Remark** |
| --- | --- | --- | --- | --- | --- |
| 1 | User inputs the message, then clicks “Send” button. | The system displays “Hi, everyone please check your e-mail” on the screen. | The system displays “Hi, everyone please check your e-mail” on the screen. | Pass | - |
| 2 | User inputs blank the message, then clicks “Send” button. | The system displays “” on the screen. | The system displays “” on the screen. | Pass | - |