



BuySafe Acceptance Test Plan

Version 1.0

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Revision History

Date	Version	Description	Author
2012-20-12	0.01	Initial Draft	Trevor Jagerfield
2013-20-01	1.0	Final version	Trevor Jagerfield

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

Table of Contents

1.	Introduction	5
1.1	Purpose of this document	5
1.2	Intended Audience	5
1.3	Scope	5
1.4	Definitions and acronyms	5
1.4.1	Definitions	5
1.4.2	Acronyms and abbreviations	5
1.5	References	5
2.	Test-plan introduction	6
3.	Test items	6
4.	Features to be tested	6
5.	Features not to be tested	7
6.	Approach	7
6.1	Approach to configuration and installation	8
7.	Item pass/fail criteria	8
7.1	Installation and Configuration	8
7.2	Documentation problems	8
8.	Suspension criteria and resumption requirements	8
9.	Environmental needs	8
9.1	Hardware	8
9.2	Software	8
9.3	Other	9
10.	Test procedure	9
10.1	Test case specifications	9
10.1.1	Test Group 1- code	9
10.1.2	Add user – DBACLNT-002	Error! Bookmark not defined.
10.2	Test plan	17
11.	Responsibilities	17
11.1	Developers	17
11.2	User representative	18
12.	Risks and contingencies	18
13.	Approvals	18

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

1. Introduction

1.1 Purpose of this document

This document is to describe acceptance test plan for BuySafe project. This project will be tested with all the test cases specified in this document to verify that the project meet all the specified requirements. Any aspect concerned with testing is specified in this document.

1.2 Intended Audience

Intended audience of this project is:

- project supervisor
- project leader
- team members
- course staff

1.3 Scope

This document includes the plan, items, scope, approach, environment and procedure of BuySafe acceptance test. After that, the responsibilities of developers and user representatives are identified. At last, risks and contingencies are specified to ensure the test reliability. Other information not related to the test activities is not included in this document.

1.4 Definitions and acronyms

1.4.1 Definitions

Keyword	Definitions
BuySafe	The name of the project.

1.4.2 Acronyms and abbreviations

Acronym or abbreviation	Definitions
GUI	Graphical user interface

1.5 References

BuySafe Requirements and Design Documents:

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

<http://www.fer.unizg.hr/rasip/dsd/projects/safeshopper/documents>

2. Test-plan introduction

BuySafe project will be verified and validated to meet all the requirements outlined in the requirement definition document. Functionalities will be tested with test cases that concern only smaller scope of each requirement, as many requirements have impact on several other components so it would be hard to test through one test case. Unit test cases will be designed separately for the Client and the Server Application.

3. Test items

Based on the requirements definition and design description, Client application and Server application shall be tested.

3.1 Client Application

The Client Application is the presentation layer of the system. Developers will design unit test for each feature included in the presentation layer which mainly include actions of users.

3.2 Server Application

The Server Application is the logic and data layer of the System. Developers will design unit test for each feature included in the data and logic layer which mainly provide support for the Client Application.

4. Features to be tested

The following shall be tested:

Identity	Status	Priority	Reference	Description	Source
PH-1	I	1		UC2 - User searches for product	Ctm
PH-2	I	1		UC3 - User searches product by barcode	Ctm
PH-3	I	1		UC4 - User searches for product by name	Ctm
PH-4	I	1		UC5 - User chooses wanted product from list	Ctm
PH-5	I	1		UC7 - User writes the review of the product	Ctm
PH-6	I	1		UC8 - User flags the product	Ctm
PH-7	I	2		UC14 - User searches all safe products	Ctm
PH-8	A	2		UC15 - Compare products	Ctm
SLH-1	I	2		UC6 - User adds product to shopping list	Ctm
SLH-2	I	2		UC9 - User views shopping list	Ctm
SLH-3	I	2		UC10 - User starts the process of adding the product to the shopping list	Ctm
SLH-4	I	2		UC11 - User deletes the shopping list	Ctm
SLH-5	I	2		UC12 - User deletes a product from shopping list	Ctm
SLH-6	M	2		UC10 - User enters product name	Ctm
UPH-1	I	1		UC1 - User creates/edits profile	Ctm

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

5. Features not to be tested

The following features shall not be tested:

Identity	Status	Priority	Reference	Description	Source
SS-1	I	1	3.7	Handle exceptions and errors efficiently and act accordingly in the case of exceptions.	Sys
SS-2	I	3		Schedule database updates from external sources.	Ds
AC-1	I	1		Use android SDK 2.3 to ensure compatibility with maximum number of devices.	Sys
AC-2	I	1	3.11	XML-based layout to speed up the UI-design process.	Sys
AC-3	I	1		UC13 - User exits the application	
AC-3.1	I	1		Save data locally in device before exiting.	Ds
AC-3.2	I	1		Close all connections.	Sys
DBPH-1	I	3	3.3	Optimize database to enable faster searches.	Sys
DBPH-2				Handle different data sources accordingly.	
DBPH-2.1	I	1		Connect to database for locally stored data.	Ds
				Non-functional Requirements	
NFR	I	2	3.8	Response time should be less than 10 seconds.	Ds

6. Approach

Application is tested continuously during the whole project development. On the server side, unit tests are written by developers and on the client side tests are executed manually during development and automated at the end of development. In the first iteration, basic application functionality, without client-server data exchange, was tested. Application was tested for different data input and that all implemented functions are working properly. In the second iteration, client-server connection is established. Application is tested for correct data exchange and correct client-server communication. Multiple testing scenarios are made to ensure the communication functionality. At the end of development, behavioral and automated black-box Android tests are executed. Most common Android-related situations which are considered crucial for Android development are tested.

Application is tested in the following way:

- Change in screen orientation: For devices that support multiple orientations, Android detects a change in orientation when the user turns the device. When Android detects a change in orientation, its default behavior is to destroy and then re-start the foreground Activity. The following is tested:
 - Is the screen re-drawn correctly?
 - Does the application maintain its state? The Activity should not lose anything that the user has already entered into the UI.
- Dependence on external resources: Application depends on network access. Test scenarios are executed to see what happens when the resource is not available. When application intends to use the network, it can notify the user if access is unavailable.
- Robotium: Used for automated black-box testing. Robotium is a test framework created for writing powerful and robust automatic test cases for Android applications. Function, system and acceptance test scenarios can be easily written.

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

- The Monkey: Program that runs on emulator or device and generates pseudo-random streams of user events such as clicks, touches, or gestures, as well as a number of system-level events. Monkey is used to stress-test application in a random manner.
- Manually by developers

6.1 Approach to configuration and installation

Application can be installed on the Android device or locally in Android emulator on the machine used by tester. For proper testing real Android platform is required. Network access is required. Data needed by the application will be stored on a remote server and fetched via network. Developers and project leader will provide full manual, required steps and guidance for setting up the environment.

7. Item pass/fail criteria

PASS: Test case has set and verified preconditions and has performed and verified all actions and results in the test case specification.

FAIL: Reported if the Test Case result from one of the actions is not OK. Must be indicated by raising an Exception.

SKIP/INCOMPLICATED: Reported if the actual test configuration does not fulfill the required configuration specified in the testcase.

ERROR: Test case failed because of other test environment problem.eg. network problems, hardware problems, etc.

7.1 Installation and Configuration

The hardware and software environment can be set up by following chapter 9. All the software version lower than the version mentioned in chapter 9 might cause incompatibility, which means that the test case might be ended up with SKIP/INCOMPLICATED according to the test results verdict criteria.

7.2 Documentation problems

The function test cases designed for Client GUI are to some extent dependent on the Use Case chapter in requirements definition document. So if the Use Case chapter changes during the final sprint the test cases will be also updated accordingly. The Junit test cases for server side won't be affected by document artifacts.

8. Suspension criteria and resumption requirements

Testing can be suspended in cases where the test tests an lengthy process like gathering data from a data source. In that case a test can be paused and then continued after the problem is fixed. An example of such a test is the SS1 test. In causes where a test tests a functionality that requires client - server interaction the bug will cause the test to fail because the server returns the requested data only once so if the test is paused the data will be lost. Examples of such tests are: SLH001, PH001-PH004.

9. Environmental needs

9.1 Hardware

- A work machine (A Linux server for remote deployment or a PC for local server deployment.)
- Android smart cellphone for end user testing.

9.2 Software

- Operating system
 - o Linux or windows
- Mobile Platform
 - o Android 4.1
- Servlet

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

- Tomcat 7.0
- Technology
 - Java SE6 JDK 1.6
 - MySQL database
 - Eclipse IDE
 - python 2.6
 - JDBC connector MySQL 5.5
 - SSH client

9.3 Other

No other specific requirements need to be met in order to test our application.

10. Test procedure

10.1 Test case specifications

1. *Create/edit personal user profile-UPH001*

Description:

Create or edit personal user profile.

Test type: Positive

Preconditions:

Application started.

Input definition:

1. *Application shows main screen with five options:*
 - a. *Profile*
 - b. *Search Product*
 - c. *Shopping List*
 - d. *Safe Products*
 - e. *Exit*
2. *User presses Profile button*

Output definition:

3. *Application shows window for profile creation/modification with two options:*

Input definition:

4. *User enters email address*
5. *User chooses to view personal allergies*

Output definition:

6. *Application shows new window with personalized list of allergies/conditions*

Input definition:

7. *User can choose from two options:*
 - a. *Remove selected conditions*
 - b. *Add new conditions*

8. *User chooses one option*

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

- a. *'Add new conditions' option*
 - i. *Application shows the new window with list of conditions*
 - ii. *User selects wanted conditions*
 - iii. *User chooses an option 'Add new Conditions'*
 - iv. *Application closes the window and shows previous window with personalized list of allergies/conditions*
- b. *'Remove selected conditions' option*
 - i. *User selects wanted conditions*
 - ii. *User chooses an option 'Delete conditions'*

Output definition:

- a- *Application removes conditions from the list*

Input definition:

- b- *Application removes conditions from the list*

Input definition:

- 9. *User chooses the option 'Done'*

Output definition:

- 10. *Application closes the window and shows the 'User Profile' window*

Input definition:

- 11. *User chooses option 'Save Profile'*

Output definition:

- 12. *Application closes window and shows the main screen*

Remarks:

If the user closes the application, the application closes.

If the user chooses to add new conditions and doesn't select any, application warns user to select conditions.

10.1.1 Search product-PH001

Description:

Search for information about desired product

Test type: Positive

Preconditions:

Application started

Input definition:

- 1. *User presses Search Product button*

Output definition:

- 2. *Application offers two options for product search*
 - a. *Search by barcode*
 - b. *Search by name*

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

Input definition:

3. *User chooses one option*

Remarks:

- If the user closes the application, the application closes.*
- If the user aborts search, application displays main screen*

10.1.2 *Search product by barcode- PH002*

Description:

Search for information about desired product by barcode

Test type: Positive

Preconditions:

Application started, user chose to search product

Input definition:

1. *User presses Search Product by barcode button*

Output definition:

2. *Application displays barcode scanner*

Input definition:

3. *User scans the barcode*

Output definition:

4. *Application displays*
 - a. *Product name*
 - b. *User ratings*
 - c. *Product description*
 - d. *Product content (flagged if harmful)*

Remarks:

- If the user closes the application, application closes.*
- If the user aborts search, application displays main screen.*
- If product is not found, application offers user to scan another product.*
- If the user chooses to scan another product, application displays window with barcode scanner.*

10.1.3 *Search by name-- PH003*

Description:

Search for information about desired product by name

Test type: Positive

Preconditions:

User pressed Search product button

Input definition:

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

1. Application displays empty field for product name
2. User enters full name of the product or part of the name
3. User presses Search button

Output definition:

4. Application displays list with possible products

Remarks:

If the user aborts search, application displays main window.

If user doesn't enter any name, application warns user to enter product name

10.1.4 Choose product from a list-PH004

Description:

Choose the desired product from list

Test type: Positive

Preconditions:

User searched for product by name

Input definition:

1. User chooses the product from list

Output definition:

2. Application displays
 - a. Product name
 - b. User ratings
 - c. Product description
 - d. Product content (flagged if harmful)

Input definition:

Output definition:

Remarks:

If the user aborts search, application displays main window.

If the user chooses to search for another product, application displays window with empty field for product name.

10.1.5

Description: Add product to the shopping list-SLH001

Test type: Positive

Preconditions:

User successfully scanned product or selected product from list

Input definition:

1. User presses the button Add to shopping list

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

2. *User enters quantity he wishes to buy*
3. *User saves the product to shopping list*

Output definition:

4. *Application displays message of success if product is successfully added to the shopping list*

Remarks:

10.1.6 *Create/rate a product review-PH005*

Description:

Write and store the personal opinion of the product

Test type: Positive

Preconditions:

User successfully scanned product or selected product from list

Input definition:

1. User presses the button Write review

Output definition:

2. Application displays window with one text field and 5-star rating bar

Input definition:

3. *User rates the product:*
 - a. *1 star – poor quality*
 - b. *2 stars – not so good quality*
 - c. *3 stars – average/good quality*
 - d. *4 stars – very good quality*
 - e. *5 stars – excellent quality*

Output definition:

4. User writes the observations about the product

Input definition:

5. User sends the review

Output definition:

6. Application displays message of success if review is successfully sent

Remarks:

If the user aborts to write review, application displays window with product information.

If the review can't be sent, application displays error message and asks user to try again.

If the user doesn't choose the grade and presses the button to send review, application displays a message of warning and doesn't send review.

If the user doesn't write the review and presses the button to send review, application displays a message of warning and doesn't send empty report.

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

10.1.7 Flag a product- PH6

Description:

Flag the product and send the report

Test type: Positive

Preconditions:

User successfully scanned product or selected product from list

Input definition:

1. User presses the button Send Warning

Output definition:

2. Application displays window with one input field

Input definition:

3. User writes the reason for flagging product
4. User sends the warning

Output definition:

5. Application displays message of success if report is successfully sent

Remarks:

If the user aborts flagging process, application displays window with product information.

If the user flags a product and doesn't write the report, application doesn't accept it and displays a message that user needs to fill the report.

10.1.8 View edit Shopping list-SLH2

Description:

Open the shopping list and view the products

Test type: Positive

Preconditions:

Application started

Input definition:

1. User presses the button View shopping list

Output definition:

2. Application displays window with list of products
3. Application offers three options:
 - a. Add product to the shopping list
 - b. Delete products from the shopping list
 - c. Clear shopping list

Remarks:

If the user closes the application, application closes.

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

10.1.9 Delete Shopping list- SLH3

Description:

Delete all products from the shopping list

Test type: Positive

Preconditions:

User opened shopping list

Input definition:

1. User presses the Delete list button

Output definition:

2. Application asks user to confirm list deletion

Input definition:

3. User presses the button to confirm deletion

Output definition:

4. Application deletes all products from the shopping list

Remarks:

If the user aborts deletion of the shopping list, application displays a window with shopping list.

10.1.10 Delete products from Shopin list- SLH4

Description:

Delete one or more products from the shopping list

Test type: Positive

Preconditions:

User opened shopping list

Input definition:

1. User marks the wanted products
2. 2. User presses the Delete product button

Output definition:

3. Application deletes marked products from the shopping list

Remarks:

If the user presses the Delete product button and no products are selected, application displays warning message.

10.1.11 Exit application- AC1

Description:

Exit application

Test type: Positive

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

Preconditions:

Application started

Input definition:

Application started

Output definition:

2. Application closes

Remarks:

10.1.12 Optional: Search and display all safe products based on user profile- PH7

Description:

Search and display all safe products based on user profile

Test type: Positive

Preconditions:

User profile already created

Input definition:

1. User presses the button Safe Products

Output definition:

2. Application displays list with possible products

Remarks:

If the user aborts search, application displays main window.

If no product is found, application displays a message and returns to main screen.

10.1.13 Compares products - TCPH8

Description: Compares products that user has previously scanned based on the user ratings.

Test type: Positive

Preconditions:

Application started

Input definition:

1. User chooses Compare product option
2. User scans two or more products

Output definition:

3. Application shows list of products sorted by rating

Remarks:

If the user aborts search, application displays main window.

If no product is found, application displays a message and returns to main screen.

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

10.1.14 Updating database- SS1

Description: Updating database

Test type: Positive

Preconditions:

Parsing programs installed and ready to be run from the update application

Input definition:

1. Run the application responsible for updating the DB.

Output definition:

2. DB should get updated after all parsers finish working

Remarks:

If the user aborts search, application displays main window.

If no product is found, application displays a message and returns to main screen.

10.2 Test plan

These are the Test cases we plan to run currently.

1. TCUPH1
2. TPH1
3. TCPH2
4. TCPH3
5. TCPH4
6. TCSLH1
7. TCPH5
8. TCPH6
9. TCSLH2
10. TCSLH3
11. TCSLH4
12. TCAC1
13. TCPH8

11. Responsibilities

11.1 Developers

Team member	Responsibility
JM	Oversee the testing process and test usability of the application
SM	Test server functionality with unit tests
ZK	Test client functionality with unit tests and client usability
FY	Test client functionality with unit tests and client usability
TJ	Define and delegate the testing process
XM	Test parser functionality and error handling

BuySafe	Version: 1.0
Acceptance Test Plan	Date: 2013-20-01

11.2 User representative

User representatives will be project consultants that are familiar with the application and its functionality. Other user representatives will be users that are defined as the primary users of the application (they include but are not limited to: people on a diet, athletes, people with young children).

12. Risks and contingencies

Risk identifier	Description	Impact	Probability of occurrence	Planned response
TR01	Infrastructure is experiencing problems that prevent the tests to be executed (on internet connection)	0.9	0.2	Set up the complete environment locally on a few PC and do the testing on them
TR02	One or more of the components of the system is experiencing problems that prevent the testing (the database server is down)	0.9	0.1	Delay test until the component is up and running again or Setup a local environment and test the application locally
TR03	Additional changes are done to the software after the test are completed or have already started	0.5	0.8	Define automated tests that can be multiple times in a small amount of time (unit tests)
TR04	Lack of user involvement	0.4	0.9	Gather user feedback in different ways like research pools
TR05	Developers do the testing (they know what works and what doesn't)	0.9	0.9	Test the application by the users while they are being interviewed Or Ask project consultants to test the application
TR06	Unrealistic expectations cause too many tests to be defined and not enough time to test them all	0.7	0.4	Prioritize tests and execute them in that order

13. Approvals

Name	Title	Date yyyy-mm-dd	Signature