PATH Test

Doc. No.:

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1. Introduction

1.1 Purpose of this document

This document is a specification of the testing plan and test result of PATH. Due to the importance roe of potential customer that is end user of the system, we more focused on Acceptance test rather than other tests such as Regression test. Also due to the limitation of time we didn't use any automated test technique. This document includes a list of tests expected to pass successfully as well as information for configuration of the testing environment for writing and running automated or manual tests. It is a framework for future and present test aiming at assuring that PATH has passed quality assurance procedures. This document provides details about verification and validation phase of project which is done from beginning to till end of the project.

1.2 Intended Audience

- SCORE Reviewers
- Testers / developers of PATH intending to run or write interface tests
- The project steering group who wants to run tests to get an overview on the interface development and testing status

1.3 Scope

The document describes testing procedures for the complete system developed by the PATH team. This document covers testing objectives, preconditions and outcomes of the tests, as well as the testing procedure.

1.4 Definitions and acronyms

1.4.1 Definitions

Keyword	Definitions
Google API	API provided by Google to user Google maps
PATH Tester	One person out of sex members of PATH that had the Responsibility of testing in all project period

1.4.2 Acronyms and abbreviations

Acronym or abbreviation	Definitions
PATH	Public Advice Traveling Help
GIS	Geographical Information System
UIL	User Interface Layer
DAL	Data Access Layer
BOL	Business Object Layer

2. Test-plan

One member out of six members had testing responsibility for all the project period. This person id so called PATH Tester. More information about "responsibility" could be found in [1]. SCORE Testing is done in small discrete steps testing all the functionalities of the system as the software develops progressively. In PATH, we

have done manual testing of all the applications in the system. PATH test plan aims to test the maximum system coverage regarding to the project requirements and acceptance test regarding to the feedbacks from customer and developers manual test. It includes testing all the main features of the system. Other than two test techniques that are mentioned and are focused in our project, we included some few test. The rest of this section includes the techniques were used. Test cases and test result are included at the end of this document.

2.1 Environmental testing

2.1.1 Tests Description

Before any verification and validation phase to be carried out a smooth running testing environment is set up. In PATH a web application is deployed on Linux server with Apache server and My SQL was installed on remote server. The main testing done by deploying of PATH at live server[7]. Also for client side we used IE 6+ and Google Chrome

2.1.2 Result:

Passed

2.2 Requirements testing

Requirements based testing was critical in the implementation of PATH. From the beginning of project after the completion of requirement document, the requirement testing started. In this the score project description was served as base for testing the requirements. Aim of this testing is to found the requirements which is either missed or which is not important to implement.

2.2.1 Result:

Passed
We found no key functionality that was missed nor included in project requirement documents.

2.3 Unit Testing

Unit testing was conducted by developer of project. Each module of project developed by developer was tested by that developer with PATH tester collaboration.
The main units that are tested were listed below.

Unit of PATH that are tested	**Functionality of the Unit**	**Description and**
Search Location	Search	Test Passed after 2nd iteration of Unit testing.
Search Route	Search	Passed
Add Advices to a location	Add Advice	Passed
Save Advice	Add Advice	Passed
Filter Advices	Filter Advice	Passed
Create User	Registration	Passed
Login	Registration	Passed

2.4 Exploratory Testing

It was applied mostly after unit testing where different developer interchanges their module to find out more defects by applying input data. The major aims of this testing was about known error guessing such as login testing, session check and advices being saved and populated on particular locations of maps.

2.5 Component Testing

The main components that are tested were as follows.

1. Google map API v2
   Result: Some problems with Multi Event handling occurred that mad a problem for Street view and Markers at the same time. It is reported to Google. The event handler for Clicking a marker on the map and the event handler for clicking a point of map that was needed for Street view could not be

integrated on one page.

2. AJAX
   Result: It was smooth but clicking several points on a map do not work well in AJAX as the response has a big delay and the relevant picture is loaded a bit late.
3. DAL
   Result: passed Database connection string is changed for two different MYSQL servers and no problem was occurred.

2.6 Fault Injection Testing

The main aim of this technique was to test the system fault tolerant behavior on applying fault in the system. In this system fault were applied at compile time and runtime[5].

2.7 User Acceptance Testing

The end user testing was performed by hosting the application on the web on a server. The user was asked to test the application and its different features by launching a web poll. A separate document is created that contains web poll results and its analysis [6].

3. Test procedure

3.1 Test case specifications

3.1.1 Requirements testing

All the priority one requirements are successfully implemented.

3.1.1.1 Test item – Register user

Description:
Providing registration for a new user and creating his profile in the database

Test type: Positive

Preconditions:
User should access the web page and open the link register user

Input definition:

1. Open the webpage
2. Select register user tab from the menu bar
3. Enter the personal details like First name, Last name.
4. Create User Name and Password
5. Select the category from drop list provided
6. Click Submit button

Output definition:

Application should verify if same User Name exists in the system or not. If not present, successfully add the details entered to the database. Successfully a new user is registered.

3.1.1.2 Test item – Login

Description:

Successful login of a register user

Test type: Positive

Preconditions:
User should already be registered and have a login id and password

Input definition:

1. Open PATH webpage
2. Enter the login id and password
3. Click on login button

Output definition:

A welcome message along with user name is displayed on successful logging in.

3.1.1.3 Test item – Route Finding

Description:
Finding route on map from point A to point B

Test type: Positive

Preconditions:
Enter from location and to location in search options

Input definition:

1. Open the PATH webpage
2. Enter from place and to place data in search option
3. Select language from drop down
4. Click Get Directions button

Output definition:

On right side of the page a map is displayed showing route between specified places. Also List of directions along the path in text format is displayed.

3.1.1.4 Test item – Filter advice

Description:
User gets the advice from system for specified place

Test type: Positive

Preconditions:
Any user who opens PATH webpage can get advice corresponding to particular point, or route or an area.

Input definition:

1. Open the PATH website
2. Select the filter criteria depending on which advice needs to be given
3. Click Filter button

Output definition:

On the map which is displayed on right side of the page the advice corresponding to that place displayed.

3.1.1.5 Test item – Advice giving

Description:
User giving advice corresponding to a place

Test type: Positive

Preconditions:
Only registered users of PATH application can give advices.

Input definition:

1. Open the PATH website
2. Select ADD ADVICE tab from menu bar
3. Select type of advice that you want to give which includes – point based advice, route based advice or areas based advice
4. Click on point, advice is supposed to be given
5. Enter advice and select type of advice from drop down
6. Save and close

Output definition:

What ever type is selected rather be a point or route or area, corresponding advices given by user on the map are displayed.

4. Test cases of Different Testing Techniques

Sr.No	Type of Testing	Functionality	Steps of Test Case	Expected Result	Actual Result	Comments
1	Security Testing	Registration	Click on Registration Menu. Enter the registration details as shown below 1)Enter User name as special character values "%$" 2) Enters all details as valid data and press submit. 3) Invalid input message should be displayed.	The data should be validated.	Failed	Need to have server Side validation and java script validation
2	Security Testing	Registration	Click on Registration Menu. Enter the registration details 1)Enter User name ,First name, Last name and password as special character values "%$" . 2) Do not select category and press submit button. 3) Record should not be submitted and error message are displayed.	Record should not be submitted and invalid data should be validated.	Failed	Need to have validation for textboxes and dropdown list
3	Security	Registra		Record should	Failed	Basic

	Testing	tion	Click on Registration Menu. 1) Don't Enter the registration details and press submit button. No record will be submitted	not be saved.		Validation in the system doesn't exists
4	Security Testing	Login	Under login menu 1) Enter Invalid user name and password. 2) Error message will be displayed.	Invalid username/Password message is displayed	Passed	
5	Security Testing	Login	Under login menu 1)Enter sql query for sql injection through login and password 2)Error message should be displayed	Invalid username/Password message is displayed	Passed	
6	Fault Injection	Login	Enter Invalid data in database 1) By login with invalid data. 2)Error message will be displayed	Should validated against invalid data	Failed	
7	Fault Injection	Registration	By Hard coding the details and saving the record of User. 2) Duplicate record error message will be displayed.	Validation should exist against duplicate record	Failed	
8	Fault Injection	Search	By Hard coding the Invalid address in search address code. Error Message will be displayed	Google API error code should be Handled	Failed	Error code no 602 displayed
9	Unit Testing	Registration	Click on Registration Menu. 1) Enter the registration details 2)Save the result by pressing submit button. Message should be displayed with username/Password	Record saved successfully	Passed	
10	Unit Testing	Search	On Search menu 1)Enter the from places and to places 2)Click on submit button. Example Rome and Stockholm	Route from Rome to Stockholm will be visible on the map	Passed	
11	Unit Testing	Add Advice	Click on Advice templates. 1)Select advice type on map 2) right click on advice icon to have a pop up 3) After fiiling the details .Press save& close button. 4) Advice will be saved.	Advice will be displayed with a particular icon color on the map	Passed	
12	Unit Testing	Filter Advice	Select advice category for filtering advice. 1) Select advice category "Bar" 2) Press filter button. 3) Advice will be displayed.	The bar advices will be displayed on the screen	Passed	
13	Unit Testing	Login	1) Enter the correct user name and password. 2) Press login button. 3) The user should be able to login in the system with his name displayed on the screen.	On login successfully, welcome username will be displayed on the screen.	Passed	
14	Unit	Logout	On pressing logout button. You will be	Logout	Passed	

	Testing		logged out of the system.	Successfully.		
15	Exploratory testing	Login	On login Screen 1)Don't enter user name and password 3) Press login button. 4)Message should be displayed please enter valid username/password	Message should be displayed of incorrect username/password.	Failed	No message displayed
16	Exploratory testing	Logout	1) Without Pressing logout. 2) Able to create new users by registration.	Should not be allowed to access the registration module	Failed	No Access rights exists in the PATH
17	Exploratory testing	Filter Advice	1) Selection of advice category from category by pressing filter button. 2) It should display all the selected advices for particular map location.	All advices for example located in Mumbai, India of Bars should be displayed.	Failed	Advices always points to Vasteras,even though my map location is in India.
18	Exploratory testing	Add Advice	Click on Advice menu. 1) Select advice type and drag it on screen. 2) Right click and then close the menu. 3) Advice should not be saved.	Advices are not created on the map location.	Passed	
19	Exploratory testing	Search	Click on search menu. 1)Enter from location and to location. 2)Press get direction button. Route information will be visisble.Ex Delhi and Dhaka	Corresponding location result will be displayed on the screen	Failed	System not works for location of Asian countries.
20	Exploratory testing	Registration	Click on Registration Menu. 1Enter registration details and saves. 2) Again refresh page the page and save it.	Record should not be Saved.	Failed	Duplicate record are saved.
21	Component Testing	Search Route	Click on search menus. 1)Enter from and to city and submit. 2)All the information of route is visible on map	Information of Route is displayed on the map	Passed	
22	Component Testing	Login /Logout	Enter the login details Do press logout	Successfully login shows username and on log out no username is displayed	Passed	
23	Component Testing	Add Advice and View	Choosing an advice type. 1)Drag on map location. 2)On right click menu will appear. Save details 3) On using filter options only saved advice will be visible	Advice will be saved and on using filter option required advice will be displayed	Passed	
24	Integration Testing	Filter Advices	By Add advice 1) Add advices on maps locations. 2) Use filter advices to view advices.	By Filter advices ,it is able to see a particular	Passed	

				advices.		
25	System Level Testing	Registration	Enter the all details of registration and submit. Record will saved successfully.	Record is saved Successfully	Passed	
26	System Level Testing	Search Route	Enter Search details of from and To city and press get direction. Route information will be displayed on screen.	Route Information is displayed on screen.	Passed	
27	System Level Testing	Add Advice	Click on advice menu and select advice type. Add information and saved.	User's advices saved.	Passed	
28	System Level Testing	Filter Advice	Select advices from category and press filter button. All saved advice will be displayed on screen.	User's saved advice is displayed on map location by Filter options.	Passed	
29	Installation Testing	Running Web Application	Run application on Google chrome. Application should work perfectly	Application work fine.	Passed	
30	Installation Testing	Running Web Application	Run application on Internet Explorer. Application should work perfectly	Application work fine.	Failed	Resolution
31	Environmental Testing	Running Web Application on remote server	Application is hosted on web. It should run fine.	Application work fine.	Passed	

5. References

[1] "SCORE Report" available at [8]
[2] Score competition: http://score.elet.polimi.it/
[3] Project details: http://score.elet.polimi.it/projects/fickas.pdf
[4] Course details: http://www.fer.hr/rasip/dsd
[5] José Fonseca ,Marco Vieira and Henrique Madeira: Testing and comparing web vulnerability scanning tools for SQL injection
[6] http://www.doodle.com/participation.html?pollId=ghagy73quyp3ips7
[7] http://btwmdh.rasip.fer.hr/UI/Main.php
[8] PATH Documents; available at http://www.fer.hr/rasip/dsd/projects/btw_2/documents