

Assessment Evaluation
Real Time GPS Tracking System
Version 1.0

Submitted in partial fulfillment of the requirements of the degree of
Master Software Engineering

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1. Introduction

This document presents the results of the functional testing performed on Real Time GPS Tracking System. The test cases are in reference to the test cases defined in the Test Plan 1.0 from Phase II.

2. Testing Results Summary

Actor	Feature Identifier	Description	Result
User	T-1	Track Connected Devices	Pass
	T-2	Signup	Pass
	T-3	Managing Accounts	Pass
	T-4	Register Device	Pass
	T-5	View Statistics	Pass
	T-6	Login	Pass

Table: Features to be tested.

2.1 Track Connected Devices

	Test Case	Action	Result	Pass/Fail
T.1.1	Track Connected Devices	The device has a record in the database and the record is correct.	Information about the connected devices and links that takes the user to more details and statistics about the device position.	Pass

2.2 Signup

	Test Case	Action	Result	Pass/Fail
T.2.1	Signup	The required information is complete	On successful signup the user will be given the message “Account Successfully Created “ and will be able to login using this information.	Pass
T.2.2	Signup	The required information is not complete	Generate Error Message.	Pass

2.3 Managing Accounts

	Test Case	Action	Result	Pass/Fail
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T.3.1	Managing Accounts	The required information is complete	When the user successfully does some changes he will see “Update Successful” statement.	Pass
T.3.2	Managing Accounts	The user delete some required information while editing his account information such as the password	Generate Error Message.	Pass

2.4 Register Device

	Test Case	Action	Result	Pass/Fail
T.4.1	Register Device	The required information is complete	when the user successfully adds the device he will see “New Device Added Successfully” statement	Pass
T.4.2	Register Device	The required information is not complete	Generate Error Message.	Pass

2.5 Managing Accounts

	Test Case	Action	Result	Pass/Fail
T.5.1	View Statistics	The user select a device and click View Statistics link	Some statistics displayed about the user position such as the average speed of the device movements, the path of the device moves and how many miles that device moved.	Pass

2.6 Login

	Test Case	Action	Result	Pass/Fail
T.6.1	Login	The username and the password match.	If the username and password match the login would be successful and the user will see a list of connected devices under his account.	Pass
T.6.2	Login	The username and password do not match.	Generate Error Message stating incorrect password, and asking the user to re-enter password.	Pass

3. Performance testing

Apache's ab2 used to compute how many requests per second are systems capable of serving.

The style of the used command is as the following:

```
ab2 -c5 -n1000 http://people.cis.ksu.edu/~bakor/MSEProject/includes/myfiles/getgooglemap2.php
```

C5: concurrency of 5

N1000: The page will be requested 1000 times

H 'Accept-Encoding: gzip: To test the impact of gzip-compressing.

RESULT:

```

bakor@viper:~
Completed 600 requests
Completed 700 requests
Completed 800 requests
Completed 900 requests
Completed 1000 requests
Finished 1000 requests

Server Software:      Apache
Server Hostname:     people.cis.ksu.edu
Server Port:         80

Document Path:       /~bakor/MSEProject/includes/myfiles/getgooglemap2.php
Document Length:     1384 bytes

Concurrency Level:    5
Time taken for tests: 56.941 seconds
Complete requests:   1000
Failed requests:     0
Write errors:        0
Total transferred:   1602088 bytes
HTML transferred:    1384000 bytes
Requests per second: 17.56 [#/sec] (mean)
Time per request:    284.703 [ms] (mean)
Time per request:    56.941 [ms] (mean, across all concurrent requests)
Transfer rate:       27.48 [Kbytes/sec] received

Connection Times (ms)
      min  mean[+/-sd] median  max
Connect:    0   6 133.7      0   2992
Processing: 183 278 31.3     278   491
Waiting:    179 271 30.2     271   488
Total:      183 284 139.1    278  3316

Percentage of the requests served within a certain time (ms)
 50%    278
 66%    290
 75%    299
 80%    302
 90%    315
 95%    327
 98%    345
 99%    361
100%   3316 (longest request)
viper$

```

3.1 Observations

- Notice that Drupal can only serve cached pages to anonymous visitors (users that have not logged on). Once users have logged on, caching is disabled for them since the pages are personalized in various ways.
- Standard deviation [+/-sd] of a random variable, or population or multistep of values is a measure of the spread of its values.
- The time of calling *getgooglemap2.php* page representing the time needed to receive location information from a device.