QA Team “Apple”

Telerik Academy 2014

**Performance Test Plan**

Version 1.0

November 21, 2014

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# VERSION HISTORY

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Reason for Change | Revised By | Date |
| 1.0 | Initial Performance Test Plan | Team Apple | 21/11/2014 |
|  |  | Choose an item. |  |
|  |  | Choose an item. |  |
|  |  | Choose an item. |  |

# INTRODUCTION

This document describes the procedure and expectations for performance testing of “Evaluation” and “Teamwork” modules in the student system being developed by Telerik Academy institution. In addition it includes information about test’s objectives, scope, approach and description of the performance test process.

## Objectives

The main objective of this performance plan is to establish a baseline environment and assess the technical specifications of “Evaluation” and “Teamwork” modules of the TASS. With the results of these tests we will have a benchmark test that will be used for comparison with future releases.

## Scope

The scope of the current project is limited to the “Evaluation” and “Teamwork” modules of the student system and to the provided requirements and includes the following activities:

* Identify baseline test environment and requirements
* Plan and design tests
* Set up test environment, testing database and reporting database
* Implement test designs
* Execute tests
* Analyze test results for bottlenecks and create reports. Log performance problems that are identified by the performance requirements.
* Re-test

# FEATURES TO BE TESTED

The following is a list of the areas subject to performance testing of the application.

## Admin UI

### Evaluation modules

* Practical Exams
* Practical Exam Files
* Practical Exam Evaluations
* Test Exams
* Students Records
* Export Results
* Bonuses
* Homework Evaluation
* Helpers
* Homework Statistics
* Homework Evaluation Reactions
* Add Students for Practical Exam
* Add Students for Test Exam

### Teamwork modules

* Teamwork
* Team Member Suggestions
* Import Teams
* Team Name Suggestions
* Import Team Names
* Team Member Evaluations
* Team Member All Evaluations

## Front-end UI

* Homework (Teamwork) Upload
* Homework Evaluation
* Exam Upload
* Exam Results
* Teamwork Sign-up
* Teammate Grading

# FEATURES NOT TO BE TESTED

Functional testing and fixing defects activities are out of the scope of performance testing.

Front-end UI features not to be tested due to the lack of database or business layer service access:

* Exam Sign-up
* Exam Evaluation
* Homework Comments & Grading

# TESTING APPROACH

* Identify performance requirements and establish baseline environment
* Identify user groups:
  + Logged common user
  + Logged admin user
* Design and implement tests based on designed use cases
* Implement load testing scenarios, according to the established metrics
* Executing tests
* Report and analyze the results

# METRICS

* Performance test metrics
  + The average response time for 20 and 60 users in all front-end functionalities has to be less than 0.5 sec
  + The average response time for 20 and 60 users in all administration modules has to be less than 0.3 sec
* Browser mix
  + 34% IE
  + 33% Chrome
  + 33% Firefox
* Load test pattern metrics for Administration and Front-end UI

|  |  |  |
| --- | --- | --- |
| 60 | 20 | Scenario Users |
| 5 | 15 | Start user count |
| 20 | 20 | Step duration |
| 5 | 15 | Step user count |
| 20 | 60 | Maximum user count |

* All load test durations are set to 10 minutes

# RISKS OF THE PERFORMANCE TEST PROCESS

* The test environment is down that can stop/slow the performance test process.
* There are functional bugs that can stop/slow the performance test process.
* Test server is overloaded and test results will be distorted.
* Low bandwidth may distort test results.

# TESTING CRITERIAS

## Entrance criteria

The system needs to be fully functional in order to perform performance testing as any malfunction will distort the results or interrupt the testing process.

## Pass / Fail Criteria

Depends whether test results meet the requirements:

* + Response time for 20 and 60 users in Front - less than 0.5 sec
  + Response time for 20 and 60 users in Administration - less than 0.3 sec

## Suspension Criteria

* Unavailability of the test environment
* Defects are found in the system.
* Found bottlenecks in the system.

## Resumption Criteria

Performance testing will be resumed when full access to the test environment is restored and there are no defects or bottlenecks that interfere with the test results.

## Exit Criteria

The results of performance testing will be considered “approved” if they meet the expected requirements.

# ENVIRONMENTAL REQUIREMENTS

## Hardware

* Intel (R) Xeon (R) CPU @ 3.1GHz (Quad Core)
* Ram 8GB
* HD 100GB

## Software

* Windows Server 2008 R2
* IIS7
* MS SQL Server 2008 R2
* Browsers:
  + Microsoft Internet Explorer
  + Google Chrome
  + Mozilla Firefox

# TESTING TOOLS

* Visual Studio Ultimate 2012/2013

# TEST DELIVERABLES

* Performance Plan
* Performance tests and load scenarios
* Initial benchmark test
* Test reports