**ONLINE EXAM SYSTEM**

**SOFTWARE REQUIREMENTS SPECIFICATION**

<Hanoi, 15-02-2017>

# RECORD OF CHANGE

\*A – Added M – Modified D – Deleted

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Effective Date** | **Changed Items** | **\*A, M, D** | **Change Description** | **New version** |
| 15-02-2017 | The whole document | A | Initial version | 1.0 |
| 17-02-2017 | Table of contents | A |  | 1.1 |
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# INTRODUCTION

The introduction of the Software Requirements Specification (SRS) provides an overview of the entire SRS with purpose, scope, definitions, acronyms, abbreviations, reference, system proposals and an overview of the SRS.

## Purpose

The aim of this document is to gather, analyse and provide a consistent and complete description of the requirements for the software: Online Exam System. The Online Exam System (OES) provides facility to online examination inside and outside FPT University. Administrator and Test masters can create, modify, and delete tests and paticular questions. User can register, login, authenticize, take the test and review also. The system can eliminate the use of items such as papers, pen, etc.

* 1. Scope

The system is designed to access into 2 scopes:

- Public: Every user can publicly access available tests and review on OBS.

- Private: Only allowed users can access to a paticular test. Test master and Administrator can provide access to users.

## 1.3 Definition, Acronyms and Abbreviations

|  |  |  |
| --- | --- | --- |
| **ID** | **Acronym** | **Definition** |
| 1 | SRS | Software Requirements Specification |
| 2 | OES | Online Exam System |
|  |  |  |

* 1. Reference
* Software Engineering - Ninth Edition (by Ian Sommerville)
  1. Overview

We intend to develop the application with client-server architecture:

* Client side: This part includes features to help user use the core function of website such as: login with gmail, register, view course, join test, view test reports, feedback and review.
* Server side: This part contains all features to manage the content of the system such as: add/update/remove test masters, view/delete/add users(for administrators), manage tests and questions ,add list users who are allowed to join test, etc.

1. **OVERALL DESCRIPTION**
   1. Product Perspective

* OES is an online examination system. It is accessible 24/7. The objective of the system is to connect candidate and examiner in a long distance and provide virtual educational environment. The user flow is as follow:
* Login with gmail

User will log into the system with gmail authentication. Especially, the domain will be limited to FPT University domain with private test for FPT University students

* System Overview:

Logged in users can view available courses with corresponding tests, review taken test (if allowed).

* Test:

Users can join public tests or private test if they are allowed to.

* Testing report:

After the test, users can view results and reviewing the test. User can only view his/her own test.

* 1. Product Functions

### 2.2.1 Client side

|  |  |  |
| --- | --- | --- |
| **Class of use cases** | **Use case** | **Description of use cases** |
| User account | Login | User can log into the website via created account or with FPT gmail |
| Test | Search for available test | Search for test using test name, time, etc. |
| Join test | Join public test or private test if allowed |
| Submit test | User submits test to send answers to examinees |
| Review test | User can view result and review after particular test if allowed by test masters |
| Send feedback | Send feedback to examinee if there is any complaints. |

### 2.2.2 Server side

|  |  |  |
| --- | --- | --- |
| **Class of use cases** | **Use case** | **Description of use cases** |
| Admin and Test master account | Login | Login using admin account |
| Change password | Change admin account password |
| Test | Add test | Test master can add test with questions and allowed users |
| Remove test | Test master can remove his/her own tests. |
| Update test | Test master can update question, time, user list in his/her own test. |
| View own tests | Test master can view his/her own tests. |
| View feedback | View feedback made by users |
| Question | Add question | Test master can add question to questionList |
| View all questions | Test master can view all questions in questionList |
| Remove own question | Test master can remove his/her own question |
| Test master | Add test master | Admin can change user from student to test master |
| View test master | Admin can view test master list |
| Remove test master | Admin can change user from test master to student |

## 2.3 User characteristics

The website doesn’t require any special characteristics of user.

* 1. General Constraints
* The website requires Internet connection and browser to assess (client side).

1. **SPECIFIC REQUIREMENTS**
   1. Functionality

|  |  |
| --- | --- |
| **Primary Actor** | **Use Cases** |
| User/Student | 1. Login 2. Search for tests 3. Join test 4. Review test 5. Send feedback |
| Administrator | 1. Login 2. Change password 3. View test 4. View userlist 5. Add test master 6. Remove test master |
| Test Master | 1. Login 2. Change password 3. Add questions 4. Add Test 5. Update own test 6. Remove own test 7. View Test report |

### Client side

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES01 | | | |
| Use Case Name | Login | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | User | | |
| Description | User can log into the website to be able to view the system overview | | |
| Preconditions | User uses FPT domain gmail | | |
| Postconditions | User is logged in | | |
| Normal Flow | 1. User clicks [Login with FPT mail] 2. Authentication popup appears 3. User click button Allow 4. Server does authentication 5. The main page is displayed | | |
| Alternative Flows | N/A | | |
| Exceptions | * Server authentication failed, prompt the error to user and go back to step 3. | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES02 | | | |
| Use Case Name | Search for tests | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | User | | |
| Description | User can search for tests which can be filtered by test categories such as name, start and end time, etc. | | |
| Preconditions | User entered the website | | |
| Postconditions | A list of related tests are displayed to user | | |
| Normal Flow | 1. User clicks [Search bar] 2. User types in search terms 3. A list of related tests is displayed to the user | | |
| Alternative Flows | N/A | | |
| Exceptions | If no test contains information related to the search terms, display a message indicating there is no test related | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES03 | | | |
| Use Case Name | Join Test | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | User | | |
| Description | User can join public test or private test if allowed | | |
| Preconditions | User logged in  User’s email is included in allowed student list if joining private test | | |
| Postconditions | Test window is displayed to users | | |
| Normal Flow | 1. User clicks on a chosen test 2. User takes the test | | |
| Alternative Flows | N/A | | |
| Exceptions | If user’s email is not included in allowed student list for the test, promp the error to user and redirect to test list. | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES04 | | | |
| Use Case Name | Submit test | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | User | | |
| Description | User can submit test to send answer to examinee | | |
| Preconditions | User are accepted in the test | | |
| Postconditions | User’s answer is added to database | | |
| Normal Flow | 1. User clicks button Submit 2. User click Yes in the confirm popup 3. User’s answer is added to database, redirect to test list. | | |
| Alternative Flows | 2.a User click No in the confirm popup  3.a User is back to test window | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES05 | | | |
| Use Case Name | Review test | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | User | | |
| Description | User can view score, review test | | |
| Preconditions | User submitted test | | |
| Postconditions | Score and review window are displayed to user | | |
| Normal Flow | 1. User clicks Review 2. Score and review window are displayed | | |
| Alternative Flows | N/A | | |
| Exceptions | User is not allowed to review test. | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES06 | | | |
| Use Case Name | Send feedback to examinee | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | User | | |
| Description | User can send feedbacks to examinee in case of complaints | | |
| Preconditions | User logged in | | |
| Postconditions | Feedback is sent to server | | |
| Normal Flow | 1. User clicks on button Contact 2. User completes the feedback form 3. User click button Send 4. Feedback is sent to server | | |
| Alternative Flows | N/A | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | All fields must be filled in | | |
| Notes and Issues | N/A | | |

## Server side

* 1. Adminstrator

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES07 | | | |
| Use Case Name | Login | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can log into the system. | | |
| Preconditions | There exists admin account in database | | |
| Postconditions | Admin logged in the system | | |
| Normal Flow | 1. Admin clicks button Normal Login 2. A login form shows up 3. Admin provides necessary information. 4. Server does authentication 5. Dashboard is displayed | | |
| Alternative Flows | 5(a). Authentication fails  5(a).1. Prompt the admin that he/she provided invalid information. | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES08 | | | |
| Use Case Name | Change password | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can change his/her password | | |
| Preconditions | Admin logged into system | | |
| Postconditions | New password is updated | | |
| Normal Flow | 1. Admin clicks Change password 2. A change password form shows up 3. Admin provides and confirms new password 4. Server does authentication 5. Dashboard is displayed | | |
| Alternative Flows | 5(a). Authentication fails  5(a).1. Prompt the admin that he/she provided invalid information | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES09 | | | |
| Use Case Name | Add test master | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can change user from student to test master | | |
| Preconditions | Admin logged into the system | | |
| Postconditions | Chosen user becomes test master | | |
| Normal Flow | 1. Admin click Add test master 2. Admin fills in a user email 3. Chosen user becomes test master | | |
| Alternative Flows | N/A | | |
| Exceptions | Email doesn’t exist. | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES10 | | | |
| Use Case Name | View test master | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can view test master list | | |
| Preconditions | Admin logged in | | |
| Postconditions | Test master list is displayed | | |
| Normal Flow | 1. User clicks button View Test Master 2. Test Master table is displayed | | |
| Alternative Flows | N/A | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES11 | | | |
| Use Case Name | Remove test master | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can change user from test master to student | | |
| Preconditions | Admin logged in | | |
| Postconditions | Chosen test master becomes studeny | | |
| Normal Flow | 1. Admin clicks button Delete on a test master record 2. Admin clicks Yes in confirm popup 3. Chosen Test master becomes student | | |
| Alternative Flows | 2.a Admin clicks No in confirm popup  3.a Back to Test master list | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES12 | | | |
| Use Case Name | View all users | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can view all existed users | | |
| Preconditions | Admin logged in  User list is not empty | | |
| Postconditions | User list is displayed | | |
| Normal Flow | 1. Admin clicks View all users 2. User list is displayed | | |
| Alternative Flows | N/A | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

* 1. Test master

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES13 | | | |
| Use Case Name | Add question | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can add question to questionList | | |
| Preconditions | Test master is logged in | | |
| Postconditions | Question is updated in questionList | | |
| Normal Flow | 1. Admin clicks Add question 2. Admin fills in question and chooses correct answers 3. Admin click button Add 4. Question is updated in questionList | | |
| Alternative Flows | N/A | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES14 | | | |
| Use Case Name | Remove question | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can remove his/her own questions | | |
| Preconditions | Test master is logged in | | |
| Postconditions | Question is removed | | |
| Normal Flow | 1. Admin clicks button Delete in question record 2. Admin chooses Yes in confirm popup 3. Question is removed | | |
| Alternative Flows | 2.a Admin chooses No in confirm popup  3.a Back to question list | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES15 | | | |
| Use Case Name | Add test | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can add test | | |
| Preconditions | Admin logged in | | |
| Postconditions | Test is added to database | | |
| Normal Flow | 1. Admin clicks Add test 2. Admin fills in question list, student list, start and end time, private or public. 3. Admin click button Add 4. Test is added to database | | |
| Alternative Flows | N/A | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES16 | | | |
| Use Case Name | Remove test | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can remove his/her own test | | |
| Preconditions | Admin logged in | | |
| Postconditions | Test is removed from database | | |
| Normal Flow | 1. Admin clicks button delete in Test record 2. Admin chooses Yes in confirm popup 3. Test is removed from database | | |
| Alternative Flows | 2.a Admin chooses No in confirm popup  3.a Back to test list | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES17 | | | |
| Use Case Name | Update test | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can update his/her own test | | |
| Preconditions | Admin logged in | | |
| Postconditions | Test is updated in database | | |
| Normal Flow | 1. Admin clicks Update in test record 2. Admin updates test information 3. Admin click button Update 4. Test is updated in database | | |
| Alternative Flows | N/A | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES18 | | | |
| Use Case Name | View tests | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can view his/her own test | | |
| Preconditions | Admin logged in | | |
| Postconditions | Testlist is displayed to test master | | |
| Normal Flow | 1. Admin clicks View test 2. Test table is displayed to test master | | |
| Alternative Flows | N/A | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case ID : OES15 | | | |
| Use Case Name | View test report | | |
| Created By | CanhKD | Last Updated By | CanhKD |
| Date Created | February 15th, 2017 | Date Last Updated | February 17th, 2017 |
| Actors | Admin | | |
| Description | Admin can view test report ( score, answers, time, etc) | | |
| Preconditions | Admin logged in | | |
| Postconditions | Report is displayed to test master | | |
| Normal Flow | 1. Admin clicks View report 2. Report is displayed to test master | | |
| Alternative Flows | N/A | | |
| Exceptions | N/A | | |
| Priority | High | | |
| Special Requirements | N/A | | |
| Notes and Issues | N/A | | |

* 1. Non-functional requirements

### Security: secure assess to user’s confidential data.

### Reliability: 24/7 availability.

* Maintainability: coding conventions, follow-up documents for maintenance activities.

## Performance requirements

90% of responses should be within 1 second, except for Update content for which more time is acceptable.

* 1. Technical issues

This system will work on client-server architecture. The system should support common browsers such as IE, mozilla firefox, chrome, etc.

1. **Interface Requirements**
   1. User interface

A graphic user interface will be available in a workflow scenarios to assess to all features of the website. Any occuring error or exception catching should be displayed to user with friendly messages.

* 1. Software requirement

Any operating system with browser and internet connection.

* 1. Hardware requirement

No special hardware requirement is needed for the system