Revision History

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| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| 31/10/2014 | v1.00 | Introduction written, abbreviations added, conventions added | Burak Atalay |
| 31/10/2014 | v1.01 | Tests added | Burak Atalay |
| 01/11/2014 | v1.02 | Tests added | Bahadır Kırdan |
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# Introduction

## Document overview

This document is the software test plan of the Ozyegin University Course Scheduler software development project. It contains the description of tests.

## Abbreviations

SRS – Software Requirements Specification

OzuSch – Ozyegin University Course Scheduler

JVM – Java Virtual Machine

JRE – Java Runtime Development

SDK – Software Development Kit

N/A – Not Available

## References

| # | Document Identifier | Document Title |
| --- | --- | --- |
| 1 | Doc #1 | Software Development Plan |
| 2 | Doc #2 | Software Requirements Specifications |

## Conventions

|  |  |  |
| --- | --- | --- |
| **Test ID** | **Some ID assigned according to the naming chosen convention** |  |
| Test description | A brief description of the test |  |
| Verified Requirement | SRS-REQ-001 | Verification method: I,A,D,T  See the explanations and examples on the next pages |
| Initial conditions | The state of software before test | You may reference a procedure or it may be the result of previous test |
| Tests inputs | Input data from any test tool, input files name and location | You may reference a procedure to use the test tool |
| Data collection actions | Recording and post processing of output data | You may reference a procedure to record data with a test tool |
| Tests outputs | Output data files names and location, logs … | Give unique name out output data files. |
| Assumptions and constraints | If any, may be limited access to a tool, license … |  |
| Expected results and criteria | List here the results of test | And the criteria to evaluate the result |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | Start foo | Foo is started |

# Tests preparations

This section contains tasks and recommendations before executing tests.

## Hardware preparation

A computer with Windows Vista/7/8.x or OS X or Linux will be enough.

## Software preparation

* Computer needs to have an internet connection.
* JVM (JRE 1.6/1.7, Java SDK 1.6/1.7) needs to be installed in the computer.
* Web browsers that support Java/Scala needs to be installed in the computer.

## Other test preparation

Create an OzuSch account for test purposes.

## Safety, security and privacy precautions

None.

# Tests descriptions

## Demonstration and Inspection Tests

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| **Test ID** | **T-SRS-OzuSch-001.1/001.2** |  |
| Test description | Verify that OzuSch allows people to register to the system. |  |
| Verified Requirement | SRS-OzuSch-001.1  SRS-OzuSch-001.2 | D, I |
| Initial conditions | OzuSch web page is open and waiting for a sign-up request. |  |
| Tests inputs | To OzuSch: username, e-mail and password |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | Username is valid and is not already registered to the system. |  |
| Expected results and criteria | User is successfully registered to the system. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User clicks the “Register” button. | OzuSch directs the user to registration page. |
| 2 | User fills the registration form. | OzuSch checks the information for validity and if everything is valid, it completes the registration. If not it warns the user to check their information. |

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| **Test ID** | **T-SRS-OzuSch-002** |  |
| Test description | Verify that the request to register to the system is done by a person and not a bot. |  |
| Verified Requirement | SRS-OzuSch-002.1 | D, I |
| Initial conditions | OzuSch registration page is opened by a user. |  |
| Tests inputs | Captcha code generated by the system. |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | Captcha code is filled correctly by the user. |  |
| Expected results and criteria | User is successfully registered to the system. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User fills the registration form. | OzuSch prompts the user to enter the automatically generated captcha code. |
| 2 | User enters the captcha code. | OzuSch compares the captcha code that is entered by the user and the captcha code generated by the system, if the two codes are same user is successfully registered to the system. |

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| **Test ID** | **T-SRS-OzuSch-003** |  |
| Test description | Verify that the registered user receives a confirmation e-mail. |  |
| Verified Requirement | SRS-OzuSch-003.1 | D, I |
| Initial conditions | OzuSch registration is completed by a user. |  |
| Tests inputs | N/A |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | N/A |  |
| Expected results and criteria | User successfully receives an e-mail from the system. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | Registration process is done. | OzuSch sends an e-mail to the user. |

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| **Test ID** | **T-SRS-OzuSch-004** |  |
| Test description | Verify that a registered user can successfully login to the system. |  |
| Verified Requirement | SRS-OzuSch-004.1 | D, I |
| Initial conditions | OzuSch login page is opened by the user. |  |
| Tests inputs | OzuSch username and password. |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | Username and password are correctly entered by the user. |  |
| Expected results and criteria | User successfully logs in to the system. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User clicks the “Login” button. | OzuSch prompts the user to enter their username and password. |
| 2 | User fills the login form. | OzuSch checks the username and password, and if the information is valid the user is logged into the system. |

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| **Test ID** | **T-SRS-OzuSch-005** |  |
| Test description | Verify that a user can eliminate his/her completed courses from the system |  |
| Verified Requirement | SRS-OzuSch-005.1  SRS-OzuSch-005.2 | D, I |
| Initial conditions | A user is logged into OzuSch. |  |
| Tests inputs | User’s completed courses. |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | User is not a new student that is in his/her first semester. |  |
| Expected results and criteria | User successfully eliminates his/her completed courses. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User navigates to courses page. | OzuSch directs the user to course selection page. |
| 2 | User selects his/her completed courses. | OzuSch removes those courses from the course list. |

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| **Test ID** | **T-SRS-OzuSch-006** |  |
| Test description | Verify that a user can see available courses to him/her. |  |
| Verified Requirement | SRS-OzuSch-006.1 | D, I |
| Initial conditions | A user has eliminated his completed courses. |  |
| Tests inputs | N/A |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | User is not a new student that is in his/her first semester. |  |
| Expected results and criteria | User successfully sees the courses available to him/her. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User looks at the courses page. | OzuSch shows the available courses. |

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| **Test ID** | **T-SRS-OzuSch-007** |  |
| Test description | Verify that a user can select the courses that he/she wants to take. |  |
| Verified Requirement | SRS-OzuSch-007.1 | D, I |
| Initial conditions | A user has given the required background information to the system. |  |
| Tests inputs | N/A |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | User is not a new student that is in his/her first semester. |  |
| Expected results and criteria | User successfully selects his/her desired courses. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User navigates to courses page. | OzuSch directs the user to course selection page. |
| 2 | User selects his/her completed courses. | OzuSch removes those courses from the course list. |
| 3 | User selects the courses he/she wants to take. | OzuSch processes this request and allows the user to select courses. |

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| **Test ID** | **T-SRS-OzuSch-008** |  |
| Test description | The system shows the user the courses that are unavailable to him/her. |  |
| Verified Requirement | SRS-OzuSch-008.1 | D, I |
| Initial conditions | A user has selected his/her desired courses. |  |
| Tests inputs | N/A |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | N/A |  |
| Expected results and criteria | User successfully sees the unavailable courses. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User navigates to courses page. | OzuSch directs the user to course selection page. |
| 2 | User selects his/her completed courses. | OzuSch removes those courses from the course list. |
| 3 | User selects the courses he/she wants to take. | OzuSch processes this request and shows the unavailable courses to the user. |

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| **Test ID** | **T-SRS-OzuSch-009** |  |
| Test description | The system shows the user the courses that have only one section. |  |
| Verified Requirement | SRS-OzuSch-009.1 | D, I |
| Initial conditions | A user has selected his/her desired courses. |  |
| Tests inputs | N/A |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | At least one of the courses that the user has selected has only one section available. |  |
| Expected results and criteria | User successfully sees the courses that have only one section. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User navigates to courses page. | OzuSch directs the user to course selection page. |
| 2 | User selects his/her completed courses. | OzuSch removes those courses from the course list. |
| 3 | User selects the courses he/she wants to take. | OzuSch processes this request and shows the courses that have only one section to the user. |

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| **Test ID** | **T-SRS-OzuSch-0010** |  |
| Test description | The system shows the user the courses that have only one section. |  |
| Verified Requirement | SRS-OzuSch-0010.1 | D, I |
| Initial conditions | A user has selected his/her desired courses and was shown the courses that have only one section. |  |
| Tests inputs | N/A |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | User has selected courses that have more than one section available. |  |
| Expected results and criteria | User successfully sees the rest of the courses. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User navigates to courses page. | OzuSch directs the user to course selection page. |
| 2 | User selects his/her completed courses. | OzuSch removes those courses from the course list. |
| 3 | User selects the courses he/she wants to take. | OzuSch processes this request and shows the courses that have only one section to the user. |
| 4 | User clicks to see the rest of the courses. | OzuSch shows all of the courses available to the user. |

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| **Test ID** | **T-SRS-OzuSch-011** |  |
| Test description | The system display the profile page with correct user credentials which of them are username, password, email and lessons that user has took. |  |
| Verified Requirement | SRS-OzuSch-0011.1 | D, I |
| Initial conditions | The user profile page is opened. |  |
| Tests inputs | N/A |  |
| Data collection actions | N/A |  |
| Tests outputs | Correct user credentials |  |
| Assumptions and constraints | User must enter his/her credentials correctly. |  |
| Expected results and criteria | User profile must shown with correct user credentials. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User clicks the “Profile” tab. | The user profile page is opened |

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| **Test ID** | **T-SRS-OzuSch-012** |  |
| Test description | The system change the credentials that belongs to user |  |
| Verified Requirement | SRS-OzuSch-0012.1 | D, I |
| Initial conditions | The user profile page is opened. |  |
| Tests inputs | Username, password, email, lessons, semester information |  |
| Data collection actions | N/A |  |
| Tests outputs | Username, email, semester information, password, lessons |  |
| Assumptions and constraints | The user correctly enters his/her credentials, semester information, lessons etc. |  |
| Expected results and criteria | User profile must shown with correct data. |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User fills his/her new credentials on the web page | N/A |
| 2 | User click the “Save” button | The system take the inputs and change the old credentials with the news in the database |

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| **Test ID** | **T-SRS-OzuSch-013** |  |
| Test description | The system must be able to work under the huge amount of the response. |  |
| Verified Requirement | SRS-OzuSch-0013.1 | D, I, T |
| Initial conditions | N/A |  |
| Tests inputs | All kind of response in the system including multi-logins, clicking buttons and calling functions in different accounts in the same time |  |
| Data collection actions | N/A |  |
| Tests outputs | The system must response all requests in a correct way |  |
| Assumptions and constraints | N/A |  |
| Expected results and criteria | The system must response all requests in a correct way |  |

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| **Test ID** | **T-SRS-OzuSch-014** |  |
| Test description | Up-to-date function |  |
| Verified Requirement | SRS-OzuSch-0014.1 | D, I |
| Initial conditions | N/A |  |
| Tests inputs | All kind of response in the system including multi-logins, clicking buttons and calling functions in different accounts in the same time |  |
| Data collection actions | N/A |  |
| Tests outputs | The system must response all requests in a correct way |  |
| Assumptions and constraints | N/A |  |
| Expected results and criteria | The system must response all requests in a correct way |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | User fills his/her new credentials on the web page | N/A |
| 2 | User click the “Save” button | The system take the inputs and change the old credentials with the news in the database |

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| **Test ID** | **T-SRS-OzuSch-015** |  |
| Test description | Calculating the limit of credit that user has |  |
| Verified Requirement | SRS-OzuSch-0015.1 | D, I |
| Initial conditions | N/A |  |
| Tests inputs | Student’s GPA |  |
| Data collection actions | N/A |  |
| Tests outputs | The system must response all requests in a correct way |  |
| Assumptions and constraints | Student’s GPA must be entered between 0.00 and 4.00 |  |
| Expected results and criteria | Maximum number of credit should be calculated true |  |

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| **Test ID** | **T-SRS-OzuSch-016** |  |
| Test description | Connecting the API that provided from school and taking the information of lessons correctly |  |
| Verified Requirement | SRS-OzuSch-0016.1 | D, I |
| Initial conditions | N/A |  |
| Tests inputs | N/A |  |
| Data collection actions | N/A |  |
| Tests outputs | N/A |  |
| Assumptions and constraints | The API that provided from school must be contains correct functions |  |
| Expected results and criteria | Information of lessons including credit and time slots must be correct |  |

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| **Test ID** | **T-SRS-OzuSch-017** |  |
| Test description | Expecting true wait time after 5 times wrong captcha entered |  |
| Verified Requirement | SRS-OzuSch-0017.1 | D, I |
| Initial conditions | The user opened login or register page |  |
| Tests inputs | 5 times wrong captcha entering |  |
| Data collection actions | N/A |  |
| Tests outputs | 2 minutes of waiting time |  |
| Assumptions and constraints | Captcha picture must be shown correctly |  |
| Expected results and criteria | After 5 wrong captcha, the system shows an alert message. Then it should not allow new login or register and the user must wait 2 minutes |  |
| **Test procedure** |  |  |
| **Step number** | **Operator actions** | **Expected result and evaluation criteria** |
| 1 | The user enters 5 times captcha | The system shows an alert message. |
| 2 | The user “OK” in the alert message | The system does not allow a new request within 2 minutes. |

Verification Methods:

* Inspection (I): control or visual verification
  + Control of the physical implementation or the installation of a component. The control verifies that the implementation or the installation of a component is compliant with the requirements of diagrams.
  + Control of the documentation describing a component. The control verifies that the documentation is compliant with the requirements.
* Analysis (A): verification based upon analytical evidences
  + Verification of a functionality, performance or technical solution of a component by analyzing the data collected by tests in real conditions, by simulation of real conditions or by an analysis report.
  + Analysis of test data or of design data is used as appropriate to verify requirements.
  + The verification is based upon analytical evidences obtained by calculations, like modeling, simulation and forecasting.
  + Analysis is used when an acceptable level of confidence cannot be established by other methods or if analysis is the most cost-effective solution.
* Demonstration (D): verification of operational characteristics, without quantitative measurement
  + Verifying a requirement by demonstration implies that the required functionality specified by a requirement is complete.
  + Demonstration is used when quantitative measurement is not required for verification of the requirements
  + Demonstration includes the control of the technical solutions specified by the non-functional requirements.
* Test (T): verification of quantitative characteristics with quantitative measurement
  + Verifying a functionality, performance or technical solution of a component by executing testing scenarios in predefined, controlled and traceable testing conditions.
  + Tests require the use of special equipment, instrumentation, simulation techniques, or the application of established principles and procedures,
  + Data produced during tests is used to evaluate quantitative results and compare them with requirements.