**ĐẠI HỌC ĐÀ NẴNG**

**ĐẠI HỌC BÁCH KHOA**

**KHOA CÔNG NGHỆ THÔNG TIN**



**TESTING DOCUMENTATION**

**ĐỀ TÀI**

**“Hệ thống quản lý**

**trung tâm Anh Ngữ HAHYWU”**

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Đà Nẵng, 04/2023

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1. **Scope of Testing**
   1. **Within the Scope of Testing**

Functions included :

* Authentication
* Account
* Class
* Schedule
* Mark
* Revenue
  1. **Out of the Scope of Testing**

Check the performance of the application

1. **Test Strategy**
   1. **Testing Types**

|  |  |
| --- | --- |
| **Type of testing** | **Objectives** |
| Whitebox Testing | Identify how the SOS system responds to expected and unexpected user actions, its response time, usability issues and reliability issues |
| Blackbox Testing | Check the functionality of the SOS system under test. Based on the requirements and external interface of the program, identify how the SOS system responds to expected and unexpected user actions |

* 1. **Test Levels**
* *Unit Testing :*
* The basic level of testing where where individual units or components of a software are tested . Unit testing can be performed seperately from the rest of the software depending on the Software Development Lifecycle chosen for that particular appilcation.
* Purpose: confirm weather the application functions are coded correctly or not.
* *Integration Testing:*
* A level of software testing where individual units are combined and tested as a group.
* Purpose: expose faults in the interaction between integrated units.
* *System Testing :*
* A level of software testing where a complete and integrated software is tested.
* System testing is in the Scope of Balckbox Testing.
* Purpose: evaluate the system’s compliance with the specified requirements.

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Tests** | **Test Level** | | |
| **Unit** | **Integration** | **System** |
| Blackbox Testing | X | X |  |
| Whitebox Testing | X |  |  |

1. **Test Plan**
   1. **Human Resources**

|  |  |  |
| --- | --- | --- |
| **Worker** | **Role** | **Specific Responsibilities/Comments** |
| Phan Trần Nhật Hạ | Tester  Developer | Create test plan.  Create Unit Test Cases and reports.  Execute Unit Test.  Fix bug. |
| Nguyễn Đức Huy | Tester  Developer | Create Integration Test Cases and reports.  Execute Integration Test.  Write login test report.  Fix bug. |
| Trần Lê Như Quỳnh | Tester  Developer | Create test plan.  Create Integration Test Cases and reports.  Execute Integration Test.  Fix bug. |

* 1. **Test Environment**

|  |  |  |  |
| --- | --- | --- | --- |
| **Purpose** | **Tool** | **Provider** | **Version** |
| Unit Test | Visual Studio | Microsoft Office | Visual Studio 2022 |
| Integration Test | Visual Studio | Microsoft Office | Visual Studio 2022 |
| System Test | Visual Studio | Microsoft Office | Visual Studio 2022 |

* 1. **Test Milestones**

|  |  |  |
| --- | --- | --- |
| **Milestone Task** | **Start Date** | **End Date** |
| Unit Test | 07/04/2023 | 19/04/2023 |
| Integration Test | 07/04/2023 | 19/04/2023 |
| System Test | 07/04/2023 | 19/04/2023 |

1. **Test Cases**

* Unit Test Case:
  + Test Authentication
  + Test Account
  + Test Class
  + Test Schedule
  + Test Mark
  + Test Revenue
* Integration Test Case:
  + Test Student

1. **Test Reports**
   1. **Result of Unit Test**
      1. **Authentication**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NO** | **Function Code** | **Passed** | **Failed** | **Untested** | **N** | **A** | **B** | **Total Test Case** |
| 1 | AuthenticatAccount | 5 | 0 | 0 | 4 | 1 | 0 | 5 |
| 2 | RegisterAccount | 5 | 0 | 0 | 3 | 2 | 0 | 5 |
| 3 | ForgotPassword | 4 | 0 | 0 | 2 | 1 | 1 | 4 |
| 4 | ResetPassword | 3 | 0 | 0 | 1 | 1 | 1 | 3 |
| 5 | LogoutAccount | 3 | 0 | 0 | 3 | 0 | 0 | 3 |
|  | **Sub Total** | **20** | **0** | **0** | **13** | **5** | **2** | **20** |

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**Test Coverage** **100%**

**Test Successful Coverage**  **100%**

**Normal Case**  **65%**

**Abnormal Case** **25%**

**Boundary Case** **10%**

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* + 1. **Account**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NO** | **Function Code** | **Passed** | **Failed** | **Untested** | **N** | **A** | **B** | **Total Test Case** |
| 1 | getAllAccount | 3 | 0 | 0 | 3 | 0 | 0 | 3 |
| 2 | getAccount | 3 | 0 | 0 | 2 | 1 | 0 | 3 |
| 3 | deleteAccount | 3 | 0 | 0 | 2 | 1 | 0 | 3 |
| 4 | createAccount | 3 | 0 | 0 | 1 | 1 | 1 | 3 |
| 5 | updateAccount | 3 | 0 | 0 | 1 | 1 | 1 | 3 |
|  | **Sub Total** | **15** | **0** | **0** | **9** | **4** | **2** | **15** |

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**Test Coverage** **100%**

**Test Successful Coverage**  **100%**

**Normal Case**  **60%**

**Abnormal Case** **27%**

**Boundary Case** **13%**

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* + 1. **Class**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NO** | **Function Code** | **Passed** | **Failed** | **Untested** | **N** | **A** | **B** | **Total Test Case** |
| 1 | getAllClass | 2 | 0 | 0 | 2 | 0 | 0 | 2 |
| 2 | getClassOfStudent | 2 | 0 | 0 | 2 | 0 | 0 | 2 |
| 3 | deleteClass | 2 | 0 | 0 | 1 | 1 | 0 | 2 |
| 4 | createClass | 3 | 0 | 0 | 1 | 1 | 1 | 3 |
| 5 | updateClass | 3 | 0 | 0 | 1 | 1 | 1 | 3 |
|  | **Sub Total** | **12** | **0** | **0** | **7** | **3** | **2** | **12** |

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**Test Coverage** **100%**

**Test Successful Coverage**  **100%**

**Normal Case**  **58%**

**Abnormal Case** **25%**

**Boundary Case** **17%**

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* + 1. **Schedule**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NO** | **Function Code** | **Passed** | **Failed** | **Untested** | **N** | **A** | **B** | **Total Test Case** |
| 1 | getAllShedule | 2 | 0 | 0 | 2 | 0 | 0 | 2 |
| 2 | getSheduleOfClass | 3 | 0 | 0 | 2 | 1 | 0 | 3 |
| 3 | updateShedule | 3 | 0 | 0 | 1 | 1 | 1 | 3 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **Sub Total** | **8** | **0** | **0** | **5** | **2** | **1** | **8** |

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**Test Coverage** **100%**

**Test Successful Coverage**  **100%**

**Normal Case**  **62%**

**Abnormal Case** **25%**

**Boundary Case** **13%**

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* + 1. **Mark**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NO** | **Function Code** | **Passed** | **Failed** | **Untested** | **N** | **A** | **B** | **Total Test Case** |
| 1 | getAllMarkOfClass | 3 | 0 | 0 | 3 | 0 | 0 | 3 |
| 2 | getMarkOfStudent | 3 | 0 | 0 | 2 | 1 | 0 | 3 |
| 3 | updateMark | 4 | 0 | 0 | 2 | 1 | 1 | 4 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **Sub Total** | **10** | **0** | **0** | **7** | **2** | **1** | **10** |

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**Test Coverage** **100%**

**Test Successful Coverage**  **100%**

**Normal Case**  **70%**

**Abnormal Case** **20%**

**Boundary Case** **10%**

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* + 1. **Revenue**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NO** | **Function Code** | **Passed** | **Failed** | **Untested** | **N** | **A** | **B** | **Total Test Case** |
| 1 | getAllRevenue | 3 | 0 | 0 | 3 | 0 | 0 | 3 |
| 2 | updateCost | 6 | 0 | 0 | 3 | 1 | 2 | 6 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | **Sub Total** | **9** | **0** | **0** | **6** | **1** | **2** | **9** |

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**Test Coverage** **100%**

**Test Successful Coverage**  **100%**

**Normal Case**  **67%**

**Abnormal Case** **11%**

**Boundary Case** **22%**

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* 1. **Result of Integration Test**
     1. **Student**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No** | **Module Code** | **Pass** | **Fail** | **Pending** | **N/A** | **Number of**  **test cases** |
| 1 | Login | 3 | 0 | 0 | 0 | 3 |
| 2 | Fogot Password | 3 | 0 | 0 | 0 | 3 |
| 3 | View Profile | 1 | 0 | 0 | 0 | 1 |
| 4 | Change Password | 3 | 0 | 0 | 0 | 3 |
| 5 | Edit Profile | 2 | 0 | 0 | 0 | 2 |
| 6 | View Schedule | 1 | 0 | 0 | 0 | 1 |
| 7 | View Mark | 1 | 0 | 0 | 0 | 1 |
|  | **Subtotal** | **14** | **0** | **0** | **0** | **14** |

Test coverage: 100%

Test successful coverage: 100%

|  |  |
| --- | --- |
| **ID** | **Message** |
| No.1 | Please fill all the fields |
| No.2 | Incorrect ID or Password |
| No.3 | This account does not exist |
| No.4 | Incorrect personal information |
| No.5 | Change password successfully |
| No.6 | Incorrect old password |
| No.7 | Your new password is invalid |
| No.8 | Information is invalid. Please fill again! |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Test Case Discription** | **Test Case Procedure** | **Expected Results** | **Inter-test case Dependency** | **Result** | **Test date** | **Tester** |
| Student account | | | | | | | |
| [Login-1] | Login by Student account (ID and password valid) | 1. Open app  2. Fill the information of account  ID: 101001  PW: 123456 | 1. Redirected to the “Student Menu” Form | 1. Have internet to connect with server  2. Already has student account | Pass | 18/04/2023 | Tran Le Nhu Quynh |
| [Login-2] | Login by Student account (ID or password is null) | 1. Open app  2. Fill the information of account  ID: 101001  PW:  or  ID:  PW: 123456 | 1. Display the message No.1 | 1. Have internet to connect with server  2. Already has student account | Pass | 18/04/2023 | Tran Le Nhu Quynh |
| [Login-3] | Login by Student account (ID or password is incorrect) | 1. Open the app  2. Fill in the information of account  ID: 101001  PW: 123457 | 1. Display the message No.2 | 1. Have internet to connect with server  2. Already have active admin account | Pass | 18/04/2023 | Tran Le Nhu Quynh |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Test Case Discription** | **Test Case Procedure** | **Expected Results** | **Inter-test case Dependency** | **Result** | **Test date** | **Tester** |
| Student account | | | | | | | |
| [Fogot Password-1] | In “Forgot password” Form, enter right personal infor and ID | 1. In “Login” Form, click “Forgot Password”  2. In “Forgot Password” Form, fill personal infor  3. Enter | 1. Password will be reseted as initial state (similar to ID) | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |
| [Fogot Password-2] | In “Forgot password” Form, enter personal infor and ID (ID doesn’t exist) | 1. In “Login” Form, click “Forgot Password”  2. In “Forgot Password” Form, fill personal infor  3. Enter | 1. Display message No.3 | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |
| [Fogot Password-3] | In “Forgot password” Form, enter personal infor and ID (one of the personal infor is incorrect) | 1. In “Login” Form, click “Forgot Password”  2. In “Forgot Password” Form, fill personal infor  3. Enter | 1. Display message No.4 | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Test Case Discription** | **Test Case Procedure** | **Expected Results** | **Inter-test case Dependency** | **Result** | **Test date** | **Tester** |
| Student account | | | | | | | |
| [View Profile-1] | View profile with right account | 1. Login to account  2. Click “Personal Information” | 1. The personal information of account is displayed | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Test Case Discription** | **Test Case Procedure** | **Expected Results** | **Inter-test case Dependency** | **Result** | **Test date** | **Tester** |
| Student account | | | | | | | |
| [Change Password-1] | Change password with right pattern | 1. In "Personal Information”, click “Change Password”  2. Fill information by pattern:  ID: 101001  Old PW: 123456  New PW: abcdef  New PW: abcdef  3. Enter | 1. Display message No.5 | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |
| [Change Password-2] | Change password with old password doesn’t match with database | 1. In "Personal Information”, click “Change Password”  2. Fill information by pattern:  ID: 101001  Old PW: 123457  New PW: abcdef  New PW: abcdef  3. Enter | 1. Display message No.6 | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |
| [Change Password-3] | Change Password with the second new password that does not match the first new password | 1. In "Personal Information”, click “Change Password”  2. Fill information by pattern:  ID: 101001  Old PW: 1234567  New PW: abcdef  New PW: abcdee  3. Enter | 1. Display message No.7 | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Test Case Discription** | **Test Case Procedure** | **Expected Results** | **Inter-test case Dependency** | **Result** | **Test date** | **Tester** |
| Student account | | | | | | | |
| [Edit Profile-1] | Edit profile with right pattern | 1. In "Personal Information”, click “Edit Profile”  2. Fill information is needed to change  3. Click “Save” button to change it | 1. The information is updated | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |
| [Edit Profile-2] | Edit profile with wrong pattern | 1. In "Personal Information”, click “Edit Profile”  2. Fill information is needed to change  3. Click “Save” button to change it | 1. Display message No.8  2. The information cannot be updated | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Test Case Discription** | **Test Case Procedure** | **Expected Results** | **Inter-test case Dependency** | **Result** | **Test date** | **Tester** |
| Student account | | | | | | | |
| [View Mark-1] | View mark with right account | 1. Login to account  2. Click “Mark” | 1. The mark information of account is displayed | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Test Case Discription** | **Test Case Procedure** | **Expected Results** | **Inter-test case Dependency** | **Result** | **Test date** | **Tester** |
| Student account | | | | | | | |
| [View Schedule-1] | View schedule with right account | 1. Login to account  2. Click “Schedule” | 1. The schedule information of account is displayed | 1. Have internet to connect with server  2. Already logged in Student | Pass | 18/04/2023 | Tran Le Nhu Quynh |