

**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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# MỤC LỤC

<b>1. Scope of Testing .....</b>	<b>3</b>
<b>1.1. Within the Scope of Testing .....</b>	<b>3</b>
<b>1.2. Out of the Scope of Testing .....</b>	<b>3</b>
<b>2. Test Strategy .....</b>	<b>3</b>
<b>2.1. Testing Types .....</b>	<b>3</b>
<b>2.2. Test Levels .....</b>	<b>3</b>
<b>3. Test Plan .....</b>	<b>4</b>
<b>3.1. Human Resources .....</b>	<b>4</b>
<b>3.2. Test Environment .....</b>	<b>4</b>
<b>3.3. Test Milestones .....</b>	<b>5</b>
<b>4. Test Cases .....</b>	<b>5</b>
<b>5. Test Reports .....</b>	<b>6</b>
<b>5.1. Result of Unit Test .....</b>	<b>6</b>
<b>5.1.1. Authentication .....</b>	<b>6</b>
<b>5.1.2. Account .....</b>	<b>7</b>
<b>5.1.3. Class .....</b>	<b>8</b>
<b>5.1.4. Schedule .....</b>	<b>9</b>
<b>5.1.5. Mark .....</b>	<b>10</b>
<b>5.1.6. Revenue .....</b>	<b>11</b>
<b>5.2. Result of Integration Test .....</b>	<b>12</b>
<b>5.2.1. Student .....</b>	<b>12</b>

## 1. Scope of Testing

### 1.1. Within the Scope of Testing

Functions included :

- Authentication
- Account
- Class
- Schedule
- Mark
- Revenue

### 1.2. Out of the Scope of Testing

Check the performance of the application

## 2. Test Strategy

### 2.1. 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

### 2.2. Test Levels

- *Unit Testing* :
  - The basic level of testing where individual units or components of a software are tested . Unit testing can be performed separately from the rest of the software depending on the Software Development Lifecycle chosen for that particular application.
  - Purpose: confirm whether 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 Blackbox 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		

### 3. Test Plan

#### 3.1. 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.

#### 3.2. Test Environment

Purpose	Tool	Provider	Version
Unit Test	Visual Studio	Microsoft Office	Visual Studio 2022
Integration Test	Visual Studio	Microsoft Office	Visual Studio 2022

### 3.3.Test Milestones

Milestone Task	Start Date	End Date
Unit Test	07/04/2023	19/04/2023
Integration Test	07/04/2023	19/04/2023

## 4. Test Cases

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

## 5. Test Reports

### 5.1.Result of Unit Test

#### 5.1.1. 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

---

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

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

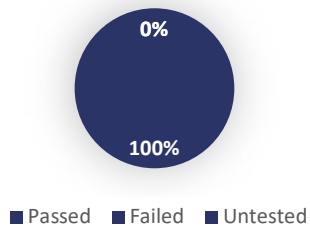
**Normal Case** **65%**

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

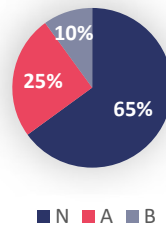
**Boundary Case** **10%**

---

**Passed Percent**



**Test Type**



### 5.1.2. Account

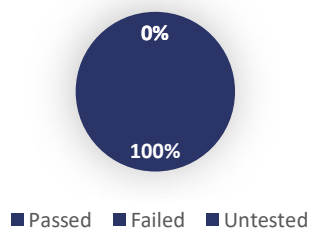
NO	Function Code	Passed	Failed	Untested	N	A	B	Total Test Case
1	getAllAccount	3	0	0	3	0	0	3
2	getAccount	3	0	0	2	1	0	3
3	deleteAccount	3	0	0	2	1	0	3
4	createAccount	3	0	0	1	1	1	3
5	updateAccount	3	0	0	1	1	1	3
	Sub Total	15	0	0	9	4	2	15

---

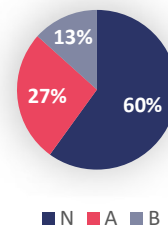
Test Coverage	100%
Test Successful Coverage	100%
Normal Case	60%
Abnormal Case	27%
Boundary Case	13%

---

Passed Percent



Test Type



### 5.1.3. 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

---

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

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

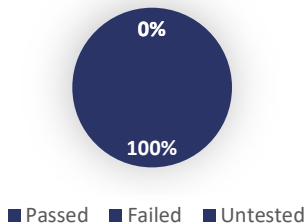
**Normal Case** **58%**

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

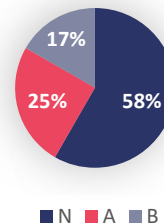
**Boundary Case** **17%**

---

**Passed Percent**



**Test Type**





#### 5.1.4. 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
	<b>Sub Total</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>8</b>

---

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

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

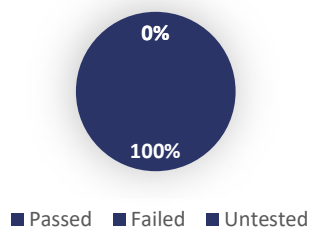
**Normal Case** **62%**

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

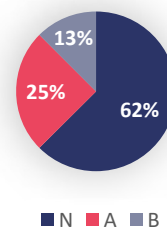
**Boundary Case** **13%**

---

**Passed Percent**



**Test Type**



### 5.1.5. Mark

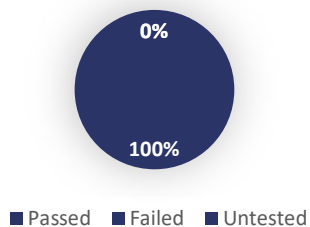
NO	Function Code	Passed	Failed	Untested	N	A	B	Total Test Case
1	getAllMarkOfClass	3	0	0	3	0	0	3
2	getMarkOfStudent	3	0	0	2	1	0	3
3	updateMark	4	0	0	2	1	1	4
	<b>Sub Total</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>10</b>

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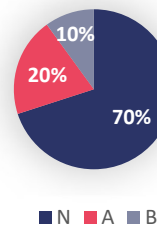
<b>Test Coverage</b>	<b>100%</b>
<b>Test Successful Coverage</b>	<b>100%</b>
<b>Normal Case</b>	<b>70%</b>
<b>Abnormal Case</b>	<b>20%</b>
<b>Boundary Case</b>	<b>10%</b>

---

**Passed Percent**



**Test Type**



### 5.1.6. Revenue

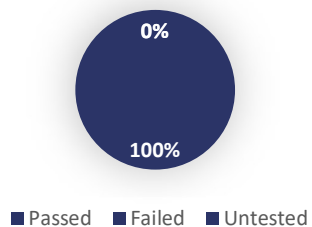
NO	Function Code	Passed	Failed	Untested	N	A	B	Total Test Case
1	getAllRevenue	3	0	0	3	0	0	3
2	updateCost	6	0	0	3	1	2	6
	<b>Sub Total</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>9</b>

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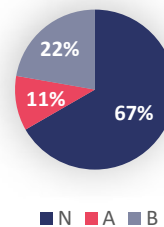
<b>Test Coverage</b>	<b>100%</b>
<b>Test Successful Coverage</b>	<b>100%</b>
<b>Normal Case</b>	<b>67%</b>
<b>Abnormal Case</b>	<b>11%</b>
<b>Boundary Case</b>	<b>22%</b>

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**Passed Percent**



**Test Type**



## 5.2. Result of Integration Test

### 5.2.1. 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
	<b>Subtotal</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>

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