

VIETNAM NATIONAL UNIVERSITY, HO CHI MINH CITY
UNIVERSITY OF TECHNOLOGY
FACULTY OF COMPUTER SCIENCE AND ENGINEERING



SOFTWARE TESTING (CO3015)

Semester 231

ASSIGNMENT 2

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HO CHI MINH CITY, NOVEMBER 2023

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1. Team members and workload

Name	Student ID	Role	Workload
Mai Hữu Nghĩa	2052612	Leader	I/ Test Rosariosis application <ul style="list-style-type: none"> ● Test Administration- Add Student ● Test Administration- Student Info ● Non-Functional Requirement II/ Test Moodle E-learning system <ul style="list-style-type: none"> ● Test Notification preferences - Assignment Notification ● Test Private files
Nguyễn Ngọc Hưng	2053075	Member	I/ Test Rosariosis application <ul style="list-style-type: none"> ● Test Administration - Add Course ● Test Teacher - Take Attendance II/ Test Moodle E-learning system <ul style="list-style-type: none"> ● Test Add a new course ● Test Add a quiz
Lê Tuấn Hưng	2052508	Member	I/ Test Rosariosis application <ul style="list-style-type: none"> ● Test Teacher - Grading Assignment ● Test Student - Submit Assignment II/ Test Moodle E-learning system <ul style="list-style-type: none"> ● Test Student submit assignment ● Test 2 Users private messaging
Trần Trí Đạt	2052443	Member	I/ Test Rosariosis application <ul style="list-style-type: none"> ● Test Administrator - Associate Parents with Students ● Test Administrator - Add Activity II/ Test Moodle E-learning system <ul style="list-style-type: none"> ● Test Teacher - Create Assignment ● Test Teacher - Update Assignment
Lê Nguyễn Hoàng Nhân	2052650	Member	I/ Test Rosariosis application <ul style="list-style-type: none"> ● Add meal item ● Delete meal item ● Add meal item image II/ Test Moodle E-learning system

Name	Student ID	Role	Workload
			<ul style="list-style-type: none">● Add discussion to forum● Add file resource to course

2. Link to the sheet:

The below links will redirect you to the sheet that our team is writing the test-case for, please feel free to go to each sheet for more details and complete submission.

- A- Test Rosariosis application:
<https://docs.google.com/spreadsheets/d/1AEsimFIKnhEOPCUT8qQBFIWZPTKdXnN1/edit?usp=sharing&ouid=110749852465406617649&rtpof=true&sd=true>
- B- Test Moodle E-learning system:
<https://docs.google.com/spreadsheets/d/1mHy17-5r6LZQg7hM27ez-9WSAJIwCYIU/edit?usp=sharing&ouid=110749852465406617649&rtpof=true&sd=true>

3. A- Test Rosariosis application

3.1. Mai Hữu Nghĩa

3.1.1. Add student

Use-case Name	Add student
Use case overview	Add a student in administrator role
Pre-conditions	1. User logged in as administrator 2. Admin is at the add student page
Normal flow	1. Go to "Student" tab 2. Click on "Add student" option 3. Fill in the first name of the student 4. Fill in the last name of the student 5. Click on "Save"
Alternative flow	3. Fill the RosarioSIS ID 3.1. Fill the custom username 3.2. Fill the password field 3.3. Fill other not required field
Exception flow	3. Duplicated RosarioSIS ID 3.1. Duplicated username 3.2. Warning password not strong enough

Technique used: Use-case testing

- Test case 1: Add new student successfully with required information
- Test case 2: Add new student with missing required data
- Test case 3: Test upload student photo successfully in the add new student page
- Test case 4: Test upload student photo with incorrect photo type in the add new student page
- Test case 5: Test add custom RosarioSIS ID successfully
- Test case 6: Test add custom RosarioSIS ID duplicated
- Test case 7: Test add username successfully
- Test case 8: Test add username duplicated
- Test case 9: Validate input field of RosarioSIS ID

- Test case 10: Test calendar input field year dropdown

Test details: [Sheet](#)

Special test case:

This is some special test case when testing the calendar field:

Test case	Month	Day	Year	Reason
1	2	28	2012	28/2 is leap year
2	2	28	2013	28/2 is normal year
3	2	29	2012	Leap day of a leap year.
4	2	29	2000	Leap day of the year 2000.
5	2	28	1900	28/2 of the year 1900
6	12	31	2011	The last day of the year
7	10	31	2012	The last day of the month that have 31 days
8	11	30	2012	The last day of the month that have 30 days
9	12	31	2012	The last day of leap year

3.1.2. *Student information tab*

Use-case Name	Student information
Use case overview	Add a student in administrator role
Pre-conditions	1. User logged in as administrator 2. Admin is at the student info page 3. Admin click save without entering any value to show up all the users.
Post-conditions	Successfully manage users
Normal flow	1. Go to "Student" tab 2. Click on "Student Information" option 3. Click "Submit" button without filling anything 4. Choose 1 student to view the detail information 5. Go to "General info" tab 6. Modify the user data 7. Click on "Save"
Alternative flow	5. Go to “addresses & info” tab 5.1.Modify or add new data about addresses & info 5.1.1 Click save to save the data about the address 5.1.2 Continue click to add new contact to add a new information of contact of a student 5.2 Click save
Exception flow	6. Duplicated or wrong data format input

Technique used: Use-case testing

- Test case 1: Test edit student information info successfully
- Test case 2: Test upload student photo successfully in the general info tab
- Test case 3: Test upload wrong student photo type
- Test case 4: Test calendar input field year dropdown
- Test case 5: Test add new address of a student and OpenStreetMap
- Test case 6: Test add contact of the student

Test details: [Sheet](#)

Special test case:

This is some special test case when testing the calendar field:

Test case	Month	Day	Year	Reason
1	2	28	2012	28/2 is leap year
2	2	28	2013	28/2 is normal year
3	2	29	2012	Leap day of a leap year.
4	2	29	2000	Leap day of the year 2000.
5	2	28	1900	28/2 of the year 1900
6	12	31	2011	The last day of the year
7	10	31	2012	The last day of the month that have 31 days
8	11	30	2012	The last day of the month that have 30 days
9	12	31	2012	The last day of leap year

3.2. Nguyễn Ngọc Hưng

3.2.1. Add course

Use-case description:

Use-case Name	Add course
Use case overview	Add a course to a student in administrator role
Pre-conditions	1. There is at least 1 course and 1 student in the list 2. User logged in as administrator
Post-conditions	Course successfully assigned to student
Normal flow	1. Go to the "Scheduling" tab 2. Click on "Student Schedule" option 3. Click the "Submit" button without filling in anything 4. Choose 1 student to add a course 5. Go to "Add a course" 6. Choose a subject to assign course 7. Choose 1 course 8. Choose 1 period 9. Click on "Save"
Alternative flows	2. Go to "Group Scheduling" option 2.1. Click the "Submit" button without filling anything 2.2. Choose a course with subject -> course -> period 2.3. Choose the start date and marking period for the course 2.4. Tick on the student to assign course 2.5. Click "ADD COURSE TO SELECTED STUDENTS"
Exception flows	9. Course already assigned to student 9.1. Back to step 5 9.2. Choose another period, course or subject 9.3. Continue to step 9

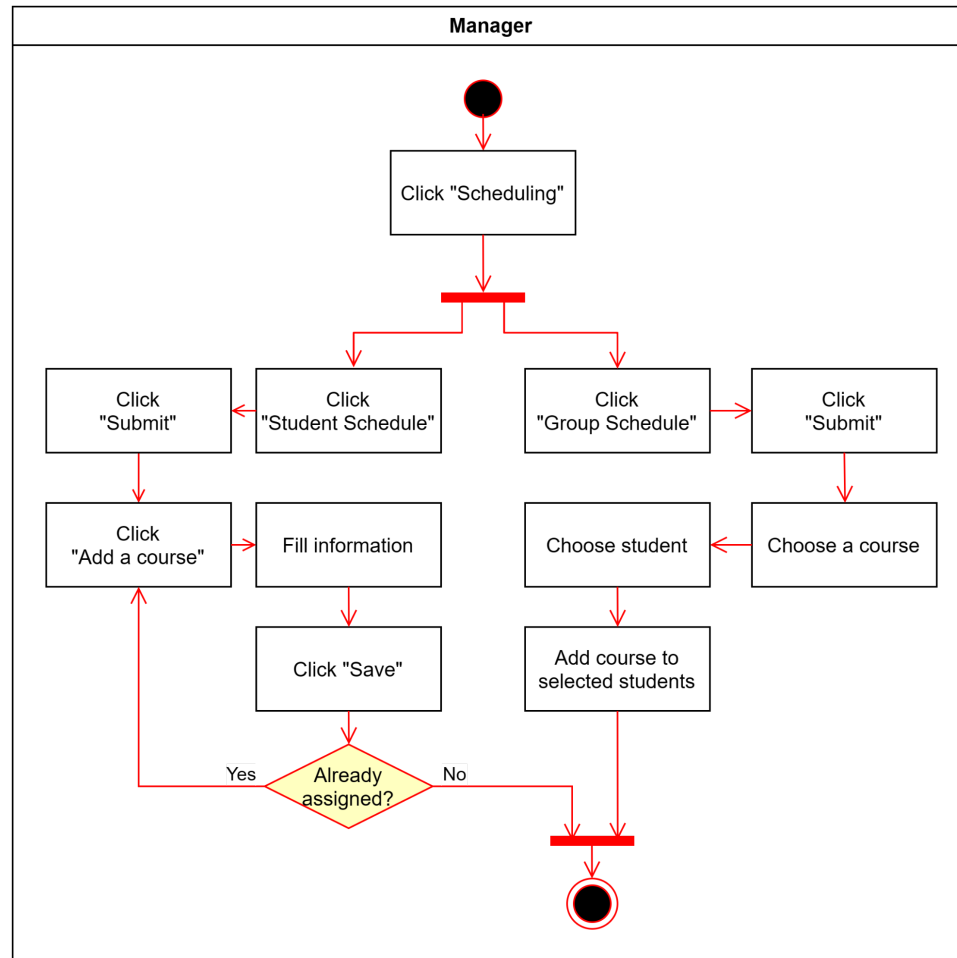
Technique used: Use-case testing

- Test case 1: Successfully add a course which appear first in the list
- Test case 2: Successfully add a course which appear last in the list
- Test case 3: Add a course that already assigned to a student
- Test case 4: Add a course to a student using "Scheduling -> Group Schedule"

- Test case 5: Add a course to a student as the second course using "Scheduling -> Group Schedule"

Test detail: [Sheet](#)

Activity diagram:



3.2.2. Take Attendance

Use-case description:

Use-case Name	Take Attendance
Use case overview	Enter period attendance for all students in the current period using teacher role
Pre-conditions	There is at least 1 student in the list
Post-conditions	Successfully enter the student attendance
Normal flow	<ol style="list-style-type: none">1. Click on "Attendance" tab on the menu2. Click on "Take Attendance" option3. Enter the period and date to take attendance4. Choose student attendance status5. Click on "Save" button
Alternative flows	<ol style="list-style-type: none">4. Teacher want to leave a comment<ol style="list-style-type: none">4.1. Enter teacher comment in the input field4.2. Click "Save" button

Technique used: Decision table

- Test case 1: Successfully take every students as present in current period
- Test case 2: Successfully take every students as absent in current period
- Test case 3: Successfully take every students as tardy in current period
- Test case 4: Successfully take student differently in current period
- Test case 5: Successfully take attendance and leave a teacher comment

Test detail: [Sheet](#)

3.3. Lê Tuấn Hưng

3.3.1. *Submit Assignment*

Use-case description:

Use-case Name	Submit Assignment
Use-case overview	Students submit assignments which are assigned by the teacher
Pre-conditions	Student login as "student" with username "student" and password "student" Students are in the "portal.php" page
Post-conditions	Student submitted the assignment
Normal flow	<ol style="list-style-type: none"> 1. Student click "Grades -> Assignment" 2. Student click on appropriate "Assignment" to submit 3. Student clicks to choose the file to submit 4. Students choose and upload the allowed file 5. Student press submits assignment
Alternative flows	<ol style="list-style-type: none"> 1. The student chooses an assignment from the list from Portal.php pages 5.1. Students use the message box to submit assignment 5.2. Student leave the assignment empty and do not submit anything
Exception flows	<ol style="list-style-type: none"> 1. The assignment is overdue, the assignment is not displayed in the assignment list 3.1. The assignment is not opened to submit, no box to submit 3.2. Students choose the restricted file extension to submit <ol style="list-style-type: none"> 1. Back to step 4 5. Late submission but submit page still in the cache, then press "submission", and go to the homepage

Technique used: Use-case testing

Test case 1: Students submit by "Grade ->Assignment" tab

Test case 2: Students submit in portal.php

Test case 3: Student use message box to submit assignment

Test case 4: Student submit nothing to the assignment

Test case 5: Students submit in portal.php

Test case 6: Assignment is not opened to submit

Test case 7: Student submit nothing to the assignment

Test case 8: Student upload the restricted file "a.xyz" to the system

Test case 9: Students use the toolbar in the message box

Test detail: [Sheet](#)

3.3.2. Grading Assignment

Use-case description:

Use-case Name	Grading Assignment
Use-case overview	Teachers grading students
Pre-conditions	User login as "teacher" privilege with username: "teacher", and password: "teacher"
Normal flow	<ol style="list-style-type: none"> 1. The teacher goes to click "Grades -> Grades" 2. Choose an appropriate student in a student list for grading 3. The system displays the box for grading, a number/(Point scale) 4. Input a numerical grade 5. The system calculates the percentage and assigns the letter score
Alternative flows	<ol style="list-style-type: none"> 1. The teacher modified the score 2. The teacher chooses list all students for grading
Exception flows	<ol style="list-style-type: none"> 2. If there is no students assigned to the class for the teacher, the list is empty

Technique used: Robust Boundary Value combined with Use-case testing

Test case 1: Input a valid mid-range score (70/100)

Test case 2: Input an invalid below lower score -1

Test case 3: Input an upper range score (100/100)

Test case 4: Input an invalid about upper range score (101/100)

Test case 5: Input a lower range with score 0

Test case 6: Grading the assignment have the score scale of 0

Test case 7: Input an invalid alphanumeric "ABC"

Test case 8: The teacher modified the score

Test detail: [Sheet](#)

3.4. Trần Trí Đạt

3.4.1. Associate Parents With Students

Use-case description:

Use-case Name	Associate Parents With Students
Use case overview	Associate Parents with the chosen Student using administrator role
Pre-conditions	<ol style="list-style-type: none"> 1. There are a student account and some parent accounts created 2. User logged in as administrator 3. Open Students -> Associate Parents with Students
Post-conditions	Successfully associated a student with a parent
Normal flow	<ol style="list-style-type: none"> 1. Enter student ID "2052123" in the "RosarioSIS ID" box. And click "Submit" button 2. Click on student name 3. Enter parent username "ptttd" in the "Username" box. And click "Submit" button 4. Select a parent and click "Add selected parents" button
Alternative flows	<ol style="list-style-type: none"> 2. Search empty <ol style="list-style-type: none"> 2.1. Leave all box empty and click "Submit" button 2.2. Click on student name with ID "2052123" 2.3. Leave all box empty and click "Submit" button 2.4. Select parent "ptttd" and click "Add selected parents" button 3. Associate multiple parents <ol style="list-style-type: none"> 3.4. Select 2 parent users "ptttd1" and "ptttd2" and click "Add selected parents" button
Exception flows	<ol style="list-style-type: none"> 4. Student not found <ol style="list-style-type: none"> 4.1. Enter a non-existent student ID "999999" in the "RosarioSIS ID" box. And click "Submit" button 5. Parent not found <ol style="list-style-type: none"> 5.4. Enter non-existing parent userID "6" in the "User ID" box. And click "Submit button" 6. User ID not parent user <ol style="list-style-type: none"> 6.4. Enter an userID "6" which is not a parent ID in the "User ID" box. And click "Submit button"

Technique used: Use-case testing

- Test case 1: Successfully associated a student with a parent
- Test case 2: Empty search will display all students and parents
- Test case 3: Cannot find a student when search
- Test case 4: Associate multiple parents with a student
- Test case 5: Cannot find any parents when search
- Test case 6: User ID not a parent account
- Test case 7: Successfully delete a parent and associate a parent
- Test case 8: Use advanced search to search for a parent

3.4.2. Add Activity

Use-case description:

Use-case Name	Add Activity
Use case overview	Add New Activity to Student
Pre-conditions	1. There is at least 1 activity and 1 student created 2. User logged in as administrator 3. Open Activities-> Student Screen
Post-conditions	Successfully added a student to an activity
Normal flow	1. Enter student ID "2052123" in the "RosarioSIS ID" box. And click "Submit" button 2. Click on "N/A" box next to "+" (plus) button 3. Choose activity "Basketball" by clicking on it 4. Click "Add" button
Alternative flows	2. Search empty 2.1. Leave all box empty and click "Submit" button 2.2. Click on a student name "Test Student 1" 2.3. Click on "N/A" box next to "+" (plus) button 2.4. Choose activity "Basketball" by clicking on it 2.5. Click "Add" button
Exception flows	3. Student not found 3.1. Enter a non-existent student ID in the "RosarioSIS ID" box. And click "Submit" button 4. Add N/A activity 4.2. Leave the "N/A" button as default. Click "Add"

	button 5. Add existed activity 5.3. Choose activity “Football” that is already registered to the student
--	---

Technique used: Use-case testing

- Test case 1: Successfully added a student to an activity
- Test case 2: Not found student with given student ID
- Test case 3: Empty search for student will display all
- Test case 4: Cannot add N/A activity
- Test case 5: Cannot add activity that added to a student
- Test case 6: Display activities within a certain timeframe

3.5. Lê Nguyễn Hoàng Nhân

3.5.1. Add meal item

Use-case description:

Use-case Name	Meal Items
Use case overview	Add meal item
Pre-conditions	"Logged in as Administrator On ""Meal Items"" page Have at least one meal (Lunch)"
Post-conditions	Successfully added a meal item
Normal flow	<ol style="list-style-type: none"> 1. Click on the "+" button besides all meal 2. Click on the "ITEM DESCRIPTION" field 3. Type the meal item description into the field ("Rice with Grilled Pork Rib") 4. Click on the "SHORT NAME" field 5. Type the item short name into the field (R_GPR) 6. Click on the "ICON" drop down 7. Select "Lunch.png" from the "ICON" dropdown 8. Click on the "SORT ORDER" field 9. Type the sort order into the field (1) 10. Click on the "STUDENT PRICE" field 11. Type the student price into the field (1.25) 12. Click on the "STAFF PRICE" field 13. Type the staff price into the field (1.20) 14. Click the "SAVE" button
Exception flows	<p>- Add meal item with negative price</p> <ol style="list-style-type: none"> 1. Click on the "+" button besides all meal 2. Click on the "ITEM DESCRIPTION" field 3. Type the meal item description into the field ("Rice with Grilled Pork Rib") 4. Click on the "SHORT NAME" field 5. Type the item short name into the field (R_GPR) 6. Click on the "ICON" drop down 7. Select "Lunch.png" from the "ICON" dropdown 8. Click on the "SORT ORDER" field 9. Type the sort order into the field (1)

	10. Click on the "STUDENT PRICE" field 11. Type the illegal student price into the field (-1.25) 12. Click on the "STAFF PRICE" field 13. Type the staff price into the field (-1.20) 14. Click the "SAVE" button
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Technique used: Use-case testing

- Test case 1: Add normal meal item to list of meal item
- Test case 2: Enter negative price to the price of meal item

3.5.2. Delete meal item

Use-case Name	Meal Items
Use case overview	Normal flow of delete meal item
Pre-conditions	Logged in as Administrator On ""Meal Items"" page Have at least one meal (Lunch) Have at least one meal item in the meal
Post-conditions	Successfully delete a meal item
Normal flow	1. Click on the "+" button besides all meal 2. Click on the "-" button at the start of each item row 3. Click on the "OK" button on the confirmation screen

Technique used: Use-case testing

Test case 1: Normal flow of delete meal item

3.5.3. Add meal item image

Use-case Name	Meal Items
Use case overview	Add meal item image
Pre-conditions	Logged in as Administrator On ""Meal Items"" page

	Have at least one meal (Lunch) Have at least one meal item in the meal
Post-conditions	Successfully upload a meal image
Normal flow	<ol style="list-style-type: none"> 1. Click on the "+ Add Icon (.jpg, .png, .gif)" 2. Choose a photo and press "Open" 3. Click on the "Upload" button

Technique used: Use-case testing

Test case 1: Normal flow of adding meal item image

3.6. Non-Functional Requirement

Usability	The website is designed to be simple, compact, and easy to operate.
Usability	Check the system's responsiveness to user input, ensuring that the system responds quickly and accurately to user actions.
Usability	Test the system's compatibility with different browsers, devices, and screen sizes.
Availability	The website can operate 24/7 except for system maintenance times.
Compatibility	Test the system's compatibility with different operating systems (e.g., Windows, Linux, macOS, iOS).
Compatibility	Verify that the system is compatible with different web browsers (e.g., Chrome, Firefox, Safari).
Compatibility	Test the system's compatibility with different hardware configurations (e.g., desktop computers, laptops, mobile devices).
Reliability	Test the system's ability to handle large traffic volumes without encountering problems or downtime.
Access Rate	The website is accessed at a fast speed. The average page load speed is under 1s.

4. B- Test Moodle E-learning system


4.1. Mai Hữu Nghĩa

TEST CASE LINK SHEET: [Sheet](#)

4.1.1. Test Notification Preference - Assignment notification


4.1.1.1. Functional Requirement

Preferences / Notification preferences

 **Mai Hữu Nghĩa** [Message](#)

Notification preferences

☐ Disable notifications

	Web	Email 
Assignment		
Assignment notifications	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BigBlueButton		
BigBlueButton recording available	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BigBlueButton session updated	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Use case name	Notification Adjustment 1
Actor	User
Description	User can adjust the notification setting in web or in email
Pre-condition	Login as the user
Post-condition	User can adjust the notification setting successfully
Normal flow	<ol style="list-style-type: none"> 1. From the homepage, the user clicks on the notification icon. 2. The system displays the notification panel. 3. The user clicks on the edit icon. 4. The system displays the notification editing panel. 5. In the Assignment section, the user can customize the on/off at the following categories: Web, Email.
Alternative flow	At step 1:

	<ol style="list-style-type: none"> 1. From the homepage, the user clicks on the User Avatar. 2. The user clicks on Options. 3. The system displays the options. 4. The user clicks on Notification preferences. 5. The system displays the notification editing panel. 6. In the Assignment section, the user can customize the on/off at the following categories: Web, Email.
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4.1.1.2. Decision table technique

a/ Reason for using the Decision table technique:

In the Assignment section, the input is the conditions (turning on/off different types of notifications) and the output is the actions.

b/ How to create a test case set for the Decision table technique:

Create and test every case (rule) with input and output in the Decision table.

c/ Decision table

Content of the Decision table

Condition at "Notification - Assignment":

- c1: Web notification is turned on
- c2: Email notification is turned on

Actions:

- a1: Can view the notification in web
- a2: Can view the notification in email
- *imp: imposible

	Rule 1	Rule 2	Rule 3	Rule 4
c1	T	T	F	F
c2	T	F	T	F

a1	X	X		
a2	X		X	
imp				X

*impossible: when turn off all the option, the user cannot view the notification from everywhere

4.1.1.3. Non-Functional Requirement

- Processing time after successful setup is under 1s
- Verification: Only the owner can set up notifications - assignment notifications.

4.1.2. Test Private files function

4.1.2.1. Functional Requirement



Mai Hữu Nghĩa [Message](#)

Private files

You have currently used 60.0 KB of your 100 MB limit. [×](#)

Files

Maximum size for new files: 100 MB, overall limit: 100 MB

Files

MyPictures

My essay n...

Save changes

Cancel

Use case name	Upload Private Files
Actor	User
Description	User can upload their file to the system
Pre-condition	Login as the user
Post-condition	User can upload files to system successfully
Normal flow	<ol style="list-style-type: none"> 1. From the homepage, the user clicks on the user's avatar. 2. The user clicks on Private Files. 3. The system displays the file upload page. 4. The user clicks on the Add icon.

	<p>5. The user clicks on Upload a file.</p> <p>6. The user clicks on Choose File.</p> <p>7. In the computer's folder, select the file to upload.</p> <p>8. Click on the Upload this file button.</p> <p>9. Click on the Save changes button.</p> <p>10. The user successfully uploads the file.</p>
Alternative flow	<p>At step 4:</p> <p>4.1 The user drags and drops the file to be uploaded into the box.</p> <p>4.2 Click on the Save changes button.</p> <p>Continue to step 10 in the Normal flow.</p>
Exception flow	<p>Uploading a file exceeding the allowed size:</p> <p>At step 10, if the user uploads a file over 100MB, the system notifies that only files up to 100MB can be uploaded.</p>

4.1.2.2. Boundary value analysis technique

a) Reason for using the Boundary value analysis technique

This function includes the variable File Size with boundaries, so the Boundary value analysis technique is chosen for testing.

b) How to create a test case set for the Boundary value analysis technique

In this testing method, the range of specific variables is as follows:

- 1 byte \leq File Size \leq 100MB

\Rightarrow The number of Normal Boundary Test Cases generated is $1 \times 4 + 1 = 5$ (sets)

c) Test case set

Test case	Test upload file 1
Purpose	Upload the file with normal size
Pre-condition	Login as the user
Data	File size is less than 10MB

Normal flow	<ol style="list-style-type: none"> 1. The user clicks on the Add icon. 2. The user clicks on Upload a file. 3. The user clicks on Choose File. 4. In the computer's folder, select the 10MB file to upload. 5. Click on the Upload this file button. 6. Click on the Save changes button.
Expect result	File upload successfully
Passed/Failed	Passed

Test case	Test upload file 2
Purpose	Upload the file with minimum size
Pre-condition	Login as the user
Data	File size is 1 Byte
Normal flow	<ol style="list-style-type: none"> 1. The user clicks on the Add icon. 2. The user clicks on Upload a file. 3. The user clicks on Choose File. 4. In the computer's folder, select the 1 Byte file to upload. 5. Click on the Upload this file button. 6. Click on the Save changes button.
Expect result	File upload successfully
Passed/Failed	Passed

Test case	Test upload file 3
-----------	--------------------

Purpose	Upload the file with minimum size +
Pre-condition	Login as the user
Data	File size is 2 Byte
Normal flow	<ol style="list-style-type: none"> 1. The user clicks on the Add icon. 2. The user clicks on Upload a file. 3. The user clicks on Choose File. 4. In the computer's folder, select the 2 Byte file to upload. 5. Click on the Upload this file button. 6. Click on the Save changes button.
Expect result	File upload successfully
Passed/Failed	Passed

Test case	Test upload file 4
Purpose	Upload the file with max size
Pre-condition	Login as the user
Data	File size is 100MB
Normal flow	<ol style="list-style-type: none"> 1. The user clicks on the Add icon. 2. The user clicks on Upload a file. 3. The user clicks on Choose File. 4. In the computer's folder, select the 100MB file to upload. 5. Click on the Upload this file button. 6. Click on the Save changes button.
Expect result	File upload successfully
Passed/Failed	Passed

Test case	Test upload file 5
Purpose	Upload the file with max size -
Pre-condition	Login as the user
Data	File size is 100MB - 1 Byte
Normal flow	<ol style="list-style-type: none">1. The user clicks on the Add icon.2. The user clicks on Upload a file.3. The user clicks on Choose File.4. In the computer's folder, select the 100MB - 1 Byte file to upload.5. Click on the Upload this file button.6. Click on the Save changes button.
Expect result	File upload successfully
Passed/Failed	Passed

4.1.2.3. Equivalence Class Testing technique

a) Reason for using the Equivalence Class Testing technique

With the constraint of 1 byte \leq size \leq 100 MB, the file size is divided into the following regions:

Invalid	Valid	Valid	Invalid
<1 Byte	1 Byte - 50MB	50MB-100MB	>100MB

b) Testcase sets

Test case	Test upload file 1
Purpose	Upload the file with size < 1 Byte
Pre-condition	Login as the user
Data	File size is 0 Byte
Normal flow	<ol style="list-style-type: none"> 1. The user clicks on the Add icon. 2. The user clicks on Upload a file. 3. The user clicks on Choose File. 4. In the computer's folder, select the 0 Byte file to upload. 5. Click on the Upload this file button. 6. Click on the Save changes button.
Expect result	The error is that the uploaded file is an empty file.
Passed/Failed	Passed

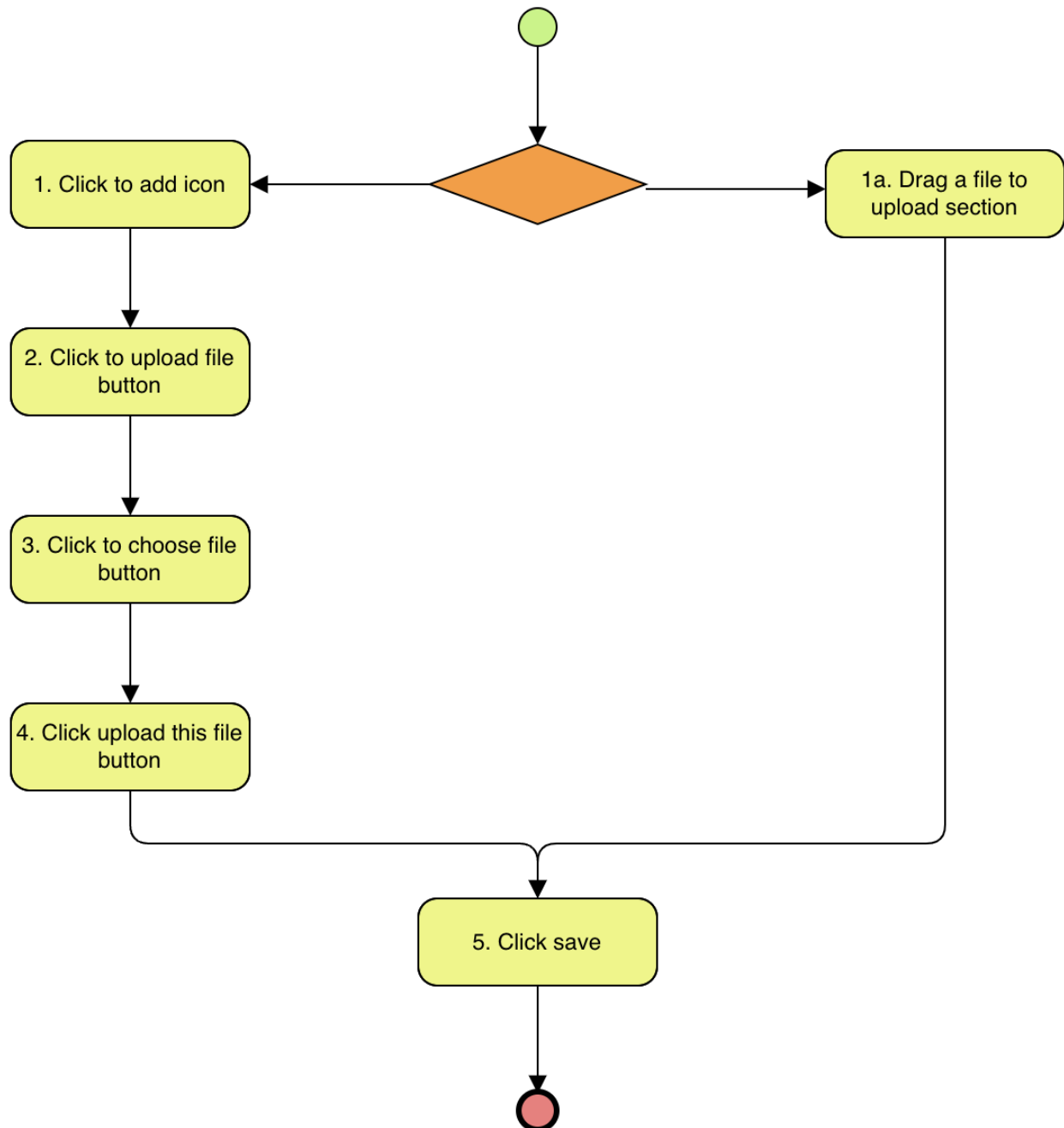
Test case	Test upload file 2
Purpose	Upload the file with size 1 Byte-50MB
Pre-condition	Login as the user

Data	File size is 20MB
Normal flow	<ol style="list-style-type: none"> 1. The user clicks on the Add icon. 2. The user clicks on Upload a file. 3. The user clicks on Choose File. 4. In the computer's folder, select the 20MB file to upload. 5. Click on the Upload this file button. 6. Click on the Save changes button.
Expect result	File upload successfully
Passed/Failed	Passed

Test case	Test upload file 3
Purpose	Upload the file with size 50MB-100MB
Pre-condition	Login as the user
Data	File size is 80MB
Normal flow	<ol style="list-style-type: none"> 1. The user clicks on the Add icon. 2. The user clicks on Upload a file. 3. The user clicks on Choose File. 4. In the computer's folder, select the 80MB file to upload. 5. Click on the Upload this file button. 6. Click on the Save changes button.
Expect result	File upload successfully
Passed/Failed	Passed

Test case	Test upload file 4
Purpose	Upload the file with size > 100MB
Pre-condition	Login as the user
Data	File size is 120MB
Normal flow	<ol style="list-style-type: none"> 1. The user clicks on the Add icon. 2. The user clicks on Upload a file. 3. The user clicks on Choose File. 4. In the computer's folder, select the 120MB file to upload. 5. Click on the Upload this file button. 6. Click on the Save changes button.
Expect result	The file was not successfully uploaded, notification that the file exceeds 100MB.
Passed/Failed	Passed

4.1.2.4. Use-case testing



Use case complete path:

- P1:1,2,3,4,5,end
- P2: 1A, 5, end

Testcase sets:

Test case	Test upload file 1
Purpose	Upload with use case path P1
Pre-condition	Login as the user
Data	File size is 50MB
Normal flow	<ol style="list-style-type: none">1. The user clicks on the Add icon.2. The user clicks on Upload a file.3. The user clicks on Choose File.4. In the computer's folder, select the 50MB file to upload.5. Click on the Upload this file button.6. Click on the Save changes button.
Expect result	File upload successfully
Passed/Failed	Passed

Test case	Test upload file 2
Purpose	Upload with use case path P2
Pre-condition	Login as the user
Data	File size is 50MB
Normal flow	<ol style="list-style-type: none">1. The user drag the file to the upload section2. Click on Save changes button
Expect result	File upload successfully
Passed/Failed	Passed

4.1.2.5. Non-Functional Requirement

Usability	The website is designed to be simple, compact, and easy to operate.
Availability	The average file upload time is under 1s.
Access Rate	The website can operate 24/7 except for system maintenance times which will be notified in advance to students via email and announcements on the website.
Access Rate	The website is accessed at a fast speed. The average page load speed is under 1s.

4.2. Nguyễn Ngọc Hưng

4.2.1. Add course

Use-case description:

Use-case Name	Add course
Use case overview	Add a new course to the system
Pre-conditions	User logged in as Manager, Administrator, or Course Creator
Post-conditions	Course successfully added to the system
Normal flow	<ol style="list-style-type: none"> 1. Go to "Site Administration" 2. Go to Courses -> Manage courses and categories 3. Click on Create new course 4. Fill in all required field correctly 5. Click "Save and display"
Alternative flows	<p>2.1. Go to Courses -> Add a new course</p> <ol style="list-style-type: none"> 2.1.1. Fill in all required field correctly 2.1.2. Click "Save and display" <p>2.2. Go to Courses -> Add a category</p> <ol style="list-style-type: none"> 2.2.1. Fill in all required field correctly 2.2.2. Click "Create category" 2.2.3. Click "Create new course" 2.2.4. Fill in all required field correctly 2.2.5. Click "Save and display" <p>2.3. Go to Courses -> Upload courses</p> <ol style="list-style-type: none"> 2.3.1. Upload a .csv or .txt file to create course 2.3.2. Click "Preview" 2.3.3. Click "Upload courses"
Exception flows	<p>2.3.2. Wrong file format</p> <ol style="list-style-type: none"> 1. Back to step 2.3.1 2. Click "Preview" 3. Click "Upload courses"

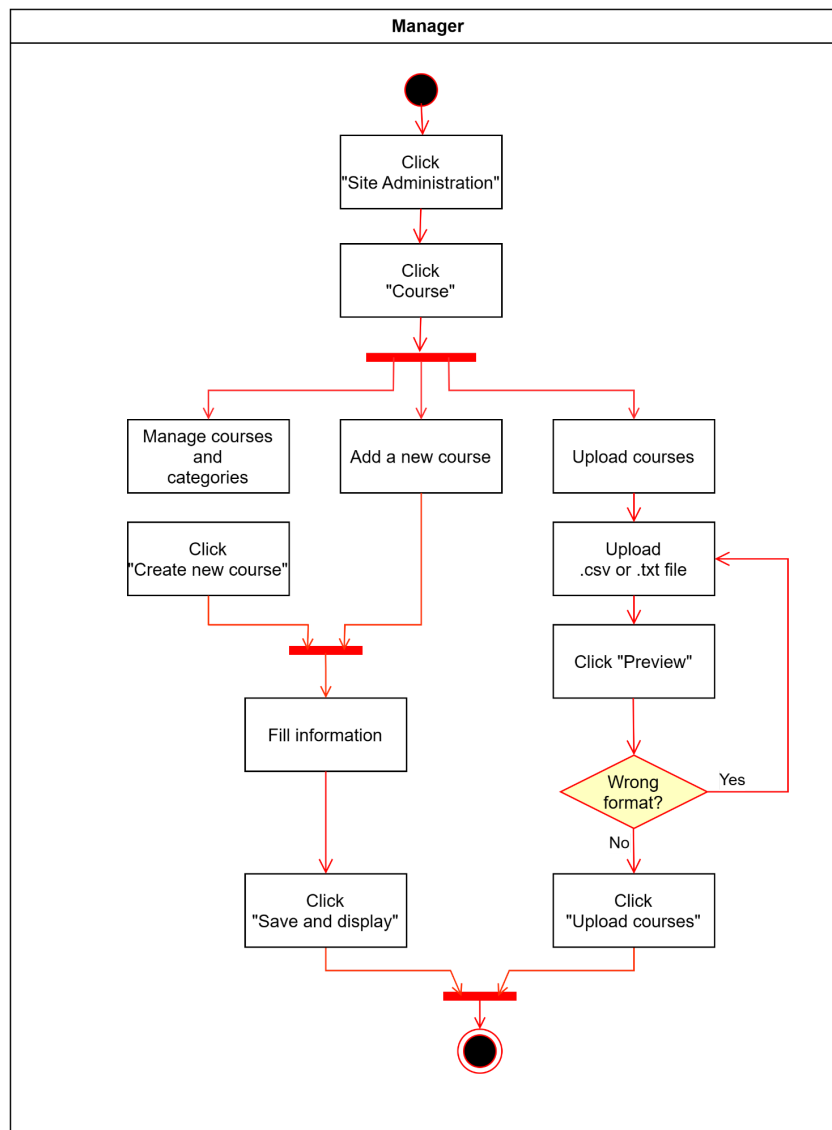
Technique used: Use-case testing

- Test case 1: Successfully add a new course with all required information
- Test case 2: Successfully add a new course with all required information using Course -> Add a new course

- Test case 3: Successfully add a new course with all required information after create a new category
- Test case 4: Add a new course without filling any required information
- Test case 5: Add a new course by upload a csv file
- Test case 6: Add a new course by upload a csv file with missing required information
- Test case 7: Add a new course by upload a .txt file
- Test case 8: Add a new course by upload a wrong file

Test details: [Sheet](#)

Activity diagram:



4.2.2. Add quiz

Use-case description:

Use-case Name	Add quiz
Use case overview	Add a quiz to a course
Pre-conditions	User logged in as Manager, Admin, or Teacher
Post-conditions	Quiz successfully added to the course
Normal flow	<ol style="list-style-type: none"> 1. Go to "My courses" 2. Go to 1 course to add quiz 3. Turn on "Edit mode" 4. Click "Add an activity or resource" -> "Quiz" 5. Enter a proper name for the Quiz 6. Click "Save and display"
Alternative flows	<p>1.1. Go to “Dashboard”</p> <ol style="list-style-type: none"> 1.1.1. Click on one course category under the calendar 1.1.2. Go to 1 course to add quiz 1.1.3. Turn on "Edit mode" 1.1.4. Click "Add an activity or resource" -> "Quiz" 1.1.5. Enter a proper name for the Quiz 1.1.6. Click "Save and display" <p>1.2. Go to “Site Administration”</p> <ol style="list-style-type: none"> 1.2.1. Go to Courses -> Manage courses and categories 1.2.2. Go to 1 course to add quiz 1.2.3. Turn on "Edit mode" 1.2.4. Click "Add an activity or resource" -> "Quiz" 1.2.5. Enter a proper name for the Quiz 1.2.6. Click "Save and display"

Technique used: Boundary value analysis

- Test case 1: Add quiz with a proper name from "My courses"
- Test case 2: Add quiz without filling the name
- Test case 3: Add quiz with a 1 character name
- Test case 4: Add quiz with a 254 characters name
- Test case 5: Add quiz with a 255 characters name
- Test case 6: Add quiz with a 256 characters name
- Test case 7: Add quiz from "Dashboard"
- Test case 8: Add quiz from "Site Administration"

Test details: [Sheet](#)

4.3. Trần Trí Đạt

4.3.1. Create New Assignment

Use-case description:

Use-case Name	Create New Assignment
Use case overview	Create New Assignment for a course
Pre-conditions	<ol style="list-style-type: none"> 1. Logged in to moodledemo website with username “teacher” and password “moodle” 2. Open course page “Mindful course creation” 4. Turned on edit mode 5. Click “Add an activity or resource” under a topic “Why this course?” 6. Click choose “Assignment”
Post-conditions	Successfully create a new assignment
Normal flow	<ol style="list-style-type: none"> 1. Enter assignment name “New Assignment 1” 2. Set "Allow submissions from" to enable, and set value to "1-January-2020-00-00" 3. Set "Due date" to enable, and set value to "1-February-2020-00-00" 4. Set "Cut-off date" to enable, and set value to "1-March-2020-00-00" 5. Set "Remind me to grade by" to enable, and set value to "1-April-2020-00-00" 6. Click "Save and display" button
Alternative flows	<ol style="list-style-type: none"> 2. Create same name assignment <ol style="list-style-type: none"> 2.1. Enter assignment name with the exactly the same name as previous assignment “New Assignment 1” 2.2. Click "Save and display" button 3. Assignment require a grade to pass <ol style="list-style-type: none"> 3.2. In "Grade", set "Grade to pass" to "5.00" 3.3. In "Completion conditions", choose "Add requirements" bullet, enable "Receive a grade", choose "Passing grade" 3.4. Click "Save and display" button

Exception flows	<ol style="list-style-type: none"> 4. No name provided <ol style="list-style-type: none"> 4.1. Click the "Save and display" button. Without given any name 5. Open date after due date <ol style="list-style-type: none"> 5.2. Set "Allow submissions from" to enable, and set value to "1-January-2021-00-00" 5.3. Set "Due date" to enable, and set value to "1-January-2020-00-00" 5.4. Click "Save and display" button 6. Cut-off date before due date <ol style="list-style-type: none"> 6.2. Set "Due date" to enable, and set value to "1-February-2020-00-00" 6.3. Set "Cut-off date" to enable, and set value to "31-January-2020-00-00" 6.4. Click "Save and display" button 7. Reminder date before due date <ol style="list-style-type: none"> 7.2. Set "Due date" to enable, and set value to "1-February-2020-00-00" 7.3. Set "Remind me to grade by" to enable, and set value to "1-January-2020-00-00" 7.4. Click "Save and display" button 8. Require submission without any Submission types <ol style="list-style-type: none"> 8.2. In Submission types, disable both "Online text" and "File submissions" 8.3. In "Completion conditions", choose "Add requirements" bullet, enable "Make a submission" 8.4. Click "Save and display" button 9. Require a grade to pass without minimum grade <ol style="list-style-type: none"> 9.2. In "Grade", leave "Grade to pass" as default (0.00) 9.3. In "Completion conditions", choose "Add requirements" bullet, enable "Receive a grade", choose "Passing grade" 9.4. Click "Save and display" button
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Technique used: Use-case testing

- Test case 1: Create a new assignment with all default settings
- Test case 2: Create a new assignment and return to course after created
- Test case 3: Create a new assignment without providing name
- Test case 4: Turn off edit mode when creating a new assignment
- Test case 5: Create new assignment with same name as previous assignment

- Test case 6: Create a new assignment with Allow submissions from, due date, cut-off date, Remind me to grade by
- Test case 7: Create a new assignment with open date after due date
- Test case 8: Create a new assignment with cut-off date before due date
- Test case 9: Create a new assignment with reminder date before due date
- Test case 10: Create a new assignment with require submission without any Submission types
- Test case 11: Create a new assignment that require a minimum grade to pass
- Test case 12: Create a new assignment that require a minimum grade to pass without providing minimum grade

4.3.2. *Updating Assignment*

Use-case description:

Use-case Name	Updating Assignment
Use case overview	Updating Assignment for a course
Pre-conditions	<ol style="list-style-type: none"> 1. Logged in to moodledemo website with username “teacher” and password “moodle” 2. Open course page “Mindful course creation” 3. Click “Assignment 1” under topic “Why this course?” 4. Click “Settings” tab
Post-conditions	Successfully updating an assignment
Normal flow	<ol style="list-style-type: none"> 1. Enter new assignment name “New Assignment 1” 2. Set "Allow submissions from" to enable, and set value to "1-January-2020-00-00" 3. Set "Due date" to enable, and set value to "1-February-2020-00-00" 4. Set "Cut-off date" to enable, and set value to "1-March-2020-00-00" 5. Set "Remind me to grade by" to enable, and set value to "1-April-2020-00-00" 6. Click "Save and display" button
Alternative flows	<ol style="list-style-type: none"> 2. Update same name assignment <ol style="list-style-type: none"> 2.1. Enter new assignment name with the exactly the same name as previous assignment “New Assignment 1”

	<p>2.2. Click "Save and display" button</p> <p>3. Assignment require a grade to pass</p> <p>3.2. In "Grade", set "Grade to pass" to "5.00"</p> <p>3.3. In "Completion conditions", choose "Add requirements" bullet, enable "Receive a grade", choose "Passing grade"</p> <p>3.4. Click "Save and display" button</p>
Exception flows	<p>4. No name provided</p> <p>4.1. Delete the old assignment name and leave blank</p> <p>4.2. Click the "Save and display" button. Without given any name</p> <p>5. Open date after due date</p> <p>5.2. Set "Allow submissions from" to enable, and set value to "1-January-2021-00-00"</p> <p>5.3. Set "Due date" to enable, and set value to "1-January-2020-00-00"</p> <p>5.4. Click "Save and display" button</p> <p>6. Cut-off date before due date</p> <p>6.2. Set "Due date" to enable, and set value to "1-February-2020-00-00"</p> <p>6.3. Set "Cut-off date" to enable, and set value to "31-January-2020-00-00"</p> <p>6.4. Click "Save and display" button</p> <p>7. Reminder date before due date</p> <p>7.2. Set "Due date" to enable, and set value to "1-February-2020-00-00"</p> <p>7.3. Set "Remind me to grade by" to enable, and set value to "1-January-2020-00-00"</p> <p>7.4. Click "Save and display" button</p> <p>8. Require submission without any Submission types</p> <p>8.2. In Submission types, disable both "Online text" and "File submissions"</p> <p>8.3. In "Completion conditions", choose "Add requirements" bullet, enable "Make a submission"</p> <p>8.4. Click "Save and display" button</p> <p>9. Require a grade to pass without minimum grade</p> <p>9.2. In "Grade", leave "Grade to pass" as default (0.00)</p> <p>9.3. In "Completion conditions", choose "Add requirements" bullet, enable "Receive a grade", choose "Passing grade"</p> <p>9.4. Click "Save and display" button</p>

Technique used: Use-case testing

- Test case 1: Update assignment name, leave all others settings the same
- Test case 2: Update assignment and return to course after created
- Test case 3: Update the assignment without providing new name
- Test case 4: Update assignment name with same name as another assignment
- Test case 5: Update assignment with Allow submissions from, due date, cut-off date, Remind me to grade by
- Test case 6: Update assignment with open date after due date
- Test case 7: Update assignment with cut-off date before due date
- Test case 8: Update assignment with reminder date before due date
- Test case 9: Update assignment with require submission without any Submission types
- Test case 10: Update assignment that require a minimum grade to pass
- Test case 11: Update assignment that require a minimum grade to pass without providing minimum grade

4.4. Lê Tuấn Hưng

4.4.1. *Submit Assignment*

Use-case description:

Use-case Name	Submit assignment
Use case overview	Student assignment
Pre-conditions	Student login with the username “student” and password “student” Submission files are available to submit
Post-conditions	Student submits the assignment
Normal flow	<ol style="list-style-type: none"> 1. Go to "Dashboard" 2. Choose an "assignment 2 (16th century)" 3. System display the content of the assignment, submission status, deadline, grade and time remaining 4. Student click "add submission" 5. System redirect to the page for add submission, including display "file size maximum, number of file maximum" 6. Student click "upload a file" 7. A dialog to choose file from the computer 8. Student select the file < 1MB from computer 9. System display the file is uploaded 10. Student press submit 11. System change the submission status to "Submitted for grading"
Alternative flows	<p>Student go the assignment by the different way</p> <ol style="list-style-type: none"> 0.. Choose My Courses 1. type "Literature of France", choose "Literature of France 1100 - 1960" in search box 2. Choose an "assignment 2 (16th century)" <p>Student drag files</p> <ol style="list-style-type: none"> 6. Student drag file to upload <p>If student have submitted the file, student can change file submission</p> <ol style="list-style-type: none"> 4. Student click "edit submission" 5. System redirects to the page for add submission,

	<p>including display "file size maximum, number of file maximum", and "submitted file name"</p> <p>6. Student click "submitted file"</p> <p>7. System display a information of the submitted file Student change the name from "old_name.pdf" "new_name.pdf"</p> <p>8. System displays the "new_name.pdf" Student press "Update"</p> <p>9. System displays the new file name</p> <p>10. Student press "Save changes"</p> <p>11. System change the new file name, with new last modified time "</p> <p>Student remove the submission</p> <p>4. Student click "remove submission"</p> <p>5. System displays a dialog to confirm "Are you sure you want to remove your submission?"</p> <p>6. Student click "continue"</p> <p>7. System removes all file submitted, change the submission status to "No submissions have been made yet"</p> <p>If student have submitted the file, student can remove the files</p> <p>4. Student click "edit submission"</p> <p>5. System redirects to the page for add submission, including display "file size maximum, number of file maximum", and "submitted file name"</p> <p>6. Student click to any file submitted</p> <p>7. System display a information of the submitted file</p> <p>8. Student choose "Delete"</p> <p>9. System displays the a box to confirm "Are you sure you want to delete this file?"</p> <p>10. Student press "Yes"</p> <p>11. System update the new list of files for submission</p> <p>12. Student press "Save changes"</p> <p>13. System updates the new submission, and change the modified time</p>
Exception flows	<p>Student remove all submitted file</p> <p>4. Student click "edit submission"</p> <p>5. System redirects to the page for add submission, including display "file size maximum, number of file maximum", and "submitted file name"</p>

	6. Student click to any file submitted 7. System display a information of the submitted file 8. Student choose "Delete" 9. System displays the a box to confirm "Are you sure you want to delete this file?" 10. Student press "Yes" 11. System displays "You can drag and drop files here to add them" 12. Student press "Save changes" 13. System display the error "Nothing was submitted", and system do not save the deletion Student submit the overdue assignment with cut-off date 2. Choose an assignment to submit 3. "System display the content of the assignment, submission status, deadline, grade and time remaining and system do not display a button "add submission"
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Equivalence class partition testing for upload file

	Valid	Valid
File size	1 Byte - 50MB	50MB-100MB
File number	1-10	10-20

Technique used: Normal equivalence partition class combined with use-case testing

Testcase 0: Student go to assignment and upload by traditional way and upload 5 files size 420 MB to submit

Testcase 1: Student upload assignment having 5 files with the size of 420 MB by dashboard

Testcase 2: Student upload assignment having 20 files with the size of 200 MB

Testcase 3: Student uploads assignment having 2 files with the size of 810MB

Testcase 4: Student uploads assignment having 15 files with the size of 720MB

Testcase 5: Student tries to drag file to the system

Testcase 6: Student changes the information of the submitted files

Testcase 7: Students deletes the all submitted files

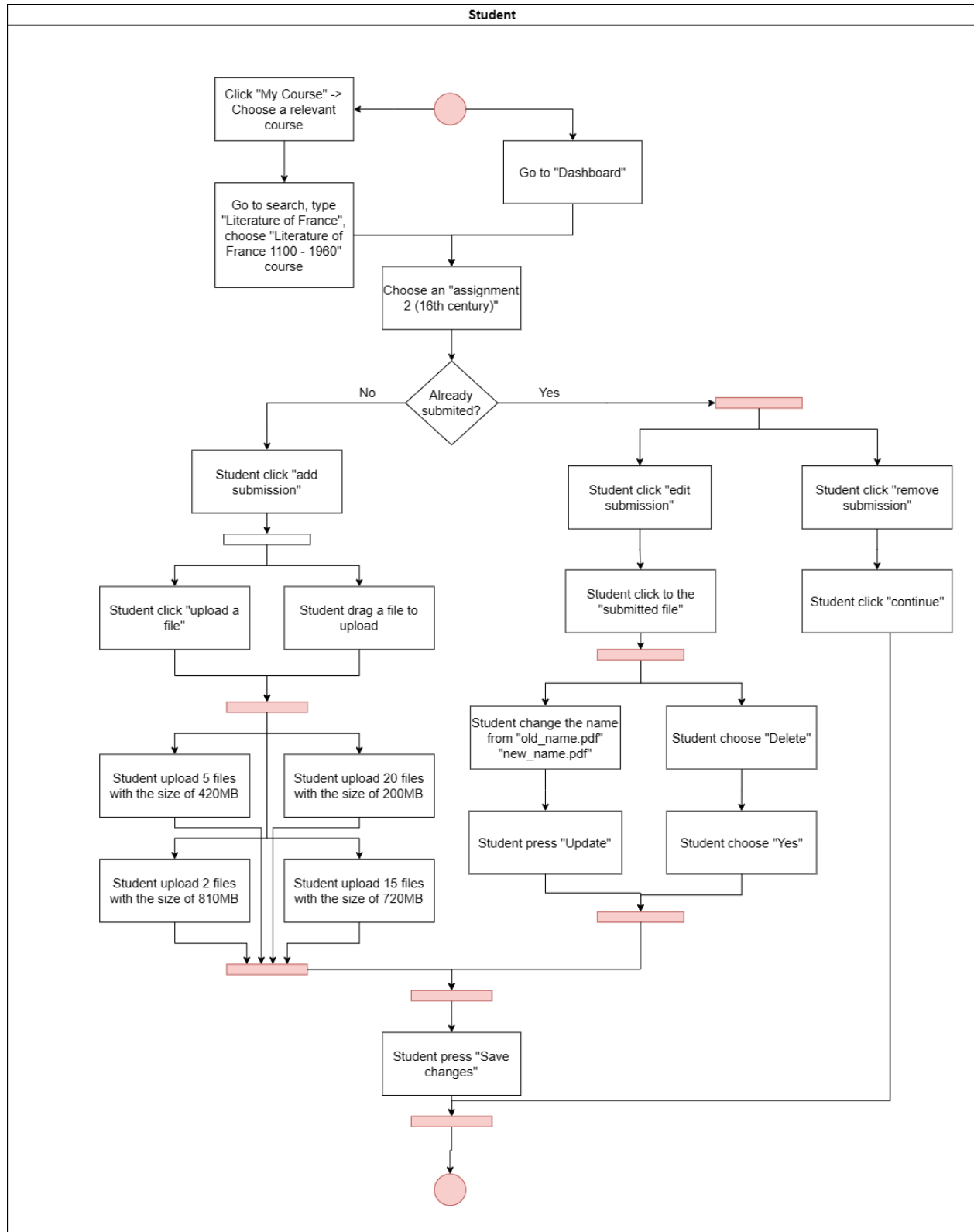
Testcase 8: Student deletes all submitted file (alternative flow)

Testcase 9: Student deletes some submitted file

Testcase 10: Student submit the overdue assignment with cut-off date

Test details: [Sheet](#)

Activity Diagram:



4.4.2. *Private Messaging*

Use-case description:

Use-case Name	Private messaging
Use case overview	2 users text each other
Pre-conditions	User 1 logins with username “student”, password “student” User 2 logins with username “teacher”, password “teacher”
Post-conditions	The message send to other user
Normal flow	<ol style="list-style-type: none"> 1. User 1 locate and click on the "Chat" icon to access the chat feature. 2. System display the chat bar User choose the appropriate people to chat 3. System display the chat history User type the message with the length 100 characters to the chatbox 4. System display the message on the chat box User press "send" icon 5. System send the message to the user 2, and display "new message" notification in the user 2 message
Alternative flows	<p>User sends icon in the message</p> <ol style="list-style-type: none"> 4. User click to icon button, choose an icon 5. System display the message with icon on the chat box User press "send" icon 6. System send the message to the user 2, and display "new message"notification in the user 2 message <p>User delete the message</p> <ol style="list-style-type: none"> 3. User choose a message to delete 4. User press “delete” icon 5. System display the notification "Are you sure you would like to delete the selected messages? This will not delete them for other conversation participants." 6. User press “delete”

Exception flows	User send too long message 3. User type the message with the length of 5000 to the chatbox User 2 blocks user 1 3. User 2 choose the "..." option 4. User 2 press "Block User" icon 5. User 2 press "Block" Target user send the message 6. User 1 send a message to user 2
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Because the limited size of the chatbox is not provided, so i consider it as an **open boundary**, in this case, I build the testcase by continuously increasing the length size, in this case, i test with the length of 100, 2000 and 5000

Technique method: Use-case testing combines with limit testing

Testcase 0: User 1 sends the message with the length of 100 words to people

Testcase 1: User 1 sends the message with the length of 2000 words to people

Testcase 2: User 1 sends the message with the length of 5000 words to people

Testcase 3: User 1 deletes the local message

Testcase 4: User 2 block an other user 1

Testcase 5: User 1 send the message with icon

Test details: [Sheet](#)

4.5. Lê Nguyễn Hoàng Nhân

4.5.1. Add discussion to forum

Use-case description:

Use-case Name	Forums - Add discussion
Use case overview	Add a discussion to forum
Pre-conditions	User logged in as Manager, Admin, or Teacher User is in the forum discussion UI User has click the "Add discussion topic" button
Post-conditions	A discussion topic is successfully added to the course
Normal flow	1. Input into the "Topic" field 2. Input into the "Message" field 3. Click the "Post to forum" button
Alternative flows	1. Upload file 1.1. Input into the "Topic" field 1.2. Input into the "Message" field 1.3. Click the "Advanced" button 1.4. Click on the file attachment box 1.5. Click on "Upload a file" 1.6. Upload a file smaller than 200MB in size 1.7. Click the "Post to forum" button
Exception flows	1. Upload too large file 1.1. Input into the "Topic" field 1.2. Input into the "Message" field 1.3. Click the "Advanced" button 1.4. Click on the file attachment box 1.5. Click on "Upload a file" 1.6. Upload a file larger than 500MB in size

Technique used: Use-case testing

Test case 1: Create a normal discussion topic with default settings

Test case 2: Create new discussion topic file attachment

Test case 3: User create a topic with too long name

Test case 4: User try to upload too large file to server

4.5.2. Add file resource to course

Use-case description:

Use-case Name	Course - Add file resource
Use case overview	Adding file resource, including image, binary file, or text file to the course for student to access
Pre-conditions	"User has logged in as teacher User is at course main UI"
Post-conditions	A file resource has been added to the course
Normal flow	<ol style="list-style-type: none"> 1. Toggle the edit mode to on 2. Click the "Add an activity or resource" 3. Click on the "File" resource type in the modal 4. Type "Test" on to the file name input box 5. Type "Test" on to the file description input box 6. Click on the file attachment box 7. Click on "Upload a file" 8. Upload a files smaller than 200MB in size 9. Click the "Save and return to course"
Alternative flows	<p>- Save and display</p> <ol style="list-style-type: none"> 1. Toggle the edit mode to on 2. Click the "Add an activity or resource" 3. Click on the "File" resource type in the modal 4. Type "Test" on to the file name input box 5. Type "Test" on to the file description input box 6. Click on the file attachment box 7. Click on "Upload a file" 8. Upload a files smaller than 200MB in size 9. Click the "Save and display"
Exception flows	<p>- Upload too large file</p> <ol style="list-style-type: none"> 1. Toggle the edit mode to on 2. Click the "Add an activity or resource" 3. Click on the "File" resource type in the modal 4. Type "Test" on to the file name input box 5. Type "Test" on to the file description input box 6. Click on the file attachment box 7. Click on "Upload a file" 8. Upload a files larger than 500MB in size

Technique used: Use-case testing

Test case 1: Create a file resource with default settings

Test case 2: User forget to select the file before saving

Test case 3: User choose a too long name

Test case 4: User try to upload too large file to server