



Faculty of Computing and Information Technology

BACS2053

Object-Oriented Analysis and Design

Assignment Report

PART 1 (202405)

Programme	RSDY2S1
Tutorial Group	5
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Date Submitted	17-8-2024

Declaration

We confirm that we have read and shall comply with all the terms and conditions of TAR UMT's plagiarism policy.

We declare that this assignment is free from all forms of plagiarism and for all intents and purposes is my own properly derived work.

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	Name	Profile Picture
1.	Ng Ian Kai	A portrait of a young man with short brown hair and glasses, wearing a dark t-shirt.
2.	Chia Ming Yi	A portrait of a young woman with short dark hair and glasses, wearing a light-colored top.
3.	Lim Jun Wei	A portrait of a young man with short dark hair and glasses, wearing a dark t-shirt.
4.	Ong Yi Xin	A portrait of a young woman with long dark hair and glasses, wearing a striped shirt.

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PROJECT TITLE:

Student Internship Placement Management System

OBJECTIVE:

1. The system is aiming for providing a comprehensive platform for students to find a suitable internship placement offered by real world companies.
2. The system is crucial for helping real world companies to promote internship placement offers for students.
3. The system is used to integrate all the processes when university and company supervisors are required to manage students' internship progress and information while evaluating students' performance during internship.
4. The system is actively committed for providing an all-in-one space for interaction and communication between students, university supervisors and company supervisors such as reviewing students' internship progress, evaluating students' performance or students providing ratings and comments for specified companies.

PROBLEM (CURRENT SYSTEM):

1. There is no interface for applying for an internship in a desired company. Thus, students can only apply for an internship via manually sending an email to the company and attaching the relevant files such as portfolio and resume. These actions will cause serious time spending and high chances of entering wrong email, messages and attachments.
2. There is no education level filtering feature for internship placement offered by companies in the system. Students will need to spend more time finding the suitable internship placement based on their education level such as diploma or degree.
3. There is no internship application tracking function which can help students to check whether the employer has accepted the students application.
4. There is no automated function for company employers to send offer letters to students once the company has accepted the students' application. Meanwhile, there is also no automated feature for sending offer letters to academic advisors once students have accepted the offer letters.
5. The system does not have the company review or rating feature for the students who have interned at the company. So, the other students are not able to view the useful comments and ratings about the company to choose the suitable internship placement in the suitable company.

6. The system lacks evaluation tools for tracking student internship progress and feedback and performance evaluation from university and company supervisors. It may cause difficulties when university and company supervisors want to understand the overall internship performance of a student and enter the marks for the specified student.
7. The system does not have an automated internship placement matching feature based on the academic background and career aspiration of the students. Eventually, the students will need to repeatedly set the filter option to find out the suitable internship placement.
8. The system does not provide a messaging system between students, university and company supervisors. So, they are required to use other communication tools for communicating with each other when asking any internship related questions and tracking students' internship progress. Those actions will cause a huge drop of efficiency and effectiveness when obtaining students' internship information and status.
9. The system lacks an interface for students to submit internship reports to their university and company supervisors. They have to rely on other education tools such as Google Classroom for submitting the internship report. The integrity of the students' internship management system will be affected. The users have to switch between multiple tools or systems for reviewing and tracking students' internship progress.

FUNCTIONAL REQUIREMENT LIST:

LOGIN MODULE (LIM JUN WEI)

Actor/User: User		
REQ-1.0	Login	The system allows users to sign in the system via entering their emails and passwords.
REQ-1.1	Logout	The system allows users to log out from the system once the system is not used.
REQ-1.2	Recover password	The system allows users to recover passwords via submitting their email, clicking the authentication link from the email and resetting the password when users have forgotten their password.
REQ-1.3	Verify login credential	The system will use password and One-Time-Password (OTP) via email to verify user credentials so users will get access to the system.
REQ-1.4	Verify email	The system will acquire users' email addresses before users can access the system so the system can recognize who is accessing the system.
REQ-1.5	Register account	The system will allow new users to register a new account via filling and submitting the registration form. Thus, the new users are able to access the system. The system will also obtain the user role and credentials from the new users for identifying the appropriate role of the user.

UNIVERSITY SUPERVISOR MODULE (ONG YI XIN)

Actor/User: University Supervisor		
REQ-4.0	Update university supervisor profile	The system allows university supervisors to update their own profile information so that the students they are responsible for can be contacted in the first instance when help is needed.
REQ-4.1	Review the list of students in charge by university supervisor	The system should allow university supervisors to view and manage the list of internship students under their responsibility in order to facilitate follow-up on the progress of the students under their charge.
REQ-4.2	Create announcement for students	The system should allow university supervisors to make announcements to students, such as notifying them of updates or reminding them of the time to submit internship reports.
REQ-4.3	Tracking students' internship progress	The system should allow university supervisors to communicate directly with students through an embedded messaging system to get updates on their internships.
REQ-4.4	Review students internship reports / evaluation reports	The system enables university supervisors to view the internship reports submitted by students who are under his/her supervision and also the company supervisor evaluation report that is submitted by the company supervisor.
REQ-4.5	Provide internship performance feedback or marks for students	The system allows university supervisors to enter feedback and marks based on students' internship performance.

SUPERVISOR ALLOCATION MODULE (LIM JUN WEI)

Actor/User: University Supervisor, Company Supervisor, Students		
REQ-4.0	Automatically assign university supervisor to a student	The system should automatically match the students with university supervisors based on the students' fields of interest and supervisors' areas of expertise. Meanwhile, the system also allocates a fair number of students to every university supervisor as possible to maintain the balance of workloads for every supervisor.
REQ-4.1	Automatically send notifications and alerts for supervisor assignment	The system will automatically notify university supervisors, company supervisors and students when there is a new assignment made or changes in previous assignment.
REQ-4.2	Provide a messaging platform for three parties	The system should provide an integrated messaging feature for university supervisor, company supervisor and students to directly communicate with each other. Thus, all the messages can be transmitted. to any related party seamlessly.
REQ-4.3	Scheduling meetings between students and university supervisors	The system should allow students to request meetings with his or her university supervisor for asking any question about internship. Meanwhile, the university supervisors should be allowed to accept or reject and arrange time for meetings. The system will also update the students and university supervisors once there is any meeting scheduling update.
REQ-4.4	Modify student's applied company	The system allows university supervisors to unassign students from the current company supervisor. This is used when students want to leave the current company and intern in another company due to valid reasons. University supervisor can manually assign students to another company supervisor.
REQ-4.5	Request for switching university supervisor	The system allows students to request for switching their current university supervisors if there is any valid reason.

SUPERVISOR MODULE (NG IAN KAI)

<p>Actor/User: Company supervisor</p>		
REQ-5.0	Update company profile	The system shall allow the company supervisor to update the company profile's information to eliminate false information that could potentially mislead intern applicants.
REQ-5.1	Review the list of students accepted by company/ students who have accepted the company's offer	The system shall allow the company supervisor to view and manage the list of students who have been accepted by the company or who have accepted the company's internship offer, facilitating the internship placement process.
REQ-5.2	Tracking students' internship application progress	The system shall enable the company supervisor to monitor and track students' internship application progress, to identify whether the student secured an internship or not.
REQ-5.3	Job Posting	The system shall allow the company supervisor to post jobs on students' internship placement interface. Thus, students are able to view the available internship placement posted in the system.
REQ-5.4	Review students internship reports	The system enables company supervisors to view the internship reports submitted by students who are under his/her supervision.
REQ-5.5	Provide internship performance feedback or marks for students	The system allows company supervisors to enter feedback and marks based on students' internship performance.

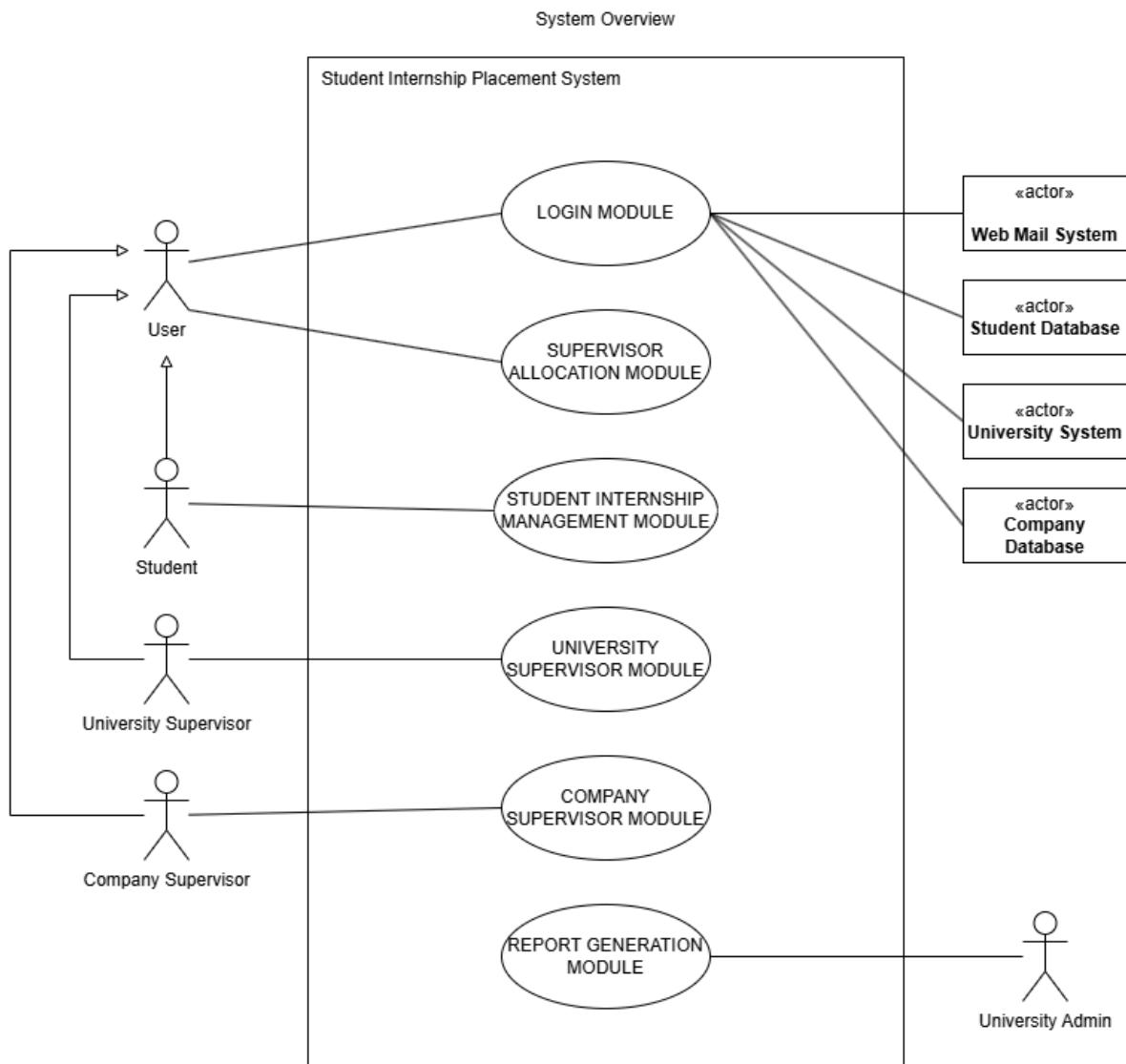
STUDENT INTERNSHIP MANAGEMENT MODULE (CHIA MING YI)

Actor/User: Student		
REQ-6.0	Update student profile / resume / portfolio	The system allows students to update their personal profiles, resumes, and portfolios. This feature enables students to maintain an accurate and up-to-date record of their education, skills, experiences, and achievements, which can be showcased to potential employers.
REQ-6.1	Review the list of recommended company for internship	The system provides students with a curated list of companies that are recommended for internships. Students can review these recommendations, which may be based on their field of study, rating from previous students, or expected salary, to identify potential internship opportunities.
REQ-6.2	Apply for joining company internship	The system enables students to apply for internships by directly submitting their applications to the interested company (appropriate HR personnel) for review and consideration. This streamlined process simplifies the application procedure, ensuring that students can easily and efficiently express their interest in available internship positions.
REQ-6.3	Review the internship applying progress	The system enables students to track the status of their internship applications. Students can review the progress of each application, receive updates on their status, and get notifications about interviews or other steps in the hiring process.
REQ-6.4	Submit students' internship reports	The system allows students to submit their internship reports to their university and company supervisor such as monthly reports and final reports.
REQ-6.5	Provide reviews and ratings for company	After completing an internship, students have the opportunity to provide feedback on their experience with the company. They can submit reviews and ratings, which can include comments on the work environment, the quality of supervision, and the overall value of the internship experience. This feedback can be useful for other students considering internships with the same company.

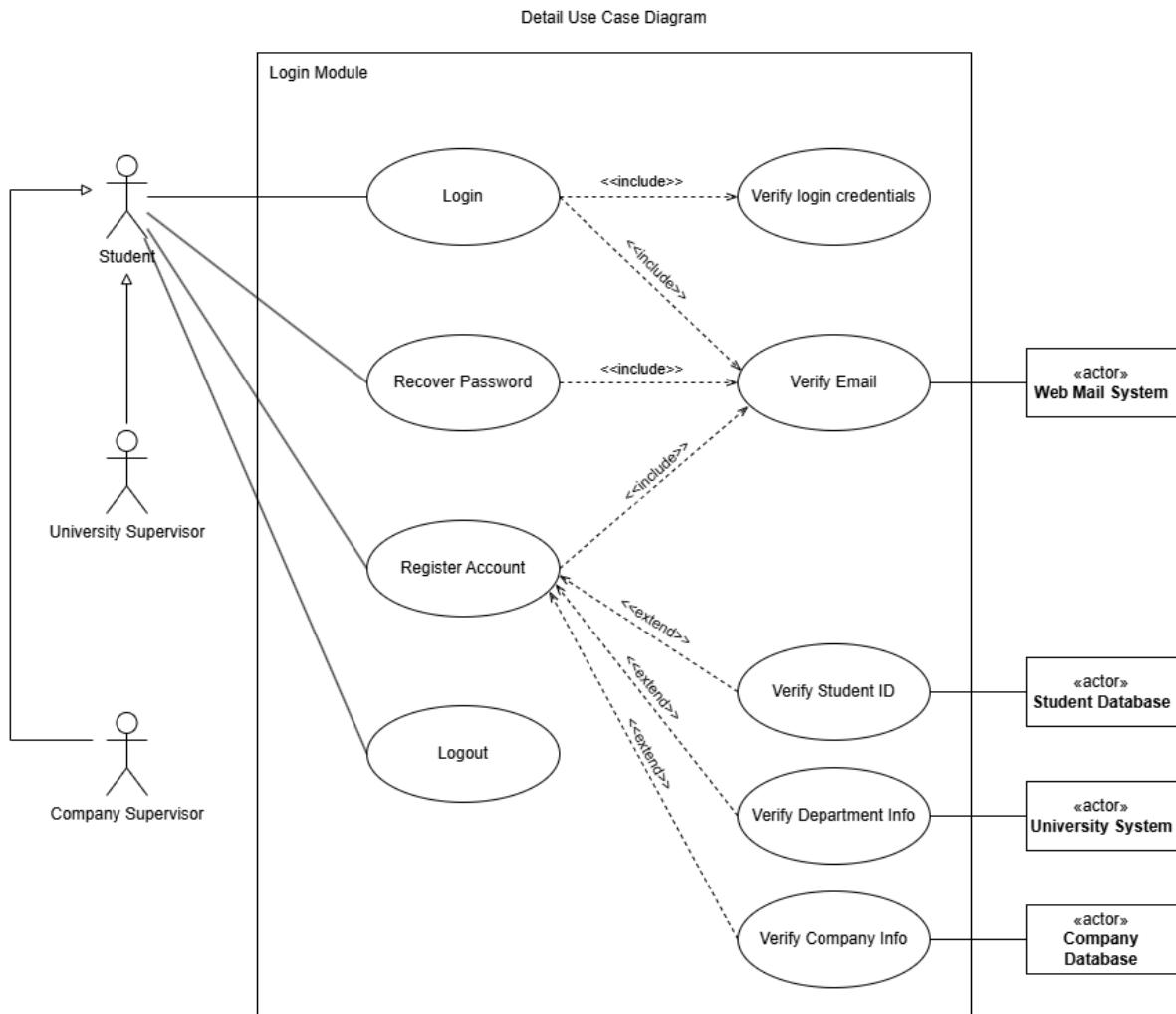
REPORT GENERATION MODULE (NG IAN KAI)

Actor/User: University Staff		
REQ-2.0	Generate report by month, week, year	The system will enable staff to generate reports based on multiple time frames, such as weekly, monthly, and yearly, so as to offer a comprehensive analysis of data.
REQ-2.1	Format report	The system shall allow staff the ability to format reports, including customizing style, headers, and data presentation, to make certain that the report matches particular standards and demands.
REQ-2.2	Print report	The system ought to enable staff to print reports generated from within the system, assuring that physical copies are available for meetings and conferences.

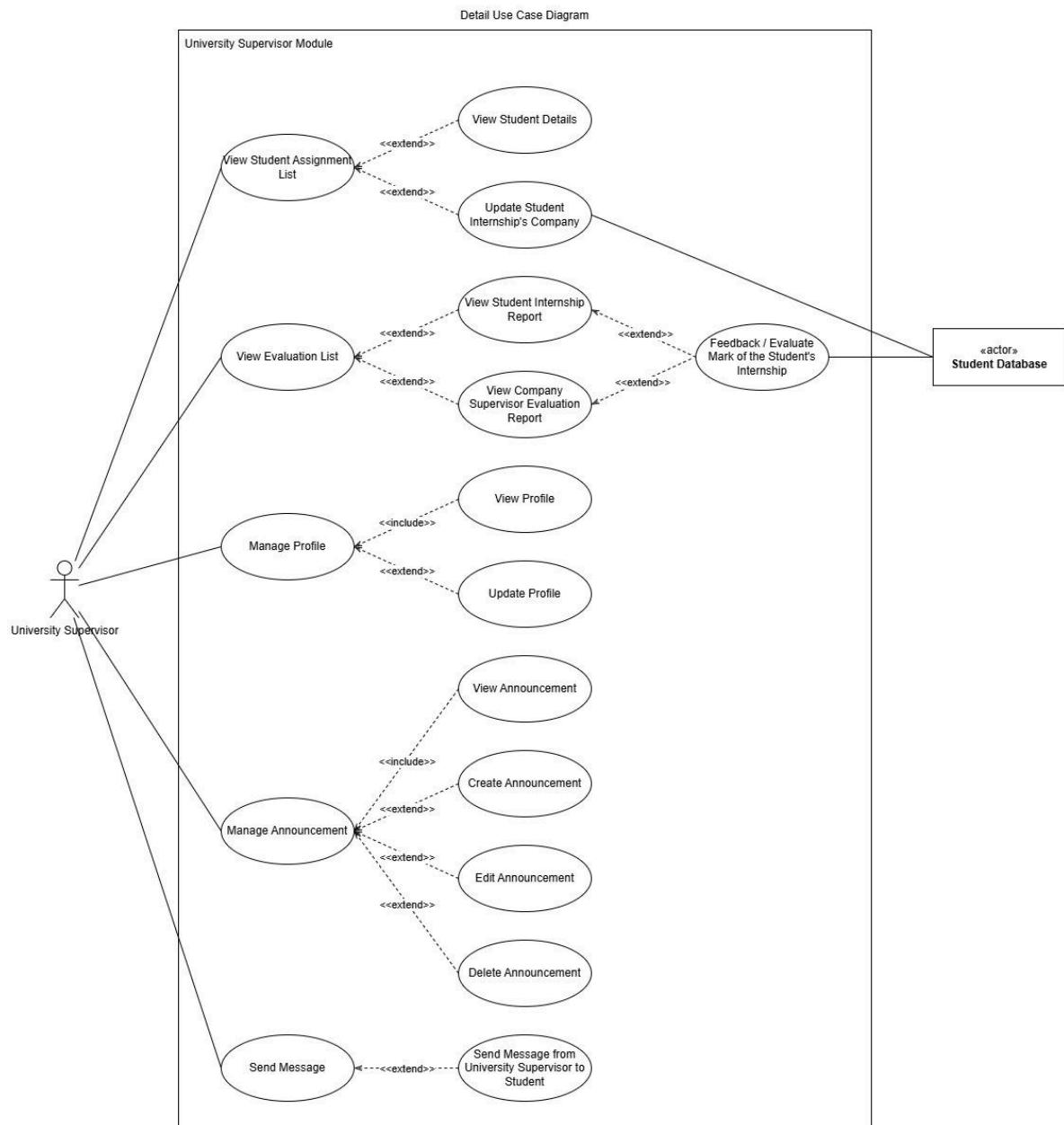
OVERVIEW USE CASE DIAGRAM



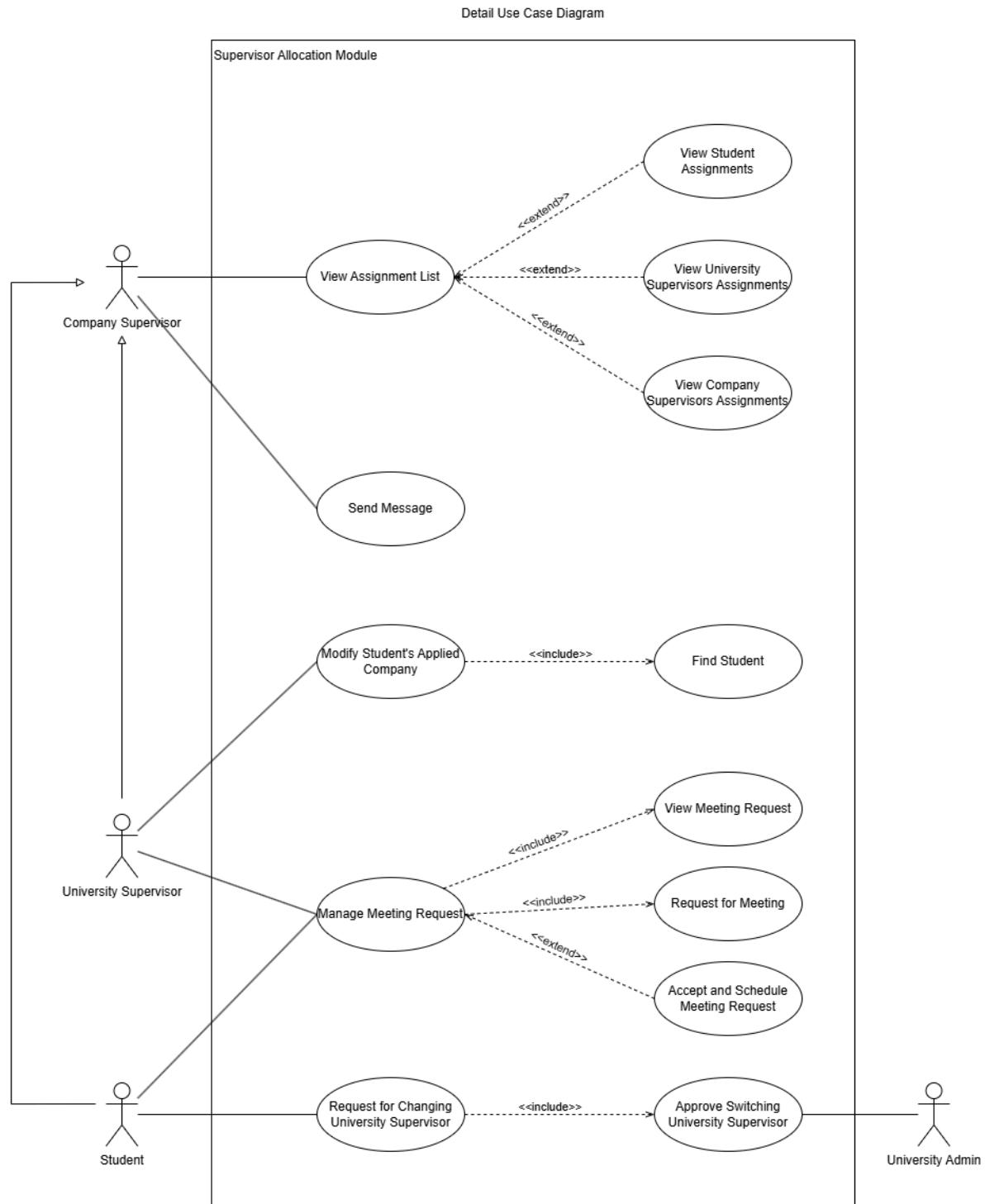
DETAIL USE CASE DIAGRAM FOR THE LOGIN MODULE THAT HANDLED BY LIM JUN WEI



UNIVERSITY SUPERVISOR MODULE THAT HANDLED BY ONG YI XIN



SUPERVISOR ALLOCATION MODULE THAT HANDLED BY LIM JUN WEI

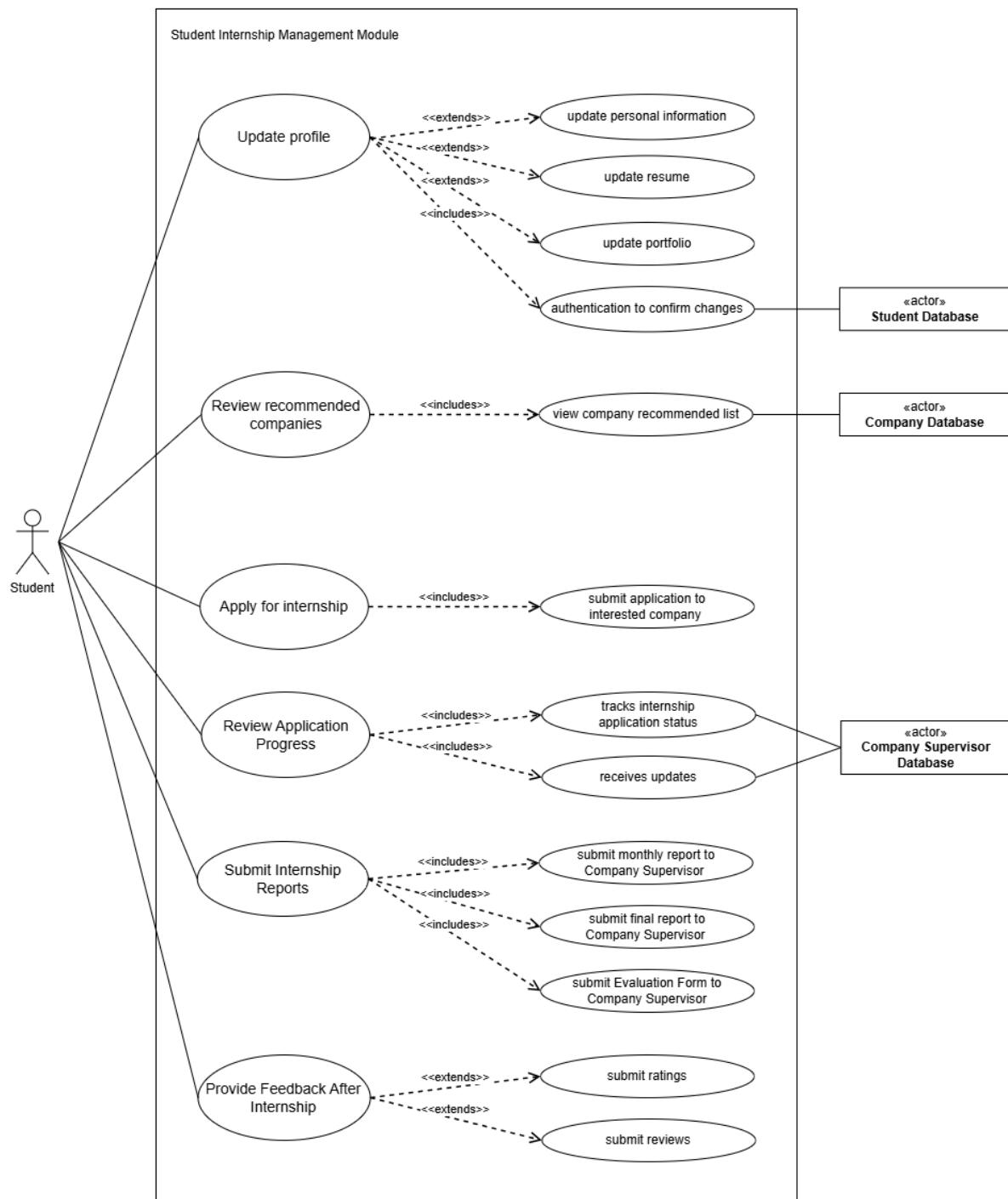


COMPANY SUPERVISOR MODULE HANDLED BY NG IAN KAI

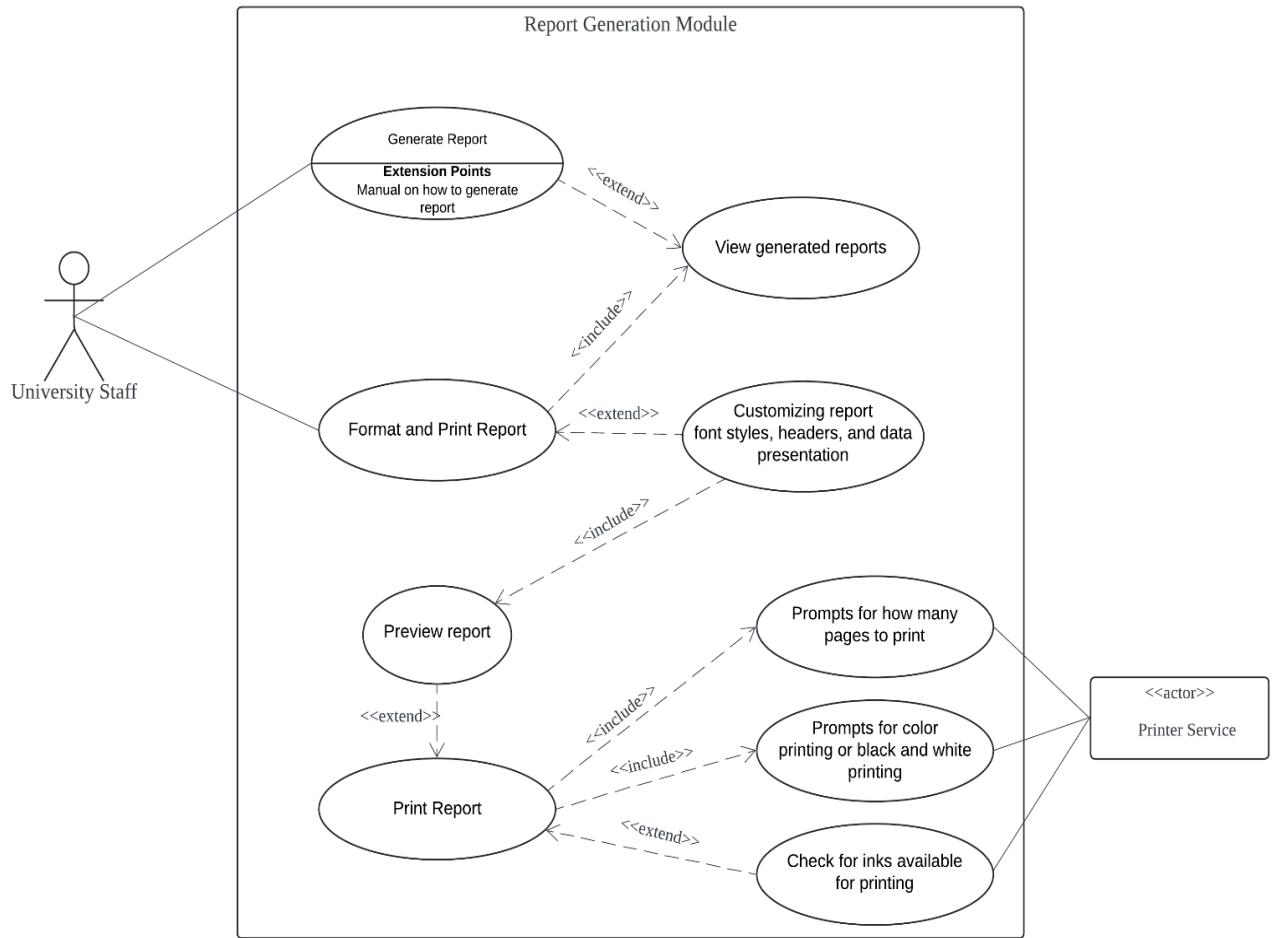


STUDENT INTERNSHIP MANAGEMENT MODULE THAT HANDLED BY CHIA MING YI

Detail Use Case Diagram



REPORT GENERATION MODULE THAT HANDLED BY NG IAN KAI



USE CASE DESCRIPTION

LOGIN MODULE HANDLED BY LIM JUN WEI

Recover Password

Name of Use Case: Recover Password	
Brief Description: When the user forgot their account password, he or she can recover the password via verifying the email address and resetting the password.	
Actor: Student, university supervisor, company supervisor	
Precondition: The user must have his or her valid user account.	
Actor Action	System Response
1. The user enters the email address of his or her account.	2. The system checks the format of the email address.
	3. The system verifies the email address to check whether it is a valid account.
	4. The system sends a verification email to the user's account mailbox.
	5. The system redirects the user to the OTP verification page.
6. The user enters the OTP (One-Time Password) password.	7. The system verifies the OTP (One-Time-Password) password to check whether it is correct.
	8. The system redirects the user to the password reset page and asks the user to enter the new password.
9. The user enters a new password.	10. The system checks the format of the password.
	11. The system displays a successful message.
	12. The system redirects the user to the login page.
Alternative Flows:	
A1. Step 2. If the format of the email address is invalid, the system will display the error message "Invalid format of email address" below the email address field and prompt the user to re-enter the valid email address.	

A2. Step 3. If the email address is not recorded in the system user account database, the system will display the error message “The email address does not exist” and prompt the user to re-enter the existing email address.

A3. Step 7. If the OTP (One-Time-Password) entered by the user is incorrect, the system will display the error message “Incorrect OTP password. Please try again.” and prompt the user to re-enter the correct OTP password. If the OTP (One-Time-Password) has expired, the system will display the error message “OTP password has expired.” and ask the user to click on the “Resend OTP” button.

A4. Step 10. If the format of the password is invalid, the system will display the error message “Invalid format of password” below the password field and prompt the user to re-enter the valid format of password.

Postcondition: The user successfully set the new password to login to his or her account while the new password has been updated into the system user account database.

UNIVERSITY SUPERVISOR MODULE HANDLED BY ONG

YI XIN

Manage Announcement

Name of Use Case: Manage Anznouncement	
Brief Description: The user can manage the announcement including view, create, edit, and delete the announcement which is for the purpose of announcing the latest internship information to the student they are in charge.	
Actor: University supervisor	
Precondition: The user must be logged in and the role is university supervisor.	
Actor Action	System Response
1. User click on the “Announcement” button.	2. System displays the announcement list of the announcement the user has posted and provides 3 action buttons to user.
3. User clicks on one of the action buttons.	4. System redirect user to the corresponding page or corresponding action.
Alternative Flows:	
A1. Step 4. If the user clicks on the “Create” button, the system redirects the user to the “Create Announcement” form page. The user fills in the title, description and select release time of the new announcement to the form fields in the page. Then the system will verify the release time is valid or not, if the release time user has selected is the date that passed, the system will show an error message “The date of release time is invalid and already passed” and ask the user to re-enter a valid release time. After all information is valid, the user clicks on the “Create” Button and the system will pop up a create confirmation message with option “Yes” and “Cancel” to the user for confirmation to create the announcement information. If the user clicks on “Cancel”, the system stays on the create page and does not create the announcement. If the user clicks “Yes”, the system will display successful messages to the user. Then the system redirects the user back to the announcement list page.	
If the user clicks on the “Edit” button of one of the announcements, the system redirects the user to the “Edit Announcement” form page and displays the detailed information of the specific announcement in form format. The user changes the title, description or release time of the announcement. If the release time, the system will verify is it the release time is valid or not. If not, the system will show an error message and ask the user to re-enter a valid release time. After the information are all validated, the user clicks on the “Save” button and the system will pop up a change confirmation message with option “Yes” and “Cancel” to the user for confirmation to update the announcement information. If the user clicks on “Cancel”, the system goes back to the edit page and does not update the announcement information. Otherwise, the system will display a	

successful message to the user and redirect the users back to the “Announcement List” page.

If the user clicks on the “Edit” button of one of the announcements, the system will display a delete confirmation message with option “Yes” and “Cancel” to the user for confirmation to delete the announcement information. If the user clicks on “Cancel”, the system goes back to the list page and does not delete the announcement. Otherwise, the system will display a delete successful message to the user and redirect the users back to the “Announcement List” page.

Postcondition: The announcements are able to be managed by the user and the student that is in charge of the current users is able to view and receive the latest announcement. The system updated and stored all the announcements in the system database.

SUPERVISOR ALLOCATION MODULE HANDLED BY LIM JUN WEI

Manage Meeting Request

Name of Use Case: Manage Meeting Request	
Brief Description: This use case helps the student to request a physical or online meeting with his or her university supervisor when he or she is facing some issues during internship. Meanwhile, the university supervisor can also use it for managing the meeting requests from students.	
Actor: Student, University Supervisor	
Precondition: The student must be assigned to at least one university supervisor.	
Actor Action	System Response
1. The student clicks on the “Request Meeting” button.	2. The system redirects to the request meeting page.
	3. The system displays a form with the field of University Supervisor Name (read-only) and Title.
4. The student enters the field “Title”.	
5. The student clicks on the “Submit” button.	6. The system checks the format of the field “Title”.
	7. The system sends the request to the corresponding university supervisor.
	8. The system displays the successful request message.
	9. The system detects whether the university supervisor has accepted the request.
	10. The system sends the successful meeting reservation notification to the student.
Alternative Flows:	
A1. Step 5. If the student clicks on the “Cancel” button, the system will cancel the process of request meeting and redirect back to the main page.	
A2. Step 6. If the format of the field “Title” is invalid, the system will show an error message “Invalid format of Title” and prompt the student to re-enter the valid input.	

A3. Step 9. If the university supervisor accepts the request, he or she will select the meeting date, time and mode of meeting. Then, they will submit the form.

If the university supervisor clicks on the “Reject” button, the system will delete the rejected meeting request and send a rejection notification to the student.

Postcondition: The student successfully requested the meeting with his or her university supervisor while the meeting reservation is updated in the system database.

COMPANY SUPERVISOR MODULE HANDLED BY NG IAN KAI

Job Posting

Use Case: Job Posting	
Brief Description: This use case allows the company supervisor to post new internship offer or update existing posted internship offer.	
Actors: Company Supervisor	
Precondition: The company supervisor is logged into the system.	
Actor Action	System Response
1. Company supervisor clicks on the “Job Posting” button.	2. The system displays a list of existing job offers the actor posted in the system.
	3. The system prompts the actor to choose to post a new job or update the existing job offer.
4. Company supervisor selects the “post new job” option.	5. The system displays a form for posting a new job.
6. Company supervisor enters job details and submits the form.	7. The system saves the new job posting and confirms the job posting is successful.
Alternative Flows: A1. Step 2-5. If the actor clicks on the “Cancel” button at any point, the system does nothing and redirects him/ her back to the main menu. A2. Step 4. If the actor selects the “update existing job offer” option, the system prompts the actor to choose which posted job to modify, then allows the actor to update the details. A3. Step 7. If the job details form is incomplete, the system prompts the actor to complete all required fields.	
Postcondition: The system database for job posting is updated with the new job or modified existing job.	

STUDENT INTERNSHIP MANAGEMENT MODULE THAT HANDLED BY CHIA MING YI

Update Profile

Name of Use Case: Update Profile	
Brief Description: When the student wants to update their profiles which includes settings, personal information, resumes, and portfolios, the student can access this case to update their own profile.	
Actor: Student	
Precondition: The user must login to the system using his or her account and their roles must be students.	
Actor Action	System Response
1. The user clicks on the "Update Profile" button.	2. System redirects to the edit profile page.
3. The user clicks on the part that he or she wants to modify.	
4. The user modifies his or her information to the latest version.	5. System validates each change.
6. The user clicks on the "Update" button.	7. System displays a confirmation dialog.
8. The user selects the "Yes" or "Cancel" option.	9. System displays profile updates successful messages.
	10. System redirects back to the profile page.
Alternative Flows: A1. Step 5. If the phone number format is invalid, the system will display "Invalid format of phone number" and prompt the user to re-enter a valid number. If the email address format is invalid, the system will display "Invalid format of email address" and prompt the user to re-enter a valid email. If the new password does not meet complexity requirements, the system will display "Password does not meet complexity requirements" and prompts the user to enter a stronger password. If the profile picture is in an unsupported format, the system will display "Invalid profile picture format" and prompt the user to upload a JPEG or PNG file. If the resume is in an unsupported format, the system will display "Invalid resume format" and prompt the user to upload a PDF or DOCX file. If the resume file size exceeds the limit, the system will display "Resume file size exceeds the maximum limit" and prompt the user to upload a smaller file. If the portfolio file is in an unsupported format, the system will display "Invalid portfolio file format" and prompt the user to upload a valid file type.	

If the total portfolio size exceeds the limit, the system will display "Portfolio size exceeds the maximum limit" and prompt the user to reduce the size.

A2. Step 8. If the user selects "Cancel", the system will not update any information about the user and remain information before edit.

A3. Step 9. If the updates fail, the system will display the update failure message and let user to retry.

Postcondition: The user information in the system will be updated. The user is able to view their latest information.

REPORT GENERATION MODULE HANDLED BY NG IAN KAI

Format and Print Report

Use Case: Format and Print Report	
Brief Description: This use case allows university staff to format a generated analysis report of the internship placement system to customize according to requirements and finalize the document for presentation.	
Actors: University Staff	
Actor Action	System Response
1. University staff click on the “Format Report” button in the admin panel.	2. The system displays a list of generated analysis reports available for formatting.
3. University staff selects a specific report to format by searching for unique identifier or clicking on the report in the list displayed.	4. The system loads the selected report and displays a variety of formatting options.
5. University staff applies desired formatting options (e.g. font styles, headers, tables, etc)	6. The system applies the selected formatting styles to the report and shows a preview of it.
7. University staff reviews the formatted report	8. The system prompts the actor to print the formatted report or discard it and go back to the admin panel.
9. University staff can click on “Check Ink Availability” button to check for ink availability before printing.	
10. University staff click on “Print Report” button.	11. The system prompts for how many pages to print, color printing or black and white printing, then prints out the analysis report.

Alternative Flows:

A1. Step 1-11. If university staff clicks the “Discard” button at any point, the system returns to admin panel without doing anything.

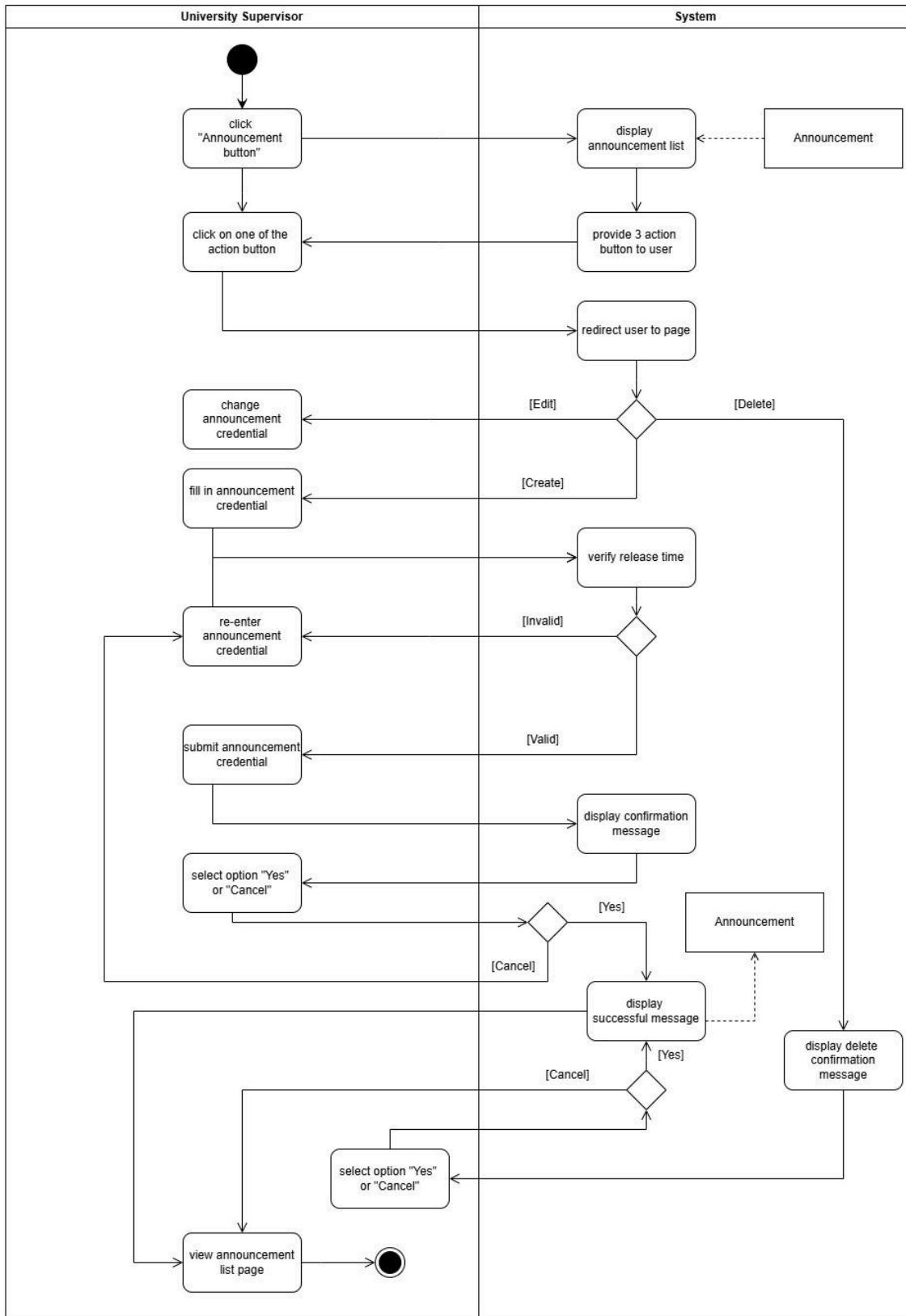
A2. Step 11. If there is not enough inks or papers for printing, the system displays an error message indicating that there are not enough inks and/ or papers, and requests the actor to refill the inks and/ or papers.

Postcondition: The formatted report is printed out and ready to be presented in a conference.

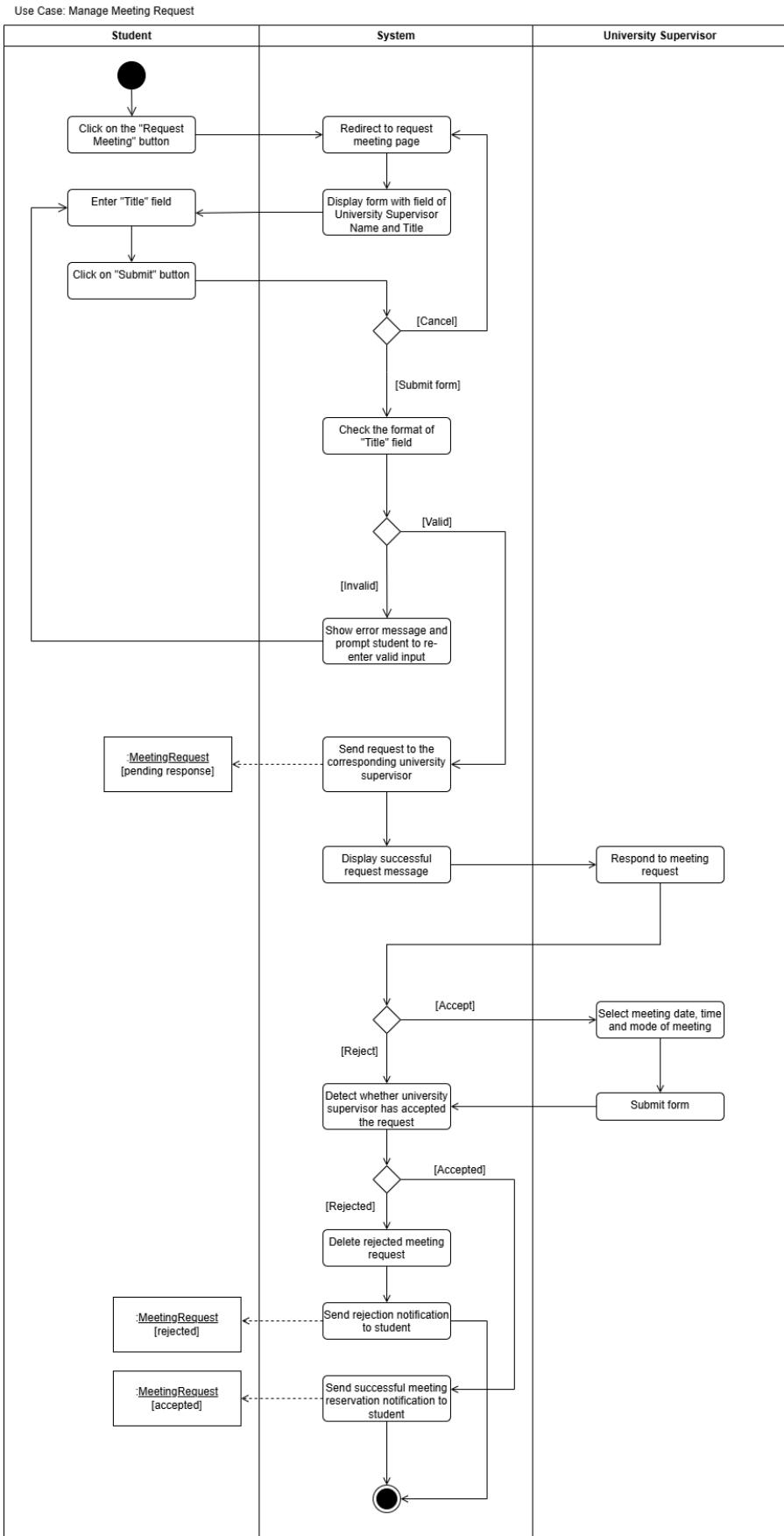
Activity Diagram

UNIVERSITY SUPERVISOR MODULE HANDLED BY ONG YI XIN

Use Case: Manage Profile

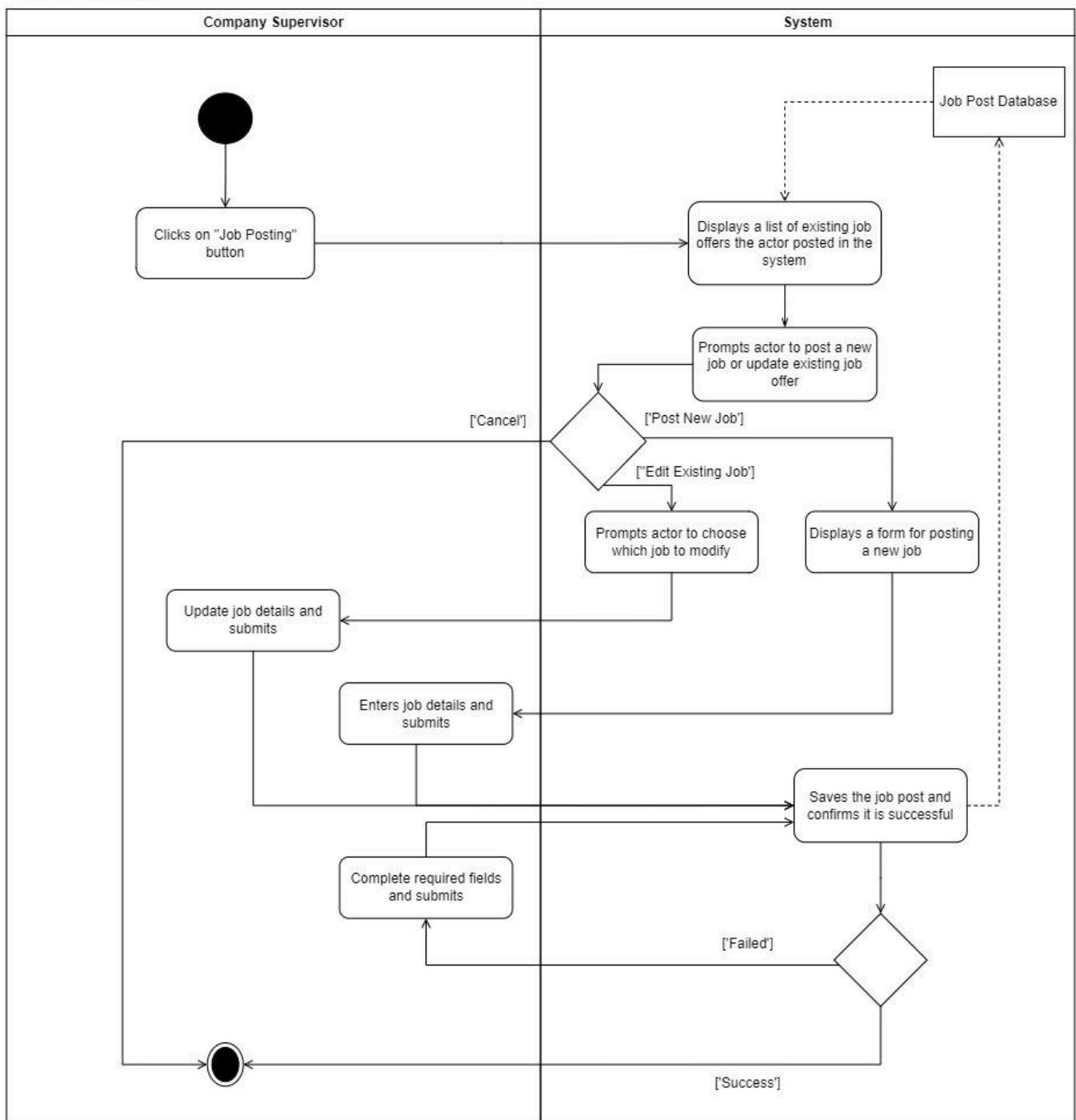


SUPERVISOR ALLOCATION MODULE HANDLED BY LIM JUN WEI



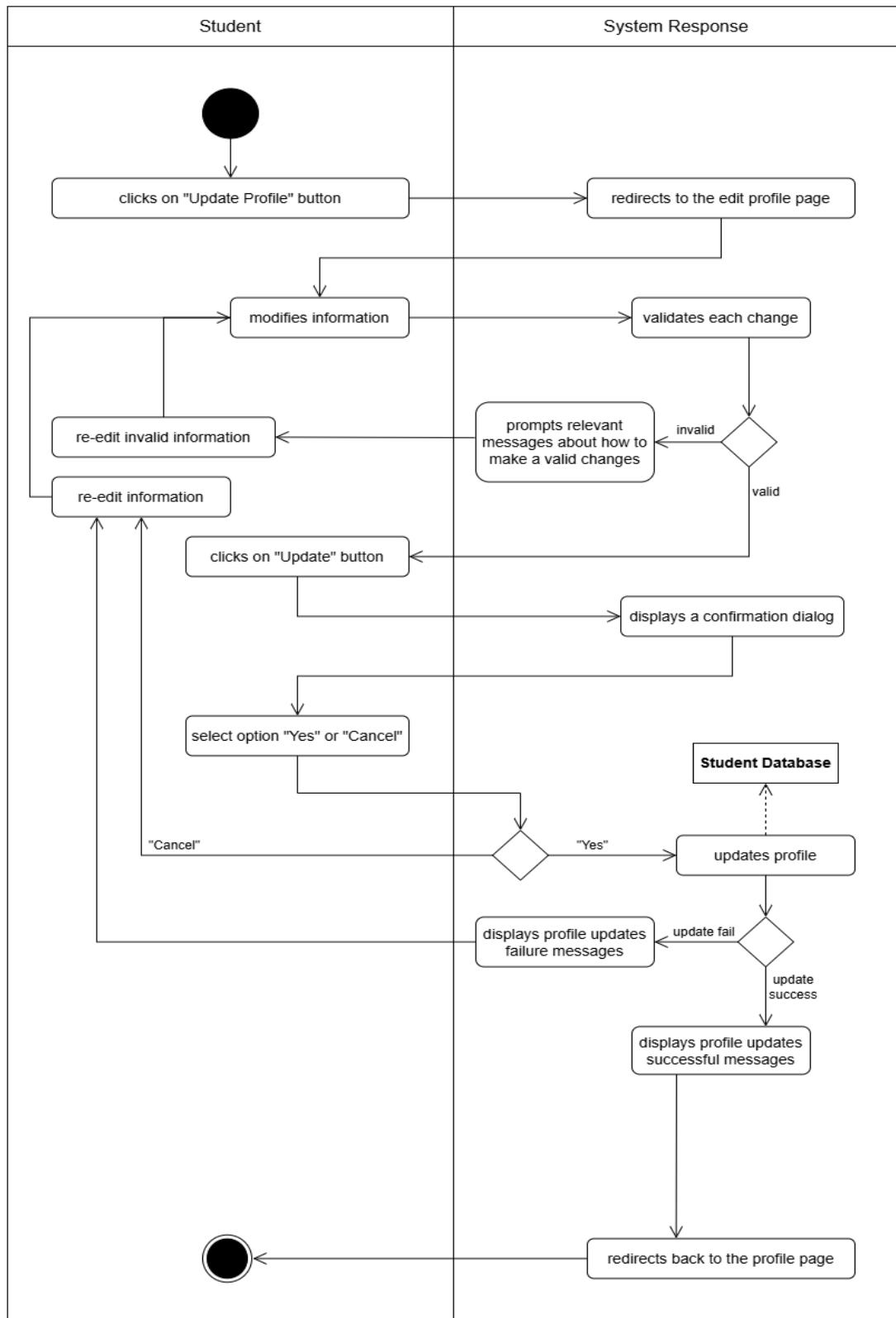
COMPANY SUPERVISOR MODULE HANDLED BY NG IAN KAI

Use Case: Job Posting



STUDENT INTERNSHIP MANAGEMENT MODULE THAT HANDLED BY CHIA MING YI

Use Case: Update Profile



Class Diagram

