Software Requirements Specification for Internship management system

Introduction

Purpose

This document is created to provide a detailed description of the proposed software for the client, Dr Bibiana, who is associated with Swinburne University of Technology Sarawak campus. In this document would be the summary of the problem statement, an introduction to any terminologies used, product description, general design of the software with an elaborated summary, functions of the software, constraints of the project, and a plethora of system requirements like, functional and non-functional.

Scope

The software is being developed for Work integrated learning, where degree students in Swinburne Sarawak can opt to take as a replacement to two elective units. The system aims to be the link for the students and companies to form internship arrangements. It also acts as a way for the staff to keep track of the students and their internships. Prior to wanting the system, the staff had to do things manually through emails and tracking was very inefficient. Human error could also get in the way of managing the students as well. The system would also be handy for the staff to check feedback and generate reports based on them for future improvements to the internship course. As for the students it aims to make it easier for them to look and apply for internships, especially for the companies they want. The companies partnering with Swinburne would also benefit as they can directly sign up and be involved in the selection process instead of manual interaction through emails with the industry supervisor of Swinburne.

Terminologies, Definitions and Acronyms

Term	Explanation
SRS(Software Requirements Specification)	It is a document that entails majority of the very intricate details regarding the system, its purpose, and general constraints issues for operation.
PHP	A scripting language used in general web development for server-side implementation. Commonly integrated with databases.
HTML	A programming language mostly used to display web pages
CSS	A programming language used to provide design to web pages
Bootstrap	An open-source framework of CSS used to create responsive front-end websites and pages.
SQL	A programming language used to design and manage complex databases.
CRUD	An acronym for Create, read, update, and delete

Overall Description

Product Perspective

The Internship management systems is based around the web application framework. Meaning it works like a website, allowing students, companies, and staff to sign up and login with their details and use the portal. For the students they can enter an application form and will be shown on a list of students looking for internships. The companies will be able to see this list and can see the details of the students. They will then be able to accept or reject any applicants they might get. The staff can see most of the things on the platform and can also make use of the platform for report generation and infographic data. Both the students and companies can leave feedback of each other to complete the loop of the internship.

This platform will be developed for a web application, so it will be dependent on all users to be connected to the internet. It will use most of the programing languages that are associated with web development, like PHP, HTML, CSS, Bootstrap. SQL will also be used to create the databases that will store all the relevant information like student applications list and company list.

Product functions

The following are the major features of the system that will be prioritized:

- Internship applications
- Login
- Company registration
- Feedback submission
- Approval or Rejection of an application
- Query Filters for Student list and Company list
- Report generation
- Create/Read/Delete/Update data for staff
- Infographics from database data

User class and characteristics

Staff

The first users of the system would be the staff, they would be the super user of the system and would see majority of the platform. They also have the highest authority for CRUD operations. The staff would need to be computer literate and have prior experience in managing users in a platform or portal.

Below are the following that the staff should be able to do:

- View the Student application list
- View the Company list
- View the Feedback list
- View infographic data
- CRUD operations in the lists
- Generate report
- Filter the lists

Students

The students have very basic access to the system. The students should not feel that much of a difference in UI usage as it would be similar to canvas or the student portal.

Below are the following that the students should be able to do:

- View the company list
- Submit feedback
- Edit application form
- View status page
- Edit password

Industry companies

The industry clients would have the same level of access of students with slight differences of viewable pages. The staff employed by the industry should be computer literate to use the system.

- View the student list
- Submit feedback
- Edit application form
- View applicant page
- Edit password
- Accept or reject applications

Operating environment

The internship management system should work in most operating systems, preferably it should work best in Windows 10 and 11. It should also work perfectly fine in MacOS and Linux OS. As this is a web application, the system would be also functional on all web browsers that support HTML 5 and beyond.

Assumptions and Dependencies

A lot of factors have to be guessed as there is not a lot we can know of our users. First would be how well equipped they are in terms of hardware, if the users don't have proper functioning computers with internet access then they cannot use the system. Secondly, students are expected to use the system but there might be cases where they might forget. Students are also expected to manually email their industry employers in tandem with their approval in the system, although we have no way of knowing or confirming it. We also do not know if the Swinburne staff would prefer our implementation of the system as we do not possess technical knowledge of how they do their systems.

System architecture
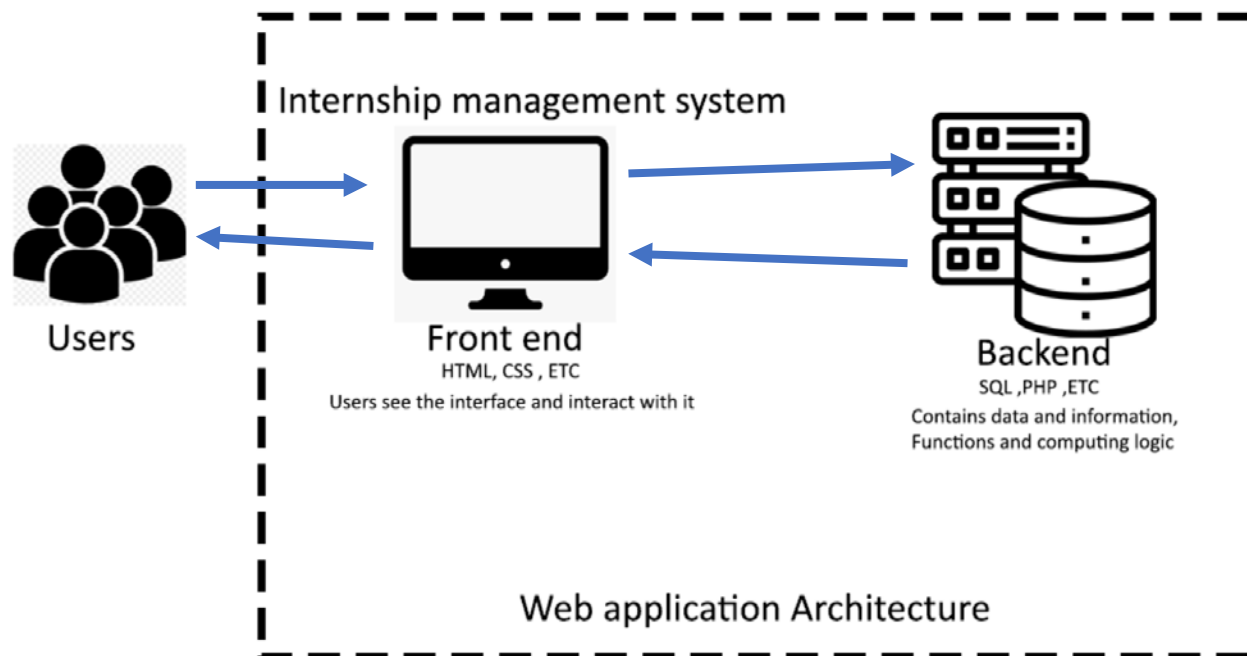
The system architecture that our decided to use is web application. Web applications are extremely versatile and cost effective as they do not need beefy computer hardware to use. The framework relies on a front end and a back end. In the front end, users interact with menus and buttons. These interactions are then carried out to the back end and executes relevant computing logic. The response is then sent back to the front end and is acted out and displayed to the user.

Implementation constraints

Time

Project duration is very critical in the quality of the overall product. The timeframe for this project is 12 weeks long, which includes the proposal, planning execution of the development , implementation, and testing. With a short time, certain elements will be lower in quality.

Knowledge

The biggest issue would probably be the knowledge gap. Certain things like how Swinburne staff's working habits or their preferences cannot be ascertained. Neither can be said about how Swinburne actually implement their existing systems.

Functional requirements

Students

FR1 – Student login

Use Case Name	FR1 student login
Priority	Essential
Trigger	Student clicks on the login button
Precondition	• IMS is connected to the Internet and Database • Students registered in canvas
Basic Path	1. IMS sends login details to the server 2. Server checks for details if it exists or not in the database 3. Takes to dashboard
Alternate Path	N/A
Postcondition	Students will view the dashboard page
Exception path	If login fails, show error messages

FR2 - Submit the internship application form

Use Case Name	FR2 Submit Internship Application Form
Priority	Essential
Trigger	Student clicks on submit form
Precondition	● IMS connected to internet and database ● Students are on Internship Application form page
Basic Path	4. IMS sends application details to the database 5. Students are sent to log in page
Alternate Path	N/A
Postcondition	Students will go back to the landing page, with pop up stating registration successful.
Exception path	If details are not properly inserted then show error messages

FR3 – Search internship offers

Use Case Name	FR2 Search for internship
Priority	Essential
Trigger	Student clicks on the search button
Precondition	● IMS connected to internet and database ● Student logged in
Basic Path	6. IMS will look for all the registered companies looking for interns based on the search/search filter 7. Displays all companies in a list
Alternate Path	N/A
Postcondition	Students can view the list and apply
Exception path	They can opt to not apply for any company

FR4 – Apply for the companies

Use Case Name	FR3 Apply for the Companies
Priority	Essential
Trigger	Student clicks on Apply button
Precondition	● IMS connected to internet and database ● Students have their CVs uploaded
Basic Path	8. IMS sends the application details to the companies database and waits for approval
Alternate Path	N/A
Postcondition	Companies applied will appear on the dashboard
Exception path	They can choose not to apply for any companies

FR5 – Final approval for companies

Use Case Name	Final approval for companies
Priority	Essential
Trigger	The student clicks on confirm button

Precondition	• IMS connected to internet and database • They must have applied for industries and wait for their approval. • Must have some industries seeking them out
Basic Path	9. IMS sends approved industry to the database 10. The industry will have another approved student on their list
Alternate Path	N/A
Postcondition	Students will access the status page with the feedback option
Exception path	None

. *FR6 - Submit feedback*

Use Case Name	*FR6 Submit feedback*
Priority	Essential
Trigger	The student clicks on submit report button
Precondition	• IMS connected to internet and database • Students must complete their internship • Students are at the IMS feedback page
Basic Path	1. IMS submits the document that students have uploaded into the database
Alternate Path	N/A
Postcondition	Students will see a guideline of instructions
Exception path	N/A

Industries

FR1 – Industry login

Use Case Name	*FR1 Industry login*
Priority	Essential
Trigger	Company clicks on login button

Precondition	• IMS is connected to the Internet and Database • Companies registered in canvas
Basic Path	11. IMS sends login details to the server 12. Server checks for details if it exists or not in the database 13. Takes to dashboard
Alternate Path	N/A
Postcondition	The company will view the dashboard page
Exception path	If login fails to show error messages

FR2 - Submit the Industry application form

Use Case Name	*FR2* Submit Industry Application Form
Priority	Essential
Trigger	Companies click on submit the form
Precondition	● IMS connected to internet and database ● Students are on Internship Application form page
Basic Path	14. IMS sends application details to the database 15. Companies are sent to log in page
Alternate Path	N/A
Postcondition	Companies will go back to the landing page, with pop up stating registration successful.
Exception path	If details are not properly inserted then show error messages

FR3 – Search available students

Use Case Name	*FR2* Search for available students
Priority	Essential
Trigger	Student clicks on the search button

Precondition	• IMS connected to internet and database • Company logged in
Basic Path	16. IMS will look for all the registered companies looking for interns based on the search/search filter 17. Displays all students in a list
Alternate Path	N/A
Postcondition	Companies can view the list and request
Exception path	they can just view

.   *FR4 – confirm applicants*

Use Case Name	*FR4 Confirm applicants*
Priority	Essential
Trigger	Company clicks on confirm button
Precondition	• IMS connected to internet and database • They have applicants on their list
Basic Path	18. IMS sends a request for approval in the database
Alternate Path	N/A
Postcondition	Students confirmed will appear in the dashboard
Exception path	N/A

FR6 - Submit feedback

Use Case Name	*FR6 Submit feedback*
Priority	Essential
Trigger	company clicks on submit report button

Precondition	• IMS connected to internet and database • Students must complete their internship • Companies are on the IMS feedback page
Basic Path	1. IMS submits the document that students have uploaded into the database
Alternate Path	N/A
Postcondition	The industry will be taken back to the applicant's page
Exception path	N/A

Admins

. FR1 –Admin login

Use Case Name	FR1 Admin login
Priority	Essential
Trigger	Admin clicks on login button
Precondition	• IMS is connected to the Internet and Database • Admins registered in canvas
Basic Path	19. IMS sends login details to the server 20. Server checks for details if it exists or not in the database 21. Takes to dashboard
Alternate Path	N/A
Postcondition	Admins will view the dashboard page
Exception path	If login fails to show error messages

FR2 – Admin view charts

Use Case Name	FR2 admin view charts
Priority	Optional
Trigger	Admin clicks on submit form
Precondition	• IMS connected to internet and database • Data must be present in the database

Basic Path	22. IMS creates a chart based on the query
Alternate Path	N/A
Postcondition	Admins can generate a report
Exception path	none

FR3 – Search query results

| Use Case Name	*FR3* Search query results
Priority	optional
Trigger	Admin clicks on query questions
Precondition	- IMS connected to internet and database - Data must be present in the database
Basic Path	23. IMS will try to match the query result
Alternate Path	N/A
Postcondition	Admins will see a table based on the results
Exception path	N/A

FR4 – Assign supervisor

Use Case Name	*FR4 Assign Supervisor*
Priority	Essential
Trigger	Admin places a name
Precondition	- IMS connected to internet and database - Students must have completed all their processes to get approved by a company
Basic Path	24. The table will contain the supervisor's name

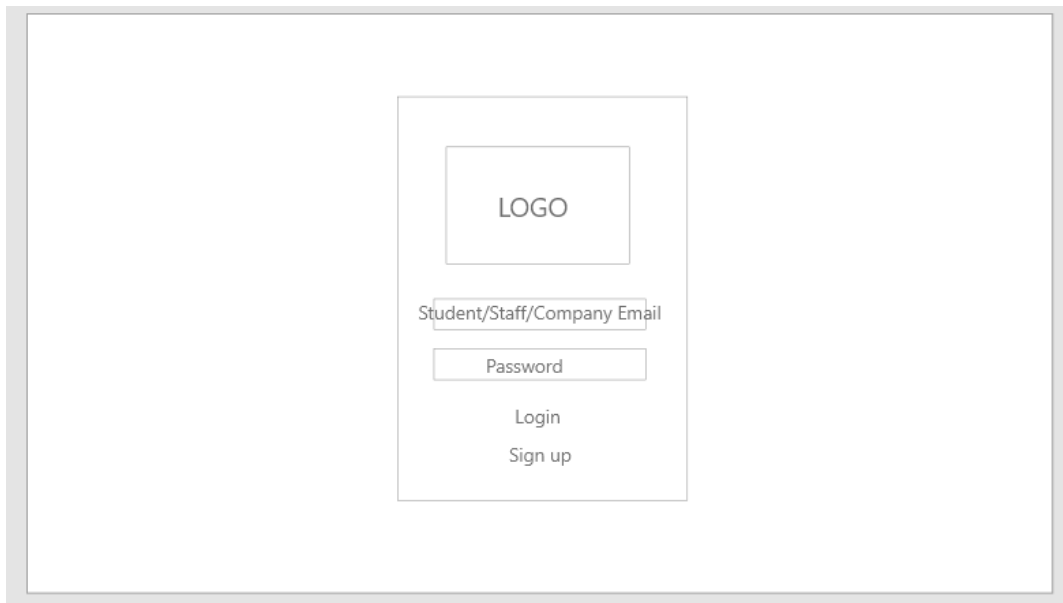|	25. The table will update the empty data
Alternate Path	N/A
Postcondition	Students will have a supervisor on their dashboard
Exception path	none

External Interface Requirements

User Interfaces

Landing page
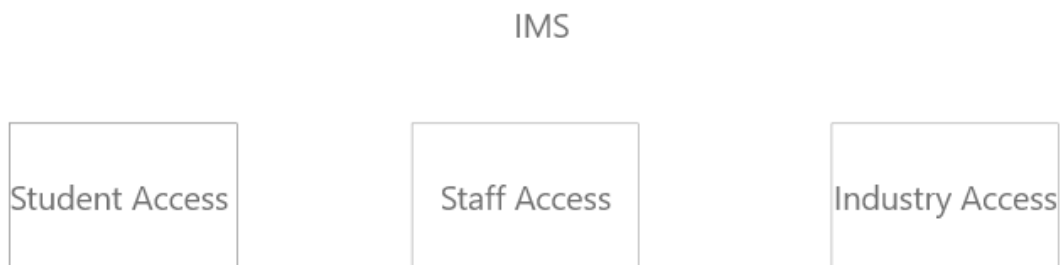
When the user enters the website, they will see the name of the system which is the internship management system, and three options to choose from. Each access panel would take the user to its respective login screens.
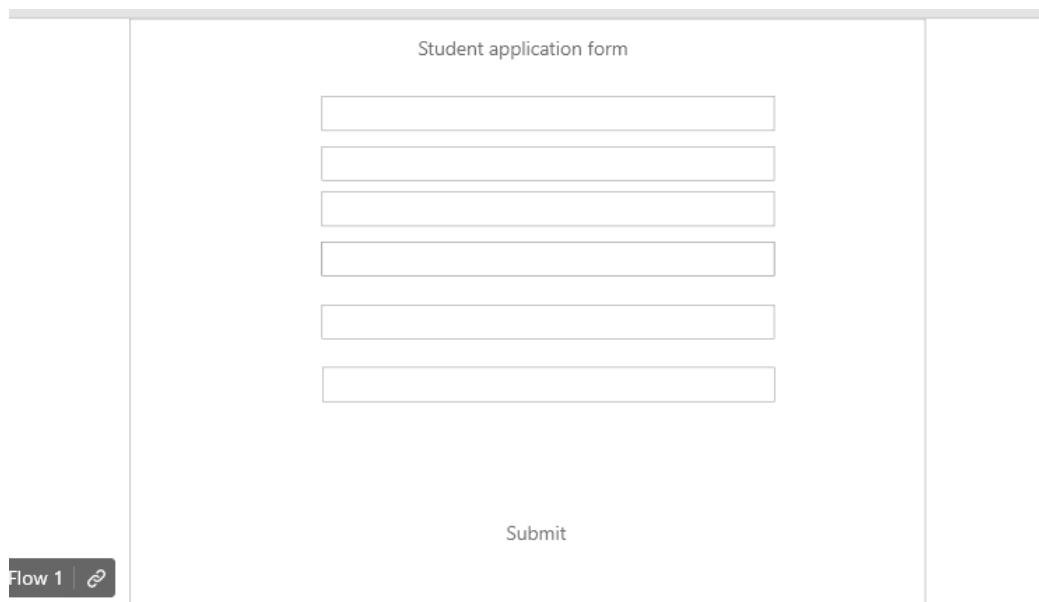
Login pages for students/admins/industries

When the users click on the login options on the landing page they will be taken to a log-in page. The page will ask the user to enter their username and password. If they don't have an account, the page will also have a link for registration. Admins will not have any registration link as they will be pre-registered.

Application form for students

When students click on the signup option they will be taken to an application form page, in which there will be a list of fields they have to enter such as username, password, courses, GPA, and so on. They will have an upload option for CVs which they will be using in the future to show to the industries. The students must fill in all the fields and have their CVs uploaded as well to be registered. The figure below shows the wireframe for the student application form. Each field will have specific patterns for verification, if they cannot match those patterns they will have error messages to refill those options again.

Industry application form

Company registration page

Submit

When the industry clicks on the sign-up option they will be taken to the application form page, where they will see fields that will ask the user to fill such as company name, registration number, vacancies, and job description.

Dashboard for Students

Student status page

Navigation bar

Welcome back (User name:_____)

Approved/pending/complete

Accepted company detail   Feedback
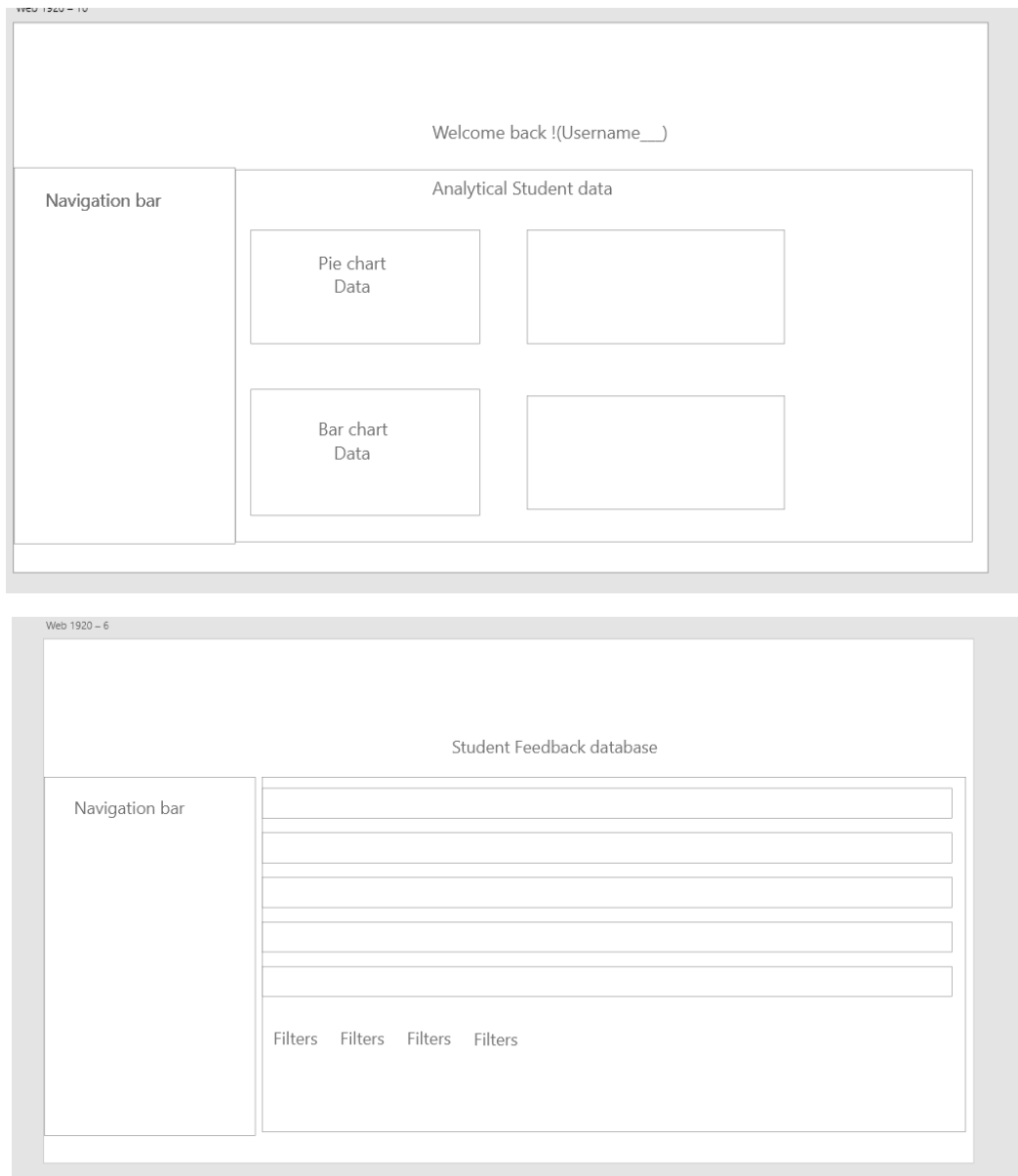
Company list

Navigation bar

Apply

Filters   Filters   Filters   Filters

The student dashboard will consist of options that will take them to the search page, a log out button with other navigation options on the navigation bar. The students will see the list of industries that have accepted their applications as well as industries that are seeking them out from their search. The students will have the option to accept the industries they want to approve or join. Once they accept an offer or confirm an industry the dashboard will only show a status page every time they log in afterward. The students will have a feedback option once they completed their internship. The feedback will have a submit button which when submitted will send the feedback to the admins for review.

Dashboard for admins

Welcome back !(Username___)

Navigation bar	Analytical Student data

Pie chart
Data

Bar chart
Data

Student Feedback database

Navigation bar

Filters   Filters   Filters   Filters

The admin's dashboard will have access to the database. The dashboard will consist of queries that will process the database and find results based on the queries. It will also have options for pie chart data statistics and an option for report generation. One of the options will take them to all the feedback options which will consist of filters for sorting those feedbacks. The navigation bar will also have options to view all the tables in the database.

Dashboard for Industries

Company status page

Navigation bar

Welcome back (User name:_____)

Accepted student detail   Feedback

Student list

Navigation bar

Applicant 1   Accept/Reject

Filters   Filters   Filters   Filters

The industry dashboard will look similar to the student dashboard which will showcase the list of students that applied to them. They can approve those students and wait for confirmation from the students. Once they have a list of students that have accepted their approval their dashboard will have options of feedback beside each student's name. The feedback will appear as a form and then send those feedback to the admin after the internship is over.

Hardware interfaces

As this application is a web application and is to run over the internet, the hardware that are used for access to the internet will be the hardware interfaces for this web application

Software interfaces

The internship management system should interact with various software systems through various software interfaces. Some of these include the email protocols, web browsers, and peripherals.

Browser

The web app should be able to work seamlessly with all the browsers supported by the system, such as Chrome, fire fox and Safari.

MySQL (version 8.0.17 and above)

The web app should be able to retrieve data from the database at any time. It should also be able to perform specific actions on the data collected from SQL Queries.

Communications interfaces

The internship management system uses HTTP protocol for communication between its server and database.

Non-functional Requirements

Performance requirements

Performance

The goal of the web application is to be interactive, and delays are minimized between the client and the server. In most cases, the system will only take a couple of seconds to complete an action. In most cases, it will take less than 2 seconds for the user to retrieve and display the data collected by the web application.

Safety

The data collected by the application will be stored in MySQL, a database management system. It is designed to ensure that the data is secure and encrypted before it is transmitted to the server.

Portability

High portability since devices that can access the platform will can be mobile. If the device has access to the internet and has access to a browsing platform.

Reliability

The web application is built on top of the existing manual process of applying for an Engineering faculty internship at Swinburne. It eliminates the need for anyone and only allow relevant personal to have access to private information.

Application compatibility

Application should be compatible with all internet browsers. Unless restriction from specific countries. No download required.

Software system attributes

Availability

User should be available 24/7. Downtime will only be during maintenance (should not be more than 12 hours). If internet is available, the platform will be accessible to the users.

Security

For student registration student id is required. As for company registration company number will be required. All users will register a password upon registration to access the login mechanism with email authentication to allow another layer of authentication. All information will be verified to prevent false data.

Usability

The application should only show the most relevant information to the users who are most likely to use it. It should also minimize the number of navigations and pages to make the system more responsive.

Other requirements

The design of the web application should follow a simple and user-friendly approach.

Signed off by Dr. Bibiana Lim Chiu Yiong : _____ _____

Client for Internship management system