**ITE5622 – INDUSTRIAL APPLICATION DEVELOPMENT PROJECT**

**Internship Management System**

**Project Report**

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## 1. Introduction

The courses ITE5621:Industrial Training and ITE5622:Industrial Application Development Project are 6 credit courses designed to provide students with practical hands-on experience in a professional working environment in the Information Technology industry. The level 5 students of the BSc. IT degree programme have to register to either one of the courses among ITE5621 and ITE5622 as their wish, in order to complete their degree programme. These two courses are self-learning / independent learning courses that have been designed to gain knowledge by working in a real world project (training) in the industry as an intern or by actively engaging in a selected industrial project. The evaluation of these two courses will be done via the contents in this diary as well as via the progress report and the viva.

## 2. Project Overview

### 2.1 Project Name

INTERNSHIP MANAGEMENT SYSTEM

### 2.2 Purpose

The purpose of this Software Requirements Specification (SRS) document is to capture the requirements for the Internship Management System. This document will serve as a guide for the development team to ensure that the final product meets the needs of the users. It details the system’s functional and non-functional requirements, use case models, and entity-relationship diagrams.

### 2.3 Scope

The Internship Management System is a web-based application designed to streamline the process of managing internships for students, companies, and administrators. The system will provide a platform for students to search and apply for internships, for companies to post internship opportunities and manage applications, and for administrators to oversee the entire process.

## 3. System Requirements

### 3.1 Functional Requirements

The Internship Management System will provide the following functionalities:

3.1.1 Student Requirements

* User Authentication:
  + The system will allow students to create an account and log in securely.
  + The system will allow students to reset their password if forgotten.
* Profile Management:
  + The system will allow students to create and update their profiles, including personal information, education, and skills.
  + The system will allow students to upload their resumes.
* Internship Search:
  + The system will allow students to search for internships based on keywords, location, and category.
  + The system will display a list of available internships with relevant details.
* Internship Application:
  + The system will allow students to apply for internships.
  + The system will allow students to track the status of their applications.
* Notifications:
  + The system will notify students of new internship opportunities.
  + The system will notify students of the status of their applications.

3.1.2 Company Requirements

* User Authentication:
  + The system will allow companies to create an account and log in securely.
  + The system will allow companies to reset their password if forgotten.
* Company Profile Management:
  + The system will allow companies to create and update their profiles, including company information and contact details.
* Internship Posting:
  + The system will allow companies to post internship opportunities with relevant details, including title, description, requirements, and duration.
* Application Management:
  + The system will allow companies to view and manage student applications for their internships.
  + The system will allow companies to shortlist, accept, or reject student applications.
* Communication:
  + The system will allow companies to communicate with students regarding their applications.

3.1.3 Admin Requirements

* User Management:
  + The system will allow administrators to manage student and company accounts.
  + The system will allow administrators to activate or deactivate accounts.
* Internship Management:
  + The system will allow administrators to view and manage all internship postings.
  + The system will allow administrators to approve or reject internship postings.
* System Configuration:
  + The system will allow administrators to configure system settings, such as user roles and permissions.
* Reporting:
  + The system will allow administrators to generate reports on system usage and internship statistics.

### 3.2 Non-Functional Requirements

The Internship Management System will meet the following non-functional requirements:

3.2.1 Performance Requirements

* The system will be responsive and provide a fast user experience.
* The system will be able to handle a large number of concurrent users.
* The system will have a maximum page load time of 3 seconds.

3.2.2 Usability Requirements

* The system will have a user-friendly interface that is easy to navigate.
* The system will provide clear and consistent feedback to users.
* The system will be accessible to users with disabilities.

3.2.3 Maintainability Requirements

* The system will be designed to be easily maintainable and upgradable.
* The system will use a modular architecture.
* The system will be well-documented.

3.2.4 Security Requirements

* The system will protect user data from unauthorized access.
* The system will use secure authentication and authorization mechanisms.
* The system will be protected against common web vulnerabilities, such as SQL injection and cross-site scripting.

3.2.5 Portability Requirements

* The system will be compatible with multiple web browsers (e.g., Chrome, Firefox, Safari).
* The system will be accessible on different devices, including desktops, laptops, and mobile devices.

3.2.6 Data Integrity

* The system will ensure the accuracy and consistency of data.
* The system will implement data validation and error handling mechanisms.
* The system will provide data backup and recovery mechanisms.

### 3.3 External Interface Requirements

3.3 External Interface Requirements

3.3.1 User Interfaces

* The system will provide a web-based user interface for students, companies, and administrators.
* The user interface will be intuitive and easy to use.
* The user interface will be consistent across different sections of the system.

3.3.2 Hardware Interfaces

* The system will operate on standard web server hardware.
* The system will support standard client hardware, such as desktops, laptops, and mobile devices.

3.3.3 Software Interfaces

* The system will be compatible with standard web browsers (e.g., Chrome, Firefox, Safari).
* The system may integrate with other software systems, such as learning management systems or payment gateways.

3.3.4 Communications Interfaces

* The system will use standard internet protocols (e.g., HTTP, TCP/IP) for communication.
* The system may use email or SMS for notifications.

## 4. System Design

### 4.1 Use Case Models

Use case diagrams visually represent the idea of the system and how each elements interlink with others.

### 4.2 Use Case Descriptions

4.2.1 Student Use Cases

* Register: A student can create a new account by providing their personal information.
* Login: A student can log in to the system using their email and password.
* Manage Profile: A student can view and update their profile information.
* Search Internships: A student can search for available internships based on various criteria.
* View Internship Details: A student can view the details of a specific internship.
* Apply for Internship: A student can apply for an internship.
* Track Application Status: A student can track the status of their internship applications.
* View Notifications: A student can view system notifications.

4.2.2. Internship Coordinator Use Cases

* Login: An Internship Coordinator can log in to the system using their email and password.
* Manage Student Applications: An Internship Coordinator can view and manage student applications.
* Communicate with Students: An Internship Coordinator can communicate with students.
* Generate Reports: An Internship Coordinator can generate reports.

4.2.3 Company Use Cases

* Register: A Company can create a new account by providing their company information.
* Login: A Company can log in to the system using their email and password.
* Manage Company Profile: A Company can view and update their company profile information.
* Post Internship: A Company can post a new internship opportunity.
* View Applications: A Company can view the applications received for their internship postings.
* Manage Applications: A Company can manage the applications (e.g., shortlist, accept, reject).
* Communicate with Students: A company can communicate with students regarding their applications.

4.2.4 Admin Use Cases

* Login: An administrator can log in to the system using their email and password.
* Manage Users: An administrator can manage student and company accounts.
* Manage Internships: An administrator can manage all internship postings.
* Configure System: An administrator can configure system settings.
* Generate Reports: An administrator can generate system reports.

### 4.2 Entity-Relationship Diagrams (ERD)

ER diagrams also included in the SRS document to show the relationships between entities which can use as a base document for the database design stage.

## 5. Implementation and Development

### 5.1 About ITE5621

The aim of this course is to expose the students to the working environment, enhance their knowledge & skills and teach them integrity, responsibility, and self-confidence. This is a 6-credit course with a defined time period, where students will have the chance to work under industry supervision.

### 5.2 Course Learning Outcomes

Ability to understand a problem and proposing tentative solutions. Self-learning and application of new technologies and trends. Application of Project management concepts in self-guided project. Experience the product development lifecycle. Presentation and discrimination of new knowledge Self-entrepreneurship skill identification.

### 5.3 Weekly Log

**Week 1:** The initial phase of the project involved getting acquainted with the tasks and understanding the general practices of the industry, particularly in project management. The team initiated discussions with supervisors to identify the project and learned about common tools and platforms used in the field. A significant portion of the week was dedicated to learning about project management tools like ClickUp and Jira, as well as version control systems such as GitHub, to understand their practical applications in a project setting. The team also explored how such tasks are typically handled in the industry, gaining an initial understanding of the work that was to be performed. Challenges during this week included time constraints due to other commitments and the complexity of the tutorials for the tools, which were designed for a broader range of tasks than initially required for the project.

**Week 2:** In the second week, the team delved deeper into project management and version control tools, focusing on Jira, ClickUp, Bitbucket, and GitHub. They selected ClickUp and GitHub as the primary tools for the project and began to learn more about these platforms. Internal discussions and knowledge-sharing sessions were conducted, along with self-study on project management and version control systems. The team created accounts on GitHub and ClickUp and finalized the information-gathering plan. Initial steps were taken to gather project data, including preparing interview questions and conducting the first interview. By the end of the week, the team had developed a better understanding of project management and version control principles, and tasks were divided among team members, including setting dates for interviews to facilitate initial data collection for the project. A key learning experience was the realization that learning these tools is more effective when applied to a practical project compared to learning through tutorials alone.

**Week 3:** The primary focus of the third week was on completing the information gathering process and initiating the supporting documents for the System Requirements Specification (SRS) file, such as flow charts and Entity-Relationship (ER) diagrams. The team conducted interviews to gather the necessary information and began creating ER diagrams based on this data. Additionally, they studied SRS document formats commonly used in the industry to ensure that their documentation would meet professional standards. By the end of the week, the team had a good understanding of the system requirements and the roles of the stakeholders involved. They also became familiar with using Canva for designing ER diagrams, which helped them visualize the overall structure of the system. The team found that learning and working collaboratively was more effective and engaging than working individually, and it also helped to develop teamwork and leadership skills.

**Week 4:** Week four was centered around the creation of the outline for the SRS document, the completion of the ER diagram with updated requirements, and the initiation of wireframe designs. The team gathered updated requirements, which were then incorporated into the ER diagram. Wireframe designs were started, and internal discussions were held to review the progress of the project. This week allowed the team to gain a deeper understanding of the project requirements and provided valuable experience in using Canva for ER diagram designs. A key learning experience was the realization that repeatedly working on a task, such as editing ER diagrams, reinforces knowledge and expertise in the subject matter. However, the team noted that completing tasks took longer than expected because they often had to learn or review information before applying it to the actual task.

**Week 5:** In the fifth week, the team's objective was to complete 30% of the SRS document. To achieve this, they referred to sample documents to understand how SRS documents are typically written in the industry. They then began working on their document, following the outline created in the previous week. This phase of the project provided the team with valuable knowledge about project documentation. Additionally, the team engaged in brainstorming sessions for project management, further enhancing their understanding of this critical aspect of the project. A key reflection from this week was that self-learning, while effective, presents its own set of challenges. One specific challenge was the difficulty in determining the most suitable type of documentation for their current project needs.

**Week 6:** Complete the SRS document by collecting all the elements done by each member of the team and review should be done with industry supervisor and the staff member to check is there any changers to be done according to the requirements.

## 6. Future Enhancements

* Implement a messaging system for communication between students and companies.
* Add a feature for students to rate and review their internship experiences. Incorporate a recommendation system to suggest relevant internships to students.
* Develop a mobile app for students and companies. Integrate with social media platforms for sharing internship opportunities.
* Implement a calendar feature to track important dates.
* Add functionality for companies to manage the intern evaluation process.

## 

## 7. Conclusion

The process of developing the Software Requirements Specification (SRS) for the Internship Management System has provided valuable insights and practical experience. Through this project, we have gained a deeper understanding of the software development life cycle, from the initial stages of requirement gathering and analysis to the creation of detailed specifications.

The weekly log in the diary reflects the systematic approach we followed, starting with understanding the project's goals and setting up the development environment, progressing to designing database schemas and identifying key functionalities, and culminating and documentation.

This experience has not only enhanced our technical skills but also reinforced the importance of clear communication, collaboration, and meticulous attention to detail in software development. The ability to understand a problem, propose solutions, apply new technologies, and manage a project has been significantly strengthened.

The development of this SRS has equipped us with essential skills that will be invaluable in our future careers as IT professionals.