

# Cover page



**Jordan University of Science and Technology  
Faculty of Computer and Information Technology  
Computer Information Systems Department**

## **<Intelligent Internship Matching Platform for IT Students> for Faculty of Computer and Information Technology**

**By:  
[Hamzah Drawsheh, Mahde Hanandeh, Mohaamad Othman, Jad Awadallah]**

**[Graduation project [1]]**

**Submitted in partial fulfilment of the requirements  
for the award of  
Bachelor degree  
of the  
Jordan University of Science and Technology**

**[Supervisor: Dr. Qusai Abo Aien ]  
Faculty of Computer and Information Technology**

## PROJECT PROPOSAL

**Deadline: 2<sup>nd</sup> week of the semester**

**Form No.1**

### **GRADUATION PROJECT PROPOSAL**

**Student Name** \_\_\_\_\_

**Student ID #** \_\_\_\_\_ **Grade** \_\_\_\_\_ **Email** \_\_\_\_\_

**Project Title** \_\_\_\_\_

**Brief Description**

[

]

**Project goal** – Why did you choose this particular project? What do you plan to learn from this experience?

[

]

**Plans to achieve this goal – Timeline:**

[

]

**Student Signature** \_\_\_\_\_

**Project coordinator signature** \_\_\_\_\_

---

**For project committee**

☐ **Approved**                      ☐ **Rejected**                      ☐ **Approved with conditions**

**Comments:**

**Committee chair signature**

Date:

<b>Project Progresses Activities [log]</b>
--

**Form No 2**

Student Name \_\_\_\_\_

Student ID # \_\_\_\_\_ Email \_\_\_\_\_

Project Title \_\_\_\_\_

The daily and weekly activities of the project

Date	Activates/ Explanations	Time spent	supervisor signature

Student's Signature: \_\_\_\_\_

Mentor's Signature: \_\_\_\_\_

Supervisor’s Signature:

Graduation Project Evaluation

Forms NO 3

Graduation Project Evaluation

Department of Computer Information Systems

GRADUATION PROJECT

Project Title:  
[  
  
]

Supervisor:

Final Grades

Student name	Evaluation committee (average) XX%	Supervisor XX%	Total 100%

Signatures:

1. Project's Coordinator: .....

2. Head of Department: .....

Date: \_\_\_\_\_

Evaluation Form for CIS 491

Jordan University of Science and Technology  
Faculty of Information Technology and Computer  
Department of Computer Information System  
Evaluation Form Graduation Project I (CIS491)  
(Documentation, Presentation)

**Advisor Form**

<b>Student name</b>	
<b>Student number</b>	
<b>Project name</b>	

<b>Criteria</b>	<b>Grade</b>	
1) Is the cover letter included in the report?	5%	
2) Is the cover letter formatted properly (CL1 style)?	5%	
3) Is the table of content included in the report?	5%	
4) Is the table of content created automatically?	5%	
5) Are the introduction and subsequent chapters embedded in the report?	5%	
6) Is the report written very well (grammatical and syntax errors)?	5%	
7) Is the presentation on the topic clearly understood? Are the sentences readable and understood?	5%	
8) Are the paragraphs logically connected?	5%	
9) Are the figures and tables clear and formatted properly (FT2 style)?	5%	
10) Following up with the advisor, commitment to the meetings and working with the team.	30%	
11) Submitting the report on time and the overall structure of the report is properly prepared?	10%	
12) The presentation of the project to the committee: -Starting on time -Finishing on time -Dressing and appearance -Self-confidence and delivering the ideas -Answering to the committee questions	15%	

<b>Total</b>	<b>100%</b>	
	<b>50%</b>	

Evaluation Form for CIS 491
-----------------------------

Jordan University of Science and Technology  
 Faculty of Information Technology and Computer  
 Department of Computer Information System  
 Evaluation Form Graduation Project I (CIS491)  
 (Documentation, Presentation)  
**Examiner Form**

<b>Student name</b>	
<b>Student number</b>	
<b>Project name</b>	

Criteria	Grade	
1) Is the cover letter included in the report?	5%	
2) Is the cover letter formatted properly (CL1 style)?	5%	
3) Is the table of content included in the report?	5%	
4) Is the table of content created automatically?	5%	
5) Are the introduction and subsequent chapters embedded in the report?	5%	
6) Is the report written very well (grammatical and syntax errors)?	5%	
7) Is the presentation on the topic clearly understood? Are the sentences readable and understood?	5%	
8) Are the paragraphs logically connected?	5%	
9) Are the figures and tables clear and formatted properly (FT2 style)?	5%	
10) The presentation of the project to the committee: -Starting on time -Finishing on time -Dressing and appearance -Self-confidence and delivering the ideas -Answering to the committee questions	5%	
<b>Total</b>	<b>50%</b>	
	<b>25%</b>	

Evaluation Form for CIS 492
-----------------------------

Jordan University of Science and Technology  
 Faculty of Computer and Information Technology  
 Department of Computer Information Systems  
 CIS492 Graduation Project II Evaluation Form  
 (Documentation, Presentation)  
**Advisor Form**

<b>Student Name</b>	
<b>Student ID</b>	
<b>Project name</b>	

	Score	
1) GP2 report consists of GP1 report and the implementation part details of the project.	5%	
2) GP2 report has no syntax or semantic errors.	5%	
3) The student was well dressed, and presented the project on time.	5%	
4) The student explained the problem and the contribution in a good manner.	5%	
5) The student answered all questions correctly.	5%	
6) The project report has missing parts or some parts do not work correctly.	5%	
7) The level of accomplishment in comparing to existing solutions.	10%	
8) The novelty of the contribution	10%	
9) The student attendance and the degree of his/her collaboration with other team members.	40	
10) Delivering the complete project material on time.	10	
<b>Sum</b>	<b>100%</b>	
	<b>50%</b>	



Evaluation Form for CIS 492

Jordan University of Science and Technology  
Faculty of Computer and Information Technology  
Department of Computer Information Systems  
CIS492 Graduation Project II Evaluation Form  
(Documentation, Presentation)

**Examiner Form**

<b>Student Name</b>	
<b>Student ID</b>	
<b>Project name</b>	

	Score	
1) GP2 report consists of GP1 report and the implementation part details of the project.	5%	
2) GP2 report has no syntax or semantic errors.	5%	
3) The student was well dressed, and presented the project on time.	5%	
4) The student explained the problem and the contribution in a good manner.	5%	
5) The student answered all questions correctly.	5%	
6) The GP2 report has missing parts or some parts do not work correctly.	5%	
7) The level of accomplishment in comparing to existing solutions.	10%	
8) The novelty of the contribution	10%	
<b>Sum</b>	<b>50%</b>	
	<b>25%</b>	



# **Intelligent Internship Matching Platform for IT Students**

Presented to the Faculty of Computer and Information Technology,  
Jordan University of Science and Technology

In Partial Fulfillment  
of the Requirements for the Degree of  
Bachelor of Science in Computer Information Systems

By:

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Irbid, Jordan

Fall 2026

## ***ABSTRACT:***

The **Internship Matching System** is a web-based platform designed to facilitate the process of internship placement for Data Science and Artificial Intelligence students. The goal of the system was to bridge the gap between students, companies, and academic supervisors by providing a centralized and organized environment for internship applications and monitoring.

The system created to be used by Students who looking for internship opportunities in related companies and organizations, as a graduation requirement. The system created to be available on Free public website which makes the system accessible at all times and anywhere by simply using a web browser and Internet connectivity.

This research project presents the main steps that led to the creation of the system, starting from gathering data about different reporting systems that were available on the Internet and reviewing them. Then, specifying the requirements using Use Case analysis method that was needed to accomplish the design and development phase of the system. The last step was implementing the system.

## ***ACKNOWLEDGEMENT:***

We are very thankful to everyone who supported us complete this paper effectively. We would like to thank our advisor Dr. **Ousai Abu Ein** for his support and instructions that allowed us to organize our project idea and implement it properly, and define the process that we will walk through.

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# 1 Introduction

## *1.1 Introduction*

Internship training plays a critical role in preparing university students for the labor market, especially in technical and rapidly evolving fields such as Data Science and Artificial Intelligence. Practical training is considered a core graduation requirement, as it provides students with valuable hands-on experience, exposure to real working environments, and an opportunity to apply theoretical knowledge to real-world problems. Through internships, students develop both technical and professional skills that are essential for their future careers.

Despite the importance of internship training, the process of selecting a suitable internship company often lacks proper organization, structure, and transparency. In many cases, students rely on personal communication, informal recommendations, or limited publicly available information when choosing an internship opportunity. This can lead to poor decision-making, mismatches between student specialization and internship tasks, and unequal access to opportunities. Furthermore, the absence of a centralized system makes it difficult for academic supervisors to monitor student progress and evaluate the suitability of internship placements.

To address these challenges, this project proposes a web-based intelligent platform that aims to organize and automate the internship selection and management process. The platform connects students, companies, and academic supervisors within a unified system that ensures transparency and efficiency. In addition, the system integrates an AI-based assistant designed to guide students toward suitable internship opportunities based on their interests, skills, and academic background. By combining structured internship management with intelligent guidance, the proposed system helps students make informed decisions and improves the overall quality of the internship experience.

## ***1.2 Background***

Currently, internship coordination is often handled manually through emails, phone calls, or personal connections. This approach introduces several challenges, including lack of documentation, difficulty in tracking applications, and limited visibility for academic supervisors.

Moreover, students often struggle to identify companies that align with their academic specialization and career goals, which highlights the need for a data-driven system that supports informed decision-making.

## ***1.3 Problem statement***

The absence of an integrated system for managing internship opportunities results in inefficient communication between students and companies. Students lack reliable information about companies, supervisors face challenges in monitoring applications, and companies receive unstructured requests.

Therefore, there is a need for a centralized platform that organizes internship applications and provides intelligent recommendations based on data analysis and AI recommendation systems, this help students and companies to connect each other, and the official university supervisor who will be monitoring the connection.

## ***1.4 Importance of the project***

This project is important as it introduces a structured and data-driven approach to internship placement. By leveraging web technologies and artificial intelligence concepts, the system aims to facilitate the process of finding a training opportunity, save time and money for students, improve decision-making, reduce administrative workload, and enhance the overall internship experience for all stakeholders.

On other side, our service covers the companies and organizations by connecting them with fresh graduate students, our service ensures that company will invest in the right targeted students to make them qualified for the market.

## ***1.5 Required tools***

The project utilizes modern web technologies to ensure scalability and ease of use:

- **Frontend:** HTML, CSS, JavaScript
- **Backend:** Fast API (Python code)
- **Database:** Relational database system (PostgreSQL)
- **Artificial Intelligence:** Company ranking and recommendation system models
- **Development Tools:** Web browsers and code editors

## 2 Literature review

Several studies and existing systems have explored the use of online platforms for internship management and job recommendation services. Most traditional internship platforms focus primarily on listing available opportunities and providing basic application functionalities. While these systems improve accessibility, they often lack intelligent features that support personalized decision-making or evaluate the quality of internship providers.

Recent research emphasizes the effectiveness of data-driven approaches in enhancing user experience and decision support systems. Ranking models based on user feedback, historical data, and relevance to user profiles have been shown to significantly improve the quality of recommendations. In addition, conversational chatbots have gained attention as effective tools for assisting users by providing guidance, answering questions, and reducing uncertainty during decision-making processes.

These research findings serve as the foundation for the proposed system. By integrating structured internship management with intelligent ranking mechanisms and an AI-powered chatbot, the platform aims to overcome the limitations of existing solutions. The proposed approach not only facilitates internship applications but also supports students in identifying suitable opportunities aligned with their academic background and career goals, thereby contributing to a more efficient and informed internship selection process.



### **3 Requirement analysis and specifications**

#### ***3.1 Introduction:***

This chapter outlines the functional and non-functional requirements of the proposed internship platform, focusing on user roles and system capabilities.

#### ***3.2 Work progress:***

This section presents a detailed description of the work progress and activities carried out to develop the proposed internship management portal. The project work started with understanding the general idea of the system and identifying a suitable application domain that addresses a real-world problem faced by students, companies, and academic supervisors during the internship process.

After careful analysis, the selected project focused on developing a centralized web-based platform that connects data science and artificial intelligence students with companies offering internship opportunities in Jordan. The main objective of the system is to organize the internship application process, reduce manual communication, and improve transparency between all involved parties.

The existing internship process relied heavily on informal communication channels such as emails and personal contacts, which made it difficult to track applications, monitor approvals, and evaluate company performance. The absence of a centralized system resulted in inefficiencies, delays, and limited visibility for academic supervisors. These limitations highlighted the need for a unified platform to manage internship applications, approvals, and evaluations in an organized and efficient manner.

Throughout the project, multiple activities were conducted including requirement analysis, system modeling, interface design, and architectural planning. The work was carried out in an iterative manner, allowing continuous refinement of system requirements and design components based on ongoing discussions and feedback.

### **3.2.1 Business Requirements identification:**

Identifying the business requirements of the proposed system is a critical phase in the system development life cycle. An iterative development approach was adopted to allow continuous improvement and refinement of requirements as the project progressed. This approach ensured flexibility in adapting to new insights and stakeholder feedback.

Based on the analysis, the primary business requirements of the system include providing a centralized platform for internship opportunities, enabling students to submit and track internship applications, allowing companies to manage and respond to applications, and enabling academic supervisors to monitor and approve internship placements. Additionally, the system aims to support future data-driven evaluation and ranking of companies based on student feedback and performance indicators.

The identified business requirements served as a foundation for defining the functional and non-functional requirements of the system, ensuring alignment between system objectives and stakeholder needs.

### **User functional requirements:**

This section illustrates the user requirements of the system. The following requirements identify the possible action that each user type can take in the system.

1. All users should be able to interact with the web site using both mouse and keyboard.
2. The admin should be able to add, delete, and modify the system's database.
3. The admin should be able to modify the structure of the web pages.
4. The admin should be able to add or remove some users.
5. The admin should be able to monitor the Web pages.
6. The admin should be able to specify the authority of users.
7. The student should be able to sign in/log in to his account using his own email and password.
8. The student should be able to create his profile on the system and fill his academic info, upload his CV, and communicate with the assistance chat-bot.
9. The student should be able to view the list of related companies and available training opportunities.
10. The student should be able to fill an application for training.
11. The student should be able to track his application using the system.
12. The student should receive notification emails with any response from applied company.

13. The company representative should be able to sign in/log in to his account using his own email and password.
14. The company representative should be able to create a profile for his company and provide general information about it to be shared
15. The company representative should be able to offer internship opportunities and share them on the web site.
16. The company representative should be able to view the list of training applications from students and their profiles.
17. The company representative should be able to edit/remove his offered training opportunities.
18. The company representative should get a notification email once a student applies for his opportunity.
19. The university supervisor should be able to sign in/login to the system using his email and password.
20. The university supervisor can view all placed applications and all application responses.
21. The university supervisor should be able to view the opportunity availability.
22. The university supervisor should be able to accept or reject an order.
23. The university supervisor should be able to generate reports regarding the pending, accepted, in progress, and rejected training applications.
24. The university supervisor should be notified once an order is approved.
25. The university supervisor should be able to approve the company acceptance for the student and give a permission to start training.
26. The university supervisor should be able to prepare the standard application form or template.

### ***System Non-Functional Requirements:***

This section presents the non-functional requirements and assumptions that must be considered during the design and implementation of the proposed internship management platform. These requirements are defined to simplify system development, ensure usability, and support future scalability and intelligent features.

### ***Non-Functional Assumptions:***

- The user has limited log in trials (maximum 5 for example).
- The system should provide friendly, suitable and understandable interface.
- The system should ensure the sequential of actions and order of pages to keep the user experience smooth.
- The system provides the service only for technical and IT university students.
- The student has limited internship applications in each day.
- Each registered company should provide opportunities related to technology and AI fields.
- An order may contain multiple line items, where each line item relates to a specific product and quantity required. A product shall not appear more than once in an order.
- Each student can apply to more than one company, but only one internship can be approved at a time.
- A company may offer multiple training opportunities simultaneously.
- Companies respond to internship request by predefined statuses (Accepted, Rejected, Pending).
- The training applications/responses should be visible for university supervisor (read-only access).
- Students feedbacks is collected only after internship completion.
- Student can report for any unexpected issues during internship.
- Student can stop/cancel his internship only if the supervisor allowed for that based on reasonable issues.
- Companies ranking depends on predefined criteria such as relevance to specialization and student's feedback.
- The system doesn't handle financial transactions or salary processing.
- Data provided by companies and students is assumed to be accurate and truthful.
- The chat-bot provides advisory assistance only and doesn't make final internship decisions.
- The system shall load main pages within 3 seconds under normal usage conditions.
- User actions such as form submission and request status updates shall be processed without noticeable delay.

- User data shall be protected from unauthorized access.
- Each user role (student, company, supervisor) shall have controlled access privileges.
- Passwords shall be stored securely using encryption techniques (planned).
- The system shall prevent unauthorized modification of internship requests and responses.

### ***Non-Functional Requirements:***

- **Portability:** The system shall be easily and quickly ported to any server
- **Speed:** The system shall load the selected page with no more than 30 seconds.
- **Scalability:** The system shall adopt the addition of new chapters and or activities when needed.
- **Availability:** There are two key concepts for availability when it comes to this system:
  - Hours of operation:* The system should be available 24 hours a day, 7 days a week.
  - Reliability:* The system should be reliable at all times and by all users.
- **Capacity:** This system should handle the load of data and transactions that will take place through it. It should handle growth in number, and the rush hours of usage
- **Data currency:** The system should always have up to date data. Real time updates, and delays are not acceptable.
- **Data retention:** The system should be able to store only the useful data, and data that will be used later on.
- **Disaster recovery:** The system should be able to recover from an outage.
- **Error-handling:** The system should be able to handle unexpected situations such as internet interruption.

- **Internationalization:** The system should be user friendly with people from different backgrounds and languages.
- **Logging:** The system should keep track of its activity. This provides an audit trail that can be used for problem-solving.
- **Security:** The system needs to handle customer privacy as well as user privileges securely and prevent any unauthorized access to the data.

**Upgradeability:** There should be an ease of replacing a component in a system with another one. •

### **System functional requirements:**

1. The system should display a welcome message and a login button for the user to get through the portal.
2. The system should provide an interface to identify user types (student, company, supervisor) and log in using his username and password.
3. The system will enable users to insert and edit data based on their authorizations.
4. The system will log out from the user profile if the representative clicks log out button (log out from account).
5. The system should provide an interface where each customer can log in using their username and password.
6. The system should allow the students to fill in their applications by providing them with an application form.
7. The system should send emails to both the students and companies to notify them with applications or responses.
8. The system should notify the university supervisor with certain updates e.g.(application acceptance, internship completion).
9. The system should allow the university supervisor to view the student/company profile to check availability.

- 10.** The system should permit the company to accept/reject the training request and give their reasons of rejection.
- 11.** The system should allow the student to do these reports:
  - a. View recommended list of related companies.
  - b. View company's profile and available opportunities.
  - c. Apply for any chosen opportunity.
  - d. Contact the company.
- 12.** The system should generate a "Apply" button once the form is filled.
- 13.** The system should record each internship data individually (start/end date, work hours, feedbacks).
- 14.** The system should provide the status of every valid training request.
- 15.** The system should allow the university supervisor to update the status of the student with predefined statuses e.g. (await internship, in-internship, finished).
- 16.** The system should provide AI chat-bot assistant for students as training guide.
- 17.** The system should provide a "home" button that brings the user back to his home page which is activated when the user clicks the home button.
- 18.** The system should provide a dashboard for students that displays the number of available companies, number of applied opportunities and the number of successful applications across all students.
- 19.** The system should provide a dashboard for company that displays the number of training requests, number of its offered opportunities and the number of students training currently in it.
- 20.** The system should provide a dashboard for university supervisor that displays the number of available companies, number of pending applications and the number of pending/training students.
- 21.** The system should provide an "about us" button for students to know more about companies they intend to join.
- 22.** The system should provide a "contact us" button for students who need to contact any company.
- 23.** The system should provide an "attach" button to allow students to attach documents onto the system such as CV file.
- 24.** The system will display user's account (history activity) if the user clicks on user "history" button.
- 25.** The system will display user's recent applications if the user clicks on "recent applications" button.

## 4 System Design

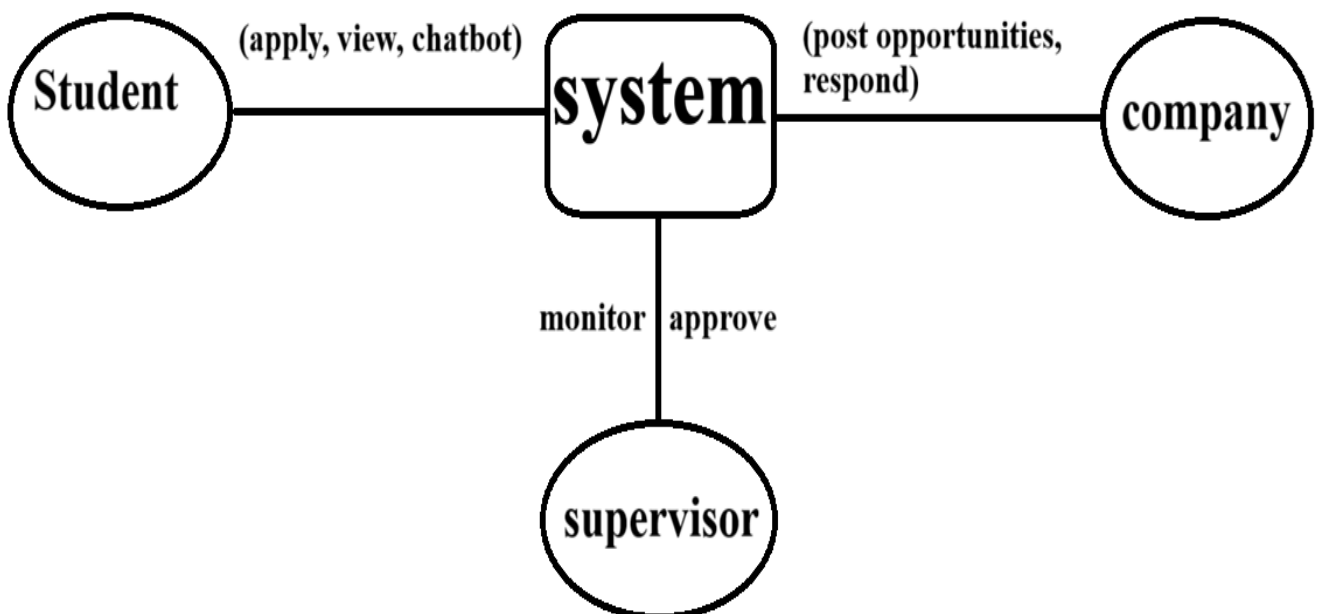
### 4.1 Introduction:

The main objective of this chapter is to present the overall system design of the Intelligent Internship Matching Platform. This chapter describes the system architecture, interaction between users and system components, and the visual representation of the system through different diagrams.

Since this project is divided into two phases, Graduation Project I focuses on designing the system structure and developing the front-end user interfaces, while backend services, database integration, and artificial intelligence components will be implemented in Graduation Project II.

### 4.2 Context Diagram

The context diagram represents the system as a single process and illustrates its interaction with external entities including students, companies, and university supervisors. Each actor communicates with the system through defined inputs and outputs such as internship applications, responses, and monitoring actions.



**figure 1: Context Diagram**



### 4.3 Use case diagram

The use case diagram illustrates the functional behavior of the system from the users' perspectives. It identifies the main actors interacting with the system and the actions they can perform. This diagram helps in understanding system functionality and user responsibilities.

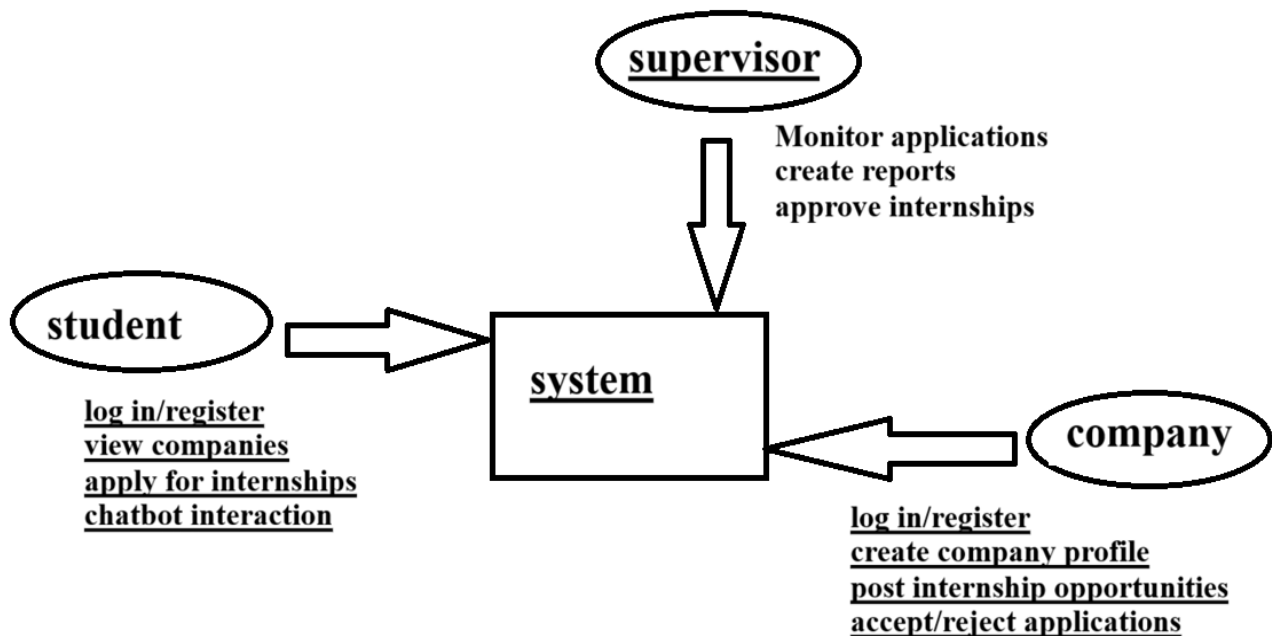


figure 2: Use Case Diagram

#### Use Case: Apply for Internship

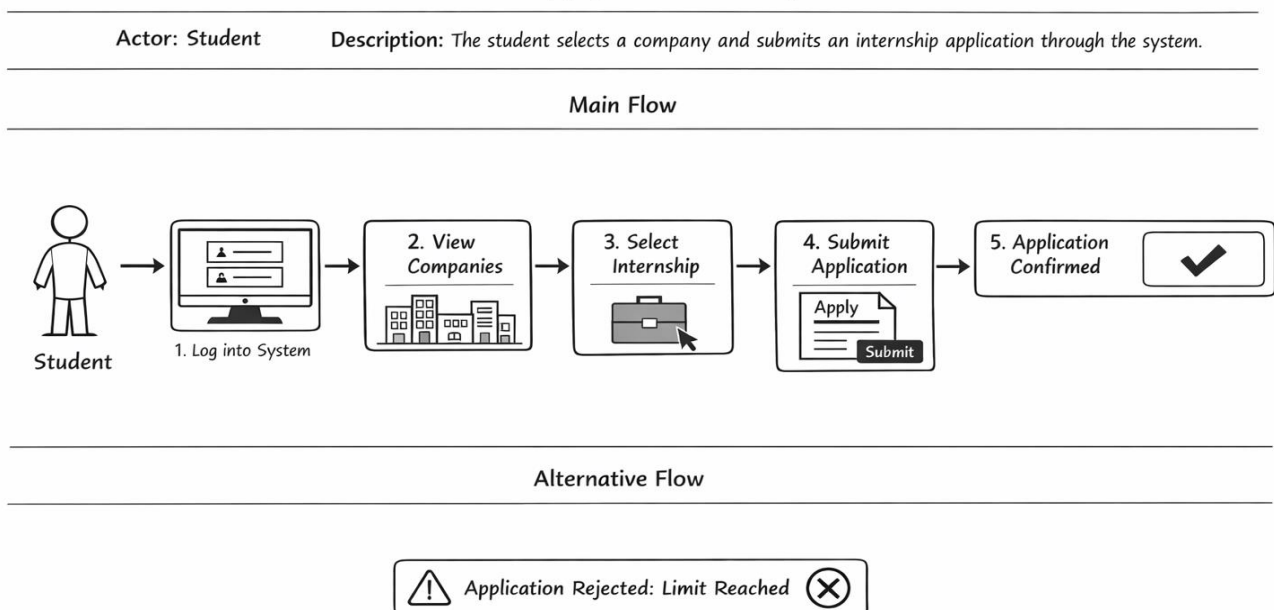


figure 3: Example Use Case Diagram

This system will include different use cases shown in the Use Case Diagram above. Examples:

**Use case 1: Register account/ Log in:**

<b>Actor:</b> Student, company, supervisor	<b>System</b>
1- Opens the registration/log in page 2- User enters personal or company information. 3- Clicks “Register” button.	4- validates the data. 5- Account is created successfully <b>Alternative Flow:</b> Registration fails due to invalid or missing data

**Use case 2: View Companies:**

<b>Actor:</b> Student	<b>System</b>
1- Student logs into the system.  3- filters or searches companies. 4- Clicks “Finish and Submit” button.	2- displays list of companies.  <b>Alternative Flow:</b> No companies match the selected criteria

**Use case 3: Apply for Internship:**

<b>Actor:</b> Student	<b>System</b>
1- logs into the system.  3- Selects an internship opportunity 4- Submits application.	2- Displays available companies.   5- confirms submission. <b>Alternative Flow:</b> Application rejected due to limit reached

**Use case 4: Post Internship Opportunity**

<b>Actor:</b> company	<b>System</b>
1- logs in. 2- Opens internship creation form. 3- Enters internship details. 4- Submits internship.	5- publishes opportunity. <b>Alternative Flow:</b> Submission fails due to missing information

**Use case 5: Review Student Applications**

<b>Actor:</b> Company	<b>System</b>
1- logs in. 2- click views list of applications.  4- Opens student application details	3- Displays applications  <b>Alternative Flow:</b> No applications available

**Use case 6: Accept / Reject Application:**

<b>Actor:</b> Company	<b>System</b>
1- selects application. 2- Chooses accept or reject. .	3- updates application status  4- Student and supervisor are notified <b>Alternative Flow:</b> Decision cannot be submitted due to system error

**Use case 7: Monitor Applications:**

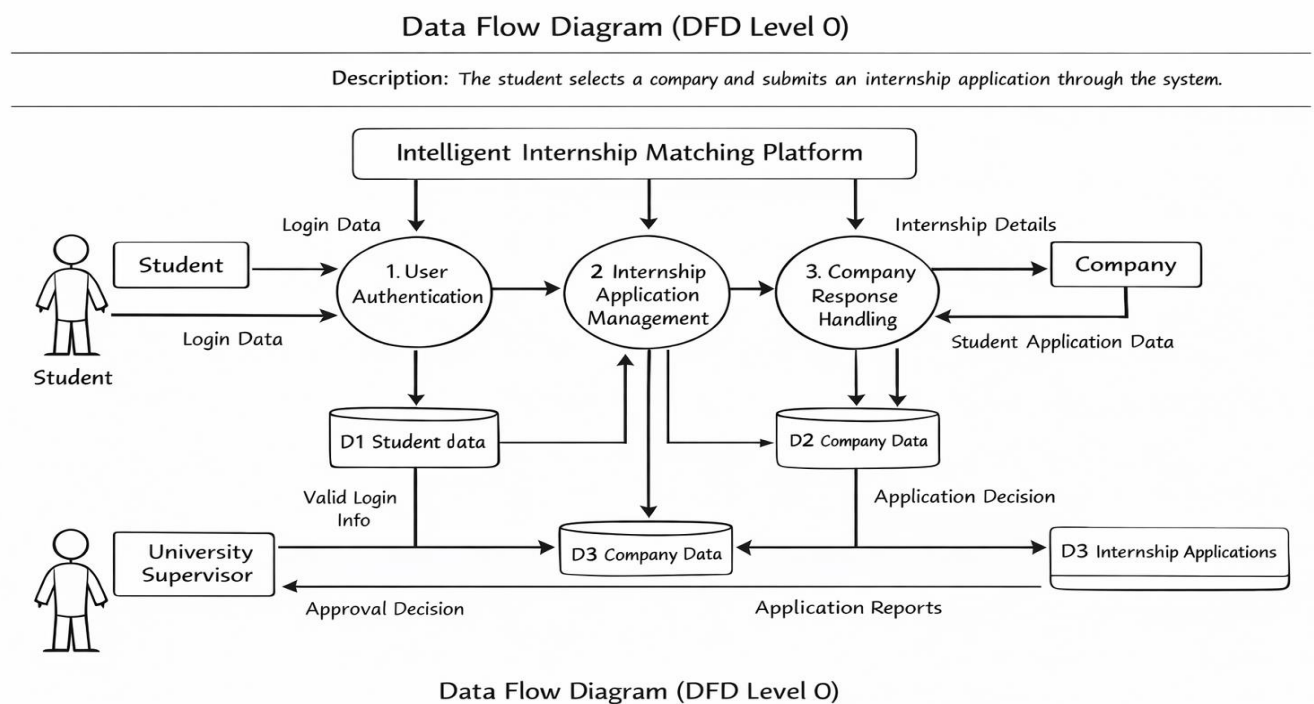
<b>Actor:</b> University Supervisor	<b>System</b>
1- logs in  3- Views applications list 4- Reviews application details	2- Displays valid applications   <b>Alternative Flow:</b> No applications available

### Use case 8: Approve Internship:

Actor: University Supervisor	System
1- logs in  3- Selects application  4- Approves internship	2- Displays valid applications  5- Updates final status <b>Alternative Flow:</b> Internship rejected due to policy violation

## 4.4 Data Flow Diagram

The Data Flow Diagram (DFD Level 0) provides a high-level overview of how data flows within the Intelligent Internship Matching Platform. It illustrates the interaction between external entities, internal system processes, and data stores. The diagram focuses on core processes such as authentication, internship application handling, company responses, and supervisor monitoring.

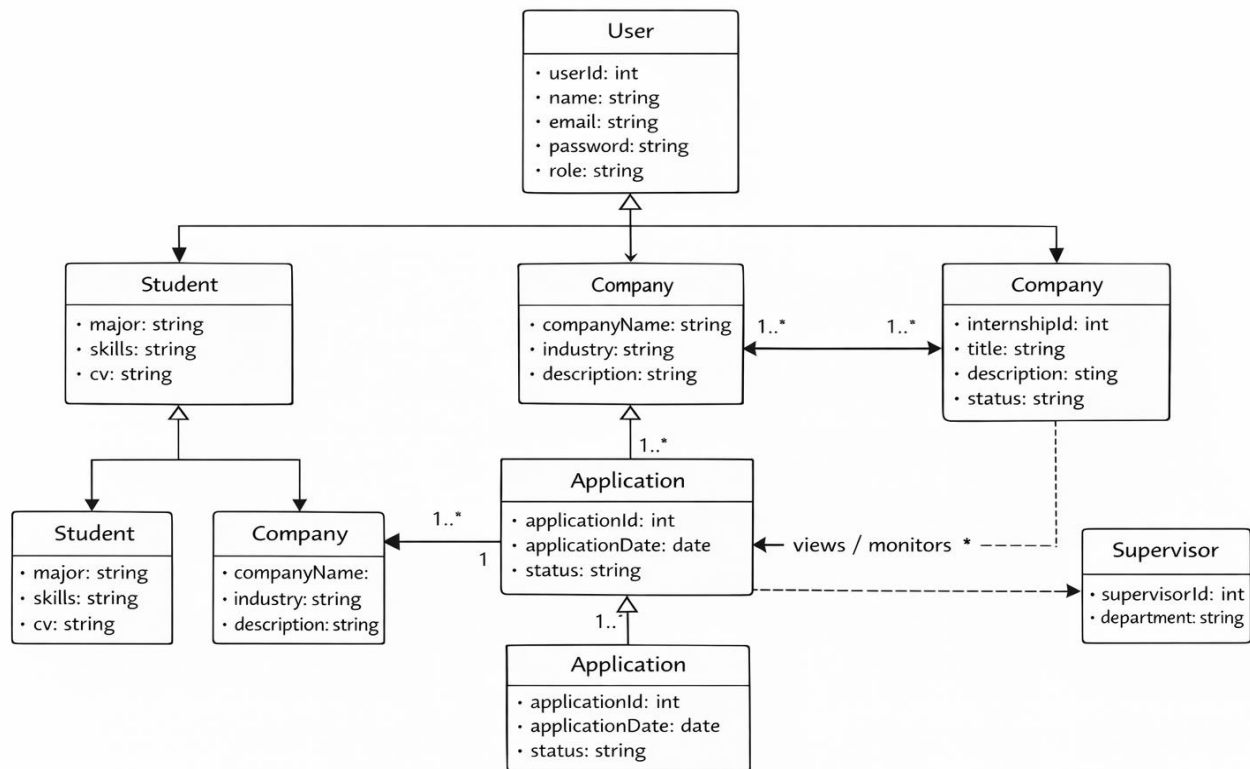


**figure 4: Data Flow Diagram**

## ***Internship Application Process Flow***

- The process starts when the student accesses the internship platform and logs into the system using valid credentials.
- After successful authentication, the system retrieves the student's profile information and displays a list of available companies offering internship opportunities.
- The student browses the available companies and selects a suitable internship opportunity based on their interests and specialization.
- Once an internship opportunity is selected, the student submits an internship application through the system.
- The system validates the application data and stores the application details in the internship applications database.
- After the application is submitted, the system automatically notifies the selected company that a new internship application has been received.
- The company representative logs into the system and views the list of pending student applications.
- The company reviews the application details and decides to either accept or reject the internship request.
- The company's decision is recorded in the system, and the application status is updated accordingly.
- Once a decision is made, the system notifies both the student and the university supervisor about the application outcome.
- The university supervisor logs into the system to monitor the application status and review the company's decision.
- If the internship is accepted by the company, the supervisor can approve the internship to finalize the process.
- After final approval, the application status is marked as completed, and the internship record becomes available for future evaluation and reporting.

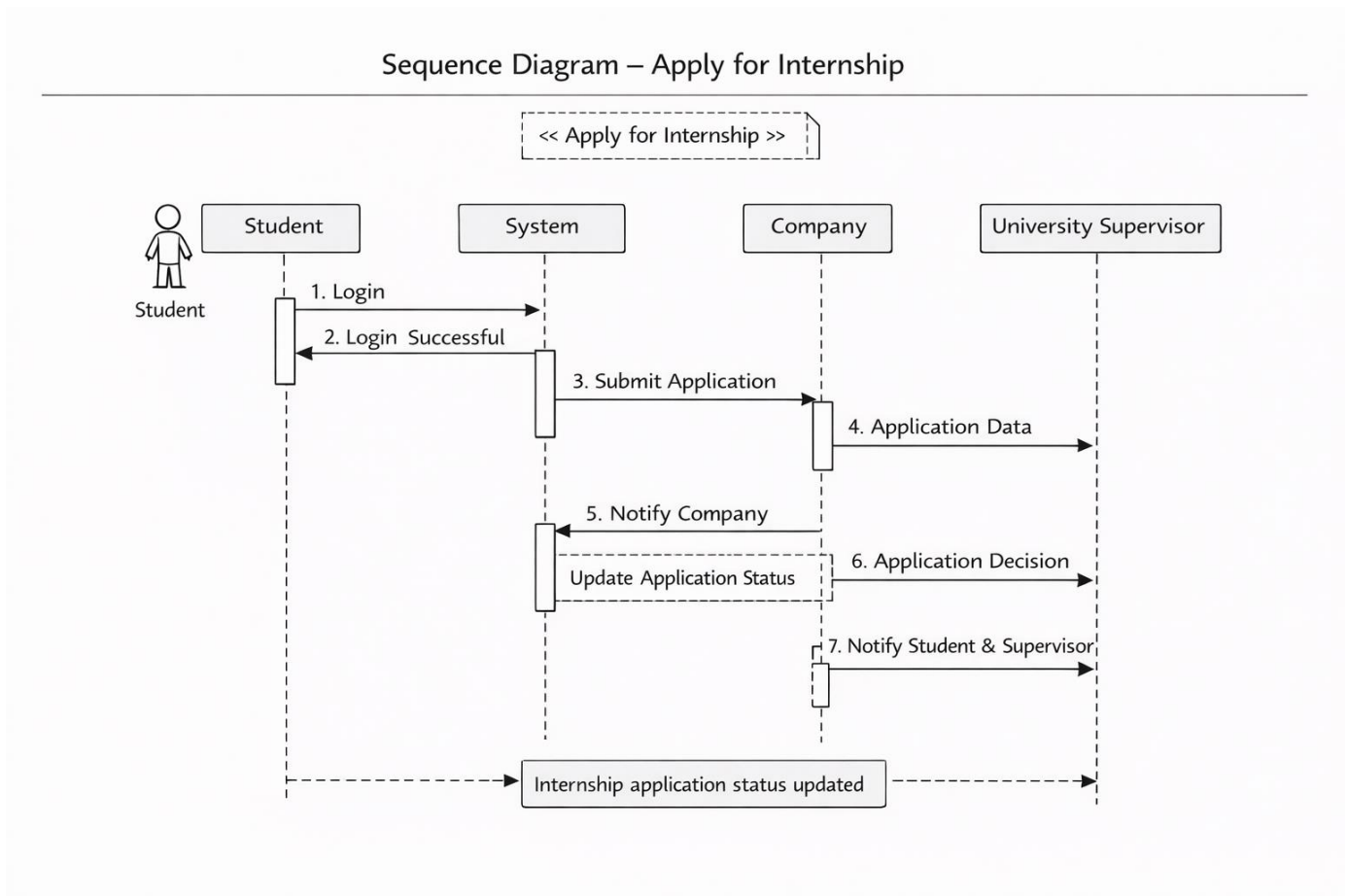
## 4.5 Class Diagram



**figure 5: Class Diagram**

- The system is structured around a base User class that represents all system users.
- The User class contains common attributes such as user ID, name, email, password, and role.
- The Student class inherits from the User class and includes additional attributes such as major, skills, and CV.
- The Company class also inherits from the User class and contains company-specific information such as company name, industry, and description.
- The Internship class represents internship opportunities offered by companies and includes details such as title, description, and status.
- The Application class represents the internship application submitted by students and includes attributes such as application date and status.
- Each student can submit multiple applications, but each application is linked to only one internship.
- Each company can offer multiple internships, and each internship can receive multiple applications.
- The Supervisor class represents the academic supervisor who monitors and approves applications.
- The relationships between classes define the logical structure of the system and serve as a foundation for future database implementation.

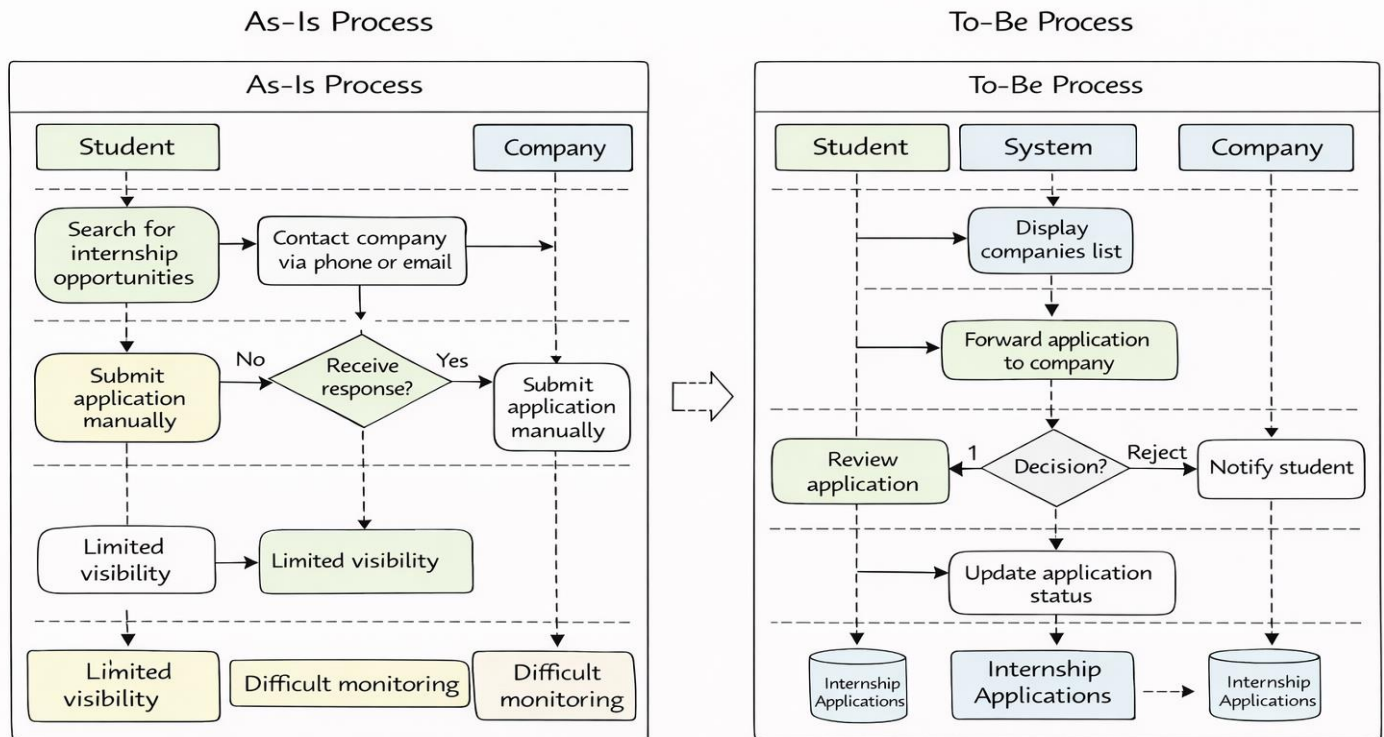
## 4.6 Sequence Diagram



**figure 6: Sequence Diagram**

- The sequence starts when the student logs into the system.
- The system authenticates the student and grants access to available internship opportunities.
- The student selects an internship opportunity and submits an application.
- The system processes the request and stores the application data.
- The system sends a notification to the company informing them of a new application.
- The company reviews the application and sends a decision (accept or reject) back to the system.
- The system updates the application status based on the company's response.
- The system notifies both the student and the university supervisor of the final decision.
- The sequence ends when the application status is updated and visible to all relevant parties.

## 4.7 Business Process Model



Business Process Model: As-Is vs. To-Be

**figure 7: Business Process Diagram**

### As-Is Process (Current Situation)

- The student searches for internship opportunities through personal communication or informal channels.
- The student contacts companies manually via email or phone.
- Internship requests are handled without a unified system or documentation.
- The academic supervisor has limited visibility over student applications.
- Tracking application status is difficult and time-consuming.

### To-Be Process (Proposed System)

- The student logs into the internship platform and views available companies.
- Internship applications are submitted electronically through the system.
- Companies receive structured applications and respond directly through the platform.
- The system automatically updates application status and notifies all parties.
- The academic supervisor monitors applications in real time.
- The process becomes centralized, transparent, and efficient.



## 4.8 *User interface design*

This section presents the user interface design of the proposed internship management platform in the form of a storyboard. The storyboard illustrates the main screens of the system and describes the layout, components, and interactions available to different types of users. The user interface is designed to be simple, intuitive, and user-friendly, ensuring ease of navigation for students, companies, and university supervisors.

The platform is implemented as a web-based system, where users interact with the system through a set of structured web pages. The interface focuses on clarity of information, responsiveness, and consistency across all pages to enhance user experience and usability.

### **Home Page**

The Home Page is the first interface displayed to users when accessing the system. It provides a general overview of the platform and its purpose.

#### **Main components:**

- Navigation bar containing links to Login, Register, and About pages
  - Brief description of the internship platform and its objectives
  - Call-to-action buttons for student and company registration
  -
- 

### **Login and Registration Page**

This page allows users to authenticate or create a new account in the system.

#### **Main components:**

- Login form (username/email and password)
- Registration options for:
  - Student
  - Company
  - University Supervisor
- Error and validation messages for incorrect input

## Student Dashboard

After successful login, the student is redirected to the Student Dashboard, which serves as the main working area for students.

### Main components:

- List of available companies offering internship opportunities
  - Search and filtering options (e.g., specialization, company rating)
  - Internship application status panel
  - Notifications related to application updates
- 

## Company Profile and Internship Details Page

This page displays detailed information about a selected company and its internship offerings.

### Main components:

- Company information (name, description, field of work)
  - Internship opportunities and requirements
  - Company rating and feedback from previous students
  - “Apply for Internship” button
- 

## Internship Application Page

This interface allows the student to submit an internship application.

### Main components:

- Internship details summary
  - Application submission button
  - Confirmation message after successful submission
- 

## Company Dashboard

The Company Dashboard enables companies to manage internship applications submitted by students.

### Main components:

- List of received internship applications
- Application details view
- Accept or reject application options
- Application status update functionality

## **Supervisor Dashboard**

The Supervisor Dashboard allows the university supervisor to monitor the internship process.

### **Main components:**

- Overview of student applications
  - Application status tracking
  - Notifications of company decisions
  - Ability to approve accepted internships
- 

## **Chatbot Interface**

The system includes a chatbot interface to assist students in navigating the platform and selecting suitable internship opportunities.

### **Main components:**

- Chat window accessible from all pages
  - Automated responses to student inquiries
  - Guidance on internship fields and job roles
- 

## **Summary**

The proposed user interface design ensures a clear separation of roles and functionalities for each type of user. The storyboard-based design provides a structured view of system interaction and supports future integration of backend services, database management, and artificial intelligence components.

4.9 Site Map:

An Example of Site Map, when the project is a website, is shown next.

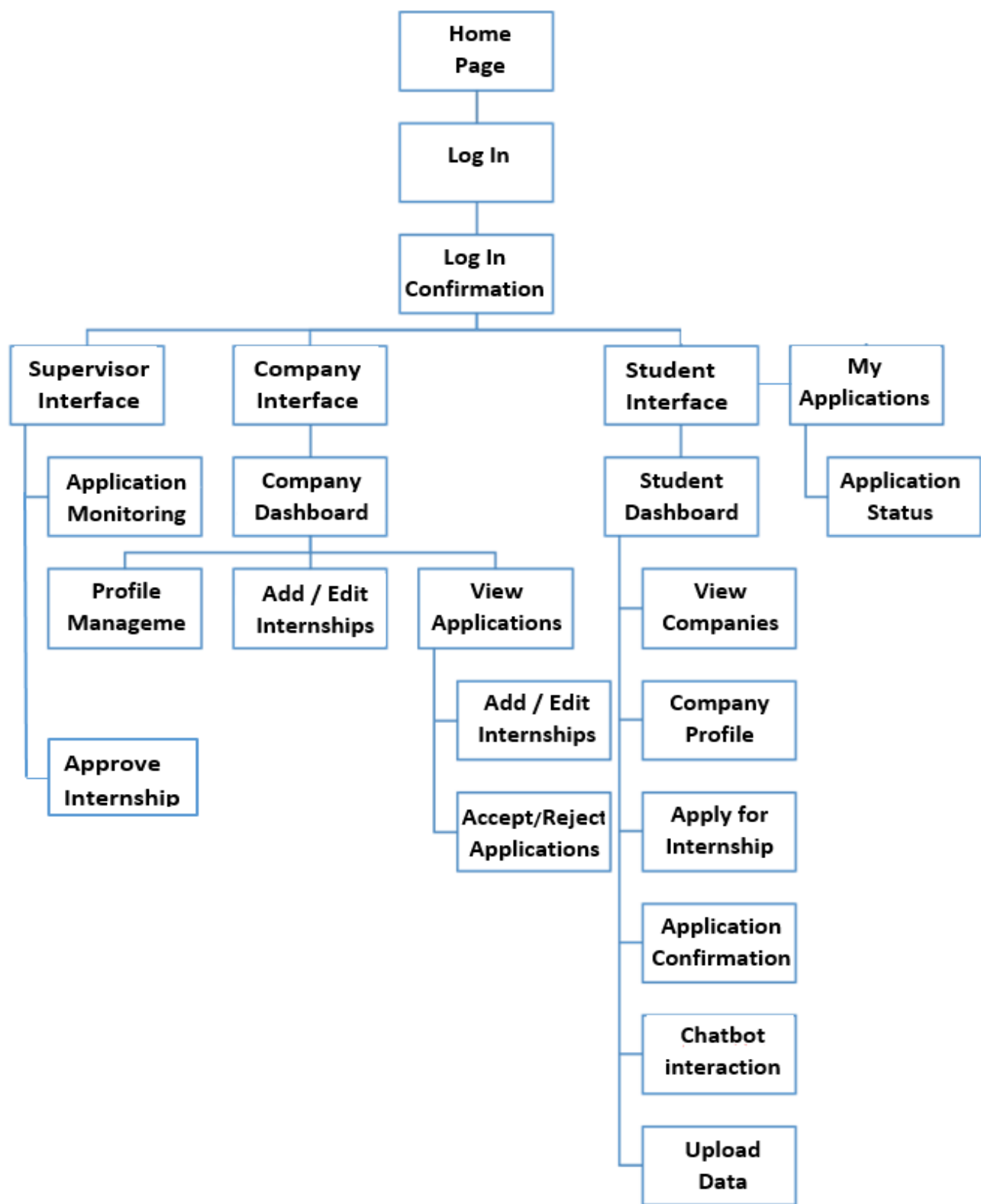
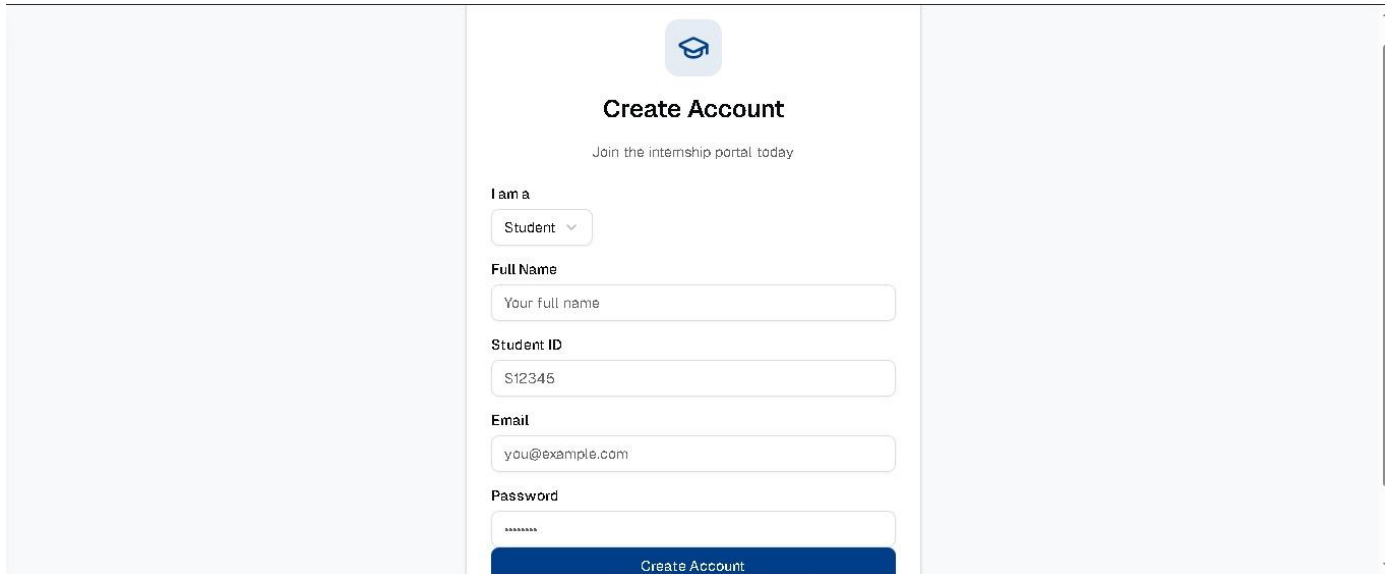


figure 8: Site Map

### 4.8.1 Story board

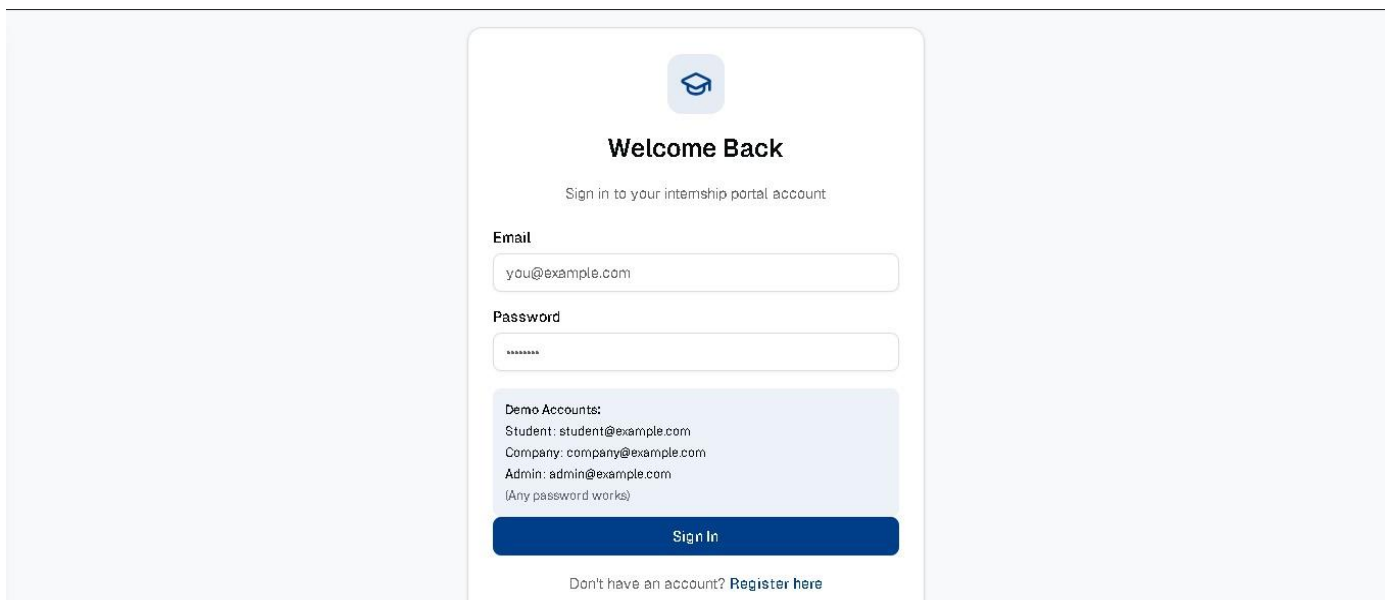
This part displays the main system pages (interface) for the project, implemented as principled perception of the system page's structure.



The registration page features a central white card on a light gray background. At the top of the card is a blue graduation cap icon. Below the icon, the title "Create Account" is displayed in bold, followed by the subtitle "Join the internship portal today". The form includes a dropdown menu labeled "I am a" with "Student" selected. Below this are input fields for "Full Name" (placeholder: "Your full name"), "Student ID" (placeholder: "S12345"), "Email" (placeholder: "you@example.com"), and "Password" (placeholder: "\*\*\*\*\*"). A blue "Create Account" button is at the bottom of the form.

**Figure 9: Registration Page**

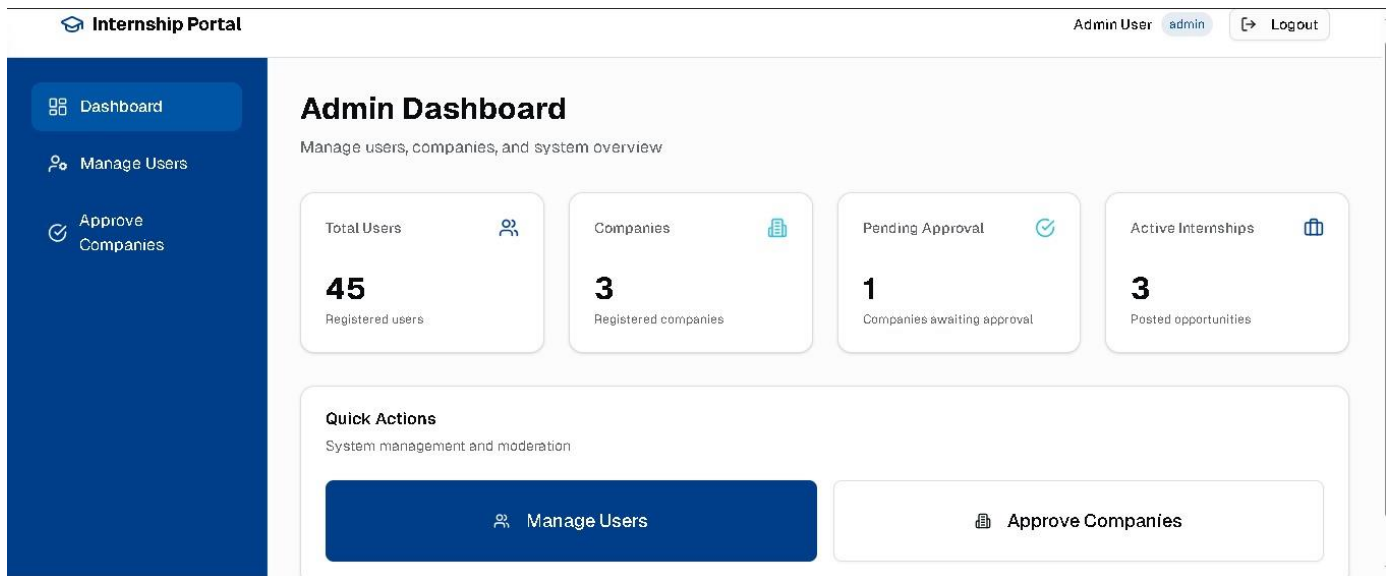
The registration page allows the user to choose his identity (student, company, supervisor) and register to the system by entering the required data and create his own password.



The login page features a central white card on a light gray background. At the top of the card is a blue graduation cap icon. Below the icon, the title "Welcome Back" is displayed in bold, followed by the subtitle "Sign in to your internship portal account". The form includes input fields for "Email" (placeholder: "you@example.com") and "Password" (placeholder: "\*\*\*\*\*"). Below the password field is a light blue box containing "Demo Accounts:" and three entries: "Student: student@example.com", "Company: company@example.com", and "Admin: admin@example.com" (with a note "(Any password works)"). A blue "Sign In" button is at the bottom of the form. Below the button, the text "Don't have an account? Register here" is displayed.

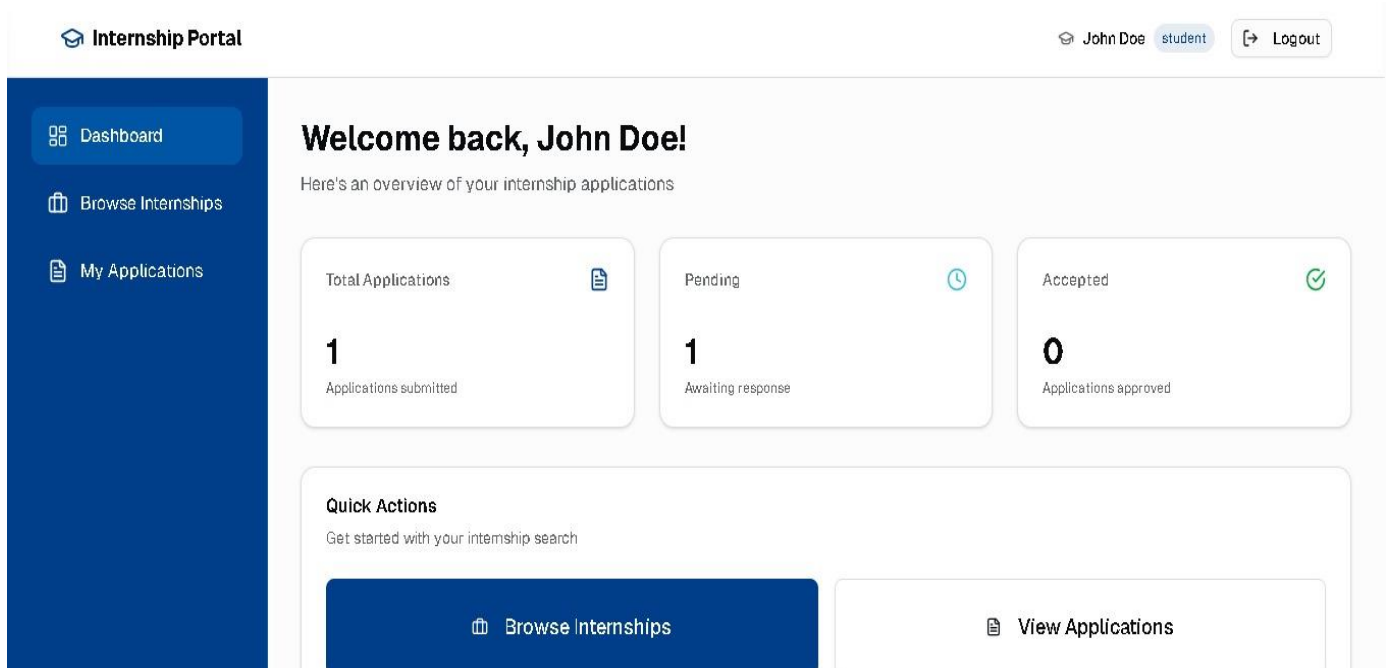
**Figure 10: Homepage**

The login in page will include a login plug-in, in which the user will enter his username (email) and password.



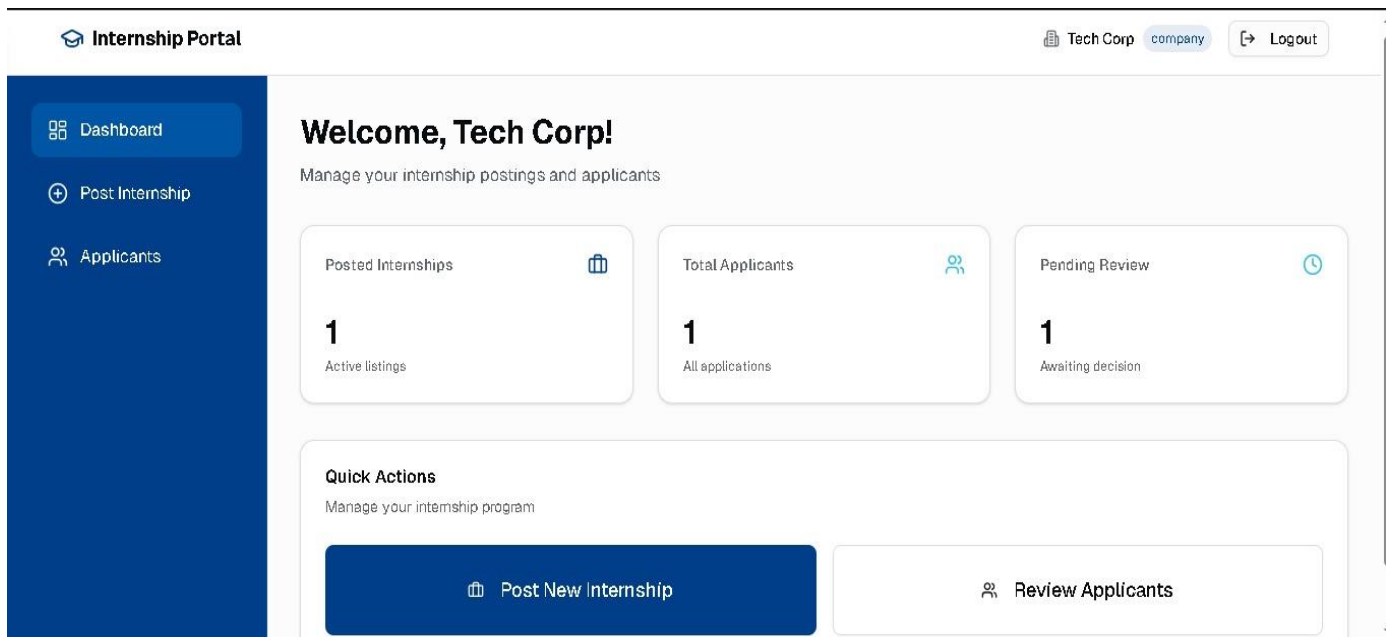
**Figure 11: Admin Interface**

The admin page provides full control of the system and displays the general information about the system users.



**Figure 12: Student Interface**

The student page includes general dashboard that gives him short summary about his account, the student can view recommended companies based on his preferences, brows internships, view details and apply for multiple opportunities, also review his previous applications.



**Figure 13: Company Interface**

This page related to company users, which allow them to control their profile, post internship opportunities, view training requests and respond the students.

## 4.9 Data Model:

This section illustrates a detailed description of the data model, ER diagram, EER and the data dictionary in order to develop the database for the portal.

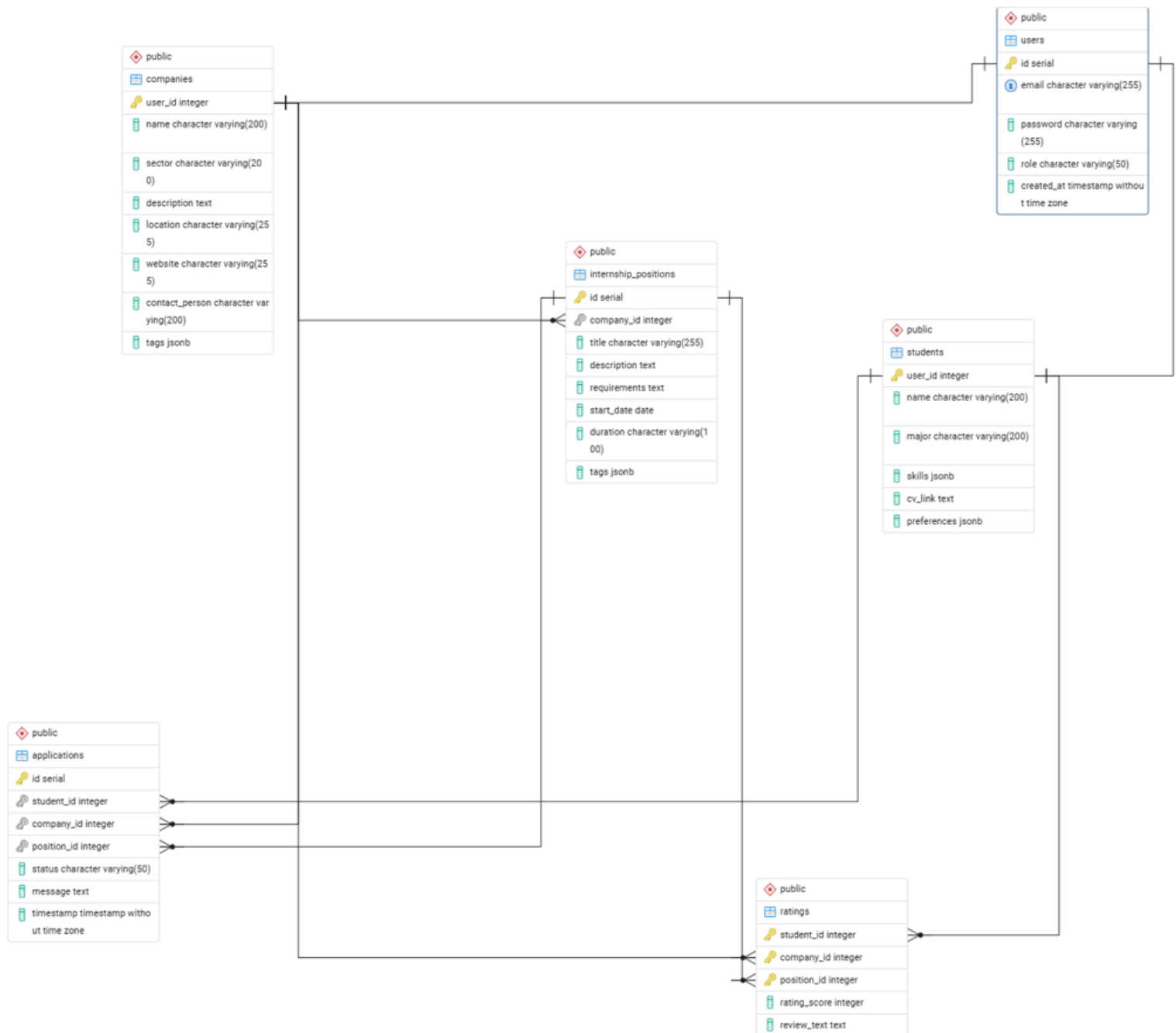


figure 14: Data Model



## 5 Conclusion

### 5.1 Conclusion:

This project presented the design and development of a web-based internship management platform aimed at supporting data science and artificial intelligence students in finding suitable internship opportunities. The system was designed to address the limitations of the traditional internship process by providing a centralized, structured, and transparent platform for managing internship applications.

Through careful analysis and system design, the proposed solution enables effective interaction between students, companies, and academic supervisors. The platform enhances the internship selection process by improving accessibility to opportunities, simplifying application procedures, and increasing visibility for supervisors. Moreover, the system design lays the foundation for future integration of data analytics and artificial intelligence techniques to enhance decision-making and service quality.

Overall, the project demonstrates how technology-driven solutions can improve academic and professional processes while supporting scalability and future enhancements.

### 5.2 Difficulty faced:

While working on this project we have faced some problems and difficulties such as:

- Understanding and analyzing the existing internship workflow and identifying its limitations.
- Gathering accurate information about similar systems and identifying suitable database structures.
- Designing clear and consistent relationships between system entities.
- Managing time effectively while coordinating tasks among team members.
- Designing a user-friendly and role-based interface that meets the needs of different users.
- Limited prior experience in full-stack web development, which required additional learning and adaptation.

### ***5.3 Future Works:***

The proposed internship management platform can be extended in several directions in future work. One major enhancement would be the full implementation of the backend services and database integration to support large-scale deployment. Additionally, advanced data analytics and machine learning models can be incorporated to provide intelligent company ranking and personalized internship recommendations for students.

Future work may also include the integration of real-time chat functionality between students and companies, automated internship evaluation reports, and deeper analytics dashboards for academic supervisors. Furthermore, the system can be expanded to support multiple universities and industries, making it a scalable solution for a broader user base. These enhancements were not implemented in the current project due to time and resource limitations but remain viable directions for future development.