"FEATURE-RICH, ADVANCED PRACTICAL ONLINE WEBSITE FOR THE TRAINING AND PLACEMENT DEPARTMENT OF THE COLLEGE "

A

Project Report

submitted

in partial fulfillment

for the award of the Degree of

Bachelor of Technology

in Department of Information Technology

Project Mentor:
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Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

Department of Information Technology

CERTIFICATE

This is to certify that Ms Komal Jha, a student of B.Tech(Information Technology) VIII semester have submitted their Project Report entitled ”Feature-rich, advanced practical online website for the training and placement department of the college under my guidance.

Mentor	**Coordinator**
Mr. Praveen Kumar Yadav	Dr. Sanju Choudhary
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Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

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CERTIFICATE

This is to certify that Ms Anjali Arora, a student of B.Tech(Information Technology) VIII semester have submitted their Project Report entitled ”Feature-rich, advanced practical online website for the training and placement department of the college” under my guidance.

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This is to certify that Ms Chestha Gautam, a student of B.Tech(Information Technology) VIII semester have submitted their Project Report entitled ”Feature-rich, advanced practical online website for the training and placement department of the college” under my guidance.

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DECLARATION

We hereby declare that the report of the project entitled ”Feature-rich, advanced practical online website for the training and placement department of the college” is a record of an original work done by us at Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur under the mentorship of ”Mr. Praveen Kumar Yadav, Assistant Professor”(Dept. of Information Technology) and coordination of ”Dr. Sanju Choudhary, Associate Professor (IT)” (Dept.of Information Technology). This project report has been submitted as the proof of original work for the partial fulfillment of the requirement for the award of the degree of Bachelor of Technology (B.Tech) in the Department of Information Technology.It has not been submitted anywhere else, under any other program to the best of our knowledge and belief.

Team Members **Signature**

Komal Jha, 19ESKIT300

Anjali Arora, 19ESKIT303

Chestha Gautam, 19ESKIT305

Acknowledgement

A project of such a vast coverage cannot be realized without help from numerous sources and people in the organization.We take this opportunity to express our gratitude to all those who have been helping us in making this project successful.

We are highly indebted to our faculty mentor Mr. Praveen Kumar Yadav .He has been a guide, motivator source of inspiration for us to carry out the necessary proceedings for the project to be completed successfully. We also thank our project coordinator Dr. Sanju Choudhary for her co-operation, encouragement, valuable suggestions and critical remarks that galvanized our efforts in the right direction.

We would also like to convey our sincere thanks to Prof. Dr. Anil Chaudhary, HOD, Department of Information Technology, for facilitating, motivating and supporting us during each phase of development of the project.Also, we pay our sincere gratitude to all the Faculty Members of Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur and all our Colleagues for their co-operation and support.

Last but not least we would like to thank all those who have directly or indirectly helped and cooperated in accomplishing this project.

Team Members:

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Chapter 1
Introduction

1.1 Problem Statement and Objective

Students need to interact with the admin for applying in any company and vice versa for company, there is a need to maintain all these papers, causing large amount of space. It is manually done, chances of missing, difficult to handle the details of student. from this portal student can interact with company directly and company directly with student online. All these functionality will work online.

1.2 Literature Survey/Investigation and Analysis

A paper on "Generating Placement Intelligence in Higher Education Using Data Mining" gives that a university is an institution of higher education and research which grants academic degrees in a variety of subjects and provides both under graduate education and postgraduate education. University performs various activities like enrolling the students, conducting classes, conducting special workshops of different subjects, conducting placement etc. This paper is going to describe the activity related to placement, placement cell, and student database.

1.3 Introduction to Project

In today's world everyone is travelling for jobs after Completion of their graduation. It has became need for each and every student, but for that they need to travel world wide in searching of jobs. For simplicity of this whole hectic procedures we had proposed Online Training and Placement System because of earlier system is totally done manually by maintaining records ,time consuming and very difficult to maintain coordination between student and companies. The project is aimed at developing an online web application for the training and placement department of the

college. The system is an online web application that can be accessed throughout the Institute with proper login provided. This systemcan be used as an application for the TPO of the college to manage the student in formation with regard to placement. Student logging should be able to upload their information. Organizations representatives logging in may also access/search an information put up by the students. TPO have to collect the information and manage them manually according to various streams. If any modification is required that is also to be done manually. Overall it will reduce the paper work and utilize the maximum capability of the setup and organization as well as it will save time and money.

1.4 Proposed Logic/Algorithm/Business Plan/Solution/Device

The main purpose of proposed Web based Training and Placement portal is meant to give more easiness to students and company, They can modify and access information so quickly. The system provides a better way to maintain students information in the database, ensures data correctness and data integrity as well. The system also reduces the paperwork time and provides anefficient information flow between different system modules. Our system consists of different modules to interact with Firstly, for student login on opening the web portal you'll land on the main page of the portal which showcases information about the jobs. Secondly ,there are four tabs given in the portal namely internships, applied ,bookmarks and full time job. Each module has the same login page consisting of user id and passwordfield for gaining access to the functionalities of the system. in the portal namely Student, and Company. Each module has the same login page that contain userid and password field, by entering data in these field the user can gain access to thefunctionalities

1.5 Scope of the Project

Our project has a big scope to do. Students can access previous information about placement. We can stores information of all students. Various companies can access their information. Companies can download students resume.

1. Easy to collect and manage student data.

2. To increase the accuracy and efficiency of placement procedure.
3. Reduce the paper work.
4. Analysis of overall placement activities

1.6 Tools Used

]**1) Node JS** Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications. Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux. Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent.

2) Visual Studio Visual Studio Code combines the simplicity of a source code editor with powerful developer tooling, like IntelliSense code completion and debugging. First and foremost, it is an editor that gets out of your way. The delightfully frictionless edit-build-debug cycle means less time fiddling with your environment, and more time executing on your ideas. Visual Studio Code is a free source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded. On November 18, 2015, Visual Studio Code was released under the Expat License and its source code posted to GitHub.

3) Java Script JavaScript is a lightweight, interpreted programming language. It is designed for creating network-centric applications. It is complimentary to and integrated with Java. JavaScript is very easy to implement because it is integrated with HTML. It is open and cross-platform. Javascript is the most popular programming language in the world and that makes it a programmer's great choice. Once you learnt Javascript, it helps you developing great front-end as well as back-end softwares using different Javascript based frameworks like jQuery, Node.JS etc.

4) HTML CSS HTML is simply the only option with respect to the Frontend for the Web. Abstractions like HAML, Jade, etc., are considered to be alternatives to HTML; however, even these abstractions are eventually converted to HTML because

that's what the browser understands! So, if you're looking to wow your audience, HTML along with CSS(Cascaded Style Sheets) makes a good case for itself. Think of CSS as a make-up artist and HTML as the actor, HTML brings the talent, but it looks plain without CSS. HTML is a markup language used to create static web pages and web applications. CSS is a style sheet language responsible for the presentation of documents written in a markup language. CSS is considered to be one of the easiest languages to learn. Its basic rules and syntax are simple, and you could start styling web pages after a single day of learning (if you're already familiar. Extension support was also announced.Visual Studio Code is a source-code editor that can be used with a variety of programming languages, including Java, JavaScript, Go, Node.js and C++. It is based on the Electron framework, which is used to develop Node.js Web applications that run on the Blink layout engine. Visual Studio Code employs the same editor component (codenamed "Monaco") used in Azure DevOps (formerly called Visual Studio Online and Visual Studio Team Services). Visual Studio Code can be extended via extensions, available through a central repository. This includes additions to the editor and language support A notable feature is the ability to create extensions that add support for new languages, themes, and debuggers, perform static code analysis, and add code linters using the Language Server Protocol.

Chapter 2
Software Requirement Specification

2.1 Overall Description

This project aims to develop an online automation system that is beneficial for SIM students and companies recruiting SIM graduates. This software has two login portals, one for students and the other for recruiting companies.Students will enter all their personal as well as professional while registering themselves into the system. The students can also control the privacy settings of their accounts. The companies register with their company name, Job title, No. of vacancy, Job description, Job profile, Criteria, etc. The students can view and apply to the companies. The students will also be notified if job ads match with their interests and abilities, provided that they choose to make their information public. The companies can view the list of student profile who have applied to the particular company. An optional requirement is that the system allows users to communicate. The company recruiter of the system, has the access to all the portal.

2.1.1 Product Perspective

Website uses two login portals, one for students and other for recruiting companies.Students will enter all their personal as well as professional while registering themselves into the system.The students will also be notified if job ads match with their interests and abilities, provided that they choose to make their information public. The company recruiter can add, delete or edit information when need be. The companies register with their company name, Job title, No. of vacancy, Job description, Job profile, Criteria, etc.

2.1.1.1 System Interfaces

The Training and Placement Cell (TP Cell) is an essential department in educational institutions such as colleges and universities. Its primary responsibility is to help students prepare for and secure employment opportunities after graduation. The TP Cell works in collaboration with the academic departments to develop and organize training programs that enhance the employability skills of students. These training programs may include technical skills development, soft skills training, communication skills, interview skills, and other professional skills. The aim of these programs is to equip students with the knowledge and skills required by the industry and make them job-ready. The TP Cell also acts as a bridge between students and potential employers. They organize campus recruitment drives where students can interact with representatives from various companies and organizations. The TP Cell assists students in preparing their resumes, preparing for interviews, and providing them with information about job vacancies in their respective fields. Overall, the TP Cell plays a vital role in ensuring that students receive the best possible career opportunities and helps in building a strong relationship between educational institutions and industry partners.

2.1.1.2 User Interfaces

The user of the proposed system requires that the developed software should be user friendly, have security access, and ensure the privacy of the administrator and produce results in timely manner. The users are not frequently exposed to the training and placement interface to the user must be simple and understandable. The desktop application must be user – friendly and must be in an easy-to-use style . The user must be able to easily switch among various I/O screens. The system is well designed so that it can be easily used by users. The system should be designed in such a way that only authorized users should be allowed to login to the system. The user interface should be as interactive as possible. A user-friendly interface must be provided so that the user can easily interact with the system and comprehend things in a quicker and easier way. The system must provide reliable and up-to-date information. The application should be efficient so that the user does not spend much

time in training.

2.1.1.3 Communcication Interfaces

As the website consists of online recruiting so it requires high speed internet modem for the use of this application.For the suitable use there must be a correct internet connection among the users. The users can directly interact with the application and use its functionalities. Keep peopleinformed so that they will support the outcome of the project, understand what theyneed to do and the implications, and alert the project team to issues.

2.1.1.4 Software Interfaces

–Operating system
– Database
– Tools/ide
– Platform

2.1.1.5 Product Functions

Website uses two login portals, one for students and other for recruiting companies.
Students will enter all their personal as well as professional while registering themselves into the system. The students will also be notified if job ads match with their interests and abilities, provided that they choose to make their information public. The company recruiter can add, delete or edit information when need be. The companies register with their company name, Job title, No. of vacancy, Job description, Job profile, Criteria, etc.

2.1.1.6 User Classes and Characteristics

The Users should be able to do the following functions:
Students will enter all their personal as well as professional while registering themselves into the system and can view the company data.
The company recruiter can edit information according to their needs.
The company recruiter can handle all login credentials.

TPO have to collect the information and manage them manually according to various streams.

2.1.1.7 Operating System

The operating system used in the project is Windows.

2.1.1.8 Need for the new system

College training and placement (CTAP) system provides the modules like

1) Student
2) company recruiter
3) Student can view company data
4) company recruiter dashboard has overall functional rights
5) Appropriate data processing and handling

Student Module

This Module consist of a login option and registration window for unregistered-students. Students will use their choice of username and a proper specified length password.

Chapter 3

System Design Specification

3.1 System Architecture

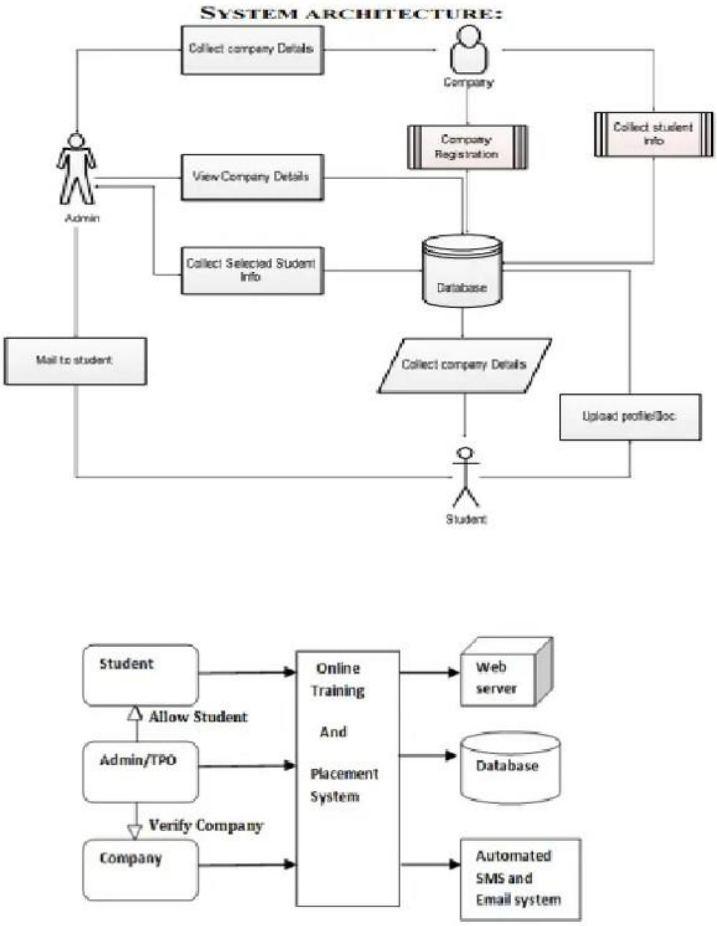

Figure 3.1: Architecture diagram

3.2 Module Decomposition Description

Student Module

This Module consist of a login option and registration window for unregistered-

students. Students will use their choice of username and a proper specified length password. The functionalities provided in this module consist of:

It helps the Students to update their details anytime.

• The students would be able to view the company requirement.

• Students will be provided with a link to apply for the company if eligible.

• Previous Years placement paper and material is also provided.

• Students can see the complete profile of the company. Such as recruitment procedure history CTC offer and the working environment.

Figure 3.2: student diagram

The company Module

It has the authority to manage various functionalities of the system. This module will be handled by an company recruiter (say Training and placement Officer) who has the authority to:

• Provides authentication for registered students

• Add news feed and Update company data. Overall records of the students will be presented over the portal like the data of all placed and unplaced students which will reduce the bottleneck of confusion among students.

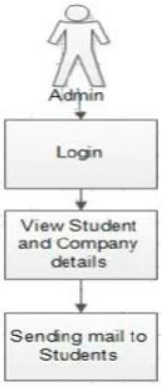

Figure 3.3: company diagram

3.3 High Level Design Diagrams

3.3.1 Sequence Diagram

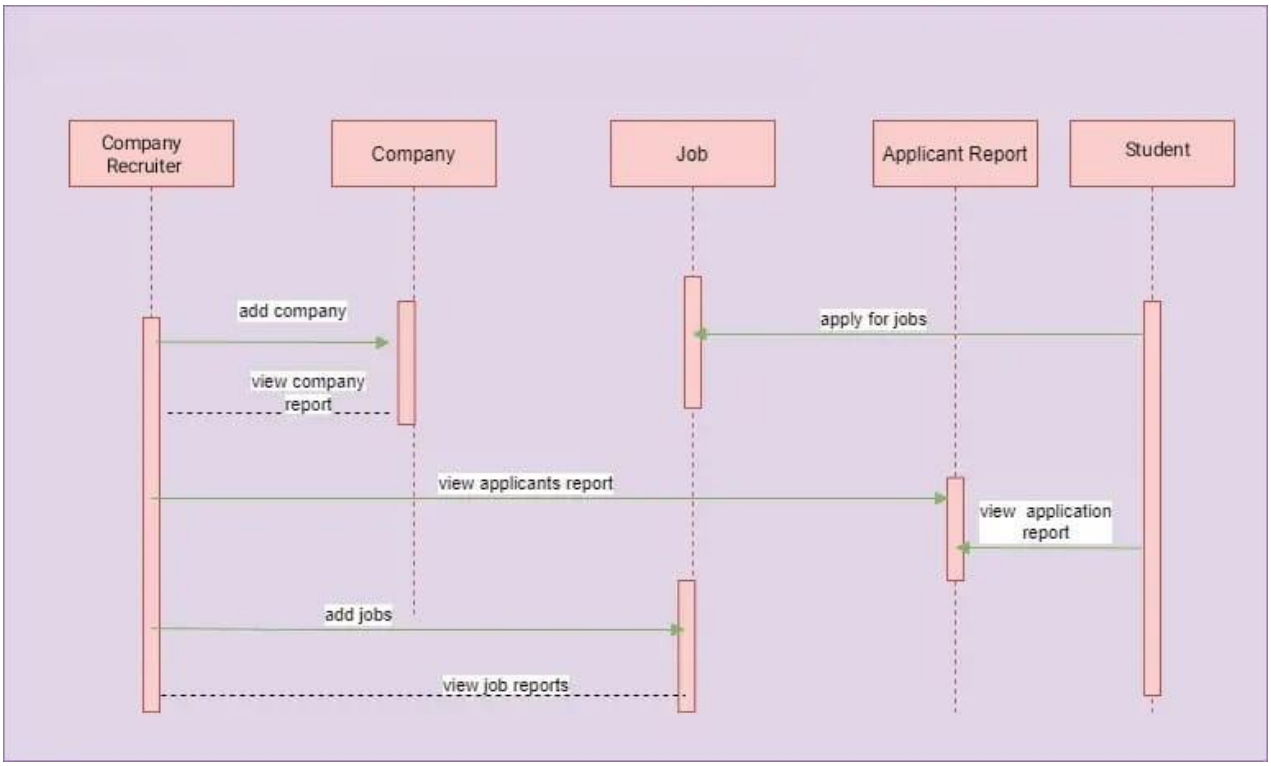

Figure 3.4: sequence diagram

3.3.2 Data Flow Diagram

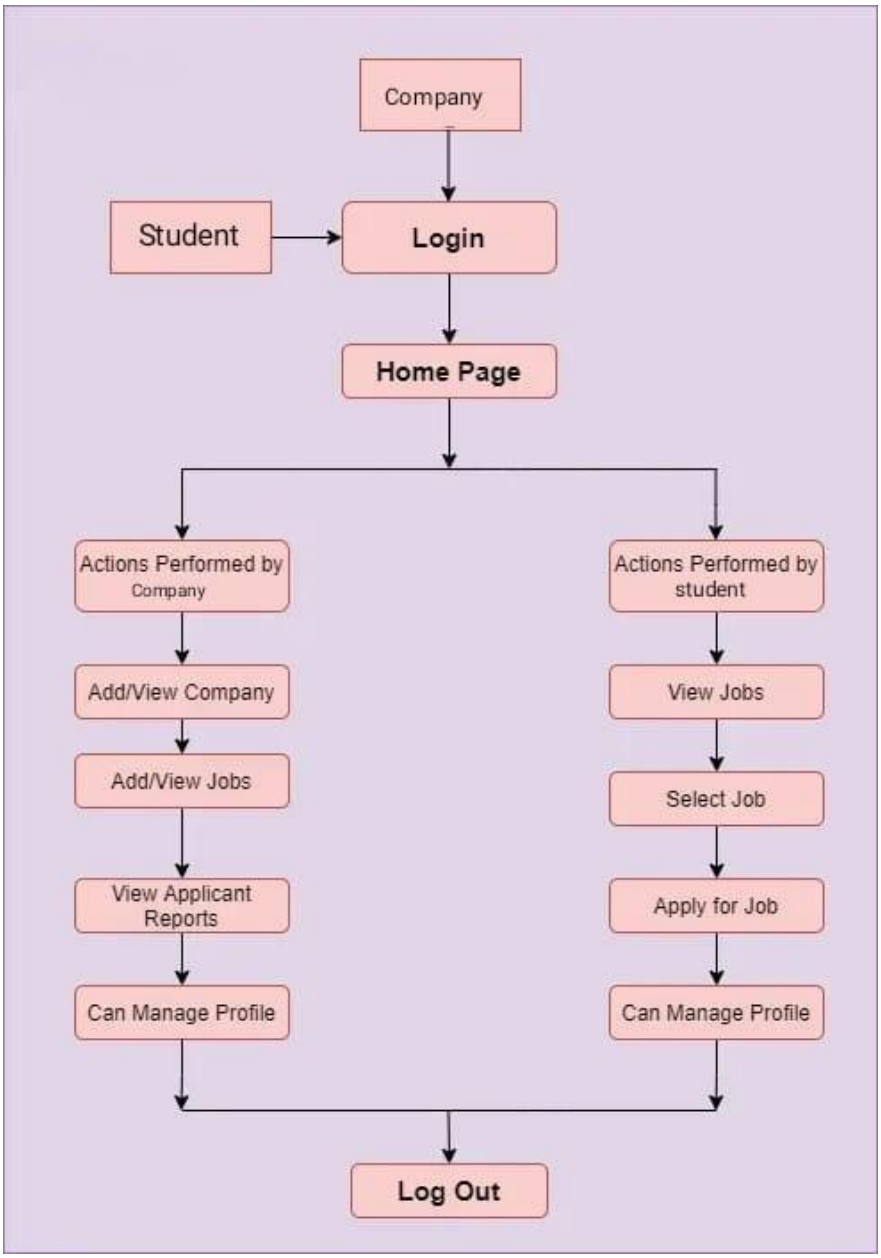

Figure 3.5: Data flow diagram

3.3.3 Use Case Diagram

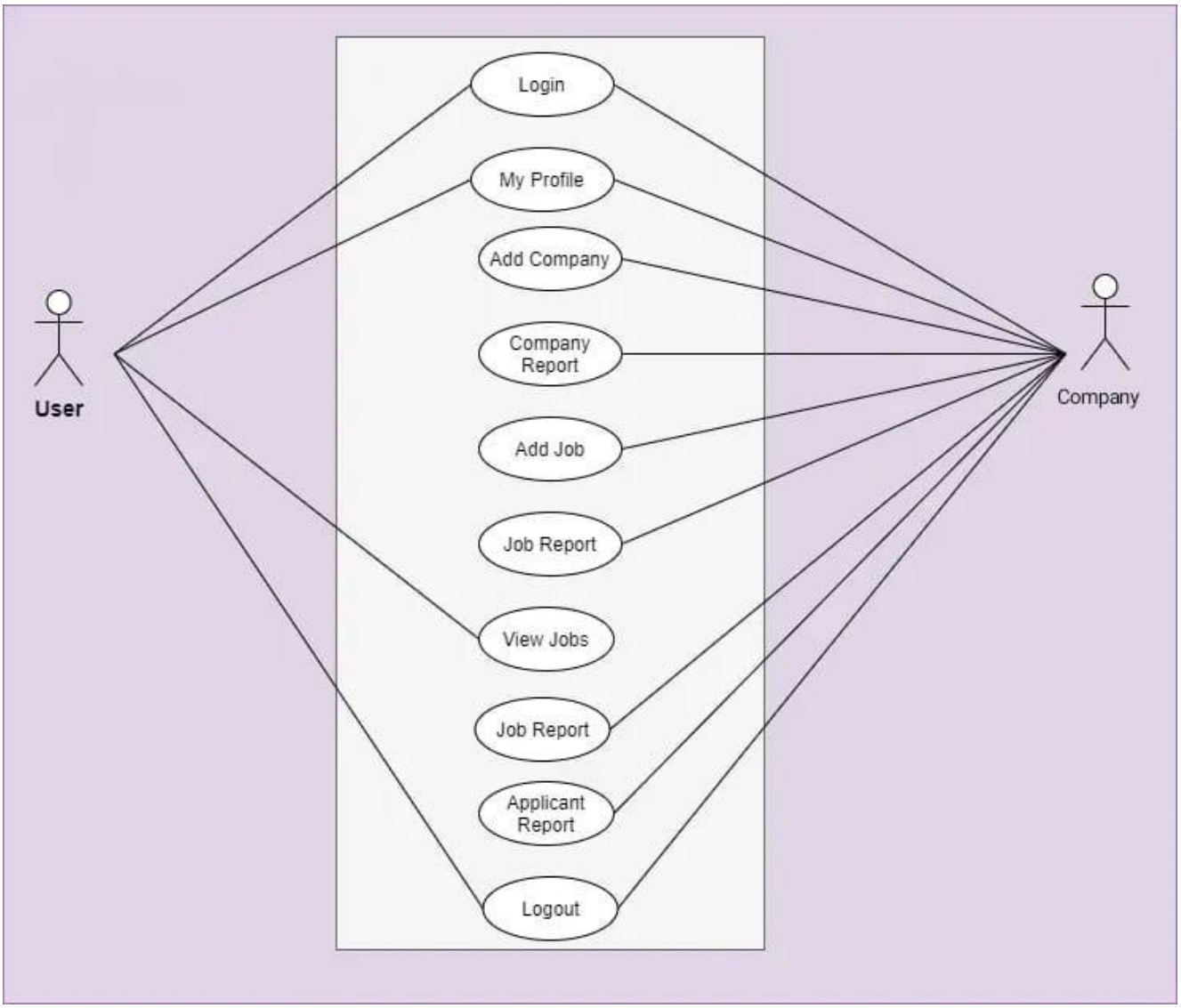

Figure 3.6: Usecase diagram

3.3.4 Class Diagram

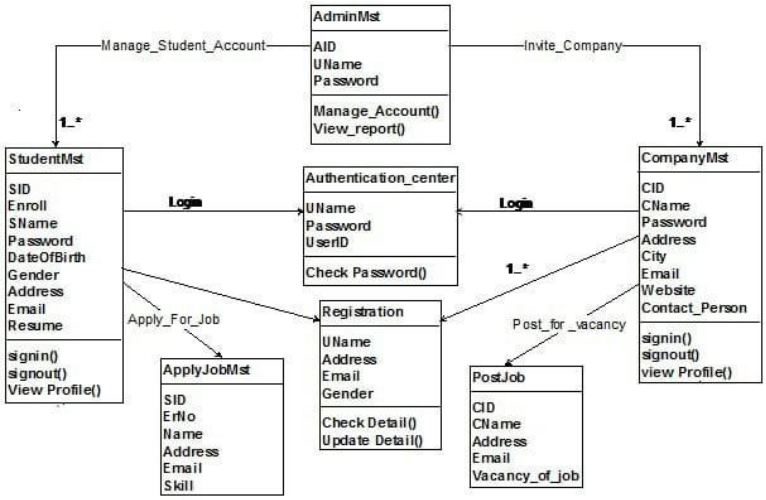

Figure 3.7: Class diagram

3.3.5 Component Diagram

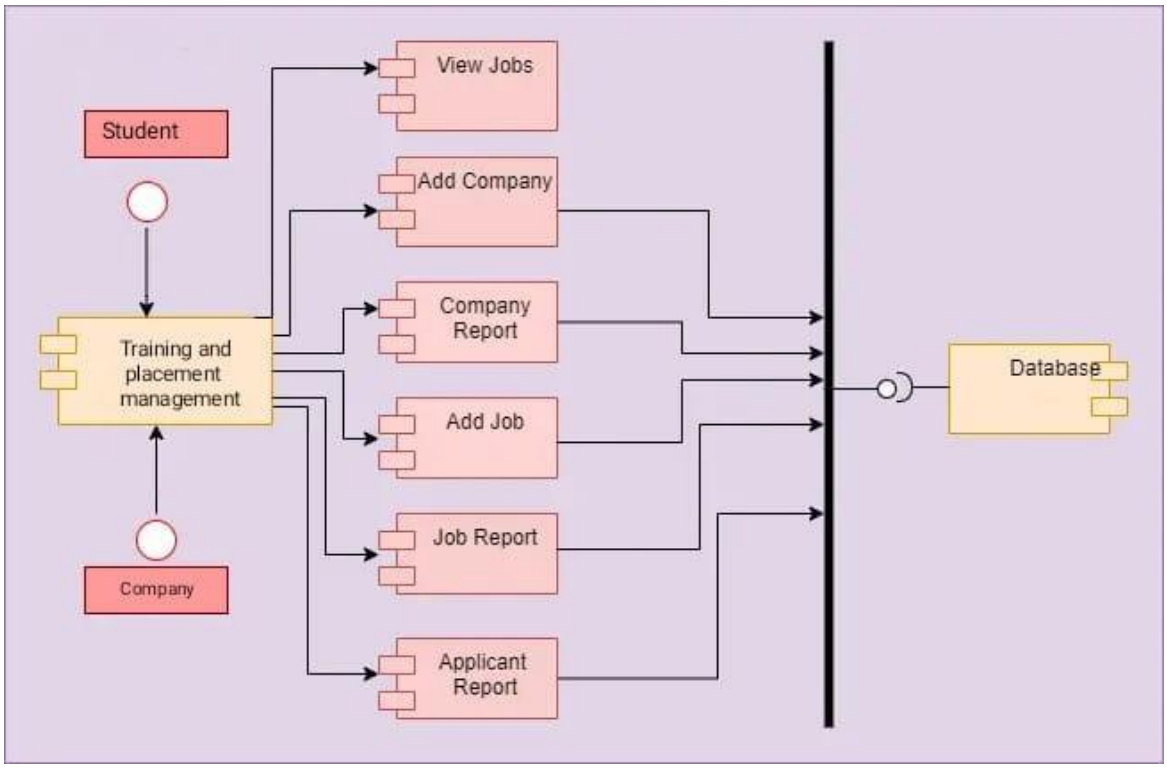

Figure 3.8: Component diagram

3.3.6 Activity Diagram

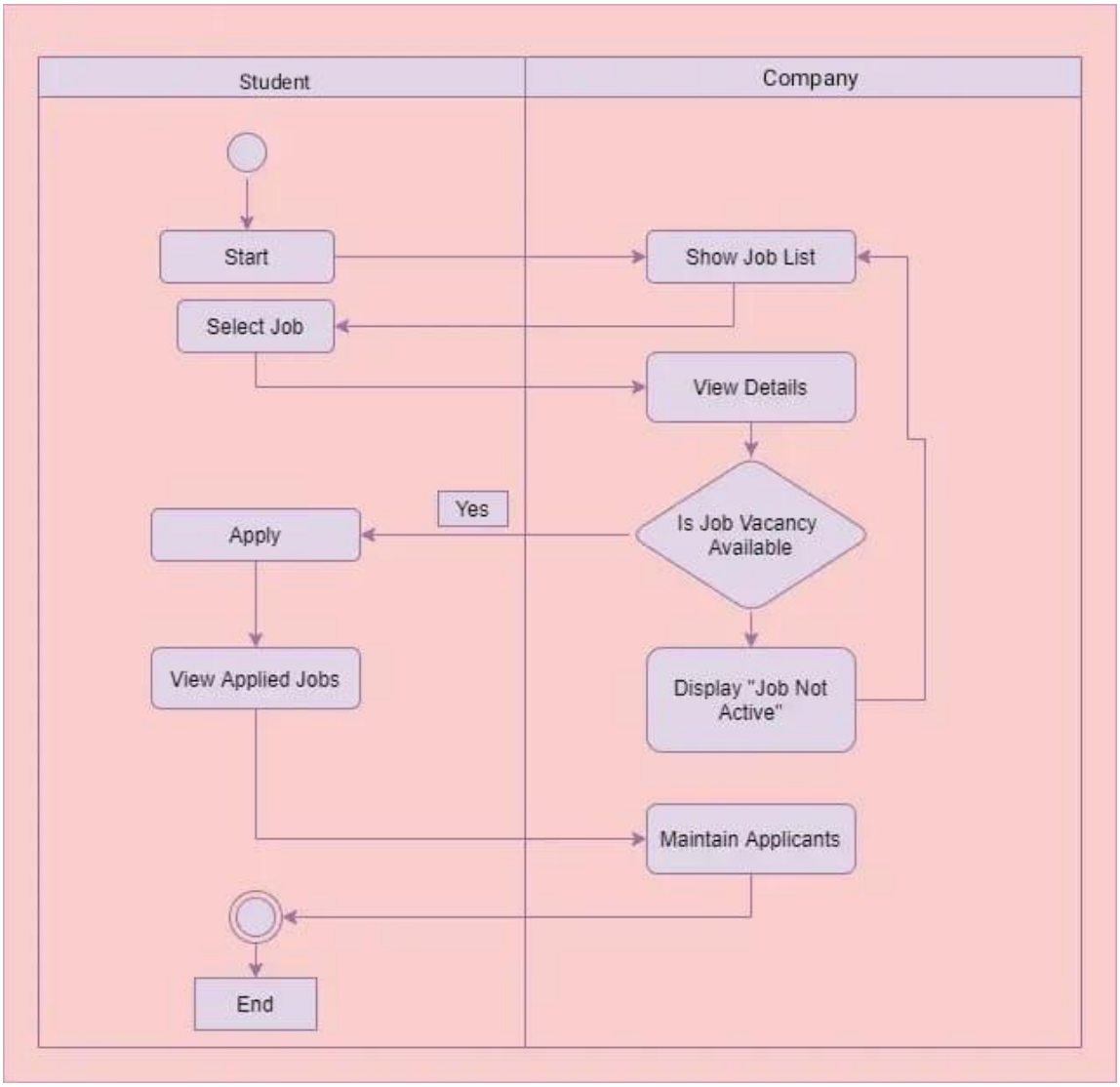

Figure 3.9: Activity diagram

Chapter 4

Methodology and Team

4.1 Introduction to Waterfall Framework

The Waterfall Model was first Process Model to be introduced. It is also referred to as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases. The waterfall Model illustrates the software development process in a linear sequential flow; hence it is also referred to as a linear-sequential life cycle model. This means that any phase in the development process begins only if the previous phase is complete. In waterfall model phases do not overlap. In "The Waterfall" approach, the whole process of software development is divided into separate phases. In Waterfall model, typically, the outcome of one phase acts as an input for the next phase sequentially. Following is a diagrammatic representation of different phases of waterfall model.

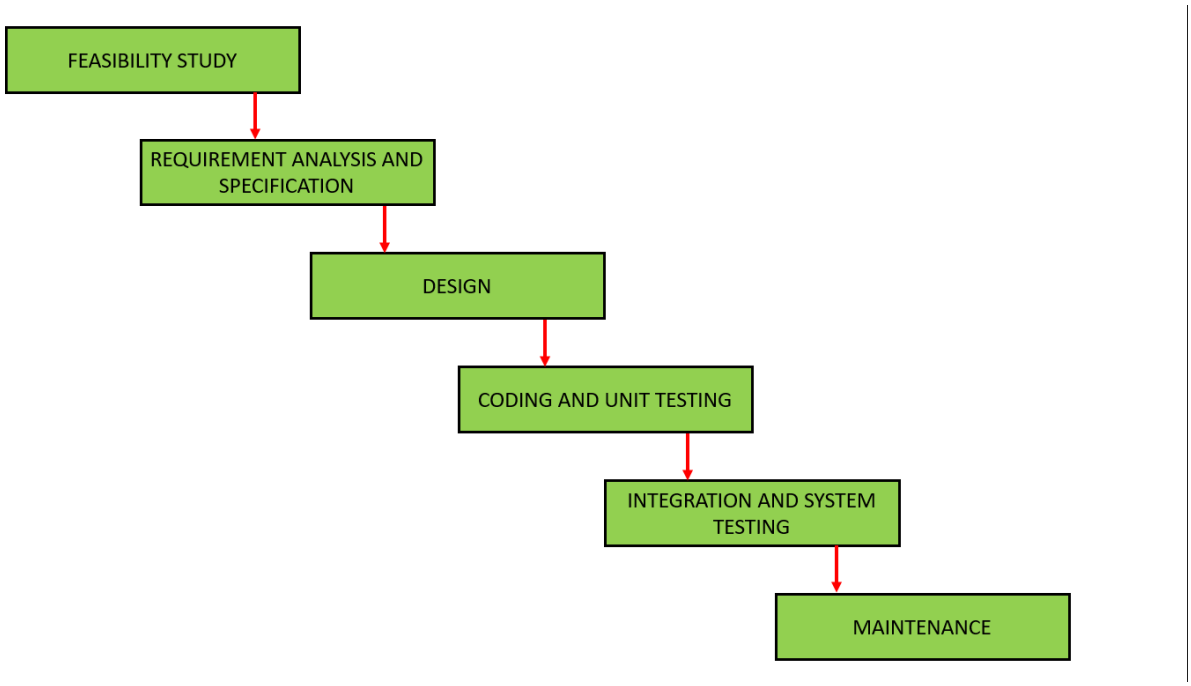

Figure 4.1: WaterFall model

The sequential phases in Waterfall model are-

1. **Requirement Gathering and analysis:** All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification doc.

2. **System Design:** The requirement specifications from first phase are studied in this phase and system design is prepared. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture.

3. **Implementation:** With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.

4. **Integration and Testing:** All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

5. **Deployment of system:** All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

6. **Maintenance:** All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

All these phases are cascaded to each other in which progress is seen as flowing steadily downwards (like a waterfall) through the phases. The next phase is started only after the defined set of goals are achieved for previous phase and it is signed off, so the name ”Waterfall Model”. In this model phases do not overlap.

Waterfall Model Pros & Cons

Advantage The advantage of waterfall development is that it allows for departmen-

talization and control. A schedule can be set with deadlines for each stage of development and a product can proceed through the development process model phases one by one. Development moves from concept, through design, implementation, testing, installation, troubleshooting, and ends up at operation and maintenance. Each phase of development proceeds in strict order.

Disadvantage The disadvantage of waterfall development is that it does not allow for much reflection or revision. Once an application is in the testing stage, it is very difficult to go back and change something that was not well-documented or thought upon in the concept stage.

4.2 Team Members, Roles & Responsibilities

The team consists of 3 members:

1. Komal Jha
2. Anjali Arora
3. Chestha Gautam

The roles and responsibilities the members:

1. Komal jha

i. Research and analysis
ii. Development plan
iii. Working on frontend module
iv. Services and routes
v. Database
vi. Company module
vii. Bugs fixation
viii. Testing of modules

2. Anjali Arora

i. Research and analysis
ii. Development plan
iii. Designing ui/ux

iv. Working on frontend module

v. Company module

vi. Services and routes

vii. database

viii. student module

ix. Testing of modules

x. Bugs fixation

3. Chestha Gautam

i. Research and analysis

ii. Development plan

iii. Designing ui/ux

iv. Working on frontend module

v. Services and routes

vi. database

vii. student module

viii. company module

ix. Testing of modules

x. Bugs fixation

Chapter 5
Centering System Testing

The designed system has been testing through following test parameters.

5.1 Functionality Testing

In testing the functionality of the web sites the following features were tested:

1. Links

   (a) Internal Links: All internal links of the website were checked by clicking each link individually and providing the appropriate input to reach the other links within.

   (b) External Links: Till now no external links are provided on our website but for future enhancement we will provide the links to the candidate's actual profile available online and link up with the elections updates online etc.

   (c) Broken Links : Broken links are those links which so not divert the page to specific page or any page at all. By testing the links on our website, there was no link found on clicking which we did not find any page.

2. Forms

   (a) Error message for wrong input : Error messages have been displayed as and when we enter the wrong details (eg. Dates), and when we do not enter any details in the mandatory fields. For example: when we enter wrong password we get error message for acknowledging us that we have entered it wrong and when we do not enter the username and/or password we get the messages displaying the respective errors.

   (b) Optional and Mandatory fields : All the mandatory fields have been marked with a red asterisk (*) and apart from that there is a display of error messages when we do not enter the mandatory fields. For example: As the first

name is a compulsory field in all our forms so when we do not enter that in our form and submit the form we get an error message asking for us to enter details in that particular field.

3. Database Testing is done on the database connectivity.

5.2 Performance Testing

To check the performance of the website following tests were conducted:

1. Load test: The website easily maintain the load of 10,000 users at the same time. As the website is in development stage, the load balancing is good but can be improved in upcoming versions.

2. Stress test: Under high load, there is no memory leakage. There were no signs of any synchronization problems during the stress test.

3. Capacity and Endurance test: The website has the capacity to manage 10,000 users at the same time which makes it well endured during the development stage and the website runs smoothly below the specified load.

5.3 Usability Testing

The website is in initial phase of development, so we conducted two types of test:

1. Hallway testing: In this test, random people tested the website and shared their user experience to help us to update the design of the website to make it more user-friendly and descent.

2. Different Device testing: The website is quite responsive as the user experience is pretty good even for mobiles, tablets, laptops and other devices.

Chapter 6

Project Screen Shots

6.1 Company Section

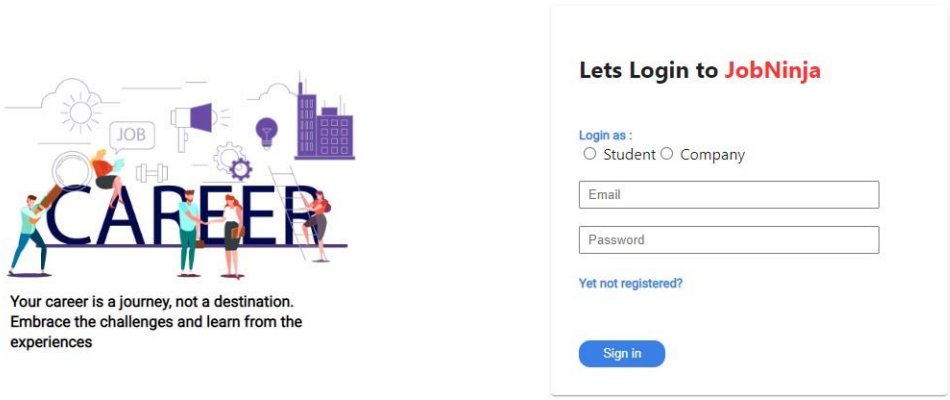

Figure 6.1: login/register page

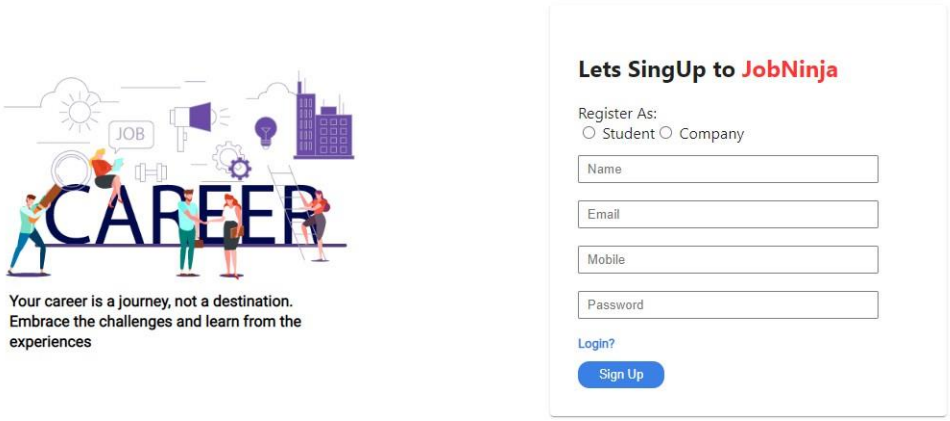

Figure 6.2: register page

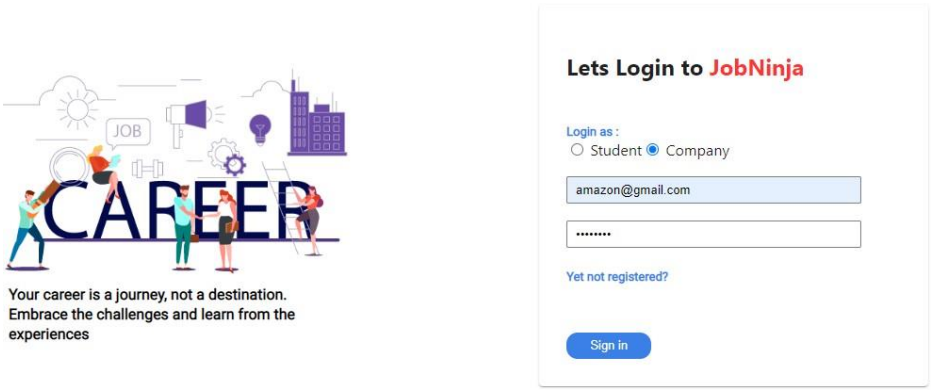

Figure 6.3: login/register page

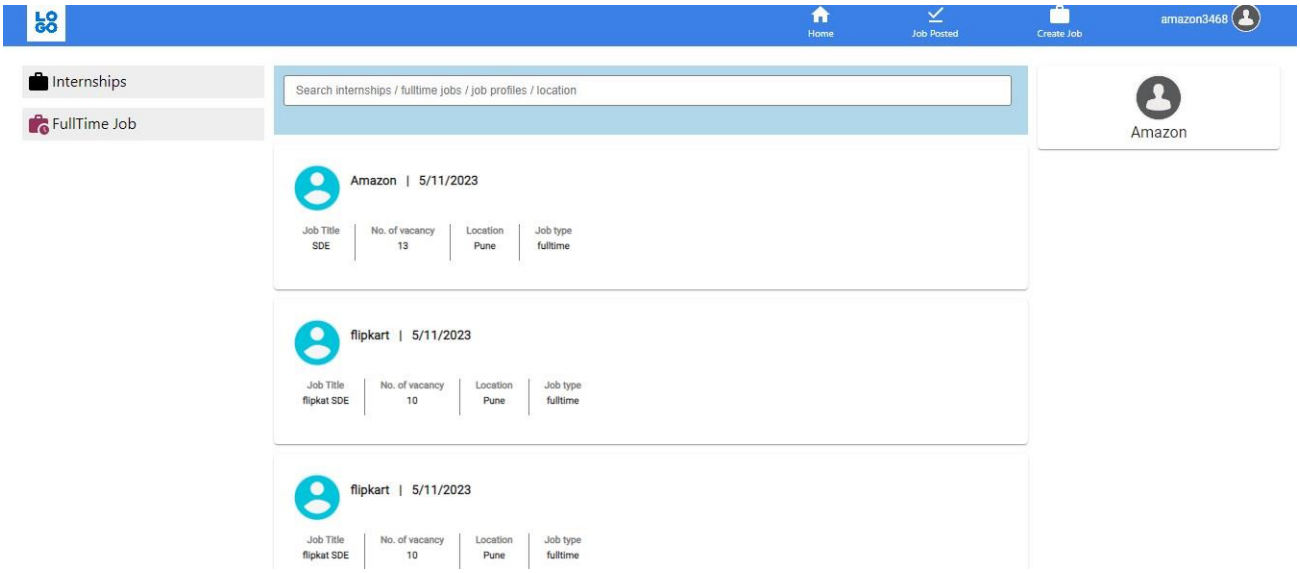

Figure 6.4: company login page

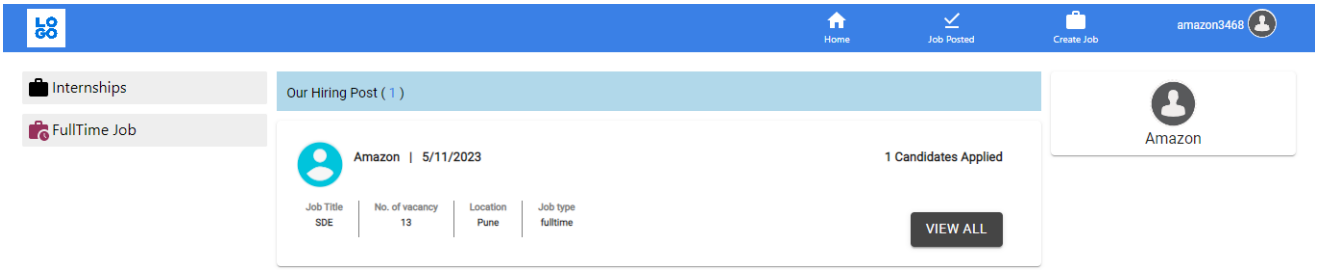

Figure 6.5: company homepage

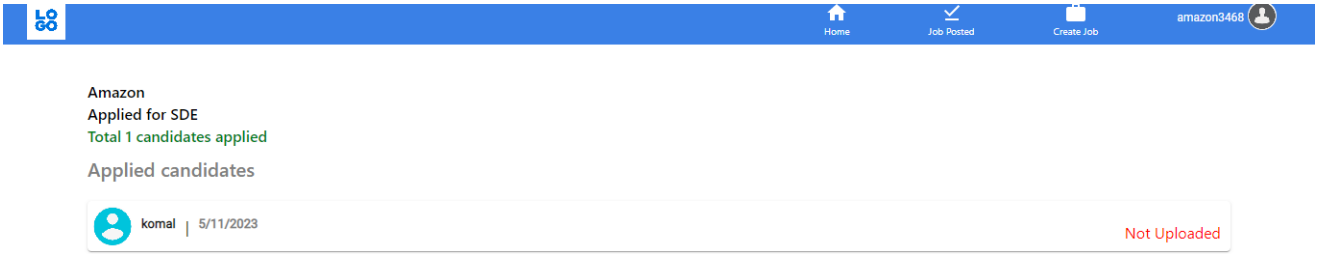

Figure 6.6: dashboard

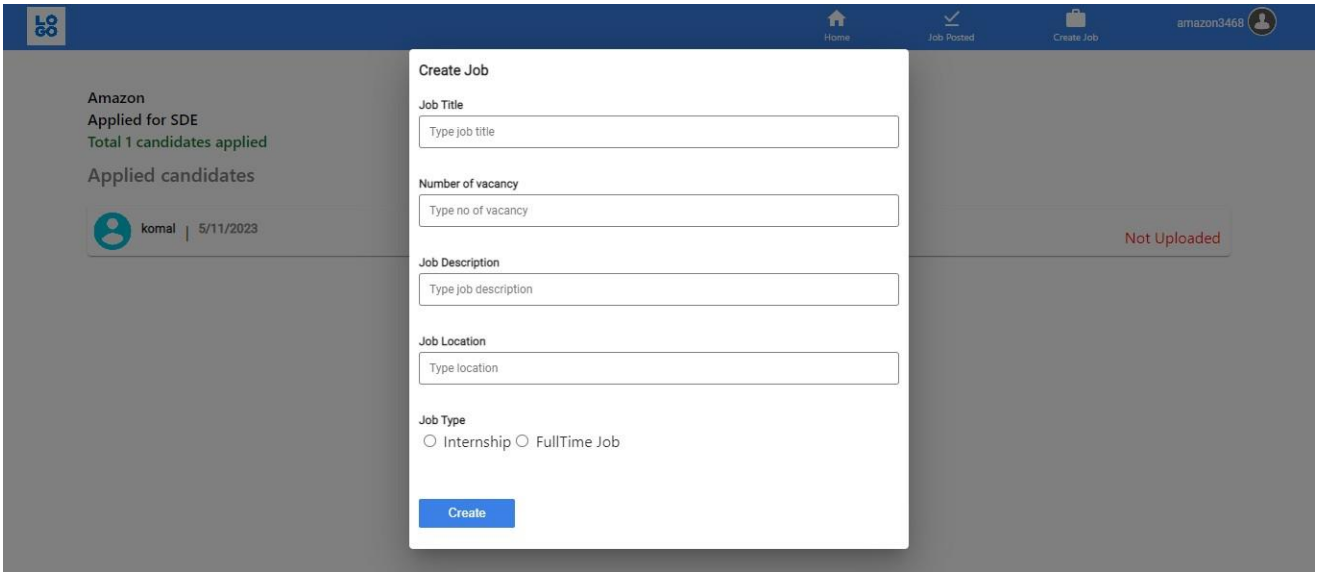

Figure 6.7: create job page

6.2 Student Section

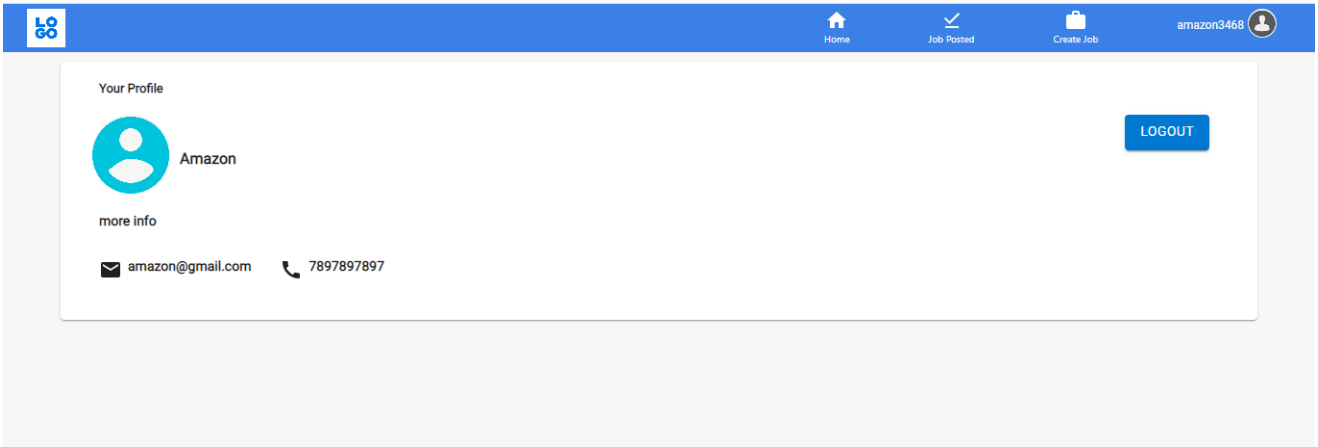

Figure 6.8: profile page

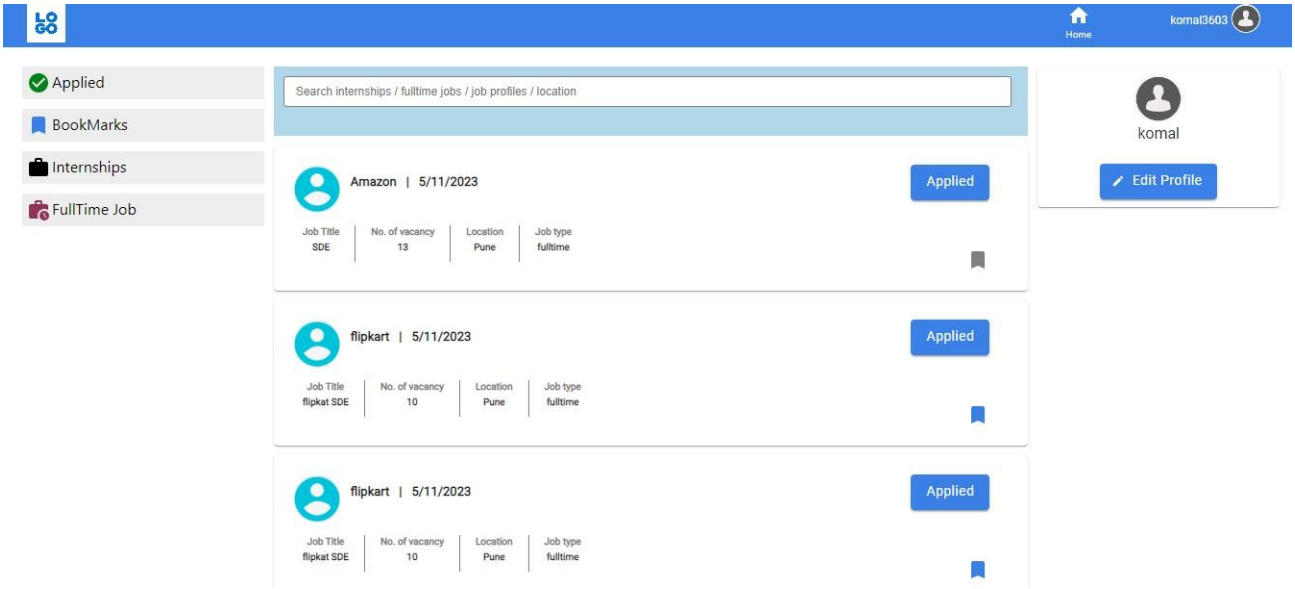

Figure 6.9: student homepage

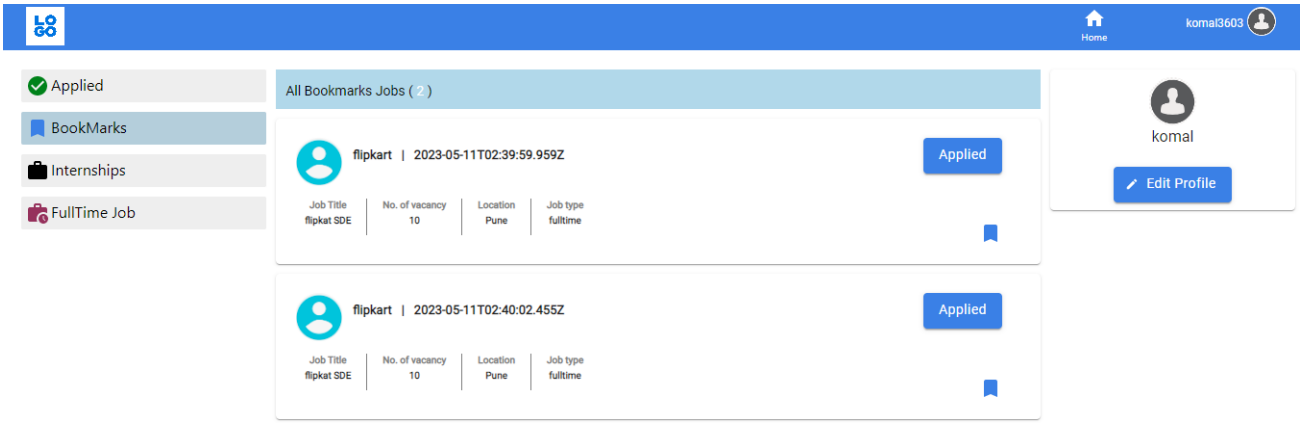

Figure 6.10: student dashboard page

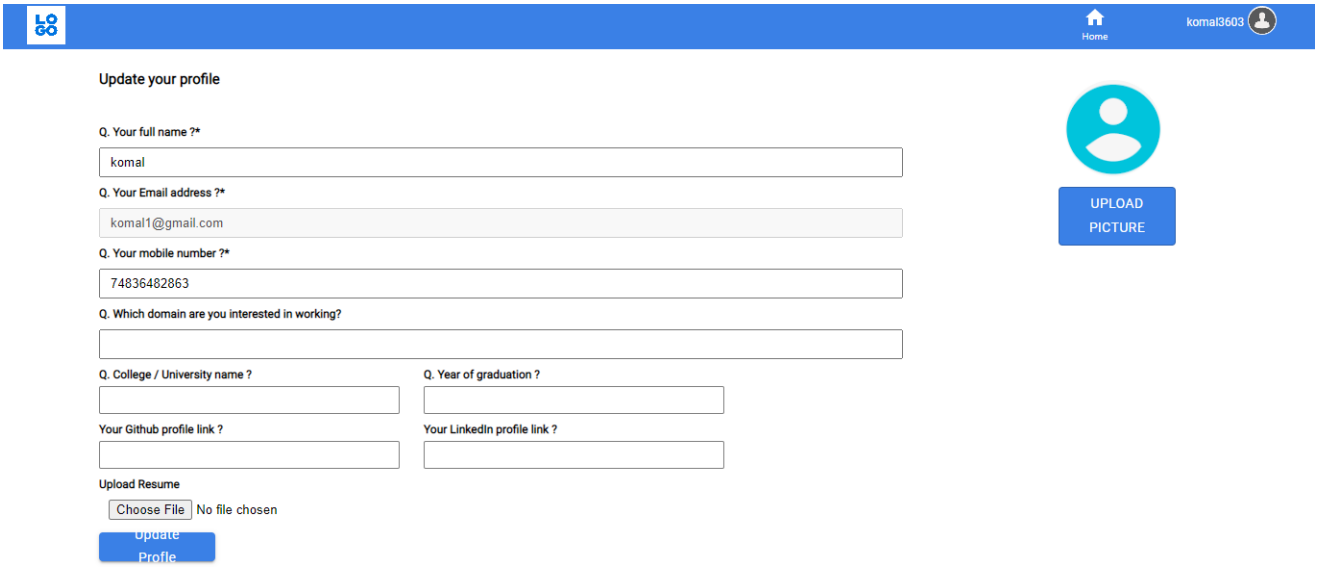

Figure 6.11: edit profile page

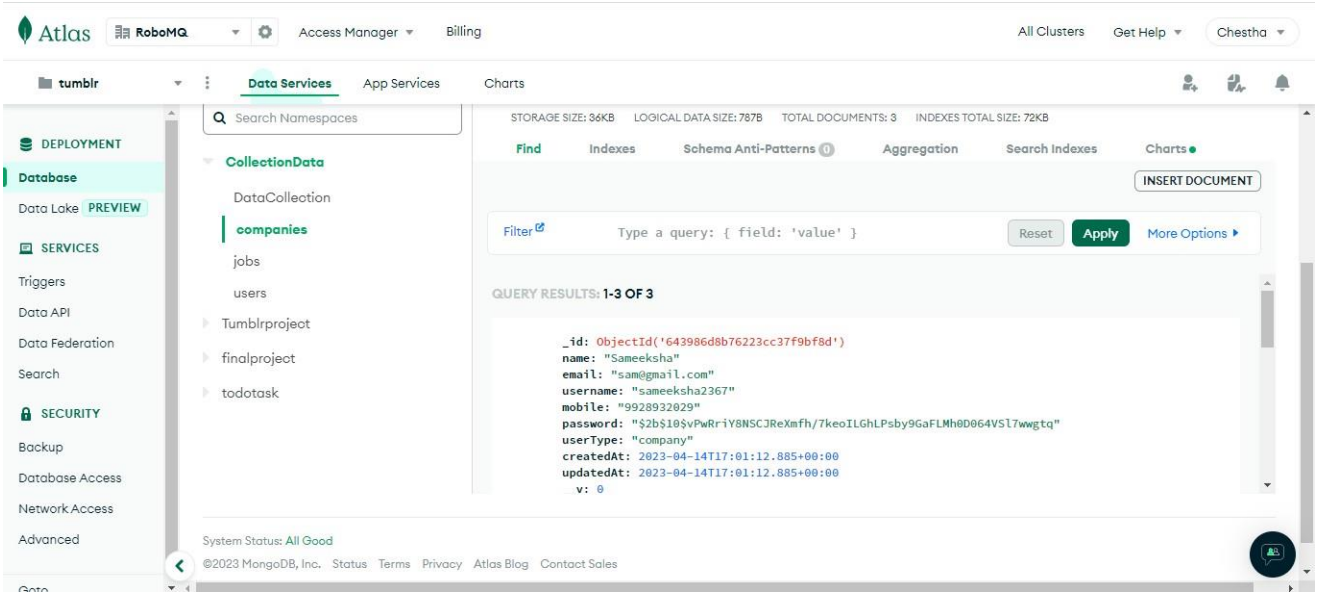

Figure 6.12: Mongodb

Chapter 7
Project Summary and Conclusion

7.1 Project Summary

Our system is user friendly. It can successfully login authorized person to sys- tem and register them. In our system company can check the Student list those eligible according to criteria given by the Company and Our system isSecure and User-friendly for all of two modules. Increasing need of comfort and inculcating all the data at one place has always been a challenging process for everybody. With the introduction of this web based training and placement portal we promise to make the lives of students and administration a little easier by proposing an alternative for the current system being used. Easy accessibility and functioning of this portal will allow easy management of the allocation process during placement period. With the increasing demand of digitalization in every aspect of day to day activities we can anticipate the great demand for such portals in the near future and the comfort it will bring with it to the lives of all. Also the rapidly increasing concerns of global warming due to increase deforestation for large amount of paper that it requires we here have a minor role to save Mother Nature. So we hope all of you can sit back and relax and enjoy the luxury of Digitalization. More so in this busy and exhausting life we are saving one of the most crucial factor that keeps us running that is human energy.

7.2 Conclusion

In conclusion, the Online Training and Placement Cell (TP Cell) is a valuable tool for connecting students with employers and providing them with the necessary training to succeed in their careers. Furthermore, the TP Cell offers a streamlined and efficient process for employers to find qualified candidates for their open positions. By posting job listings and participating in virtual recruitment events, companies can connect with talented students who are ready to contribute to their organizations. Overall, the Online Training and Placement Cell is an excellent initiative that can benefit both students and employers alike. It provides a comprehensive platform for career development, job placement, and networking that can help students achieve their goals and help companies find the best talent for their teams.

Chapter 8

Future Scope

The Online Training and Placement Cell (TP Cell) has become more important than ever in the wake of the COVID-19 pandemic, as more and more students and employers rely on virtual platforms for job searches and recruitment. As technology continues to evolve, the scope of the Online TP Cell will also expand to meet the changing needs of the industry. Here are some potential future developments for the Online TP Cell. Virtual Reality-Based Career Guidance: The Online TP Cell could leverage virtual reality technology to provide students with immersive career guidance experiences. Augmented Reality-Based Recruitment Events: Online TP Cells could host augmented reality-based recruitment events that provide students with a more interactive and engaging job search experience.

Chapter 9

References

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