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# Software Requirements Specification

## for Placement Cell

Version 1.0

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### Revision History

Name	Date	Reason For Changes	Version
Group 22	06/04/2023	-	Version 1.0
Group 22	23/04/2023	Because of bugs found in testing.	Version 2.0

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# **1. Introduction**

## **1.1 Purpose**

This platform of placement website is designed to ease the process of the current placement drive. It includes most of the functionalities that are helpful in easing up the process by the use of the current technology and managing the large database of students and companies. The placement website is a place to simplify the tasks of the placement drive. A lot of data is managed, and its usage, entry, and deletion are made simple by this form. Our stakeholders - students, placement cell members, and companies' requirements are fulfilled by using this platform for their interaction.

## **1.2 Intended Audience**

The intended audience for this srs document is:

- Developers
- Testers
- Users
  - Admin
  - Students
  - Companies
  - Placement Manager

## **1.3 Project Scope**

The software developed as the placement website is useful for the current placement drive as the key benefits of the system include reducing the administrative workload for placement cell members, increasing efficiency and accuracy in managing student and company data, and providing students with an easy-to-use platform to apply for job placements. The objectives of the system are to improve the overall effectiveness of the placement process and increase the number of successful job placements for college students.

# **2. Overall Description**

## **2.1 Product Perspective**

As the placement drive comes in any college, there are many functions to be performed and many tasks to take place, so if technology can assist in the process, it would prove really helpful. This product is developed to solve the problems of the current placement process. The product is newly developed and helps the placement process.

## **2.2 Product Features**

1. Student information management: A centralised platform for storing and managing student information such as grades, courses taken, and endorsements from faculty.
2. Secure company access: A secure login system for companies to access student information and job postings.
3. Job postings and scheduling: An online platform for companies to post job opportunities and schedule recruiting drives.
4. Online recruitment process: The ability for students to apply for job opportunities and receive updates throughout the recruitment process.
5. Company profile creation: A platform for companies to create company profiles and gather information about the students who have registered for that particular company.
6. Data analysis: A system for tracking and analysing student information and recruitment trends, allowing the placement cell to spot trends and identify areas for improvement. (Removed in Requirement Elicitation Technique)
7. User-friendly interface: An intuitive and user-friendly interface for easy navigation and use by all stakeholders.
8. Resume builder: A tool for students to create and manage their resumes, which can be available to recruiters. (Removed in Requirement Elicitation Technique)
9. Real-time notifications: A real-time notification system to keep students updated on the latest developments throughout the recruitment process.
10. Interview Scheduling: According to the interview timing, there should be a video conference call on the website at the time of an interview. (Removed in Requirement Elicitation Technique). If the student has more than one interview clashing, the system should reschedule the interviews according to the available time slots.
11. Application Timing: Students must register or deregister for the company in a limited time specified by the company.
12. Criterion: Companies should be able to add the criteria based on their needs, e.g. cpi should be greater than 7 so the students who come under the company's criteria can easily register for it.

13. Company Information: Students will be able to see all companies details that are going to visit the campus for recruitment.
14. Company filters: Students should be able to filter the companies based on their interest like roles in the company, location of the job etc.
15. Transportation/Location: Companies will be able to view various transportation options to reach the college campus.

## **2.3 User Classes and Characteristics**

We have 5 user classes:

1. *Student*  
Users seeking job opportunities through the placement cell can view job postings and apply for positions.
2. *Admin (Placement Committee Members)*  
Users responsible for coordinating the placement process and communicating with companies and students.
3. *SuperAdmin (Placement Manager)*  
Users who have the ability to manage and configure the website, such as adding or removing companies and job postings.
4. *Company*  
Users who represent companies interested in recruiting students through the placement cell can post job opportunities.
5. *General/Viewer*  
One who is new to the website and visits the website just for viewing it and getting information about placements at DAIICT.

Characteristics for each user class:

1. Student
  - Level of access: Students would have access to view job postings and apply for positions through the placement cell website.
  - Technical expertise: Students may have varying levels of technical expertise and familiarity with the website, so it should be designed to be user-friendly and easy to navigate.
  - Role within the organisation: Students are the primary users of the placement cell website, and its main purpose is to facilitate their job search process.

- Frequency of use: Students may use the placement cell website frequently during their job search process to view new job postings and track their applications.
2. Admin(Placement Committee members)
- Level of access: Admins would have access to manage job postings and communicate with companies and students.
  - Technical expertise: Admins would be expected to have a good understanding of the website and its features.
  - Role within the organization: Admins would be responsible for coordinating the placement process and facilitating communication between companies and students.
  - Frequency of use: Admins may use the website frequently to manage job postings and track student applications.
3. SuperAdmin (Placement Manager)
- Level of access: Super Admin would have the highest level of access to the website, including the ability to manage and configure its settings.
  - Technical expertise: Super Admin would be expected to have a high level of technical expertise and familiarity with the website and its features.
  - Role within the organization: Super Admin would be responsible for managing and maintaining the placement cell website.
  - Frequency of use: Super Admin may use the website frequently to monitor its performance and make any necessary updates or changes.
4. Company
- Level of access: Companies would have access to post job opportunities and view student applications through the placement cell website.
  - Technical expertise: Companies may have varying levels of technical expertise and familiarity with the website, so it should be designed to be user-friendly and easy to navigate.
  - Role within the organization: Companies are external users who interact with the placement cell website to recruit students for job opportunities.
  - Frequency of use: Companies may use the placement cell website frequently during their recruitment process to post new job opportunities and review student applications.
5. General User / Viewer
- Level of access: Users won't have access to website functionality except registration.
  - Technical expertise: The technical expertise of the user is assumed to be zero as the user is completely new to the website and has visited the site to know more about it.
  - Role within the organization: They are the external users who would like to know about the placements at DAICT.

- Frequency of use: They may use the website once or twice as it is used just to know more about the functioning of placements at DAIICT.

## 2.4 Operating Environment

1. The website will be designed to run on a Node server engine that supports the required programming languages and frameworks.
2. The website will require a NoSQL database management system such as MongoDB to store user data and job postings.
3. The website must integrate with external services, such as email providers, to enable admins to perform necessary actions.
4. The website will need to be secured using appropriate security mechanisms, such as encryption, regular security audits like password encryption of users, etc.
5. The website's development and maintenance will require a development environment, including a code editor, a version control system, and a testing environment. The deployment process will require a continuous integration/continuous deployment (CI/CD) pipeline to ensure smooth and error-free releases.

## 2.5 Design and Implementation Constraints

**Database:** We have used basic level of MongoDB database which gives us 500MB storage for the web application. This restricted us in collecting every user's resume file. Thus we ask user to input the link of the resume. For more data, we have to pay a certain amount to buy the storage of database.

**Nodemailer:** We have used nodemailer to send user real-time notifications when a job is posted. This slows down the process of the email notification and we can only email certain number of users.

**Host Portal:** We have hosted our website on free onrender.com platform. This can lead to limited users on the platform.

## 2.6 Assumptions and Dependencies

### Assumptions:

1. The website will be used to connect job seekers with potential employers for full-time, part-time, and internship positions.
2. Users will be able to create accounts, upload resumes, and apply for jobs through the website.

3. Employers will be able to create accounts, post job openings, and review resumes and applications through the website.
4. The website will need to be compatible with major web browsers.
5. The website will need to comply with relevant laws and regulations, such as those governing user data privacy and job advertising.

**Dependencies:**

1. The website will require a database to store user information, job postings, applications, student registration, and company registrations.
2. The website will need to integrate with third-party services, such as email providers.
3. The website will need to be hosted on a reliable and scalable web hosting platform to ensure high availability and performance.
4. The website will need to be developed using appropriate web development tools and technologies, such as HTML, CSS, JavaScript, and a web framework like Node.js and Express.js.



### **3. Functional and Non-Functional Requirements**

#### **3.1 Functional Requirements**

1. The system should be able to manage and store all the student information.
2. There should be a registration system for the companies through which they register themselves and get access to students' information and placement cell.
3. The Companies or Admin should be able to schedule the interviews and placement process, like tests etc, according to the student's schedule.
4. Easy access for companies to students' information.
5. Students should be able to register and deregister for various companies.
6. Criteria (such as CPI limit) for company registration can be set easily on the system.
7. The students should not be able to apply for the company until the admin approves the registration.
8. Students are notified when new companies come on campus for the recruitment process.
9. The registration opening time and closing time for a company can be set.
10. Company can create its profile and add information about job requirements, posting and package.
11. Students who have applied to various companies receive their performance analysis based on the rounds they have successfully completed till date.
12. Resume builder helps and guides the students to properly build their resumes.
13. Real-time notifications/emails keep the recruitment process easy for everyone.
14. Contact details about the placement cell and its members are provided on the site.
15. Students should be able to filter the companies according to their eligibility and interest.
16. There should be a feedback system for students to know user requirements.

#### **3.2 Non-Functional Requirements**

1. **Authentication** - While registering for the company the system/admin must authorize and validate the student credentials.
2. **Scalability** - The system will be used by a huge number of student as well as companies, so it must adapt to handle such a high number of users
3. **Reliability** - The database must be kept up to date so that it doesn't display companies which are not currently recruiting. This will ensure that the students can only apply for the companies that are currently recruiting and those for which the students are eligible .
4. **Maintainability** - The web application should have the capability of modifications and updates so that the technology used does not get outdated too quickly It can be easily updated even if the developer team of the website changes after the deployment of final product
5. **Compatibility** - The website should be able to run on latest versions of browsers and some older ones.

6. **Usability** - The UI/UX of the website should be simple yet elegant so that students can filter companies according to their choice and perform other actions easily, without any special training. User comfort and easy interaction with the website should be ensured.
7. **Accuracy** - The information that is recorded about the companies and the students that are registered for particular companies must be accurate, reliable, and consistent.
8. **Security** - Credentials of the user should not leak in a data breach anyway, as it is a privacy concern.

## 4. Use Cases

1. Post Job
2. Schedule
3. View Student Details
4. Send Notification
5. Prepare datasheet
6. View company details
7. Apply for jobs
8. Filter the companies
9. Manage profile
10. Download previous year company list
11. View placement statistics

## 5. Use Cases Descriptions

### 5.1 Post Job

- Actors: Company, Placement-Manager
- Goal: To enable the companies to post jobs.
- Pre-conditions:
  - The Company must be registered with the system and have a unique login Id.
- Description:
  1. The company logs into the system using their login Id.
  2. The company selects the "Post Job" option.
  3. The system presents a form for the company to enter details about job opening, such as job title, job description, package, criteria if any and application deadline.
  4. The company fills in the required fields and submits the job posting to the system.
  5. The system saves the job posting and displays it on the "Companies" page of the system, where it can be viewed by the students.
  6. The company can later edit or delete the job posting as needed.
- Exceptions:

4.a. If the company leaves any required fields blank, the system prompts the company to fill in the missing information before submitting the job posting.

- Post-conditions:
  - The students should get notified that the company has posted a job.

## 5.2 Schedule

- Actors: Company, Admin
- Goal: To enable a registered company to schedule an assessment test for applicants who have applied to their job opening.
- Pre-conditions:
  - The company must be registered with the Placement Cell system and have a unique login ID.
  - The company must have posted a job opening on the Placement Cell system.
  - The job posting deadline must have passed, and students must have applied for the job opening.
- Description:
  1. The company logs into the system using their login id.
  2. The company selects the "Schedule" option.
  3. The company enters the date, time, and location for the assessment test.
- Post-conditions:
  - Company should be able to successfully see its schedule after filling in details.

## 5.3 View Student Details

- Actors: Company
- Goal: To enable the company to view the details of a student's profile on the placement cell website.
- Pre-conditions:
  - Company must be logged in to the system.
- Description:
  1. When the company is logged in to their account on the placement cell website, they should be able to view a list of the students who have registered for the company.
  2. The company can select any student from the list.
  3. Once they have selected a student, they should be able to view the details of the student's profile.
- Exceptions:
  - 1.a. If the company has not logged in to the account, they can't see the details of the students registered for their company.
  - 3.a. If there are technical issues with the website, such as slow loading times or broken links, the company representative may not be able to view the student's profile.

3.b. The company can only see specific details of the student like name, student id, cpi, resume etc. The company can not see the list of companies the student has registered for and the contact details of the student.

- Post-conditions:
  - The company can analyze the student data available on the profile and may shortlist the student for the further process.

## 5.4 Send Notification

- Actors: Admin
- Goal: To send notification to every user of new sessions or events , or any new job posts.
- Pre-conditions:
  - System should have to update with new information.
  - The user must be logged in.
- Description:
  1. When the system updated with new sessions, new job posts or any other activity.
  2. Administrator must send a notification to user through e-mail as soon as an update of any information.
- Exceptions:
  - 1.a. The message will loss due to a system crash or any other case of internet issue, in this case the message will not reach to users.
- Post-conditions:
  - The notification will be shown to the user in the email notifications section.

## 5.5 Prepare Datasheet

- Actors: Admin
- Goal: To prepare a datasheet of users and jobs.
- Pre-conditions:
  - Admin must be logged in.
- Description:
  1. Admin will collect data from the database and create a datasheet about user details like name, mobile number, email address, CPI details, reference resume details, and backlog details.
  2. Admin will create a datasheet about job details like the company's name, package details, posting location, selection process, and reference to job details.
  3. Admin will create a datasheet about candidates hired by the company with their package details.
- Post-conditions:
  - An authorized person can see the details presented in datasheets.

## 5.6 View Company details

- Actors: Student, Admin

- Goal: Show list of companies to the user.
- Pre-conditions:
  - Students and Admin must be logged in.
- Description:
  1. Students can check the companies which have come for the placements.
  2. Admin can view all the details about the companies which have come for placements including HR details etc.
- Exceptions:
  - 1.a. If anyhow the database failed to connect then the student must retry.
  - 2.a. As same as 1a.
- Post-conditions:
  - Students can choose and apply for the company in which (s)he are interested in.

## 5.7 Apply for Jobs

- Actors: Student , Admin
- Goal: To make students apply for a job posted by a registered company on the System.
- Pre-conditions:
  - The student must be registered with the Placement Cell system and have their details approved by the admin.
  - The company must be registered with the Placement Cell system and have posted a job opening.
- Description:
  1. The student logs into the Placement Cell system using their unique ID and password.
  2. The student selects the "Apply for Job" option from the menu.
  3. The system presents a list of all the job openings posted by registered companies.
  4. The student selects the job opening they wish to apply for.
  5. The system displays the job opening details, including the job description, criteria, and application deadline.
  6. The student confirms that they meet the required criteria for the job opening.
  7. The student submits their application by providing their resume and any additional requested information.
  8. The system confirms that the student has applied for the job opening.
- Exceptions:
  - 2.a. If the student tries to apply for a job before their details have been verified and approved by the admin, the system notifies the student that they are not yet eligible to apply for jobs.
  - 6.a. If the student doesn't meet the criteria provided by the company, the system notifies the student that he is not eligible for that job.
- Post-conditions:
  - Students can see his/her application.

## 5.8 Filter the Companies

- Actors: Students
- Goal: Students can register in the companies based on the job location, package etc.
- Pre-conditions:
  - Students must be logged in to the system.
- Description:
  1. Students will have a choice for the companies based on their preference like job location, package offering, categories, register end date, role in the company etc.
- Post-conditions:
  - Students will have an accurate choice on the company selection so s(he) have the better. opportunities.

## 5.9 Manage Profile

- Actors: Student, Admin
- Goal: To manage your student profile information.
- Pre-conditions:
  - The student has logged in to the system
- Description:
  1. The student goes to 'my profile' option .
  2. The system displays his/her profile.
  3. The student selects the edit option.
  4. Student makes the required changes to his profile.
  5. The student saves the changes made and sends his profile for approval.
  6. Admin checks the validity of the profile.
  7. Admin approves it and profile status is shown as approved to the student.
- Exceptions:
  - 6.a. Admin disapproves the profile and the system shows profile status as disapproved to the user.
- Post-conditions:
  - Valid changes made to the profile will be accepted by the admin.

## 5.10 Download Previous Year Company List

- Actors: Student, Visitor
- Goal: Get the list of the companies that visited the campus last year.
- Pre-conditions:
  - The Student should be logged in to the system.
- Description:
  1. The Student goes to the Companies section of the system.
  2. The student finds the previous year companies option and downloads the list of companies from there.

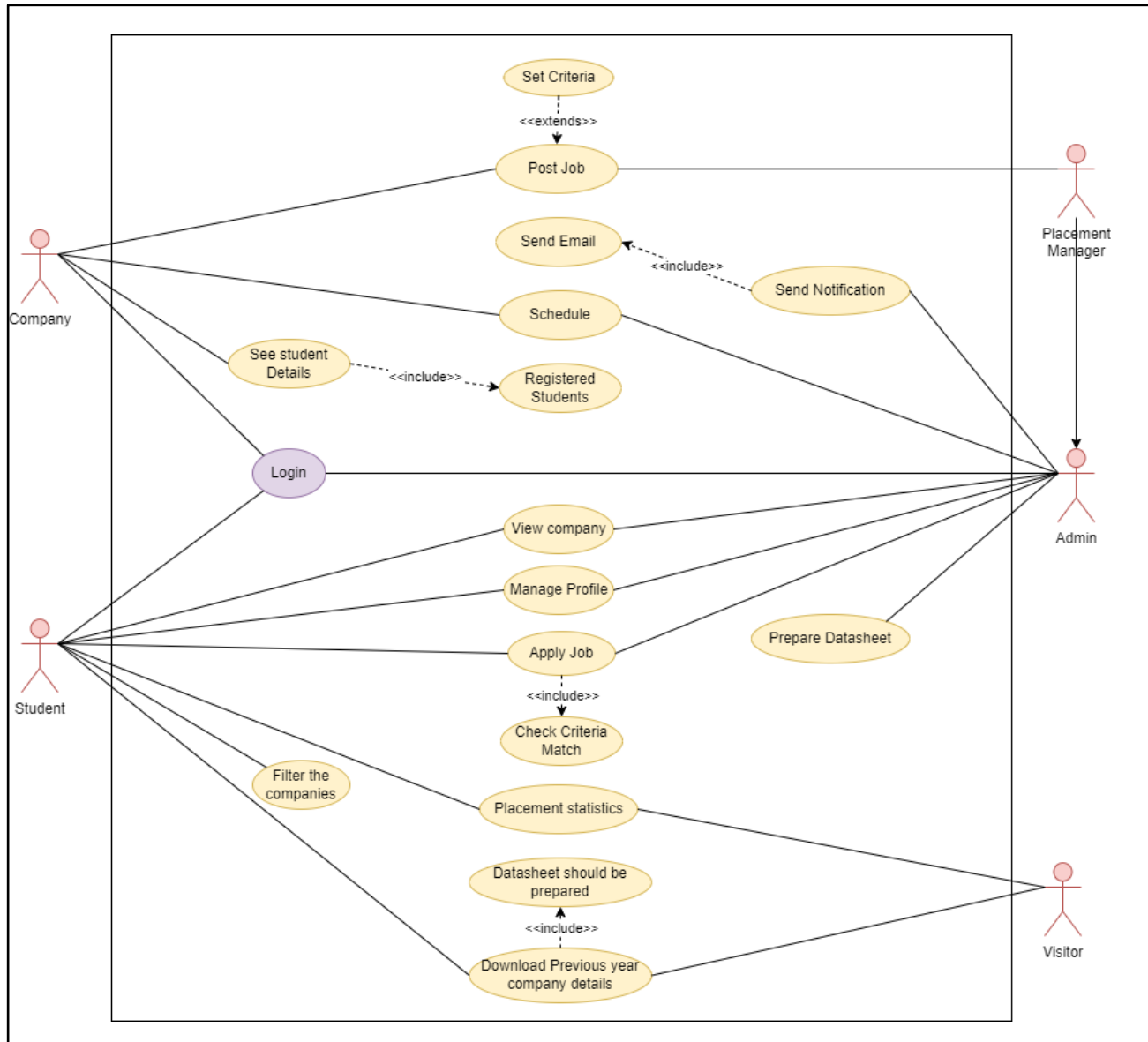
- Post-conditions:
  - Students get the excel sheet of the list of the previous year companies and their offers.

## **5.11 View Placement Statistics**

- Actors: Visitor, Student
- Goal: Show placement statistics to user
- Pre-conditions:
  - Details about placement statistics must be updated.
- Description:
  1. User goes to the “view placement statistics” section.
  2. User asked to choose a year.
  3. According to the user input display result.
- Exceptions:
  - 3.a. There might be a case that , for a given input year data has not been updated / uploaded.
- Post-conditions:
  - Users should be able see overview of placement statistics

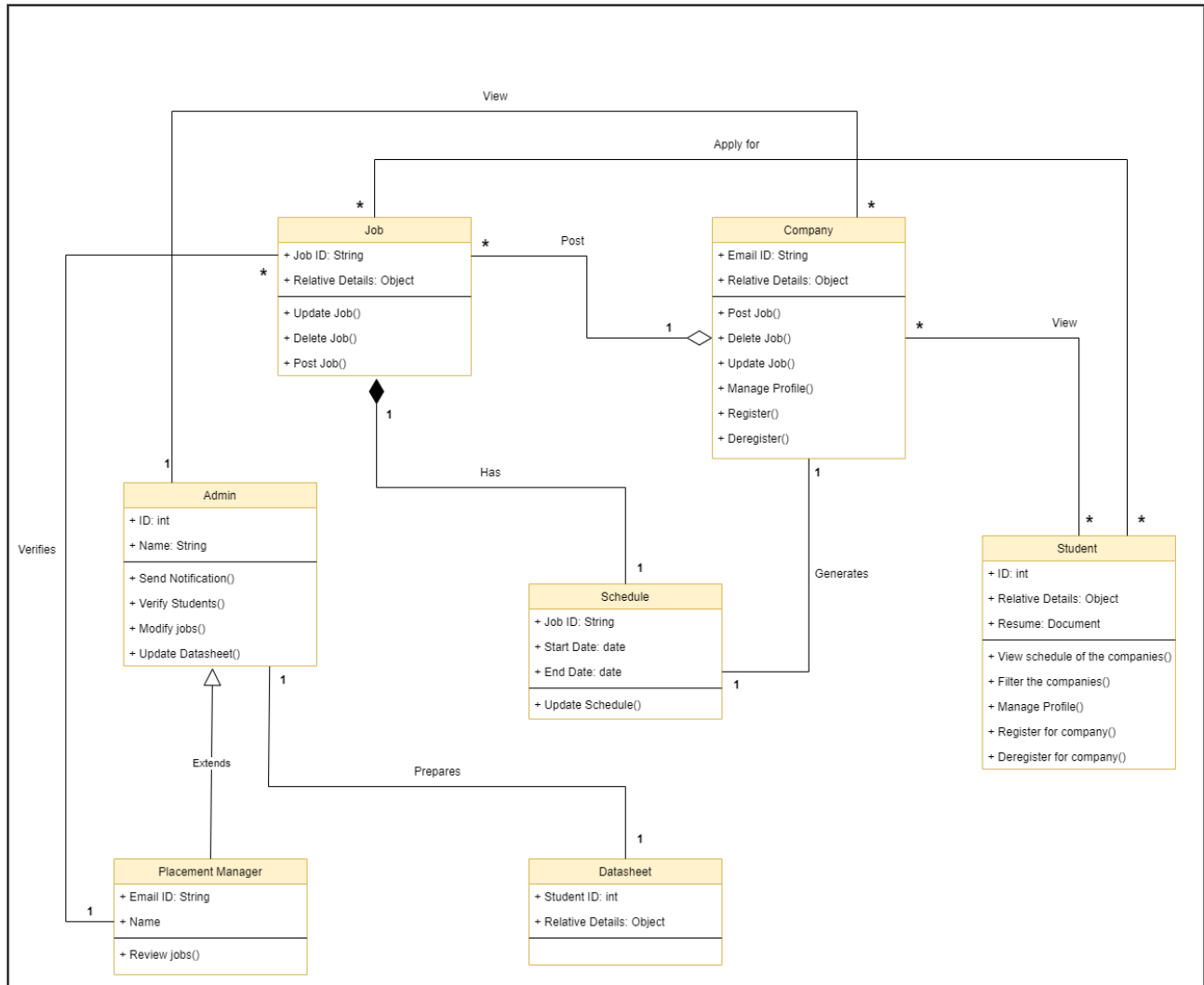
## Appendix A: Analysis Models

### Use Case Diagram





## Class Diagram



## Sequence Diagram

