Software Requirements Specification

for

Online Placements Information Gathering System (OPIGS)

Version 1.0 approved

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23rd March 2023

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1.Introduction

1.2 Purpose

This project aims at delivering an application to help the placement department of college, students and the recruiters to ease the placement process. The digitization of processes helps greatly reduce the load on resources and time consumed in performing a given operation. The information then becomes easily available to the stakeholders who can access and provide information to interact and carry out the placement process using any personal computer. Also many of the processes like organizing the data gets automated and as a result the system becomes extremely cost effective.

1.3 Document Conventions

The following standards document conventions are used in our document:
"A.5 Template of SRS Section 3 organized by feature"-from Annex A, IEEE STD 830 -1998, IEEE Standard for Software Requirement Specification.
The Use-Case diagrams and Class Diagrams provided can be used by technical personnel to understand the design of the product in a graphical manner.

1.4 Intended Audience and Reading Suggestions

This document is intended to assist the users when they use the software and for developers and the project managers to plan their project and implement the software required. As per guidelines, the document has been segregated to the following sections.
Section 1: Introduction: A brief overview
Section 2: Overall Description: A detailed description of the different functionalities we have implemented, the user classes, operating system requirements and the constraints and dependencies.
Section 3: External Interface Requirements A brief introduction to user, hardware, software and communications interfaces.
Section 4: System Features: Detailed functional requirements of different features.
Section 5:Other Nonfunctional Requirements: List of non-functional requirements
Section 6:Other Requirements

1.5 Product Scope

The software will ease the placement process for the college's placement department, students, and recruiters. It aims to provide notifications to students regarding ongoing or upcoming placement opportunities, display information about various companies and their recruitment policies, and provide a platform for students to upload their resumes.

Additionally, the system will allow the institute's alumni to share feedback about their work experiences with various companies and provide a platform for interested students to contact them for further information. The project's scope is focused on streamlining the placement process, providing valuable information to students, and connecting them with potential employers.

1.6 References

We have referred to the following sources:
IEEE STD 830 -1998, IEEE Standard for Software Requirement Specification.
https://www.djangoproject.com/ (official Django documentation)
https://online.visual-paradigm.com (for use case and class diagrams)

2. Overall Description

2.1 Product Perspective

The aim of this project is to create a digital solution for the placement process in institutes, as the manual pen-and-paper process is inefficient and susceptible to human error. The goal is to develop software that can store and retrieve relevant data of users automatically, eliminating the need for large teams to manage the placement process.
As a result of this the placement process can be carried out faster and without the need for excessive technical expertise owing to the user friendly nature of the product.

2.2 Product Functions

1. *The platform allows different users, such as students, alumni, company admins, and institute admins, to register or log-in via the respective login pages and access specific functionalities.*
2. *Students can upload their resumes, mark the necessary preferences and provide other relevant information.*
3. *Alumni can provide feedback about their work experiences, the benefits of working with a given establishment. They can provide tips to the students and reveal the various challenges students can face in the given institution.*
4. *Company admins can enter their company details, the details of their recruitment procedures and information about their recruitment officers.*
5. *Institute admins can enter notifications related to placement proceedings.*
6. *Students can view various notifications, company details, and alumni feedback to keep themselves informed.*
7. *Company admins can browse through uploaded resumes to assess the quality of students in the institute.*
8. *The software should also send notifications to students about upcoming recruitment opportunities suitable for them.*
9. *The product will also notify the administrator about any company trying to contact the college for placement purposes.*
10. *The software can verify the authenticity of recruiters to prevent fraud.*

2.3 User Classes and Characteristics

• Student

– Create account with login credentials(name, email, contact number, roll number).
– Choose placement profiles and upload multiple resumes according to job profiles after login.
– Can upload a profile picture after login.
– See different company details
– Get notifications on various placement opportunities, announcements by institute admins and .

• Alumni

– Create account with login credentials(name, email, year of graduation).
– Can give feedback to students based on their resumes and the companies to which the student is applying
– Contact interested students.

• Company Admin:

- Enter the company details.(name of the company, company admin)
- View resumes of different students
- Select different students based on their eligibility and inform them about the same
- Upload announcements related to recruitment and selections

• Institute Admin:

- View the companies contacting the college for placement, the students and alumni who have registered on the server.
- Verifies the recruiter and checks whether they are genuine or not.
- Releases announcements that the students and other entities will get notified about.
- Block access to chosen students, alumni or companies if any malpractice is noticed.

2.4 Operating Environment

The platform can be accessed on any web browser over the internet on any computer regardless of operating system. The Placement Portal will retrieve all the information from a server through which it can access the database maintained at the server.

2.5 Design and Implementation Constraints

• Institute admin has to manually verify the recruiter credentials and grant them access to the interface.

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2.6 User Documentation

User documentation, including basic installation procedures, would be available on the README of the repository as well as on the deployed platform.

2.7 Assumptions and Dependencies •

■ • Assumptions:

− Institute Admin will have access to the central database.
− Only Institute admin can modify a record.
– At the start of a placement season, the Institute Admin has to provide a data sheet containing verification credentials of all the students.

■

■ • Dependencies:

■ – Python: Version 3.9.13
■ − Django: Backend Framework (Version 4.1.7)
■ − Sqlite3: Database
■ − HTML5, CSS, Bootstrap, JavaScript, jQuery: Frontend

3. External Interface Requirements

3.1 User Interfaces

• Student-Interface:

–Separate login and registration pages for the respective actions

On the login page they can:
– Personalize their login page by adding a profile picture.
– Upload professional details like one curriculum vitae for each profile choice and contact information.
– View the companies that have been verified by the institute admin, based on the respective

profiles.
– Apply to the companies and thus make the resume they choose available to the respective company admins.
– Read the feedback sent by the alumni and contact the alumni using the contact information available.
– Contact admins who have worked on the companies to which the student has applied
– Get notifications on various placement opportunities, announcements by institute admins and alumni feedback on the notification panel.

• Alumni

–Separate login and registration pages for the respective actions

On the login page they can:

– Personalize their login page by adding a profile picture.
– View the students who have applied to the same company to the same profile with which they themselves are associated
– Select a student and view their curriculum vitae and provide feedback based on it.
– Interact with the students who contact them over the platform.

• Company Admin:

–Separate login and registration pages for the respective actions

On the login page they can:

- Upload certificates to help the institute admin verify the authenticity of the company officials.
- View resumes of different students who have applied to the company
- Select different students based on their eligibility and inform them about the same.
- Issue announcements related to recruitment and selections that will reach the students after being approved by the institute admin.

• Institute Admin:

–A login page which they can access using admin credentials provided to officials of the institute

On the login page they can:

- View the companies contacting the college for placement, the students and alumni who have registered on the server.
- View the recruiters who create a portal on the website and grant them access to the resources by validating them
- Releases announcements that the students and other entities will get notified about.
- Review the announcements sent to them by the companies and release the same as a notification.
- Rescind access from chosen students, alumni or companies if any malpractice is noticed.

3.2 Hardware Interfaces

It can run on any Operating System on any commonly used computing device like a personal computer, tablet or smartphone. It has to be accessed over the internet and has minimal processing requirements needed to open different websites.

3.3 Software Interfaces

The software interfaces are based on the following:

•Student database: The database will store important details about every student, such as their name, roll number, uploaded CVs, selected profiles, and other essential personal information.
•Alumni database: This would contain basic details of alumni such as name and year of graduation, company with which he/she is associated, feedbacks issued and other personal information.
•Company database: This database would contain all information about companies registered. Name, profiles offered, students who applied to the company, students who were selected, and the validity of the company (as determined by the administrator).
•Announcements database: The database would allow the institute admin to create and publish notifications which would be visible on the students' pages. The announcements issued by companies also go here after being validated by the institute admin.
•Chat database: The purpose of this database is to store feedback provided by alumni to students. It will include information such as the alumni's roll number and name, the student's roll number and name, the feedback given.

3.4 Communications Interfaces

•Communication over chat: A communication interface has been set up which can enable alumni and students to interact.

•Internet-protocols: HTTP standard has been used while deploying the given page.

•Front End - Back End: The communication happens via the Django back-end framework.

4. System Features

The system has the following features:

4.1 Institute Administrator

- Login page:
  Stimulus/Response Sequences *:*
  - *The platform is deployed by the establishment, following which the users can start registering and using the interface.*
  - *The official of the institute logs into the server using superuser credentials to access the administrator account page*
- *Super-user privileges:* The institute administrator has access to the databases that store the platform user interfaces. This allows them to view and edit the databases for monitoring purposes
  Stimulus/Response Sequences *:*
  - *The administrator can now access all the databases and view the contents*
  - *He or she can make the modifications allowed by the interface such as deleting objects, validating companies*
  - *Issuing notices is also a feature that the institute administrator alone can do.*

4.2 Company Administrator

- Registration and Login page:
  Stimulus/Response Sequences *:*
  - *The recruiter from the company registers himself as a company administrator and uploads necessary information, documents and profiles offered.*
  - *He or she then accesses the account page by logging in*
  - *The institute administrator verifies the company's credentials upon which they become available to the students who can now apply to the profiles offered.*
  - *Change certain aspects of their credentials like address, contact information, etc*

- *Applicant selection: The company has the power to view a candidate's resume and select the candidate for shortlisting.*
  Stimulus/Response Sequences *:*
  - *The recruiter can scrutinize the curriculum vitae of the students who have applied to the different profiles offered.*
  - *Shortlisting of the candidates based on their eligibility is done by the company administrator.*

4.3 Alumni

- Registration and Login page:
  Stimulus/Response Sequences *:*
  - *The alumnus registers himself as an alumnus by providing the required information, company name and job profile.*
  - *He then accesses the account page by logging in.*
  - *Edit certain aspects of their credentials like profile picture, contact information, company name and job profile etc*
- *Feedback and Interaction with students:*
  - *Alumni can provide feedback to interested students after viewing their curriculum vitae.*
  - *Students can also choose to initiate further interactions with the alumni if they are interested via the chat interface provided.*

4.4 Students

- Registration and Login page:
  Stimulus/Response Sequences *:*
  - *The student registers himself as an alumnus by providing the required information. Optionally they can upload their curriculum vitae and profiles to which they want to apply upon registration.*
  - *He then accesses the account page by logging in.*
  - *Edit certain aspects of their credentials like profile picture, contact information, etc.*
  - *After successful logging in, the student will be asked to upload one curriculum vitae mandatorily.*
  - *In the student dashboard, there will be an option to upload multiple CVs, one for each available profile.*
- *Notification reception and feedback:*
  Students will be able to view the current notifications and the reply to the requested feedback from the alumnus.
  Stimulus/Response Sequences *:*
  - *Students can view alumni based on the companies and profiles they have chosen.They can request feedback from the alumni if the alumni has not already provided one.*
  - *After requesting feedback, students can receive feedback from alumni.*
  - *Students can also choose to initiate further interactions with the alumni if they are interested.*
- *Apply for Companies:*
  Students would be able to view a list of all companies participating in the recruitment process and can apply for companies from the portal.
  Stimulus/Response Sequences *:*
  - *There will be a dedicated section for applying to companies on the student portal*
  - *The student would be able to see a list of all companies and can see the details and description of a specific company by clicking on the Company name which will take the student to a dedicated page of that company. There will be a dedicated page for the details of each company.*
  - *The student can then apply for a company, by selecting a CV from the list of all the CVs uploaded on the portal.*

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- *The performance requirements are minimal, with the necessities needed to run an interactive website. A stable internet connection and a common web browser can run the system with ease. Most common operating systems like Windows, MacOS and Linux can handle the platform.*
- *Basic knowledge of using graphical user interfaces and handling accounts is sufficient for most of the operations required by the software.*

5.2 Safety Requirements

The following have been implemented to safeguard against frauds, cyber-attacks and other mishaps:

- *Users should log out after their usage so as to avoid unnecessary load on the server.*
- *Users should enter valid information to prevent mishaps from occurring due to misinformation.*

5.3 Security Requirements

The following have been implemented to safeguard against frauds, cyber-attacks and other mishaps:

- *Password protection: Individual accounts have passwords that can be set by the user. Passwords are checked for simplicity and users are prompted to enter more complex passwords. Password and Confirm Password fields have been added to the registration page to prevent mis-typing of the password.*
- *Separate Pages: The implementation of the platform keeps the pages for the students, alumni, company administrator and institute administrator separate to prevent mixing up of accounts and confusion.*
- *CSRF token has been used in the server, which is sent to the client-side, and mandating the client to send the token back in the request header. The server will then verify if the token from the client is the same as the one generated previously; if not it will not authorize the request.*
- *All the recruiter information is properly authenticated by the institute administrator before giving access to the portal thereby minimizing the risk of fraudulent companies recruiting students.*

5.4 Software Quality Attributes

Object Oriented Programming Practices have been followed at every step. We have encapsulated and hidden implementations that the users do not need to know. We have created separate apps to handle the different instances. Also, the steps of Rapid Application Development (RAD) Software Development Life Cycle has been followed . As a result of this we have ensured the following

- *Reduced Delivery time: Owing to working in parallel on the different aspects of the software development, me and my team members have been able to maximize productivity with minimal workforce and deliver reasonable requirements within the deadline.*
- *Continuous Involvement of the Evaluators: Delivery of a prototype after a given time period and continuous interaction with our mentor has enabled us to increase effectiveness of the product delivered while keeping our evaluators updated about our progress.*
- *Implementing changes: As a result of the RAD modeling the changes recommended by our mentor becomes easier to incorporate.*

6. Other Requirements

Graphical User Interfaces should be in effect as the application cannot perform optimally on Command Line Interfaces.

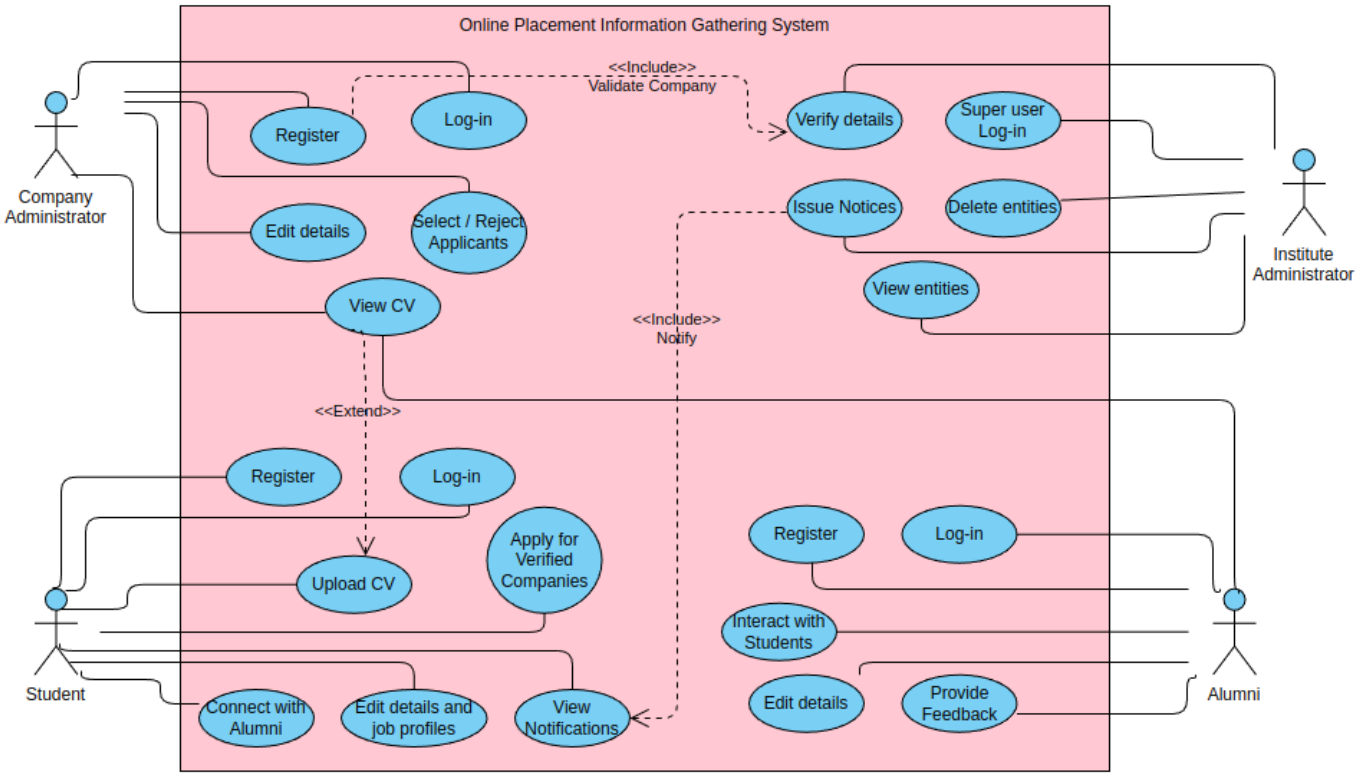
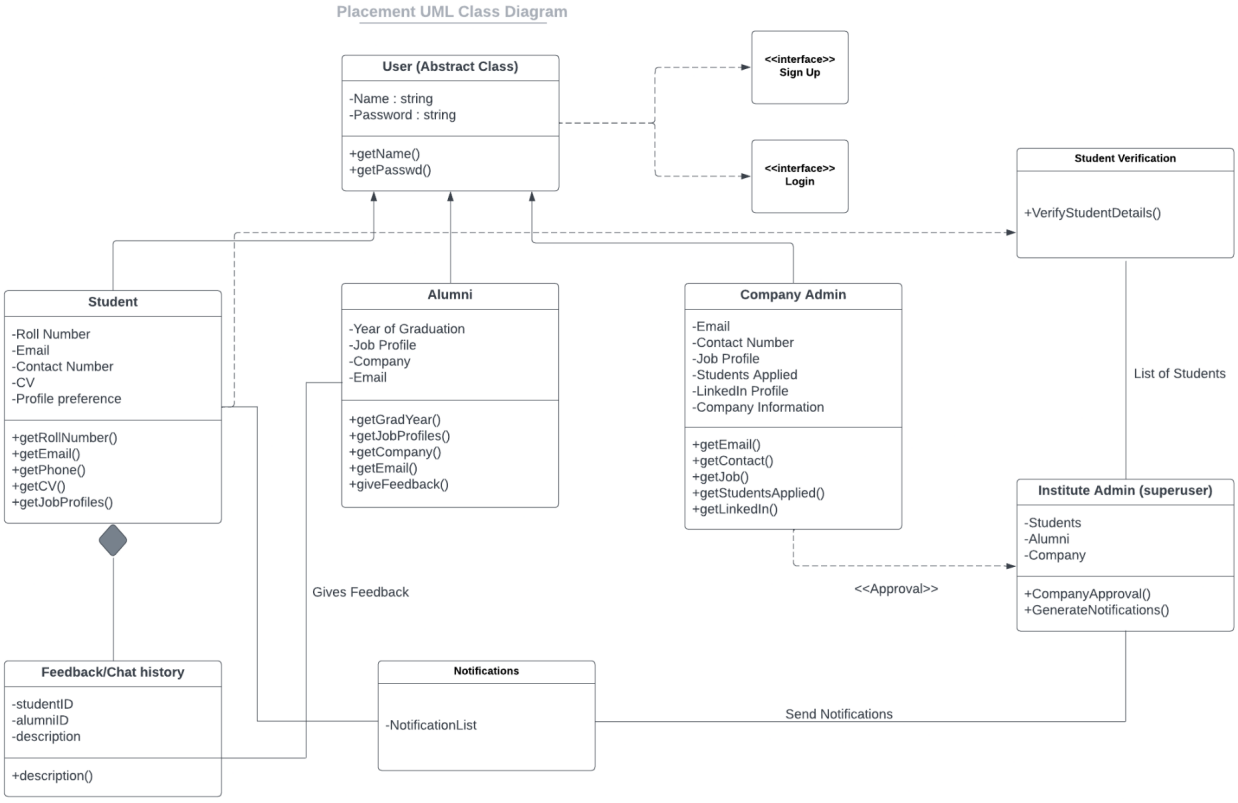
7. Appendix A: Glossary

GUI: Graphical User Interface which is a form of user interface that allows users to interact with electronic devices through graphical icons.

SRS: Software Requirements Specification, A document that completely describes all of the functions of a proposed software.

IEEE: Institute of Electrical and Electronics Engineers , the organization that monitors standards of different engineering products.

USE CASE DIAGRAM:



Class Diagram: