Software Requirements Specification

for

Online Placement Information Gathering System

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version
Initial Documentation	16/03/2022	Project Assignment	1.0

1. Introduction

1.1 Purpose

This Software Requirements Specification document describes all the functionalities supported by the software and limitations and constraints of the Online Placement Information Gathering System, developed for easing and digitalizing the entire placement process.
The project focuses on designing an Online Placement Information Gathering System for Institutes to enable companies to hire students based on their profiles and interests.

1.2 Document Conventions

- The document is written in Times New Roman Font.
- Main headings (size 18) and sub-headings (size 14) are written in bold.
- The rest of the document is written out in font size 11.
- Prior knowledge about interpreting user case diagrams is preferable for better understanding.

1.3 Intended Audience and Reading Suggestions

This document is intended for developers and admins at the Institute (as they would be having control over the central database). Students, alumni, and companies who are the primary users of the software would be mostly interacting with the frontend of the software.

This SRS contains the structure of the application as well as the software dependencies of the application, which must be present for the application to function smoothly. For reading this SRS, the reader should have a basic knowledge of Object-Oriented Programming, Web Development Frameworks (python framework Django is used), and Database Management. The reader must also have some prior knowledge about use case diagrams.

1.4 Product Scope

- PMS software aims to felicitate the placement process right from providing students an option to register themselves to providing companies an option to accept or reject applicants.
- The software provides a one-to-one interaction facility between alumni and students so that the students can get useful suggestions from their seniors.
- Students should be able to enter their essential details and should also be able to view the details of companies partitioned based on their profiles. Features like CV uploading and applying in the desired company should also be provided by the software.
- Institute admins must have control over the details of students and companies registering and should be able to delete an entity in case of suspicion. Institute admin will have access to the central database.
- Companies should be able to register themselves by entering valid details and getting approval from the institute admin. Companies should also be able to see the necessary details of the applicant.

1.5 References

Although the basic outline of the SRS was provided, other websites referred to while the making of this document
https://www.djangoproject.com/ (official Django documentation)
https://www.lucidchart.com/pages/ (for use case and class diagrams)

2. Overall Description

2.1 Product Perspective

Good placements are a dream of all. Even before a student registers himself/herself in an institute, he/she aspires for ideal placement. The placement process also reflects an institution's standard and quality. Thus, a hassle-free and systematic placement process is the target of every institute. Institutes spend a lump sum amount in maintaining a placement task force that coordinates the entire process. This process involves huge paperwork and human interference at several steps which can become cumbersome once the number of students increases.

This task force also has to arrange profiles of students according to various streams and notify them according to company requirements. If any modifications or updates are required in the profile of the students of the Company, it has to be searched and done manually.

Thus, the Online Placement Information Gathering System would replace the task of the task force and provide all these functionalities using a user-friendly interface.

2.2 Product Functions

The web portal provides the given functionalities:

a. Multiple Logins- The web portal allows login by four different entities. Students, Company Admin, Institute Admin, and Alumni can log in to the software and access the functionalities required by them.
b. Upload Resume-Students can upload their resume and these resumes can be viewed by the company to identify the quality of students in the institute and to shortlist them for selection.
c. Notifications- Institute Admin can release various notifications regarding the placement proceedings. These notifications can be viewed by the student after logging in to the software. Students will also get notified about the suitable opportunities for them through the software.
d. Alumni Feedback-Alumni can log in to the web portal and give reviews about the various resumes uploaded in the software. This feedback will be visible to the student on the software.
e. Notification to the institute admin- This software will inform the institute admin about the various companies trying to reach out to them.
f. Verification of Companies- The companies applying for recruiting students will then be verified by the institute admin and if they are genuine their name will be on the list of prospective companies hiring students.

2.3 User Classes and Characteristics

The Online Placement Information Gathering System has 4 types of users:

a. Institute Admin: Institute Admin can do the following: -
   - Get notified about the companies that are trying to contact the college for placement
   - Verifies the recruiter and checks whether they are genuine or not
   - Releases notifications for the students regarding the placement proceedings

b. Company Admin: Company Admin can do the following: -
   - Enter the company details
   - View resumes of different students

c. Student: Student can do the following: -
   - Upload multiple resumes according to job profiles
   - Can view feedback from alumni and interact with them later
   - Can view company details
   - Can read various notifications released by institute admin related to placement proceedings
   - Get to know about suitable recruitment opportunities for them

d. Alumni: Alumni can do the following: -
   - Can give feedback to students by analysing their CVs and profile.
   - Interact with interested students

2.4 Operating Environment

The software can be used by any user with access to a device with the internet. The Placement Portal will have a server from which it will retrieve all the information and the database will be maintained at the server. The software can run on any modern device which can load a modern web browser and has a reliable internet connection.

2.5 Design and Implementation Constraints

1. For now, one company can offer jobs in only one Profile, this is done to simplify the classification process of different companies, used for filtering the search results and other user-friendly features.
2. The institute admin is expected to maintain the software and database.

2.6 User Documentation

All user documentation, including basic tutorials, would be made available via the README of the repository. The same information would also be available on the deployed application.

2.7 Assumptions and Dependencies

- **Assumptions:**

– Institute Admin will have access to the central database.
– Only Institute admin can delete an entity.
– At the start of a placement season, the Institute Admin has to provide a list of all the students and their email IDs and Roll number used for verification purposes.

- **Dependencies:**

– Django: Backend Framework (Version 3.1.13)
– Django-widget-tweaks: Version 1.4.8
– Pytz: Version 2020.1
– Sqlite3: Database
– HTML5, CSS, Bootstrap, JavaScript, jQuery: Frontend

3. External Interface Requirements

3.1 User Interfaces

Institute Admin Interface: After the login of Institute Admin, a Portal will be displayed through which one can,

- View the list of all Students, Companies, and Alumni.
- Approve the new Companies, trying to offer jobs for the institute's students.
- Post important notices on the Notification Panel, which is visible to all Students.
- Add and delete a student, alumni, or company in case of misconduct.

Student Interface: After the login of a Student, a Portal will be displayed through which one can,

- View the list of all available Companies.
- Upload Multiple CVs, one each for different Placement Profiles.
- Get feedback on the CVs and profiles, from the Alumni.
- Apply for Companies by selecting one CV, from the list of uploaded CVs.
- View the notification panel for the latest updates.

Company Admin Interface: After the login of Company Admin, a Portal will be displayed through which one can,

- View the details of the students that have applied for a Job in the Company.
- Shortlist Students based on CVs and get the contact details of the shortlisted students for further rounds of the Placement Procedure.

Alumni Interface: After the login of Alumni, a Portal will be displayed through which one can,

- View the details of all the students that are sitting in the Placement Procedure.
- Can give feedback to individual students on their CVs and how to improve the chances of their shortlisting.
- After the feedback, have a direct one-to-one conversation with that student on the portal itself.

3.2 Hardware Interfaces

Since the software is a web application, it only requires a basic hardware interface such as a laptop, mobile, or computer where the user can run the software.

3.3 Software Interfaces

5 databases would be maintained:

- Student database: This database would contain essential information about all students. Their name, roll number, list of CVs uploaded, list of profiles chosen, and other basic personal information will be stored here.
- Alumni database: This database would contain basic details of alumni such as name and roll number.
- Company database: This database would contain all information about companies registered. Companies' names, profiles supported, the description would be stored here.
- Chats database: This database is maintained to store the feedback given by an alumnus to a student. This would contain alumni roll number, alumni name, student roll number, student name, and feedback given.
- Notification database: this database would enable the institute admin to post notifications that would be displayed on students' pages.

3.4 Communications Interfaces

- User - Front End: The user can access the front-end UI through a modern web browser.
- Front End - Back End: This communication happens via the Django framework.
- Back End - Database: The backend communicates with the database with the help of the Django framework.
- Student – Alumni: Students and alumni can interact with each other

4. System Features

The system is broadly divided into 4 categories namely:

- Institute admin
- Student
- Alumni
- Company admin

Individual features of the above categories are listed below:

4.1 Institute Admin:

- **Access to central database:**

  Institute admin being the superuser will have the ability to add, delete or modify registered account details as per requirement. The admin will also be able to view and monitor the central database.

Response Sequence:

1. Institute will open the portal and go to the Institute admin login page.
2. By entering the superuser username and password the admin can log in.
3. Upon logging in the admin would be able to view, add and delete students', companies, and alumni's accounts.
4. Individual details of each entity would be displayed on the admin portal.
5. The admin can change an entity by clicking the entity and then either modifying or deleting the entity.

- **Post notifications:**

  Institute admin should be able to post notifications regarding upcoming events and other necessary information. These notifications would be displayed on the student's page.

Response Sequence:

1. Institute will open the portal and go to the Institute admin login page.
2. By entering the superuser username and password the admin can log in.
3. Admin will find a label named notification. The admin can click this button and add a notification by clicking on add button.
4. Once the admin saves the notification, it would be automatically posted on students' sites.

4.2 Student:

- **Sign up and CV upload:**

  The student would be able to enter their essential details and register themselves into the portal and Upload their CV onto the portal for participating in the placement process.

  Response Sequence: -

1. The student will open the portal and go to the Sign-Up section and register themselves as a student by filling up essential information.
2. After successful verification, the student will be asked to upload one CV mandatorily.
3. Once the CV upload is done, the student will be redirected to the Login Portal to login and move to the Student dashboard.
4. In the student dashboard, there will be an option to upload multiple CVs, one for each available profile.
5. Students can also edit the profiles they want to apply for in the placement process.

- **View Notifications and Feedback:**
  Students will be able to view the current Notifications and the reply to the requested feedback from the alumnus.
  Response Sequence: -
  1. On the student dashboard, there will be a Notification Panel, which will show the latest Notifications from the Institute Admin.
  2. The student will be able to see a list of alumni and can request feedback from a particular alumnus from the list.
  3. The student can also see the feedback received from the alumnus and can reply to the alumnus for further conversation on the portal.

- **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.
  Response Sequence: -
  1. There will be a dedicated section for applying to companies on the student portal.
  2. 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.
  3. The student can then apply for a company, by selecting a CV from the list of all the CVs uploaded on the portal.

4.3 Alumni:

- **Alumni sign up and feedback:**
  Alumni can sign up on the portal after entering the required details and then give feedback to candidates that requested them to do so.
  Response Sequence:
  1. The Alumni can register on the website by giving out their details.
  2. Then the alumni can give feedback to students who have requested feedback.
  3. Alumni then may also interact with students who are interested in interacting with the alumni further.

4.4 Company Admin:

- **Sign up and Company Verification:**
  The company would be able to fill in all the necessary details and register themselves onto the portal and request for verification from student admin for participating in the placement process.
  Response Sequence: -
  1. The company admin will visit the portal and sign up themself as a company after filling in necessary details about the company and about the job role for which they are hiring.
  2. Institute Admin will then get a request then to verify this company.
  3. After successful verification of the company they can log in to the website.

- **Logging in and shortlisting of candidates:**
  Company admin would be able to login into the portal and view the list of students and their CVs who have applied for a job role in the company. Company Admin can then shortlist candidates for further rounds according to their requirements and based on CV uploaded.
  Response Sequence:
  1. After logging in they can view the different list of students that have applied for a job role in the company.
  2. Company Admin can then download the CVs of different students that have applied for a job role.

3. The company will then shortlist students after viewing their CVs for further rounds of placements according to the company's needs.
4. The company may also change the description for which they are hiring on the portal according to their needs.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

1. Online Placement Gathering System is a web-based application and can work on a decent internet connection.
2. This can work on operating systems such as Windows, Linux, or Mac.
3. The system should be able to process requests to the database and perform computations for better performance.
4. Any of the recent versions of the browser would suffice for running this web-based application.

5.2 Safety Requirements

The safety requirements are: -

1. Users should log out after their usage so as to avoid unnecessary load on the server.
2. For now, reset password feature hasn't been added so user must remember their password to avoid losing access to their account.

5.3 Security Requirements

For the security of the software, following implementations have been done: -

1. Password-based logins for all the users and all the passwords are secured by hashing before storing them in the database.

2. A 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 client is the same as the one generated previously; if not it will not authorize the request.

3. All the company admin are properly authenticated by the institute admin before giving access to the portal thereby minimizing the risk of invalid company recruiting students.

5.4 Software Quality Attributes

1. Object Oriented Design principles has been implemented to change the software in future according to our future requirements.
2. The software can be used on any device using a browser.
3. Extensive testing of the software will be done and there will be minimal bugs and errors.

6. Other Requirements

GUI should be effective, interactive and intuitive to increase user experience. The total application should be made as sleek as possible to decrease loading time and to improve user experience.

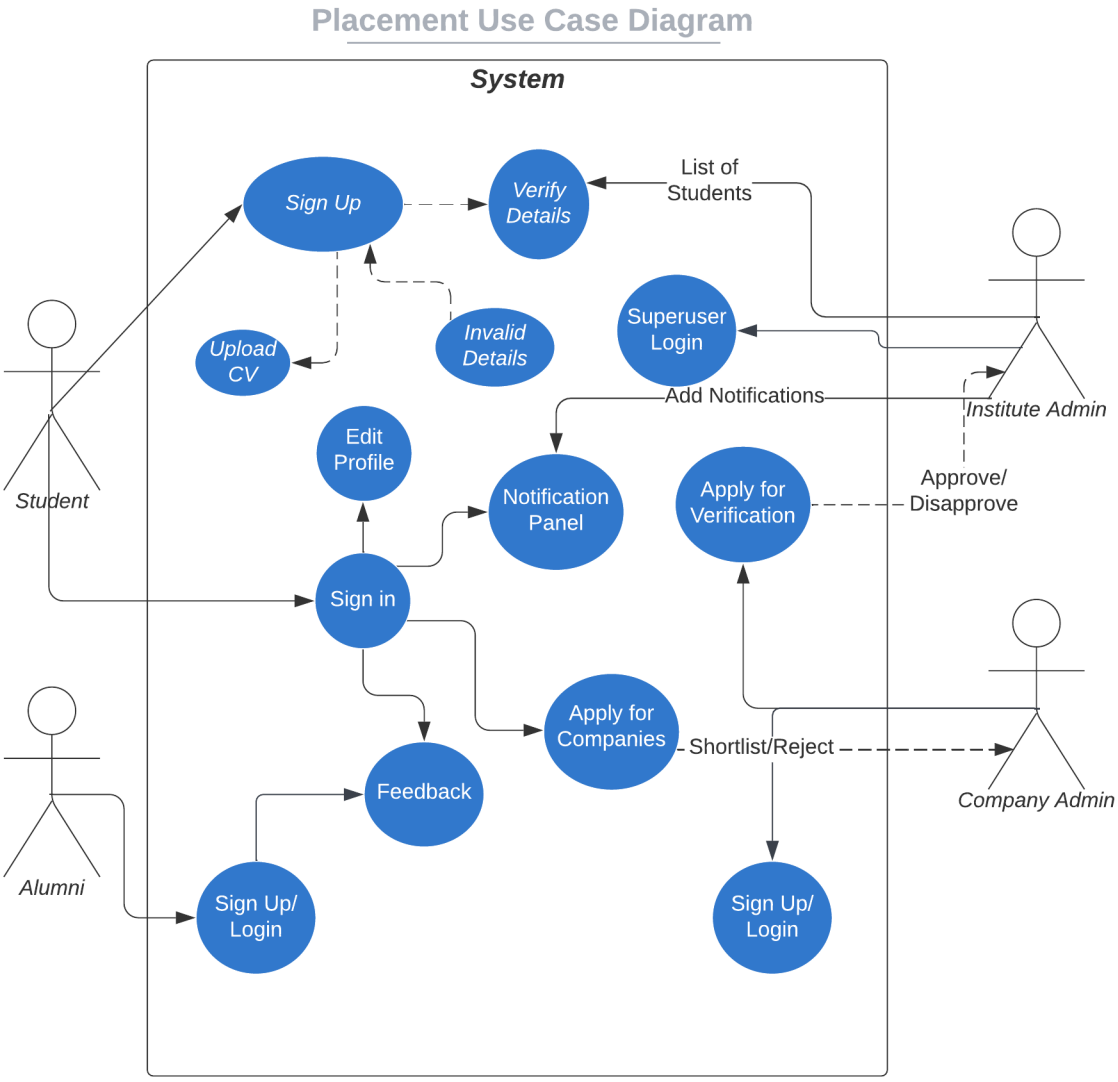
Appendix A: Glossary

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.

Appendix B: Analysis Models

a. Use Case Diagram



b. Class Diagram