CAREER INFORMATION AND RECRUITMENT PORTAL

SOFTWARE REQUIREMENTS SPECIFICATION

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1. INTRODUCTION

1.1. Background

To find a job after successful graduation has become a lot more difficult than olden days. Students must become more competent to get selection from campus interviews and placements. The student may not have any knowledge about most of the companies and opportunities for their future. The students need to apply for each job individually and it may not be possible for everyone. The job interviews are a cumbersome activity and hence majority of the companies find it difficult to trace the right talent. At the same time the employers also need to find suitable candidates among thousands of applications. In such a situation, there is a need to change this system for a good future.

1.2. Overall Description

This software requirement specification provides a description of all the functional and non-functional features and goals of the web application for career information and recruitment portal. The application maintains a database of colleges, recruiters and, students and alumni of an educational institution to offer job placements with an online employment portal. The portal also includes information pages for students under various faculties to obtain information related to job opportunities and higher studies. The online employment portal can be used by students and alumni to apply for job offers listed by various companies and recruiters on the portal. Also, with the recruitment management system, companies and recruiters can review student/ alumni resumes and job applications and offer employment to competent candidates.

1.3. Scope:

The system would store all academic as well as personal details of the students and alumni who wish to be placed and details of colleges and companies.

The college, company, student and alumni details can be updated or modified or deleted to keep the information up to date.

The system can be used to obtain career related information for students. Companies can use this web application to hire students or alumni. Colleges can use the application for effective management of placement cell.

1.4. Environmental Characteristics:

System Requirements:

Java version 1.8 or above

Supported Browsers: Internet Explorer 9 and above, Chrome, Firefox etc.

People:

Maintenance Staff: College admins, Server admins

General Users: Colleges, Students, Alumni, Recruiters

2. GOALS OF IMPLEMENTATION

- The web application can be used by students to retrieve information related to various career or higher educational opportunities available in their respective fields of study.
- The online employment portal can be used by students to apply for job offers listed by various companies and recruiters on the portal.
- Companies and recruiters can use the portal for hiring competent students or alumni of colleges.
- The web application user interfaces are designed to make the usage of the application simple and easy-to-use for all types of users of the system.
- Security of the database is a primary concern of implementation.
- Code used is reusable.
- Complex codes are avoided wherever possible.
- Flexibility of design and code is desired.
- Code used should be easy to understand and manipulate for further modifications of the system in future.
- Good coding standards and guidelines are followed.

3. FUNCTIONAL REQUIREMENTS

The various functionalities of the web application are listed below.

I.   **Career Information**

Description: This section includes webpages for information related to local and international higher studies and job opportunities information for all branches. Users can click on the corresponding menu option to navigate to the respective page.

Input: User clicks on a menu option.

Output: Corresponding webpage is loaded in the web browser.

II.   **Student, Alumni and Recruiters - Portal**

    A.   **Colleges Portal**

        1.   **Registration**

Description: Allow registration of new colleges. By clicking on register as a college link, the user receives the registration form to fill out college details. On submitting the filled application form, a new college registration request is sent to the server.

Input: User clicks new college registration, completes and submits the registration form.

Output: Server receives registration request on server homepage.

        2.   **Opt Out**

Description: If the college admin wishes to remove the college from this portal, he/she can submit an opt out request by clicking the link for opt out.

Input: User submits opt out request.

Output: Server receives the request.

        3.   **Login**

Description: Users can login using their registered email id and password. Server verifies the login details and grants access to the user session.

Input: User submits login credentials.

Output: Server verifies and grants or declines user session according to successful validation or failure of authentication.

4.   **Request for Forgot Password**

Description: User can request for resetting password, if he/she forgets the password, by clicking on the forgot password link. On clicking on forgot password link, the user will be prompted to submit the registered email id.

Input: User submits forgot password request for a registered email id.

Output: Server receives the request.

5.   **Update Details**

Description: Colleges can update their communication details by clicking on the update details link. It redirects to a form for editing the details. After making the necessary changes, the user can click on save button to save the changes.

Input: User makes changes in the college details using the edit form and clicks the save button.

Output: The new details are saved to the database.

6.   **Student and Alumni Management**
    1. **Add New Student Enrolments of the College to the Portal**

        Description: Colleges can add multiple new students by uploading an excel file containing all the details of new student enrolments (name, contact number, email, communication address, educational qualifications) by clicking add new students and uploading the file.

        Input: User uploads an excel spreadsheet of student details.

Output: All new student entries are added to the student database and students get login credentials via email.

2. **Add Alumni Students**

   Description: Colleges can receive alumni registration requests on homepage. The college admin verifies the alumni details and approves or cancels the registration by clicking verify or cancel registration link. Applicants get notified by email regarding approval or cancellation of registration request.

   Input: Alumni requests for registration.

   Output: College admin verifies or cancels the registration by clicking verify or cancel registration button.

3. **Remove Alumni Students**

   Description: Colleges can receive alumni opt out requests on homepage. On clicking on the request, he/she is directed to a list of all related records of the alumni out of which information to be retained can be selected. The admin can click on the delete alumni button to retain all selected records and remove other records.

   Input: Alumni requests for opt out.

   Output: College admin approves the request by selecting the records to keep and clicking delete alumni button.

4. **Update Student Details**

Description: When some student's details are to be updated or semester marks to be uploaded the admin can either upload a new excel spreadsheet file of the details by clicking the edit student details in the students' tab, or selecting individual student with email search and clicking on edit details. All records of the students with the login details specified in the spreadsheet will be updated.

Input: Student details are submitted via spreadsheet or edit details form.

Output: Updated student details are stored in the database.

5. **Recommend Student or Alumni**

Description: Colleges receive recommendation request from student or alumni on dashboard. The college admin can submit recommendation letter(s) from faculties by clicking on the request and selecting upload files.

Input: Student or alumni requests for recommendation.

Output: College admin uploads recommendation letter(s) from faculty.

B. **Student Portal**
1. **Login**

Description: Users can login using their registered email id and password. Server verifies the login details and grants access to the user session.

Input: User submits login credentials.

Output: Server verifies and grants or declines user session according to successful validation or failure of authentication.

2.   **Request for Forgot Password**

   Description: User can request for resetting password, if he/she forgets the password, by clicking on the forgot password link. On clicking on forgot password link, the user will be prompted to submit the registered email id.

   Input: User submits forgot password request for a registered email id.

   Output: Server receives the request.

3.   **Personalization**

   Description: Students can add skills, interests, experience, project links, awards and honours, organizations, profile pic and a description to their profile by adding or editing details from the personalization tab. An automatic CV is generated with these details if the student does not upload a CV.

   Input: Student edits personalization details from the personalization tab.

   Output: Updated details are stored in the student's database. Automatic CV is generated with these details if no uploaded CVs of the student are available.

4.   **Follow**

   Description: Students can follow companies and topics of interests, and set notification preferences for each company or topic from the follow tab and selecting a company or topic and preference from the options indicated against it.

   Input: Student selects a company or topic to follow and indicates notification preference for the same.

   Output: The follow details are stored or updated in the student's database.

5. **Job Feed**

   Description: Students receive job feed in their homepage according to the follow details in his/her student record. Students can click on each job listing and view its details.

   Input: Student follow details from database.

   Output: Job listings are shown in the student's homepage according to the follow details.

6. **Notifications**

   Description: Students receive notifications in the notifications tab about new job listings from a company or a following topic according to his/her notification preferences for that company or topic

   Input: Student follow details from database.

   Output: Job listing notifications are shown in the student's notifications tab according to notification preferences in follow details.

7. **Apply for Jobs**

   Description: On clicking apply button on a job details page, students will be prompted to enter description for applying. This can be submitted by clicking the submit button. The recruiter gets the applicant's CV and description for applying in his/her applications tab.

   Input: Students submit a job application.

   Output: Recruiter receives the applicant's CV and description for applying in his/her applications tab.

8. **Request Recommendations**

Description: Students can request for recommendations from his or her college or from an alumnus by searching for the name of the alumnus and submitting a request for recommendation by the request recommendation button. The college / alumnus receives the request on dashboard.

Input: Student requests recommendation from college or alumnus.

Output: College or alumni receives the request for recommendation dashboard.

9. **Reply to Recruiters**

Description: Students can receive messages from recruiters and reply them in the chat feature.

Input: Student receives message from recruiters in the chat feature.

Output: Student replies to the message in the chat feature.

C. **Alumni Portal**
1. **Registration**

Description: Allow registration of new alumni. By clicking on register as an alumnus link, the user receives the registration form to fill out personal details and college details. On submitting the filled application form, a new alumni registration request is sent to the respective college admin.

Input: User clicks new alumnus registration, completes and submits the registration form.

Output: College admin receives registration request on college homepage.

2. **Opt Out**

Description: If an alumnus wishes to remove his company from this portal, he/she can submit an opt out request by clicking the link for opt out. College admin receives the request from alumni on dashboard.

Input: Alumni submits opt out request.

Output: College admin receives the request on his dashboard.

3.   **Login**

Description: Users can login using their registered email id and password. Server verifies the login details and grants access to the user session.

Input: User submits login credentials.

Output: Server verifies and grants or declines user session according to successful validation or failure of authentication.

4.   **Request for Forgot Password**

Description: User can request for resetting password, if he/she forgets the password, by clicking on the forgot password link. On clicking on forgot password link, the user will be prompted to submit the registered email id.

Input: User submits forgot password request for a registered email id.

Output: Server receives the request.

5.   **Personalization**

Description: Alumni can add or update personal details, higher education details, skills, interests, experience, project links, awards and honours, organizations, profile pic and a description to their profile by

adding or editing details from the personalization tab. An automatic CV is generated with these details if the alumnus does not upload a CV.

Input: Alumnus edits personalization details from the personalization tab.

Output: Updated details are stored in the alumni database. Automatic CV is generated with these details if no uploaded CVs of the alumnus are available.

6. **Follow**

Description: Alumni can follow companies and topics of interests, and set notification preferences for each company or topic from the follow tab and selecting a company or topic and preference from the options indicated against it.

Input: Alumnus selects a company or topic to follow and indicates notification preference for the same.

Output: The follow details are stored or updated in the alumni database.

7. **Job Feed**

Description: Alumni receive job feed in their homepage according to the follow details in his/her record. He/she can click on each job listing and view its details.

Input: Student follow details from database.

Output: Job listings are shown in the alumnus's homepage according to the follow details.

8. **Notifications**

Description: Alumni receive notifications in the notifications tab about new job listings from a company or a following topic according to his/her notification preferences for that company or topic.

Input: Alumni follow details from database.

Output: Job listing notifications are shown in the alumni's notifications tab according to notification preferences in follow details.

9. Apply for Jobs

Description: On clicking apply button on a job details page, alumni will be prompted to enter description for applying. This can be submitted by clicking the submit button. The recruiter gets the applicant's CV and description for applying in his/her applications tab.

Input: Alumni submit a job application.

Output: Recruiter receives the applicant's CV and description for applying in his/her applications tab.

10. Request Recommendations

Description: Alumni can request for recommendations from his or her college or from a fellow alumnus by searching for the name of the alumnus and submitting a request for recommendation by the request recommendation button. The college / alumnus receives the request on dashboard.

Input: Alumni requests recommendation from college or alumnus.

Output: College or alumni receives the request for recommendation dashboard.

11. Recommend Students or Fellow Alumni

Description: Alumni receive recommendation request from students or fellow alumni on dashboard. He/she can submit a recommendation letter by clicking on the request and selecting upload files.

Input: Student or alumni requests for recommendation.

Output: The alumni uploads a recommendation letter.

12.   Reply to Recruiters

Description: Alumni can receive messages from recruiters and reply them in the chat feature.

Input: Alumni receives message from recruiters in the chat feature.

Output: Alumni replies to the message in the chat feature.

D.   Recruiter Portal
1.   Registration

Description: Allow registration of new recruiters. By clicking on register as a recruiter link, the user receives the registration form to fill out company details. On submitting the filled application form, a new company registration request is sent to the server.

Input: User clicks new recruiter registration, completes and submits the registration form.

Output: Server receives registration request on server homepage.

2.   Login

Description: Users can login using their registered email id and password. Server verifies the login details and grants access to the user session.

Input: User submits login credentials.

Output: Server verifies and grants or declines user session according to successful validation or failure of authentication.

3.   **Request for Forgot Password**

Description: User can request for resetting password, if he/she forgets the password, by clicking on the forgot password link. On clicking on forgot password link, the user will be prompted to submit the registered email id.

Input: User submits forgot password request for a registered email id.

Output: Server receives the request.

4.   **Opt Out**

Description: If a recruiter wishes to remove his company from this portal, he/she can submit an opt out request by clicking the link for opt out.

Input: User submits opt out request.

Output: Server receives the request.

5.   **Update Details**

Description: Colleges can update their communication details by clicking on the update details link. It redirects to a form for editing the details. After making the necessary changes, the user can click on save button to save the changes.

Input: User makes changes in the college details using the edit form and clicks the save button.

Output: The new details are saved to the database.

6.   **Create Job Listings**

Description: Recruiters can create job listings by clicking listings tab and create new button. He/she will be prompted to enter a job title and

description, salary offered and add all related tags (topics) for the job. On clicking submit button, a new job listing will be created.

Input: Recruiter submits job details for new job listing.

Output: A new job listing is created.

7. **Edit / Delete Job Listing**

Description: Recruiters can delete job listings by clicking listings tab and selecting an already created job listing. He/she will be directed to an edit details form. By clicking update button or delete button, the job listing will be updated or deleted accordingly.

Input: Recruiter clicks update or delete button on a job listing.

Output: The job listing is updated or deleted according to the button clicked.

8. **Review CV**

Description: Recruiters can view CV of all students and alumni on the portal following tags associated with job listings of the company from the Potential tab. The student profiles (name, profile picture, and description) will be listed in a sorted order according to a score calculated based on work experience, educational qualifications, skills and recommendations. On clicking a student's or alumnus's name, the recruiter will be directed the student's or alumni's CV. From this page, the recruiter can click on contact button to message the student or alumnus regarding recruitment. The webpage directs to the chat tab with the student or alumni and recruiter can type his message and click on send button.

Input: Recruiter selects a CV and sends a message to the student or alumni.

Output: The student or alumni receives the messages in the chat tab.

9.   **Review Applications**

Description: Recruiters can view all received application for a job listing from the applications page of the listing. The description for application along with student profile (name, profile picture) will be listed in a sorted order according to a score calculated based on work experience, educational qualifications, skills and recommendations. On clicking a student's or alumnus's name, the recruiter will be directed the student's or alumni's job application. He/she can click on view CV button to view the CV of the candidate. The recruiter can click on contact button to message the student or alumnus regarding recruitment. The webpage directs to the chat tab with the student or alumni and recruiter can type his message and click on send button.

Input: Recruiter selects a job application and sends a message to the student or alumni.

Output: The student or alumni receives the messages in the chat tab.

10.   **Recommend Student or Alumni Employees**

Description: Recruiters can recommend current or past employees of the company registered as student or alumni in the portal by searching for the name of the employee and selecting recommend button. The recruiter can upload a recommendation letter by clicking on upload files on the redirected page.

Input: Recruiter selects a current or previous employee of the company and uploads a recommendation letter.

Output: The student or alumni receives the recommendation in his profile.

E.   **Server Admin**
1.   **Verify / Cancel College and Recruiter Registration**

Description: The server admin personally verifies details of registration of college users and recruiter users before allowing them login access. All new college and recruiter registrations pending verification will be

displayed on the server homepage. The server admin can click on each registration to view the details submitted. If the admin finds the registration details are correct (credible), he/she can click verify registration button to verify the college or recruiter registration; otherwise, the admin can click cancel button to cancel the registration. On approval or cancellation of registration, email messages are automatically sent to the respective users. This is used for ensuring credibility of registered colleges and recruiters.

Input: Colleges and recruiters submit registration.

Output: Server admin clicks on new registrations of colleges and recruiters, verifies the details and clicks verify or cancel registration button. Autogenerated emails are sent to the respective users regarding confirmation or cancellation of registration.

2.   **Handle Opt Out Requests of Colleges and Recruiters**

Description: When colleges or recruiters request for opting out from the application, the server admin gets the request on the server homepage. On clicking on the request, he/she is directed to a list of all related records of the user out of which information to be retained can be selected. The admin can click on the delete user button to retain all selected records and remove other records.

Input: Colleges and recruiters request for opt out.

Output: Opt out request is displayed on server homepage. Admin clicks on the request to view all related records. He/she selects records to be retained and deletes all other records by clicking on delete user button.

3.   **Close Active Login Sessions with No Activity for a Long Duration**

Description: When user session is inactive for over 15 minutes, the session is automatically closed by the server.

Input: User session remains inactive for 15 minutes.

Output: Server closes the request.

4. **Handle Forgot Password Requests**

Description: When a user submits forgot password request, the server automatically sends a password reset link to the registered email of the user.

Input: User submits forgot password request.

Output: Server automatically sends a password reset link to the registered email of the user.

4. NON-FUNCTIONAL REQUIREMENTS

4.1. Portability:

Since this is a web application it can be used from all supported browsers irrespective of the underlying operating system.

4.2. Security:

The web application is developed using Spring boot framework for Java, Spring security core, and MongoDB RESTful authentication is used in the back end. The APIs are guarded by spring security REST and JWT. This is a great combination of a secure modern web application. The database used is highly secured and protected from unauthorized access.

4.3. Usability:

The web application will be available all the time since it is hosted on a real time server. It has a simple and user-friendly interface. Both skilled and unskilled users can use the application efficiently to meet their requirements. The user interface is designed to make the user to interaction simple and easy as possible.

4.4. Reliability:

Performance and reliability are two key components of the system. The application offers high performance and reliability of data and information as well as transactions of the database.

4.5. Maintainability:

The database used provides high performance. It can be used to store files of any size easily without any complications. In the case of a failure, it is easy to be administered. The system can be easily maintained by the admin users.

4.6. General Constraints on Design and Development:

The software and technologies used for development are Java, Spring boot framework for Java, Angular 7 and MongoDB database.