Project Proposal

360 search : job search platform

**Team Members**

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**Business Goal/Objective of the proposed application.**

* The goal is to establish a platform that would give society the opportunity to have a platform to apply to jobs. This platform would support four different types of users. It would support a guest, a registered user, and recruiter.

**Technology Stack**

* Spring Boot 2.1.2
* Angular 7.2.0
* MySQL
* Python (ML algorithms)
* Google Cloud Services
* Git version control
* Maven
* JUnit (backend unit testing)
* Auth0

**Sprint 1**

* **Business Objective**
  + Create one stop shop for recruiters and job seekers to connect. Set up infrastructure for web application. Be able to authenticate users and present data for proper user roles
* **User Stories**
  + Authentication and Authorization
    - Register
      * If you want to create an account to use the follow capabilities of 360 search you should have the opportunity to create either a regular user account or a employer account. When you create an account an email verification should automatically be sent confirming that an account has been made under your name.
    - Login
      * An authenticated user should be able to login successfully and issue a jwt token, as it is a safe way to represent information between parties.
    - Forgot Password
      * If a user forgot their password you should be able to receive a link or automatically get a link via email to reset it.
    - Authorization
      * Only authorized users should be able to access system related services that are relevant to their role.
  + Recruiter CRUD postings with required questions
    - As a recruiter I want to create posting
      * Title
      * Description
      * Required questions
      * Location
      * Create button
    - As a recruiter, I want to Retrieve posting
      * Title
      * Description
      * Required Questions
      * Location
      * Status (Still accepting Applicants)
      * As a Recruiter, I want to View Applicants
        + Rank

\* By Date

\* By closest matching skill set

Alphabetical order

* + - * + Message button
        + View profile button
    - Update posting
      * Title
      * Description
      * Location
      * Required questions
      * Save button
    - Delete posting
      * Delete Button
      * Modal to confirm deletion
  + As a job seeker Set up profile/resume (Sprint 1)
    - Experience
    - Education
    - Skills
      * Rank each skill
    - Contact info
      * Address
      * Email
      * Phone Number
  + As a job seeker I need to view applied jobs
    - Display link to posting and preview info
  + Contact us
    - As a regular user and a guest I want to be able to contact 360 job search if I have any questions.
    - If a user has a question they should be able to email us
* **Technical Tasks**

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| --- | --- | --- | --- | --- |
| **User Story** | **Task** | **Description** | **Priority** | **Assigned to** |
| Authentication & Authorization | Create Capability of User being able to create an account and login | Configure Auth0 in the Angular Application, create the Authentication Service that allows user to login or create an account. | HIGH | TBD |
| Authentication & Authorization | Configure Email Verification with Auth0 | In the Identity Management settings providers configure Email Verification when user creates an account. | HIGH | TBD |
| Authentication & Authorization | Check role based authorization and entity states | Implement a service to get current user roles. | HIGH | TBD |
| Authentication & Authorization | Build the workflow and permissions map | Create a mapping of what we can do and who we can do by creating a tree with different entities and their states. (The purpose of this task is to guide us in determining who can do what) | HIGH | TBD |
| Authentication & Authorization | The check authorization service to consume the workflow and permission map | Create a service to consume permissions and to check whether a user is authorized or not. | HIGH | TBD |
| Authentication and Authorization | User metadata | Right when authenticated user should be redirected to a profile file and all the metadata used to sign up should be visible | HIGH | TBD |
| Authentication & Authorization | Make authorization capable through out the application | Create a directive in angular, as this can help us globally to apply the certain permissions on a page. | HIGH | TBD |
| Recruiter CRUD Postings and Required Questions | Create posting | Title Description Required questions Location Create button | High |  |
| Recruiter CRUD Postings and Required Questions | Retrieve Posting | Title  Description Required Questions Location  Status (Still accepting Applicants)  View Applicants Rank \* By Date \* By closest matching skill set Alphabetical order Message button View profile | High |  |
| Recruiter CRUD postings with required questions | Update posting | Title Description Location Required questions  Status Save button | High |  |
| Recruiter CRUD postings with required questions | Delete Posting | Delete posting Delete Button Modal to confirm deletion | High |  |
| Set up profile/resume | Resume  Information | Experience Education Skills Rank each skill Contact info Address Email Phone Number  Must be filled in order to properly be incorporate applicant to rankings |  |  |
| View Applied Jobs | List Applied Jobs | User Needs to view list of applied jobs see their status and preview descriptions |  |  |
| Contact us | Chatbot to answer any questions a user may have | Implemented with google’s dialog flow.  To answer common questions about the site for job seekers and recruiters.  To determine what are the typical questions users ask to recruiter, train your dialog flow with based on the topics from support.ziprecruiter.com.  After training your dialog flow chat, this chat will end up being an html tag, that we can call in our angular front end. | MEDIUM | TBD |
| Contact us | Users should be able to contact us | Create form to send to our mail server  In order to answer questions for user  (Create a mail server utilizing the spring-boot-starter-mail library)  As this mail server will allow users to send an email. | HIGH | TBD |
| Miscellaneous | Create Models | Create all domain specific data and business logic that will maintain the data of our application. | TBD | HIGH |
| Miscellaneous | Run Migration of Career Builder Kaggle Data Set | Run Migration of Career Builder Kaggle Data so we can use it to help train our ML models | HIGH | TBD |

**Sprint 2**

* **Business Objective**
  + Be able to recommend jobs to job seekers and rank applicants for recruiters using machine learning models and continuously serve data to improve recommendations and rankings. Refine the web application.
* **User Stories**
  + Messaging
    - Recruiter - A user with a recruiter role should be able to message a user who applied to a job listing.
    - As a job seeker If I receive a message from a recruiter I should be able to message back and forth with the recruiter.
  + Notifications
    - As a job seeker I need to receive notifications, when a job posting has closed, my application was viewed
  + Machine Learning Algorithm to Generank Ranked Applicants for Job Postings
    - As a recruiter, I want to be view on a job posting the top ranked candidates based on their skills that they defined in the job questionnaire and the criteria for the job being posted.
  + Machine Learning Algorithm to Generate Recommendations
    - As a regular user I want to be able to get recommendations based on the metadata from my profile.
  + Search job postings
    - As a non authenticated user, you should have a Search bar present that gives you the ability to either search by:
      * Job Title or Keyword
      * Location
    - The most recent postings should be populated on the page.
      * As a authenticated user, you should have a Search bar present that gives you the ability to search by:
        + Job title
        + Key word
        + Location
    - The most recommendations with the most relevant will be populated on the page.
* **Technical Tasks**

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| --- | --- | --- | --- | --- |
| **User Story** | **Task** | **Description** | **Priority** | **Assigned To** |
| User needs to receive notifications | Implement notifications | Notify users when their application has been viewed, liked  Tentative implementation:  <https://stackoverflow.com/questions/49672752/reminder-push-notification-using-spring-boot-and-angular> | HIGH | TBD |
| User needs to receive notifications | Implement notifications | Notify user when a job posting they applied to has closed  Tentative implementation:  <https://stackoverflow.com/questions/49672752/reminder-push-notification-using-spring-boot-and-angular> | HIGH | TBD |
| User needs to receive notifications | Implement notifications | Notify user when they have received a message from a recruiter  Tentative implementation  <https://stackoverflow.com/questions/49672752/reminder-push-notification-using-spring-boot-and-angular> | HIGH | TBD |
| Message job seekers | Messaging system between recruiters and job seekers | Recruiters have to initiate contact first then job seekers can reply  Recruiters can only initiate contact with job seekers who have applied to posting  Tentative implementation  Messaging with Redis:  <https://spring.io/guides/gs/messaging-redis/> | HIGH | TBD |
| Machine Learning Algorithm to Generate Recommendations | Create a data pipeline | Create a data pipeline, that helps us process and move to data to feed into our machine learning model. We can accomplish this with the Google Cloud Platform. It is important to incorporate that the Pipeline is capable of processing clean data. | HIGH | TBD |
| Machine Learning Algorithm to Generate Recommendations for ranked applications | Create a data pipeline | Create a data pipeline, that helps us process and move to data to feed into our machine learning model. t is important to incorporate that the Pipeline is capable of processing clean data. | HIGH | TBD |
| Machine Learning Algorithm to Generate Recommendations | Generate job recommendations to job seekers | Once data pipeline is established begin recommending jobs to job seekers and continuously serve extracted data to model. Integrating the data pipeline,create an api utilizing a collaborative filtering model that, based on the metadata the user feeds in generate recommendations. This api can be displayed in the front end. | HIGH | TBD |
| Machine Learning Algorithm to  Rank Applicants for recruiter | Rank applicants based on multiple variables and latent factors | Based on metadata the user provider and the job criteria. Integrating the data pipeline,create an api utilizing a collaborative filtering model that, based on the metadata the user feeds in generate recommendations. This api can be displayed in the front end. | HIGH | TBD |
| Miscellaneous | Deployment Front End | TBD | HIGH | TBD |
| Miscellaneous | Deployment BackEnd Api | TBD | HIGH | TBD |