SmartJobs

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SWE 599 - HBY-01 - SmartJobs

03 January 2024 Submission – Final Report

Deployment URL : https://smart-jobs.netlify.app/

DEMO Video : https://youtu.be/1AH9fTT5n44

GitHub Repository : https://github.com/Omar4GH/SWE-599-SmartJobs

Plan

Here's an initial plan for process regarding the Tasks and Deadlines:

Task	Deadline
Gather Requirements	
Plan Submission	22 October
Define Goals	
Plan Design & Scenarios	
Progress Report Submission	26 November
Implementation	
Deployment	
Final Submission + DEMO	03 January 2024

Table of Contents

Overview

This Report is a Documentation for SWE 599's Project, SmartJobs.

It Discusses the **Software Requirements Specifications** that were set before the Development.
And the **Design** process that took place, then the **Current Status of the Project** in terms of what was accomplished and what wasn't, the **Status of Deployment** goes into deployment details and the current status.
Then a **System and User Manual,** a manual that would guide the process of running the project locally, and a manual for the User's use of the App with steps.
Test Results after testing all features.
Finally a Link to a **Video Demonstration** of using all the App Features, Uploaded on Youtube as Unlisted.

Software Requirements Specification

Initial description : This application will provide a platform for posting academic jobs and ease the process of searching for the academic job postings. Typically, during a job search period, people visit many job posting websites and subscribe to email alerts to look for appropriate job postings. SmartJobs@Academia application will make this process easier for both sides.

1. Registration

The application provides registration for two types of users: Job Seekers and Employers. The required registration information includes:

- a. Email
- b. Password
- c. Username
- d. User Type

2. Sign-In

Both Job Seekers and Employers can sign in to their respective accounts.

3. Basic Profile Information

Users can provide basic profile information, including:

- a. Location

- b. Age
- c. Position
- d. Job Interests

4. Job Posting (Employer)

Employers can post job listings, including the following details:

- a. Job Title
- b. Description
- c. Location
- d. Salary (if available)
- e. Position/Faculty Position options
- f. Labels/Tags

5. Browse Jobs as Guest

Guest users can browse job listings.

6. Browse Jobs (Logged-In User)

Logged-in users can browse job listings and perform the following actions:

- a. Mark jobs
- b. Save jobs
- c. Apply for jobs
- d. Like jobs

Employer can browse Jobs but not allowed to Apply or interact with it.

7. Profile Management

Users can view and update their profile information.

8. Change Job Status (Employer)

Employers can change the status of posted jobs to active or inactive.

9. Logout

Users can log out of their accounts.

10. Job Search

Users can search for jobs based on various criteria, including Title, Position, Location, and Salary.

Key Features

1. **Job Suggestions**

   The application offers job suggestions by learning user preferences based on visited job postings, liked jobs, and marked or saved jobs.

2. **Weekly Email Alerts**

   Users can subscribe to weekly email alerts based on selected search settings.

3. **Job Post Marking**

   Users can mark job posts as "Want to Apply" or "Applied."

Scenario

Scenario : Job Search for a Software Engineering Graduate

Omar, a fresh software engineering graduate with a Bachelor's degree and one year of relevant experience, is embarking on his job search to kick-start his career. He decides to use the SmartJobs application to simplify the job search process.

1. **Registration and Profile Setup:**
   - Omar visits the SmartJobs website for the first time.
   - He registers as a "Job Seeker" using his email address, creating a strong password, and selecting a suitable username.
   - After registering, Omar can completes his profile by providing basic profile information, like :
     - Location: He enters his current location, as he is open to job opportunities in this area.
     - Age: He provides his age for profile completeness.
     - Position: He mentions that he is a recent software engineering graduate with one year of relevant experience.
     - Job Interests: He lists his interests, such as software development, web applications, and database management.

2. **Browsing for Job Opportunities:**
   - After logging in, Omar explores the platform as a logged-in user, for a better experience.
   - He uses the search functionality to find job listings that match his qualifications.
   - He enters keywords like "software engineer" and "entry-level" to narrow down the results.

- Omar reviews job postings and reads detailed descriptions to determine the best fit for his career objectives.

3. **Job Selection and Application:**
   - Omar comes across a job listing for an "Entry-Level Software Engineer" at a prominent technology company.
   - He marks this job as "Want to Apply" for future reminders and notifications about it, or mark it as “Applied” after he applies.
   - Or He can save the Job Post since he’s interested in it to check out later
   - He can Like the Job post.

4. **Setting Up Job Alerts:**
   - Knowing that job searching can be time-consuming, Omar decides to set up job alerts to receive relevant job listings in his email.
   - He fills the Search criteria he wants, and click on “Subscribe to this Search Settings” so he’ll be alerted for any job with these specifications.

5. **Weekly Email Alerts:**
   - Omar receives personalized job alerts suggestions in his email every week, featuring newly posted positions that match his preferences.
   - And Receives Subscribed Settings Job alerts Weekly.
   - This feature saves him time and ensures he stays updated on relevant job openings.

Omar's journey to securing his first job in software engineering is facilitated by the SmartJobs application, which simplifies the job search process and helps him find the perfect opportunity that aligns with his career aspirations and qualifications.

Scenario: Recruiting a Software Engineer for John's Tech Company

John is the CEO of a rapidly growing technology company, and they are actively seeking a talented and highly motivated Software Engineer to join their team. To streamline the hiring process and find the perfect candidate, John decides to leverage the SmartJobs application:

1. **Employer Registration and Profile Setup:**
   - John visits the SmartJobs website.
   - He registers as an "Employer" by providing his email address, creating a secure password, and choosing a unique company username.
   - After registering, John can completes his employer profile, adding basic company information such as:
     - Company Name: He adds his company's name.
     - Location: He specifies the location of the company's headquarters.

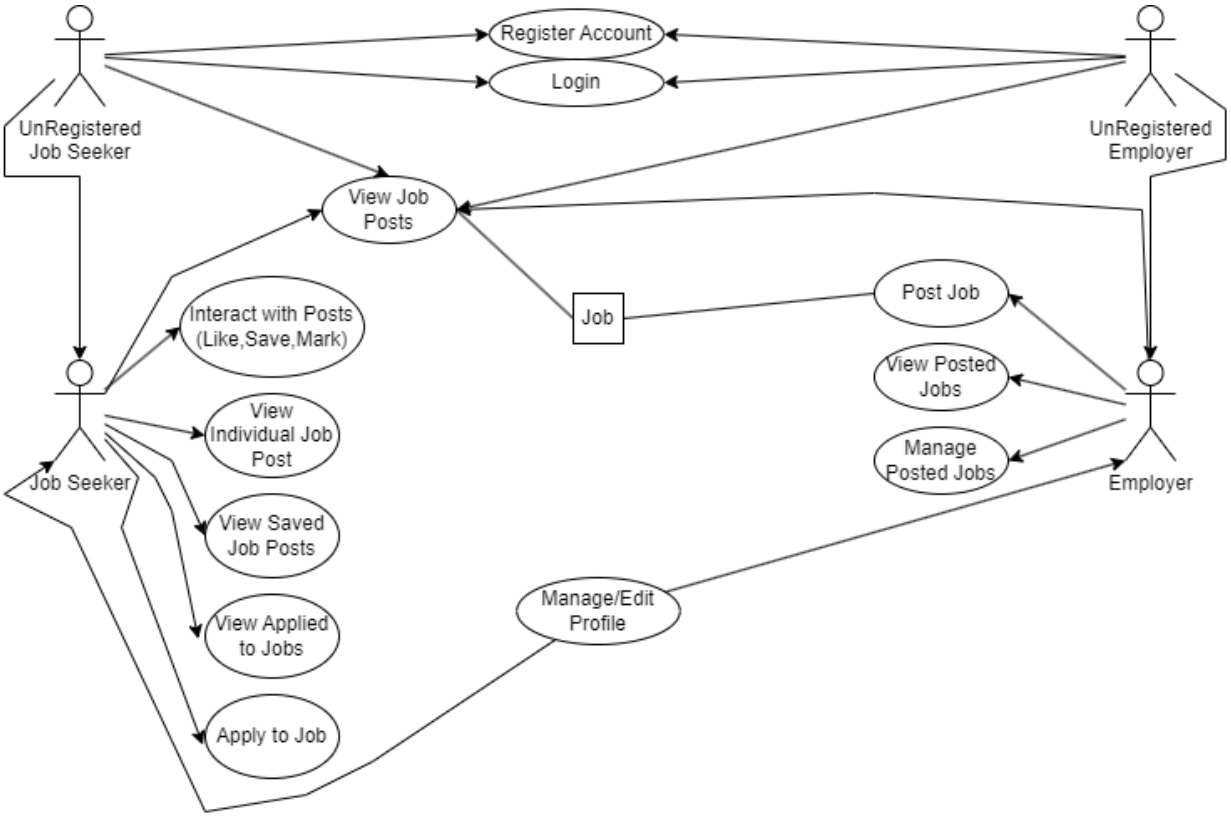
- Industry: John selects the technology industry to attract candidates with relevant backgrounds.
- Company Description: He writes a compelling description of the company and its mission to attract top talent.

2. **Posting the Software Engineer Job:**
   - John initiates the job posting process by going to the “Post a Job” page, to create a new job listing for a "Software Engineer."
   - He fills all the required information, including:
     - Job Title: "Software Engineer."
     - Job Description: A detailed description of the role, responsibilities, and qualifications required.
     - Location: The specific location or remote work options.
     - Salary: Competitive salary and benefits offered | Or specific Salary.
     - Position/Faculty Position: John selects the appropriate position within the organization.
     - Labels/Tags: He includes relevant tags like "Java," "Web Development,", “Software Engineer” and "Full Stack."
   - Then John sets the Job status as “Active” and Posts it.

3. **Changing Job Post Status:**
   - John realizes that he has received an overwhelming response to the job posting.
   - He goes to his profile where he can see a list of Jobs Posts posted by him, where he can delete/edit posts.
   - He manages the job post's status, making it "Inactive" to stop new applications.

By using the SmartJobs application, John efficiently finds a skilled Software Engineer who matches the company's requirements. The application helped him make his Job Posts reach every potential interested Software Engineer that would fit his needs.

Use Case


Register Account
Login
UnRegistered Job Seeker
UnRegistered Employer
View Job Posts
Interact with Posts (Like,Save,Mark)
Job
Post Job
View Posted Jobs
Manage Posted Jobs
Job Seeker
Employer
View Individual Job Post
View Saved Job Posts
View Applied to Jobs
Apply to Job
Manage/Edit Profile

Design (Software & Mockups)

Logo

Mockups

Mockup Designs of the pages :

https://github.com/Omar4GH/SWE-599-SmartJobs/wiki/Design-Mockups

Pages Design

Actual Pages Designs :

https://github.com/Omar4GH/SWE-599-SmartJobs/wiki/Pages-Design

Development

The Frontend of this Web app was built using ReactJS , styled with tailwind CSS, and used some components from libraries like mui.com and other libraries.

The Backend was built with NodeJS, for the Mailing system Nodemailer was used, sending Emails from a newly created SmartJobs Gmail account, and used MongoDB as the database.
Both Frontend and Backend will have Docker Images built to be used in Deployment.

Status of project

For this Final Submission, all mentioned Requirements above are met. From registration and Login, to Browsing, Posting and Interacting to Jobs, along with Search.
All Key Features mentioned above were met, with one Limitation to *Key Feature #1* , where user recommendations and suggestions are based on Visited Jobs only.

Key Features #2 and #3 were implemented successfully. As Demonstrated in Demo Video and Weekly meetings , and Mentioned Below in User Manual.

Status of Deployment

For this Final Submission, the project is deployed on an EC2 Instance on AWS, the frontend and backend on a Docker image each, and MongoDB installed on the machine. Using the free tier in AWS, the project will be up until checked and graded, then will be shutdown.

System manual

The System will be Live and can be Accessed Online, In case of a Local Run of the System:

- Full Backend and Frontend Code, with their Dockerfile can be accessed from the SWE 599 GitHub Repo.
- Have Java Installed on your Machine, and NodeJS if running the Backend Project too and Not through Docker,
- Open the Frontend code in Visual Studio Code (Or any other Choice) NPM Install to install all needed dependencies. Then npm start to start the App.
- Open Api/_axios.js to change the API URL between Local Backend or the Live Backend.
- OR build the Docker file in each Frontend and Backend and run them in a Docker Container.

User manual

Screenshots of all Mentioned Pages Available here with corresponding Titles

1. Registration

To use SmartJobs with all it's features, users must register. Two user types are available: Job Seeker and Employer. Required registration information includes email, password, username, and user type.

2. Sign-In

Both Job Seekers and Employers can signin to their respective accounts using their registered username and password.

3. Basic Profile Information

Users, after registration, can provide basic profile information, including Profile Picture, Country, Birthdate, Title, Company name, full name, Bio...

4. Browsing Jobs

Guests and Logged in Users can browse Jobs and use the Search section.
Jobs will be displayed with their Title, Tags, Location, Salary, Position, Deadline and Contract Type.
Each Job Card has a color depending on it's category.

5. Job Seekers

Job Search

Users can search for jobs based on criteria, like Title, Tags, Location, and Contract Type.
And Quick Search using the Recommended Job Categories after using the app for a while.

Subscribing to Search Preset

After filling in the search fields, user can "Save Preset", a Preset will all desired info will be saved in his profile, where Email Alert for each can be turned on or off.

Job Suggestions

The application offers job suggestions based on user preferences derived from visited job postings, in a section in the Feed Page called "Recommended Jobs".

Weekly Email Alerts

Users can subscribe to weekly email alerts, and will receive a list of Recommended Jobs, Jobs from Saved Search Presets with Alert On, and Reminder for their Saved Jobs.

Job Post Marking

Users can mark job posts as "Want to Apply" or "Applied," allowing for easy tracking of job interests and applications. And can be viewed categorized in "Profile".

Interacting with Job Post
Users can click on the Job Post and enter to read it with more details. Job Post can be Liked, Saved, Marked, or Applied to.

Mailing
Received Emails with list of Jobs, can be clicked to view in the App, carried with a Login Token for Automatic login from Job clicked inside the email.

Profile Management
Users can view and update their profile information as needed.

6. Employers

Posting Jobs
Employers can post job listings with details such as Job Title, Description, Country, Salary, Position, Contract Type, Deadline, Tags, Visibility (Draft/Public)and Application URL.

Profile Management
Employers can view and update their profile details as needed including Company name and Profile Picture, and delete Job Posts, or set their Visibility to Public or Draft.

Job Post Engagement
Employers can see how many likes are on their Job Post, and view a list of all Profiles who liked, and view their profiles.

7. General Features

Logout
Users can log out of their accounts to ensure security and privacy.

Test results
Testing consisted of only light testing of all features, with using Jmeter for some Backend endpoint test with some different inputs.

Video Demonstration

Video Here !