

SW Engineering CSC648/848

Spring 2021

Application Title: Milestone

Section 02 - Team 06

Team Lead: Maria Caravez (mcaravez@mail.sfsu.edu)

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Jooyoung Kim - GitHub Master

Jeffrey Ye - Database Manager

Milestone 1

History Table

Submitted	Revised
February 23, 2021	February 28, 2021
Revision Summary	
<p>CEO/CTO Feedback: Good starting and effort for this phase of the project. Good and clear uses cases that represent what is needed for this application. Overall, the requirements were identified clearly for the application. Keep improving them and adding more details as we move to next phase. Please contact us if you have any question.</p>	

1.Executive Summary

The evolution of the employment process has led us to recognize the talent pipeline. Today, employers are proactively seeking potential candidates to fill roles that become vacant. Although there exist other applications that offer similar service, none is as targeted and focused on the needs of students and graduates as Milestone. Opportunities for our users would pass if it were not for our method of being proactive.

As students of San Francisco State University (SFSU), our team understands our users and their environment. Through personal experience, we know the amount of time and effort needed to balance academics while striving to become an exceptional candidate through remaining active in networking. To satisfy the user requirements, we aim to reduce the amount of time it takes to find employment. This is why we do not leave the search up to the students and headhunters alone. Instead, we aim to streamline the employment process not only by producing personalized recommendations, but also by proactively matching students with open positions. With our alert system, we will be able to facilitate quick connections between headhunters and candidates to expedite the hiring process to promote interviews. This process is beneficial to both the candidates and the employers. We are aware that the talent pipeline requires optimization and Milestone provides the ideal framework needed for this. Our intention is to alleviate the stress that comes with hiring personnel. Milestone's alert system will ensure an open position is matched with the best possible candidates in order to quickly produce a new-hire. With our messaging system, a hiring team member can easily learn whether a candidate is interested and accordingly proceed with the necessary steps.

This is an end to end solution targeted at delivering to the user rather than generating traffic for advertisement and the merchandising of user data. The user's data will only benefit our users. The user profile form will consider users from all fields of study. We are aware that different careers require various forms of resumes, and our application will accommodate these through profile customization. Our design will prioritize usability by maintaining our focus on efficiency.

Our team has studied other applications and strives to produce a prime environment that will exceed our users' expectations. We are passionate about problem-solving. Our dedication will provide a genuine solution to the application and recruitment process. We are committed to working hard to combine our skills and individual abilities to create a truly useful application.

2. Personas & Main Use Cases

Student: Persona 1

About Edward	Skills	Goals
Year: Senior Major: Business Career Choice: Uncertain Attitude: Outgoing Limitation: Can't spend too much time on one posting.	Technology Proficient Good People Skills	Wants to find as many matching opportunities as possible. Wants unique skills to be recognized.
	Pain Points	
	Applying feels impersonal; feels like text isn't enough to express skills. Keeps filling out the same information over and over again.	

Use Case 1: Candidate Profile Creation

Edward wants to create a profile on our website. They choose to register for an account and fill out the registration form. Once completed, they decide to upload a resume and a video showcasing their programming skills.

Use Case 2: Endorsement Request

Estelle notices she can request ratings for some of his skills and classes. When requesting a rating for a class she enjoyed and did well in, she leaves a message for the professor. After walking away for a cup of coffee, she sees a notification that his professor already gave her a high rating for the class and even some of her skills.

Headhunter: Persona 2

About Stan	Skills	Goals
Company: Food for Homeless Department: Human Resources Attitude: Critical	Technologically Proficient Proofreading Expert	Wants a hiring platform that is flexible and inviting.
	Pain Points	
	Encounters students with integrity issues in skills and experience. Gets tired of seeing keywords in resumes instead of descriptive experience details.	

Use Case 3: Job Posting

Stan wants to post an open position in their company. When they are logged in, they fill out a job posting form with required and preferred criteria. They include the amount of experience, technical skills, and demographics.

Endorser: Persona 3

About Robin	Skills	Goals
Department: Health and Education Attitude: Career-driven lifestyle Limitation: Requires teaching assistant to organization maintenance	Expert at using iLearn	Wants to give outstanding students the opportunities they deserve.
	Pain Points	
	Doesn't have time to spend seeking out students to endorse. Has to juggle multiple means of communication.	

Use Case 4: Endorsement

Robin receives a request to rate a student in one of her classes. She views the student's profile to jog her memory. She gives a glowing rating for this student and also endorses some of his skills.

Administrator: Persona 4

About Admin	Skills	Goals
Milestone Employee Limitation: Busy, this is only one of many responsibilities	Tech savvy Full-stack developer	Solve user problems Maintain useful web application
	Pain Points	
	Needs a responsive system to minimize troubleshooting.	

Use Case 5: Verify Clients

Admin consistently receives user account requests from students, employers, and professors. In order to fulfill these demands, they ensure the legitimacy of their company and job description.

3. List of Main Data Items & Entities

Student Entity

userID	username	password	email	contactInfo	Demographics	resume
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Headhunter Entity

userID	username	password	email	contactInfo	company
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Endorser Entity

userID	username	password	email	contactInfo	credentials
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Demographics Entity

demoID	gender	race	currentLocation	nationality	countryOfBirth
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Job Postings Entity

postID	description	location	contactInfo	company	salary
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Job Requirements Entity

jobReqID	experience	Demographics	skills
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Message System Entity

msgID	message	receiver	sender	subject	alerts
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4. Functional Requirements

1. Students shall be able to search for open positions of interest to them. A new graduate or senior shall use this system to find openings at companies of interest and be able to knock on the door by indicating his/her interest.
2. Students shall seek endorsements from endorsers for specific skills the students want prospective employers to take note of.
3. Endorsers shall rate students in a scale from 1-5 fashion, being 5 the highest ratings that implies knowledge, responsible, teamwork, leadership, committed to success, etc and enter recommendations.
4. A new graduate or senior shall use the system to request endorsements from a professor at the university.
5. Endorsers shall be able to login without need for them to sign up.
6. Headhunters shall register to use the system.
7. An Administrator shall verify a headhunter.

8. Headhunters shall create job postings.
9. Guests (students, and headhunters) who do not want to sign up yet, shall be able to search.
10. Search capability for new graduates or students by major, demographics, and military code.
11. Headhunters shall specify demographic preferences and have results highlighted accordingly.
12. Students shall register and get alerts for matching profiles that they are looking for.
13. Administrative capabilities to trigger the matching alerts to the companies and alerts to the students to get ready for interviews.
14. Students and headhunters shall participate in a chat dialogue.
15. Students shall have the option to automatically build a profile from their resume.
16. First-time visitors shall be onboarded.
17. Students shall be given suggestions to improve their profiles.

5. Non-Functional Requirements

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0 (some may be provided in the class, some may be chosen by the student team but all tools and servers have to be approved by class CTO).
2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers
3. Selected application functions must render well on mobile devices
4. Data shall be stored in the team's chosen database technology on the team's deployment server.
5. No more than 100 concurrent users shall be accessing the application at any time
6. Privacy of users shall be protected, and all privacy policies will be appropriately communicated to the users.
7. The language used shall be English.
8. Application shall be very easy to use and intuitive.
9. Google maps and analytics shall be added
10. No e-mail clients shall be allowed. You shall use webmail.
11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated in UI.
12. Site security: basic best practices shall be applied (as covered in the class)
13. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development
14. The website shall prominently display the following exact text on all pages "SFSU Software Engineering Project CSC 648-848, Spring 2021. For Demonstration Only" at the top of the WWW page. (Important so not to confuse this with a real application).

6. Competitive Analysis

Feature	LinkedIn	Indeed	Handshake	Milestone Our Application
Endorsement	+	-	-	++
Job-Matching	+	+	-	++
Browse	+	+	+	++
Text Search	+	+	+	+
Mandatory Account	-	-	+	-
Upload Files	+	+	+	++

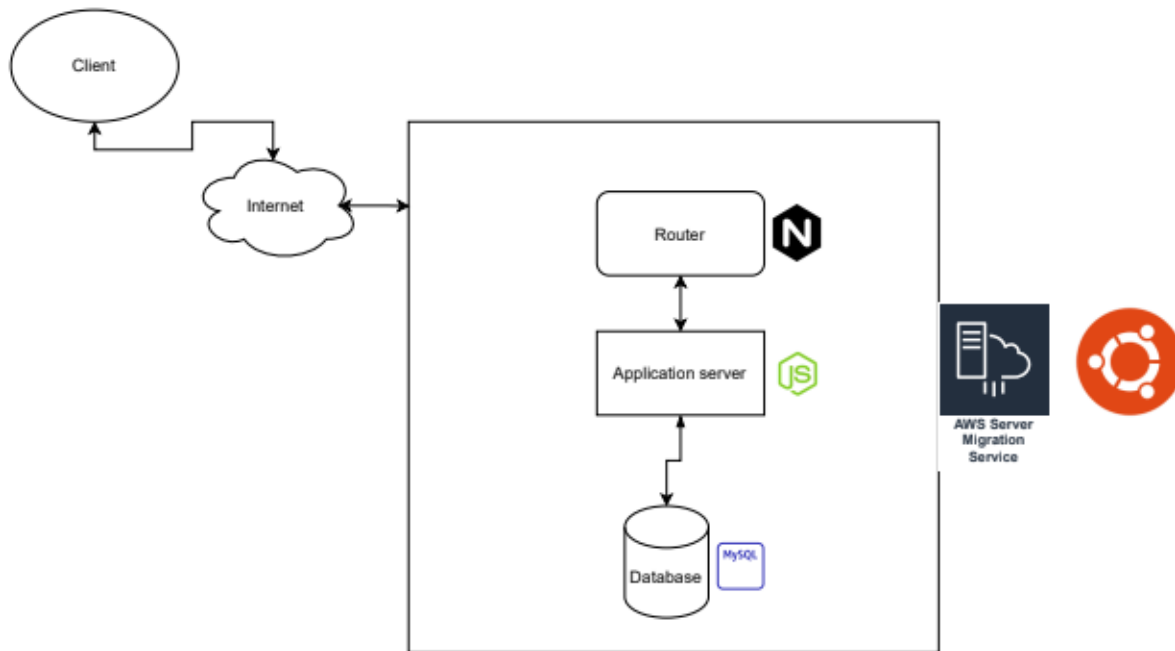
+ feature exists; ++ superior; - does not exist

Summary: Other products are overpopulated with tools found in social media sites, at the expense of functionality. Students want to discover matching jobs and employers, while employers want the tools necessary to find great talent. Our product focuses on matching students directly with employers, rather than personalized recommendations. This creates a more efficient and effective process for both parties.

7. High-Level System Architecture & Technologies

- Server Host: Amazon Web Services EC2 8G
- Operating System: Ubuntu Linux 20.04
- Database: MySQL 8.0.23
- Web Server: NodeJS v14.15.1 NginX 1.18.0
- Server-Side Language: Javascript
- Additional Technologies:
 - Web Framework: React.js v17.0.1, Express 4.17.1
 - Database Tool: MySQL Workbench
 - UI Tool Kit: Semantic UI React v2.0.3
 - IDE: Visual Studio Code
 - Web Analytics: Google Analytics

Architecture Diagram



8. Team & Roles

- Team Lead: Maria Caravez
- GitHub Master: Jooyoung Kim
- Front End Lead: Bera Coskun
- Back End Lead: Peter Ijeoma
- Database Manager: Jeffrey Ye

9. Checklist

1. **DONE:** Team found a time slot to meet outside of the class
2. **DONE:** Github master chosen
3. **DONE:** Team decided and agreed together on using the listed SW tools and deployment server
4. **ON TRACK:** Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing
5. **DONE:** Team lead ensured that all team members read the final M1 and agree/understand it before submission
6. **DONE:** Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)