

CSC 648/848-02 Software Engineering – Spring 2022

Milestone 1

Milestone 1 - Use Cases, High Level Requirements and Architecture

Team 2

Team Lead: Zubin Kanga (zkanga@sfsu.edu)

Front End: Cat Tuong Vu, Gurinder Singh, Sebastian Wcislo

Back End: Anudeep Katukojwala, Brandon Butler, Zubin Kanga

GitHub Master: Sebastian Wcislo

Revision Table

Executive Summary

Our world is changing. Each day our status quos are evolving and becoming more and more efficient. From the way we consume our media, to the way we interact with medical professionals, to the way we transport our goods and ourselves around the world. It is all changing and here at Tech Connect we intend to keep you evolving with it.

Tech Connect is a revolutionary app that is designed to keep you, those in your industry, and those hiring in your field connected with one another. With our app you will never fall behind the current market trends and trajectory and will be able to get an edge against your competition.

With Tech Connect, you are able to see postings from around the industry and directly connect with those hiring these positions. You are also able to connect with your colleagues and share information about the interview process for different companies. Finally, if you are a startup or a large company you can post job listings to Tech Connect to alert those who qualify to apply.

There are so many uncertainties in our ever-changing world, let's make staying connected something we're certain about. Welcome to Tech Connect!

Personas and Main Use Cases – Gurinder

Personas

Key personas that will be using our application include: San Francisco State University students who are part of the Science, Technology, Engineering, and Math fields and are looking to find jobs that they love. Moreover, this application will also help tech companies to post about various jobs and positions that they want to fill.

SFSU students in STEM

In general, students in the STEM field are tech-savvy; they enjoy working on complex problems. Most of them have great problem-solving abilities, which are crucial when trying to solve complex problems. However, everyone has different goals and passions that they want to pursue. For example, some students enjoy learning about Artificial Intelligence, while others are more interested in web development. The point is there are many opportunities to find the job of your dreams in tech. However, sometimes it becomes tough to pinpoint exactly the type of tech field someone wants to go in. They might have some vague idea of the industry they wish to enter, but they are unsure. It's a common problem that students face when looking for jobs in the tech industry.

Tech Companies

It's no secret that every tech company or any company in general wants motivated people to work for them. They want people who are quick learners and are self-motivated. Moreover, they want employees who can adapt to their work environments and adhere to the best practices. Unfortunately, it's sometimes hard for tech companies to find such self-motivated workers. As technology keeps on getting better, the demand for good engineers, programmers, and problem-solvers, in general, will also increase. Many companies want to employ university students and

train them. Tech companies are willing to pay good salaries for self-driven and skilled students who want to join the industry. However, it's sometimes hard for them to look for such talented students because websites currently in use today to find jobs like Indeed, ZipRecruiter, etc., are very broad in terms of their usage. They don't necessarily focus on students who are looking for Internships or Entry-level jobs.

Use Cases

1. Refined search results

A student who is part of SFSU, interested in tech, and wants to look for jobs that match their interests and skills. They are not sure about the type of sub-field they want to be a part of. However, they are passionate about designing cool user interfaces. They search for jobs using their skills as a filter to get relevant and refined search results.

2. Technology trends of 2022

A student who is passionate about tech in general but doesn't know where to focus their attention to benefit the most from the technology trends of 2022. They go to our website and look at various trends in tech and try to find something that they will enjoy learning about. They then decide to look for jobs posted under that category in order to get a gist of job requirements so they can focus on learning appropriate skills.

3. Tech companies can post jobs

A tech company is looking for a motivated and talented student for an entry-level job. They want to hire someone from the SFSU and enjoy the process to be as smooth as possible. They go to our website and post under the appropriate category stating the job title, description, and skills they are looking for.

4. Register to get notifications

A student wants to work in the tech industry and is passionate about tech in general. They go to our website and search by skills, but couldn't find a job matching their skills and interests. They want to be notified whenever a job gets posted that matches their abilities and interests. They get prompted to register to be notified of jobs that match their skills.

List of Main Data Items and Entities – Sebastian

Features

1. Search (For the following non specific job postings)
 - a. Artificial Intelligence, Machine Learning, Robotic Process Automation, Edge Computing, Quantum Computing, Virtual Reality, Augmented Reality, Blockchain, Internet of Things, 5G, Cyber Security
2. Search Filter
 - a. Tech areas, Job Positions, Skills
3. Mobile Device Rendering
4. Register
5. Log In
6. Log Out
7. About the Creators
8. Profile Page Sharing
9. Claim Verification
10. Span Control
11. Alerts
12. User Messaging
13. Interview Prep

Types of Users

1. SFSU Students
 - a. This website is designed for students who attend San Francisco State University who wish to find their dream jobs in tech. This website will use their search

filters, along with the perks of attending SFSU to help them with tech career endeavors.

2. Tech Companies

- a. This website will allow tech companies to post job openings with the following minimum job information: Job titles, descriptions, required skills

Technologies

- Stack Revision
 - o Using us-west-1
- Server Host
 - o t3.micro instance (2 vCpus and 1 GiB) => t2.micro instance (t3.micro does not have the free tier eligible tag)
- Operating System
 - o Ubuntu 16.04 Server => Ubuntu Server 20.04 LTS (HVM)
- Database
 - o MySQL v 8.0.28
- Web Server
 - o Nodejs
- Server-Side Language
 - o Javascript
- Web Framework
 - o react.js
- IDE
 - o Microsoft Visual Studios

- Web Analytics
 - Google Analytics
- SSL Cert
 - Lets Encrypt (Cert Bot)
- SASS
 - 3.5.6
- ADDED
- SSH Terminal
 - MobaXTerm (Windows)

Initial List of Functional Requirements – Brandon Butler

What Does it Do?

This app allows users to search for job listings posted by companies looking for help.

This has an emphasis on STEM careers.

Functions

- Job Searching
 - Users should be able to search through job listings based on their titles and associated companies. The users are also able to use different filters to get more specific results.
- Account Management
 - Easily allows the users to register their accounts with the app, log into and log out of their accounts to gain access and deny access from the app, and manipulate their profiles to give their basic information, job experience, and general information on their personalities for other users and posters can see.
- Profile Sharing
 - Profiles should be allowed to be easily shared through text messages, emails, and through messages on the app with ease.
- Claim Verification
 - There should be a claim verification feature for admins to review as they see fit.
- Spam Control
 - Spam posting and other malicious posts should be mitigated and controlled.
- Notifications

- Sending the users emails or phone notifications when they get information from the app when they are not directly using the app.
- Messaging
 - Users should be able to easily interact with Users and Posters.
- Interview Prep
 - Users should be able to post advice for the companies interviews and even link videos from YouTube with examples.

Data Description

- Users and Posters
 - Users – people who are using the app to search for jobs and interact with other users to gain insight on the job market.
 - Posters – the companies that post the job listings for the Users to apply for and reach out for better insight on what are the requirements and expectations for the job.
- Key Elements

List of Non-Functional Requirements – Cat

Product Requirements

- Usability requirements:
 - An application that will provide SFSU tech students easy access to any specific tech related job based on individual interests. In which will also provide companies an easy tool to reach out for suitable candidates for the job positions.
- Efficiency requirements:
 - Performances requirements:
 - Up-to-date searching tools and data
 - Speed, capacity and reliability
- Dependability requirements:
 - Availability: up-to-date recruitments and candidates information
 - Reliability: accurate and reliable information from company and candidates
- Security requirements:
 - We plan to take this feature seriously to protect both our job seekers and employers from spam by incorporating rigorous onboarding processes onto our portal.
 - We shall incorporate this feature to make sure the job seekers won't be fooled by unverifiable salary claims, and other tactics that employers use to lure the job seekers to their companies.

Organizational Requirements

- Environmental requirements:

- This is an easy and friendly app for all SFSU tech students that guarantees to make the jobs seeking process more efficient.
- Operational requirements:
 - With an Ubuntu server, the application is guaranteed to offer a wide range of choices, making it very customizable.
- Development requirements:

Competitive Analysis – Anudeep

Features	LinkedIn	Glassdoor	Indeed	Our Product Name
Interview Prep and career advice	+	-	-	++
Apply within portal	++	-	-	++
Pricing	\$29.99 per month	Not disclosed but a premium account needed to access all features	Price per click model for Employers who post job ads	Free of charge
Profile page sharing	++	-	-	++
Spam Control	-	-	-	++
Claim Verification	-	-	-	+

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

We envisioned launching this product to provide laser focus help for SFSU students to find jobs in the Tech world. Although every other competitive products as mentioned in the above table have many core features that are needed for both the job seekers and employers, our product shines in few areas such as below:

1. Pricing: We planned to develop a completely free of charge product for our students and employers.
2. Spam control: We plan to take this feature seriously to protect both our job seekers and employers from spam by incorporating rigorous onboarding processes onto our portal.
3. Claim Verification: We shall incorporate this feature to make sure the job seekers won't be fooled by unverifiable salary claims, and other tactics that employers use to lure the job seekers to their companies.

4. Targeted Help: Since our product is exclusively being built for SFSU students, we can help our students with their job search and career advising on a deeper level.

High-Level System Architecture and Technologies Used – Zubin

<u>Category</u>	<u>Team 2</u>	<u>Feedbacks</u>
Correctly Installed and Configured Software Stack	2	Able to access db.
Correctly Populated Credentials Folder in GitHub	2	No instructions were entered in the list of items required section.
Correct use of Git and GitHub	1	Only 3 contributors are displayed. Add URL in the about section
Correct team WWW page functionality, deployment and proper usage of team's Software Stack for creating web page	3	I see you are using a prebuilt framework/template. Just be mindful
Total:	8	

Team and Roles

Team Lead: Zubin Kanga

Front End: Cat Tuong, Gurinder Singh, Sebastian Wcislo

Back End: Anudeep Katukojwala, Brandon Butler, Zubin Kanga

GitHub Master: Sebastian Wcislo

Checklist

- ✓ Team found a time slot to meet outside of the class
- ✓ GitHub master chosen
- ✓ Team decided and agreed together on using the listed SW tools and deployment server
- ✓ 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
- ✓ Team lead ensured that all team members read the final M1 and agree/understand it before submission
- ✓ GitHub organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)