

SW Engineering CSC648/848 Spring 2022

GatorJobs

Section 02 Team 05

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Milestone 2
6 March 2022

| | |
|-----------------|--------------|
| Date Submitted: | 7 March 2022 |
| Date Revised: | |

1. Functional Requirements - Prioritized

Priority 1 (P1): Must Have, needed for launch.

Priority 2 (P2): Desired, necessary to have. Delay ship date unnecessary

Priority 3 (P3): Opportunistic, good to have can wait till next launch

System:

(P1) System shall have a homepage.

(P1) System shall have admin pages.

(P1) System shall have a login page.

(P1) System shall have a forgot password page.

(P1) System shall have a student page.

(P1) System shall have a company page.

(P1) System shall give alerts to students if any jobs are available.

(P2) System shall have a search bar / filters.

Admin:

(P1) Admin shall be able to manage students and company data.

(P1) Admin shall be able to notify students about available job offers.

(P1) Admin shall be able access and manage student or company's profile pictures.

Student:

(P1) Students shall be able to create and register accounts using their sfsu email or ID number.

(P1) Students shall receive job alerts if some job description matches their portfolio.

(P1) Students shall be able to upload a picture of themselves to their profile.

(P2) Students shall be able to search and filter for tech jobs using the search bar or filter tool at the top of the page.

(P3) Students shall be able to add a link to their websites or projects. Links can be student's own personal websites or GitHub page

(P3) Students shall be able to upload recommendations from professors.

Companies:

(P1) Companies shall be able to create and register accounts.

(P1) Companies shall be able to upload a company picture or logo to their profile.

(P1) Companies shall be able to post job availability by posting about the job titles, descriptions and skill set requirements.

2. UI Mockups and Storyboards (high level only)

a. Student Sign Up:

This is a student sign up page where new students can create an account by entering some basic information.

New Student? Sign Up Today !

| | |
|--|-----------------------------|
| <p>FIRST NAME:</p> <input type="text"/> | <p>Dummy students image</p> |
| <p>LAST NAME:</p> <input type="text"/> | |
| <p>PHONE NO.</p> <input type="text"/> | |
| <p>EMAIL ID:</p> <input type="text"/> | |
| <p>PASSWORD:</p> <input type="password"/> | |
| <p>CONFIRM PASSWORD:</p> <input type="password"/> | |
| <p>GENDER: <input type="radio"/> Female <input type="radio"/> Male</p> | |
| <p>SUBMIT</p> | |

b. Student Registration:

After the sign up, students can further complete their registration by answering a comprehensive set of questions. The registration consists of 7 steps.

- A. Basic Information
- B. Educational Qualifications
- C. Certifications
- D. Skills & Languages
- E. Work Experience
- F. Objective & Recommendations
- G. Review and Submit

The image shows a registration form interface. At the top, there is a progress bar with 7 steps, numbered 1 through 7, and a checkmark icon at the end. Step 1 is highlighted. Below the progress bar is a form titled "TELL US A LITTLE ABOUT YOURSELF!". The form is divided into two columns. The left column contains fields for "FIRST NAME:", "LAST NAME:", "STUDENT ID:", "ADDRESS:", and "LINKS:". The right column contains fields for "PROFILE PHOTO:", "DATE OF BIRTH:", and "PIN CODE:". The "PROFILE PHOTO:" field has an "UPLOAD A PHOTO" button and a "PROFILE PHOTO" placeholder. The "LINKS:" field has a "+" button. At the bottom of the form is a "NEXT" button.

1 2 3 4 5 6 ✓

TELL US A LITTLE ABOUT YOURSELF!

FIRST NAME:
AUTOFILLED FROM SIGN UP, BUT EDITABLE.

LAST NAME:
AUTOFILLED FROM SIGN UP, BUT EDITABLE.

STUDENT ID:

ADDRESS:

LINKS:

PROFILE PHOTO:

↑ **UPLOAD A PHOTO**

PROFILE PHOTO

DATE OF BIRTH:

PIN CODE:

+

NEXT

Step 1: Basic Information

123456✓

ALMOST FINISHED WITH THE BASICS! JUST ADD A FEW SKILLS.

SKILLS:

+

X skill 1

X skill 2

X skill 3

LANGUAGES SPOKEN:

+

PROFICIENCY (on scale of 1 to 5)

PREVIOUS

NEXT

Step 4: Skills and Languages

123456✓

WE ARE ALMOST DONE! DO YOU HAVE ANY WORK EXPERIENCE?

TITLE:

COMPANY:

POSITION:

START DATE:

END DATE:

DESCRIPTION:

EXPERIENCE LETTER:

+

PREVIOUS

NEXT

Step 5: Work Experience

1

2

3

4

5

6

✓

NOW, LET'S WORK ON YOUR OBJECTIVE.

This appears near the top of your page.
Impress employers with a strong opening statement that sums up your strengths and experience.

OBJECTIVE:

UPLOAD A RECOMMENDATION:

↑

UPLOAD A RECOMMENDATION
FROM YOUR PROFESSORS.

PREVIOUS

NEXT

Step 6: Objectives and Recommendations

1

2

3

4

5

6

✓

ALL SET! PREVIEW ONCE TO MAKE SURE EVERYTHING IS GOOD.

THIS WILL BE A PAGE WISE PREVIEW
OF ALL THE INFORMATION SAVED BY THE STUDENT.

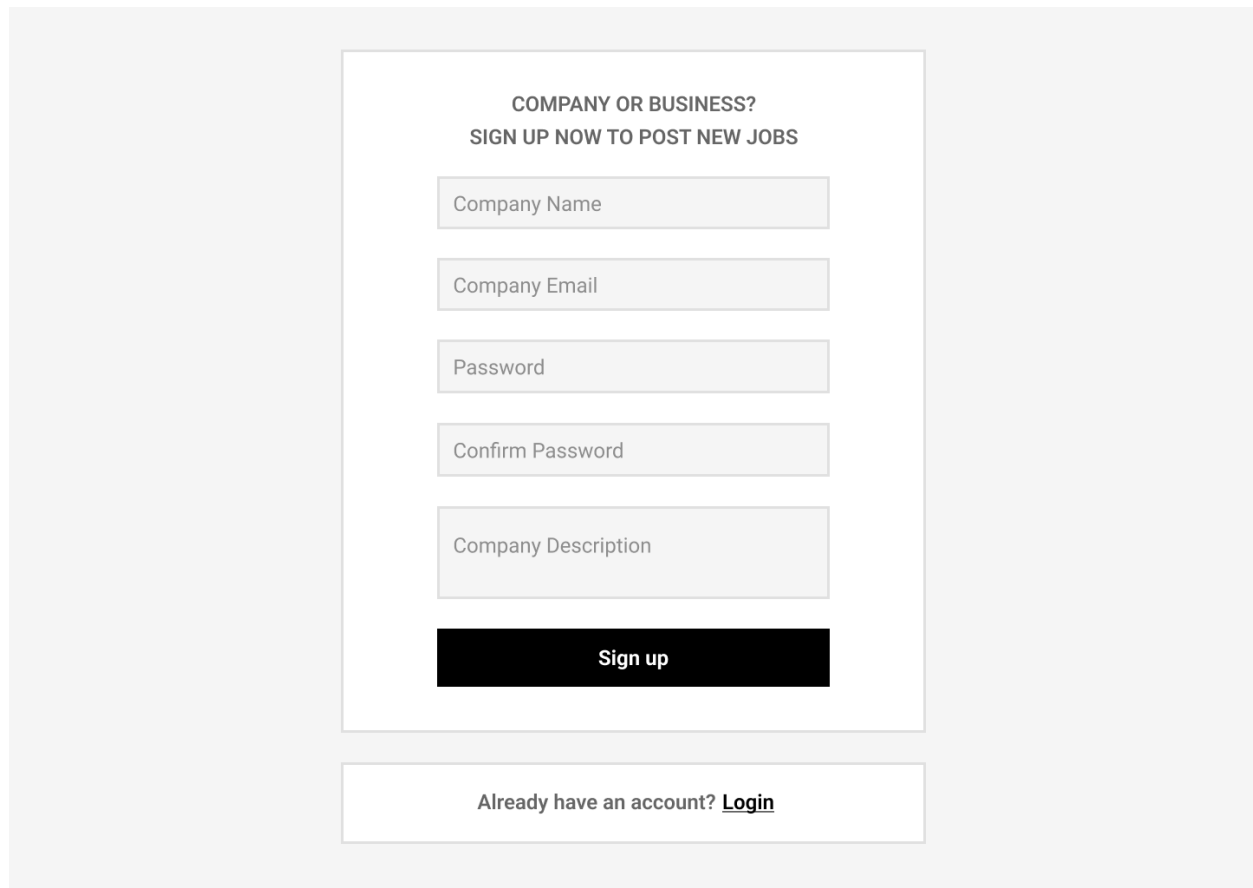
PREVIOUS

NEXT

Step 7: Review and Submit

c. Company Sign-Up:

Companies can register or create an account by filling up the information like name, email, brief description to login and post new jobs. In case they already have an account they can continue to login.



The image shows a web form for company sign-up. It is titled "COMPANY OR BUSINESS?" and "SIGN UP NOW TO POST NEW JOBS". The form contains five input fields: "Company Name", "Company Email", "Password", "Confirm Password", and "Company Description". Below these fields is a black "Sign up" button. At the bottom of the form, there is a link: "Already have an account? [Login](#)".

COMPANY OR BUSINESS?
SIGN UP NOW TO POST NEW JOBS

Company Name

Company Email

Password

Confirm Password

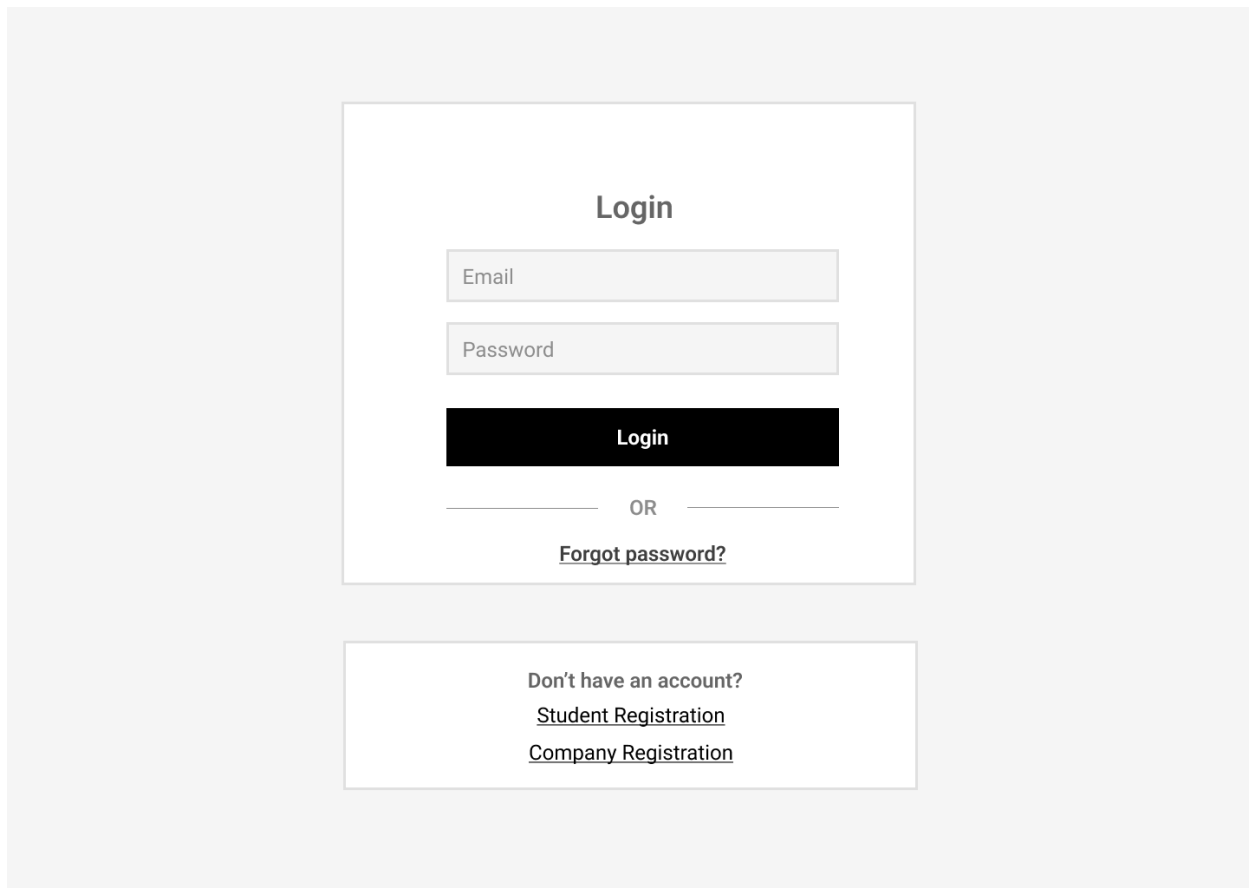
Company Description

Sign up

Already have an account? [Login](#)

d. Logins:

Students as well as companies can go to the login page and login with their email and password to access their profile. In case they are not registered they can create their new account and in case they have forgotten their password they can go to the forgot password page to change their password.



The image shows a login form centered on a light gray background. The form is contained within a white box with a thin gray border. At the top of this box is the title "Login" in a bold, dark gray font. Below the title are two input fields: the first is labeled "Email" and the second is labeled "Password", both in a light gray font. Underneath these fields is a solid black button with the word "Login" in white. Below the button, the text "OR" is centered, flanked by horizontal lines. Underneath "OR" is a link labeled "Forgot password?". Below the main login box is another white box with a thin gray border. Inside this box, the text "Don't have an account?" is followed by two links: "Student Registration" and "Company Registration", both underlined.

Login

Email

Password

Login

OR

[Forgot password?](#)

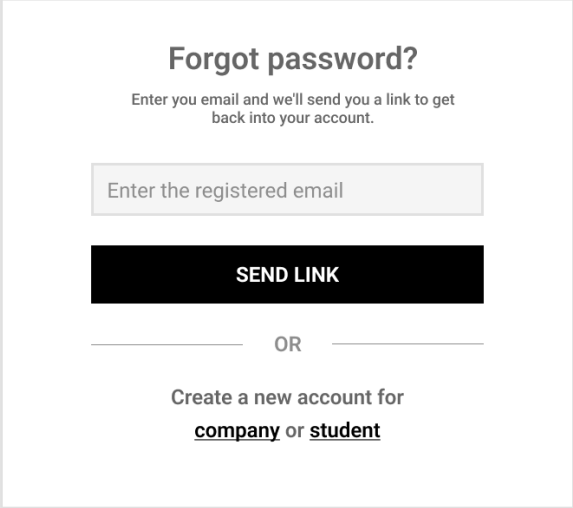
Don't have an account?

[Student Registration](#)

[Company Registration](#)

e. Change Password / Forgot Password:

Companies as well as students can change their password with the help of their email. They will receive a link in their email through which they can change their password



The image shows a 'Forgot password?' form centered on a light gray background. The form is a white rectangle with a thin gray border. At the top, the title 'Forgot password?' is in bold. Below it, a subtitle reads 'Enter you email and we'll send you a link to get back into your account.' (Note the typo 'you' instead of 'your'). There is a text input field with the placeholder 'Enter the registered email'. Below the input field is a black button with the text 'SEND LINK' in white. Underneath the button, the word 'OR' is centered between two horizontal lines. At the bottom of the form, the text 'Create a new account for' is followed by the underlined options 'company' or 'student'.

Forgot password?

Enter you email and we'll send you a link to get back into your account.

Enter the registered email

SEND LINK

OR

Create a new account for company or student

f. Post Jobs:

A company will have its own main page, where they will have a brief description, their logo, and a list of jobs they have already posted. They will also have the ability to add new jobs and search students based on the filters.

COMPANY NAME

BRIEF COMPANY DESCRIPTION
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat

ADD

SEARCH

LOGO

WE'RE HIRING!

POSTED JOBS:

JOB POSITION:

BRIEF JOB DESCRIPTION
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in

EDIT

DELETE

SEARCH

JOB POSITION:

BRIEF JOB DESCRIPTION
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in

EDIT

DELETE

SEARCH

On clicking on the add new job button, the user shall be redirected to a new page where they will be able to add new jobs.

LET'S ADD SOME INFORMATION FOR THE CANDIDATES!

TITLE / POSITION:

DESCRIPTION:

CANDIDATE'S GRADUATION YEAR (FROM):

REQUIRED SKILLS:

DOMAIN

+

ANNUAL COMPENSATION:

CANDIDATE'S GRADUATION YEAR (TO):

DONE

g. Search / Filter:

- Search/filter page for students

Students can search job results by using the following filters:

- 1) Filter by domain
- 2) Search skills
- 3) by job title

Search available jobs

Filter on domain ▼

skill 1 × Type to Search skills

Filter with job title ▼

RESULTS 3 OF 11

JOB POSITION 1

BRIEF JOB DESCRIPTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

JOB POSITION 2

BRIEF JOB DESCRIPTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

JOB POSITION 3

BRIEF JOB DESCRIPTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

NEXT >

- Search/filter page for company

Companies can search students by using the filters-

- 4) Filter by domain
- 5) Search skills
- 6) Filter by student's qualification

Search available students

Filter on domain ▼

skill 1 × Type to Search skills

Filter by qualification ▼

RESULTS 3 OF 11

student 1

BRIEF DESCRIPTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

student 2

BRIEF DESCRIPTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

student 3

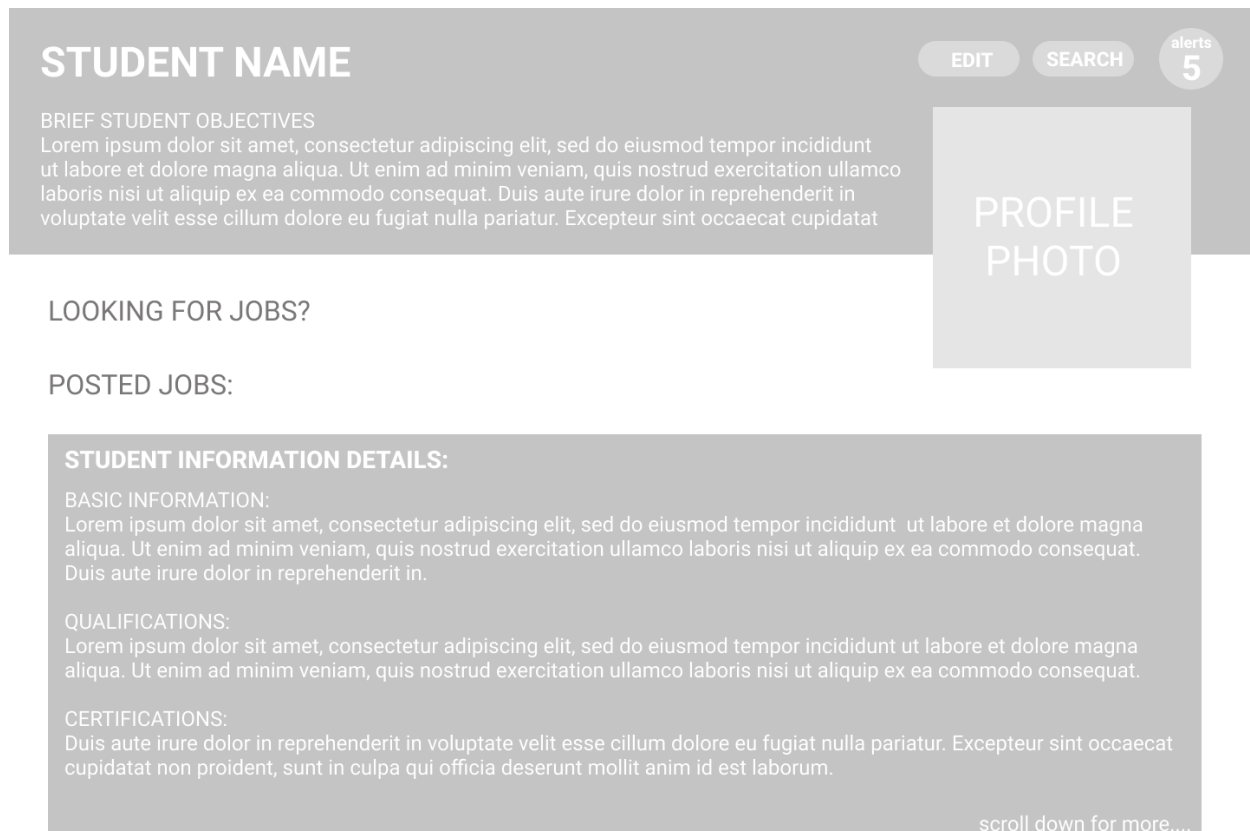
BRIEF DESCRIPTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

NEXT >

h. Get job alerts:

The students will be able to see job alerts on their student home page. They will also be able to see the information they entered on their page, along with their profile photo. They will be able to see the job alerts on the upper right corner of the page.



At the admin page, the admin will be able to see a list of all the students and the companies that have registered at GatorJobs. The admin will be able to search on companies or on students and apply filters on the searches to get more curated results.

WELCOME ADMIN!

SEARCH STUDENTS

SEARCH JOBS

SEARCH ON DOMAIN

SEARCH ON SKILLS

BASIC QUALIFICATION

CLICK ON ARROW TO SELECT ▼

X skill 1 X skill 2 TYPE TO SEARCH MORE...

CLICK ON ARROW TO SELECT ▼

SHOWING RESULTS 2 OF 7

STUDENT NAME

BRIEF STUDENT DESCRIPTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

STUDENT NAME

BRIEF STUDENT DESCRIPTION

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SCROLL DOWN FOR MORE RESULTS...

Filtering based on students

WELCOME ADMIN!

SEARCH STUDENTS

SEARCH JOBS

SEARCH ON DOMAIN

SEARCH ON SKILLS

SEARCH ON JOB TITLE

CLICK ON ARROW TO SELECT ▼

X skill 1 X skill 2 TYPE TO SEARCH MORE...

CLICK ON ARROW TO SELECT ▼

SHOWING RESULTS 2 OF 11

JOB POSITION

BRIEF JOB DESCRIPTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

JOB POSITION

BRIEF JOB DESCRIPTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

SCROLL DOWN FOR MORE RESULTS...

Filtering based on jobs

3. High level Architecture, Database Organization

a. DB organization:

- Student
 - Student_ID (uuid)
 - Username (varchar)
 - Password (varchar)
 - Name (varchar)
 - Email (varchar)
 - Photo_path (varchar)
 - Address (varchar)
 - Phone_no (int)
 - Date_of_birth (varchar)
 - Pin_code (int)
 - Links (varchar)
 - Skills (varchar)
 - Languages_spoken (varchar)
 - Proficiency (int)
 - Objectives (varchar)
 - Recommendation_letter (varchar)
 - Category (varchar)
 - Permissions (varchar)
- Student_Educational_Qualifications
 - Student_ID (varchar)
 - Degree_ID (varchar)
 - Degree (varchar)
 - GPA (float)
 - Start_date (varchar)
 - Graduation_year (int)
 - Description (varchar)
 - Awards (varchar)
- Student_Certifications
 - Student_ID (varchar)
 - Certification_ID (varchar)
 - Certification (varchar)
 - Awarding_body (varchar)
 - Start_date (varchar)
 - End_date (varchar)
 - Description (varchar)
 - Certificate_file (varchar)

- Student_Work_Experience
 - Student_ID (varchar)
 - Work_Ex_ID (varchar)
 - Title (varchar)
 - Company_name (varchar)
 - Position (varchar)
 - Start_date (varchar)
 - End_date (varchar)
 - Description (varchar)
 - Experience_letter (varchar)
- Company
 - Company_ID (uuid)
 - Username (varchar)
 - Password (varchar)
 - Name (varchar)
 - Email (varchar)
 - Photo_path (varchar)
 - Permissions (varchar)
 - Description (varchar)
 - Category (varchar)
 - Company_logo (varchar)
- Jobs
 - Job_ID (uuid)
 - Title (varchar)
 - Description (varchar)
 - Annual_compensatiob (float)
 - Graduation_year_from (int)
 - Graduation_year_to (int)
 - Required_skills (varchar)
 - Category (varchar)

b. Media Storage:

We are choosing to use the MySQL 8.0.28 database in order to store the profile pictures of students and tech companies' logos. We shall store the images in a BLOBS (Binary Large Objects) database. The BLOBS DB shall store the image's metadata which includes the file name, size, and format. We are choosing to store the media using BLOBS DB in order for Admins to monitor and access profile pictures or company logos. Admins can determine if the profile picture or company logo are appropriate for the site.

c. Search/ Filter architecture and implementation:

In order to implement a search function for our web application, we will be using software from SQL in order to communicate with MySQL, our database. With the help of SQL, the user shall use a Free Text entry field and Parametric search in order to search for terms that are related to the job positions that are included in the nine areas of tech. We shall organize search and filter items for the user based on their role. For students, the search and filter items will be organized by domain (the nine areas of tech), skills (specifically programming languages), and job titles. For tech companies, the search and filter items will be organized by domain (the nine areas of tech), skills (specifically programming languages), and student qualifications. The database terms that will be searched include job positions, the nine areas of tech, and skills. Our Search function will be coded using SQL in order to communicate with our database. Our database will be organized by using the same 3 different categories which include: the nine areas of tech, job positions, and skills.

d. APIs:

- None yet

e. Significant non-trivial Algorithms:

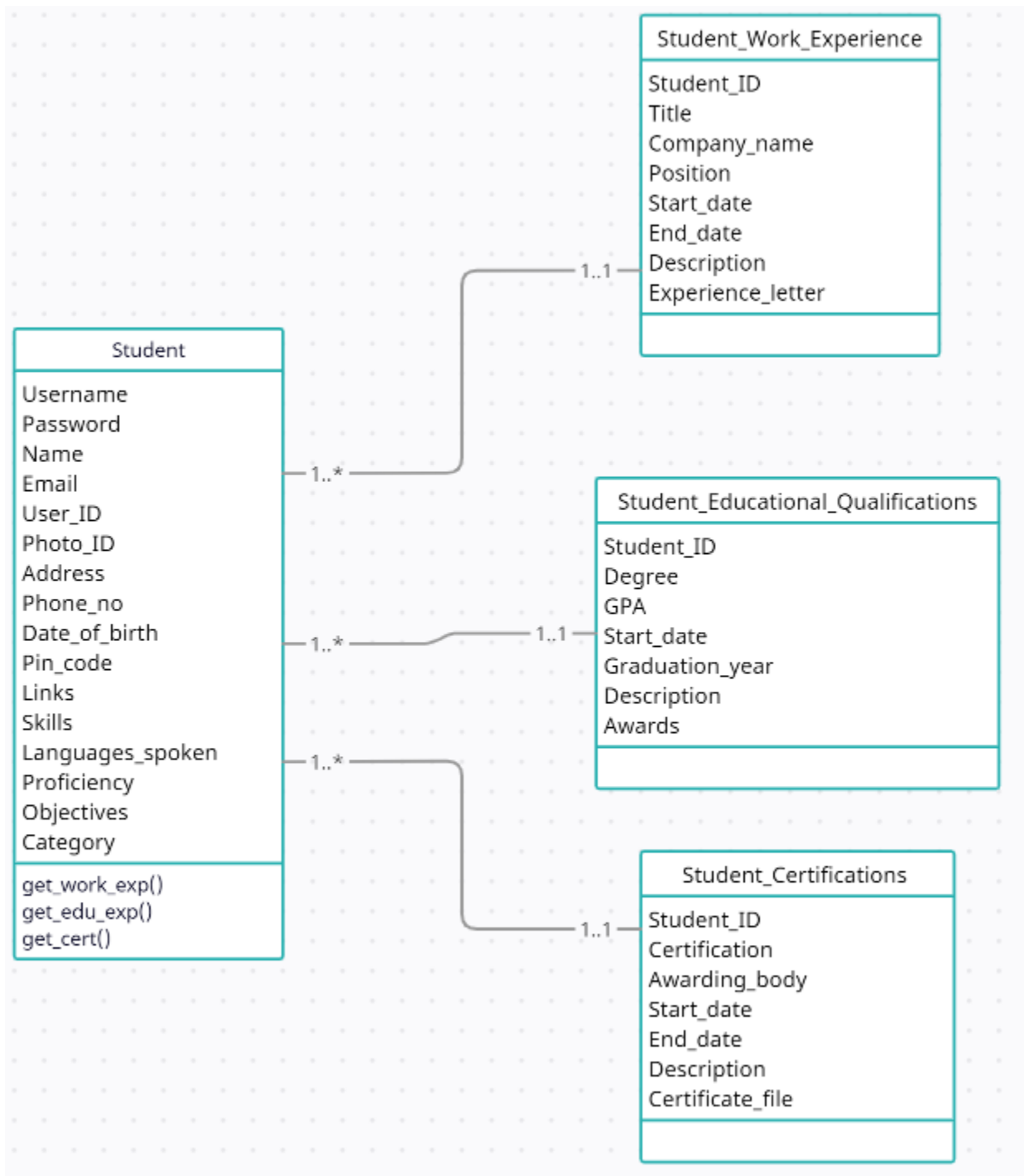
- An algorithm to help match students to job postings by their desired categories
- An algorithm to filter out erroneous/bad job postings

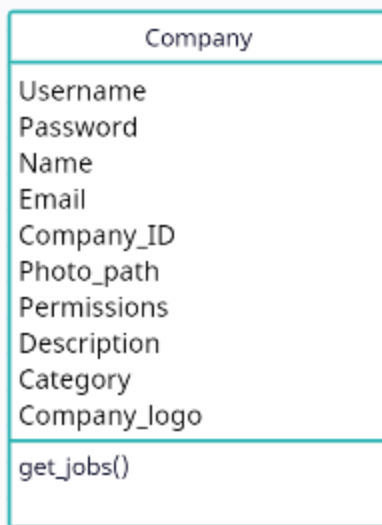
f. Added/ Changed SW tools and frameworks:

- SQL: One new software tool that we are adding is SQL. We will be adding and connecting SQL to our database for our search function. SQL allows us to communicate with MySQL in order to pull data from our database. SQL will make it easier to pull data from the database in order to search for terms that relate to nine areas of tech, job positions, and skills.

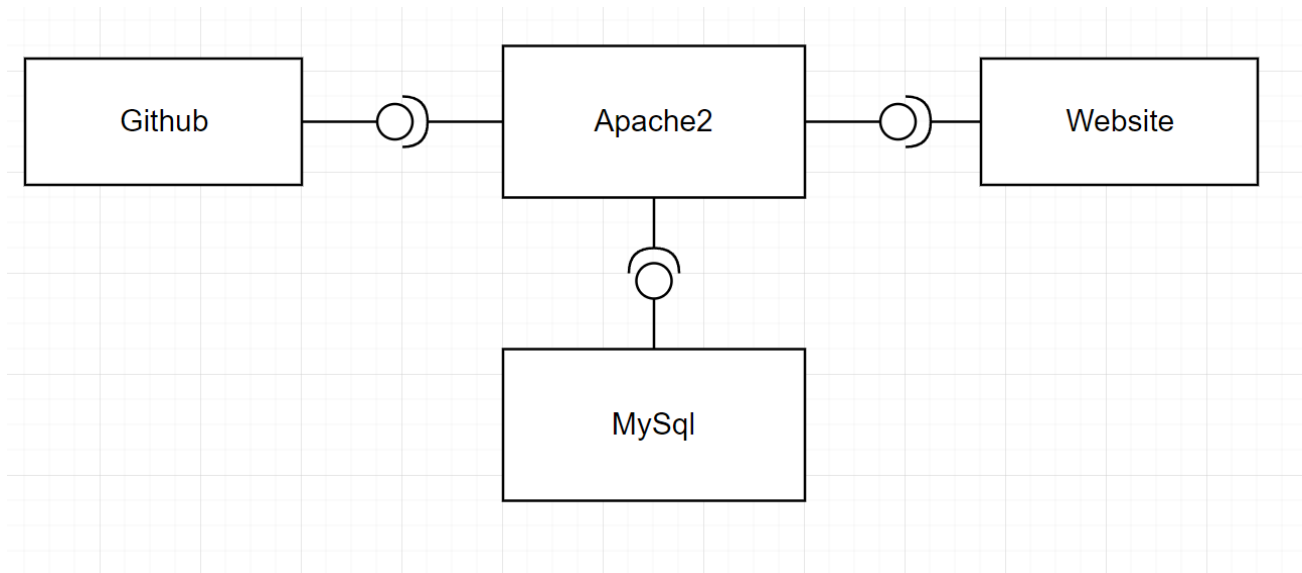
4. High Level UML Diagrams

Class diagrams:

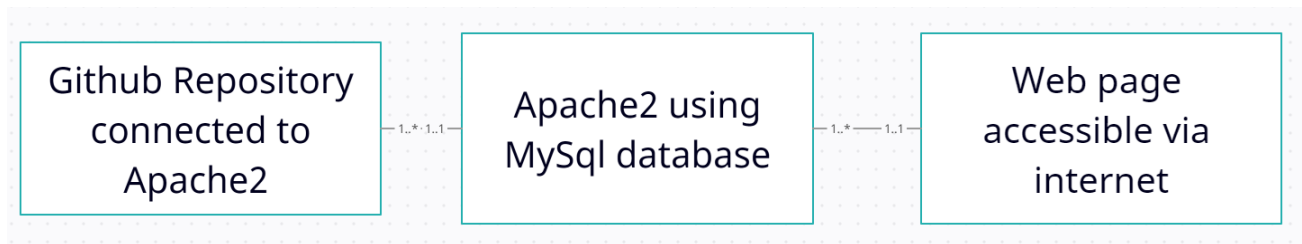




Component diagram:



Deployment diagram:



5. Potential Risks and mitigation

Skills Risk -

None of the team members are especially experienced in building and maintaining a website. We are learning the process as we go. We are mitigating this risk by holding frequent team wide and one-on-one meetings between teammates in order to coordinate and support one another.

Schedule Risks -

Team members have competing time demands with individual due dates for different classes. This is mitigated by trusting people to complete their individual tasks by utilizing good team management skills. This issue is addressed by having honest communication and asking team mates for help if needed.

Technical Risks -

Given the fact that none of the team members are familiar with the tools we are using, there is a non-zero chance that something will break. To mitigate this risk, we are using Github and regularly backing up our server in order to have a copy that we can roll back to if anything goes wrong.

Teamwork Risks -

We have some team members based out of different countries. This makes it harder for us to coordinate among many different time zones. This is mitigated by working asynchronously and concurrently. Often we group tasks to our two team members on the opposite time schedule as the rest of us for ease and simplicity.

6. Project management

As Team 5 began to approach Milestone 2, we made a concerted effort to begin acting with organizational command in independent front end and back end teams. This allowed the team to maximize efficiency by appropriately dividing tasks. For example, our front end team was responsible for generating UI mockups and Storyboards to facilitate familiarity with the basic layout of what they would be creating. This process was streamlined because they could be architecting solutions as their creativity is applied to samples. Allowing each team to specialize helping them to narrow their effort and rehearse working concurrently.

Our team has begun to use the Board functionality of Trello in order to keep track of tasks assigned to each member. This helped us ensure a fair and manageable workload for each team member. We use discord as a communication tool to meet in voice, video, or instant message. The team leader has been able to leverage these productivity tools to help align the team's strategic vision and increase efficiency while developing GatorJobs.