Computer Science   
Internship / Job Board

## Software Requirements Specification Document

**September 28, 2020**

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**1. Introduction**

**1.1 Purpose**

The purpose of this document is to lay out all of the requirements for the client to ensure that their expectations match our description prior to development.

**1.2 Scope**

The system will be implemented into the current University of Mary Washington website and will give students the ability to view internships and/or job postings from employers that have reached out to current University of Mary Washington faculty. The client for this project is Dr Polack, as she is representing the UMW Computer Science Department.

**1.3 References**

N/A

**1.4 Overview of the remainder of the document**

Our document is organized to give the reader a simple introduction to the application and then progress into more descriptive explanations of all the features that will be included in the web application. The reader will be able to reference any specific section by referencing the index at the beginning of the document.

**2. Project Description**

**2.1 System Overview**

The Computer Science Internship/Job Board system is a web-based interface that functions as a replacement for the previous internship/job board system which informs Computer Science students about internships and jobs in the field. The goal of the system is to streamline the process of posting job and internship listings, to centralize listings, and to make them easily accessible to Computer Science students. The system is hosted on a publicly accessible website to optimize availability and is designed for usage on Internet Explorer. Typical users of the system can browse and search for jobs, internships, and employers using keywords as well as flag reviews without having to create an account or log in. Only former employees of companies are able to post a review. The system provides special privileges to two account types: Admin and Employer. These privileges include posting, editing, and removing listings as well as creating and editing employer profiles that display information about employers who post jobs on the site. Additional privileges are given to the Admin such as removal of user reviews. A database stores information regarding listings, employers, and reviews and encrypts Admin and Employer passwords.

**2.2 Client Characteristics**

The client is the Computer Science Department of the University of Mary Washington. The client wants a more organized method of posting internship and job opportunities from UMW alumnus and other employers, as the current method is simply to post this information in a document relatively inaccessible to students. The client would like to ease the burden not only on the students for viewing and accessing the information in an organized fashion, but also on the department Administrators who would be posting the listings. The system is designed to make job and internship opportunities more available to students than ever before and to ensure that the client has a specific location available in order to organize offers extended to UMW students.

**2.3 User Characteristics**

The intended users of the system are separated into three different categories, each of which has their own reasons for using the system and can access different site capabilities. All three would continually use the system after its completion:

1. Administrator: The Administrator is a singular role fulfilled by Computer Science department faculty/staff who have access to the one Admin login. This user is able to post and remove listings, approve listings from employers using the site to post job listings, and remove reviews from Students if they have been flagged or found to be in some way inappropriate, inaccurate, or spam.
2. Students: Students do not have a login and in fact are not required to be students of the University of Mary Washington, though this is the target user. Students would use the system in order to navigate both job listings and individual employer profiles, as well as leave reviews on employers they have worked for. Students may also flag reviews that have been left by other Students in order to be removed, after Administrative review.
3. Employers: The Employers are any company or group that would like to post listings and make their profile available for student perusal. Employers will use the system in a similar capacity to the Administrator, but their actions are monitored and approved by the Administrator account. They are each individually allowed to create accounts, which they may then use to both post listings (pending Administrator approval) and remove them.

**2.4 Product Functions**

**2.4.1 Use Cases**

**2.4.1.a. Create Account**

**Description:**

Someone who is representing a company actively seeking to recruit a UMW Computer Science student to their company creates an account on the UMW CPSC internship page first to be able to post their listings.

**Users:**

Employer

**Basic Flow:**

<Employer creates an account>

1. A User navigates to the home page.
2. The User clicks the create account button in the upper right corner.
3. The system displays input fields to enter an email and password.
4. The User fills in all of the required information to create an account and clicks the create button.
5. The system sends an email verification (See 2.4.1.b. Verify Account).

**Pre-Conditions:**

None

**Post-Conditions:**

None

**Includes:**

<Verify Account>

**Extends:**

None

**2.4.1.b. Verify Account**

**Description:**

When an Employer attempts to create an account they must verify their account. This is done by clicking a link in an email that is sent to the email account that they provided for logging in. Once this is done they will be able to access their account regularly.

**Users:**

Employer

**Basic Flow:**

<Employer verifies account>

1. An Employer enters the necessary information, including email and password, into the account creation fields.
2. The system sends an email to the email account provided by the Employer.
3. The Employer navigates to their email account, opens the email, and clicks the link.
4. The system creates the account and the link brings the Employer to a confirmation page.

**Pre-Conditions:**

None

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

None

**2.4.1.c. Log In**

**Description:**

An Admin or Employer will navigate to the home page and will click the "login" button. The Admin or Employer will be redirected to the login page. The Admin or Employer will then enter the correct username and password combination for their account. The Admin will click the "login" button and will be redirected to the home page. The system will indicate a successful login by displaying the username in the top right corner of the page.

**Users:**

Admin, Employer

**Basic Flow:**

<Admin logs in>

1. The Admin clicks the "login" button on the home page
2. The system displays the login page
3. The Admin enters their username and password
4. The Admin clicks the "login" button
5. The system checks that the username is in the database
6. The system checks the entered password against the password associated with the username
7. The system redirects to the home page and displays the username in the upper right corner

<Employer logs in>

1. The Employer clicks the "login" button on the home page
2. The system displays the login page
3. The Employer enters their username and password
4. The Employer clicks the "login" button
5. The system checks that the username is in the database
6. The system checks the entered password against the password associated with the username
7. The system redirects to the home page and displays the username in the upper right corner

**Exception Flow:**

**<**Admin enters incorrect credentials>

1. The Admin clicks the "login" button on the home page
2. The system displays the login page
3. The Admin enters an incorrect username or password
4. The Admin clicks on the "login" button
5. The system checks for the username and that the password matches in the database
6. The system displays an error message informing the Admin that they have entered an incorrect username or password
7. The system proceeds to step 1 of Basic Flow

**<**Employer enters incorrect credentials>

1. The Employer clicks the "login" button on the home page
2. The system displays the login page
3. The Employer enters an incorrect username or password
4. The Employer clicks on the "login" button
5. The system checks for the username and that the password matches in the database
6. The system displays an error message informing the Employer that they have entered an incorrect username or password
7. The system proceeds to step 1 of Basic Flow

**Pre-Conditions:**

<Create Account>

**Post-Conditions:**

None

**Extends:**

None

**Includes:**

<Display Login Error>

<Verify Password>

**2.4.1.d. Display Login Error**

**Description:**

When an Employer or the Admin attempts to log in, but they enter incorrect login credentials, the page will display an error message. The Employer or Admin may then attempt to log in again.

**Users:**

Admin, Employer

**Basic Flow:**

<User enters incorrect login>

1. Admin or Employer enter incorrect login credentials.
2. The system displays an error message on the page that indicates that an incorrect username or password was entered.

**Pre-Conditions:**

None

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

None

**2.4.1.e. Verify Password**

**Description:**

When an Employer or the Admin login the system must check if their credentials are correct. If they are correct, the system brings them to the home page and they now have the capabilities of whatever user they are.

**Users:**

Admin, Employer

**Basic Flow:**

<User password is verified at login>

1. Admin or an Employer enters correct login credentials.
2. The system checks the database to confirm that the password is associated with the given username.
3. The system redirects to the home page and displays the username in the top right of the page.

**Pre-Conditions:**

None

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

None

**2.4.1.f. Remove Review**

**Description:**

An Admin logs into the Internship system and navigates to a particular listing on the home page via clicking on the listing. The Admin then scrolls down to the bottom of the page to find the reviews section and clicks on a specific review to be removed. The Admin clicks on a “remove review” button, and a pop-up appears for confirmation. The review is successfully removed if they choose “yes” to confirm on the pop-up. Alternatively, a review can be found by navigating to the “Employer Profiles” section via a button on the homepage. The Admin must click on a particular company or employer and navigate to the reviews section at the bottom of the page and click on a review.

**Users:**

Admin

**Basic Flow:**

<Admin removes review from listing>

1. The system displays the home page, which shows job listings
2. The Admin selects a particular listing
3. The system displays information about the listing and the reviews section at the bottom of the page
4. The Admin navigates to the review they would like to remove by clicking on it
5. The system displays the review
6. The Admin clicks on the “remove review” button
7. The system displays a pop-up which asks the Admin to confirm the removal of the review
8. The Admin clicks “yes”
9. The system returns the Admin to the listing and displays a notification that the review was successfully removed

**Alternate Flow:**

<Admin removes review from Employer profile>

1. The system displays the home page, which shows job listings
2. The Admin navigates to the “Employer Profiles” page by clicking a button on the home page
3. The system displays Employer profiles
4. The Admin selects an Employer profile by clicking on it
5. The system displays the detailed information about an Employer as well as reviews at the bottom of the page
6. The Admin navigates to the bottom of the page and clicks on a review and the system proceeds to step 5 of the Basic Flow

<Admin does not remove review>

1. The system displays a pop-up which asks the Admin to confirm the removal of the review
2. The Admin clicks “no”
3. The system returns to step 5 of the Basic Flow

**Pre-Conditions:**

<Log In>

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

None

**2.4.1.g. Navigate Employer Profiles**

**Description:**

A User may navigate employer profiles on the employer profiles section via scrolling up and down the page. The User can view detailed information about the employer by clicking on their profile. The User may also filter employers via a search function. The User can enter keywords that relate to the company name, location, fields or industry. From any given page in the system, the User can select the employer profiles section via a button.

**Users:**

Admin, Employer, Student

**Basic Flow:**

<User navigates profiles from the home page>

1. The system displays an “Employer Profiles” button on the side of any page the User may be on
2. The User will click on the “Employer Profiles” button
3. The system will navigate to the employer profiles page, displaying a list of employers
4. The User will scroll through the page and click on a specific employer profile
5. The system will display detailed information about the employer

**Pre-Conditions:**

None

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

None

**2.4.1.h. Search Employers**

**Description:**

A User should be able to search through the list of Employer profiles by keywords such as company name, work location, and industry. This allows the User to narrow down the list of employers to only those that meet their criteria, allowing them to find the employer they are looking for much easier.

**Users:**

Admin, Employer, Student

**Basic Flow:**

<User searches employer profiles by keyword>

1. The system displays the list of employers on the employer profiles page
2. The User enters keywords into the search bar related to the company name, location, fields or industry
3. The system displays a filtered list of profiles which include the keywords the User entered into the search bar

**Pre-Conditions:**

None

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

<Navigate Employer Profiles>

**2.4.1.i. Remove Listing**

**Description:**

An Admin or Employer will log in to their account. When an Employer navigates to their created job listing via clicking their listing from the home page, the Employer will view their listing as well as an option to remove their listing via a “remove listing” button. The listing will be successfully removed if they choose “yes” to the confirm option on the pop-up. In addition, the Admin may also navigate to any job listing via clicking on a listing from the home page. However, the Admin will be able to remove any listing, while an Employer may only remove their own listing. When a job listing is removed it will no longer be viewable or searchable by any Users.

**Users:**

Admin, Employer

**Basic Flow:**

<The Admin or Employer removes a job listing from the home page>

1. The system will display the home page, which shows job listings.
2. The Admin or Employer will select a particular listing via clicking on the listing.
3. The system will display information about the listing and the “remove listing” button.
4. The Admin or Employer will click on the “remove listing” button.
5. The system will display a pop-up that asks the Admin or Employer to confirm the removal of the listing.
6. The Admin or Employer will click “yes.”
7. The system will return the Admin or Employer to the home page.
8. The system will display a notification that the listing was successfully removed.

**Alternate Flows:**

<The Admin or Employer removes a listing from another page>

1. The system will display a page that is not the home page that displays job listings or the page of the listing which is to be removed.
2. The Admin or Employer will click on the home button that is displayed on every page.
3. The system will send the Admin or Employer back to the home page and the Admin or Employer will proceed to step 2 of the Basic Flow.

**Pre-Conditions:**

<Log In>

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

None

**2.4.1.j. Flag Review**

**Description:**

A Student opens the system and navigates to an employer profile. There, under the reviews for the employer, they see a review which contains inappropriate, inaccurate, or spam content. At the bottom of the review, the Student presses a button marked “flag review for removal”. Another window then pops up to allow the Student to select from a checklist why they marked the review for removal, as well as elaborate in a text box if they want to include additional information. The Student then presses send. Within 20 minutes, the system sends an email to the Admin email which says the name of the employer whose reviews were flagged, the name of the Student who posted it, and what selections/text were mentioned in the flagging.

**Users:**

Student

**Basic Flow:**

<The Student flags a review for removal>

1. The system displays the home page, which shows job listings.
2. The Student clicks on a certain job listing.
3. The system displays information about the listing on its own page.
4. The Student clicks on the employer’s profile via a link on the listing.
5. The system displays the employer profile, including reviews by other Students about said profile.
6. The Student notices that one or more of the reviews is inappropriate, inaccurate, or spam, then clicks on the button at the bottom of the review labeled “Flag for Removal”.
7. The system then provides a pop-up window with a pre-prepared checklist about what is amiss with the review, as well as types more information in a text box if none of the checklist items are appropriate for the situation or if the Student wishes to provide additional information, and a send button.
8. The Student fills out the form and clicks the button labeled “send”.
9. The system closes the window, and sends the Student back to the employer profile.

**Alternate Flows:**

<The Student accesses the reviews from an employer search>

1. The system displays the home page, which shows job listings.
2. The Student goes to the search bar and types in either the name of or keywords concerning the employer they are looking for.
3. The system displays search results, which are a list of employer profiles for the given inquiry.
4. The Student clicks on the employer profile from the search results and proceeds to step 4 of the Basic Flow.

**Pre-Conditions:**

None

**Post-Conditions:**

None

**Includes:**

<Notify Admin>

**Extends:**

None

**2.4.1.k. Notify Admin**

**Description:**

When a Student finds an inappropriate review, they may flag it. When it is flagged the Admin receives an email about the flagged review with its pertinent information. The Admin may then remove the review if desired.

**Users:**

Admin, Student

**Basic Flow:**

<Notify Admin after flagged review>

1. The system sends an email including a link to the review, the employer name, the review poster’s name, and the reasons for the review’s flagging to the Admin email within 20 minutes of the review being flagged.
2. The Admin clicks through the link to the review included in the email to see the post, or search for the employer using the alternate flow that the Student used in <Flag Review>.

**Pre-Conditions:**

<Flag Review>

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

<Flag Review>

**2.4.1.l. Post Listing**

**Description**:

The Admin or Employer logs into the system and navigates to the “post listings” button. The Admin or Employer then fills in the listing’s location, description, employer, requirements, pay, job name and whether it is remote or on-site. The Admin or Employee submits the information via a button and the information is stored in the database and displayed on the site.

**Users:**

Admin, Employer

**Basic Flow:**

<Admin posts listing>

1. The system displays the home page
2. The Admin clicks the “post listing” button
3. The Admin inputs all information regarding the new listing
4. The Admin clicks the “submit” button
5. The system stores the information in the database
6. The system sends a notification to the Employer that their listing was successfully posted
7. The system returns to the Admin page informing the Admin that the listing was successfully posted

**Alternate Flows:**

<Employer posts listing successfully>

1. The system display the home page
2. The Employer clicks the “post listing” button
3. The system displays a form with input fields for information about the listing.
4. The Employer inputs all information regarding the new listing
5. The Employer clicks the “submit” button
6. The system sends all information to the Admin via notification
7. The system returns to the employer page informing the Employer that the listing is pending until the Admin approves the listing
8. The Admin approves the listing. See specification <Approve Submission> below.
9. The system displays a notification saying that the submission has been approved
10. The Employer and any User can now view their listing

<Employer posts listing unsuccessfully>

1. The system displays the home page
2. The Employer clicks the “post listing” button
3. The Employer inputs all information regarding the new listing
4. The Employer clicks the “submit” button
5. The system sends all information to the Admin via notification
6. The system returns to the employer page informing the Employer that the listing is pending until the Admin approves the listing
7. The Admin rejects the listing. See specification <Approve Submission> below
8. The system displays a notification saying that the submission has been rejected

**Pre-Conditions:**

<Log In>

**Post-Conditions:**

None

**Includes:**

<Approve submission>

**Extends:**

None

**2.4.1.m. Approve Submission**

**Description:**

When an Employer posts a job listing, an Administrator must approve the submission in order to ensure that it meets the requirements and does not include any inappropriate information. An Admin has exclusive access to this function.

**Users:**

Admin

**Basic Flow:**

<Admin approves a submission>

1. The system displays a notification informing the Administrator of a new submission.
2. The Admin navigates to the home page with all the listings, including the pending ones that only the Admin can see
3. The system displays the listings
4. The Admin clicks on the pending listing
5. The system displays the contents of the submission that needs approval.
6. The Admin clicks “approve” at the bottom of the page to add it to the site.

**Alternate Flow:**

<Admin does not approve submission>

1. Starting from step 5 of the Basic Flow, the system displays the contents of the submission that needs approval
2. The Admin clicks “disapprove” at the bottom of the page to deny it from being added to the site.

**Pre-conditions:**

<Log In>

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

<Post Listing>

**2.4.1.n. Navigate Listings**

**Description:**

The Student navigates to the home page, which displays a list of all jobs or internships. The list shows the company name, position available, location, and date posted. The system displays jobs in chronological order with the most recently posted jobs at the top.

The home page also includes a search bar that allows Students to narrow the listings that are displayed via certain keywords related to job listings. See Search Listings (2.4.1.o.) below for more information about searching.

Each row in the listing has a link so the Student can click and navigate to an individual job page. Each job page includes a description of the job as well as the company name, location, position/title, and contact information such as email address, website link, or phone number. The company name includes a link to the company profile.

**Users:**

Student

**Basic Flow:**

<Student browses the listings>

1. The system displays a list of jobs/internships that include the company name, position available, location, and date posted. Each job is on a separate row. The system displays jobs in chronological order with the most recently posted jobs at the top.
2. The Student clicks on a job that they want to read more about.
3. The system displays a job page that includes a description of the job as well as the company name, location, position or title, and contact information such as email address, website link, or phone number.

**Pre-Conditions:**

None

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

None

**2.4.1.o. Search Listings**

**Description:** The job listings page will have a search bar displayed prominently near the top that will allow Students to narrow the list of jobs.

The search bar will allow Students to select the option to search computer science field, location, company, or the overall job description (the default). The Student will then be able to type text into the box and click on a button to perform the search. The page will update, showing just the listings that match the search. If nothing is found, the system will notify the Student and prompt them to search again.

**Users:**

Student

**Basic Flow:**

<Student searches the listings>

1. The system displays a list of jobs/internships that include the company name, position available, location, and date posted. Each job will be on a separate row. The system displays jobs in chronological order with the most recently posted jobs at the top. The system also displays a search bar with options to search (computer science field, location, company, or the job description).
2. The Student selects a search option and then types text into a box to search.
3. The system updates the list of jobs, narrowing them to just the ones that match the search query.
4. The Student selects a job that they want to read.
5. The system displays a job page that includes a description of the job as well as the company name, location, position/title, and contact information such as email address, website link or phone number.

**Exception Flow:**

<Student searches the listings but there is no match>

1. The system displays a list of jobs/internships that include the company name, position available, location, and date posted. Each job will be on a separate row. The system displays jobs in chronological order with the most recently posted jobs at the top. The system also displays a search bar with options to search (computer science field, location, company, or the job description).
2. The Student selects a search option and then types text into a box to search.
3. The system does not find any jobs that match the search and instructs the Student to do a new search in the search box.

**Pre-Conditions:**

None

**Post-Conditions:**

None

**Includes:**

None

**Extends:**

<Navigate Listings>

**2.4.1.p. Leave Review**

**Description:**

The system allows former or current interns to post reviews of a company. The system then adds the review to the company's profile page and updates the company's average score. The reviewer must also state their affiliation with the company to ensure that the review is applicable.

**Users:**

Student

**Basic Flow:**

<Student posts a review>

1. The Student navigates to an employer's profile page (see use case specification 2.4.1.g. Navigate Employer Profiles above). The Student writes a review in a text box and their affiliation with the company in another text box, chooses a star rating from zero to five, and clicks a button to submit the review.
2. The system updates the employer's profile page to include the new review and updates the average score for the employer. The system displays the newly updated page.

**Exception Flow:**

<Student submits a blank review>

1. The Student navigates to an employer's profile page (see use case specification 2.4.1.g. Navigate Employer Profiles above). The Student clicks a button to submit the review without putting text in the box or choosing a rating.
2. The system displays a message that the required text or rating is missing.

**Pre-Conditions:**

None

**Post-Conditions:**

None

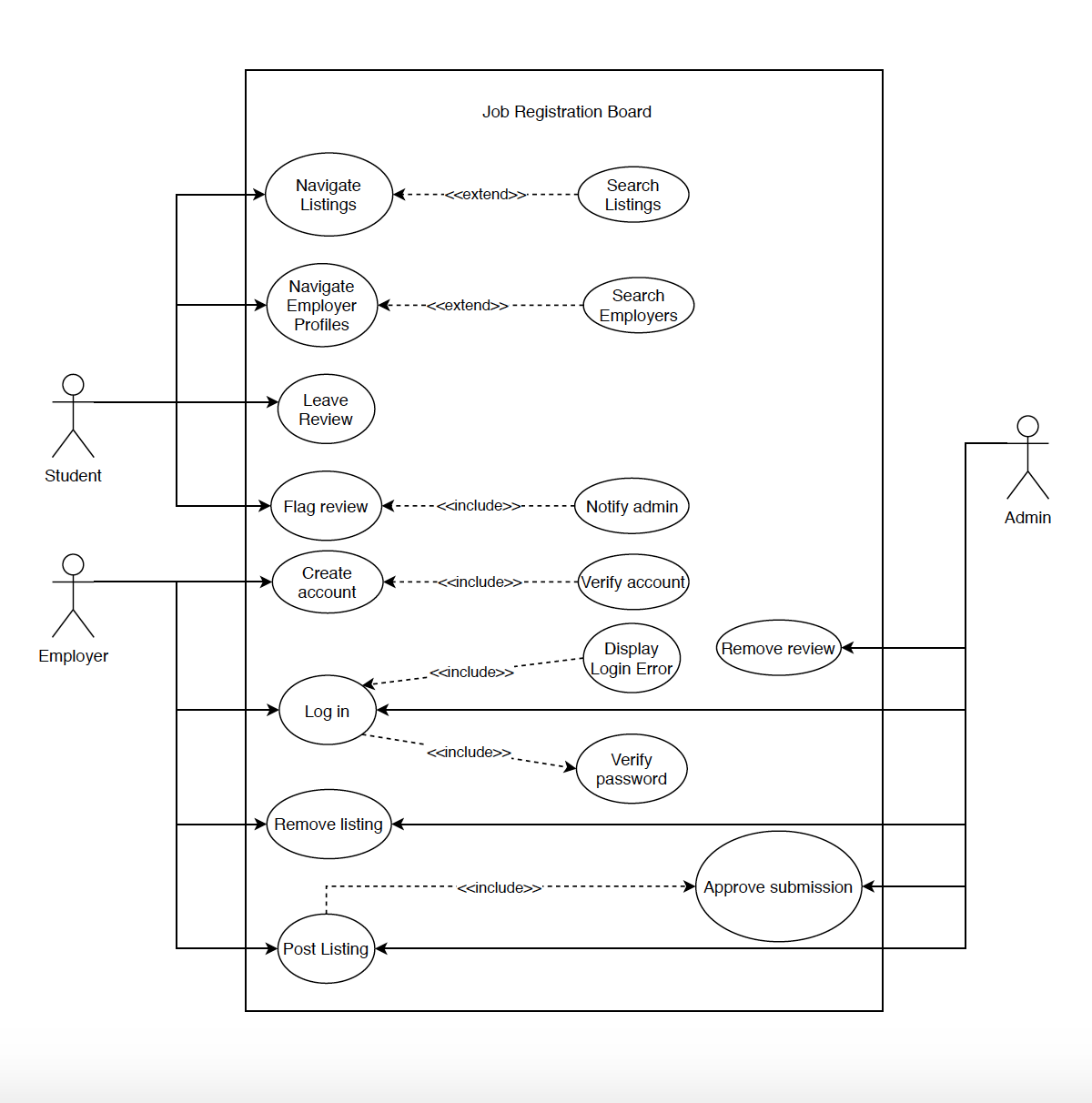
**Includes:**

None

**Extends:**

None

**2.4.2 Use Case Diagram**

**Diagram 2.4.2:** This use case diagram shows the operations that each user can perform.

**3. Requirements**

This section details the functions, properties, and performance requirements for the system.

**3.1 Functional Requirements**

This section lists the tasks the system must perform.

**3.1.1 Logging In**

**3.1.1.a.** The system shall allow the Admin to log in when they enter the correct username and password. The password must be at least eight characters and contain one capital letter, one number, and one special character. The username must be an email.

Rationale: The system checks to see if the login email and password are correct to make sure people are not given access to features that are only for the Admin or Employers.

**3.1.1.b.** The system shall allow Employers to login when they enter their login credentials.

Rationale: The system needs to be able to tell if the user is an Admin or Employer before giving them permission to do certain tasks such as posting or editing jobs, editing company profile pages, or removing flagged reviews.

**3.1.1.c.** The system will display a login error message if the username and password are incorrect when the Admin or an Employer tries to sign in.

Rationale: If the login fails, the user is notified of the error so they can try again.

**3.1.1.d.** The system shall allow employers to create a login and password when they sign up. The password must be at least eight characters and contain one capital letter, one number, and one special character. The username must be an email.

Rationale: Employers will be required to create an account to then be able to post a job or internship listing.

**3.1.1.e.** The system should send an email and have the Employer click a link to verify the employer's email address when signing up.

Rationale: This is a simple form of user authentication to prevent spam of job postings toward the website.

**3.1.2 Job Listings**

**3.1.2.a.** The system shall only allow the Admin and Employers to post listings.

Rationale: The system is built for the purpose of posting jobs available to UMW CS students. These jobs come from Employers who seek to advertise to UMW students, therefore only the Admin and registered Employers should be able to post job listings. If any user can post a listing, there is an increased likelihood of spam posting.

**3.1.2.b.** The system should make sure that all the required information for a job listing is filled in before allowing an Employer or Admin to submit a job. Required fields are a contact point (preferred not to be Human Resources), company name, work address, available position(s), and expiration date.

Rationale: The required fields contain information which is necessary for the job posting to be useful for users looking for a job. This information must be filled in to prevent useless postings.

**3.1.2.c.** The system shall allow Employers to edit all fields on their posted jobs/internships.

Rationale: If any information about a posted listing is inaccurate or out of date, the Employer does not need to go through the Administrator to change this. Since the post is associated with the Employer, they would be able to ensure that all of their posts represent their interests exactly.

**3.1.2.d.** The system shall require that Employers include contact information in the form of a phone number, an email address, or a website.

Rationale: Students should be able to contact Employers in regards to posts or listings on the system, as there is no planned in-app messaging or application system. These could also be provided in order to provide more extensive company information.

**3.1.2.e.** The system should include instructions for the Admin or Employer who is posting a new job/internship.

Rationale: In addition to form field titles, descriptions of certain fields are provided to the Admin or Employer who is inputting a new job or internship to avoid ambiguity. This helps to ensure the accuracy of the job or internship information.

**3.1.2.f.** Only the Admin and Employers shall be able to remove job listings.

Rationale: The Admin and Employers should be able to remove listings for various reasons including if the position has been filled, the position is no longer available or the listing is explicit in nature. This operation is restricted to these special users to mitigate security risks and ensure data integrity.

**3.1.2.g.** The system shall display job postings on the home/search page, which will display the company name, position available, location, and date posted.

Rationale: The students should be able to quickly browse through the list of jobs with just the most important information listed.

**3.1.2.h.** The system shall include a search bar for job listings, which allow the user to filter the postings that are displayed by keywords. These keywords include field, location, company name, and date posted.

Rationale: The search bar allows students to find a job that is relevant to them much easier by allowing the student to only display job postings that meet their criteria.

**3.1.2.i.** The system shall display a job description page that provides an overview of the job as well as the company name, location, position/title, and contact.

Rationale: Students can quickly view internships with the internship’s characteristics in order to help the Student determine the best internship.

**3.1.2.j.** The system should display jobs in chronological order with the most recently posted jobs first.

Rationale: Jobs should be displayed in chronological order as a default so that users can see positions that are the most up-to-date. Although this was somewhat of an arbitrary choice, there is a greater chance of positions having been filled or expired when they have been listed for a longer period of time.

**3.1.3 Reviews**

**3.1.3.a.** The system shall allow the Admin to edit or remove reviews or employer info.

Rationale: The Admin is able to remove or edit any content on the page in order to correct misinformation or remove inappropriate information. It is of the topmost importance that inappropriate content of any kind is removed from the internship page.

**3.1.3.b.** The system shall allow former interns to post reviews of their experience at a company.

Rationale: When prospective students are looking for work it is helpful for them to know what working for a company would be like. Former employees who leave reviews help prospective students to gain insight into possible work experiences.

**3.1.3.c.** The system shall allow users to flag reviews.

Rationale: Once a review is flagged, the Admin will be notified. The Admin does not approve reviews as this would add considerably more work for them. Therefore, it is up to other users to flag reviews, in order to bring possibly inappropriate reviews to the Admin’s attention, so that they can be removed.

**3.1.3.d.** Only the Admin shall remove reviews.

Rationale: The Admin has the sole responsibility to remove any review for inappropriate or irrelevant information in order to reflect the employer’s listing.

**3.1.3.e.** The system shall email the Admin account when a post has been flagged within 20 minutes.

Rationale: The Admin will be noticed in order for the Admin to check the flag on the listing and either remove the listing or remove the flag.

**3.1.4 Employer Profiles**

**3.1.4.a.** The system shall have employer profiles, which will be viewable from a search and will display information about companies, including their name, location, industry, reviews, and an aggregate score of reviews for each company.

Rationale: The employer profiles are integral to providing prospective applicants with more information about the job and the associated employer. This information provides the students with more information about the company or employer as a whole, as well as the reviews of previously or currently employed students, all in a convenient profile format.

**3.2 Non-Functional Requirements**

This section describes the performance of the application and how it will look and operate.

**3.2.1 Accessibility**

**3.2.1.a.** The system should allow Students to return to a home page at any time via a button or link.

Rationale: This requirement is commonplace among websites due to the importance of the home page. The home page includes the most necessary information for users and is the easiest place to navigate from.

**3.2.1.b.** The site should allow a user to navigate to any page within 4 clicks.

Rationale: The system should not be difficult to navigate or cause confusion. There are 3 main “lobby” pages which branch out to all others, so users must be able to reach these in a manner that is intuitive and does not require much clicking around and searching.

**3.2.1.c.** The system should work on the current versions of Internet Explorer.

Rationale: The system should be able to run and operate on all types of browsers because not all users use the same browser.

**3.2.2 Performance**

**3.2.2.a.** All pages should load within 7 seconds.

Rationale: The system should be quick and should not have significant loading times. However, the loading time may not be extremely quick every time, as speed is not as vital a component to this system.

**3.2.3 Storage**

**3.2.3.a.** The system shall store all information in a database.

Rationale: A database offers a dependable and fast way to store and retrieve the data for job listings, employer information, and reviews.

**3.2.4 Searching**

**3.2.4.a.** When searching the system, users must do so by keyword.

Rationale: Keywords let Students narrow their search for specific jobs more efficiently.

**3.2.5 Security**

**3.2.5.a.** The system should log the Admin or Employee out immediately if they have closed the application while still logged in.

Rationale: The system shall log the Admin and Employees out automatically when they close the application to avoid unauthorized logins. When an Admin or Employee is logged out, they must log back in to make any changes to the system. This ensures that only authorized users can make changes to the system.

**3.2.5.b.** Employee account passwords should be encrypted when stored.

Rationale: The system shall not store passwords as unencrypted plaintext. The passwords shall be encrypted, preventing user accounts from being easily hacked. This ensures the security of the system to prevent hackers from posting inappropriate job listings.

**3.2.6 Display**

**3.2.6.a.** The system should follow design styles (color, font, format) established by the university (https://www.umw.edu/web/branding/).

Rationale: The internship page will be a UMW webpage, therefore it should have the same style and layout of other UMW webpages for the sake of consistency.

**3.2.6.b.** The display shall follow the Web Content Accessibility Guidelines.

Rationale: To make the website more accessible and viewable to all users on the website.

**3.2.6.c.** The system shall display information regarding what constitutes an inappropriate review.

Rationale: So that the Admin can quickly assess whether a review is appropriate and so that Students can avoid writing a review that is inappropriate.

**3.2.7 Notification**

**3.2.7.a.** The system shall send the Administrator account an email about a flagged review within 20 minutes of the review being flagged.

Rationale: The Administrator should be notified of a review being flagged within a short time-span, to ensure that inappropriate information does not remain on the site for long. However, it is not of vital importance to notify them immediately.

**4. Non-Requirements**

This section lists features that are not implemented in the system as well as functions that all users—The Admin, Students, and Employers—should not be able to perform.

NR 1: The system must not display job listings unrelated to the Computer Science, Data Science, or Cybersecurity fields.

NR 2: The system must not allow any user besides Employers or the Admin to create and post job listings.

NR 3: The system must not allow Employers to remove job listings they did not post.

NR 4: The system must not allow Students or Employers to remove reviews; only the Admin can remove reviews.

NR 5: The system must not allow users to create an Admin account.

NR 6: The system must not allow Employers or other non-Admin users to remove or edit reviews.

NR 7: The system must not allow Employers to post job listings without approval by the Admin.

NR 8: The system must not maintain a revision history for any information—postings, reviews, or Employer profile information—stored by the system.

NR 9: The system must not allow any inappropriate listings or reviews.

NR 10: The system must not allow Students to post reviews for companies they have not worked with.

NR 11: The system must not allow listings to be found via a sort function.

NR 12: The system must not allow an Employer to create an account if they cannot verify their email.

NR 13: The system must not allow Employers or the Admin to login if they cannot accurately enter their login credentials.

NR 14: The system must not verify if an Employer is affiliated with a company.

**5. Assumptions**

This document makes several assumptions about what is needed to operate the application.

* The system is installed on a web server. The server is able to display a homepage that is accessible to the public. The server is able to run the application(s) and supporting database(s) that are not accessible to the public. The coding language, database management system and operating system are to be determined.
* The users have a computer with Internet access and a web browser.
* The users are able to type characters and click on links and other navigational elements.
* The users are able to read and write in English.
* The Admin and Employers have an email address.
* The users know or can find the URL for the website's home page.
* This system only uses code resources, applications, plugins and databases that are available for free or are currently provided by the University of Mary Washington.
* The system is designed for Internet Explorer. While it may work on other browsers, they have not been tested thoroughly.
* There is only one Admin account.

**6. Appendices**

**6.1 Glossary of Terms**

**UMW**: stands for University of Mary Washington, which is the school that is related to the project.

**CPSC:** stands for Computer Science, which is the department intended to manage and use the system.

**6.2 Author Information**

The following group members contributed to this project.

**Ian Frye:** Wrote the System Overview section under the Project Description. Wrote three functional requirements and one non-functional requirement.

**Raymond Kauffman:** Worked alongside Miles on the Non-Requirements section. Wrote three of the functional requirements and two of the non-functional requirements. Reformatted the Use Case Diagram and Use Case Specifications.

**Jordan Reiser:** Wrote the Introduction, three functional requirements and one non-functional requirement.

**James Peacemaker:** Wrote the Assumptions with Benjamin. Wrote three functional requirements and two non-functional requirements.

**Leon Sepehrar:** Wrote the Client and User Characteristics under the Project Description. Wrote three of the functional requirements and two of the non-functional requirements.

**Miles Spence:** Worked alongside Raymond on the Non-requirements section. Wrote three of the functional requirements and two of the non-functional requirements. Wrote four of the use case specifications.

**Benjamin Springer:** Helped James on the Assumptions. Wrote three functional requirements and two non-functional requirements.

**All:** Assisted in assembly, design, review and formatting of the document.

**6.3 Additional Documents**

N/A