



## **Responsive and Interactive Website for the IEEE Spokane Section**

**Team Name: Responsive Renders**

### **Team Members:**

**Travis Ho - Developer**

**Jason Stanley - Developer**

**Earl Quinto - Developer**

**Date: October 2024**

# Contents

<b>I Project Description</b>	<b>3</b>
<b>II User Stories and Scenarios</b>	<b>4-8</b>
<b>III Use Case Diagrams and Use Cases</b>	<b>9-13</b>
<b>IV Functional Requirements</b>	<b>14-15</b>
<b>V Non-functional Requirements</b>	<b>16</b>
<b>VI Traceability Matrix</b>	<b>17-18</b>
<b>VII Evaluation of Existing Code</b>	<b>19</b>
<b>VIII Individual Contribution Summary</b>	<b>19</b>
<b>IX System Architectural Design</b>	<b>20</b>
<b>X Behavioral Design</b>	<b>21</b>
<b>XI Structural Design</b>	<b>22-23</b>

## 1 Project Description

The Spokane IEEE Section Website Redesign project aims to overhaul the current website, addressing its limitations in mobile accessibility, user experience, and content freshness. This initiative will create a modern, responsive web platform that effectively serves the section's diverse audience.

### Project Scope:

- Implement an intuitive left-hand navigation menu
- Integrate social media feeds (LinkedIn and Instagram)
- Create a user-friendly 'Contact Us' form
- Reorganize and update content for clarity and relevance

### Target Users:

- Current IEEE Spokane members
- Potential members (students and professionals)
- Local engineering community
- General public interested in IEEE activities

### Value Proposition: The redesigned website will significantly enhance user experience by:

- Providing easy access to IEEE Spokane information across all devices
- Simplifying navigation and content discovery
- Offering real-time update through social media integration
- Facilitating direct communication with section officers

By addressing these issues, it will strengthen the section's online presence, potentially increasing membership and participation in IEEE events and initiatives.

## 2 User Stories and Scenarios

### User Story 1: Contact Form

U1: As a user or potential member, I want to use the 'Contact Us' form to reach the relevant officers so that I can get an answer to my inquiries quickly.

#### Scenario 1: Successful submission

Given I am a visitor to the website  
And I am on the 'Contact Us' page,  
When I fill out the form with my inquiry,  
And I click the "Submit" button,  
Then I should see a confirmation message that my form was successfully submitted,  
And my inquiry should be sent to the appropriate officers.

#### Scenario 2: Incomplete form submission

Given I am a visitor to the website,  
And I am on the 'Contact Us' page,  
When I try to submit the form with missing required fields,  
Then I should see an error message indicating the missing information,  
And I should not be able to submit the form until all required fields are filled.

### User Story 2: Left-hand Side Navigation

U2: As a new visitor, I want to use the website's left-hand side menu to find information quickly so that I can navigate the website without confusion.

#### Scenario 1: Successful navigation using the menu

Given I am a visitor to the website,  
And I am using the left-hand side menu,  
When I click on a tab (e.g., "Events," "Contact Us"),  
Then I should be taken directly to the corresponding page without delays.

#### Scenario 2: Broken links in the menu

Given I am a visitor to the website,  
And I am using the left-hand side menu,  
When I click on a tab,  
And the link is broken,  
Then I should see an error message or be redirected to a fallback page.

### **User Story 3: Updates, News Integration**

U3: As a visitor, I want to see the latest updates and events posted on the Spokane IEEE Section's LinkedIn and Instagram feeds so that I can stay informed without needing to check multiple platforms.

#### **Scenario 1: Viewing social media updates**

Given I am a visitor to the website,  
 When I navigate to the homepage,  
 Then I should see a section showing the latest posts from LinkedIn and Instagram,  
 And I should be able to click on the posts to view them directly.

#### **Scenario 2: No updates**

Given I am a visitor to the website,  
 When I navigate to the homepage,  
 And no recent updates are available from LinkedIn or Instagram,  
 Then I should see a message indicating that there are no recent posts.

### **User Story 4: Society Chapters page**

U4: As a visitor, I want to view the local Society Chapters so that I can learn about the different engineering societies associated with the Spokane IEEE Section.

#### **Scenario 1: Viewing Society Chapters page**

Given I am a visitor to the website,  
 When I navigate to the "Society Chapters" page,  
 Then I should see a list of all the local IEEE societies, including WIE(Women in Engineering) and YP (Young Professionals),  
 And I should be able to click on each society to view additional details.

#### **Scenario 2: Renamed paged**

Given the original page which was "Local Organizational Units",  
 When i visit the website,  
 Then the tab should be 'Society Chapters' to better reflect the content,  
 And I should be able to view information on WIE(Woman in Engineering) and YP(Young Professionals) on their own separate pages.

## **User Story 5: Section Officers**

U5: As a visitor, I want to view the “Section Officers” so that I can see the volunteers who lead the Spokane section and society chapters.

### **Scenario 1: Viewing Section Officers**

Given I am a visitor to the website,  
 When I navigate to the “Section Officers” page,  
 Then I should see a list of the current officers with their roles and responsibilities,  
 And I should be able to view their profile photos and short bios.

### **Scenario 2: Officers Change**

Given I am a visitor to the website,  
 When the officers change,  
 That officer won't need to appear on the page,  
 And I shouldn't be able to see profile photos or short bios of past officers.

## **User Story 6: Admin Management for Officer**

U6: As an administrator, I want to easily manage and update the officer details so that the website always displays current leadership information for the IEEE Spokane section.

### **Scenario 1: Updating officer details**

Given I am an administrator with access,  
 When new officers are elected or information changes,  
 Then I should be able to update the names, roles, bios, and profile photos.  
 And I should be able to see the new update after changing it.

### **Scenario 2: Removing old officer information**

Given I am an administrator with access,  
 When a former officer is no longer in their position,  
 Then I should be able to remove the old officer's information easily and update the officer list,  
 And I should be able to see the current officers displayed on the website.

## **User Story 7: Admin Management for Update/News Integration**

U7: As an administrator, I want to manage updates or news from LinkedIn and Instagram so that the website always shows the most current posts without errors.

### **Scenario 1: Managing update/news integration**

Given I am an administrator with access,  
When there are changes to LinkedIn or Instagram accounts,  
Then I should be able to update or reconnect the accounts,  
And ensure that the latest posts continue to display on the website.

### **Scenario 2: Handling errors**

Given there is an issue with fetching updates from LinkedIn or Instagram,  
When an error occurs or posts are not displaying correctly,  
Then there should be a notification about the issue,  
And I should be able to troubleshoot or reset the integration to resolve the problem.

## **User Story 8: Login Page**

U8: As an administrator, I want to securely log in using my email so that I can access the admin panel and manage website content.

### **Scenario 1: Successful Login with Email**

Given I am an administrator with valid email and password credentials,  
When I enter my email and password correctly on the login page,  
Then I should be granted access to the admin panel,  
And I should see the dashboard for managing website content.

### **Scenario 2: Failed Login Attempt**

Given I am an administrator attempt[ing to log in,  
When I enter an incorrect email or password,  
Then I should see an error message indicating that the credentials are invalid,  
And I should be able to retry or initiate a password reset.

## **User Story 9: Database**

U9: As an administrator, I want to manage user privileges in the database so that members, officers, and other users have appropriate access to website features.

### **Scenario 1: Assigning Privileges**

Given I am an administrator,

When I add a new officer or member to the system,

Then I should be able to assign them specific privileges based on their role,

And their access to certain features should be updated according to the database.

### **Scenario 2: Revoking Privileges**

Given I am an administrator,

When I remove a member or officer or change their role,

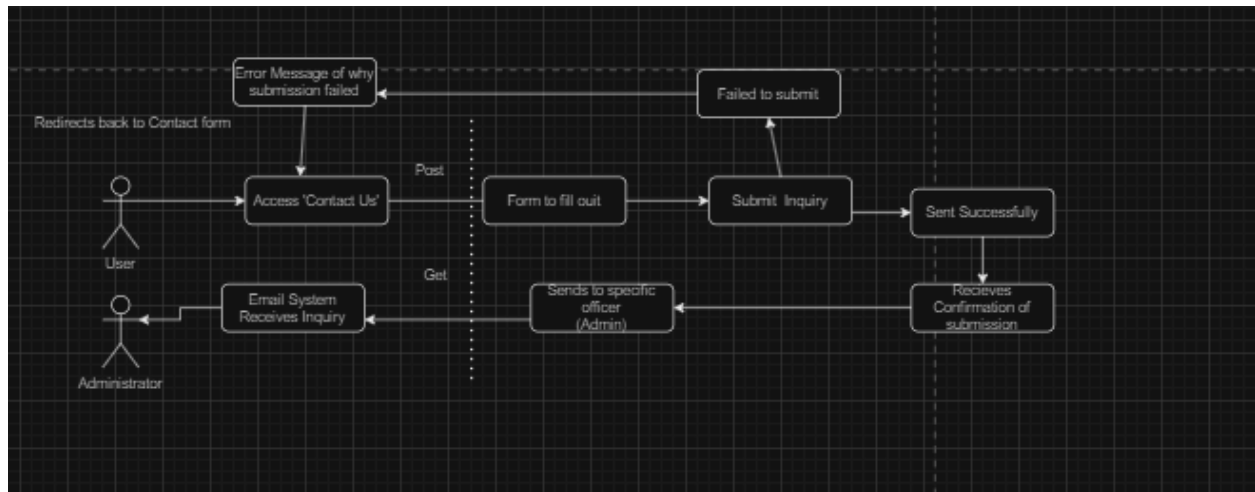
Then their privileges should be revoked or updated in the database,

And they should no longer have access to restricted areas of the website



### 3 Use Case Diagrams and Use Cases

#### Use Case 1. Contact Form



**Actors:** User, Potential Member

**Preconditions:** User is on the “Contact Us” page

**Postconditions:** Form is submitted to the relevant officer or an error message is shown

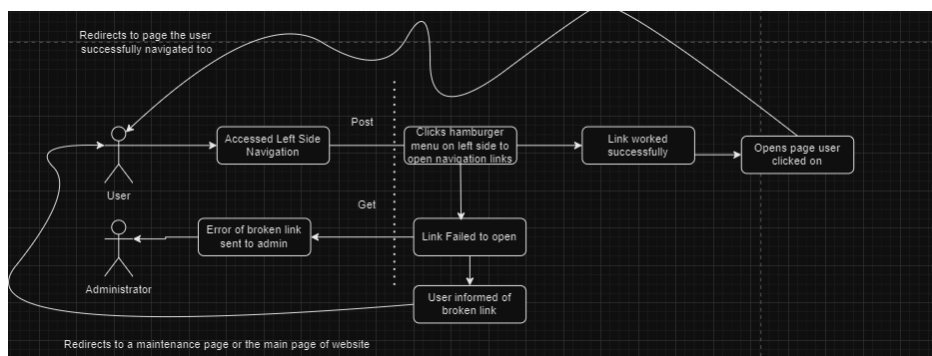
**Main Flow:**

- User fills out and submits the “Contact Us” form, selecting a specific officer.
- Server sends the form to the selected officer’s email, and a success message is shown

**Alternative Flow:** If a submission fails, an error message explains the issue. User can resubmit if it's a user error, or retry later if server-related

**Related Requirements:** FR2 (U1)

#### Use Case 2. Left-hand Side Navigation



**Actors:** Visitor

**Preconditions:** Visitor is on the website and sees the left-hand navigation icon

**Postconditions:** Visitor successfully navigates to their chosen page

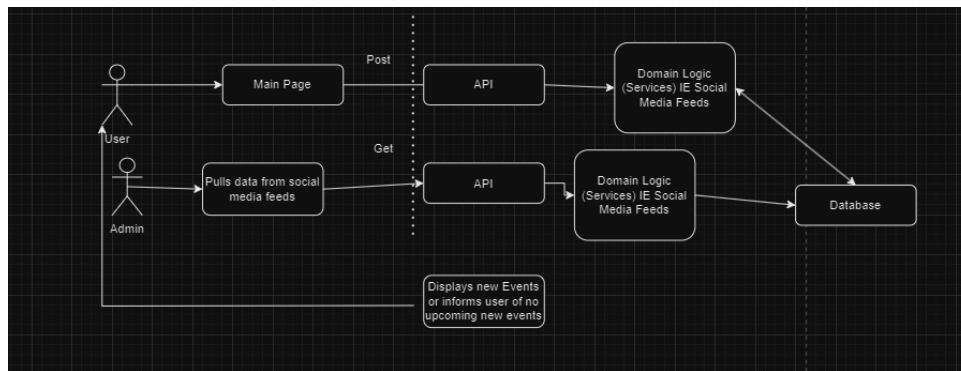
**Main Flow:**

- Visitor clicks the left-hand side navigation icon
- A dropdown menu appears with tabs(e.g, “Events,” “Contact Us”)
- Visitor selects a tab to navigate directly to the associate page without delay

**Alternative Flow:** If a tab in the menu is broken, an error message is displayed, and the user is redirected to the previous page.

**Related Requirements:** FR1 (U2)

### U3. Updates, News Integration



**Actors:** Visitors

**Preconditions:** Visitor on the website and sees the latest updates/events/posts on the main page

**Postconditions:** Visitor successfully navigates to the corresponding web page

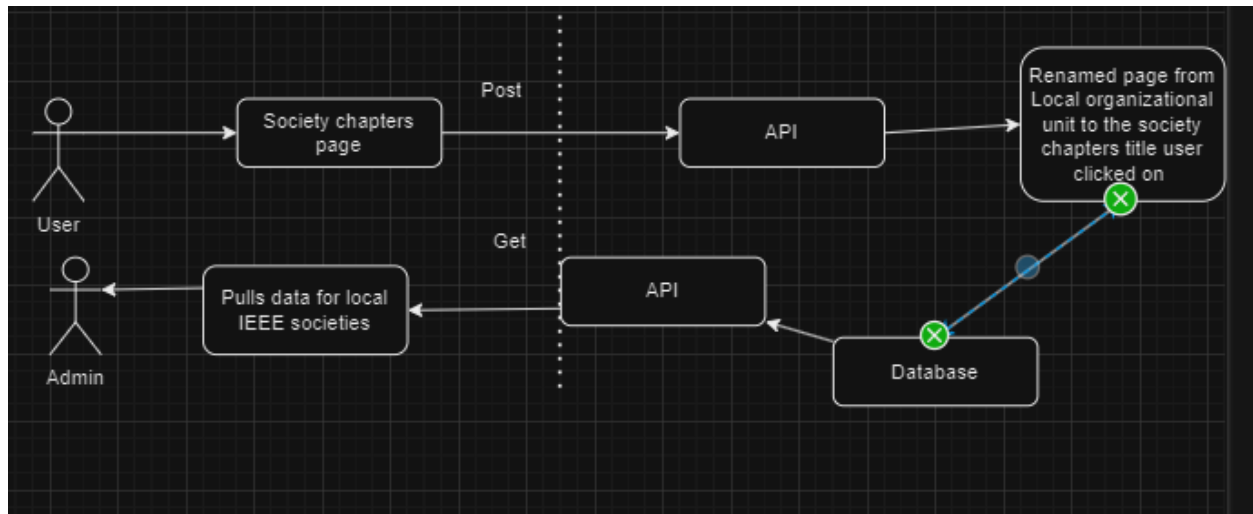
**Main Flow:**

- Visitor clicks on the latest updates/events/posts
- Visitor gets navigated directly to the corresponding web page without delay

**Alternative Flow:** If there are no latest updates/events/posts, a message will be display of no latest post

**Related Requirements:** FR-3 (U3)

## Use Case 4. Society Chapters Page



**Actors:** Visitor

**Preconditions:** Visitor sees the “Society Chapters” tab in the navigation menu

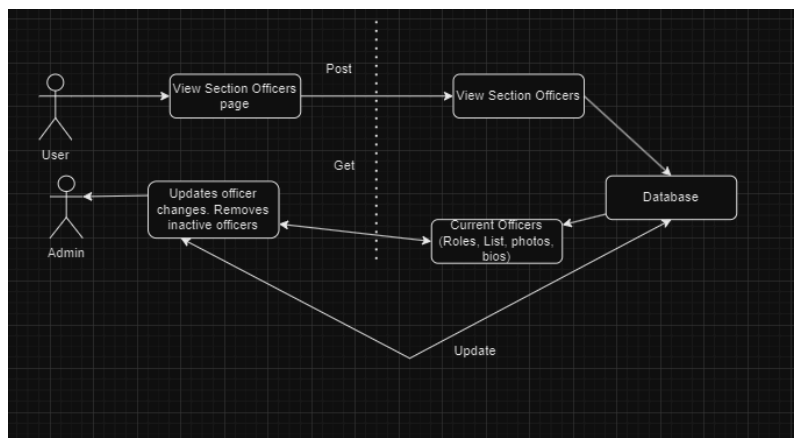
**Postconditions:** Visitor is directed to the society chapters page and learns about different engineering societies.

**Main Flow:**

- Visitor clicks on the “Society Chapters” tab in the left-hand side navigation menu
- Visitor is redirected to the Society Chapters page, where details about local engineering societies associated with Spokane IEEE Section are displayed

**Related Requirements:** FR-8 (U4)

## Use Case 5. Section Officers



**Actors:** Visitors

**Preconditions:** Visitor on the website sees the “Section Officers” tab in the navigation menu

**Postconditions:** Visitor is redirected to the Section Officers page, where details about current officers with their roles and responsibilities along with the officers profile photo and short bios

**Main Flow:**

- Visitor clicks on the “Section Officers” tab in the left-hand side navigation menu
- Visitor is redirected to the Section Officers page, where details about current officers with their roles and responsibilities along with the officers profile photo and short bios

**Related Requirements:** FR-2 (U1), FR-9 (U5)

## Use Case 6. Admin Management for Officers

**Actors:** Administrator

**Preconditions:** Admin is logged into the system

**Postconditions:** Admin can manage and update the officers details so that the website always displays current leadership information

**Main Flow:**

- Admin logs into the admin panel
- Navigate to Section Officers
- Manages and updates the officers information
- Test
- Save changes to apply the updates

**Related Requirements:** FR-2 (U1), FR-6 (U6)

## Use Case 7. Admin Management for Update/News Integration

**Actors:** Administrator

**Preconditions:** Admin is logged into the system

**Postconditions:** Recent social media posts are displayed on the homepage, and any integration issues are logged.

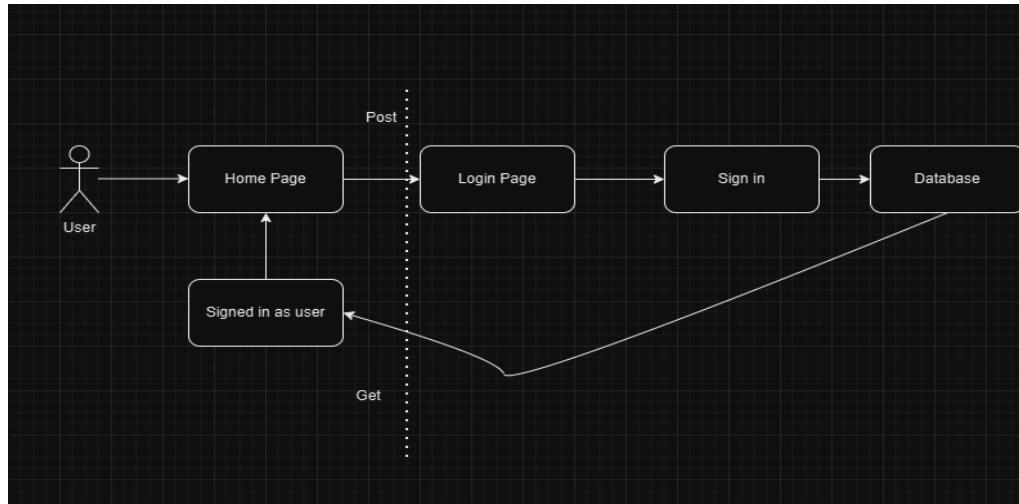
**Main Flow:**

- Admin logs into the admin panel
- Navigates to “Updates/News settings”
- Updates social media account settings (LinkedIn, Instagram).
- Test
- Save changes to apply the updates

**Alternative flow:** If the integration fails during testing, admin receives an error notification or Admin reviews settings and retries the connection

**Related Requirements:**FR-7 (U7), FR-2 (U7)

## Use Case 8. Login Page



**Actors:** User

**Preconditions:** User has an account and is on the login page

**Postconditions:** User is logged in and redirected to the homepage

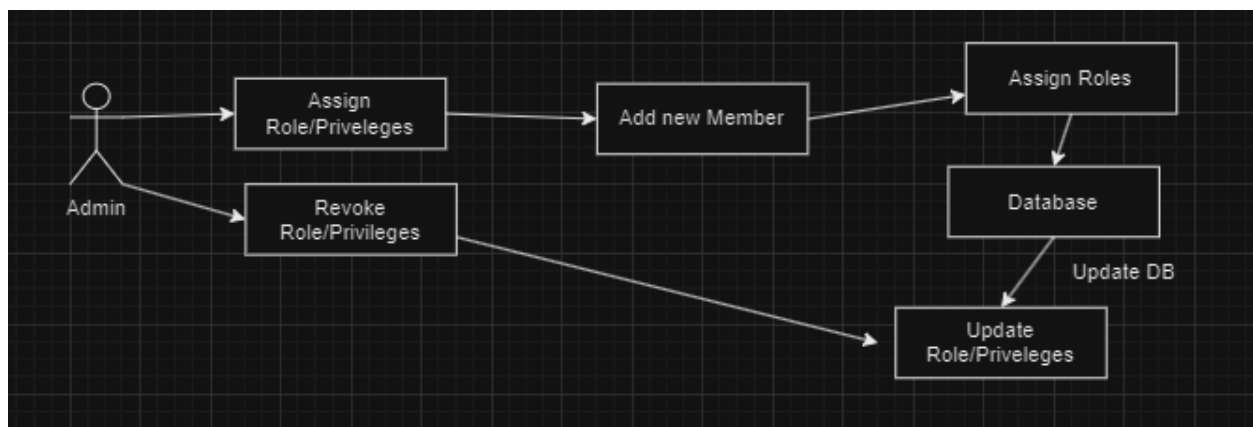
**Main Flow:**

- User navigates to the login page.
- User enters username and password
- User clicks “Login” button
- System verifies and logs the user in

**Alternative flow:** If credentials are incorrect, display an error message

**Related Requirements:** FR-4 (U8)

## Use Case 9. Database



**Actors:** Administrator

**Preconditions:** Admin is logged into the system

**Postconditions:** Database record are updated

**Main Flow:**

- Admin access the database management interface
- Selects to add, update, or delete records.
- Enters data or selects records.
- System updates and displays a success message.

Alternative flow: If data is invalid, show an error message

**Related Requirements:** FR-4 (U8), FR-5 (U9)

## 4 Functional Requirements

### Website Management

<b>Functional Requirement</b>	<b>[FR-1 (U2)] LHS Navigation Tab</b>
<b>Description/Specification</b>	The website navigation needs to be on the left-hand side of the page.
<b>Priority</b>	Level 0 (Essential)
<b>Functional Requirement</b>	<b>[FR-2 (U1)] Contact Form</b>
<b>Description/Specification</b>	The website must provide a ‘Contact Us’ form that allows users to submit inquiries.
<b>Priority</b>	Level 1(High Priority)
<b>Functional Requirement</b>	<b>[FR-3 (U3)] Updates, News Integration</b>
<b>Priority</b>	Level 0 (Essential)
<b>Functional Requirement</b>	<b>[FR-4 (U8)] Login Page</b>
<b>Description/Specification</b>	The website needs to have a login page for users to login via email.
<b>Priority</b>	Level 1 (High Priority)
<b>Function Requirement</b>	<b>[FR-5 (U9)] Database</b>
<b>Description/Specification</b>	The website must have a database to give specific privileges to members, officers, etc.
<b>Priority</b>	Level 0 (Essential)

### Admin Management

<b>Functional Requirement</b>	<b>[FR-6 (U6) Admin's ability to modify officer's information.</b>
<b>Description/Specification</b>	The admin must have the ability to add, remove, edit and remove an officer and the officer's information
<b>Priority</b>	Level 0 (Essential)
<b>Functional Requirement</b>	<b>[FR-7 (U7) Admin's management for updates/news integration.</b>
<b>Description/Specification</b>	The admin must have the ability to manage the integration of updates and news from LinkedIn and Instagram
<b>Priority</b>	Level 0 (Essential)

### Page Management

<b>Functional Requirement</b>	<b>[FR-8 (U4) Society Chapters Page</b>
<b>Description/Specification</b>	The website must provide a "Society Chapter" page listing all local societies including WIE (Women in Engineering) and YP (Young Professionals)
<b>Priority</b>	Level 0 (Essential)
<b>Function Requirement</b>	<b>[FR-9 (U5) Section Officers Page</b>
<b>Description/Specification</b>	The website must display a "Section Officers" page with a list of current officers, their roles, bios, and profile photos.
<b>Priority</b>	Level 0 (Essential)

## 5 Non-functional Requirements

Non-functional Requirement	Description
[NFR-1] Performance	Every input and output should be loaded within 2-3 seconds.
[NFR-2] Consistent Layout	All website pages should have a similar design. So visitors can navigate the page easily.
[NFR-3] Contact-Us Feedback	When used, users will receive a notification indicating whether the message was sent successfully or not.
[NFR-4] Website Availability	The website should be up and running all time, with minimal downtime
[NFR-5] Security	Only approved administrators should be able to make changes, like adding or removing officer details.



## 6 Traceability Matrix

Functional Requirement	Use Case	User Story	Priority
FR-1: LHS Navigation Tab	UC1- Successful navigation using the menu UC2- Broken Links	US2: As a new visitor, I want to use the website's left-hand side menu	Level 0
FR-2: Contact Form	UC1- Successful submission UC2- Incomplete form submission	US1: As a user or potential member, I want to use the 'Contact Us' form	Level 1
FR-1: Updates, Integration	UC1- Viewing social media updates UC2- No updates	US3: As a visitor, I want to see the latest updates and events	Level 0
FR-1: Login Page	UC1- Successful login with email UC2- Failed login attempt	US8: As an administrator, I want to securely log in	Level 1
FR-1: Database	UC1- Assigning privileges UC2- Revoking privileges	US9: As an administrator, I want to manage user privileges	Level 0
FR-3: Admin's ability to modify officers information	UC1- Updating officer detail UC2- Removing old officer information	US6: As an administrator, I want to easily manage and update the officer details	Level 0
FR-4: Admins management for updates/news integration	UC1- Managing update/news integration UC2- Handling errors	US7: As an administrator, I want to manage updates or news	Level 0
FR-5 Society Chapters Page	UC1- Viewing Society Chapters	US4: As a visitor, I want to view the local	Level 0

	Page UC2- Renamed page	Society Chapters	
FR-6 Section Officers Page	UC1- Viewing Section Officers UC2- Officers Change	US5: As a visitor, I want to view the “Section Officers”	Level 0

## 7 Evaluation of Existing Solution

### Problems:

The framework that the client is currently using is wordpress. The existing code is primarily in html, css, and javascript. The current issue is that it is using an outdated technology with basic written code to get the information out there without any format/organization resulting in a poor experience of reading through the information. Some of the reference links either do not work or go to a link that is completely empty. The code does not have any dependencies, no algorithms, and lacks modularity.

### Proposal:

Refactor the entire web page to make it organized, functional, and easier for administrators, officers, and visitors to use and travel through its browsers. An updated frontend framework like React as it is easy to set up and easy to use for administrators to make changes to the codebase or any additional features that the client would want with the addition of a backend framework like Node.js as both of the frameworks work extremely well with each other. Other frameworks that we would need is MySQL for handling roles/privileges for users. For responsive design of the website, Tailwind CSS is easy to use for designing the website.

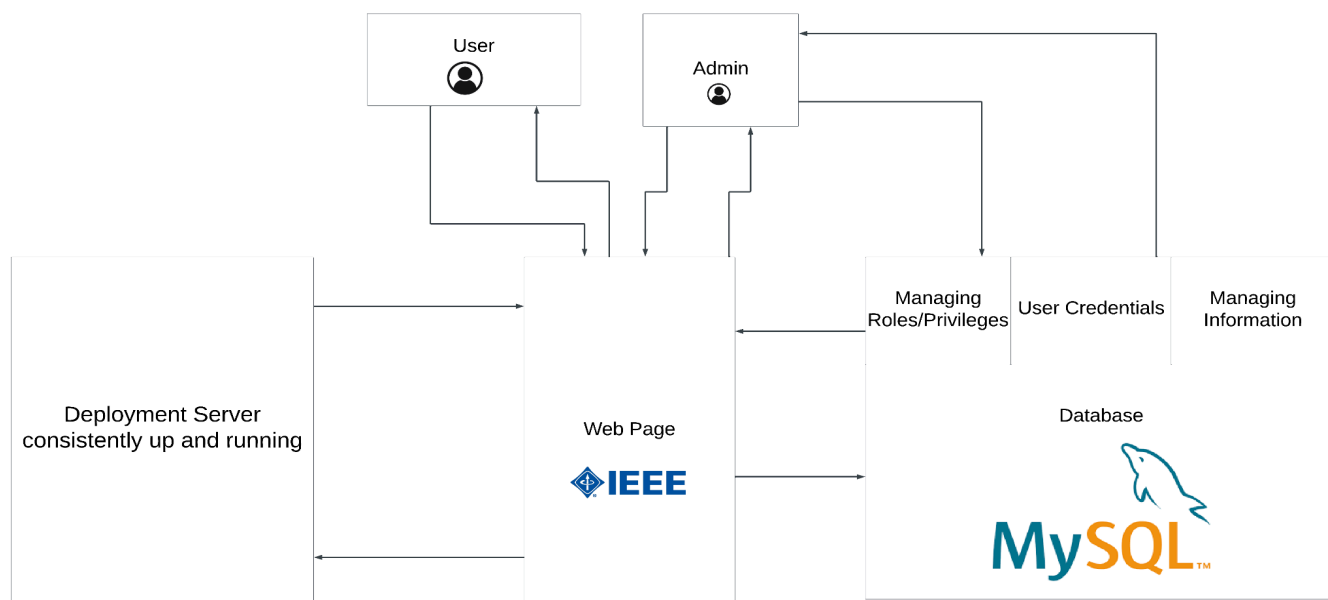
## 8 Individual Contribution Summary

Travis Ho: Team Leader. Contributed to documents, communicated with sponsor, researched technologies

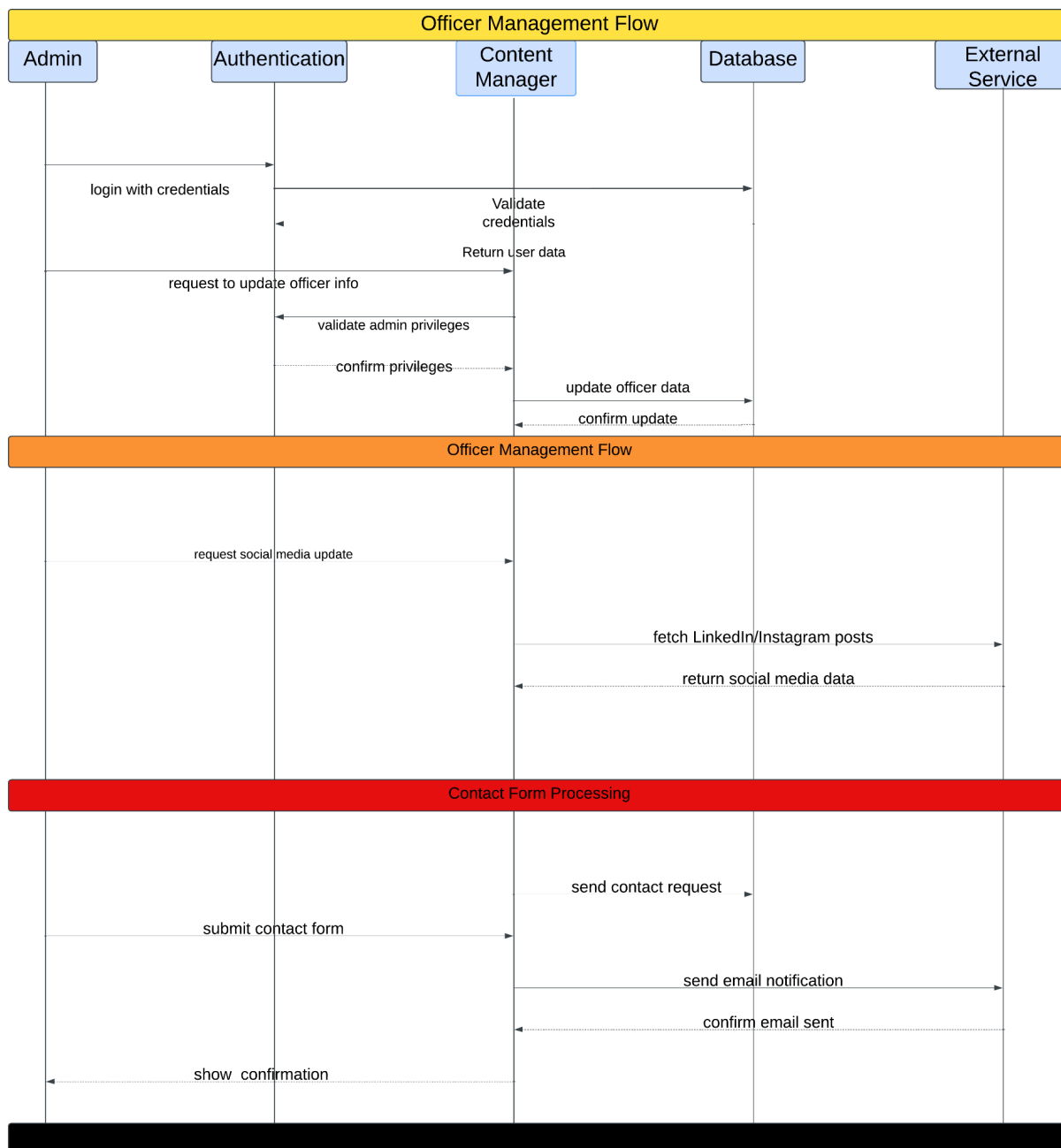
Earl Quinto: Created Documents, Contributed to documents.

Jason Stanley: Contributed to documents, Project planning.

## 9 System Architectural Design



## 10 Behavioral Diagram



## 11 Structural Diagram

