# SW Engineering CSC648-848-05 Spring 2023

DebugMe Team 02

Emilee Padilla - Team Lead emann@mail.sfsu.edu

Jijeong Lee - Frontend Lead Cristobal Padilla - GitHub Lead Matthew Bush - Backend Lead Khayotbek Azimov - Cloud Lead Jeffrey Ma - Database Lead

Hector Magallanes - Document Editor Lead

Milestone 4 05/25/2023

# History Versions Table

Revision	Date
m4v2	05/25/23
m4v1	05/18/23
m3v2	05/25/23
m3V1	04/27/23
m2V2	04/27/23
m2V1	03/31/30
m1V2	04/18/23
m1V1	02/23/23

# Table of Contents

1. Product Summary	3
2. Usability Test Plan 2.5 pages max.	5
3. QA Test Plan	11
4. Code Review	13
5. Self-Check On Best Practices For Security	16
6. Self-Check: Adherence to original Non-Functional Specs	18
7. List of Contributions	20

# 1. Product Summary

## Name of the product:

DebugMe

## Explicit itemized list of all major committed functions

- 1. Unregistered users shall be able to create an account
- 2. Registered users shall be able to delete their accounts
- 3. Registered users shall be able to log in
- 4. Registered users shall be able to log out
- 5. Registered users shall be able to see their profiles
- 6. Registered users shall be able to update their personal information
  - 6.1. Registered users shall be able to upload a profile picture
  - 6.2. Registered users shall be able to change their username
  - 6.3. Registered users shall be able to add a bio to their personal information
  - 6.4. Registered users shall be able to edit their bio
- 7. Registered users shall be able to change from Free to Premium subscription plan
- 8. Registered users shall be able to change from Premium to Free subscription plan
- 9. Registered users shall be able to see other registered users' username
- 10. Registered users shall be able to see other registered users' profile picture
- 11. Registered users shall be able to see other registered users' bio
- 12. Registered users shall be able to see all posts in the Forum
- 13. Registered users shall be able to search Forum posts by title
- 14. Registered users shall be able to create new Forum posts
  - 14.1. Registered users shall be able to add a title to their post
  - 14.2. Registered users shall be able to add text to their post body
  - 14.3. Registered users shall be able to add images to their posts
- 15. Registered users shall be able to delete their posts
- 16. Registered users shall be able to see any post's comments
- 17. Registered users shall be able to leave a comment on any post
- 18. Registered users shall be able to delete their post comments
- 19. Registered users shall be able to like any post
- 20. Registered users shall be able to send a direct message to other registered users

- 21. Registered users shall be able to receive direct messages from other registered users
- 22. Premium users shall be able to see a list of their upcoming Mentoring Sessions
- 23. Premium users shall be able to see all Premium Guides
- 24. Premium users shall be able to access any Premium Guide
- 25. Premium users shall be able to rate any Premium Guide
- 26. Premium users shall be able to request a Mentoring Session from any Mentor
- 27. Premium users shall be able to cancel their Mentoring Sessions
- 28. Premium users shall be able to save any Premium Guide to their list of saved guides
- 29. Premium users shall be able to remove any Premium Guide to their list of saved guides
- 30. Registered users shall be able to create Premium Guides
  - 30.1. Registered users shall be able to add a title to their Premium Guide
  - 30.2. Registered users shall be able to add text to their Premium Guide body
  - 30.3. Registered users shall be able to add an image to their Premium Guide
- 31. Mentors shall be able to delete their Premium Guides
- 32. Mentors shall be able to see their Mentoring Session requests
- 33. Mentors shall be able to approve Mentoring Session requests
- 34. Mentors shall be able to refuse Mentoring Session requests

## Say what is unique in your product:

Breaking into the tech industry is a difficult and complex process, which is why there exist multiple products that offer guidance for techies aspiring to get their first job offer. What the existing products fail to acknowledge is the significant portion of techies that wish to start their careers by gaining internship experience rather than full-time job offers. DebugMe's goal is to provide internship-seekers with resources and services that are designed specifically for the needs of their niche community. Want to build your network with other internship-seekers? Our forum allows users to connect with others in similar situations. Need help preparing for an interview? We offer Premium Guides and Mentoring Sessions provided by people who recently found internship success at your target company. Let us help you debug the world of internships so that you can achieve your dreams.

**URL** of your product accessible to instructor, on deployment server:

http://18.237.101.95/

# 2. Usability Test Plan 2.5 pages max.

## **Purpose:**

- The purpose of this usability test is to evaluate the effectiveness, efficiency, and user satisfaction of the five key functions on our platform: creating a premium guide, saving the guide as a favorite, rating the guide, requesting a mentoring session through premium guide, and canceling the mentoring session request.

## **Problem Statement and Objectives:**

- The objective is to identify these issues, measure their impact on user experience, and gather data to improve usability.

## **Test Objectives per Function**

- **Creating a Premium Guide:** The objective is to test the simplicity and intuitiveness of the process. It is important that users can create a guide without unnecessary complications or confusions, as this is one of the primary features of the platform.
- Saving a Premium Guide as a Favorite: The goal is to assess the process's ease and user-friendliness. Users should be able to quickly save their favorite guides and access them later without difficulty.
- **Rating a Premium Guide:** The purpose is to evaluate the visibility and accessibility of the rating system, and how smoothly users can leave a rating. Users should be able to rate a guide easily, promoting engagement and interaction on the platform.
- **Requesting a Mentoring Session:** The objective is to examine the ease of use and reliability of the appointment booking system. This function is key for users to connect with mentors and enhance their learning experience.
- **Canceling a Mentoring Session:** The goal is to test the efficiency and clarity of this process. Users should be able to cancel a mentoring session easily, providing flexibility and control over their interactions on the platform.

## **Test Description per Function**

• Use the following user for performing your usability test:

o Email: joseo@mail.com

o PW: Password1!

- Saving a Premium Guide as a Favorite:

System Setup: Desktop browsers(Chrome, Safari, Firefox), Operating Systems

(Windows and MacOS).

**Starting Point:** Premium Guide Page.

**Intended Users:** Registered premium users who would like to save a guide as favorite.

**URL:** http://18.237.101.95/premiumguides

**Measurement:** Time to save a guide as favorite, user satisfaction, any errors

encountered.

## - Rating a Premium Guide:

**System Setup:** Desktop browsers(Chrome, Safari, Firefox), Operating Systems

(Windows and MacOS).

**Starting Point:** Premium Guide.

**Intended Users:** Registered premium users after accessing the premium guide.

URL: http://18.237.101.95/premiumguides

**Measurement:** Time taken to rate, visibility of rating system, user satisfaction, any errors

encountered.

## - Requesting a Mentoring Session Through Premium Guide:

System Setup: Desktop browsers(Chrome, Safari, Firefox), Operating Systems

(Windows and MacOS).

**Starting Point:** Premium Guide page.

**Intended Users:** Registered premium users who would like to request a mentoring

session with a Mentor.

**URL**: http://18.237.101.95/premiumguides

**Measurement**: Time taken to request a session, number of steps, user satisfaction, any

errors encountered.

## - Canceling a Mentoring Session:

System Setup: Desktop browsers(Chrome, Safari, Firefox), Operating Systems

(Windows and MacOS).

**Starting Point**: Premium user on their "my page".

**Intended Users**: Registered premium users who have requested a mentoring session.

**URL**: http://18.237.101.95/mypage

**Measurement**: Time taken to cancel a session, clarity of cancellation process, user

satisfaction, any errors encountered.

## - Creating a Premium Guide:

**System Setup:** Desktop browsers(Chrome, Safari, Firefox), Operating Systems

(Windows and MacOS).

Starting Point: Premium Guides page.

**Intended Users:** Registered users who would like to become Mentors.

**URL:** http://18.237.101.95/premiumguides

**Measurement:** Time taken to create a guide, number of steps, any errors encountered.

user satisfaction.

### **User Profile:**

- Our typical users are tech-savvy people who want to help each other find success in their tech internships

#### **Method:**

- The chosen method is the task-based usability testing, where each function will be tested separately by the user performing a task associated with the function. The tasks will be realistic and represent typical use of the system.

## **Test Environment:**

- The test will be conducted in a controlled environment resembling a typical user setting. This includes a standard desktop computer with an internet connection. The test will also be observed and recorded for further analysis.

## **Test Monitor Role:**

- The test monitor will guide the participants through the process, answer any queries, and ensure that the test stays on track. The monitor will not intervene unless the participant asks for help.

## **Usability Test Table: Effectiveness**

Test/use case	% Completed	Errors	Comments
Save Guide as favorite	75%		Button is off center.
Rate Premium Guide	100%		
Request Mentoring Session through premium guide	75%	Button was not doing anything, had to refresh page. Was trying to request mentor session with herself, we didn't account for that edge case and no error msg was displayed	Button is off center.

Cancel Mentoring Session	62%	There was no session to cancel.	
Create a Premium Guide	75%		<ul> <li>Creation page looks kinda bland, not intuitive.</li> <li>Difficult time figuring out where to start to get to creating a guide.</li> </ul>

# **Usability Test Table: Efficiency**

Test/use case	Time to Complete Task (avg)	Steps Taken (in clicks)
Save Guide as favorite	10s	3
Rate Premium Guide	10s	3
Request Mentoring Session through premium guide	10s	5
Cancel Mentoring Session	25s	8
Create a Premium Guide	60s	10

# **User Satisfaction: Likert Questionnaire**

We had 8 test users, each number below represents how many users selected each option for each question.

	Strongly Disagree	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
I found it easy to create a guide	1	1	2	3	1
The process of creating a guide was intuitive	1	2	1	3	1
I am satisfied with the tools provided for guide creation	1	1	2	2	2
I can easily save a guide as my favorite	1	0	1	3	3
The option to save a guide as a favorite is clearly visible	1	0	0	4	3
I am satisfied with the 'save as favorite' function	1	0	1	4	2
It is simple for me to rate a guide	1	0	0	2	5
The rating system is clear and understandable	1	1	0	2	4
I am satisfied with the guide rating process	1	1	3	1	2
Requesting a mentoring session through a premium guide is straightforward	1	1	3	2	1
I understand how to request a mentoring session	1	0	1	4	2
I am satisfied with the process of	1	1	3	2	1

requesting a mentoring session					
Canceling a mentoring session is easy	1	1	2	4	0
The option to cancel a mentoring session is clearly visible	1	1	2	3	1
I am satisfied with the cancellation process of a mentoring session	1	0	2	5	0

# 3. QA Test Plan

- 1. The system shall respond visually within 7 seconds.
  - a. System Setup:
    - i. Hardware: Computer with internet connection
    - ii. Software: User logged in to DebugMe on a supported browser
    - iii. URL: http://18.237.101.95/posts
  - b. Feature to be tested: Page load time
  - c. QA Test Plan: Open any DebugMe page and check that it loads within the specified time
- 2. Users shall see their posts within 1 min after successfully posting.
  - a. System Setup:
    - i. Hardware: Computer with internet connection
    - ii. Software: User logged in to DebugMe on a supported browser
    - iii. URL: http://18.237.101.95/posts
  - b. Feature to be tested: Forum Post creation
  - c. QA Test Plan: Create a new post and verify that it is accessible within the specified time
- 3. Registered user passwords shall contain at least one uppercase letter, one digit, one special character, and a minimum of 8 characters
  - a. System Setup:
    - i. Hardware: Computer with internet connection
    - ii. Software: Supported browser showing DebugMe Sign Up page
    - iii. URL: http://18.237.101.95/signup
  - b. Feature to be tested: New user password validation
  - c. QA Test Plan: Register a new user with a password that fulfills all of the necessary requirements
- 4. Registered users shall stay in logged in with the same browser
  - a. System Setup:
    - i. Hardware: Computer with internet connection
    - ii. Software: User logged in to DebugMe on a supported browser
    - iii. URL: http://18.237.101.95/premiumguides
  - b. Feature to be tested: Browser session persistence
  - c. QA Test Plan: Visit Premium Guides page while logged in, close the tab, open the page again in a new tab and check that user is still logged in
- 5. Passwords shall be encrypted
  - a. System Setup:
    - i. Hardware: Computer with internet connection

- ii. Software: Supported browser showing Sign In page, MySQL Workbench with an open connection to the DebugMe database
- iii. URL: <a href="http://18.237.101.95/signin">http://18.237.101.95/signin</a>
- b. Feature to be tested: Password encryption
- c. QA Test Plan: Register a new user and verify that their password is encrypted in the database

Test #	Test Title	Description	Input	Output	Results
1	Page load time	Verify that DebugMe pages load in 7 seconds or less	Open Forum page	Forum page shows all content within 7 seconds	PASS
2	Post availability after creation	Verify that posts are accessible within 1 minute after creation	Create a new post	Post is accessible within 1 minute	PASS
3	Password validation	Verify that users can only create an account if their password meets all the requirements	Create user with a valid password	Password is accepted and user is created	PASS
4	Browser session persistence	Verify that users stay logged in even after closing DebugMe in their browser	Close DebugMe while logged in and reopen in the same browser	User is still logged in after reopening DebugMe	PASS
5	Password encryption	Verify that registered users have their passwords encrypted	Register a new user	User is created and their password is encrypted in the database	PASS

## 4. Code Review

• Coding Style:

o Frontend: Airbnb React/JSX Style

o Backend: Google Python Style

• Code to be reviewed:

```
import React, { useState } from "react"; // Needed for AWS since it's using node 16
import PropTypes from 'prop-types';
import { toast } from "react-toastify";
import { customAxios } from "../../utils/customAxios";
import Button from "../../Components/Button";
import Modal from "../../Components/Modal";
import Textare from "../../Components/Textarea";
import useAuth from "../../Hooks/useAuth";
import "./mypage.css";
const propTypes = {
  menteeSessions: PropTypes.array,
 mentorSessions: PropTypes.array,
 mentoringRequests: PropTypes.array
};
function MentoringSessions({ menteeSessions, mentorSessions, mentoringRequests }) {
  const [showMessageModal, setShowMessageModal] = useState(false);
  const [messageInfo, setMessageInfo] = useState({});
  const [content, setContent] = useState("");
  const { auth } = useAuth();
 * based on the passed-in sender, receiver information
  const openMessageModal = (sender, receiver) => {
    setMessageInfo({
      sender_id: sender.id,
      sender email: sender.email,
      receiver_id: receiver.id,
      receiver email: receiver.email,
      receiver name: receiver.name,
    })
    setShowMessageModal(true);
  const postMessage = async () => {
    try {
      const data = {
        sender_id: messageInfo.sender_id,
        sender_email: messageInfo.sender_email,
        receiver_id: messageInfo.receiver_id,
```

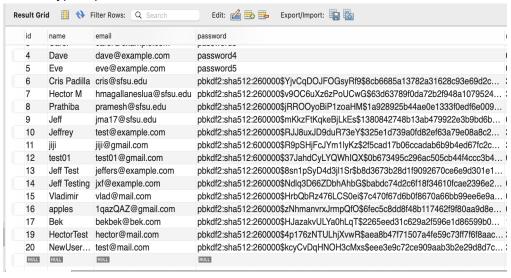
```
receiver_email: messageInfo.receiver_email,
        content: content
      };
      const res = await customAxios({
        method: "post",
        url: "/api/messages",
        data,
        headers: {
          "Content-Type": "application/x-www-form-urlencoded",
        },
      });
      if (res.status === 200 || res.status === 201) {
        toast.success("Your message has been sent.", {
          position: "bottom-left",
          autoClose: 3000,
         hideProgressBar: true,
        });
        setShowMessageModal(false);
    } catch (e) {
      console.log(e);
 };
 handleMentoring() requests mentoring session status changes to server
* based on apiUrl and mentoringId
 const handleMentoring = async (apiUrl, mentoringId) => {
   try {
     const res = await customAxios({
        method: "post",
        url: apiUrl,
        data: { id: mentoringId },
        headers: {
          "Content-Type": "application/x-www-form-urlencoded",
        },
      });
      if (res.status === 200 || res.staus == 201) {
        window.location.reload();
    } catch (e) {
      console.log(e);
 };
```

- Why this code was chosen: Mentoring Sessions are one of the main functions related to Premium Guides, which are our superior feature. This code was chosen since it's related to how Premium Users and Mentors manage their Mentoring Sessions.
- Feedback from a team member: Code looks well formatted and is fairly self explanatory to read. However, some in-line comments within the functions would help to identify what each code block is doing.

• Feedback from another team: The code appears to be well organized and nicely formatted. They have used Imports properly for the components. They have used useStates such as showMessageModal, messageInfo, content, and auth and all the variables are appropriately initialized with their initial values. For the handleMentoring function, it seems this function handles mentoring session status change by making POST request to the apiUrl, they used the try-catch blocks to catch errors during API requests, it lacks detailed error handling and error messages to handle potential errors or provide a better error handling with user feedback.

# 5. Self-Check On Best Practices For Security

- List major assets you are protecting
  - User passwords
- Confirm that you encrypt PW in the DB (describe the process and show real examples (i.e screenshots.....)
  - Passwords are hashed using Flask's werkzeug.security module.
  - **PBKDF2** is the key derivation function used by werkzeug.security module.
  - SHA 512 is the hashing method.
  - 60,000 is the number of iterations.
  - o Salt is 16 characters long.
  - The encrypted password is then stored in



the password field of the User's table in the database.

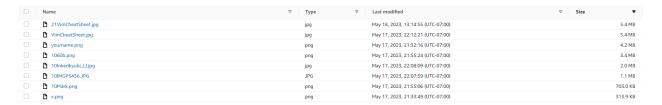
- Confirm Input data validation (list what is being validated and what code you used)
   we request you validate search bar input
- Input size: max is 250 characters

Search size is limited by the SEARCH\_INPUT\_MAX\_SIZE value in the code. We ensure that the character limit is under or equal to 250 characters.

Image Size, Image file type (jpg / jpeg / png)

We validate input data such as File size and file types through the code above. It checks the file size and or file type and if it is over the approved limit it will send an alert to try to select another image.

image_path	user_id
10IMGP5456.JPG	10
10Inkedkyubi_LI.jpg	10
10Pokecoin 1.png	10
10dragonmir.png	10
19Screenshot_20221108_031126.png	19



Once the image is stored in the database it is renamed to {userid}+filename format. And as you can see in the above image no image surpasses the approved file size.

# 6. Self-Check: Adherence to original Non-Functional Specs

## 1. **System**

- 1.1. The application shall be accessible on Google Chrome version 110.0+ **DONE**
- 1.2. The application shall be accessible on Firefox version 109.0+ **DONE**
- 1.3. The application shall be accessible on Safari version 15.0+**DONE**

## 2. Performance

- 2.1. The system shall respond visually within 7 seconds **DONE**
- 2.2. Users shall see their posts within 1 min after successfully posting. **DONE**

## 3. Storage, Security, Environmental

- 3.1. File size for uploaded images in no time shall exceed 6 megabytes **DONE**
- 3.2. Accepted image file types are PNG, JPG, and JPEG **DONE**
- 3.3. Registered users shall have their emails verified **ISSUE: We will not be implementing this requirement**
- 3.4. An approved user shall have their email stored **DONE**
- 3.5. Registered users must make a password that contains a capital letter and a number **DONE**
- 3.6. Registered users shall have unique usernames **DONE**
- 3.7. Registered users shall stay in logged in with the same browser **DONE**

## 4. Marketing, Legal

- 4.1. The logo shall be displayed on the footer of every page **ON TRACK**
- 4.2. All registered users must accept our terms and conditions **DONE**
- 4.3. A link to our terms and conditions shall be shown on the footer of every page. **DONE**
- 4.4. The logo shall be displayed on the header of every page. **DONE**
- 4.5. A link to contact information shall be shown on the footer of every page. **DONE**

## 5. Content

- 5.1. Each page shall have both a header and a footer **DONE**
- 5.2. Each page shall contain proper semantic tags **ON TRACK**

## 6. Privacy

- 6.1. Unregistered users shall not have their information stored **DONE**
- 6.2. User information shall not be shared with third parties unless compelled by law **DONE**
- 6.3. Passwords shall not be viewable at any time **DONE**
- 6.4. Passwords shall be encrypted **DONE**

## 7. Coding Standards

- 7.1. JavaScript variables and functions shall be in camelCase **DONE**
- 7.2. JavaScript functions shall state parameters and return value types **ON TRACK**

## 8. Usability

- 8.1. The date/time format shall follow month/day/year **DONE**
- 8.2. Text shall be a font size of 9 or larger **DONE**
- 8.3. The application shall be available in the English language **DONE**
- 8.4. The application shall be available in the US **DONE**
- 8.5. The application shall provide error message for wrong input **DONE**
- 8.6. Components shall follow the same design guideline **DONE**
- 8.7. Submit Buttons shall not be invoked within 300 ms after click **DONE**

## 9. Accessibility

- 9.1. All uploaded images must have an alternative text **DONE**
- 9.2. All content shall be accessible with screen readers **ON TRACK**
- 9.3. All content shall be navigable by keyboard **ON TRACK**
- 9.4. All heading level shall be in order **ON TRACK**
- 9.5. Data tables shall not have empty cells **DONE**
- 9.6. All content shall be readable with zoom to 200% **DONE**
- 9.7. All Colorset shall pass color contrast test **ON TRACK**

## 7. List of Contributions

## 1. Jiji/Jijeong Lee (Front End Leader) - Score: 9

- message page both frontend and backend
- work on my page functionality and updates
- Worked on code used for peer review
- Went to all meetings and participated
- Worked on functional requirements
- Worked on My Page frontend
- Worked on message features(get message, post message) both on frontend and backend
- Worked on unique constraint for user email field
- Worked on Saved Premium Guide list
- Worked on Mentoring Session List
- Worked on Premium guide page

## 2. Mat/Matthew Bush (Back End Leader) - Score: 8

- Went to all meetings and participated
- Worked on posts
- Worked on functional requirements
- Worked on Forum and Post pages backend

## 3. Cris/Cristobal Padilla (Github Leader) - Score: 10

- Utilized Trello
- Helped work on M3 corrections
- Very communicative in between meetings

- Went to all meetings and participated
- Worked on local storage/cookies
- Worked on functional requirements
- Worked on registered users shall be able to change from Free to Premium subscription plan and vice versa
- Worked on Add input validation to Posts search bar
- Display "no comments" on posts with no comments
- Add functionality to send message from User Profile popup

## 4. Hayat/Khayotbek Azimov (Cloud Leader) - Score: 9

- Went to all meetings and participated
- o premium guide and rendering dynamically on the database
- Created the usability table
- Worked on functional requirements
- Worked on registered users shall be able to change their username
- Worked on registered users shall be able to add a bio to their personal information
- Worked on registered users shall be able to edit their bio
- Lead most of the work for the Usability plan
- Worked on surveys for Usability with people

## 5. Jef/Jeffrey Ma (Database Leader) - Score: 9

- Went to all meetings and participated
- Worked on work on messages
- Worked on uploading pictures and how to store them
- Worked on Section #5

- Worked on doing code review with classmates outside of team
- Worked on functional requirements
- Worked on the DB connecting with everything properly
- Changing subscription plans (implement frontend)
- Worked on surveys with people for usability
- Updated all the tables

## 6. Hector Magallanes (Document Leader) - Score: 10

- o front end for posts with form that submits what we need without user info
- Document editing and formatting
- Worked on code for review
- Went to all meetings and participated
- Very communicative in between meetings
- Adjusted forum language
- Worked on functional requirements
- Worked on History Versions Table
- Worked on Table of Contents
- Lead most of the work with Hayat for Usability
- Worked on restrict Premium Guide access for non-premium users
- Check how to store Posts/Guides body as markdown instead of plain text

## 7. Emilee Padilla (Team Lead) - Score: 8

- Created a structure to follow on Trello for working efficiently
- Updated our discord channels
- Created and shared our documents

- Created office hour for questions
- Worked on Section #5
- Made contribution list
- Checked in with team mates for progress updates
- Went to all meetings and participated
- Created the logo
- Worked on editing the document
- Worked on usability testing with people
- o Worked on functional requirements
- o Created survey for User Satisfaction: Likert Questionnaire