CST2120
Web Applications and Databases

Coursework 2 – Single page website
Final Project Report

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Description of the website

FotoFiesta is an innovative social media platform designed to provide users with a seamless and engaging experience. The project's first phase involves creating a single-page website with diverse functionalities to enhance user interaction.

Website Demonstration – YouTube Link

https://youtu.be/epEgJZDBwAI

Navigation

The platform features a side menu bar for easy navigation:

- **Post:** Share your moments.

- **Explore:** Discover posts from users around the platform.

- **Home:** User can view their profile.

- **Saved:** Access saved posts.

- **Log Out:** Securely sign out from your FotoFiesta account.
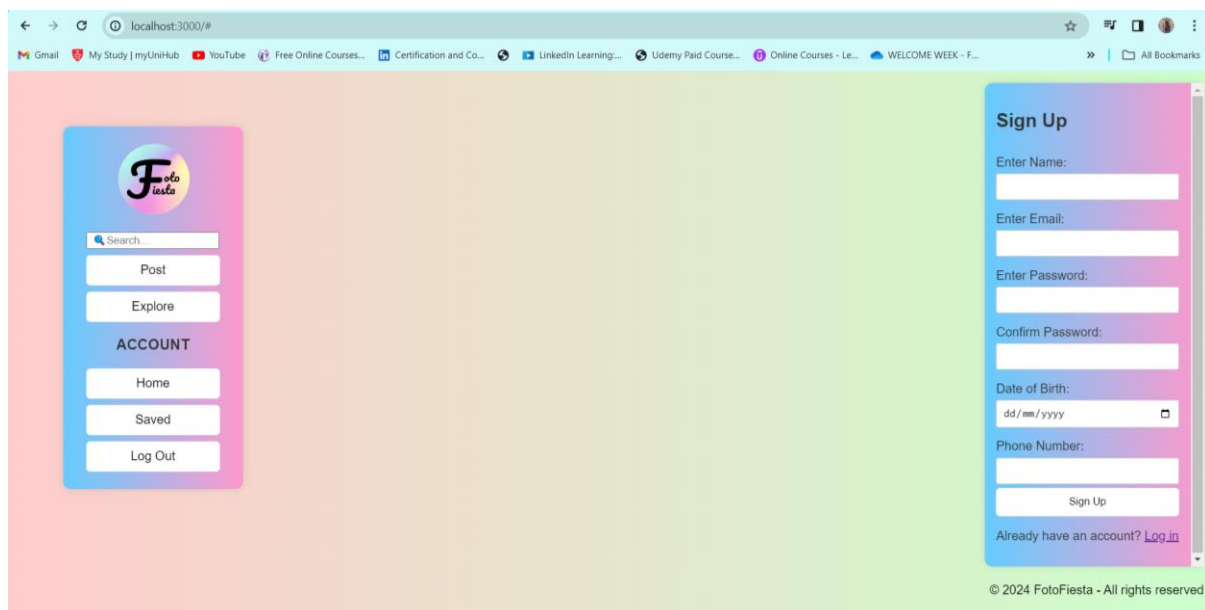
Front-end Design

Figure 1 - Sign Up

This is the webpage when user has not sign up yet. The Sign-Up form help user to create their accounts by inserting their basic information. Once their credentials are

store in the database, they will be able to log in their account. When user point its cursor on Sign Up button, a hover effect will appear.
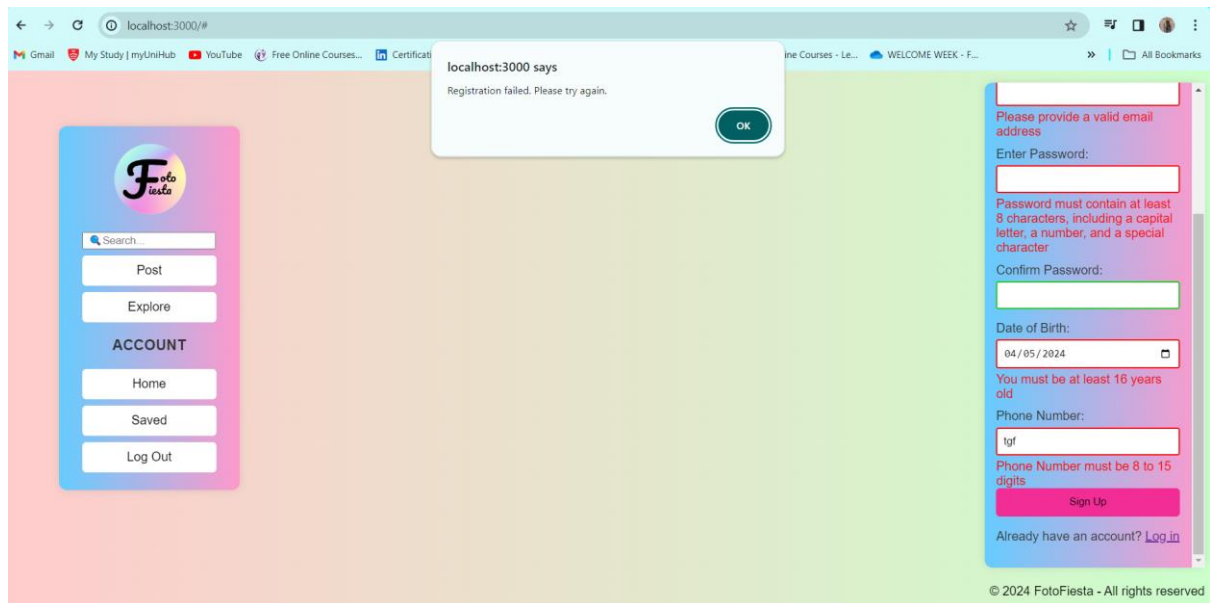

Figure 2 - Sign-Up Validation

Figure 2 shows a combination of CSS and JavaScript that perform the sign-up validation. If an invalid data is written in the input box, the borders of the input box will appear red. On the other hand, if a valid data is written, the borders of the input box will appear green.
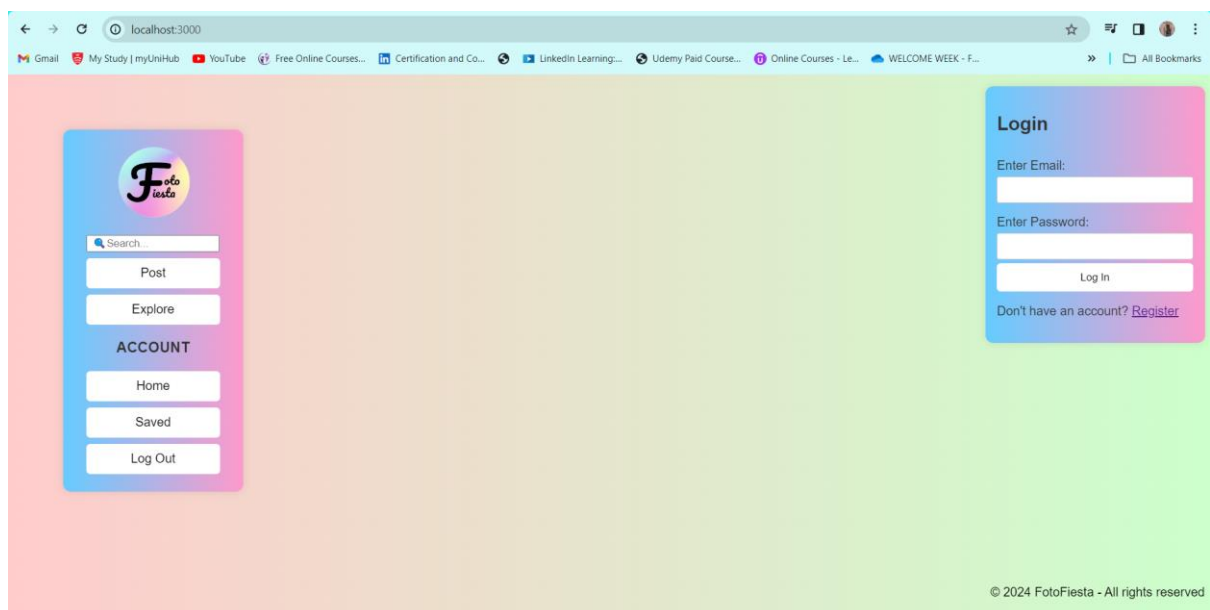

Figure 3 - Log In option

If the user already has an account, he can log in using its appropriate credentials. When user point its cursor on the Log In button, a hover effect will appear.
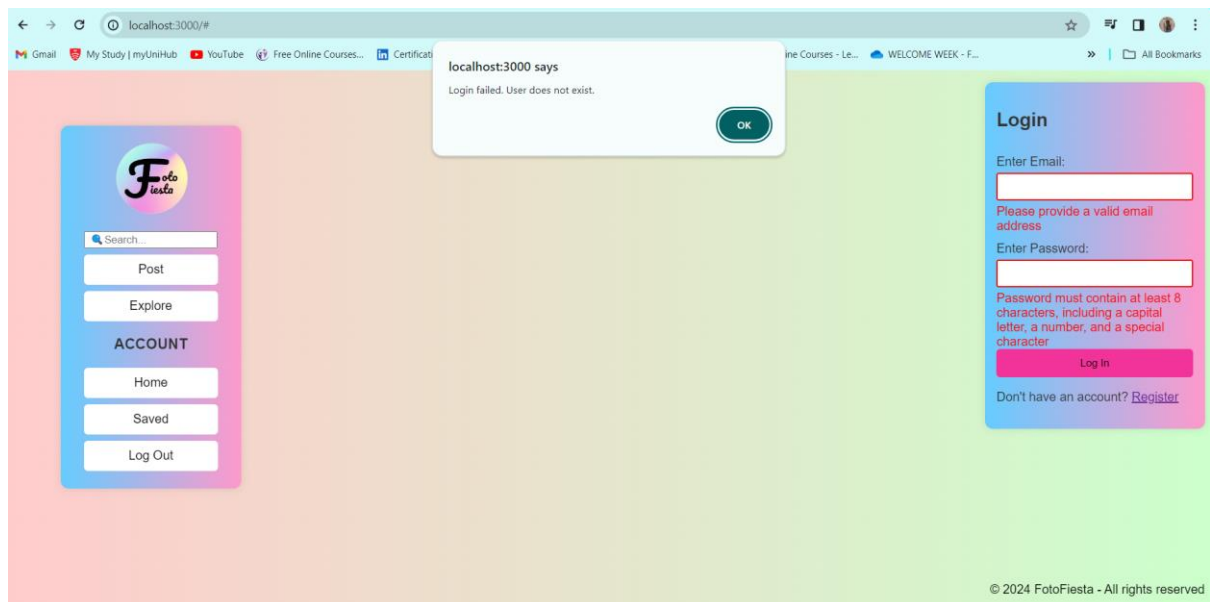
Figure 4 - Log In Validation

Figure 4 shows a combination of CSS and JavaScript that perform the log in validation. If an invalid email or short password is written in the input box, the borders of the input box will appear red. On the other hand, if a valid email and a strong password is written, the borders of the input box will appear green.
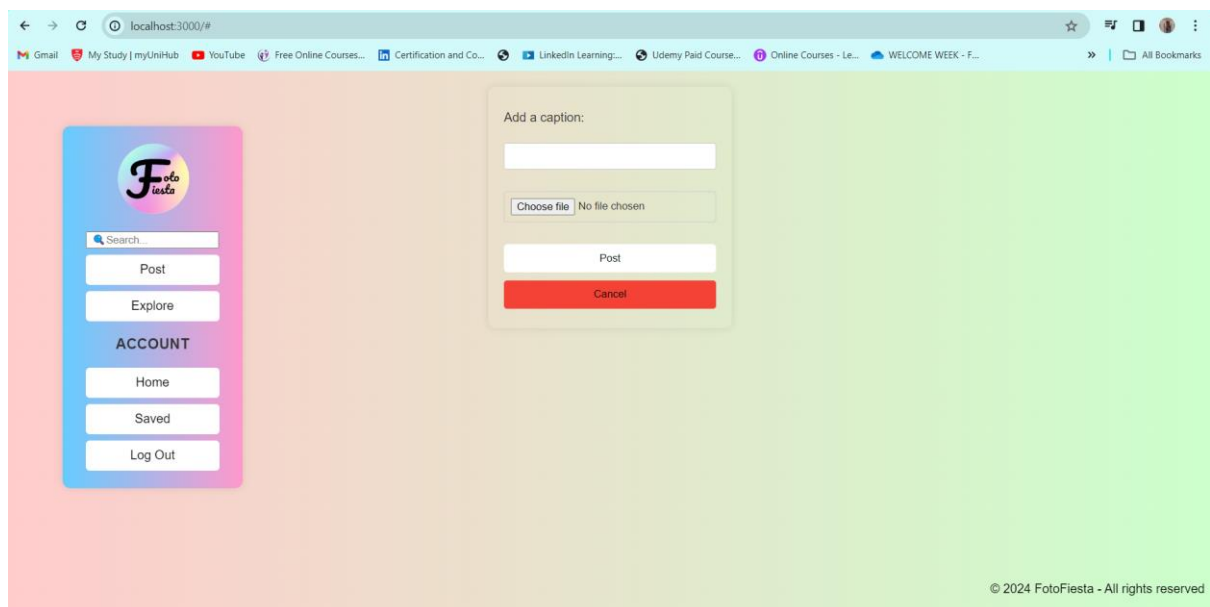

Figure 5 - Post option

Once logged in, the user can now post pictures. When user point its cursor on Post button, a hover effect will appear.
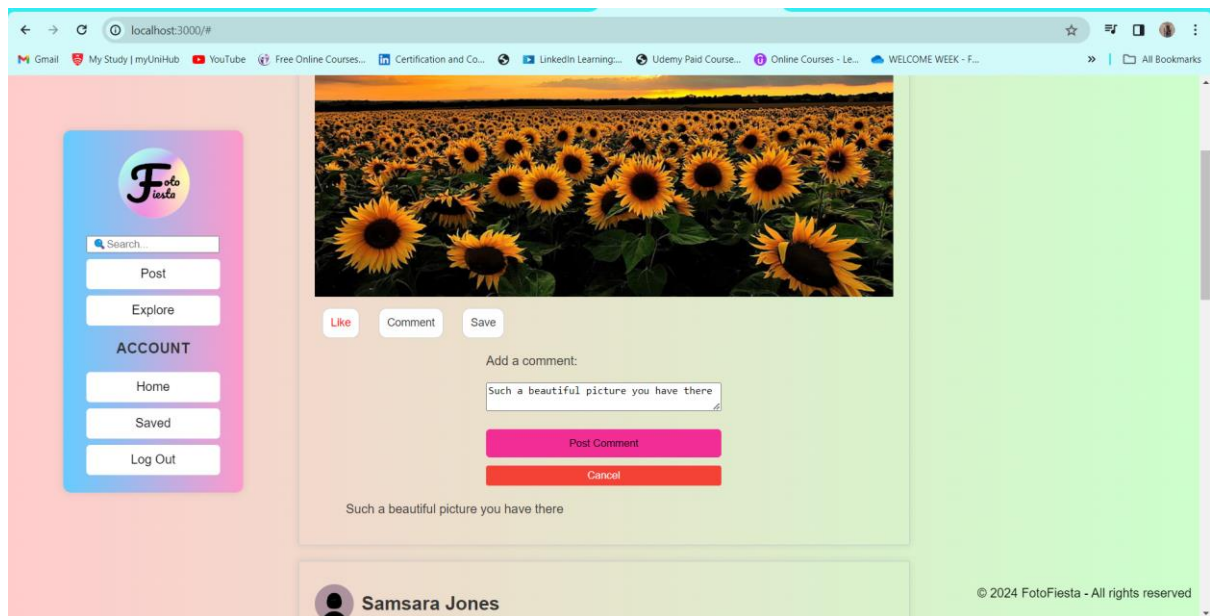
Figure 6 - Like Comment section

A toggle button allows the user to Like and Unlike a post. When user click on comment button. A comment section appears under the post, and when "cancel" button is clicked, the comment section will be closed.
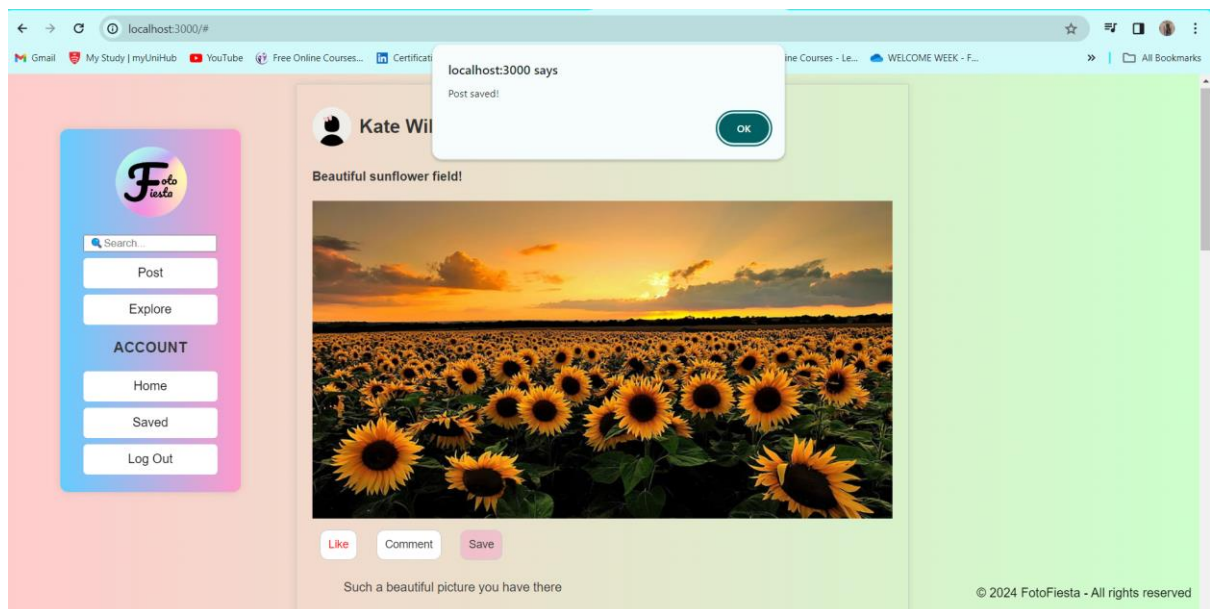

Figure 7 - Save option

When user click on save button to save a post, the website will notify him that the post is saved. If user is saving a post that he already saved, the website will notify him that the post is already saved in the saved section
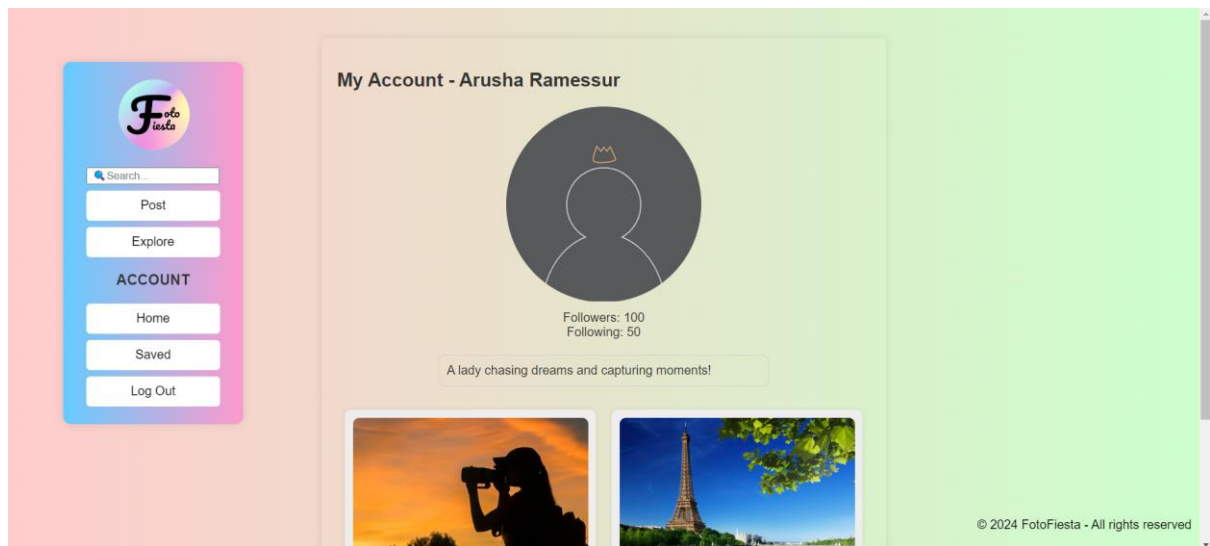
Figure 8 - Home option

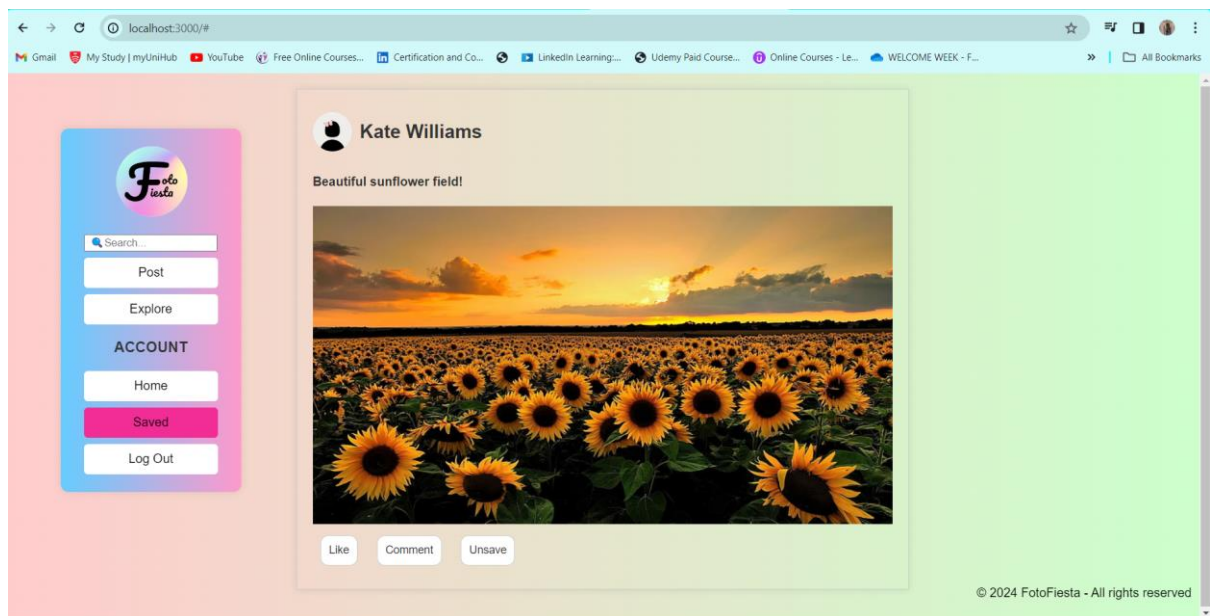User can view their profile in the Home section.

Figure 9 - Saved Section

User will find all posts that he saved in the saved section.

Figure 10 - Post removed option

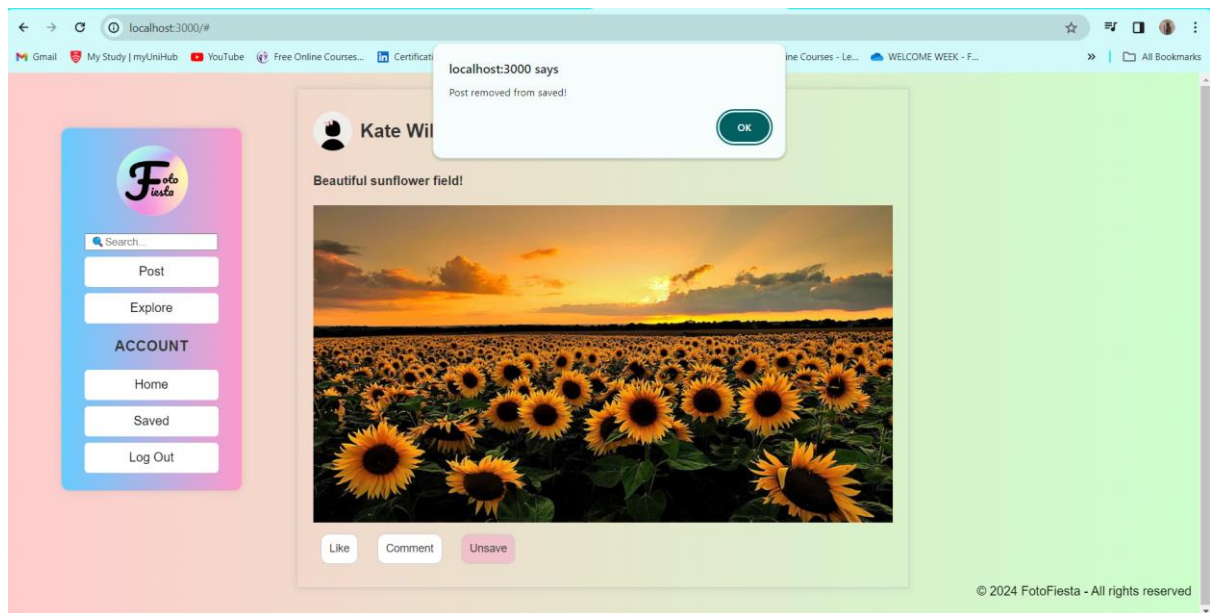User will have the option to unsave a post of his choice and the website will notify him of this change.

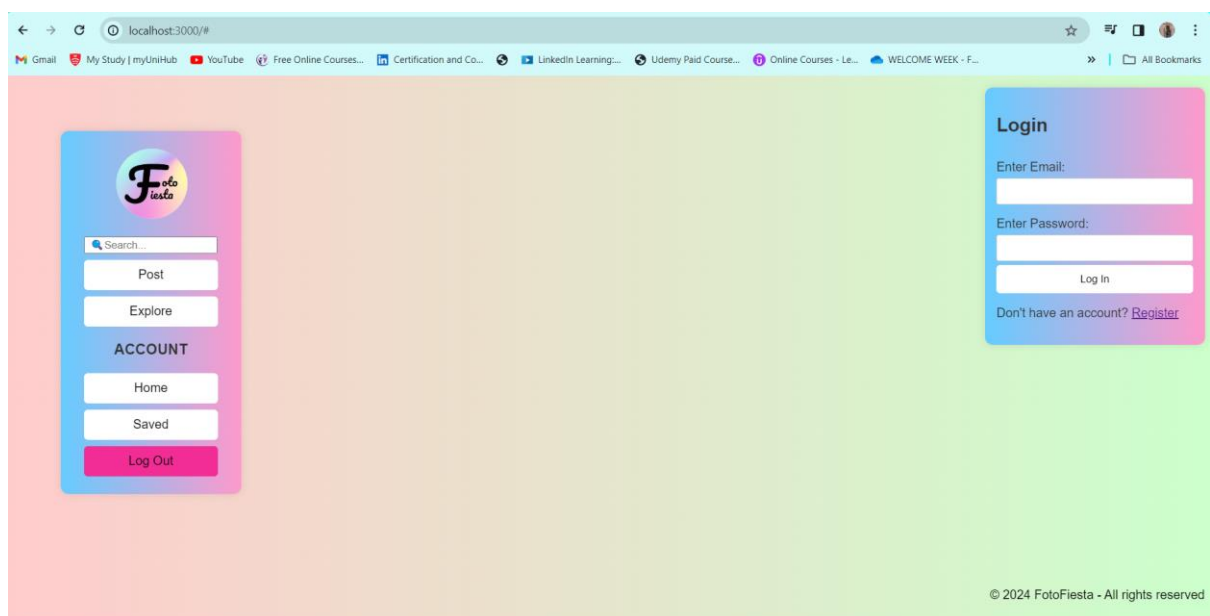*Figure 11 - Log Out option*

When user click on log out button, he is securely signed out from his FotoFiesta account.

Postman Screenshot

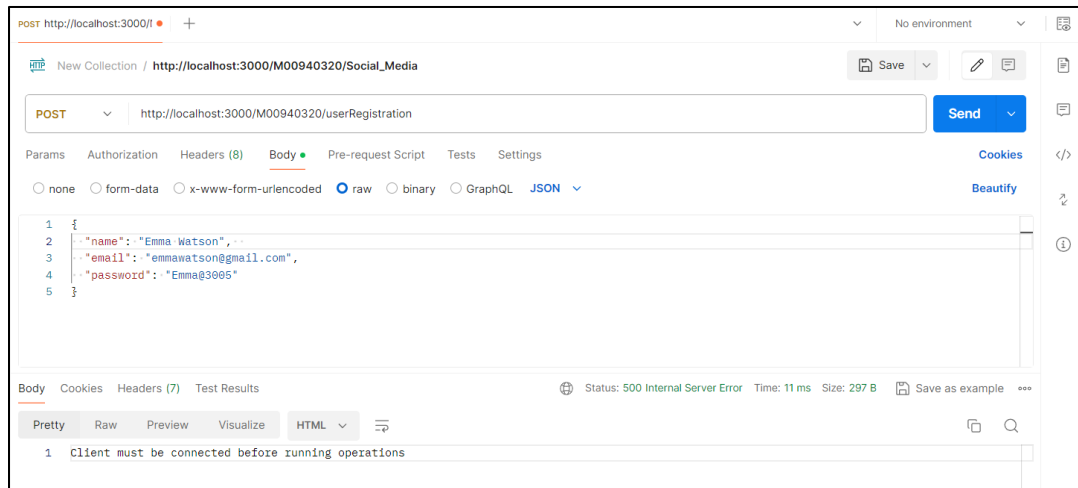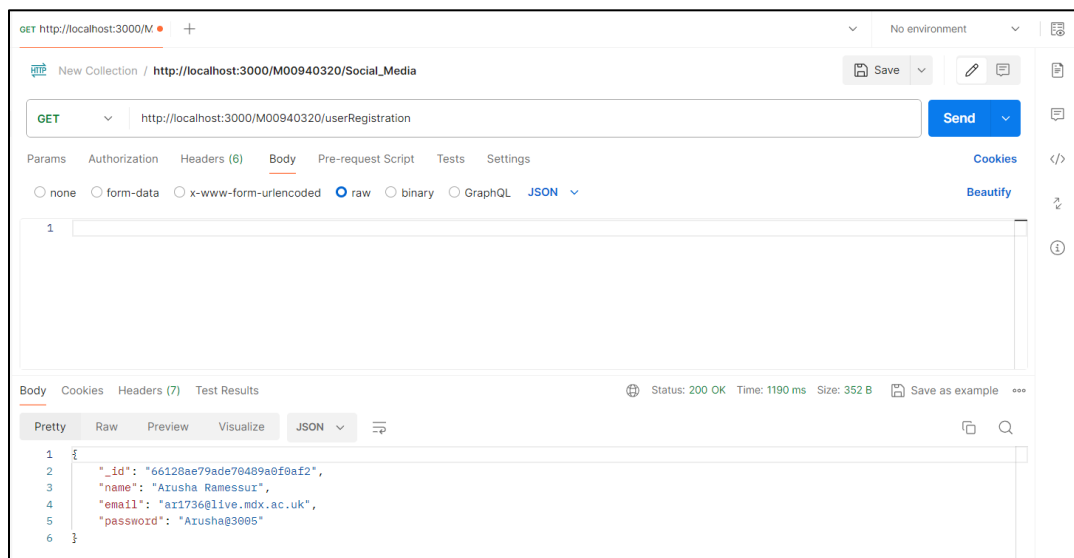*Figure 12 - Post Request for user registration*

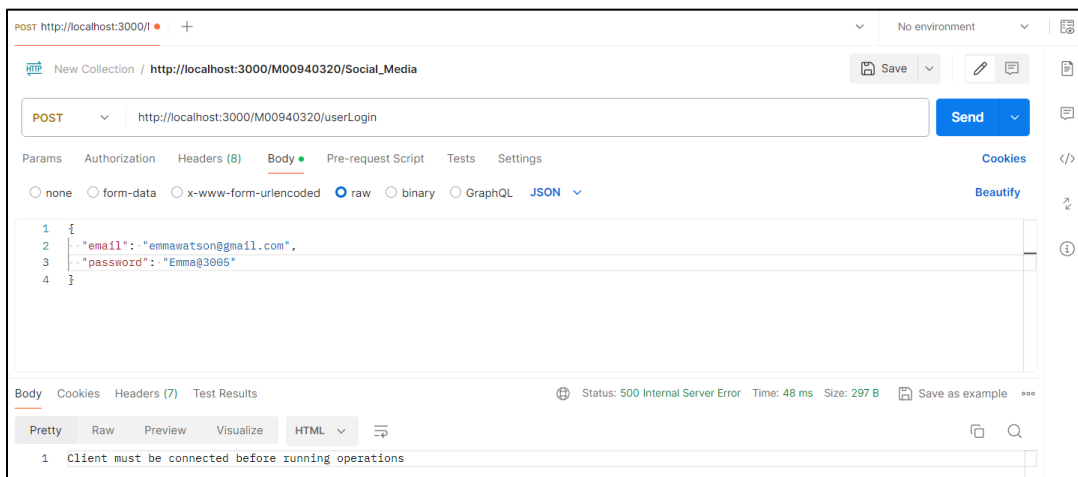*Figure 13 - Send Request for user registration*

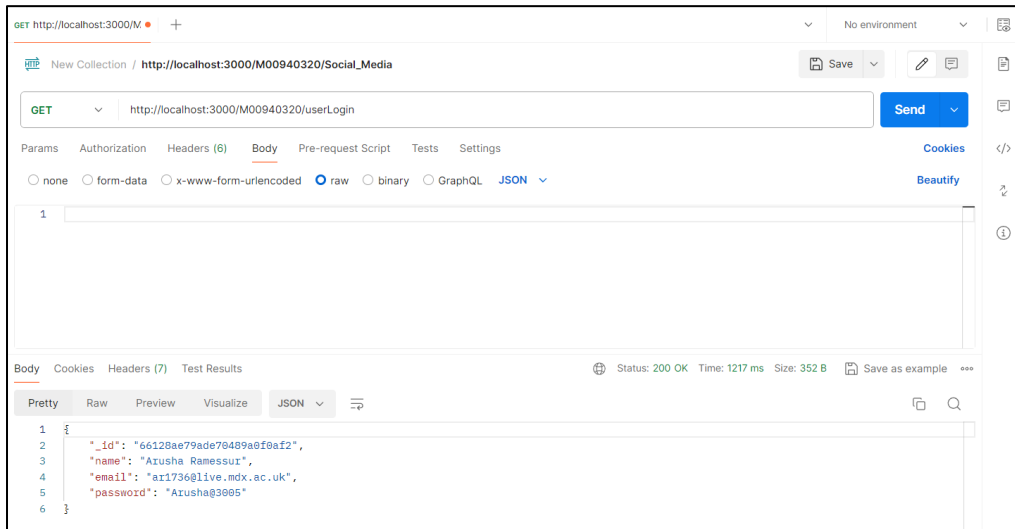*Figure 14 - Post Request for user login*

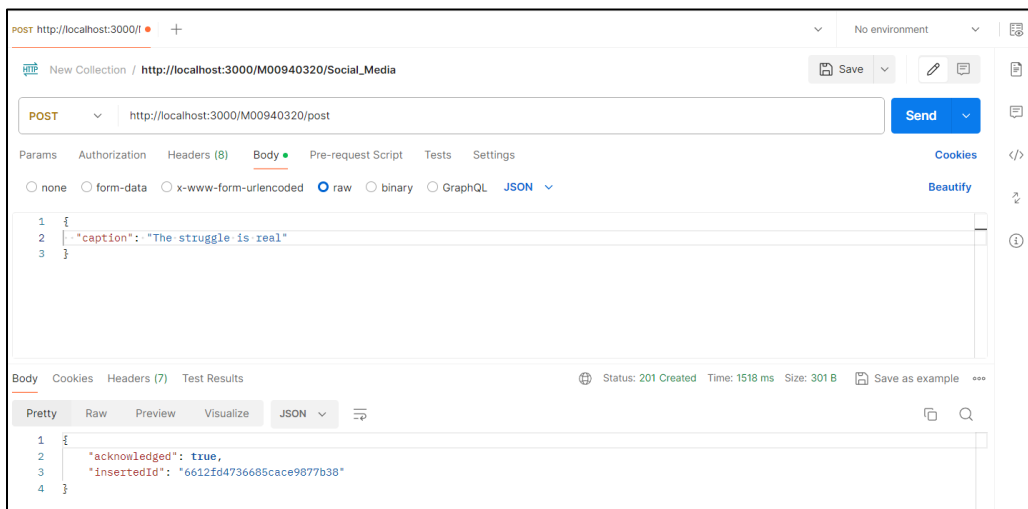*Figure 15 - Get Request for user login*

Figure 16 - Post Request for post
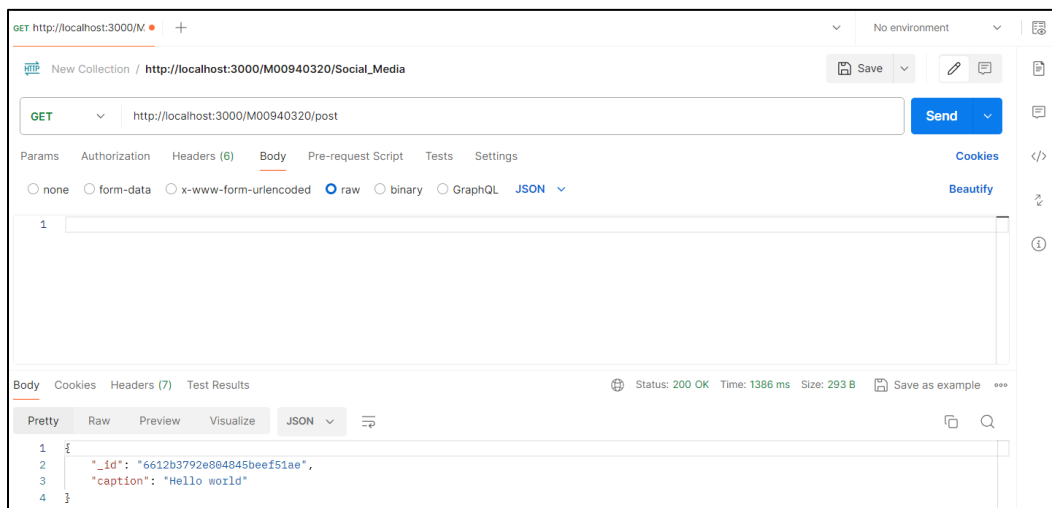
Figure 17 - Get Request for post
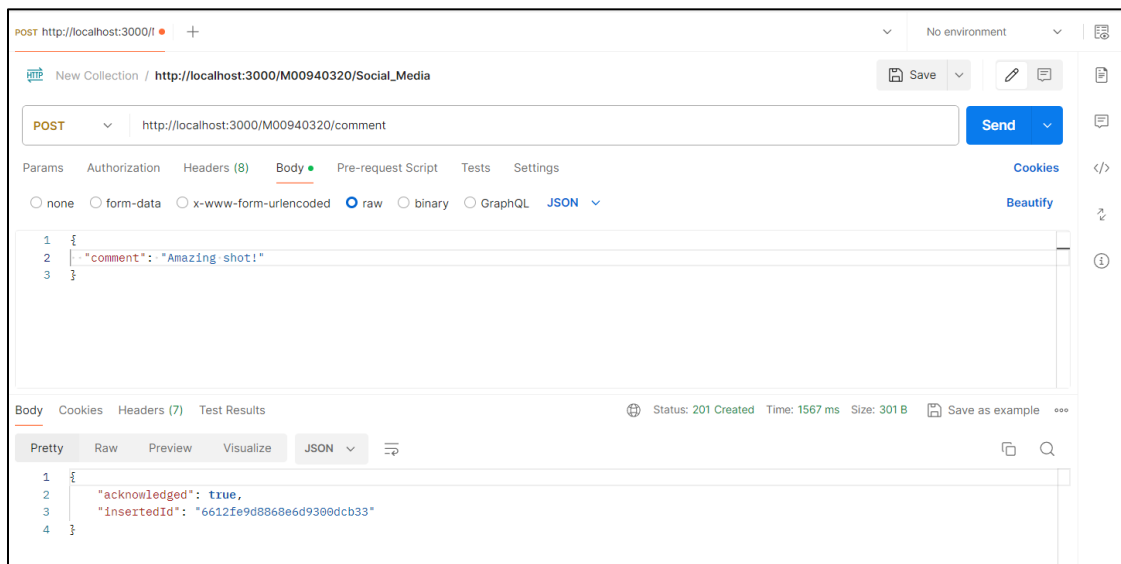
Figure 18 - Post Request for comment
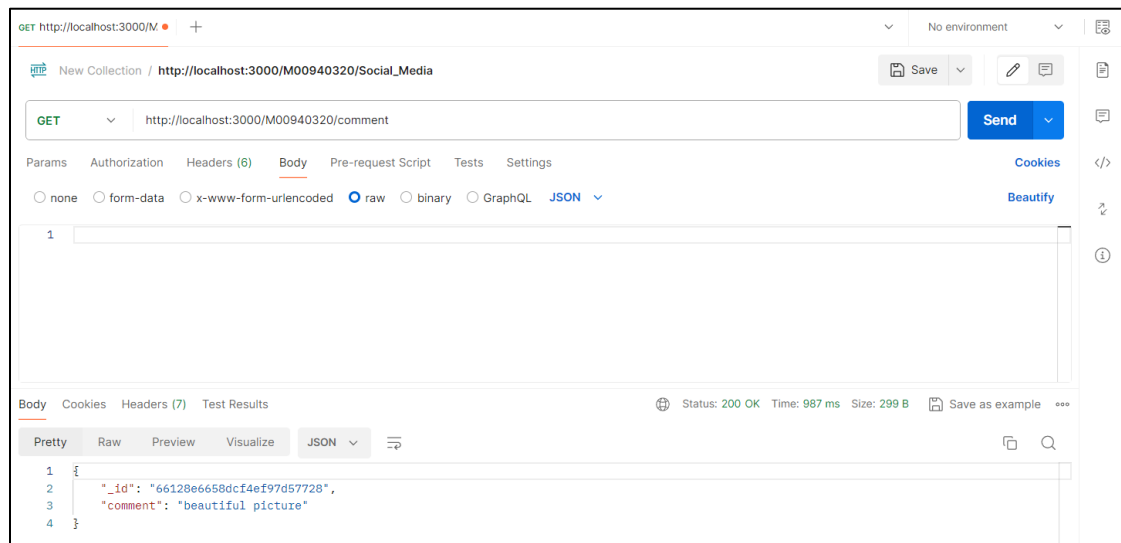
Figure 19 - Get Request for comment

Testing

Figure 20 - HTML Validation Test

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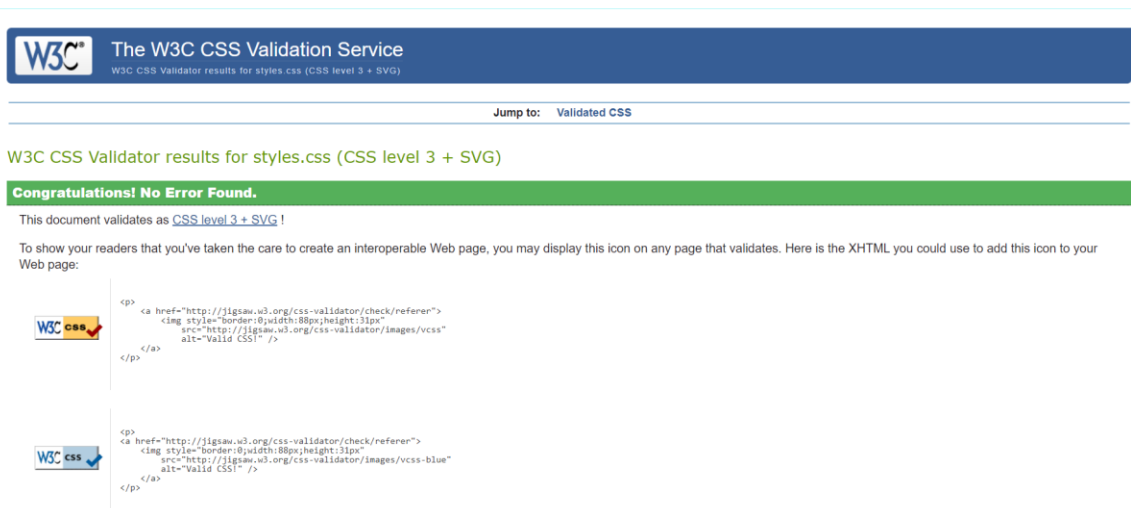
Figure 21 - CSS Validation Test
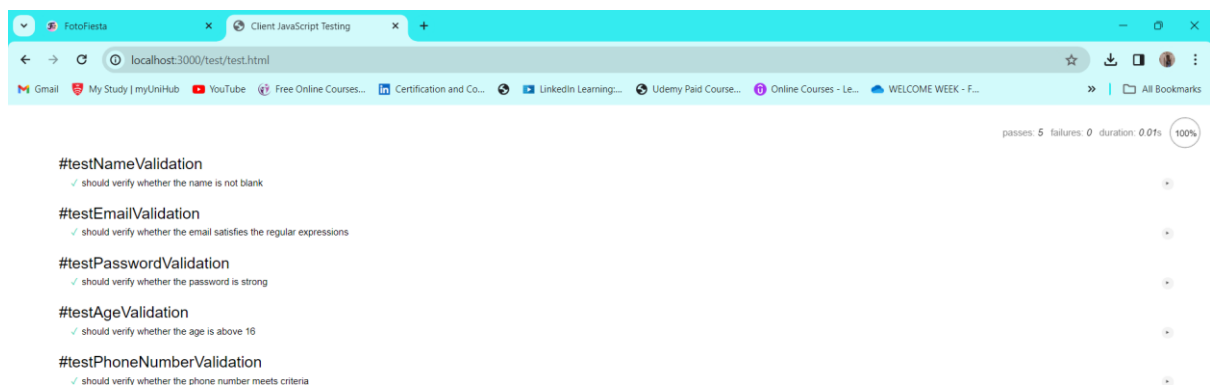
Figure 22 - Unit Testing Client-side JavaScript

Security, Privacy & Legal Issues

Security Issues:

1. **Data Breaches:** Social media platforms are prime targets for cybercriminals due to the vast amount of personal data they collect. Data breaches can lead to the exposure of sensitive information such as usernames, passwords, and personal messages. To mitigate this risk, platforms must invest in robust cybersecurity measures, including HTTPS encryption, firewalls, intrusion detection systems, and regular security audits. *(Smith, 2020).*

2. **Account Hacking:** Weak authentication mechanisms and phishing attacks can result in unauthorized access to user accounts. Once compromised, hackers can misuse the account for spreading spam, phishing, or even identity theft. Implementing multi-factor authentication (MFA) and educating users about common phishing techniques can help prevent such incidents. Other security measures are regular security audits and penetration testing to identify and patch vulnerabilities in the website's code and infrastructure. *(Williams, 2019).*

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Privacy Issues:

1. **Data Collection:** Social media platforms often collect extensive user data for targeted advertising and analytics. However, this practice raises concerns about user privacy and consent. Users may be unaware of the extent to which their data is being tracked and shared with third parties. Enhancing transparency through clear privacy policies and providing users with granular control over their data can address these concerns. *(Jones & Lee, 2018).*

2. **Third-Party Apps:** Many websites rely on third-party services for functionalities like social media integration or analytics. However, sharing user data with these third parties without adequate consent or safeguards can raise privacy issues. These apps may access users' personal information without their explicit consent, leading to privacy violations. Implementing stringent app permission controls such as offering users granular controls over their privacy settings, allowing them to opt out of certain data collection practices or third-party sharing, and conducting regular audits of third-party developers can mitigate these risks. *(Brown, 2021).*

Legal Issues:

1. **Data Protection Regulations:** Social media companies are subject to various data protection laws, such as the General Data Protection Regulation (GDPR) in Europe and the California Consumer Privacy Act (CCPA) in the United States. Failure to comply with these regulations can result in hefty fines and legal consequences. To ensure compliance, platforms must implement robust data protection measures, such as anonymization, data minimization, and user consent mechanisms. They must also conduct regular reviews of data protection regulations and update policies and procedures to ensure compliance with evolving legal requirements. *(European Union, 2018).*

2. **Content Moderation:** Social media platforms face legal challenges related to content moderation, including hate speech, fake news, and copyrighted material. Striking a balance between freedom of speech and preventing harmful content requires clear community guidelines and efficient moderation processes. Investing in automated content moderation tools and employing trained moderators can help address these challenges. *(Nguyen & Smith, 2022).*

To address these issues, social media platforms have implemented various measures, such as encryption, privacy settings, and content moderation algorithms. However, continuous efforts are needed to stay ahead of evolving threats and regulatory requirements.

Conclusion

The envisioned website for FotoFiesta is now fully operational and functional. Through the integration of AJAX, Node.js, MongoDB, CSS, HTML, and JavaScript, we have successfully brought our vision to life. Users can now enjoy a dynamic and engaging social media experience, where they can connect, share, and explore seamlessly.

References

Brown, E. (2021). Risks of third-party app integration in social media platforms. *International Journal of Information Security*, 18(4), 220-235.

European Union. (2018). General Data Protection Regulation (GDPR). Retrieved from https://eur-lex.europa.eu/eli/reg/2016/679/oj

Jones, C., & Lee, D. (2018). Privacy concerns in social media: A user perspective. *Journal of Internet Privacy*, 5(1), 30-45.

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Williams, B. (2019). Preventing account hacking in social media platforms. *Cybersecurity Today*, 8(2), 112-125.