

# **Uniconn - Social Media Platform**

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## **Table of Contents**

<b>List of tables</b>	<b>3</b>
<b>List of figures</b>	<b>4</b>
<b>1. Introduction</b>	<b>5</b>
<b>2. Literature Survey/Background</b>	<b>6</b>
<b>3. Objectives/Problem Statement</b>	<b>7</b>
<b>4. Database Design</b>	<b>8</b>
4.1 ER Diagram	8
4.2 Reduced Schema	9
4.3 Schema Diagram	10
4.4 Normalization	11
<b>5. Methodology</b>	<b>13</b>
<b>6. Results</b>	<b>14</b>
<b>7. Conclusion and Future Works</b>	<b>21</b>
7.1 Conclusion	21
7.2 Future Works	21
<b>8. References</b>	<b>22</b>

## List of Tables

1. users(user\_id, pfp, cover\_pic, u\_name, password, username, city, email, website);
2. stories(story\_id, user\_id, s\_image);
3. posts(post\_id, user\_id, p\_image, p\_desc, createdAt);
4. comments(comment\_id, post\_id, user\_id, c\_desc, commentedAt);
5. likes(like\_id, user\_id, post\_id);
6. relationships(relationship\_id, follower\_id, following\_id);
7. events(event\_id, e\_name, date, e\_location);
8. restaurants(restaurant\_id, r\_name, menu, r\_location);
9. chats(chat\_id, sender\_id, receiver\_id, message, msg\_time);

## **1. Introduction**

UniConn, aptly named to reflect its purpose, is a social media platform designed specifically for university students. It serves as a digital nexus that connects students from various universities, fostering a community where they can share experiences, knowledge, and resources. The primary objective of '**UniConn**' is to enhance the overall student experience and create a sense of community within universities. A social platform made exclusively for university students will build a virtual space that promotes a sense of belonging and identity within the college community, especially for new students. 'Uniconn' encourages students to seamlessly blend academic pursuits with a vibrant social life, providing a dedicated space to seek and offer academic assistance, share valuable resources, and engage in coursework discussions. One can also establish connections between the current students and the alumni, promoting mentorship opportunities, career advice, and knowledge exchange.

This project will act as a platform for students of their universities to socialize with their peers and engage in discussions on relevant campus issues. The website is designed to keep users informed about upcoming events, encouraging active participation and community involvement, all while ensuring user data privacy. The website will also provide a seamless and intuitive user experience, providing a space where students can effortlessly socialize, share ideas, and stay connected with the pulse of campus life.

## 2. Literature Survey

To learn about the elements of the project, including database management, connectivity and web development with HTML,CSS and nodeJS, we have referred to the following resources:

### 1. Database Management:

- "Database System Concepts" by Abraham Silberschatz, Henry F. Korth, and S. Sudarshan: A comprehensive textbook covering fundamental concepts in database management systems.
- "SQL for Beginners: Learn SQL using MySQL and Database Design" by Nathan Clark: A beginner-friendly guide to SQL and database design principles.
- Online resources such as W3Schools and GeeksForGeeks offer interactive tutorials and exercises for learning SQL.

### 2. HTML/CSS Development:

- "HTML and CSS: Design and Build Websites" by Jon Duckett: A beginner-friendly guide to HTML and CSS, covering essential concepts and techniques for building responsive web pages.
- Online code playgrounds like CodePen (<https://codepen.io/>) and JSFiddle (<https://jsfiddle.net/>) provide interactive environments for experimenting with HTML and CSS code.

### 3. NodeJS Development:

- Online resources such as W3Schools and GeeksForGeeks offer interactive tutorials and exercises for learning NodeJS.
- Online code playgrounds like Codedamn (<https://codedamn.com/>) provide interactive environments for experimenting with NodeJS code.
- Youtube tutorials from Youtubers like Programming with Mosh for clearing the basics of NodeJS syntax and functions.

### **3. Problem Statement**

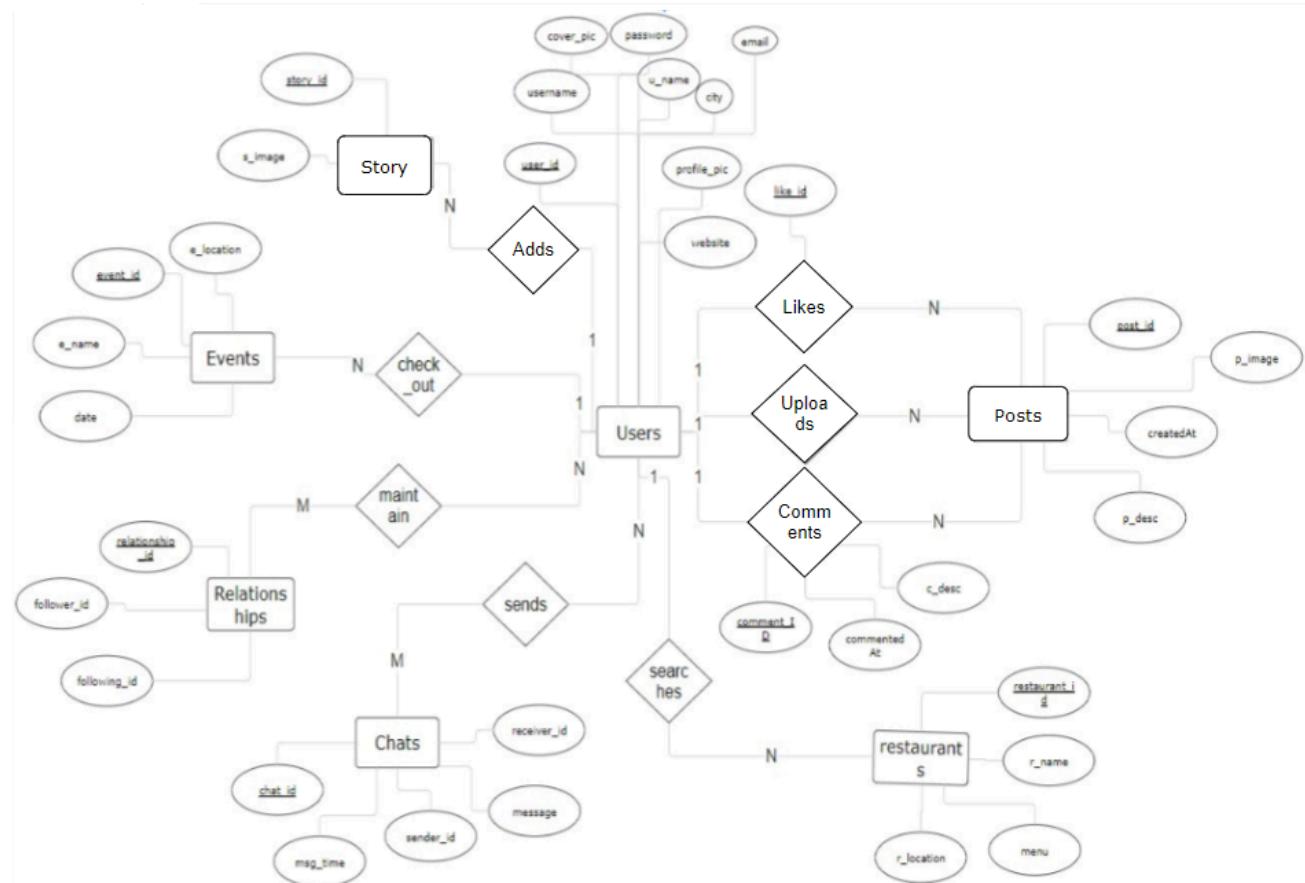
UniConn is a pivotal platform in today's digital landscape for several reasons:

1. **Community Building:** UniConn creates a dedicated space for university students to form a community beyond the physical boundaries of their campuses. It promotes a sense of belonging and collegiality, which is essential for a supportive academic environment.
2. **Networking Opportunities:** UniConn provides networking opportunities that are crucial for career development. Students can connect with peers, alumni, and professionals within their field of study, opening doors to internships, job opportunities, and mentorship.
3. **Academic Collaboration:** It supports academic collaboration by allowing students to work together on projects and assignments, discuss academic challenges, and seek peer feedback.
4. **Cultural Exchange:** With its global reach, UniConn encourages cultural exchange and global awareness among students from diverse backgrounds, promoting inclusivity and cultural sensitivity.
5. **Event Coordination:** UniConn simplifies the organization of university events, from academic conferences to social gatherings, ensuring higher participation and engagement.
6. **Mental Health Support:** The platform can serve as a support system for students, providing a space to discuss mental health issues and access resources for well-being.

In summary, UniConn addresses the need for a unified, student-centric platform that enhances the educational experience by fostering collaboration, communication, and community among university students.

## 4. Database Design

### 4.1 ER Diagram



## 4.2 Reduced Schema

```
users(user_id int, pfp varchar(255), cover_pic varchar(255), u_name varchar(30), password  
varchar(20), username varchar(20), city varchar(20), email varchar(30), website varchar(30));
```

```
stories(story_id int, user_id varchar(20), s_image varchar(255));
```

```
posts(post_id int, user_id varchar(20), p_image varchar(255), p_desc varchar(200), createdAt  
timestamp);
```

```
comments(comment_id int, post_id int, user_id int, c_desc varchar(150), commentedAt  
timestamp);
```

```
likes(like_id int, user_id int, post_id int);
```

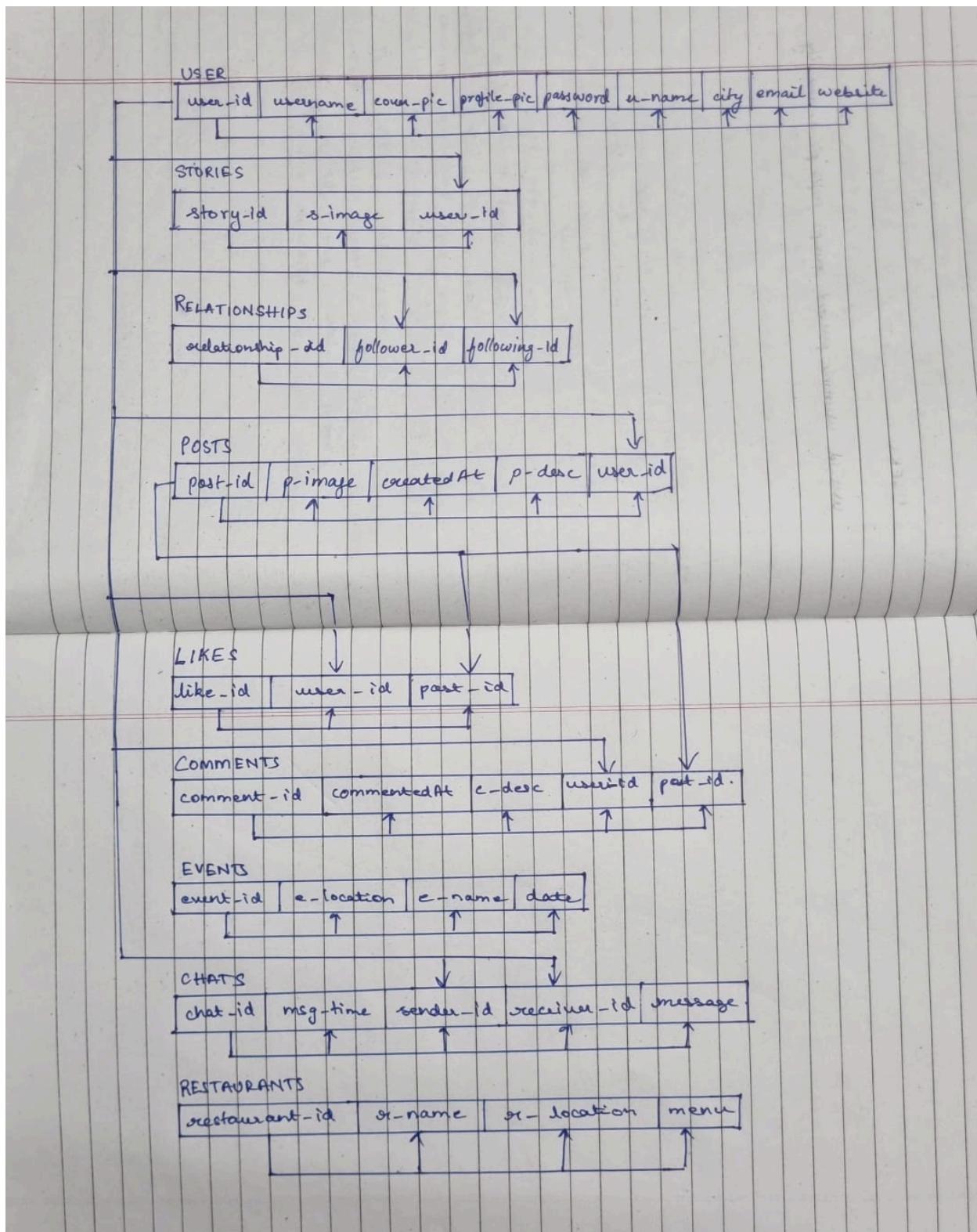
```
relationships(relationship_id int, follower_id int, following_id int);
```

```
events(event_id int, e_name varchar(30), date datetime, e_location varchar(30));
```

```
restaurants(restaurant_id int, r_name varchar(30), menu varchar(255), r_location varchar(30));
```

```
chats(chat_id int, sender_id int, receiver_id int, message varchar(100), msg_time timestamp);
```

### 4.3 Schema Diagram



## **4.4 Normalization**

### **Universal Relation:**

```
{pfp, cover_pic, u_name, user_id, password, username, city, email, website, story_id, s_image, post_id, p_image, p_desc, createdAt, like_id, liked_time, comment_id, c_desc, commentedAt, follower_id, following_id, relationship_id, restaurant_id, r_name, menu, r_location, event_id, e_name, date, e_location, chat_id, sender_id, receiver_id, message, msg_time}
```

### **Functional Dependency:**

```
{user_id} → {pfp, cover_pic, u_name, password, username, city, email, website}
{story_id} → {s_image, user_id}
{post_id} → {p_image, p_desc, createdAt, user_id}
{comment_id} → {c_desc, commentedAt, post_id, user_id,}
{like_id} → {user_id, post_id, liked_time}
{relationship_id} → {follower_id, following_id}
{event_id} → {e_name, date, e_location}
{restaurant_id} → {r_name, menu, r_location}
{chat_id} → {sender_id, receiver_id, message, msg_time}
```

### **Normalizing to First Normal Form (1NF):**

A relational schema is in first normal form if the domains of all attributes of the schema are atomic, that is, a table would only be able to hold an attribute of a single value.

Since all the attributes in the universal relation have unique values present in it, we can say that the relation follows 1NF. Hence there is no change in the universal relation.

**R1** (pfp, u\_name, user\_id, password, username, city, email, website, story\_id, s\_image, post\_id, p\_image, p\_desc, createdAt, like\_id, liked\_time, comment\_id, c\_desc, commentedAt, follower\_id, following\_id, relationship\_id, restaurant\_id, r\_name, menu, r\_location, event\_id, e\_name, date, e\_location, chat\_id, sender\_id, receiver\_id, message, msg\_time)

### **Normalizing to Second Normal Form (2NF):**

A relation R is in 2NF if every non-key attribute of R is not partially dependent on any key of R. Every attribute has to be fully dependent on the primary key of R alone.

In the relation R1, we observe the existence of a few partial functional dependencies. We see that the attributes are fully functionally dependent on the primary keys user\_id, post\_id, comment\_id, like\_id, story\_id, relationship\_id, event\_id, restaurant\_id and chat\_id. To follow 2NF, we decompose the relation R1 to the following forms:

**R1**(user\_id, pfp, cover\_pic, u\_name, password, username, city, email, website)

**R2**(story\_id, user\_id, s\_image)

**R3**(post\_id, user\_id, p\_image, p\_desc, createdAt)

**R4**(comment\_id, post\_id, user\_id, c\_desc, commentedAt)

**R5**(like\_id, user\_id, post\_id, liked\_time)

**R6**(relationship\_id, follower\_id, following\_id)

**R7**(event\_id, e\_name, date, e\_location)

**R8**(restaurant\_id, r\_name, menu, r\_location)

**R9**(chat\_id, sender\_id, receiver\_id, message, msg\_time)

### **Normalizing to Third Normal Form (3NF):**

A relation is in the third normal form, if there is no transitive dependency for non-prime attributes as well as it is in the second normal form. A relation is in 3NF if at least one of the following conditions holds in every non-trivial functional dependency  $X \rightarrow Y$  :

- X is a super key.
- Y is a prime attribute (each element of Y is part of some candidate key).

Since there are no transitive relations present in the table, we can say all the relations are already in 3NF.

### **Final Normalised Relational Schema in 3NF:**

**R1**(user\_id, pfp, cover\_pic, u\_name, password, username, city, email, website)

**R2**(story\_id, user\_id, s\_image)

**R3**(post\_id, user\_id, p\_image, p\_desc, createdAt)

**R4**(comment\_id, post\_id, user\_id, c\_desc, commentedAt)

**R5**(like\_id, user\_id, post\_id, liked\_time)

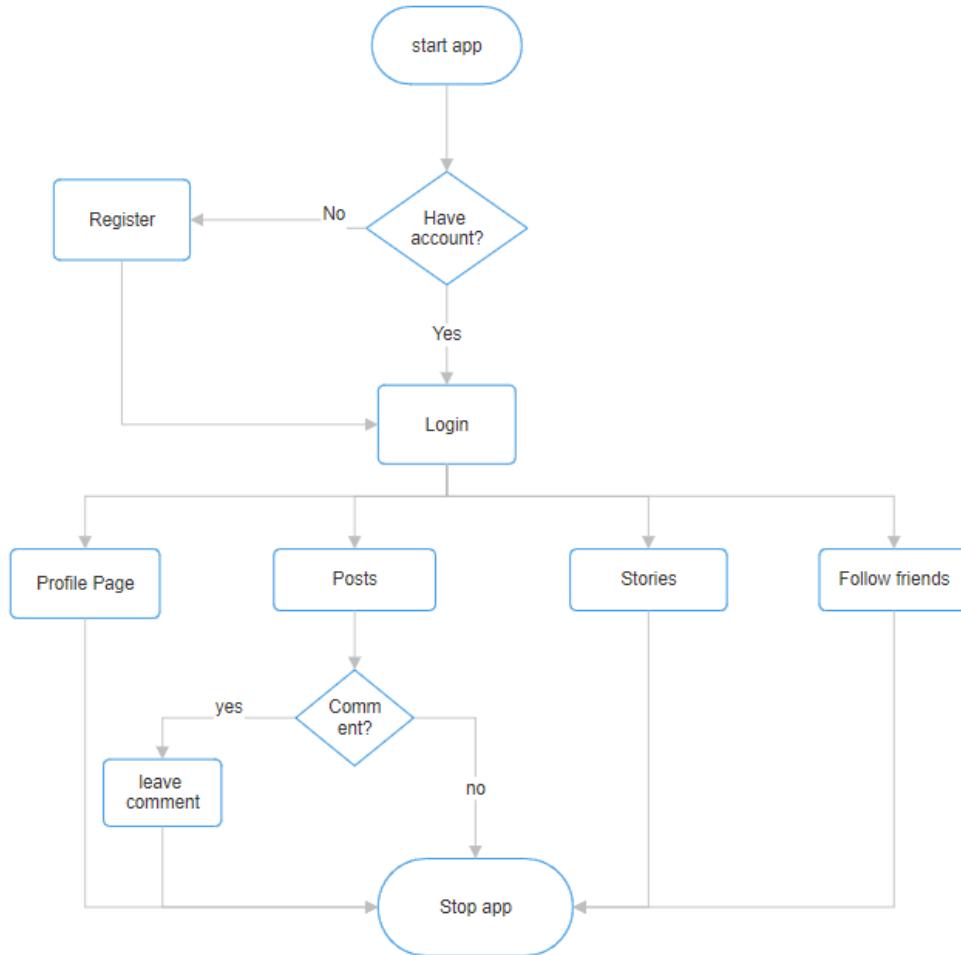
**R6**(relationship\_id, follower\_id, following\_id)

**R7**(event\_id, e\_name, date, e\_location)

**R8**(restaurant\_id, r\_name, menu, r\_location)

**R9**(chat\_id, sender\_id, receiver\_id, message, msg\_time)

## 5. Methodology



### 5.1 Implementation Approach for UniConn:

Implementing UniConn, a social media platform for university students and alumni, requires intensive planning and research with regards to the target audience and functionality, while providing importance for a seamless user experience.

The implementation process of UniConn unfolds in several phases:

**Requirements Gathering:** Extensive discussions with students, faculty and alumni lay the foundation for understanding their requirements and expectations from the platform. Insights gleaned from surveys and feedback inform the design and functionality of UniConn, ensuring it meets the needs of its users.

**System Design:** The design phase encompasses the creation of user layouts, database schemas, and mockups of user interface. Careful consideration is given to selecting programming

languages, frameworks, and databases, prioritizing factors such as ease of use, performance, and compatibility with existing infrastructure.

**Security measures:** To enhance security, it is crucial to implement robust protocols. This includes data encryption and the establishment of secure communication channels. Additionally, regular updates to the platform are essential to patch vulnerabilities and safeguard against emerging threats. By adhering to these practices, organizations can significantly bolster their security posture.

**User Interface Design:** The user interface of UniConn is crafted for intuitive navigation, responsive design, and clear visual cues to enhance the user experience. Iterative usability testing ensures that the interface meets users' needs and preferences, fostering seamless interaction and task completion.

**Testing and Quality Assurance:** Rigorous testing, including unit testing, integration testing, and user acceptance testing, is conducted to identify and rectify bugs and to ensure system compatibility. Performance testing assesses the scalability and responsiveness of UnCionn.

In conclusion, the successful implementation of UniConn requires a holistic approach encompassing requirements analysis, system design, development, testing and ongoing support. By using the suitable languages and databases for a fast and responsive social platform, we aim to provide the users with a seamless user experience to enhance collaboration and connect people for a joyous university experience.

## 6. Results

Brief Results of the App:

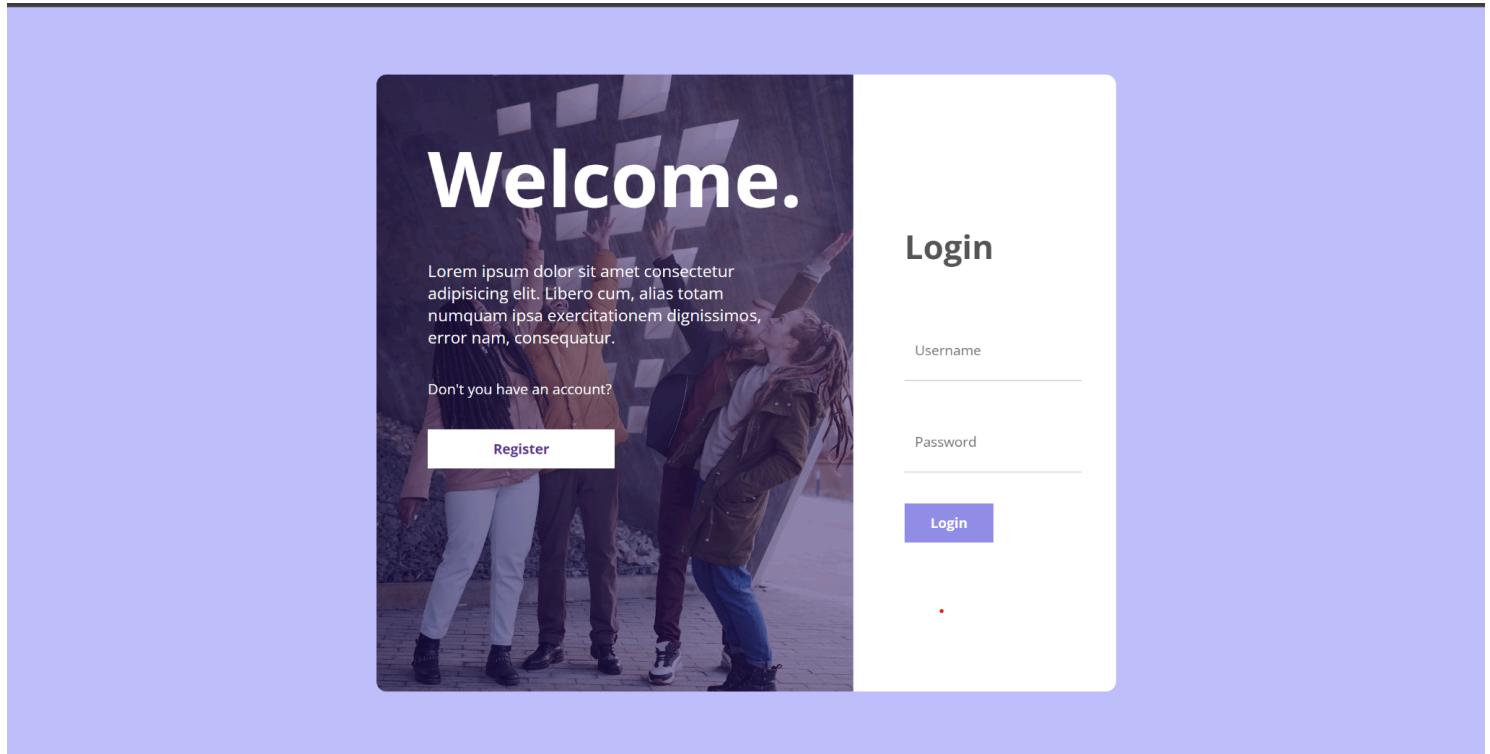
1. **Improved Academic Networking:** Users can connect with fellow students, faculty, and alumni within their university. This facilitates academic discussions, knowledge sharing, and collaboration on research projects.
2. **Student Organizations:** Users can join clubs, societies, and student organizations. These groups organize events, workshops, and social gatherings, fostering a sense of belonging.
3. **Alumni Connections:** Interaction with alumni provides insights into career paths, mentorship, and job referrals. Alumni often offer valuable advice and guidance.
4. **User Privacy:** Unlike generic social media platforms, UniConn maintains a focused environment. Users interact with people relevant to their academic journey.
5. **Security and Trust:** University apps prioritize user safety and data privacy. Users can trust that their information is handled securely.
6. **Community Building:** By participating in discussions, attending events, and collaborating on projects, users contribute to building a vibrant university community.

Overall, the implementation of UniConn provides tailored features that enhance the academic, social, and professional aspects of a student's university experience. The ultimate goal of UniConnect is to enrich the university experience by connecting individuals through a shared digital space that reflects the vibrancy and diversity of campus life.

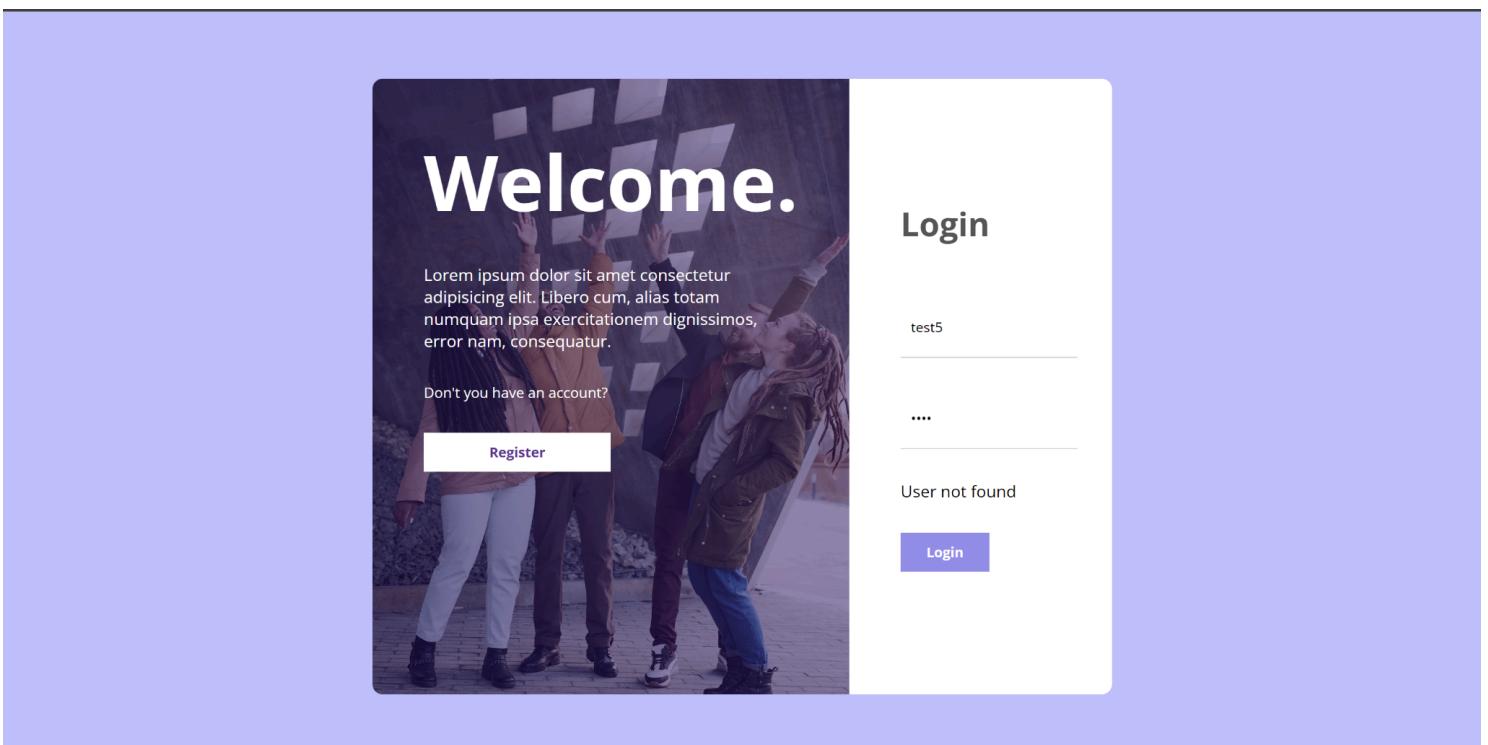
Home page:

The screenshot shows the UniConn Social Media Platform interface. At the top, there is a navigation bar with the UniConn logo, a search bar, and user profile icons. The main content area includes a central feed with a post from 'Jane Doe2' asking 'What's on your mind Jane Doe?'. Below this is a post from 'Jane Doe2' 2 days ago stating 'Eric is posting' with a large image placeholder. To the right, there are sections for 'Suggestions For You' showing two profiles of 'Jane Doe' with 'follow' and 'dismiss' buttons. Below that is a 'Latest Activities' section showing four recent changes in cover picture for 'Jane Doe2' within the last minute. At the bottom, there is a partially visible 'Online Friends' section.

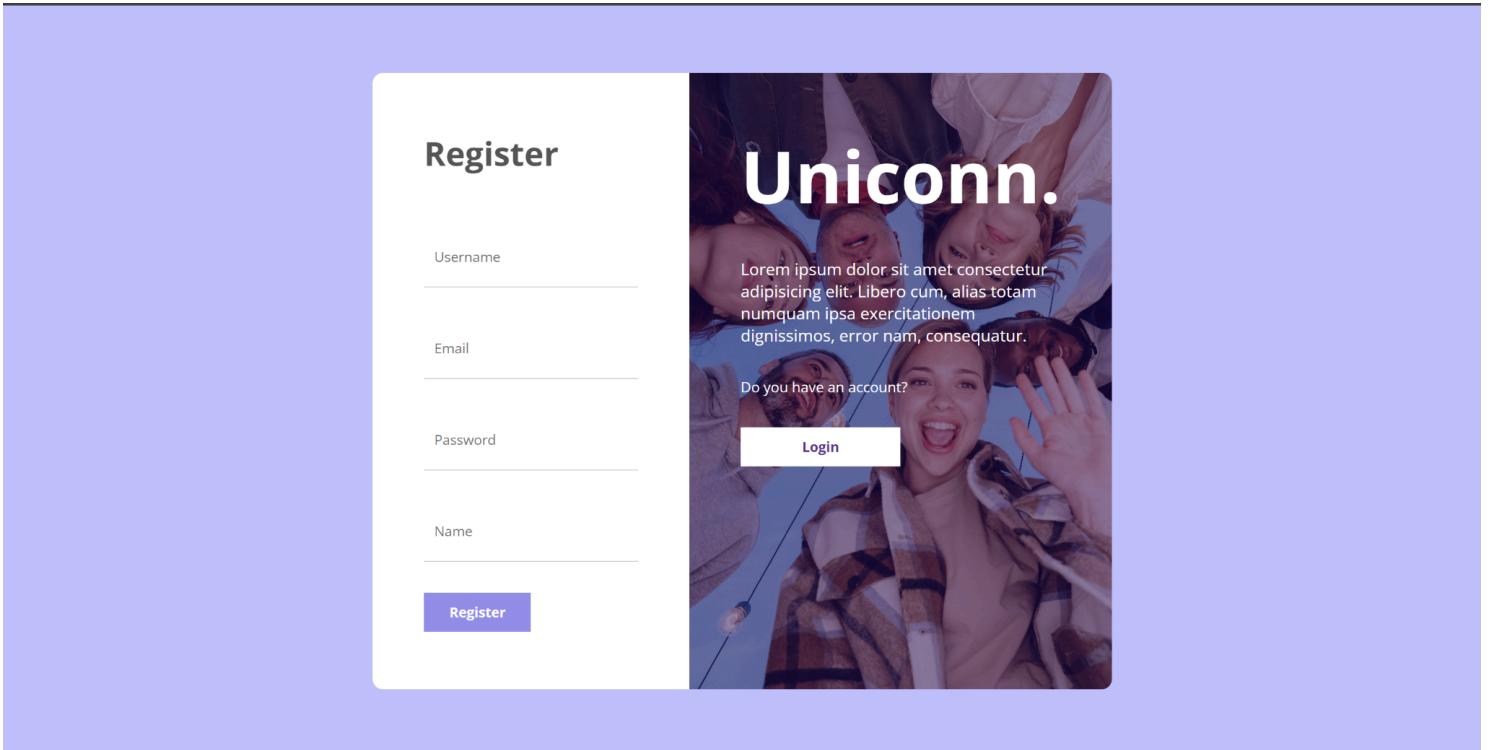
Login:



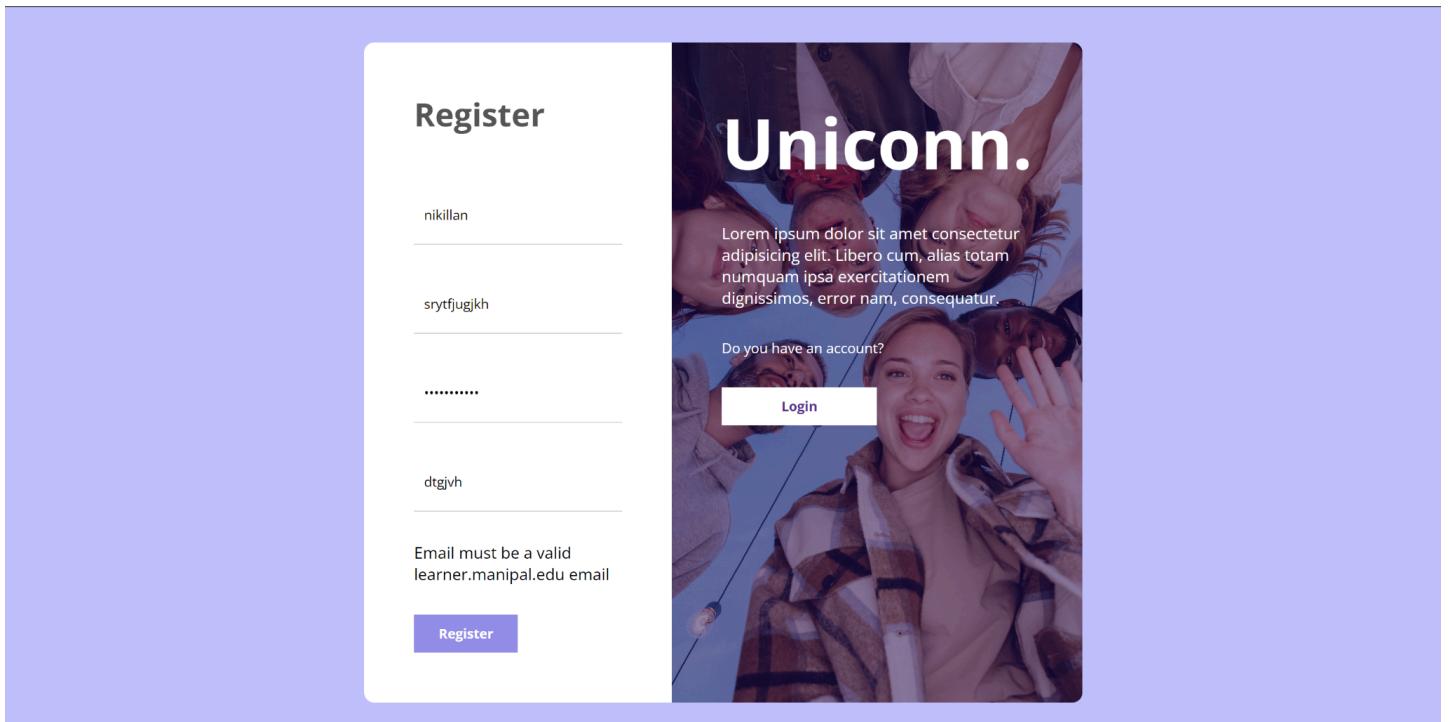
Login (user not found):



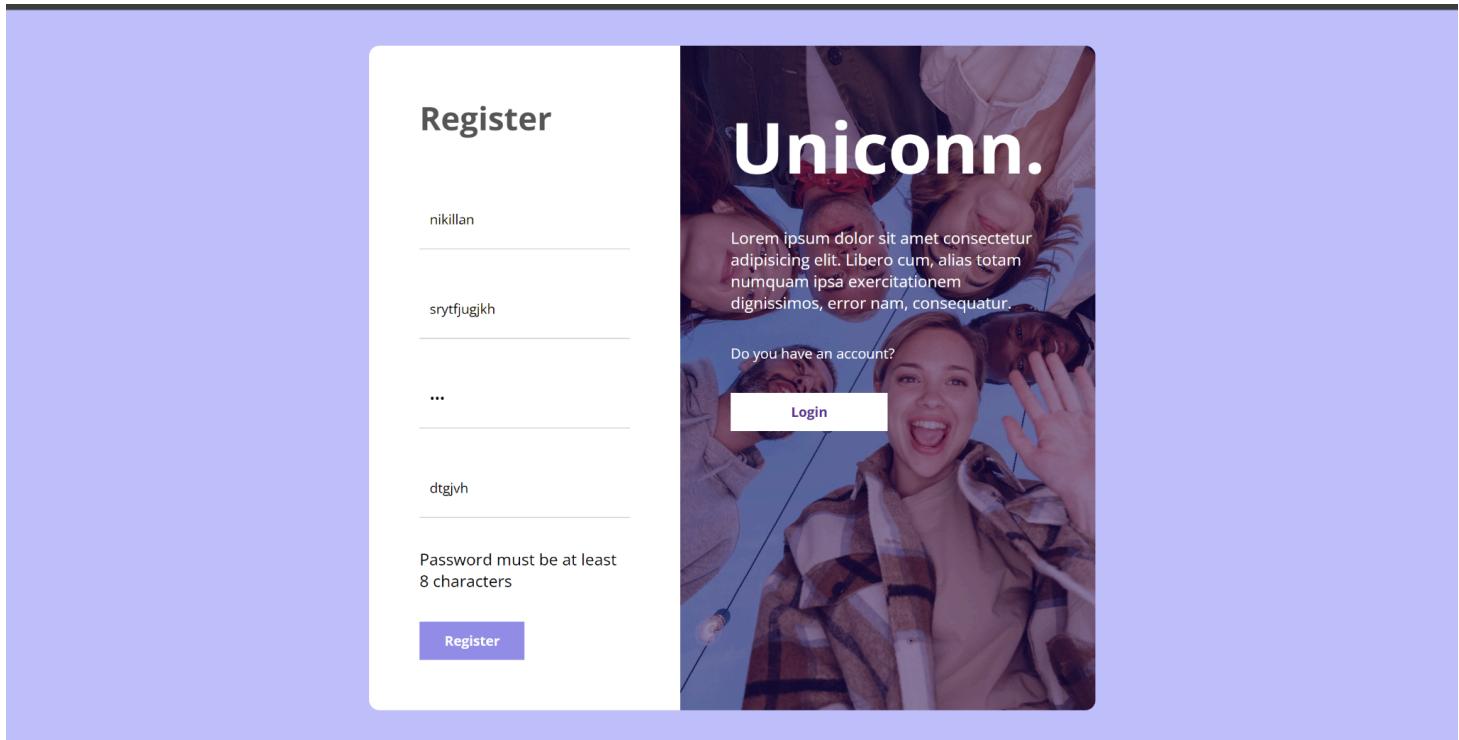
Register:



Register (invalid learnerId)



Register (invalid password)



Profile:

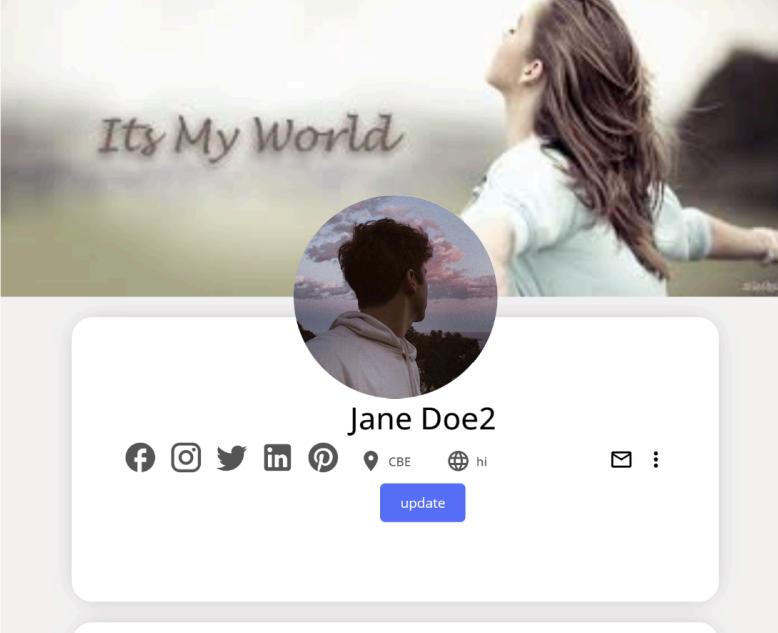
The screenshot shows the profile page for a user named 'Jane Doe2'. The top navigation bar includes the Uniconn logo, a search bar, and a user icon for 'Jane Doe2'. The sidebar on the left contains links for 'Your shortcuts' (Events, Messages), 'Others' (SLCM, Lighthouse), and a 'Search...' field. The main content area features a large profile picture of a woman with long hair looking up, with the text 'It's My World' overlaid. Below this is a smaller circular profile picture of a man. The user's name, 'Jane Doe2', is prominently displayed. A dark overlay box covers the bottom half of the profile picture, containing social media icons for Facebook, Instagram, Twitter, LinkedIn, Pinterest, location (CBE), and a 'hi' status, along with an 'update' button. To the right of the profile area are two sections: 'Suggestions For You' (two entries for 'Jane Doe' with 'follow' and 'dismiss' buttons) and 'Latest Activities' (four entries showing 'Jane Doe' changing their cover picture, each with a timestamp of '1 min ago'). At the very bottom, there is a section for 'Online Friends'.

Follow/Unfollow:

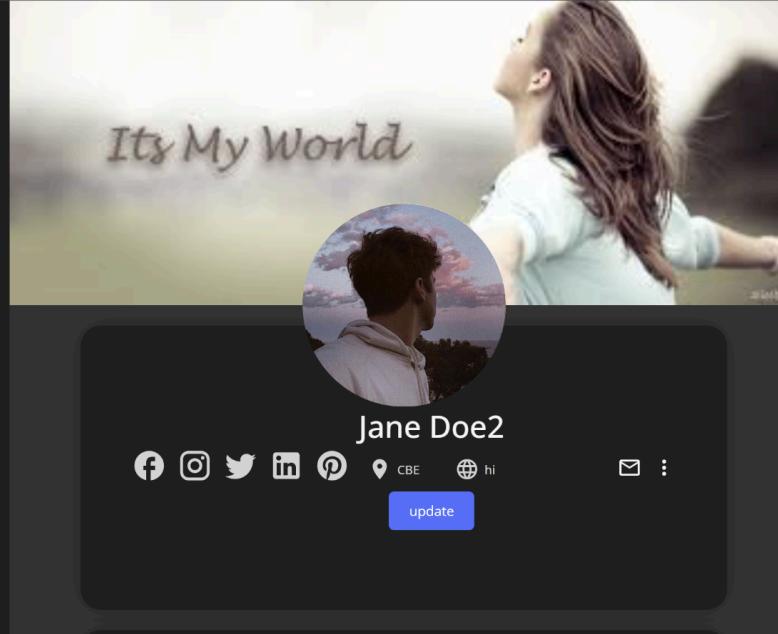
The screenshot shows the Uniconn Social Media Platform interface. On the left, there's a sidebar with links for "Your shortcuts" (Events, Messages), "Others" (SLCM, Lighthouse), and a search bar. The main area displays a profile for "John Doe" with a "Following" button. To the right, there are sections for "Suggestions For You" (two entries for "Jane Doe" with "follow" and "dismiss" buttons) and "Latest Activities" (four entries showing "Jane Doe changed their cover picture" 1 min ago). At the bottom, there's a "Online Friends" section.

This screenshot shows the same Uniconn Social Media Platform interface as above, but with a key difference: the "Following" button for John Doe has been replaced by a standard "follow" button, indicating that the user has unfollowed John Doe.

Light/DarkMode:



This screenshot shows the social media platform in Light Mode. The background is white, and the overall interface has a clean, bright appearance. On the left, there's a sidebar with links for 'Your shortcuts' (Events, Messages), 'Others' (SLCM, Lighthouse), and a search bar. The main content area features a large profile picture of a woman with long hair, with the text 'It's My World' overlaid. Below this is a smaller circular profile picture of a man. The user's name 'Jane Doe2' is displayed prominently. To the right, there are several sections: 'Suggestions For You' showing two profiles with 'follow' and 'dismiss' buttons; 'Latest Activities' showing four recent changes in cover picture by the same user; and an 'Online Friends' section which is currently empty.



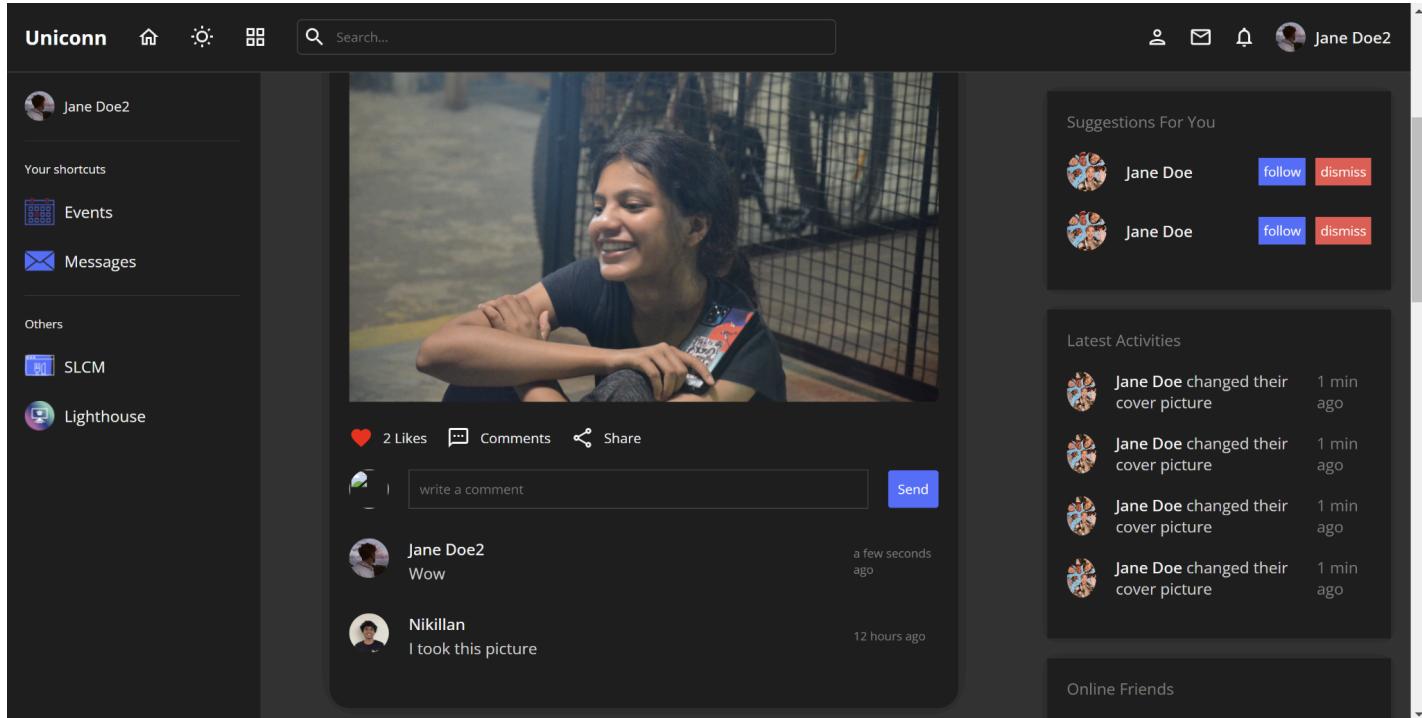
This screenshot shows the same social media platform in Dark Mode. The background is dark, and the interface uses a darker color palette. The layout is identical to the Light Mode screenshot, with the sidebar on the left, the main profile area in the center, and various sections on the right. The dark mode effectively reduces eye strain and provides a more sophisticated look.

Like/Unlike:

The screenshot shows the Uniconn Social Media Platform interface. On the left, there's a sidebar with a profile picture of Jane Doe2, followed by sections for 'Your shortcuts' (Events, Messages), 'Others' (SLCM, Lighthouse), and a search bar. The main content area features a post from user Nikillan, who is new to the platform. The post includes a photo of a smiling person sitting near a cage, with the caption "Hi I am a new student here". Below the post are options to like (2 Likes), comment, and share. To the right of the post are two columns: 'Suggestions For You' (two entries for Jane Doe with follow and dismiss buttons) and 'Latest Activities' (four entries showing Jane Doe changing her cover picture). At the bottom right is a section for 'Online Friends'.

This screenshot is identical to the one above, showing the same Uniconn Social Media Platform interface. It displays a post from user Nikillan, a sidebar with Jane Doe2's profile and various shortcut links, and sections for suggestions, latest activities, and online friends. The only difference is the number of likes on the post, which has been reduced to 1 Like.

Comments:



## 7. Conclusion and Future Works

### 7.1 Conclusion

In conclusion, UniConn has emerged as a transformative social media platform for university students, carving out a unique niche in the digital ecosystem. It has successfully addressed the specific needs of its target audience by providing a space for academic collaboration, community engagement, and resource sharing. UniConn's commitment to enhancing the university experience through technology has made it an indispensable tool for students worldwide.

### 7.2 Future Works

Looking ahead, UniConn is poised to expand its influence and utility in several ways:

1. **Integration of Advanced AI:** With the rise of generative AI, UniConn plans to incorporate more sophisticated AI tools to facilitate natural, human-like interactions on the platform, making the user experience more engaging and personalized.
2. **Expansion of Social Commerce:** UniConn intends to delve deeper into social commerce, providing a marketplace not just for textbooks but also for a wider range of student-centric products and services.
3. **Support for Mental Health:** Recognizing the importance of mental well-being, UniConn aims to enhance its support systems for students, offering resources and creating a supportive community for mental health awareness.
4. **Global Collaboration Projects:** UniConn will focus on facilitating global collaboration projects, allowing students from different parts of the world to work together on research and innovation initiatives.
5. **Career Development Tools:** The platform is expected to introduce more features aimed at career development, such as virtual job fairs, mentorship programs, and networking events tailored to students' professional aspirations.

UniConn's trajectory is one of continuous improvement and adaptation to the evolving needs of its users. As it moves forward, the platform will undoubtedly play a pivotal role in shaping the future of university education and student life, making it an even more valuable asset for students across the globe.

## 8. **References**

- Silberschatz, A., Korth, H. F., & Sudarshan, S. (2019). Database System Concepts. McGraw-Hill Education.
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