UNIVERSITY SOCIAL NETWORK(UCONNECT)

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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DHAKA, BANGLADESH

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APPROVAL

This Project titled "**University Social Network(Uconnect)**", submitted by Eftekhar Jahan Soron, ID No: 183-15-2261 and Nishat Sarker, ID No: 183-15-2321 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on September 13, 2022.

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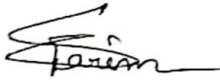Faculty of Science & Information Technology
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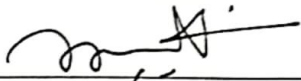**Fahad Faisal**   Internal Examiner
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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Shayla Sharmin, Senior Lecturer, Department of CSE and Co-supervision of Mohammad Jahangir Alam, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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We would like to express our heartiest gratitude to Dr. SM Aminul Haque, Associate Professor and Associate Head, Department of CSE,for his kind help to finish our project and also to other faculty member and the staff of CSE department of DaffodilInternationalUniversity.

We would like to thank our entire course mate in DaffodilInternationalUniversity, who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

Every Student can connect with the whole university with this site. This site makes understanding and bonding between junior and senior students. Also a newcomer can be guided by senior students on this site. Every registered student has skill, experience and interest in the input field on their profile page. That can help a junior to get help from seniors and Alumni students. Every student can post their status which will show on the news feed section. University Social Network to save lot of time when a student search and collaborate other student because this application does not show any other ads or violation content. Though the concept of University Social Network system is not new, students have started gaining momentum in the recent past and it will surely grow more in future.The user can connect this system 24/7 using internet from any distant location.User can easily upload post what comes into their mind and share anyone post and like other post. There is no payment-base version, it's totally free to use.Not only students but also the teacher of the university can make accounts on this site and connect all students. This approach was created with the least amount of hassle in mind for both students and professionals of all stripes.The admin panel will monitored for any suspicious activity or security risks.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

With the ongoing digitization process, people want to connect with each other within a very short time.That's why we are trying to make a social communication system for running students, Alumni, and teachers at Daffodil International University. By ensuring our Daffodil Smart City's Students will get a good website platform where they can communicate with each other and find any job requirement for their career. We are just bringing it to a website where they will be able to communicate and share their needs with classmates, faculty members, and Alumni Students. There are several options to choose from – share the post, make groups, and like a post. The Alumni student can share job requirements for graduate students so that a graduate student can't go into depression for searching job. Therefore, by saving vital time, this system introduces a new trend of doing things more easily.

1.2 Motivation

A huge amount of people use other social media. With this amount of users, university students can't connect with their Alumni student and senior student. So we trying to make a community for our university that can helps every student enjoy full campus life and build a beautiful career after graduation. Our vision is to build a communication platform that helps to cover all the students at Daffodil Smart City.

1.3 Objective

1. Build a community platform
2. Accessible from anywhere with any internet connection.
3. Share any document and files through this application.
4. Responsive website based on user feedback.

5. Ensure user personal information safety.

1.4 Expected Outcome

We hope that this will be the best communication system in Daffodil Smart City and residential halls for students and honorable faculty members. It will be known for building long-term relationships with each other. And more secure database makes this reliable. Our website will be more user-friendly because our site for the time being according to user valuable feedback.

1.5 Project Management and Finance

During its operating phase, the designed UConnect system will include a powerful admin panel. The management of the business, services and security will be stringent and effective because there is potential demand both now and in the future. This solution will be financially viable for both developers and consumers thanks to low associated maintenance costs and high return value through subscription and other promotional ads.

1.6 Projects Report Layout

UConnect project work has been completed step-by-step through the following six chapters:

Chapter 1 covered by introduction, motivation, objectives, and the expected outcome of the study.

Chapter 2 deals with works and Challenges like related work, research study, and challenges.

In chapter 3 we will discuss requirement specification

Chapter 4 deals with the front, back end,andimplementation requirements of the study.

Chapter 5 deals with the implementation of database and back-end design.

In Chapter 6 we will discuss the conclusion and further development.

CHAPTER 2
WORKS AND CHALLENGES

2.1 Related Work

Nowadays, people love to communicate with each other using online social platforms. We have to take ideas to build this wonderful website from "facebook.com, twitter.com, and instagram.com". Also, we have to gain ideas from many communication websites to design our project.

Research Study-1:

Users of Face book may easily find their friends, neighbors, and relatives and share posts with them. Also, real-time chatting will make the world very small. But they do not provide their service to a specific organization or university.

Research Study-2:

Twitter is excellent. They are international corporations that provide services like Face book. But users can't share their independent talking on this platform. Organization developers can remove any user's post or status at any time. People can't post against their government or other issues.

2.2UConnect

The project is successful and has a high user acceptance rate because of its simpledesign.Therefore, you don't need any technical expertise to put it up or maintain the system.

2.3 Challenges

We initially made little projects as we learned web development to establish this website. However, we ran into several issues when we first started working on the project. The main challenge to maintaining the security of the database. We sought some seniors' and

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juniors' assistance to learn more about web development because there were times when the materials on the internet were insufficient for us. We are appreciative of their information sharing and consent to utilize our social media platform for communication. There are some challenges we are facing:

1. The mechanism for user sign-in and sign-up is functioning properly.
2. An unauthorized visit to the administrative panel was interrupted.
3. The Backend part was the most challenging part for us.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Modeling

Being aware of the general requirements of software and hardware sites is one of the most crucial aspects of building projects.

3.2 Requirement Collection

1. The account signup process is simple and does not require admin approval.
2. Sent Confirmation mail from admin.
3. Set user Authentication Management using Firebase Authentication.
4. Provide personal profile link sharing option
5. User-friendly Profile editing option for all users.
6. Faster every page loading.
7. Easily editable user data.

3.3 Use Case diagram and details

The interface is represented by a use case. Giving information about any initiatives without demonstrating them can be made simpler. Only this diagram can make it simpler to understand the processes that take place during the entire project.

The following figure 3.3 illustrates A use case diagram is a visual representation of a user's potential interactions.
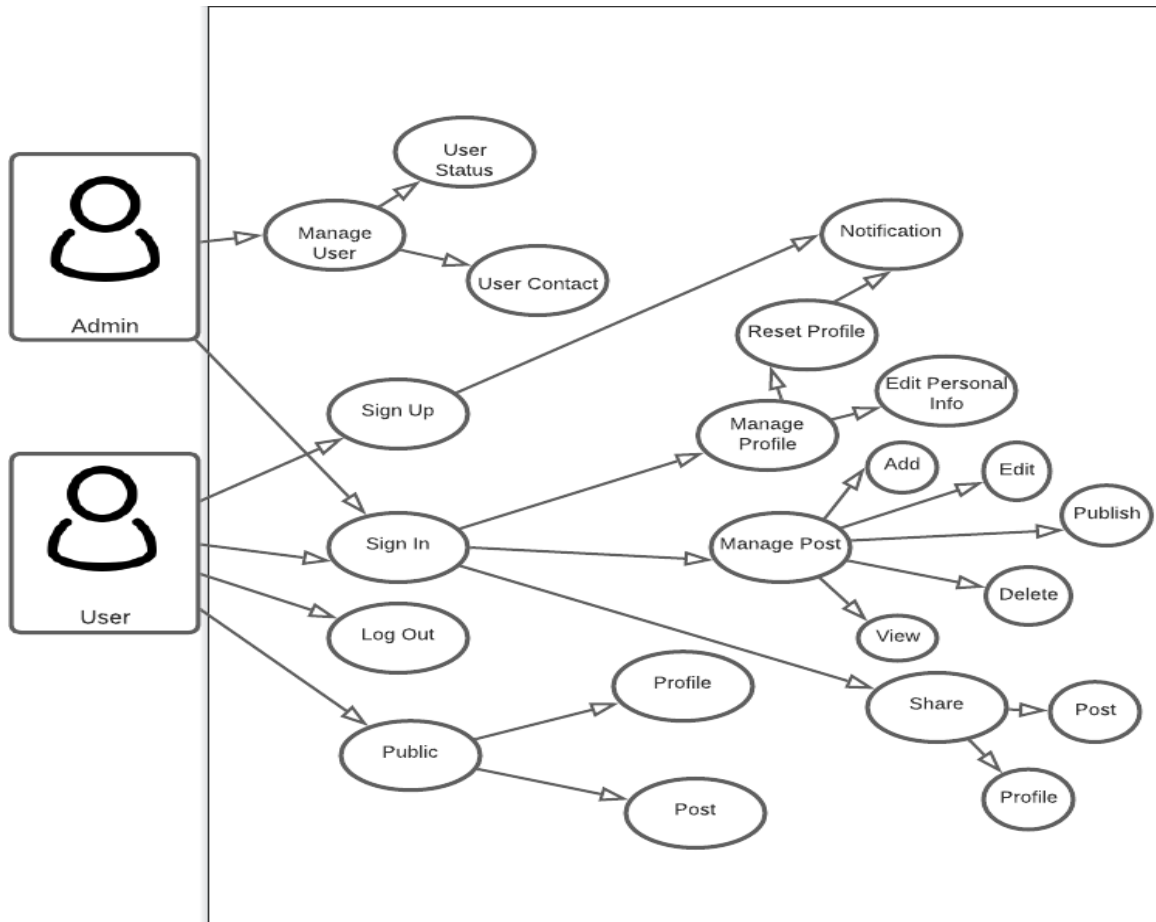
Figure 3.3: Use Case Diagram

3.4 Logical Data Model

The system is depicted as a single process with connections to external entities in figure 3.4 below. It depicts the complete system as a single bubble with incoming/outgoing arrows designating input and output data.
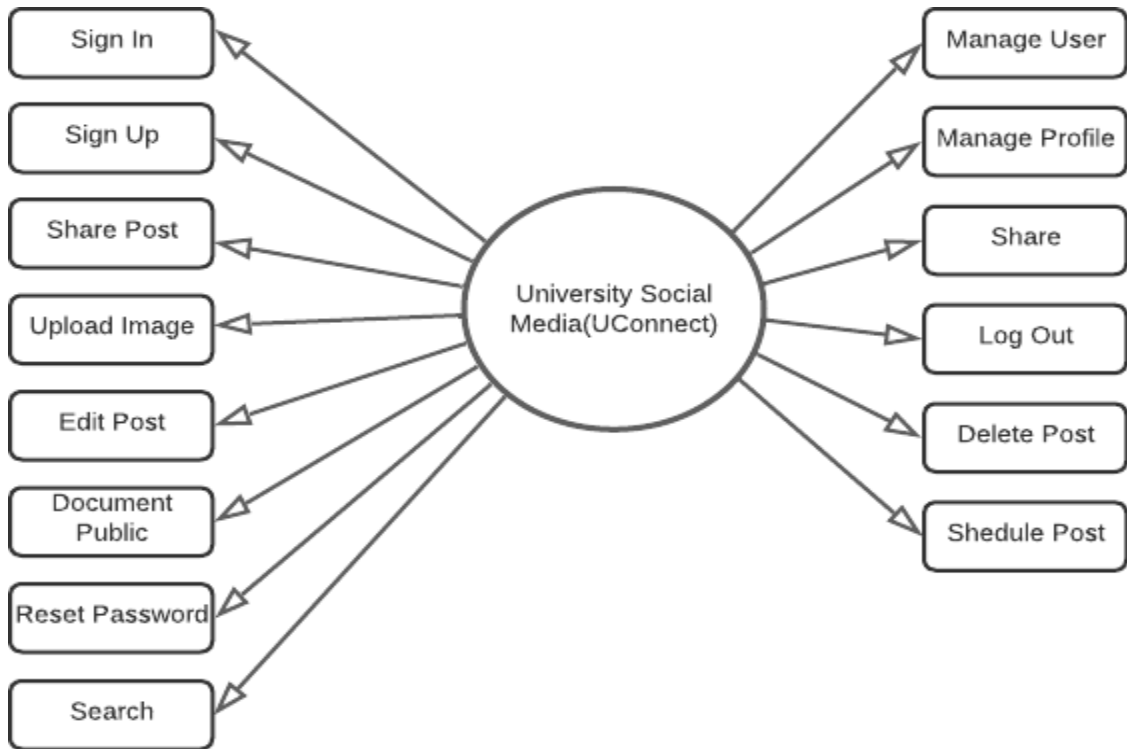
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Figure 3.4: Level Diagram

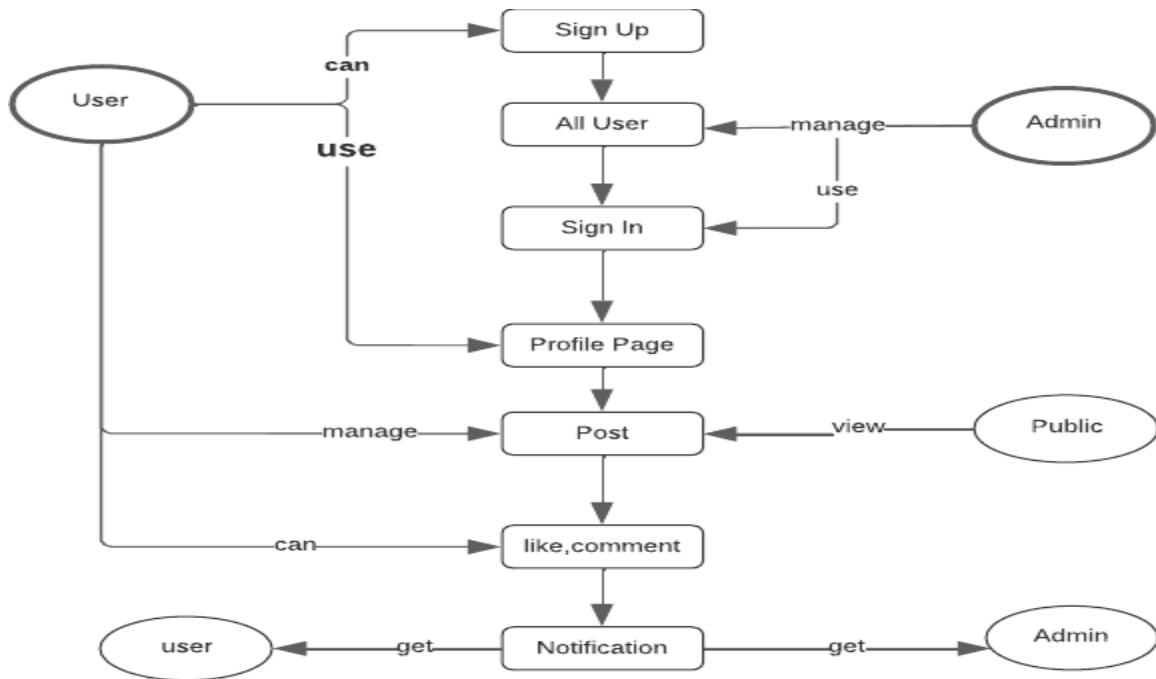The following figure 3.4.2 illustrate a series of action or flow of control in a system

Figure 3.4.1: DFD Level diagram

The following figure 3.4.2 is a data flow diagram in activity diagram.
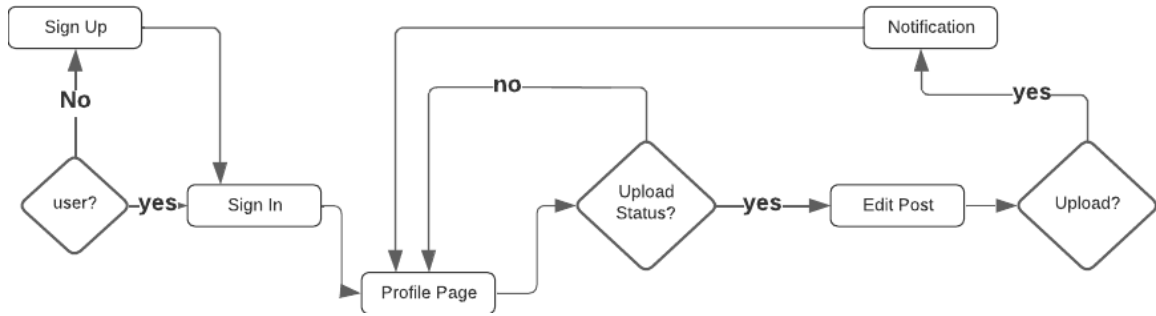

Figure: 3.4.2: Activity Diagram

3.5 Database Design

Using a database we use MongoDB. It's a non-Sql database and easy to use.
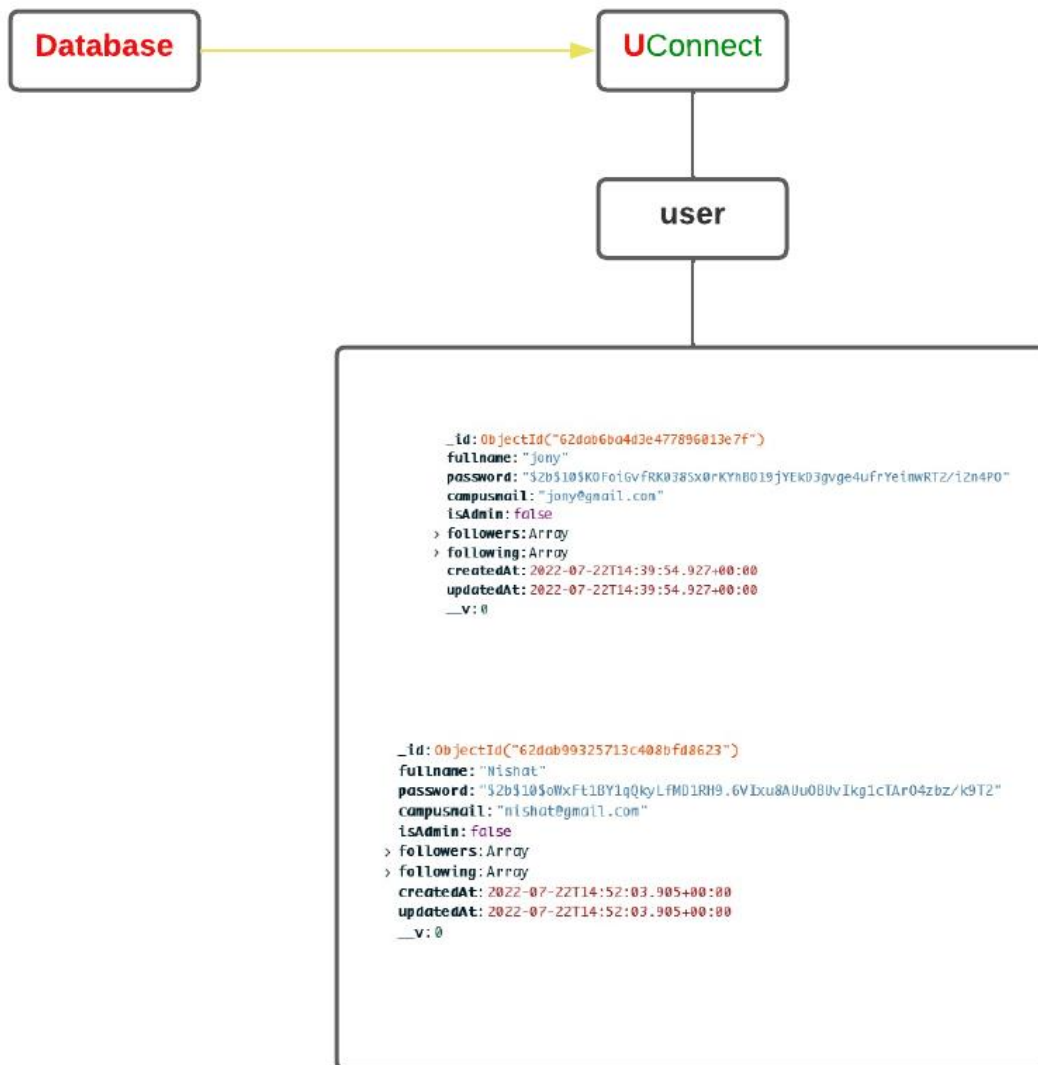
The following figure 3.5 is MongoDB Database Design

Figure 3.5: Database design

3.6 Design Requirements

3.6.1 Hardware requirements:

Any laptop or desktop with a respectable configuration aids in the development of this type of full-stack project. However, in our opinion, having a minimum of an i3 processor, 8 GB of RAM, and a 500 SSD/HDD will make things run more smoothly. A less powerful configuration can cause a minor issue when using Postman and React. js. We can say this from experience.

3.6.2 Software requirements:

Visual Studio Code(VS Code) should be installed for IDE. Front-end and Backend both can work together in VS Code and also testing could be done here.

The phrase for this website development project refers to the following technologies:

Tools:

- Code Environment: Vs code
- Store Code: GitHub, Git
- Project Manager: Trello
- Browser: Google Chrome Developer Tools.

Database:
- **MongoDB**

Technology:
- **Express.js**
- **React.js**
- **Redux.js**
- **Node.js**

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end and Back-end Design

The process of frontend design entails writing the presentational JavaScript, HTML, and CSS code that make up a user interface. For customers to understand your branding, you must use front-end development. To make it simple for customers to connect a company's website with their items elsewhere, it must use the same or comparable fonts, colors, and visuals.

MongoDB, Express, React, and Node.js are the four technologies that our project makes use of. We can store data in a JSON-like format using MongoDB, a document-oriented database management system.

As a document-oriented database, MongoDB stores data in documents that resemble JSON and have dynamic schemas.

Strongly consistent reads and writes are available with MongoDB thanks to application control over replica sets. As more nodes are added, read/write performance increases linearly. Developers can run simultaneous note operations on several nodes using replication, which maintains numerous copies of documents across various workstations. MongoDB, Express, React, and Node.js are the four technologies that our project makes use of. We can store data in a JSON-like format using MongoDB, a document-oriented database management system.

As a document-oriented database, MongoDB, store data in documents that resemble JSON and have dynamic schemas.

ExpressJs is a Javascript-based open-source web application framework that enables the development of quick, scalable, and reliable web applications. It can be installed Nodejs in which case it functions as middleware or in the browser and is also known as express.

4.2 University Social Media System(UConnect)

4.2.1HomePage

Users can share their status and see other people's posts who connect with users and see the number of followers and following.
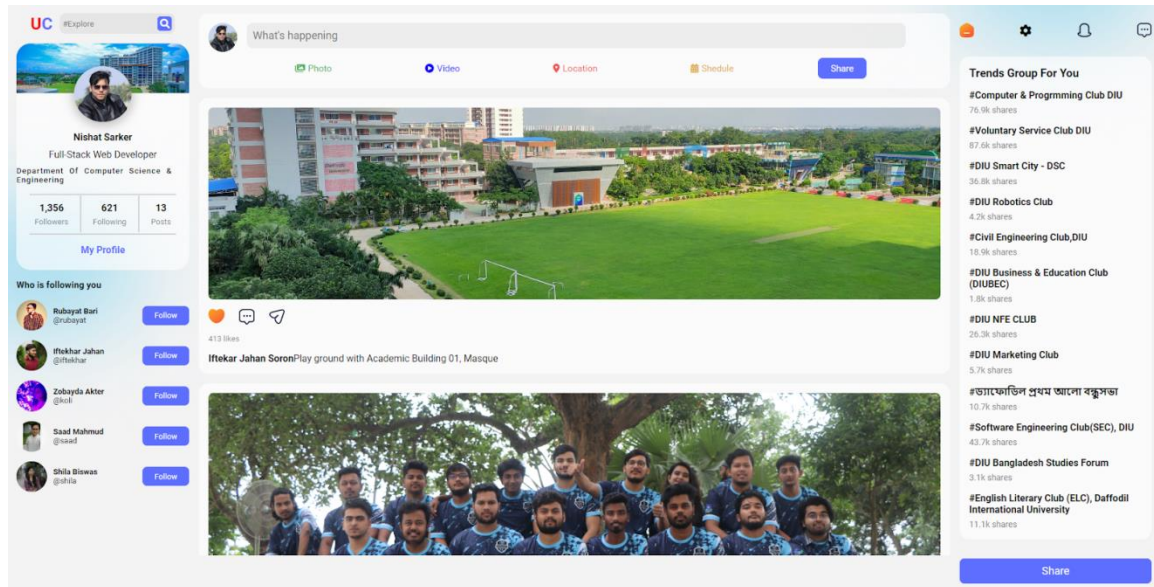

Figure: 4.2.1: Home Page

4.2.2Registration Page

The following 4.2.2 show the signup/registration Page where users are asked the full name, campus email, password, confirm password that matching the previous password.

Figure: 4.2.2: Signup/Registration Page

4.2.3 Login/Sign In Page

The following 4.2.3 show the signup/registration Page where users are asked the username that user provide when he/she create their profile, password that matching the previous password.

Figure: 4.2.3: Login page

4.3 Profile Page:

After login, the user goes to the profile page and now the user can edit their personal information. When a user creates a new account, by default the profile image and cover photo show their profile card. Then he chooses photos of their own choice.
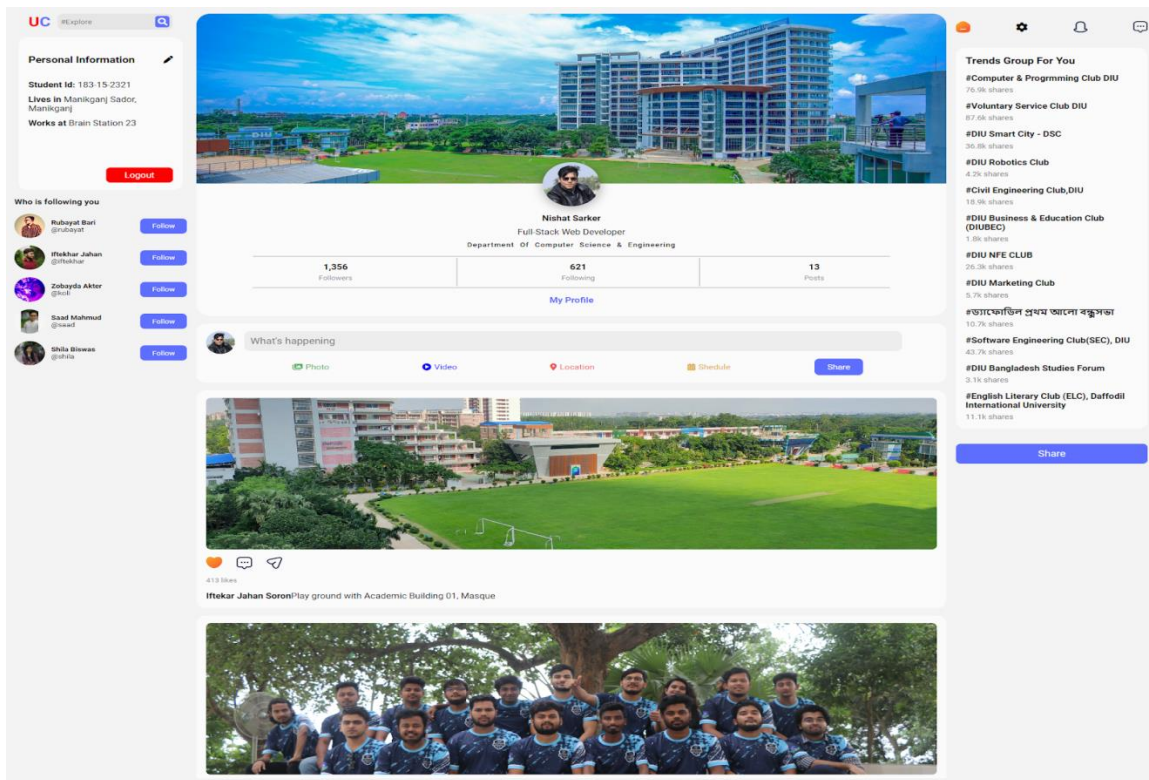
Figure: 4.3: Main Profile
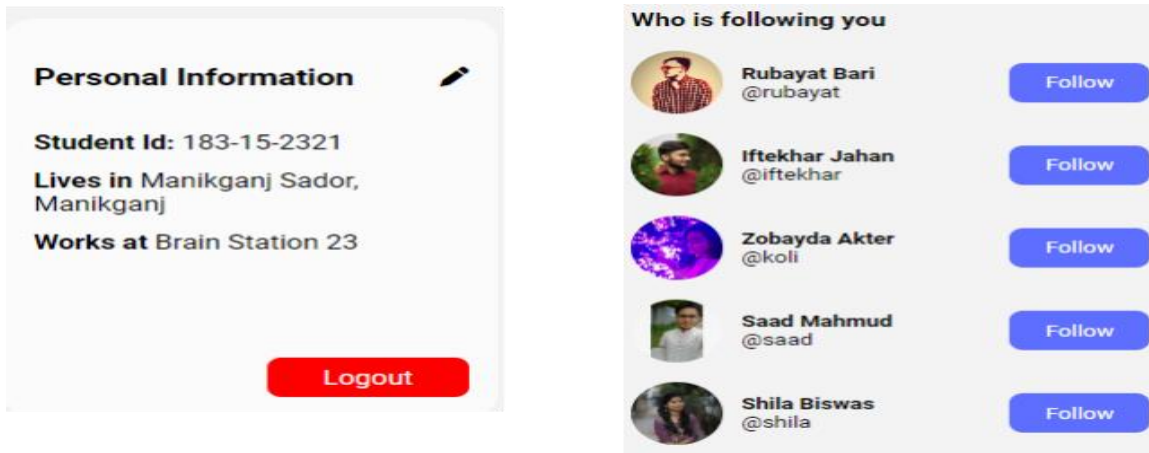
Figure: 4.3.1: Personal Info and follow card

4.4 Post/Share Status:

Users can share anything by using the share option. They can share job requirements, events, joyful moments, etc.
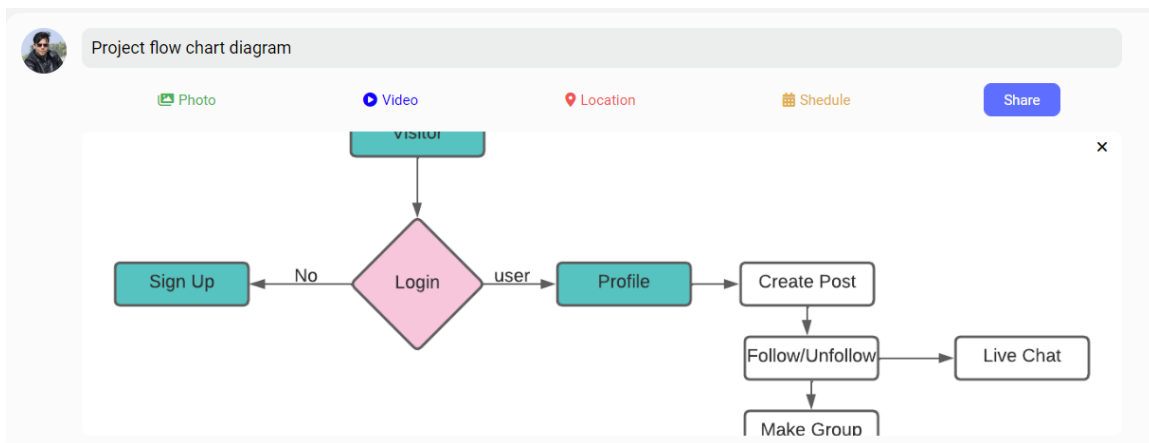
Figure: 4.4: Post/ Share Status

4.5 Edit or Manage Profile:

User can properly update their name, location, and job sector in this system. This updated information shows the user's profile. When other users see her/his profile, the user can easily connect with that person.

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Figure: 4.5: Profile Edit

4.6 Github Repo:

Following figure 4.6 shows github repository. When a developer releases a new version of any software, a github repository must necessary. They collaborate their knowledge to build an Application. The whole software development life cycle is fulfilled by using the repository.
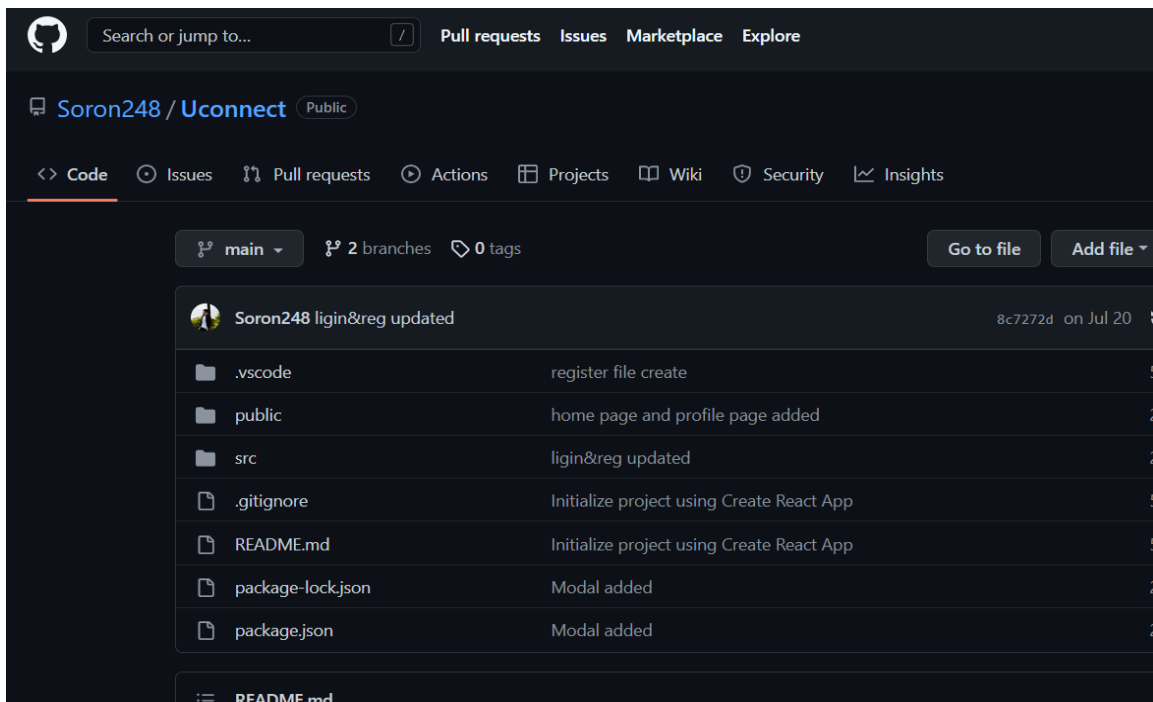
Figure: 4.6: Github Repo

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CHAPTER 5

Implementation

5.1 Implementation of Database

We have used the MongoDB database for storing data from the users and it gets stored in the database. We had selected MongoDB because it is built on a scale-out architecture that has become popular with developers of all kinds for developing scalable applications with evolving data schemas. As a document database, MongoDB makes it easy for developers to store structured or unstructured data. It uses a JSON-like format to store documents.

User Data

Figure: 5.1: User Data

5.2 Implementation of Design:

Making sure that the user experience was simple was our main goal when building the front end. As a result, we have tried to make them as simple as possible. We also consider how appealing and user-friendly the front-end design should be when putting it into practice. Another important factor to take into account is the website's responsiveness to various device types, such as laptops, tablets, and smartphones.
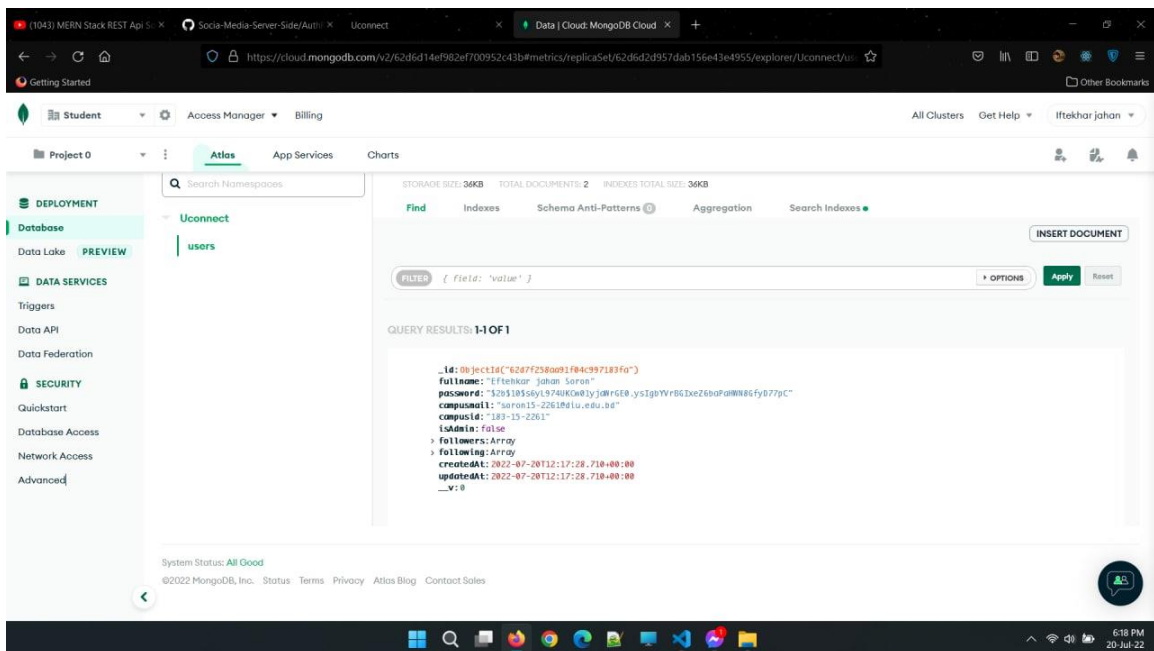
5.3 Testing Implementation

There are no bugs that have been found through user visits. Before starting our application, we must locate any important problems and defects so that we can swiftly and correctly solve them. We thus go through some testing processes to make that reliable.

1. Performance
2. Usability
3. Database
4. Functionality
5. Interfaces

5.3.1 Performance

We evaluate overall Performance and obtain this information from Google Search Console.

1. The program can get information and a server response right away.

2. faster loading occasions.

3. Desktop and mobile site loading times up to 91% faster.

5.3.2 Security Testing

We gave this testing because this is highly important for web applications. The security testing result is bellowed:

1. 404 Error page show automatically
2. Unauthorized users alert
3. Session deletion for unauthorized users or person

5.3.3 Browser Testing:

Test with many browsers and receive accurate results from Microsoft Edge, Google Chrome, and Mozilla Firefox.

5.3.4 Usability Testing:

Verify the overall syntax from the user's perspective.

1. No Faults
2. Passed responsive with mobile and desktop version

5.3.5 Database Testing:

Every web application should be essential for database testing, Which results in the following outcome:

1. CRUD operations provide data 2x faster.
2. Execute the appropriate data from the MongoDB database.
3. Response time was faster
4. Data can smoothly flow into the database.

5.4 Test reports

Test No.	Description	Test Data	Result	Pass/Fail
01	Valid email and unmatched password	Email:nishat15-2321@diu.edu.com Pass: 12354	Incorrect email or password, Please enter valid email or password.	pass
02	Input email is already registered	Email:nishat15-2321@diu.edu.com Pass:12345	User email has already taken this system	pass
03	Invalid email and password	Email:nishat152321akfjhiwhf Pass: dauygafie8	No one user with this email	pass
04	Valid email and password	Email: nishat15-2321@diu.edu.bd	Go to the profile page	pass

Table 5.4: Test report

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CHAPTER 6

IMPACT ON ENVIRONMENT

6.1 Bad Impact on the Environment

Web-based data storage systems have some negative effects on the environment since they demand more energy, but they also have many positive effects.It develops and encourages paperless storage methods and lessens the strain on forests. One might also call it a green technology. Psychological experience from UConnecthas mainly concentrated on the impact of UConnect usage on studies as the student feel hurt and tend to ignore most users action so as not to be deceived, sad or being discouraged. UConnect users share also their sociological experience while communicating with each other and this tend to improve the relationship and social ties of the university students. As the students socialize and invite other users to different activities, they are exposed to online threat and loss of their personal information which may be used for unintended purposes such as online theft and other criminal activities.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 DISCUSSION

We are trying our best to develop this system. Students can easily connect to other students and make their small businesses depend on it. By using this technique, a significant amount of time may be saved and focused on other crucial business areas.Our social networking platform can easily and securely offer all the necessary functions for uploading, editing, and sharing important documents.

7.2 LIMITATION AND FUTURE SCOPE

7.2.1 Limitation:

- Though we have successfully implemented the web application 'University Social Network(UC)' there are also some restrictions.

- Now, this web system is using a "local host". In the near future domain should be taken and launch this web application.

7.2.2 Future Scope:

- Now we release V.1. In the near future, we release an updated version.

- In the future new categories will be added to our site. Now, this system is using MongoDB. In the future, further steps should be taken as needed.

- In the future, we added a real-life chat option and making group option can be added.

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UNIVERSITY SOCIAL NETWORK(UCONNECT)

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