## **DIU STUDENT COMMUNITY**

 $\mathbf{BY}$ 

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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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# DAFFODIL INTERNATIONAL UNIVERSITY DHAKA, BANGLADESH DECEMBER 2019

## **APPROVAL**

This Project/internship titled "DIU Student Community", submitted by Sadman Sakib Shishir, ID No: 161-15-6773, Marzia Abul, ID No: 161-15-6901, Md. Samiul Islam, ID No: 161-15-6903, 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 05.12.2019

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We hereby declare that, this project has been done by us under the supervision and co supervision of Mr. Md. Jueal Mia, Lecturer and Mr. Shaon Bhatta Shuvo, Senior 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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## **ABSTRACT**

This project is on "DIU Student Community". This is a web-based application which can run like any other online communities and social media in any device. This Project's main features are Searching Students with University Id, adding them to friend list, searching in Friends list, Chatting, Giving Status Etc. This web application is very user friendly and has those important features which are needed for student of our beloved Daffodil International University to stay connected to each other. The In-depth development of this web application is described in the project report. After developing this web application, we have tasted it by different User and found positive feedback on its simplicity and performance. This application is capable of running in any kind of device. From the feed backs that we got from users we also got the feedback that this application works perfectly.

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#### CHAPTER 1

#### Introduction

#### 1.1 Introduction

Now a days the use of Internet is immense. These days it become integral part of our life and has changed our life for good. Internet has brought people closer. 3.5 billion of 7.7 billion people of the world are online. Majority of them are always connected to each other through social media and online communities.

Online community is a community which is firstly community then secondly online. Which means it is a real-world community all the time and it's just online. In the fast-developing world of modern Science and Technology, Online communities are created for the good of the people of the world. It is used for establishing communication between people all around the world. It is also used in doing Online businesses. Online business has become much more popular over the years and the use of online community to expand these online businesses are increasing day by day. But apart from the other usage of online communities, communication is the most popular and used section. People are being able to talk, share their opinions/thoughts/events and Files through Online communities and social media. It is expected that the use of online Communities and social media will increase a lot due to more people coming online.

#### 1.2 Background

As described before, keeping in consideration and needs of essential communication between the teachers and students of our beloved University, we have decided to build a web application which will help to communicate and create a bond between students and respected teacher of DIU. In this project of ours, features that are essential for modern communication will be provided, through which students of DIU reach out to other students and teachers of DIU. The main intention of our project is to Our University's very own student online community.

#### 1.3 Motivation

As we are completing Our Bachelors in Computer Science and Engineering in our beloved Daffodil International University, we need to communicate with our classmates and University friends a lot.

For Communication, we mainly use Facebook. But Facebook has its own limitation, we need more features which can assist us in many important ways. Besides our university website have all the features accept the student community. We will use more option to the Student Community application.

For example, we can anonymous poll for taking important decisions for a section. Which can help students to take decision and vote freely. We think can include more important features like this in our project.

## 1.4 Project Statement

The students of our university use Facebook for communication, but in Facebook, finding students and teachers can be very hard because of the id's similar user name. In this web application students can find each other by just searching using only University ID number or University email address.

## 1.5 Project Objective

- Categories according to Campus, Department, Shift and batch.
- Require university mail for log in.
- All the information of the students will be there for emergency case. But only authorized person can see it.
- 2 groups will automatically create. One for the hole batch and another only for the section.
- Students can share files, give post, make comment, create events and many more.

## **CHAPTER 2**

# **Background**

#### 2.1 Related works

There has been a lot of works regarding online communities and social media. Few examples are named:

#### 2.1.1 Busuu

Busuu is a language learning community and its headquarter is in Madrid, Spain. Busuu currently has 12,000,000 registered users. Busuu was founded in May 2008 by Bernherd Neisner and Adrian Hilti. Busuu allows users to interact with native speakers from around the world.

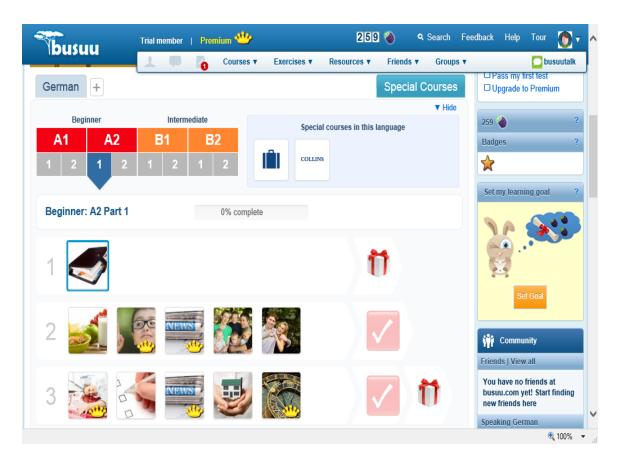


Figure 2.1.1: Busuu

#### 2.1.2 CafeMom

Cafemom was an add supported online community which was for mother and mothers to be. Andrue Shue and Micheal Sanchez founded cafemom in 2006. Cafemom gets more than 8 million visitors a month.



Figure 2.1.2: Cafemom

#### 2.1.3 Care2

Care2 is an online platform for green living, Social activism and animal rights. It was founded by Randy Paynter in 1998 and his goal was creating this online community was to connect activists from around the world with one another.



Figure 2.1.3: Care2

#### 2.2 Comparative Studies

There are already many Online Communities and Social media available at the moment. Most of us even regularly use them. But as students of Daffodil International University we need some features that will help us to find and stay connected to the other students of our university more easily. Such as finding students just by searching university id or email.

But in our project this feature will be available along with the features like adding in friendliest and chatting.

# 2.3 Challenges

## **Interactive web Application:**

A web application must be as Interactive as possible. So, trying to create idiosyncratic and uncommon features will be very much complex and also time consuming.

## **Keeping the web application Simple:**

Complicated and inconvenient web applications are not user friendly. So, user will not have that much interest in using these complex web applications.

## Maintaining the Communication with the user:

The structure and features of web application changes and upgrades day by day. So, we have to keep regular communication with user to know and understand what types of features they want and are comfortable using.

#### **Performance:**

The biggest challenge of developing such web application is to keep its design at standard level and also focusing on keeping its performance smooth and bug free.

# **CHAPTER 3**

# **Requirement specifications**

## 3.1 Use Case:

User need to register for log in. After registering and a successful log in they can use all the available features in the application.

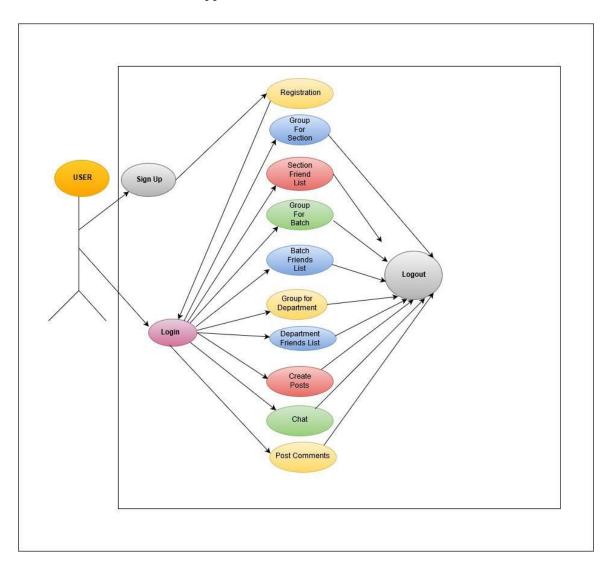


Figure 3.1: Use Case Diagram of DIU Student Community

#### 3.2 Use Case Narrative for User:

# 3.2.1 Registration:

Use case: Registration

Actor: User

#### **Pre-condition:**

- Computer with any operating system
- Internet connection

#### Scenario:

- User must create an account to gain access in app by registering.
- User can see the account after registration.

**Alternative Scenario:** If user does not register then user will not be logged in the app.

**Post-condition:** Application will be running without an error.

## 3.2.2 Log In:

Use Case: Log In

**Actor:** User

## **Pre-condition:**

- Computer with any operating system
- Internet connection

#### Scenario:

- User must give correct user name and password to log in
- User can have access to his account after successful log in

Alternative Scenario: If user give invalid user name and password then user can not

have access to his account.

**Post-condition:** Application will be running without an error.

## 3.2.3 Group for Section:

Use Case: Group for section

**Actor:** User

#### **Pre-condition:**

• Computer with any operating system

• Internet connection

#### Scenario:

• User can see information of Group for section.

**Alternative Scenario:** If user do not turn on internet connection, then user will not be able to see the information of Group for section.

**Post-condition:** Application will be running without an error.

#### 3.2.4 Section Friends list:

Use Case: Section Friends list

**Actor:** User

#### **Pre-condition:**

• Computer with any operating system

• Internet connection

#### Scenario:

• User can see information of Section Friends list.

Alternative Scenario: If user do not turn on internet connection, then user will not be

able to see the information of Section Friends list.

**Post-condition:** Application will be running without an error.

# 3.2.5 Group for Batch:

Use Case: Group for batch

**Actor:** User

#### **Pre-condition:**

• Computer with any operating system

• Internet connection

#### Scenario:

• User can see information of Section Group for batch.

Alternative Scenario: If user do not turn on internet connection, then user will not be able to see the information of Group for batch.

**Post-condition:** Application will be running without an error.

#### 3.2.6 Batch Friend List:

Use Case: Batch friend list

**Actor:** User

#### **Pre-condition:**

Computer with any operating system

• Internet connection

Scenario:

• User can see information of Section Batch friend list.

Alternative Scenario: If user do not turn on internet connection, then user will not be

able to see the information of Batch friend list.

**Post-condition:** Application will be running without an error.

3.2.7 Create Post:

**Use Case:** Create post

**Actor:** User

**Pre-condition:** 

• Computer with any operating system

• Internet connection

Scenario:

• User can see information of Create post

• User will be able to post

Alternative Scenario: If user do not turn on internet connection, then user will not be

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able to see the information of Create post or post anything.

**Post-condition:** Application will be running without an error.

3.2.8 Chat:

Use Case: Chat

**Actor:** User

**Pre-condition:** 

• Computer with any operating system

• Internet connection

Scenario:

• User can see information of Chat.

• User will be able to chat

Alternative Scenario: If user do not turn on internet connection, then user will not be

able to see the information of chat.

**Post-condition:** Application will be running without an error.

3.2.9 Post/Comment:

Use Case: Post comment

**Actor:** User

**Pre-condition:** 

• Computer with any operating system

• Internet connection

**Scenario:** 

• User can see information of Post comment.

• User will be able to post comments

Alternative Scenario: If user do not turn on internet connection, then user will not be

able to see the information of Post comments.

**Post-condition:** Application will be running without an error.

# 3.3 Business Process model (BPM):

Business process model is s model that allow us to show all the process in a system, so that the process may be rechecked, resolved and improved. The business process model will show the policies and the condition to visit the sites.

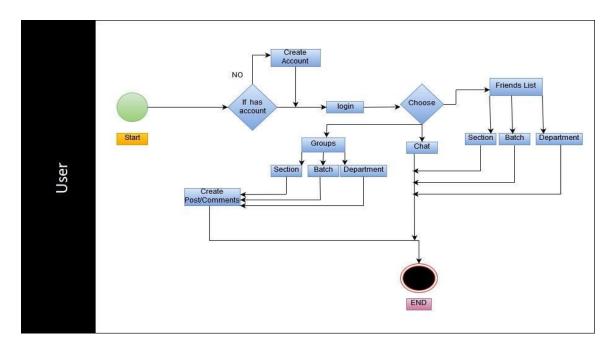


Figure 3.3: Business Process model (BPM)

# 3.4 Data Flow Diagram (DFD):

The Data Flow Diagram (DFD) is the diagram or a figure that show us how the sites functions and presenting. The DFD is a graphical figure. So by this figure we can understand the function and get to know about the features.

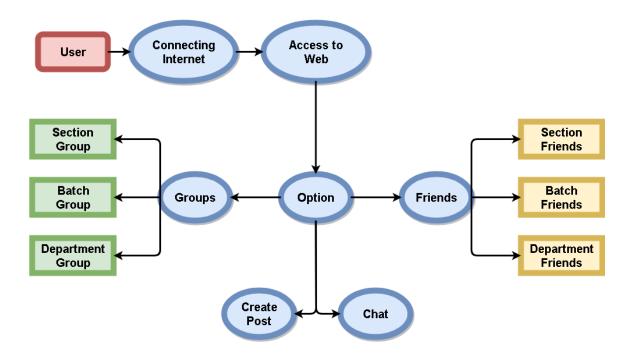


Figure 3.4: Data Flow Diagram (DFD)

# 3.5 Non-functional Requirement

- User can post Bangla in the group.
- All the process will be available always.
- There is no limit for browsing the website.
- This site can be access from all operating system known to man.
- The system responses should not be more than 5 section depending on your internet speed.

# 3.6 Usability Requirement

- Any operating system with internet connection.
- Any student how knows Bangla or English can user this application.

# **CHAPTER 4**

# **Design Specification**

# **4.1 System Architecture:**

A system architecture show us the elements, interfaces, behavior and the structure of a system. Mainly it show us the working process of a system.

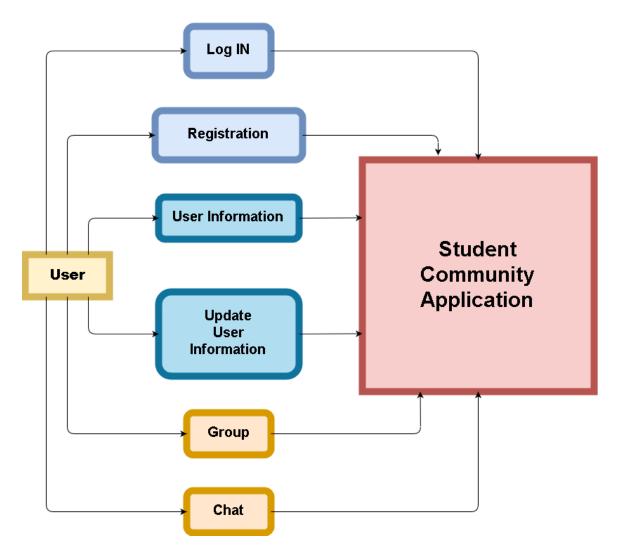


Figure 4.1: System Architecture

# 4.2 Server & Database Design:

## 4.2.1 Database:

This is our database called studentcommunity. Batch\_post, department\_post, role, section\_post and users are the table of the database.

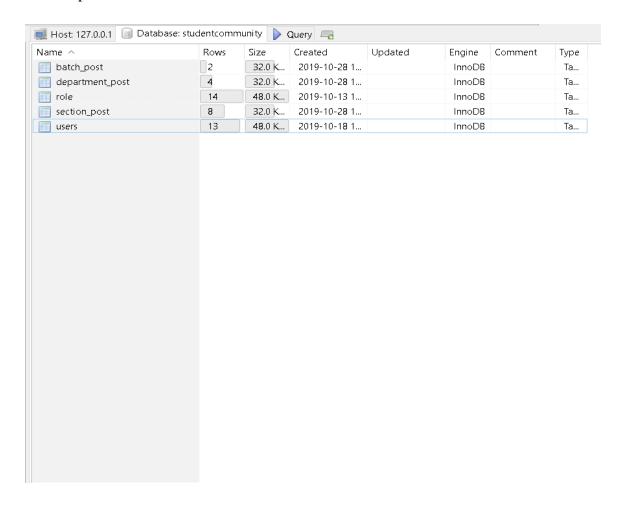


Figure 4.2.1: Database (Part 1)

#### 4.2.2 Users:

These are the attributes of the table called users. When the user register the data will be save in this table along with an encrypted password.

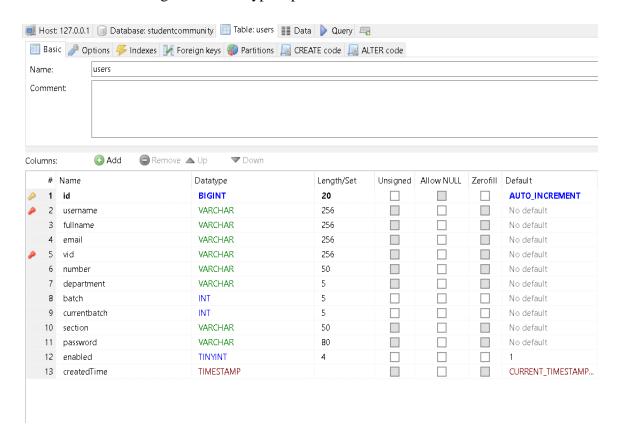


Figure 4.2.2: Users (Part 2)

## 4.2.3 Role:

These are the attributes of the table called role. From this role table we can define between admin and user.

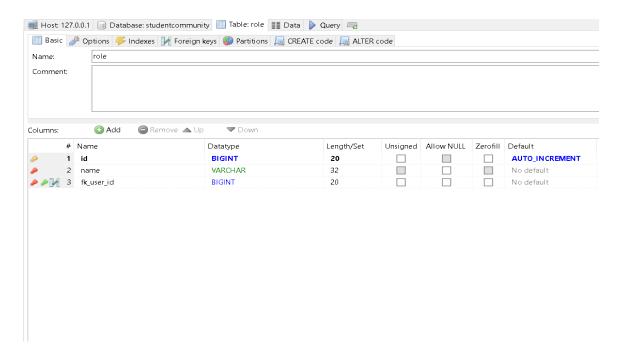


Figure 4.2.3: Role (Part 3)

## **4.2.4 Section Post:**

These are the attributes of the table called section\_post. In this table all the posts from section will save along with the user id in fk\_user\_id.

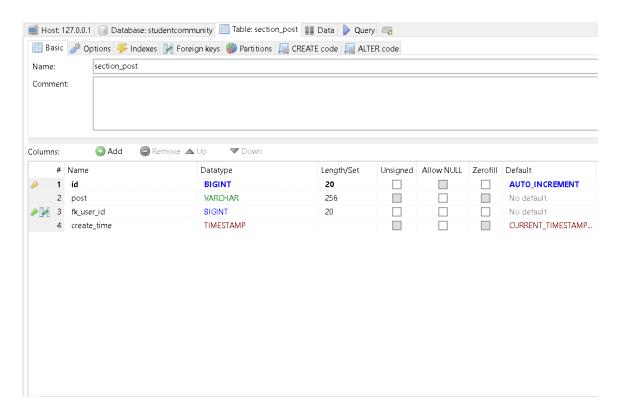


Figure 4.2.4: Section Post (Part 4)

# 4.3 E-R (Entity Relationship) Diagram:

Entity Relationship or E-R Diagram show us the design of all attributes of the tables. It show us the relationship and the connection one or more types.

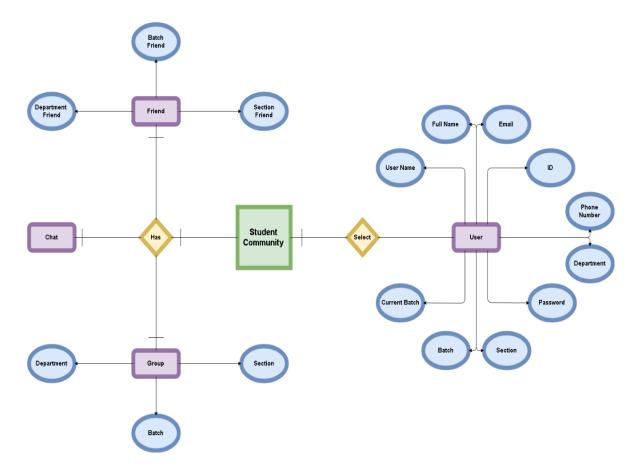


Figure 4.3: E-R Diagram

## 4.4 UI Design:

This is the main page of our application. This is a log in page. If the user is registered then they can log in. But if not then they have to register to user all the application feature.

## 4.4.1 Log In:

This is the main page and that is log in page. From this page the user will log into his account to continue to the site. If the user don't have an account then he has to create an account by registering from the button Sign UP.

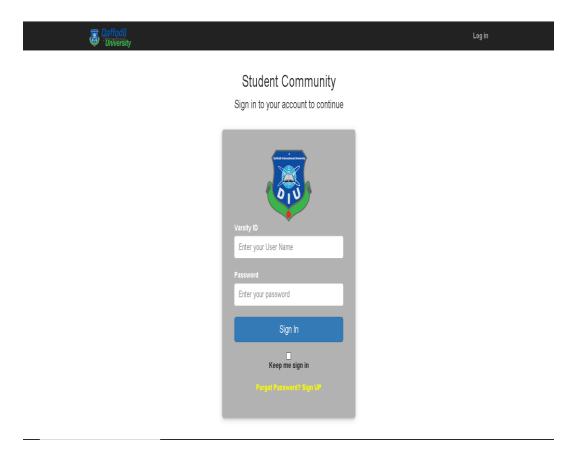


Figure 4.4.1: Log in (Part 1)

# 4.4.2 Registration:

New users can register with their university mail and ID from here. After giving all the information in the text field and register the user can sign IN after the registration process.

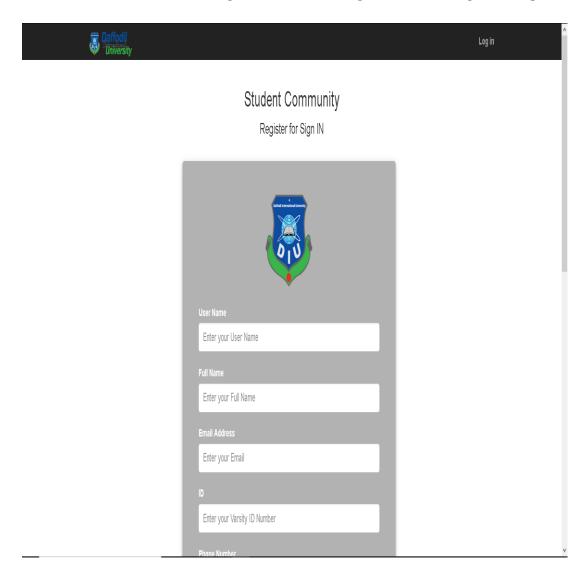


Figure 4.4.2: Registration (Part 2)

# 4.4.3 Section Group:

In section group, friends are catagorized by the section category. The user can give post from this group. All his section friends can see the post.

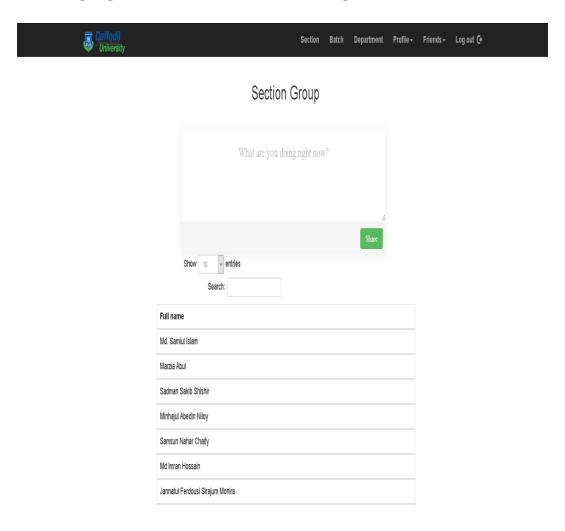


Figure 4.4.3: Section Group (Part 3)

# 4.4.4 Batch Group:

In batch group, friends are catagorized by the batch category. The user can give post from this group. All his batch friends can see the post.

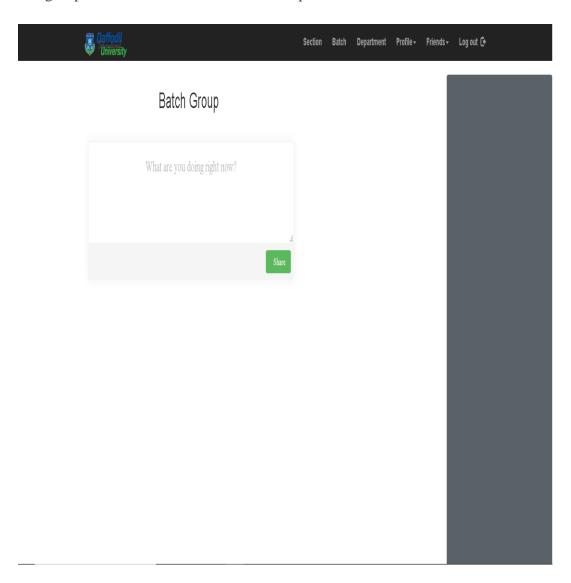


Figure 4.4.4: Batch Group (Part 4)

# 4.4.5 Department Group:

In Department group, friends are catagorized by the Department category. The user can give post from this group. All his department friends can see the post.

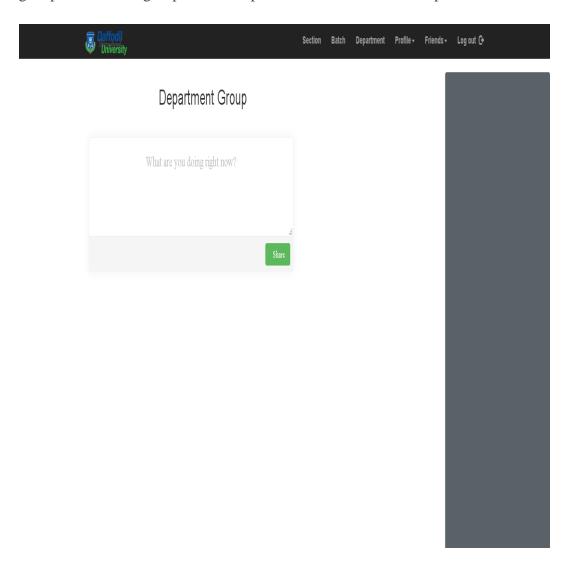


Figure 4.4.5: Department Group (Part 5)

## 4.4.6 View Profile:

This is the page where the user able to see his information that has been given when he get register himself in this site.

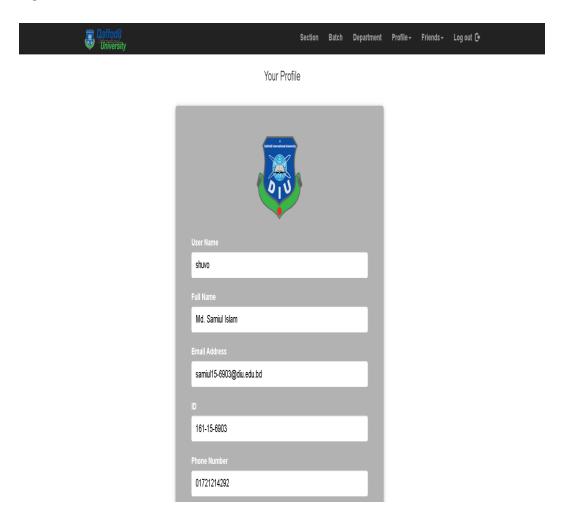


Figure 4.4.6: View Profile (Part 6)

## 4.4.7 Edit Profile:

From this page the user can able to see his profile information and also can edit it if its need any correction. After editing the profile he can update his profile.

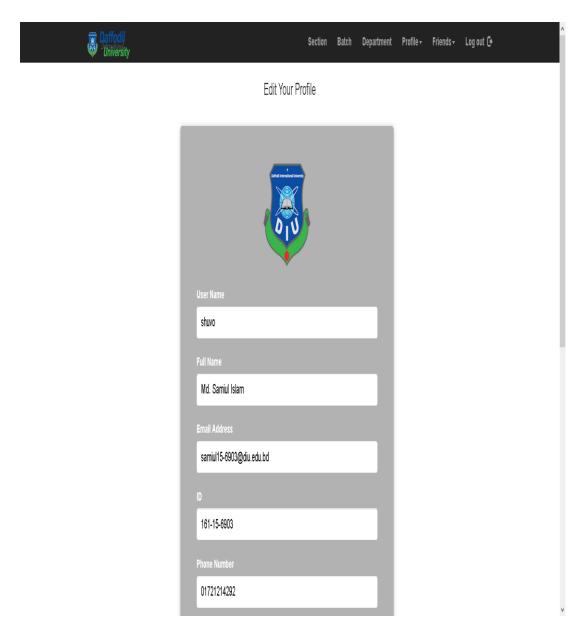


Figure 4.4.7: Edit Profile (Part 7)

#### 4.4.8 Section Friend List:

In section friends list, only friends from same section will be shown along with the necessary information about his section friend.

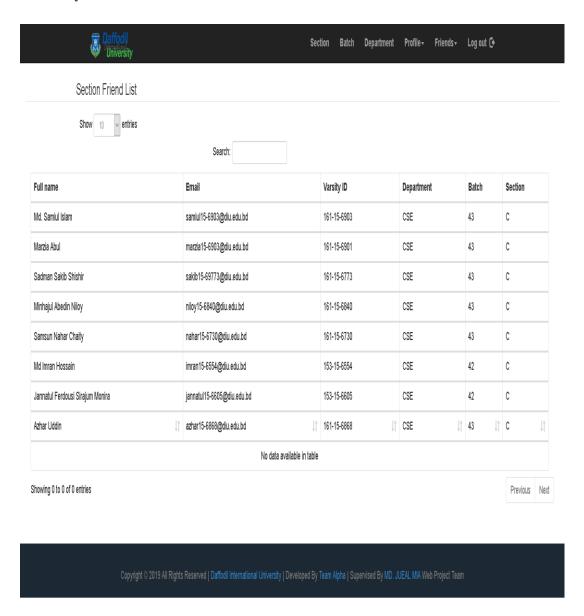


Figure 4.4.8: Section Friend List (Part 8)

#### 4.4.9: Batch Friend List:

In batch friends list, only friends from same batch will be shown along with the necessary information about his batch friend.

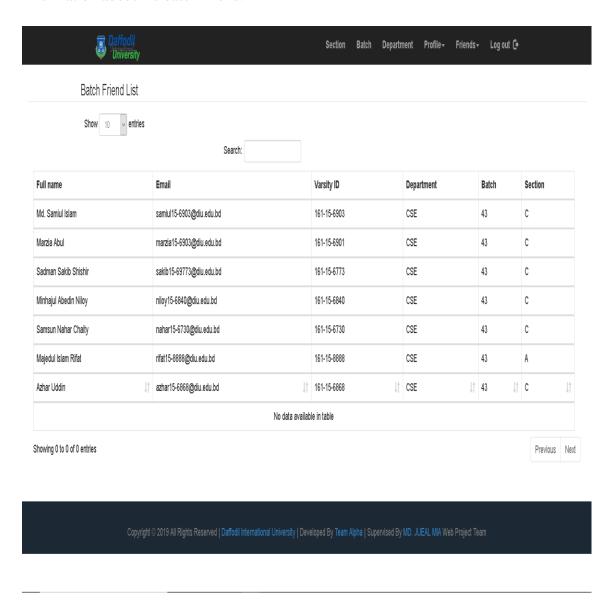


Figure 4.4.9: Batch Friend List (Part 9)

## 4.4.10 Department Friend List:

In departement friends list, only friends from same department will be shown along with the necessary information about his department friend.

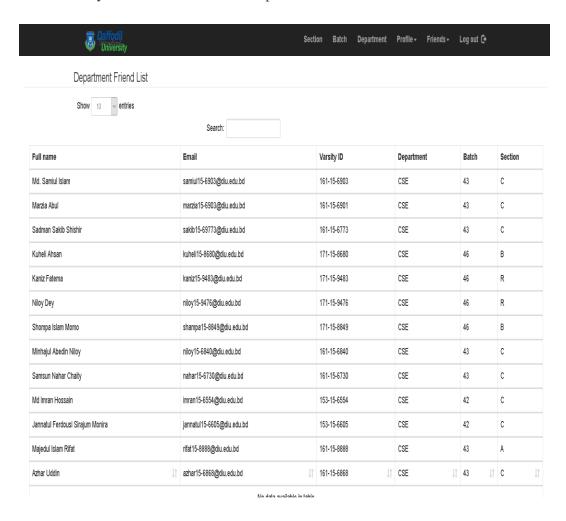


Figure 4.4.10: Department Friend List (Part 10)

#### **CHAPTER 5**

#### IMPLEMENTATION AND TESTING

## 5.1 Implementation of back end database

Database is the data store that is used to store all kinds of data. We used the MySQL database for its easy implementation. We use primary key and foreign key in the database for the connection from one table to another.

#### **Installation requirements:**

- MySQL (database)
- IntelliJ IDEA (Framework)
- JSON API (database connection)
- Java (Primary language)

## 5.2 Implementation of front end design

Front end is the most and most important part of any web app. This is the only part by which a user can decide either he will use it or not. If the front end design is attractive then it will grow more users. In front end design section we used JSP to improve our application. JSP helps to implement our layout structure and others design part like image, text, edit text, button etc. We also used different types of design library to develop UI design.

- JSP (Structure design)
- HTML, CSS, JAVASCRIPT, BOOTSTRAP
- Java (Function implementation)
- Some libraries

#### **5.3** Implementation of interactions

After completing user interface designing, it's time to implement others features to get a better look for our web app. We added login, register, profile view, profile edit, different groups based on section, batch and department. We build a communication system with the user so that they can communicate with each other for educational purpose.

#### **5.4 Testing Implementation**

After completing a project it's time to check, review or testing is it fit for market and users. Is it working properly and smoother. Having bug or error is simple in any project. We can recover it by checking run time errors and compile time error. We can test our app by every functionality that we've improved is working normally or not. We can check it by sending email, commenting, uploading pictures and videos, checking login, registration is working properly or not. We also check if our user is able to send email to admin and if the data is properly stored in database. We can match the registered data with database that is it valid or not.

## 5.5 Test Results and Reports

After finishing project work it's important to check or test application to make it smooth to users. Actually testing result discuss about how an application is useful in different conditions. Basically there are two types of test we did.

- Integration test
- System test

Table 5.1: Integration Test Table

Test case ID	Test case object	Test case description	Expected outcome
1	Check login system working properly or not	Verification to get full features of main application	Successfully entered to our application
2	Check contents uploaded to database or not	Checking content upload, data are being uploaded successfully in our database	To upload complete content details to backend
3	Check push notification are sending data or not	Notification working properly with correct information and data	To send correct data to users

Functions	Description	% Execute	% Passed	% Pending	Remarks
Upload contents to database	Data of all contents added successfully and we can monitor it.	100%	100%	0	Pass
Data input	All data input values added correctly in post section in data fields	100%	100%	0	Pass
Update data	Uploading accurate data, and sending it back to database to update any contents	100%	100%	0	Pass
Issue section	Sending mail to admin if there is any problem happens suddenly	100%	100%	0	Pass
Validation	Bad formatted e-mail or data will not receive by database	100%	100%	0	Pass
Authentication	User was able to login successfully by their given authentic data	100%	100%	0	Pass

#### **CHAPTER 6**

## **Conclusion and Future work**

#### **6.1 Conclusion**

DIU Student Community is web based online application which is built to help the students of DIU in communication. In future we want to create a new feature in this web application which will help students in many other ways. Using this web application, students can now, search, add and group other students of the university according to categories such as section, group and departments. They can also share their thoughts, announcements with multiple students by creating new post. Students will also be able post comments on the created posts. Students of DIU will be benefited in these ways because of having their very own online student community.

#### **6.2** Future work

We want to build a robust and user-friendly web application for University Students which will be more attractive both in usability and functionality. In future we want to features such as file sharing, Teacher database to create a strong communication between teachers and students, Poll system for taking votes of a section or a department to make a particular decision and many more. The database will be controlled by the authorities of the university so few people will have the access to the databases and the ability to modify them.

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## **APPENDIX**

# Appendix A:

# Plagiarism Check Report

Stud	dent Commu	nity		
ORIGIN	ALITY REPORT			
_	3% ARITY INDEX	4% INTERNET SOURCES	0% PUBLICATIONS	13% STUDENT PAPERS
PRIMAR	RY SOURCES			
1	Submitted Student Paper	to Daffodil Inte	rnational Unive	rsity 4%
2	Submitted Student Paper	to HELP UNIV	ERSITY	1%
3	Submitted Student Paper	to The Univers	ity of Manchest	er 1%
4	Submitted Student Paper	to University of	f Queensland	1%
5	Submitted Student Paper	to Sunway Edu	ucation Group	1%
6	Submitted Melaka Student Paper	to Universiti Te	eknikal Malaysia	1%
7	Submitted Student Paper	to City Univers	ity of Hong Kor	1 %
8	techupdate	enews.com		1%
9	Submitted	to Middlesex U	Iniversity	