

**A SYSTEM THAT AUTOMATICALLY UPDATES THE INFORMATION OF A  
UNIVERSITY'S ALUMNI PANEL**

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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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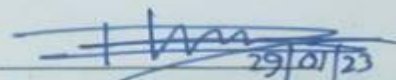
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**29 JANUARY 2023**

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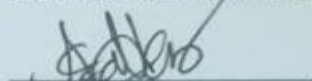
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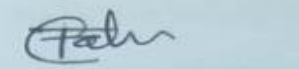
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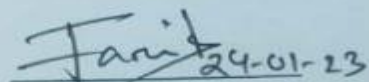
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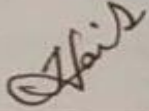
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## DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Dr. Sheak Rashed Haider Noori, Professor & Associate Head, 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.

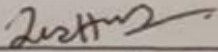
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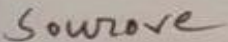
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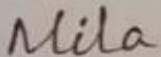
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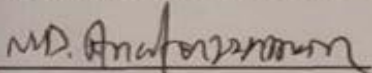
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Finally, we must acknowledge with due respect the constant support and patients of our parents.

## **ABSTRACT**

“ALUMNI ” is a system where the current students and alumni of Daffodil International University are the users. The application is aimed to make a bridge between alumni and current students and mainly focused on collaboration with current students and alumni. This application will make a platform for current students where they will be able to know about different job responsibilities like what actually an employee has to do for specific job responsibilities, Professional Guidelines, and professional opportunities open for them with the career guideline with the help of alumni of Daffodil International University. On the other hand, alumni will be able to enrich their team from their own ground and they will also be able to get all campus-related info from them. Moreover, the university authority and the current student will get to know about their huge student details and profile update just with a click. The information of alumni and their profile will be automatically updated.

To implement the whole process we have built a web application with proper functionality and an easy user experience. For the front end part, we used Html, CSS, JavaScript, and PHP. In the back end for the database we used SQLite 3, authentication is in PHP, and for data storage Django administration.

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# Chapter 1

## Introduction

### 1.1 Introduction

Students need to collaborate and work together to create a positive and supportive learning environment. Collaboration can help students learn from one another and develop skills that will be valuable in their future careers. Universities often have resources and programs in place to facilitate collaboration among students, such as study groups, team projects, and extracurricular organizations. It is important for students to take advantage of these resources and to make an effort to build relationships with their peers. In addition to benefiting their education, collaborating with other students can also be a valuable opportunity for personal and professional growth. Building relationships with seniors and learning from their experiences can be especially beneficial for junior students, as it can provide guidance and mentorship as they navigate their academic and professional paths.

All educational institutions need to foster a positive and supportive learning environment for all students. This includes promoting fair and respectful relationships between students, regardless of class or seniority. In terms of Daffodil International University or maximum private university, it is a very common issue. For example, a few days ago a university bus was stuck in a traffic jam in the city. One police officer (SI) came to the bus and told about his daffodil details. Also, he provided his contact details in terms of any emergency for the students. This type of thousand examples can be presented here. This is a century of technology and social media. We all use smart devices. Technology has made it easier for current students and alumni to stay connected and build relationships. Many online tools and platforms can facilitate communication and connection, including social media, professional networking websites, and university-specific alumni portals. These tools can make it easier for current students to reach out to alumni and build relationships, even if they are not in the same location. Keeping in mind this concept, we are targeted to build a platform where alumni and current students can make collaboration and know about each other. To do so we made a project “ALUMNI”. To bridge the gap between senior and junior students, at Daffodil International University we can use technology and social media to create a platform for alumni and current students to connect. This platform can be used to share experiences, advice,

and resources. We will also create a mentorship program where alumni can mentor current students. This will help current students to gain valuable insights from alumni and also help alumni to stay connected with the university under the project. The university can also organize events such as alumni reunions, alumni meetups, and networking events to help alumni and current students connect using the platform. This application “ALUMNI” is a web application where the user can manually update their information and also can access it with the help of social media platforms like Facebook, LinkedIn, and Google. We will collect the professional profile of the alumni students.

## **1.2 Motivation**

The “ALUMNI” application is mainly motivated as a platform for collaboration. It can certainly be helpful for a fresher to have guidance and communication with alumni, as they can provide valuable insights and advice based on their own experiences in the competitive job market. Building a strong community with alumni can be a great way to foster connections and support within the professional network. It will also motivate juniors to Reach out to the alumni association or career center to see if they have any resources or events specifically for alumni-student networking. Also, attend career fairs and job events where alumni may be present, and make an effort to introduce juniors and start conversations.

## **1.3 Objectives**

1. To identify a point person or group responsible for maintaining the alumni database and organizing events or communication with alumni.
2. Set up a website or online portal where alumni can share their contact information, job titles, and any other relevant details, as well as information about their current professional activities. This could also be a place where juniors can post questions or requests for advice or guidance.
3. To reach out to individual alumni and ask if they would be willing to chat with you about their experiences and offer any advice or guidance.

4. Consider organizing events or virtual meetups where alumni and current students can interact and network. This could be a career fair, a networking event, or even just a casual social gathering.
5. To create a group or network specifically for alumni and current students, and use it to share updates, job openings, and other professional opportunities.

## **1.4 Expected Outcome**

1. Create your user profile which typically requires users to register for an account and provide some basic information
2. Here every user can access each other's profile and data which will help them to know each other
3. Through the profile of alumni, current students will be able to know information about the corporate community.
4. provide a valuable resource for students who are looking to learn more about different industries and career paths like Career counseling, Industry-specific resources, Internships, and co-op programs.
5. Users who are alumni of the university will also be able to get updates about the program and events like convocation and also can get participation-related help from the current status of the university.

## **1.5 Report layout**

In this part, the total overview of the report is discussed. The report layout we have described is organized logically and clearly, with each chapter focusing on a specific aspect of the work.

1. The introduction chapter provides an overview of the motivation and objectives of the work, as well as a plan for how the work will be completed.
2. The second chapter covers the background and related work, as well as any challenges encountered.
3. The third chapter discusses the procedure followed to complete the work, including the process flow diagram, use case diagram, and requirements analysis and design.
4. The fourth chapter focuses on the design specification, including the front-end and back-end components and implementation requirements.

5. The fifth chapter covers the implementation and experimentation process, and the final chapter presents the conclusion and any future work that may be planned.
6. Sixth chapter is the discussion of the implementation, explanation, and testing methodology of the project.
7. The seventh chapter covers the conclusion and future work of the whole project.

Overall, this layout provides a thorough and detailed description of the work that has been completed.

## Chapter 2

### Background

#### 2.1 Instruction

The main goal of our application is to gather all previous and current students under the same roof. It's like having our platform for growing up where everyone is from the same university and gets information about each other. This platform can build professional flexibility for the future generation of the university. Current students will be able to know about the companies, they will be able to learn about the working responsibilities for different job posts from alumni. Moreover, it tends to build a healthy collaboration with alumni and current students

#### 2.2 Related works

Different types of applications have already been created at DIU for managing the association of alumni. Some of them are given below:

##### 2.2.1 DIU Convocations

This is a web-based application where all details about convocation are mentioned and updated. Only convocation-related help alumni can find from this application. This application is a part of the main website of Daffodil International University.[1]

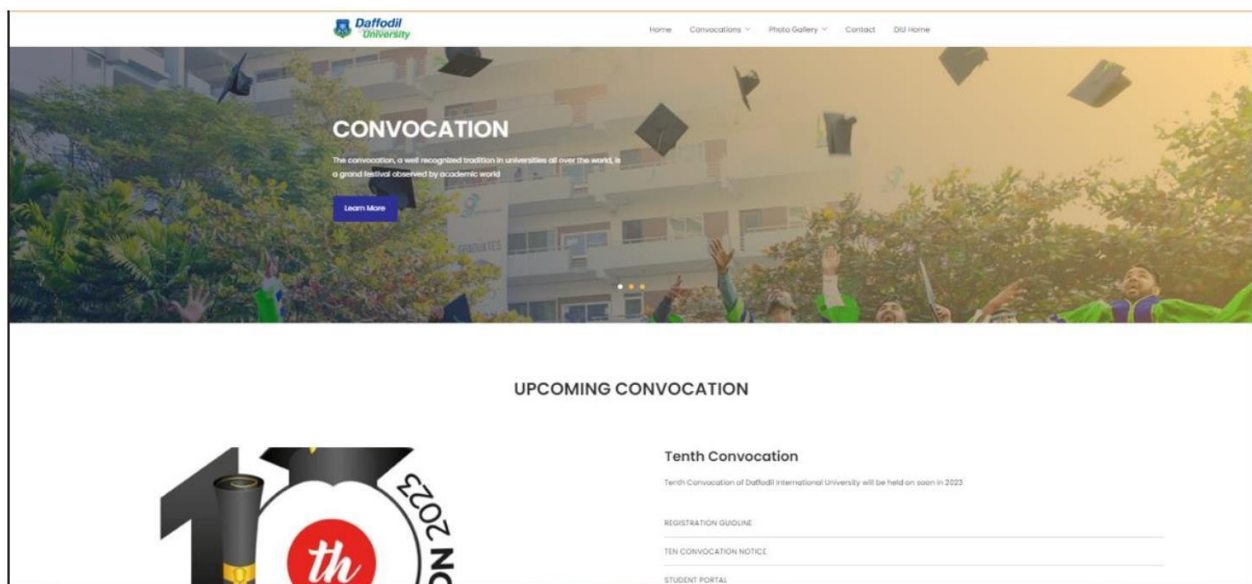


Fig: 2.2.1 Convocation site

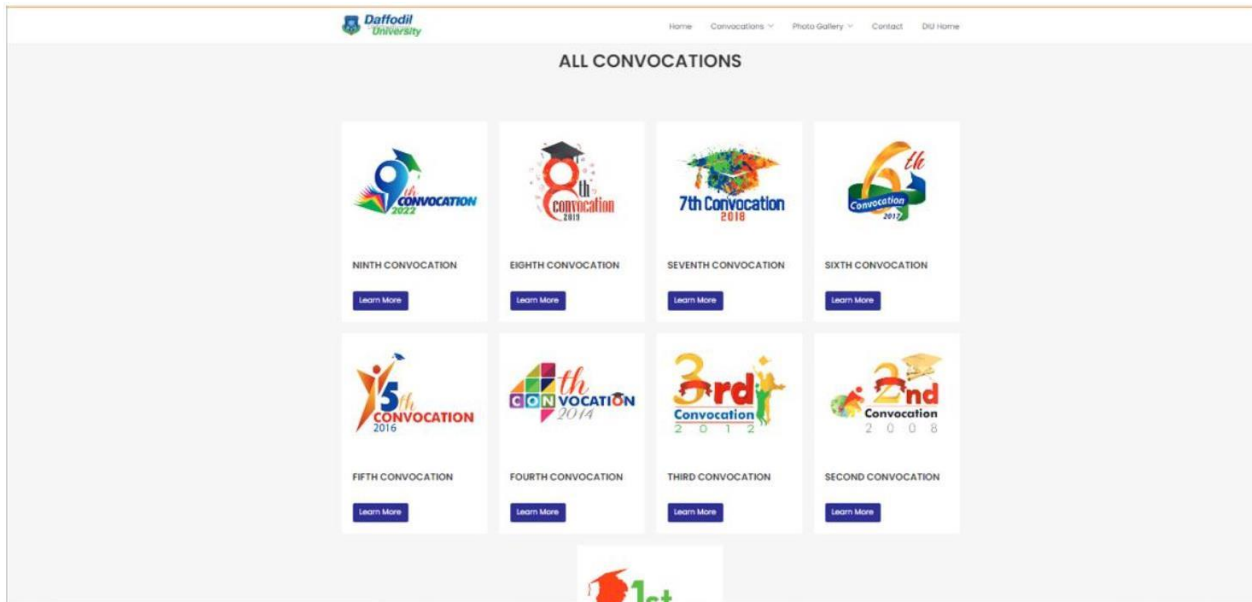


Fig: 2.2.1 Convocation site programs

### 2.2.2 Alumni List

This is also a part of the main DIU website. In this part, the name and designation of alumni are mentioned. [2]

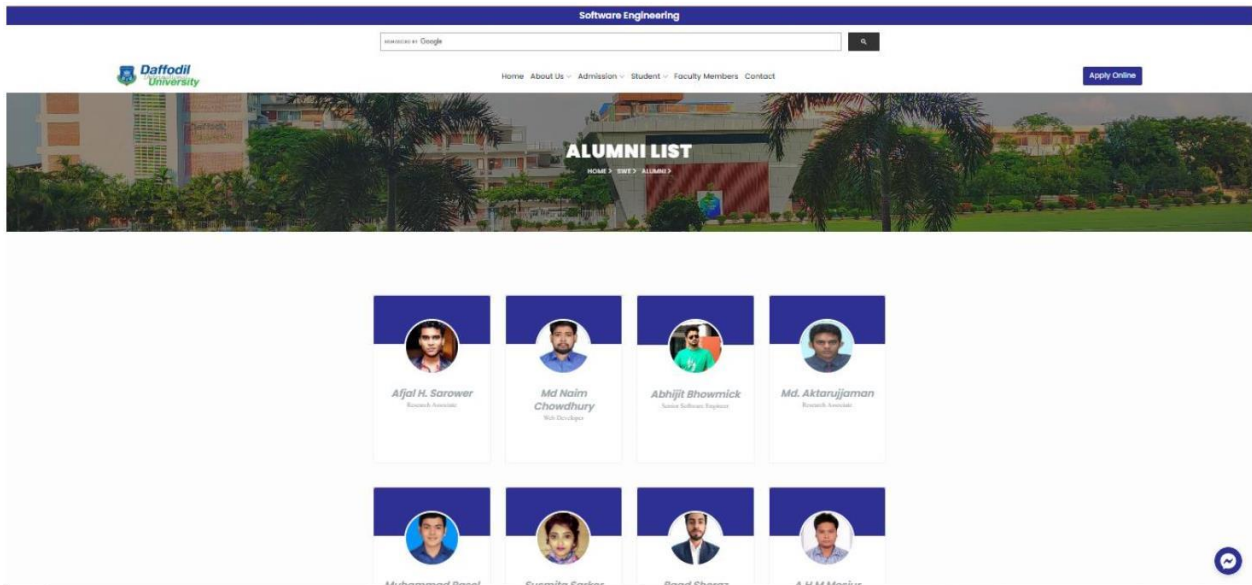


Fig: 2.2.2 Alumni list of existing work

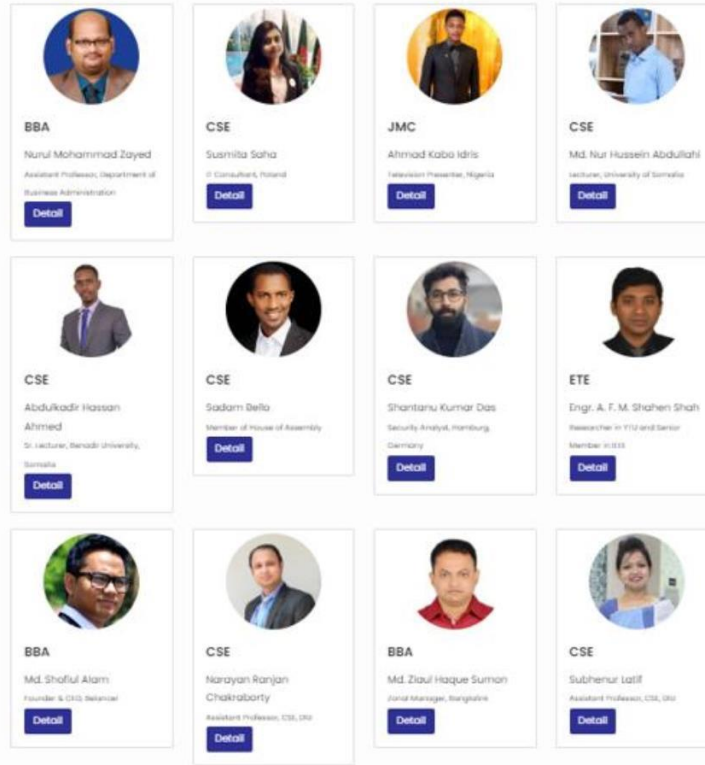


Fig: 2.2.2 Alumni list of existing work

### 2.2.3 Somporka

This website is a collaboration between Daffodil International University and Daffodil International University Alumni.[3]

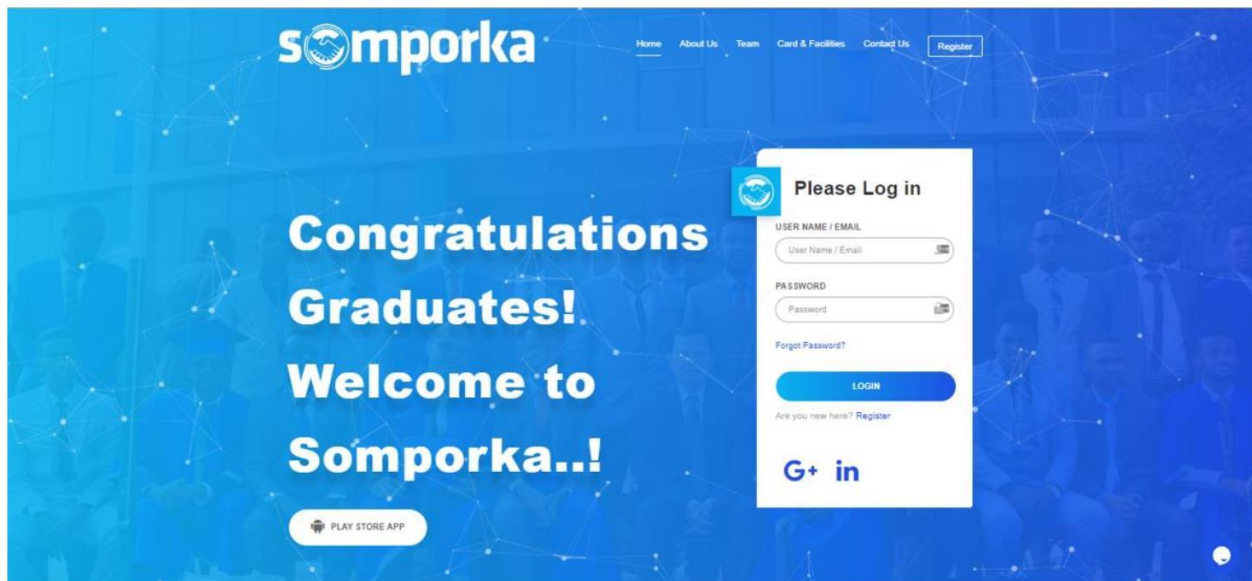


Fig: 2.2.3 Shomporka homepage



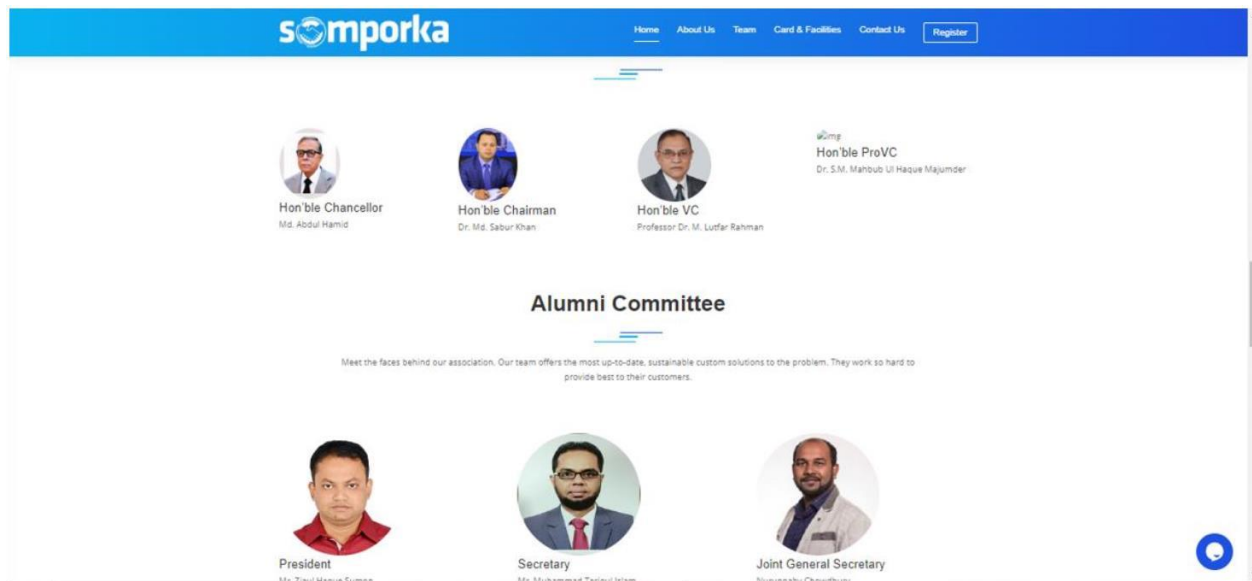


Fig: 2.2.3 Alumni Community

## 2.3 Comparative works

There are a lot of applications and features that have already been made based on this concept at Daffodil International University. They actually do not have all-inclusive functions. It is common for software applications to have some limitations and room for improvement. All those developed applications are also not out of this situation. Based on the features and capabilities of each application, we have researched and compared those to find the one that best meets your needs.

We are presenting a full package actually where we tried to solve those previous limitations and problems. It provides a collaborative platform for DIU students and alumni. The highest benefit will get the students. They will get to know about professional activities, job responsibilities, career choice help, guidance related to professional opportunities, a communication platform, and moreover a helpful community. On the other hand, alumni will get the opportunity to introduce their university family to the job market, and research platform. Also, get to know about the progress of their juniors, can build a community with them, get news about all kinds of programs and campus-related activities, and they also will be able to ask for any kind of help to their network.

## 2.4 Challenges

Developing a web project, particularly one as complex as an Alumni platform, can be challenging. Here are a few common challenges you face:

1. **Lack of technical skills:** If we are not familiar with web development technologies, we may find it challenging to build and maintain our own web project. To address this, we may want to consider learning the necessary skills through online courses or tutorials or hiring a developer to help us.
2. **Time constraints:** Building and maintaining a web project can be time-consuming, especially if we have other commitments. To manage our time effectively, we may want to set clear goals and priorities, break our project down into smaller tasks, and use tools to automate and streamline our workflow.
3. **Limited budget:** If we have a limited budget, we may have to be creative in finding ways to build and maintain our web project. We may want to consider using open-source tools and platforms, finding free or low-cost hosting and services, or seeking out volunteers or interns to help us.
4. **Data management:** An Alumni platform will likely involve collecting and storing a lot of data, which can be challenging to manage. To address this, you may want to consider using a database management system to organize and manage our data and implementing security measures to protect sensitive data.

## **Chapter 3**

### **Requirement Specification**

#### **3.1 Process flow diagram**

A process flow diagram is a graphical representation of a business process that shows the flow of activities and tasks involved in the process. It typically uses standardized symbols and shapes to represent different types of activities and tasks, and lines to indicate the flow of work from one step to the next[4]. We have used this workflow diagram in designing and improving processes to present the working process of the system. We have created the diagram with the help of flowcharting software. The process flow diagram is used in web application development to visually represent the various steps and actions that occur during the use of the application. This can include user interactions, data input and processing, and communication with other systems or databases. Having a clear and detailed process flow diagram can help developers understand the overall architecture and functionality of the application, and can also be used as a guide for testing and debugging. It can also be helpful for documentation, communication, and collaboration between development team members, and for understanding how the application will be used by end users.

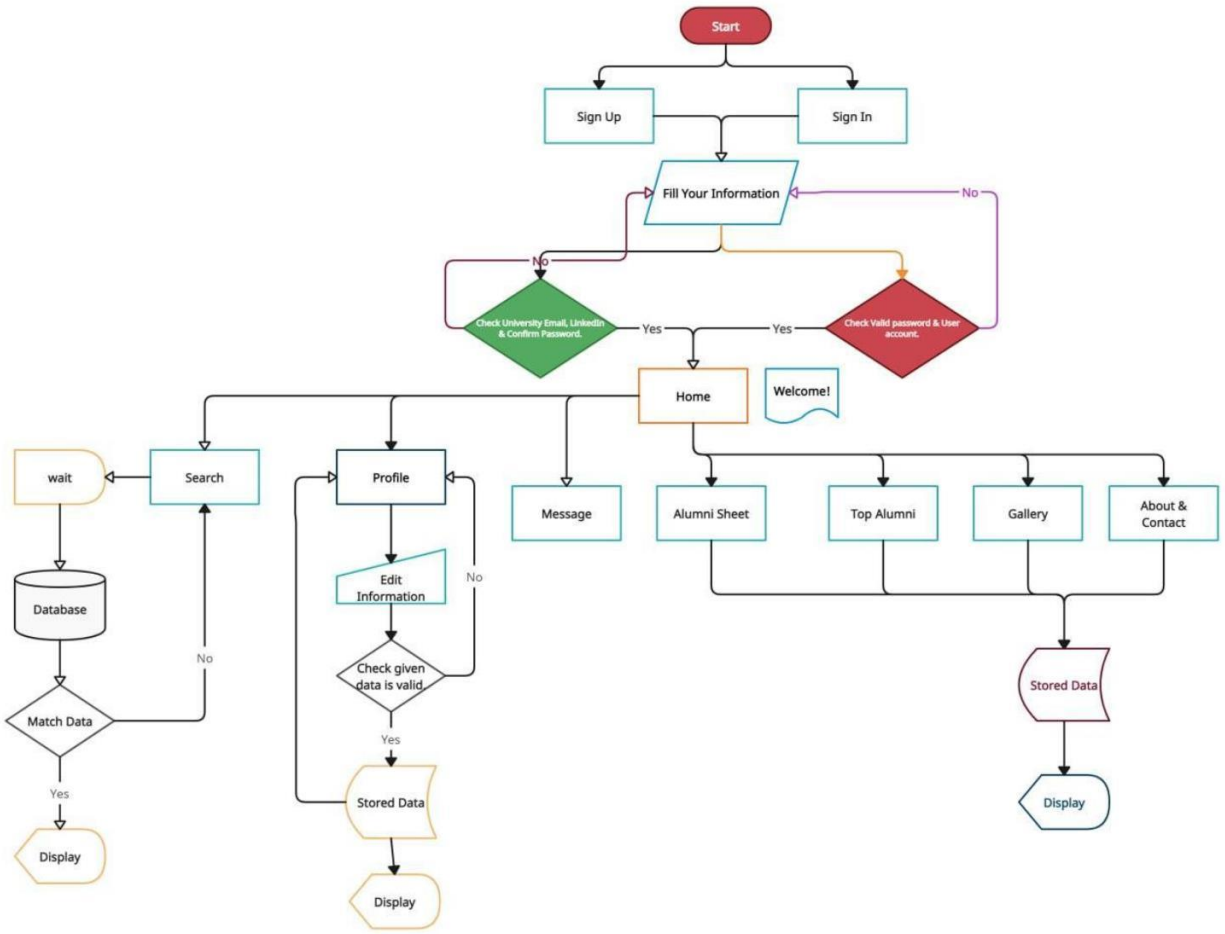


Fig: 3.1 Process flow diagram

### 3.2 Use case diagram

A use case diagram is a type of visual representation used in the field of software engineering to describe the interactions between a system and its users, or actors. It is a graphical representation of the relationships between the actors and the use cases in which they are involved. With the help of a Use case diagram, we will be able to Define the different use cases or the specific interactions between the user and the system. We have created it with the help of diagramming software.

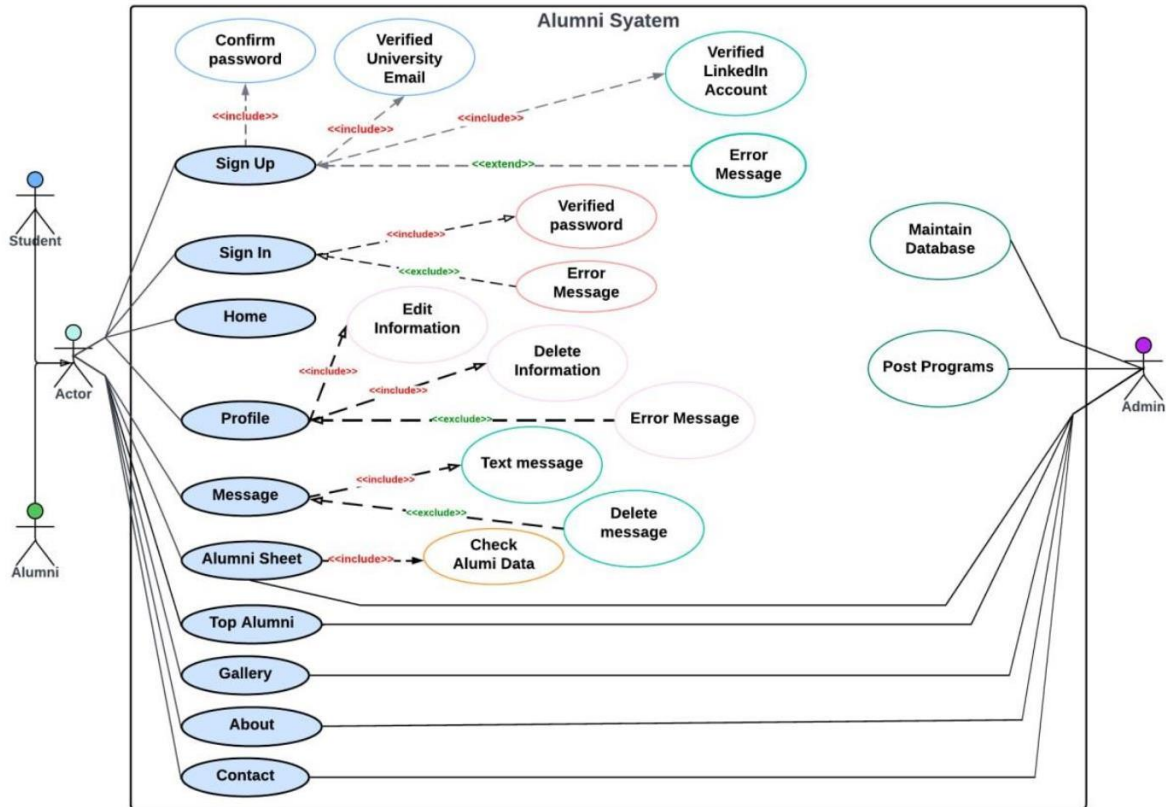


Fig: 3.2 Use Case Diagram

In our project users like alumni and current students are able to access all the functionalities shown on the home page with a valid account. The most important feature messaging facility can be accessed by both users for communications and personal queries which will not be visible to all. From the admin panel database will be maintained and different types of declarations like events, competitions, job vacancies, etc will be done too.

### 3.3 UML Class Diagram

A UML class diagram is a type of static structure diagram that describes the structure of a system by showing the system's classes, attributes, operations (or methods), and relationships among objects. Class diagrams are widely used in software engineering to describe the types of objects in a system and their relationships.

UML class diagrams are used to model the structure of a web application. They provide a visual representation of the application's components, their relationships, and the interactions between them. UML class diagrams can help developers understand the structure of the application, identify potential problems, and plan for future development. They can also be used to document existing applications and to communicate design decisions to other participants.

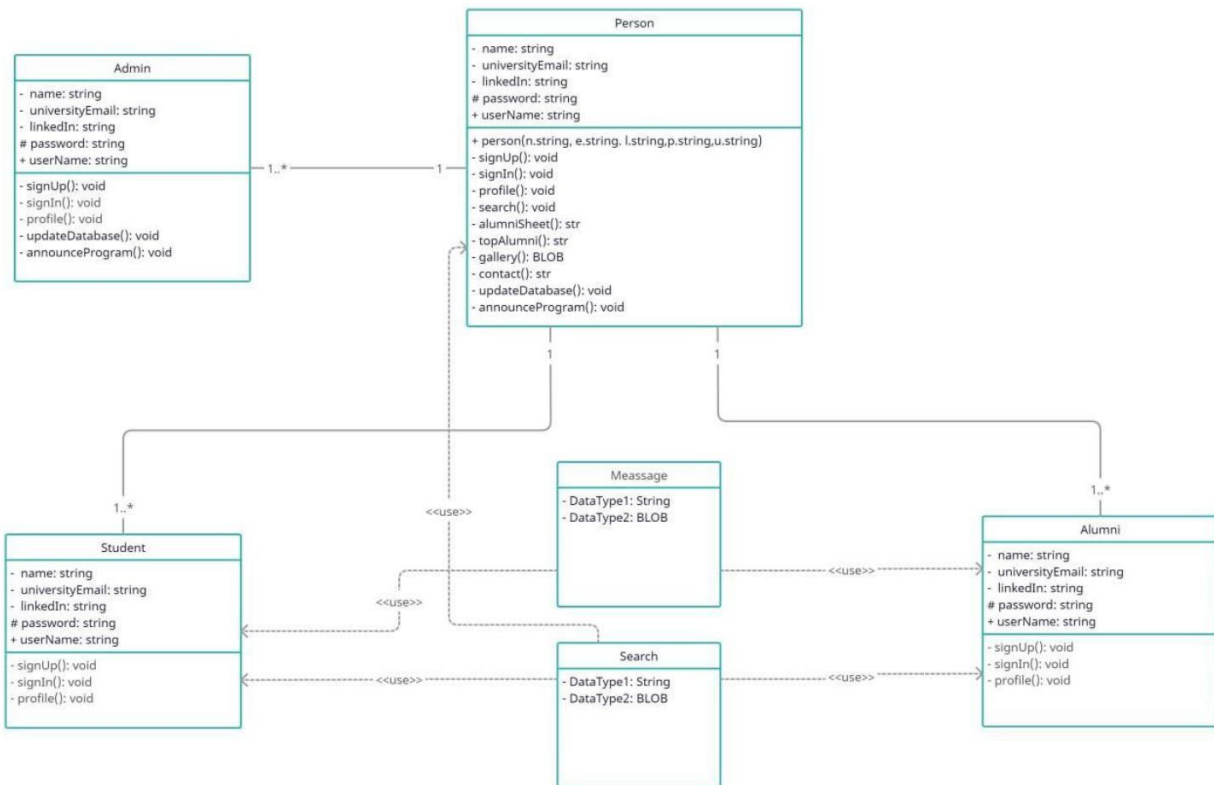


Fig: 3.3 UML Class Diagram

### 3.4 ER Diagram

An ER diagram, or entity-relationship diagram, is a graphical representation of entities and their relationships with one another. It is used in database design to illustrate the relationships between tables and to help identify the relationships between different entities in a system. ER diagrams typically include entities, attributes, and relationships, and are often used in software engineering and information systems to design and document database systems.

ER diagrams are used in web application development to help design and plan the underlying database system that will be used to store and retrieve data for the application. They provide a visual representation of the entities and relationships that will exist within the database, which can help developers understand the structure of the data and how it will be organized.

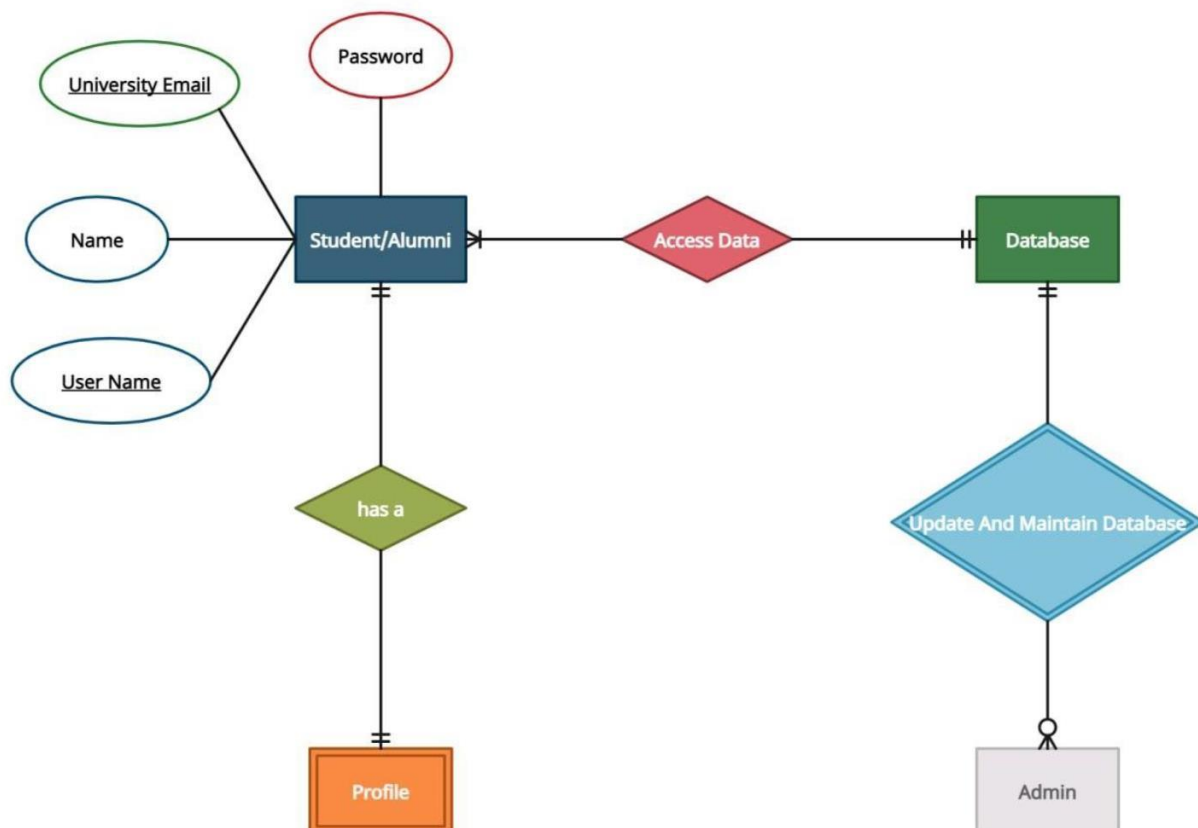


Fig: 3.4 ER Diagram

## **Chapter 4**

### **Requirement Collection and Analysis**

Proper requirement analysis helps to identify the goals and objectives of the product and to define the functional and non-functional requirements that the product must meet. This step is critical because it sets the foundation for the entire development process and helps to ensure that the final product is successful. With the help of requirement analysis and collection, we will be able to ensure that the system “ALUMNI” being developed meets the needs of the users and stakeholders.

#### **4.1 Functional Requirements**

1. A login option for User
2. Registration for User
3. Login using google, and LinkedIn
4. Dashboard for user information
5. Access information about alumni
6. Chat box option for chat
7. Manual data updating
8. Search data using student id and batch number
9. Collaboration tools for communication and collaboration among team members

#### **4.2 Non-functional Requirements**

1. Total system in the English language
2. Limitless browsing of the system
3. User-friendly user interface
4. Search data using student id



### 4.3 Design Requirements

It refers to the specific requirements that we considered when designing the system “ALUMNI”. With the functional and non-functional requirements, in this part we also included aesthetic and usability requirements, which describe the desired look and feel of the product, as well as the user experience and ease of use. We will also include performance requirements, security requirements, and regulatory requirements. In this system, we have focused on the collaboration of alumni and current students with a chat box and the information accessing rule of alumni. The main features of our developed system are given below:

1. There are three users in this system.
  - a. Admin
  - b. Alumni
  - c. Current student
2. Full control of the system is on admin. He can only handle all the manual settings, designs, and data.
3. At first, the user has to create a profile to log in to the system
4. Or using google or LinkedIn user can log in
5. Their shared information on LinkedIn or google will be fetched
6. An automated CV will be generated
7. Users can share their own data like name, job post, phone number, company, etc.
8. With the messaging option, users can contact each other like alumni can contact or a current student can contact alumni.
9. Version control systems (VCS) for managing and tracking changes to code
10. Project management tools for organizing and tracking tasks and progress
11. Testing tools for verifying the functionality and performance of the product
12. Deployment tools for packaging and deploying the final product to production environments

## **Chapter 5**

### **Design Specification**

The design specification is basically the technical specification that tends to develop the design made for the system's front and back ends. In this part, we will demonstrate the design which we created to implement our system “ALUMNI ”. We considered the tools and platforms that will be used in the development process to ensure that they are appropriate for the project and will meet the needs of the development team. We also created some specific features and platforms for the system.

#### **5.1 Front-end Part**

The front end of a website is the part that users interact with directly. It is responsible for the layout, design, and overall look and feel of the site. The front end is typically built using HTML, CSS, and JavaScript, and it is important to ensure that it is easy to use and navigate for the user. A well-designed front-end can greatly improve the user experience, while a poorly designed front-end can turn users away. In addition to the design and layout of the site, the front end also plays a crucial role in ensuring that the site is responsive and works well on different devices, such as desktop computers, tablets, and smartphones.

In our system “ALUMNI” front-end part, we have used HTML, CSS, JavaScript, and PHP. We have used HTML to create the structure and content of a web page and to define the different elements on the page, such as headings, paragraphs, lists, and links, and to specify how these elements should be displayed in the browser. We have used CSS to control the appearance and layout of the page, including things like font size, color, and spacing. JavaScript is used to create interactive and dynamic web pages like responses to user input. PHP is used to design the database.

##### **5.1.1 Home page of ALUMNI**

The first page of our site is the home page. It typically serves as an introduction to the site and provides links to the other pages or sections of the site. The home page also includes important information such as the mission statement, contact information, and recent news or updates.

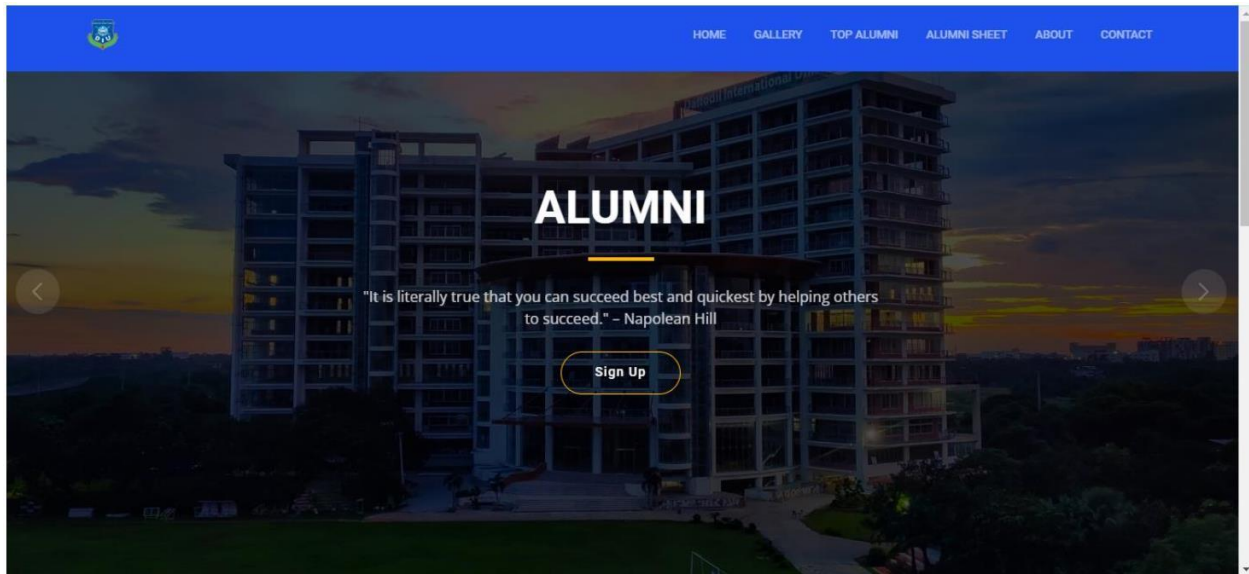


Fig: 5.1 Home page

### 5.1.2 Login page of ALUMNI

A login feature on a website is a way for users to gain access to restricted or personal information. Our system requires the user to enter a unique combination of a username and password. If the entered information matches the information stored in the site's database, the user will be granted access. Some websites also use other forms of authentication such as two-factor authentication or use third-party services such as Google or Facebook to authenticate the user. Once the user is logged in, they may have access to additional features or content that is not available to users who are not logged in.



Fig: 5.1.2 login page

### 5.1.3 Sign-up page of ALUMNI

A sign-up page, also known as a registration page, is a feature on a website that allows new users to create an account. This typically involves filling out a form with personal information such as a name, email address, and password. Once the form is submitted, the information is typically stored in a database, and the user is sent a confirmation email to verify their account. After verifying their account, the user can then log in to the site using their new account. Sign-up pages are often used for sites that require user accounts for personalized services such as online shopping, email, social media, or online communities.

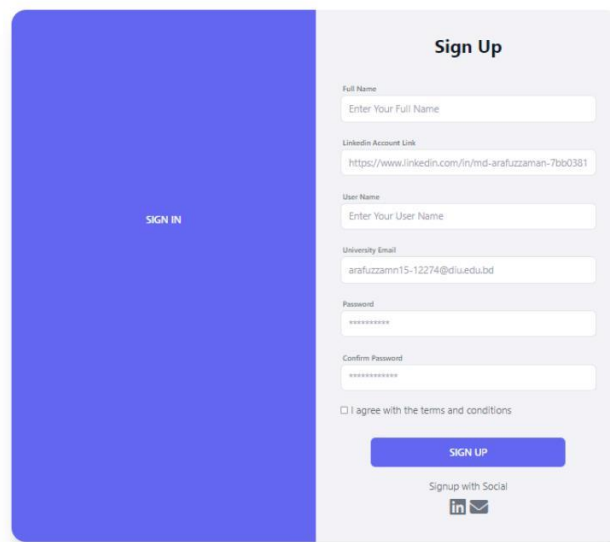


Fig: 5.1.3 sign up page

### 5.1.4 Home page after login

The home page after login on a website is typically different than the home page that is shown to users who are not logged in. Once the user has successfully logged in, the site will often display personalized information, links or options that are specific to that user. This can include things like their account settings, their personal information, their purchase history, or any content that is specific to them. The home page after login may also provide quick links to the most frequently used features or pages for that user, making it easy for them to find what they need. Additionally, the home page after login may display notifications or alerts related to the user's account or activities on the website.

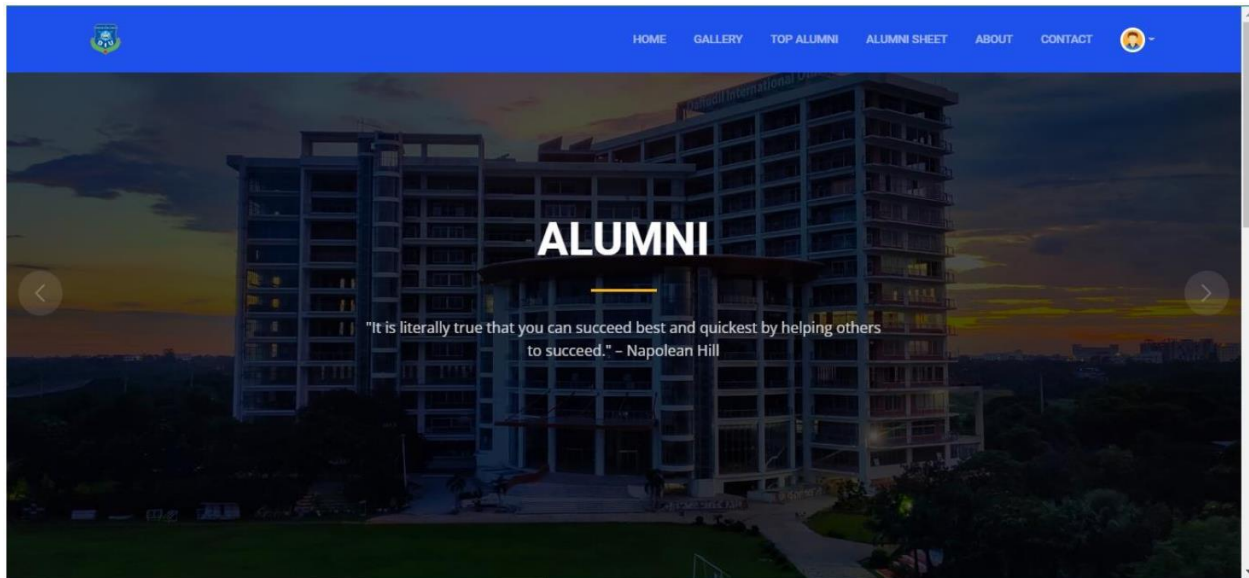


Fig: 5.1.4 Home page after login

### 5.1.5 Gallery

A gallery on a website is a feature that is used to display a collection of images, videos, or other media in an organized and visually pleasing way. The gallery can be used to showcase photos, artwork, products, or other visual content. Gallery pages often include a grid or rows of thumbnails that link to larger versions of the images or videos. Some galleries may also include captions, titles, or other information about the items in the gallery. Galleries can be used to present visual information in a user-friendly and engaging way. In our system gallery is holding the memory of different events of Daffodil International University like convocation, parent's day, and Job fair by yearly serial.

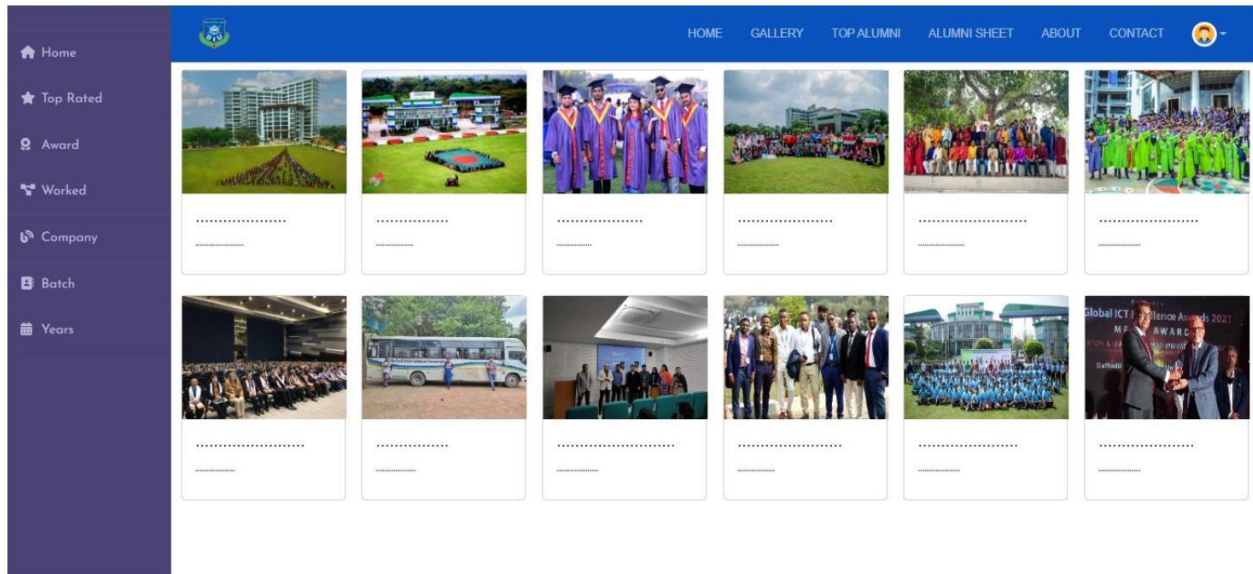


Fig: 5.1.5 Gallery

### 5.1.6 Alumni Sheet

An alumni sheet, also known as an alumni directory or alumni list, is a feature on a website that provides information about the graduates of a particular school, college, or university. The sheet includes the names, contact information, and possibly other details such as occupation, location, and graduation year of the alumni. This is to help alumni and current Students connect with each other, update their information, and keep them informed of the latest news and events of their school or university. We also included a search feature to allow users to easily find specific alumni. Alumni sheets is one of the main parts of our system which will help collaboration.

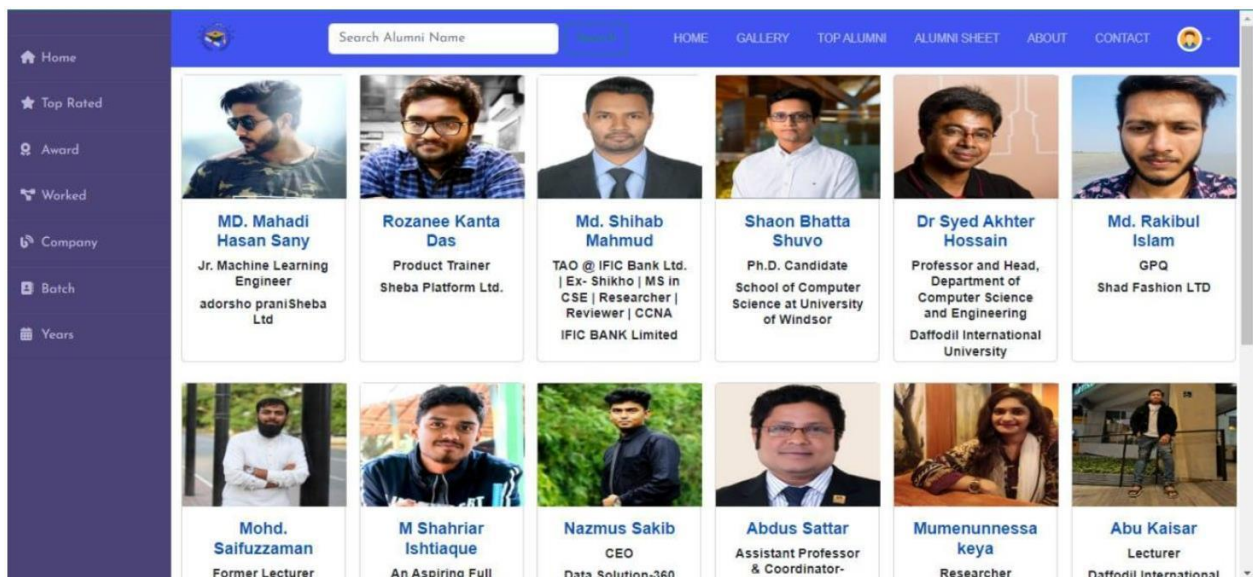


Fig: 5.1.6 Alumni sheet

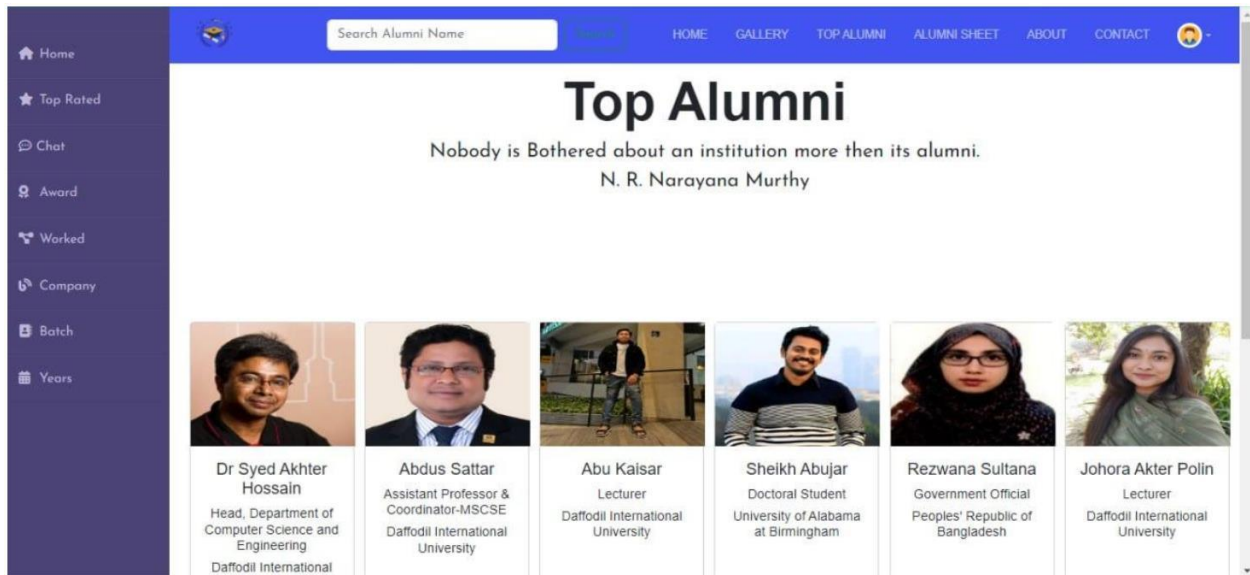


Fig: 5.1.6 Top Alumni of the sheet

### 5.1.7 User Profile

User profile contains the profile details of each user which can see all the registered user of the system

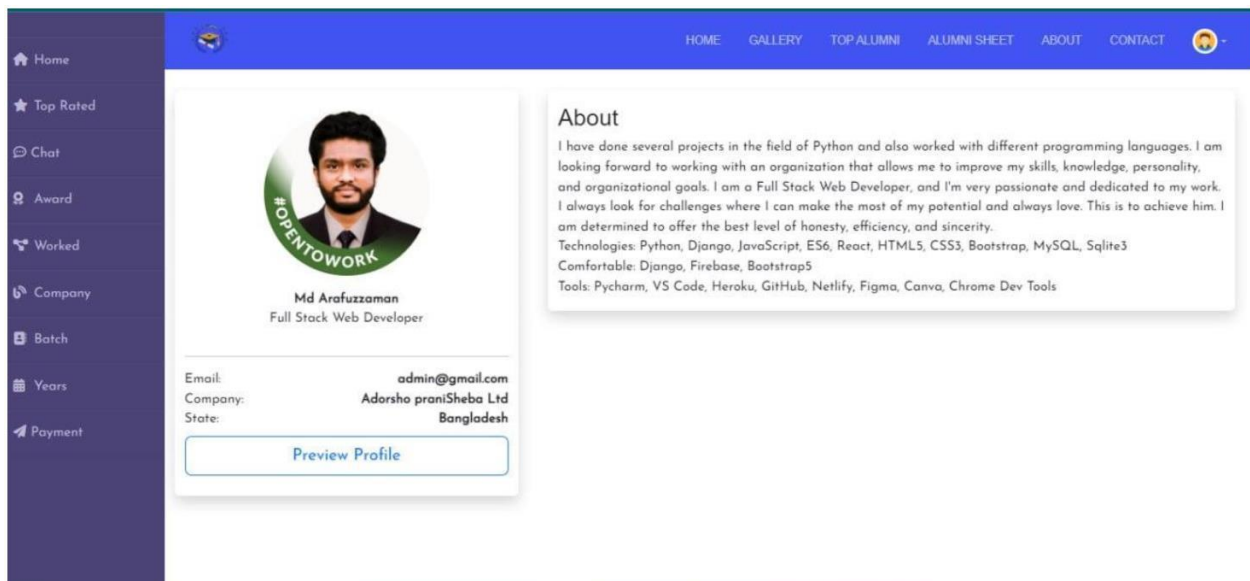


Fig: 5.1.7 User profile

### 5.1.8 Messaging Option

A messaging feature in a website allows users to communicate with one another in real-time or asynchronously.

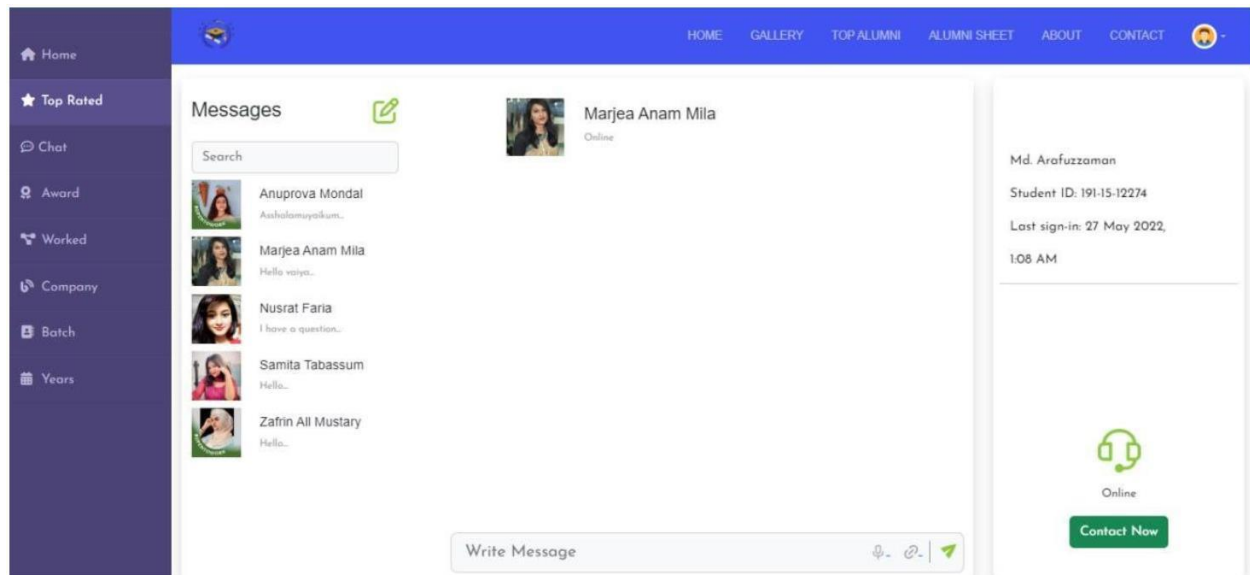


Fig: 5.1.8 Messaging option

### 5.1.9 About ALUMNI

The "About" page on a website typically provides information about the organization or individuals behind the site. We included details such as the history of the system, the mission statement, the team members and our roles, contact information, and any other relevant information that gives the visitors an understanding of who are we behind the site and what our purpose is. The "About" page is usually one of the most visited pages on a website, as it provides visitors with a sense of the company's identity, values and goals. It is linked to the homepage or the main navigation menu of a website and can be a great opportunity for organizations to build trust and credibility with their visitors.



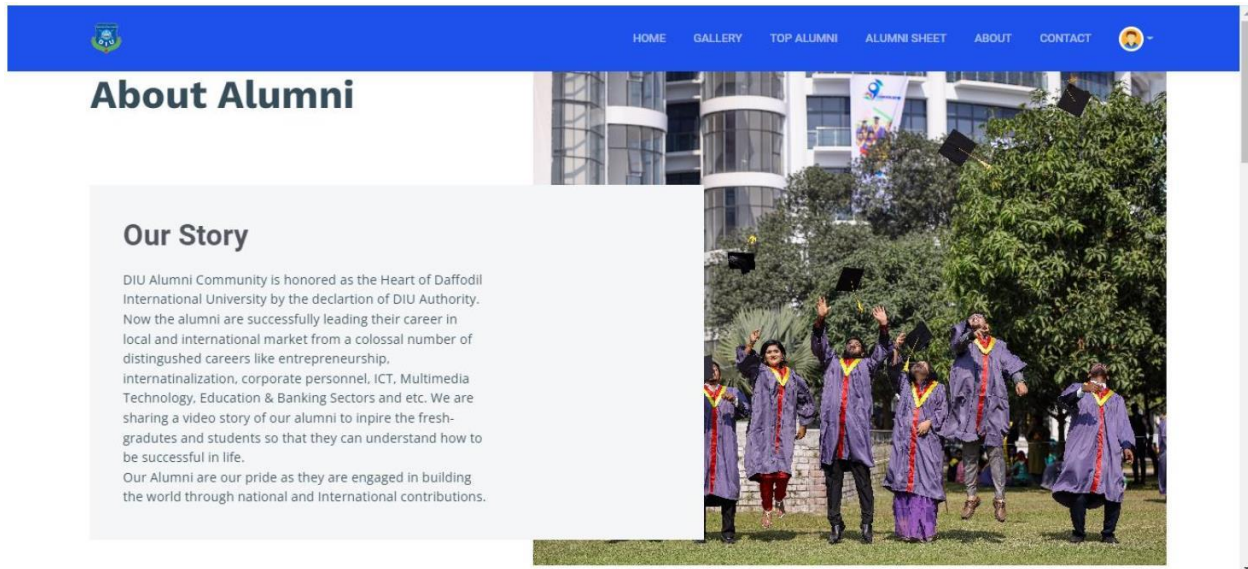


Fig: 5.1.9 About

### 5.1.10 Contact system or information of ALUMNI

The "Contact" page on a website typically provides a way for visitors to get in touch with the organization or individuals behind the site. It usually includes contact information such as an email address, telephone number, and physical address. We also included an online contact form, which allows visitors to send a message directly from the website without having to compose an email. Websites also include a live chat feature, social media links, or a map of the physical location. The "Contact" page is an important feature on a website as it allows visitors to easily reach out to the organization with questions, comments, or feedback, which can help to build customer loyalty.

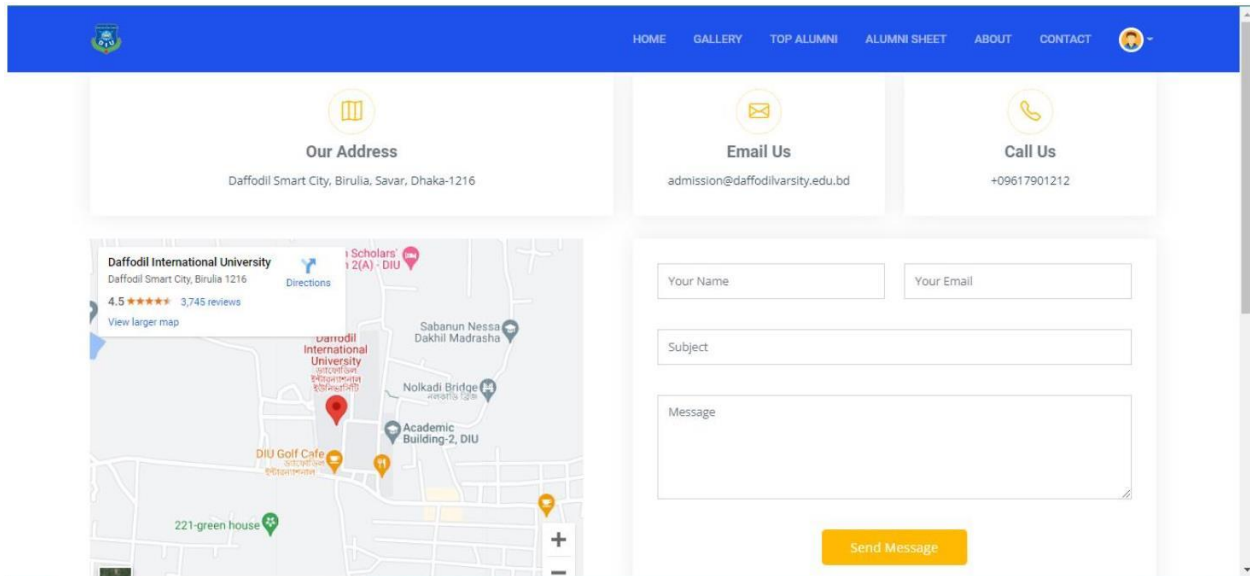


Fig: 5.1.10 Contact information

## 5.2 Back-end Part

The back end of a website or application is the part that is responsible for server-side processing and logic. It is what powers the front end and controls the functionality of the site or app. The back end typically consists of a server, an application, and a database. The server is what hosts the website or app and serves the content to the user's device. The application is the code that runs on the server and performs tasks such as processing data, generating dynamic content, and handling user requests. The database is where data is stored and retrieved from.

We have used JavaScript, PHP, and python for our backend programming language. The working description for a particular part is given below:

Firstly the database of the system “ALUMNI” is created using SQLite 3. Data we get from the Sign-up form is stored in Django administration. Forms are done using PHP language and in all forms like Sign up, and get any query we did Authentication using PHP and JavaScript.

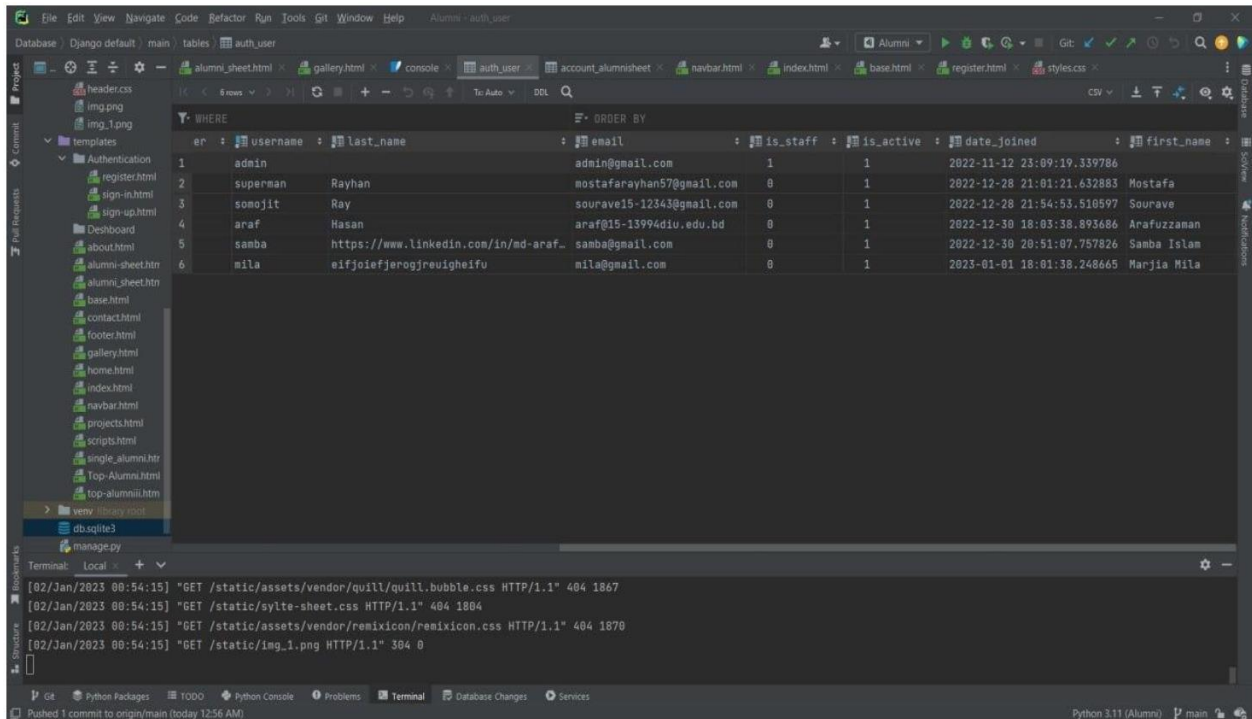


Fig: 5.2 Database of user information

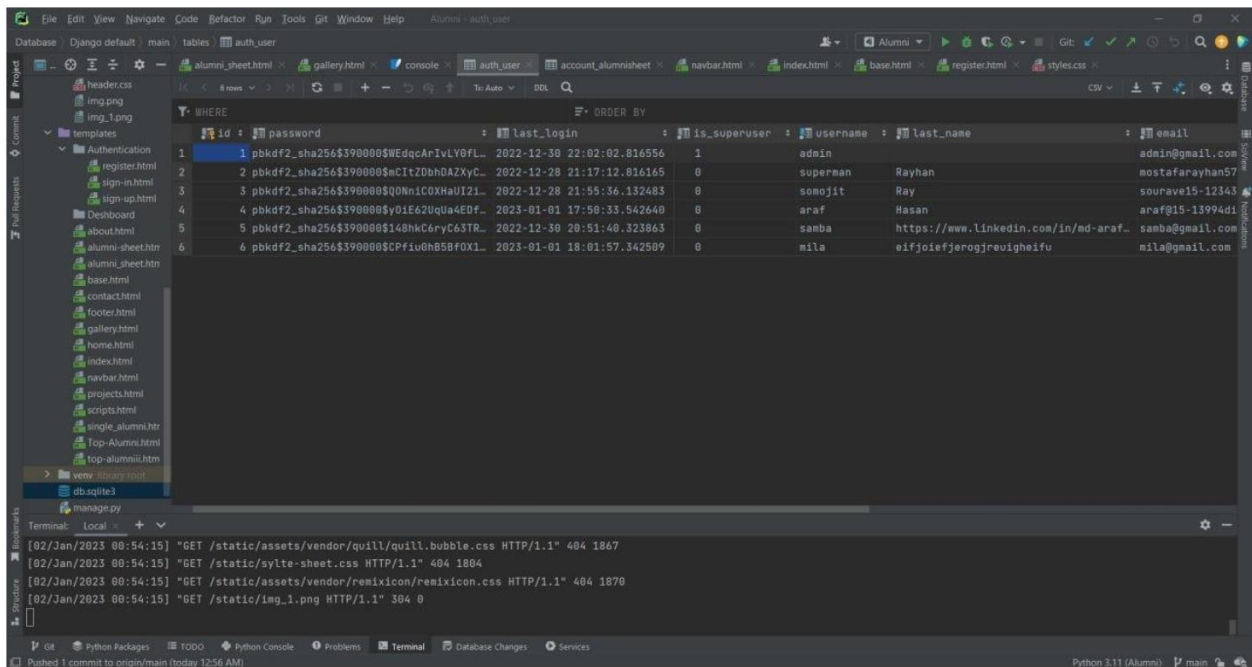


Fig: 5.2 Database of user information tracking

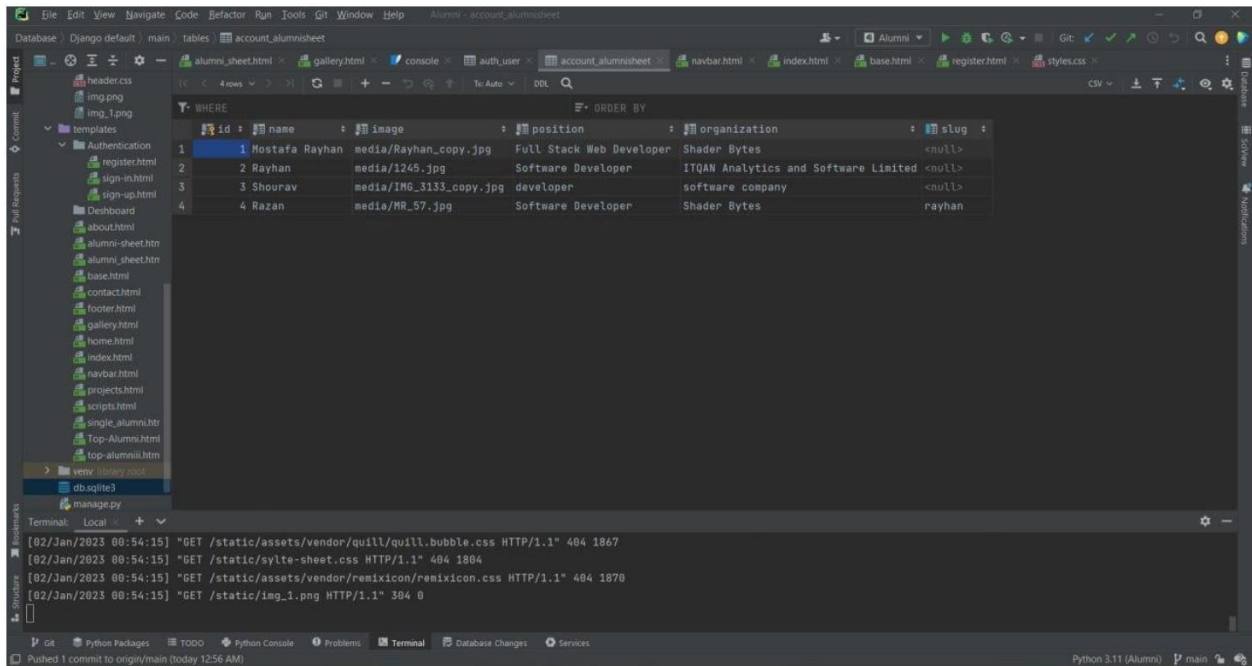


Fig: 5.2 Database of alumni sheet

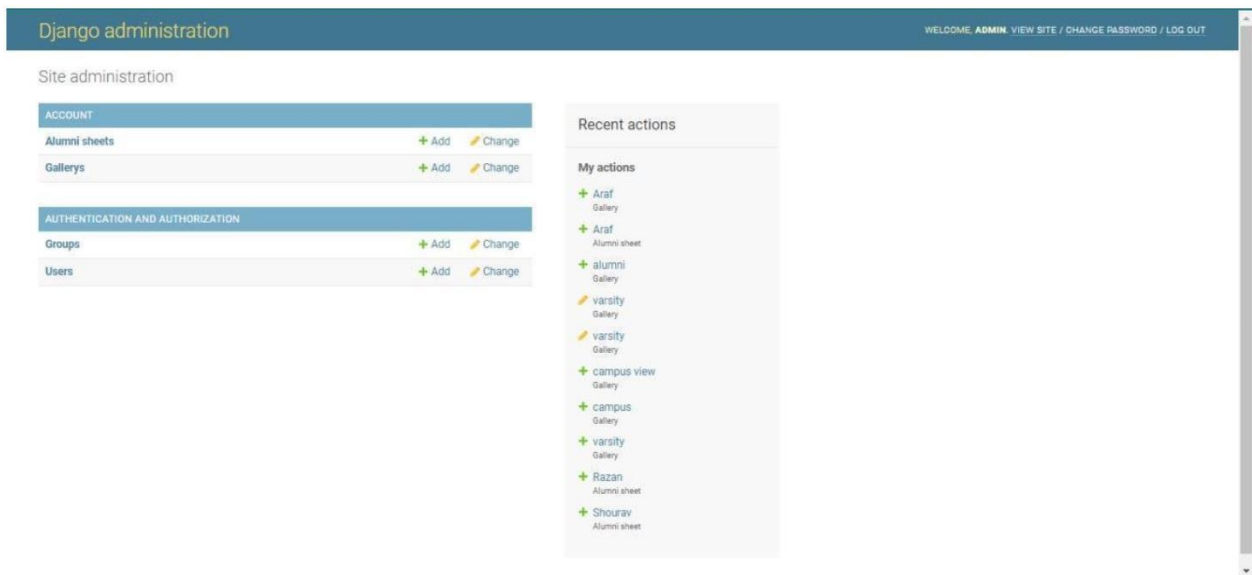


Fig: 5.2 Django default administration storage

### **5.3 Interaction Architecture and Figma**

Interaction architecture is a key part of the design of an application or website. It determines how users will interact with the application and how they will provide input, receive output, and navigate through the various features and functions of the application. Interaction design is focused on creating a seamless and intuitive experience for the user, and it considers factors such as usability, accessibility, and user-centered design principles. This can involve researching and understanding the needs and preferences of the target audience, and designing the application to meet those needs in a user-friendly way. The registration and login process can also be important for maintaining the security and privacy of the application and its users. By requiring users to register and log in using verified information, you can ensure that only authorized users have access to the application and that their data is protected. This can help to build trust with users and contribute to the overall success of the application. We are primarily concerned with the applicability of the program, and there is a function that requires users to sign up and log in using valid information.

We have used Figma and with its help of it, we have provided a consistent and intuitive layout, with clear headings, sections, and hierarchy to help users find and understand the content, Implemented responsive design, so that your designs look and work well on different devices and screen sizes. We have focused on simplicity and ease of use in our application to Clearly communicate the purpose and value of our application to users and Use intuitive and consistent navigation to help users find what they are looking for.

### **5.4 Implementation Requirements**

We have used different types of devices and programs to implement our project. The total project is categorized into two parts: Front end and back end. To complete these two categories we have used different types of tools like programming platforms.

Used requirements in this project:

- Programming language JavaScript, python, HTML, CSS, PHP: JavaScript, Python, HTML, CSS, and PHP are all programming languages that are commonly used to create

and maintain websites. JavaScript, Python, HTML, CSS, and PHP are all programming languages that are commonly used to create and maintain websites. Python is a high-level programming language that is often used for web development and scientific computing. Python is known for its simplicity and readability, it's used for building a wide range of web applications, such as web scraping, web scraping, and machine learning. HTML is used to create the structure and layout of web pages. It is the backbone of web pages, and it provides the basic structure of the document. CSS is used to control the presentation and layout of web pages. It allows developers to create consistent and visually appealing designs across a website. PHP is a server-side scripting language that is commonly used to create dynamic and interactive web pages. It can be used to interact with databases, create forms, and handle user input.

- Framework Bootstrap 5, Django: Bootstrap 5 is a front-end framework that is used to create responsive and mobile-friendly web pages. It provides a set of pre-designed components, such as forms, buttons, and navigation menus that can be easily customized and integrated into a website. Bootstrap 5 also includes a powerful grid system, which allows developers to create layouts that automatically adjust to different screen sizes. Django is a back-end framework that is written in the Python programming language. It is used for building complex and data-driven web applications. Django provides a high-level, reusable set of components for common web development tasks, such as handling user authentication and working with databases.
- PyCharm: PyCharm is an Integrated Development Environment (IDE) for the Python programming language. PyCharm provides a wide range of features that make it easy to write, debug, and maintain Python code.
- Real-time database
- Power supply
- API
- Operating system Windows 10

## **Chapter 6**

### **Implementation and Explanation**

We are using SQLite in your project because of a lightweight, embedded database that is simple to deploy and does not require a separate server process or configuration. The SQLite library is easy to integrate into our project, and the API provides a simple way to execute SQL statements and manipulate the database. Additionally, SQLite is open-source and free to use, making it a great choice for our project.

#### **6.1 Implementation of Database**

First, we can see our sign-up page. When the user successfully sign-up his account then comes to the main home page of our website. This system we implement using SQLite-3. We really want an IDE (Incorporated Improvement Climate) to involve SQLite-3 in our web project. There are different sorts of IDEs for creating web projects like PyCharm and Visual Studio. We used PyCharm to complete this segment. SQLite is a free, open-source, lightweight, embedded, and standalone SQL database engine. It is a self-contained, file-based database engine that does not require a separate server process or configuration. SQLite is a popular choice as an embedded database software because it is simple to deploy, requires minimal support from external libraries or processes, and has a small footprint[6]. It is written in C and provides a simple and easy-to-use API that can be integrated into a wide variety of programming languages, including C, C++, C#, Python, Java, and many others. To use SQLite in a web project, you will need to use a server-side language that has SQLite support. Some common server-side languages that have SQLite support include PHP, Python, and Node.js

We consider a few things using SQLite in your project:

- Make sure to properly close the database connection when you are finished with it to release resources and prevent data corruption.
- Use transactions to ensure data consistency and atomicity when making multiple changes to the database.

- Enable foreign key constraints to enforce referential integrity.
- Use indices to improve the performance of queries that filter or sort data.
- Consider using a third-party tool or library to simplify working with SQLite in our project

## 6.2 Experimentation

There are many ways you can experiment with our web project to test out new ideas or features.

- **Use a local development environment:** Set up a local development environment on our own computer, where we can make changes and test them without affecting the live version of our project.
- **Use version control:** Use a version control system like Git to track changes to our codebase. This will allow us to experiment with different versions of our project and easily switch between them if needed.
- **Use feature branches:** In Git, create a new branch for each new feature or experiment we are working on. This will allow us to isolate our changes and test them without affecting the main development branch.
- **Use staging environments:** Set up a staging environment where we can test changes before deploying them to the live site. This can be helpful for identifying and fixing bugs before they are visible to users.
- **Use feature flags:** Use feature flags to enable or disable new features for specific users or groups of users. This can allow us to test out new features with a small group of users before rolling them out to everyone.

## 6.3 Testing Methodology

After the development process is completed, it is an important step to ensure that the software meets the specified requirements and works correctly. It is one of the most important parts of any project, as it helps to identify and fix bugs and improve the overall quality of the software.

There are many different types of software development tests, including unit testing, integration testing, functional testing, performance testing, security testing, compatibility testing, and acceptance testing. Each type of test serves a specific purpose, such as checking individual units or components of the software, ensuring that the different components of the software work



together as expected, or checking that the software meets the acceptance criteria established by the client or end-user.

Website testing is also the same process of evaluating a website or web application to ensure that it functions correctly and meets the requirements of the stakeholders. There are several types of website testing, including

- **Functional testing:** This type of testing checks that the website's features and functions work correctly and as expected. This can include testing forms, links, buttons, and other interactive elements.
- **Usability testing:** This type of testing evaluates the website's user interface and user experience to ensure that it is easy to navigate and understand.
- **Performance testing:** This type of testing checks the website's speed, responsiveness, and scalability under different loads and conditions.
- **Security testing:** This type of testing checks that the website is secure and protected against potential threats such as hacking and data breaches.
- **Compatibility testing:** This type of testing checks that the website works correctly across different browsers, devices, and operating systems.
- **Accessibility testing:** This type of testing checks that the website is accessible to users with disabilities, such as those using screen readers or keyboard-only navigation.

The benefits we get from testing are:

- **Identifying and fixing defects early:** Software testing helps to identify defects early in the development process, which makes it less expensive and time-consuming to fix them.
- **Reducing costs:** By identifying and fixing defects early in the development process, software testing helps to reduce costs by minimizing the need for expensive rework and maintenance.
- **Improving reliability:** Software testing helps to improve the reliability of the software by identifying and fixing defects that could cause the software to fail or malfunction.
- **Improving security:** Software testing helps to improve the security of the software by identifying and fixing defects that could make the software vulnerable to hacking or data breaches.

## Chapter 7

### Conclusion and Upcoming work

In this part, we have discussed the overall decision and conclusion of our project. The future scope of this project and how it is effective are mainly discussed here.

#### 7.1 Conclusion

This application is mainly a student-helping platform with a combination of relationship-building with alumni. A student will get the benefit of job finding and will get the opportunity to build their communication skills along with educational knowledge. They will also get experienced advice and instruction in terms of job field and get the opportunity to know about the recruitments of different companies through the alumni newsfeed. Alumni will get to know about the current activities of the university and they will also be able to collect their capable team members from their university families. Moreover, this system is a package of benefits for both students and alumni. Mainly a collaboration platform for students and alumni.

#### 7.2 Future work

There are many potential areas for the development of our system ALUMNI. Some potential areas are

- **Integration with social media:** Integrating the alumni system website with social media platforms such as Facebook and LinkedIn could help to expand the reach and engagement of the alumni network.
- **Mobile optimization:** Optimizing the alumni system website for mobile devices could help to improve the user experience for alumni who are on the go. Continuously improve the design and functionality of the platform to make it easier and more enjoyable for users to navigate and interact with.
- **Career services:** Adding career services to the alumni system website, such as job listings and career resources, could help to support alumni in their professional development.

- **Event management:** Adding event management functionality to the alumni system website could help to organize and promote events for alumni, such as networking events, reunions, and fundraisers.
- **Data analytics:** Implementing data analytics tools could help to track and analyze data on alumni engagement, such as website traffic, event attendance, and donations.
- **Personalization:** Incorporating personalized features such as customized dashboards and targeted communications could help to increase engagement among alumni.
- **Online Learning/Webinars:** Adding an online learning/Webinars feature could help alumni to keep learning and update their skills, which in turn could help them in their career development.
- **Mentorship Program:** Adding a mentorship program to the alumni system website could help to connect alumni with recent graduates or current students, providing guidance, support, and networking opportunities.
- **Expand the platform's capabilities:** Consider adding new features and functionality to the platform to make it more useful and relevant to alumni. This could include tools for job searching, career development, networking, or fundraising.
- **Increase engagement:** Look for ways to increase engagement and participation among alumni, such as by hosting events, promoting the platform through social media and other channels, or providing incentives for participation.
- **Integrate with other systems:** Consider integrating the platform with other systems, such as the organization's website or CRM, to provide a more seamless and integrated experience for users.
- **Enhance security and privacy:** As the platform grows and collects more data, it will be important to implement strong security and privacy measures to protect sensitive data and ensure compliance with relevant laws and regulations.

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