

**RESEARCH PROJECT ARCHIVE SYSTEM**

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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**

**June 2021**

## APPROVAL

This Project/internship titled “**RESEARCH PROJECT ARCHIVE SYSTEM**”, submitted by Md Habibullah Howlader Sumon ID: 172-15-9592, Pritam Golder ID: 172-15-9879 Md Mominul Islam Jony ID: 172-15-9852 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 02-06-2021

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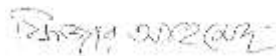
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## DECLARATION

We hereby declare that this web based project has been done by us under the supervision of **Mr. Zahid Hasan, Assistant Professor of the CSE Department**, Daffodil International University.

We also declare that neither this project nor any part of this project has been submitted elsewhere for the award of any degree or diploma.

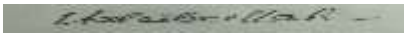
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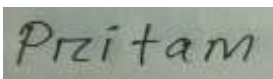
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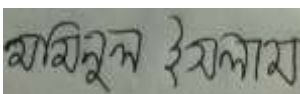
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At last, we must acknowledge with due regard consistent assist and suffers of our parents.

## **ABSTRACT**

The main objective of this project is to develop an archive system. Research Paper, Project Paper, Publications are the source of information and knowledge. Every year many papers are published by the students of Daffodil International University. But, our university has no research paper archive website so that when any student need previous papers they find difficulty collecting them. An archive that will have all the research papers and projects published by the students of Daffodil International University can solve the problem. This is a web-based project and will be published as a website. Very few varsities have this facility. Using this project students can be more proactive about their research projects. In this project, all the previous papers and projects report of our varsity will be arranged by keywords. There is a search option where one can search and get his desired paper or project report too. Everybody can read the papers and reports, but only the students of Daffodil International University will have access to download it. We are using HTML, CSS and Bootstrap for the front-end of the project and we will be using the PHP and MySQL database for the back-end of the project. We use Laravel framework. This will put some great looks into our project. We hope this project will help all the students who are interested in publishing new thesis papers and projects.

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# CHAPTER 1

## PROJECT INTRODUCTION

### 1.1 Introduction

Technology is changing the world. Everything is becoming more reliant on computers. Cloud servers are becoming more and more popular. Storing data in a cloud server is more safe and easy. Every year a huge number of research papers are published by the students of Daffodil International University. But, none of them are decorated all along. It is hard to get the publications for the students. Research paper is a big source of information and knowledge. But wasting time on collecting them is a big obstacle for the students to gain knowledge. Our idea is to make an archive system where all the research papers and project papers of DIU students will be archived in a systematic way. It is a web based project. Waterfall methodology is used in this project. We will collect all the papers and archive them on the website. Teachers will have the option to upload new thesis papers and project papers on it. Papers are categorized by topics, departments and published years. It also have a search option, students can get all related papers searching any keywords. Only the students of Daffodil International University have permission to download the paper while others can only read. Students have to create account by varsity email and ID. Then he will have permission to download papers. Any student can take a complete conception of the papers of our varsity easily from our project.

### 1.2 Motivation

Every student of Daffodil International University has three options for their defense. Internship, thesis paper and project are the options and they had to choose any one of them. But, most of the students of our varsity decide to take a thesis paper or project as final defense. Last year, we had to select a title for our title defense. Selecting a title is very hard as it has to be unique and it must have real life world use. For this we needed the previous project papers published by our varsity to get a complete conception of the papers of our varsity. Unfortunately, we couldn't get that because there was no such place where we can find all the papers together. At that moment, we got the idea that what if we make an archive

which will have all the research papers and project papers of our varsity. This archive will help the students to take a complete conception of the papers of our varsity

### 1.3 Objective

- Ideas about varsity's past projects and thesis papers.
- Find projects and papers of our varsity very easily.
- To save all the research/project papers completed by DIU students.
- Convenient to search for the project by having a separate storage database for each department.
- Documents are saved from file damage.

### 1.4 Expected Outcome

The purpose of our web based project is basically to build an archive system. The archive will have all research papers and project papers. We have to collect all papers and arrange them on the website. So that students can find papers easily. They can search keywords to get related papers. This project will ensure that no paper will be lost.

### 1.5 Report layout

In our report, we used a total of 7 chapters to fully present the project. These are:- Project Introduction, Background, Methodology, Requirement Specification, Design Specification, Implementation And Testing, Conclusion And Future Scope.

**Chapter-1:** Chapter-1 gives an idea about the role of the project. It has Introduction, Motivation, Objective, Expected Outcome, and Report Layout.

**Chapter-2:** In this part, we discussed the background of the project. It has a background Introduction, a Literature Review, a Scope of the problem, and Challenges.

**Chapter-3:** In this part, we review the methodology of the project. It has Methodology, Waterfall Model, Phase of the waterfall model, why we use the waterfall model, Justification of methodology.

**Chapter-4:** In this section, we have highlighted the requirement specification information of the project. There have Requirement Analysis, Hardware and Software Requirements, Use Case Modelling, Entity-relationship model and Data Flow Diagram

**Chapter-5:** In this part, we have highlighted the designs of our project. It has Front-end Design and Back-end Design.

**Chapter-6:** This chapter discusses the application and testing of the Project. It has Implementation of Database, Database Design, and Testing.

**Chapter-7:** This chapter gives an idea of the essence of the project and the future application of this project. It has a Conclusion, Future Development Scope, and reference of the report document.

## **CHAPTER 2**

### **BACKGROUND**

#### **2.1 Introduction**

In this chapter, we will discuss our project and compare our project with other projects that exist online. We find that there are many achieve website exist in online but not all achieve website is designed to achieve only research paper. Our Application is different from all this existing achieve website. How our project is different from other projects will be discussed here. There are a lot of problems with the existing project. Not all application is nicely designed, some of the projects have not to search option in categories. Many times, there isn't an option for the user to contact the paper owner so we will briefly describe these problems in this chapter. The scope of the problem and the challenges will be also described in this chapter briefly.

#### **2.2 Literature review**

There are many types of archive websites. These are usually some international websites for storing research papers. Among them ISO/IEC/IEEE [1] websites are well known but these type websites are used internationally for everyone and these are used by the World Wide Web for every type of communication We have created this website for a specific varsity research paper and project paper, For all the varsity teachers, students, alumni and the varsity related persons from where they can get an idea about a certain amount of papers each year. BRAC University [2] has such a website where they have kept their varsity papers. Indiana University [3] of India also has a Website collection of all types of information, not just papers, for their students and the staff. Like Indiana University, North-South University [4] of Bangladesh has a website but it has collected all types of information on the website archives for the viewer. There is another type of website here called engpaper.com [5] where according to the department the research paper is saved which is open for download to all. Daffodil International University has a website called "Diu Journal of Science and Technology" [6], but according to the department, it is for research paper submission, not for getting information about those papers.

### **2.3 Scope of the Problems**

Our main focus is to make a website for the users that will help the users to get all the papers of our varsity in one website. There is a similar website named DIU journal of science and technology. But, the website has many problems. It does not have all features that one user desires. Its UI design is not attractive and it has not a search engine. Most importantly it doesn't have all the research papers.

An user cannot be satisfied if he cannot get the desired features in one website. The user might have to visit multiple websites to get his desired information. Which is pretty irritating from a user perspective. This is exactly the reason why we are trying to make a website that will be sufficient and provide all the information and papers to users.

### **2.4 Challenges**

This is a big project and every big project has tough challenges to make it successful. We faced many challenges as we are newbie at developing web applications. But, our main challenge is to collect all previous research and project papers. Also, we have to make a very attractive UI to compete with other existing websites.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 Methodology:**

When we build software, we go through some processes. We need to do planning for our software, creating it, testing it, and then deploying a project. Methodology in software development refers to all the processes that involve building a project. There are many methodologies for software development. Each methodology has its advantages and disadvantages. The Project Manager or developer team chooses a methodology considering their requirements and benefits.

Between Waterfall Model, Prototype Methodology, Agile methodology, Agile Methodology, Spiral Methodology, Rapid Application Development methodologies, we prefer to use Waterfall Model considering our project requirements.

#### **3.2 Waterfall model:**

The waterfall model is the earliest Software Development Life Cycle that clearly defined all the processes for making Software more quality full. The Waterfall Model is very easy to understand. It is a Linear-Sequential Life Cycle Model. This model is divided into some different phases. In the Waterfall model, we need to complete the earlier phase before we want to move forward to the next phase. Because, the outcome of the earlier phase acts as the input for the next phase sequentially. So there is no overlapping in this model.

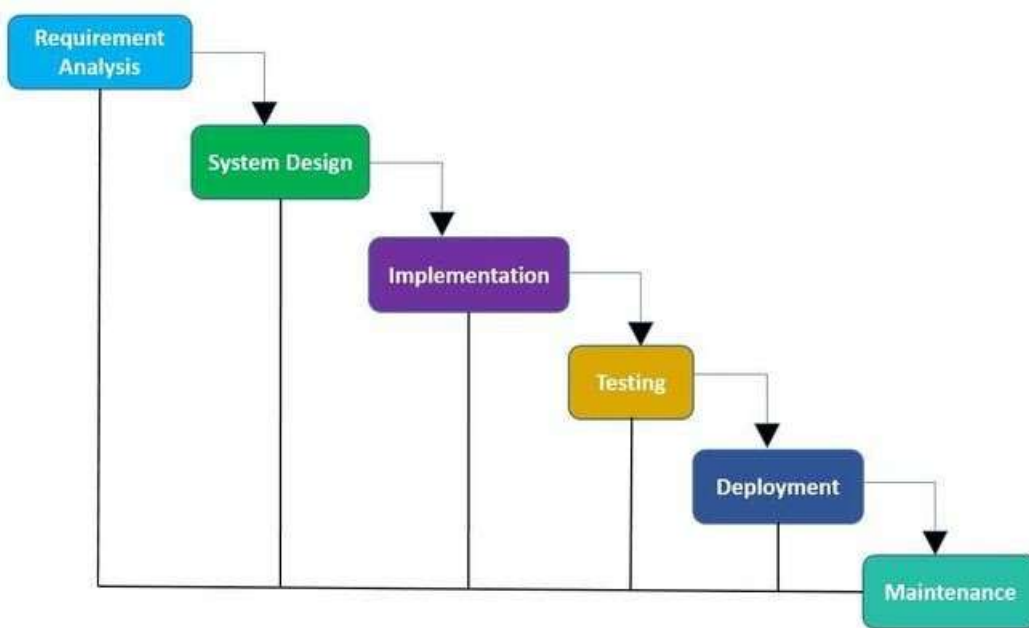


Figure 3.1: Waterfall Model

### 3.3 Phases of Waterfall model:

1. Requirement Gathering and analysis:
2. System Design
3. Implementation
4. Integration and Testing
5. Deployment of systems
6. Maintenance

### 3.4 Why We Choose Waterfall Model:

As there are many models for Software development but we selected the waterfall model considering our project idea, type, difficulty, and environment. We compare almost all



Software development methodology and consider their benefits and drawbacks. We found that the Waterfall model is the most suitable methodology for our application.

### **Clearly Defined Stages:**

In the waterfall model, all the phases are clearly defined so it is very easy to move one stage to another stage. Every stage has particular work and it's clearly defined.

### **Easy to Understand:**

The waterfall model is very easy to understand. When the project manager or team leader understands each part of the methodology then implementation of the work increases rapidly and it ensures a better-quality work software.

### **Predictable Costs and Schedules:**

It is very important to understand project cost, delivery time, project activities, etc before the project starts. The waterfall model gives a scope to understand it before the project starts.

### **Process and Results are well documented:**

In the waterfall model, all the requirements are pre-defined so the model is specific as to why we can predict the outcomes in advance.

### **Easy to Manage:**

As the waterfall model is used when the project size is very small so it is very easy to manage the project.

## **3.5 Justification of methodology:**

1. As we don't change our project requirement frequently so the waterfall model is perfect.
2. Our application is not so complicated and big.
3. Our project's main concept is very short and clear.
4. Data and all resources are easy to collect.
5. The environment of the application is stable.
6. The technologies used are not dynamic.

# CHAPTER 4

## REQUIREMENT SPECIFICATION

### **4.1 Requirement Analysis:**

Requirement analysis is very important for any kind of Software development. The success of a system or software development is mainly dependent on requirement analysis. Requirement analysis is the activity where we analyze, expurgate and anatomize the gathered requirement for understanding the entire system or project. Sometimes requirement analysis provides a graphical view for the system. Requirement analysis helps to understand which requirements are more important and it also removes any kind of confusion. For requirement analysis firstly we draw the context diagram then develop the Prototype and model the requirements and finally, finalize the requirements.

Requirement analysis includes three types of activity:

1. Determining requirements
2. Analyzing requirements
3. Recording requirements

#### **Functional Requirement:**

It is a mandatory requirement of a software system which helps to review the functionality of the application. Functional Requirement mainly focuses on the user requirement.

#### **Non Functional Requirement:**

It is not a mandatory requirement. But it fulfills all the remaining requirements which are not covered by functional requirements. Non-functional requirements make the software system more quality full. How fast the software system can work, how good software system security is etc. are some examples of the non-functional requirement.

## 4.2 Hardware and Software Requirements

For development, software's used are:

- Operating system: Windows 10 Professional
- Platform: PHP
- Language: PHP
- Backend: SQL server 2019
- For Development: Visual Studio
- For Design: Visual Studio
- Framework: Laravel
- IIS: Configured.
- Backend: sql server 2019

### Hardware Configuration required:

Minimum requirement:

- Core i3 processor
- 20 GB hard disk
- 1GB RAM
- 5-50 MBPS of Network Car

Recommended requirement:

- Core i5 Processor
- 40 GB hard disk
- 2GB RAM for smooth Transaction.
- 50-512 MBPS of network card

### Software configuration required:

- Operating System : Windows XP / Windows 7/8/10 or above
- DB : MYSQL

- Server : local host
- PHP version 7.4 or above
- Web browser : Google Chrome, Mozilla Firefox , Microsoft Internet Explorer
- Framework : Laravel Version 8.x
- Version Control System Github
- Tool : Atom 1.56.0 IDE

### **4.3 Use case Modeling:**

The use-case is a list that has defined the interaction between the actors, and the system. We have two types of actors in this use-case model. One of them is the user who can be either a student or a teacher. Users can view and download archived data from the system. Another actor is the admin who has managed the entire system and collects information the diagram below shows the interaction of the actors, and systems in our project.

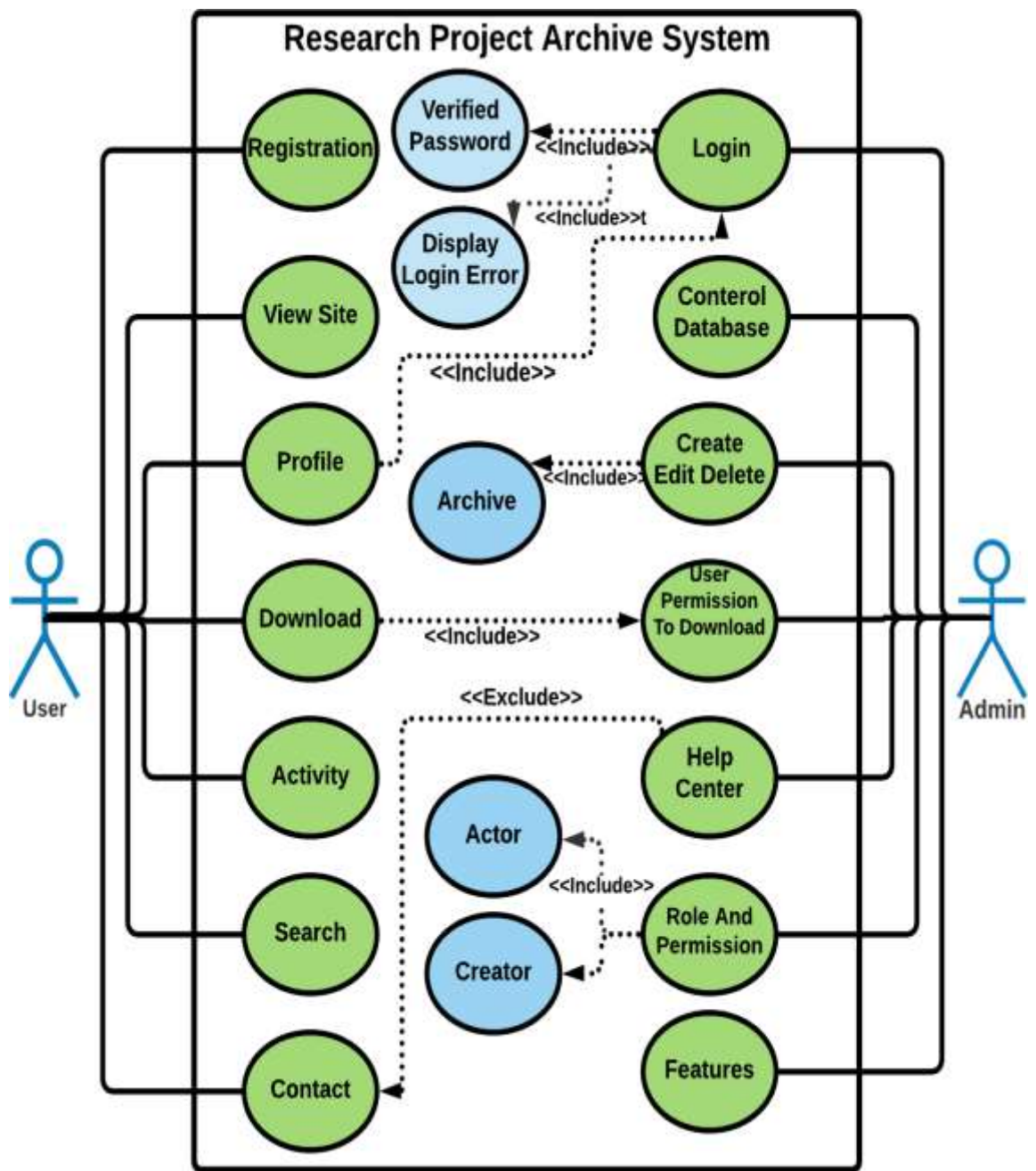


Figure 4.1: Use case diagram

## 4.4 Entity-Relationship Model:

ER model full form is Entity-Relationship model. It is a high-level diagram of conceptual data models. Describing the database structure using a chart. The ER chart has shown below.

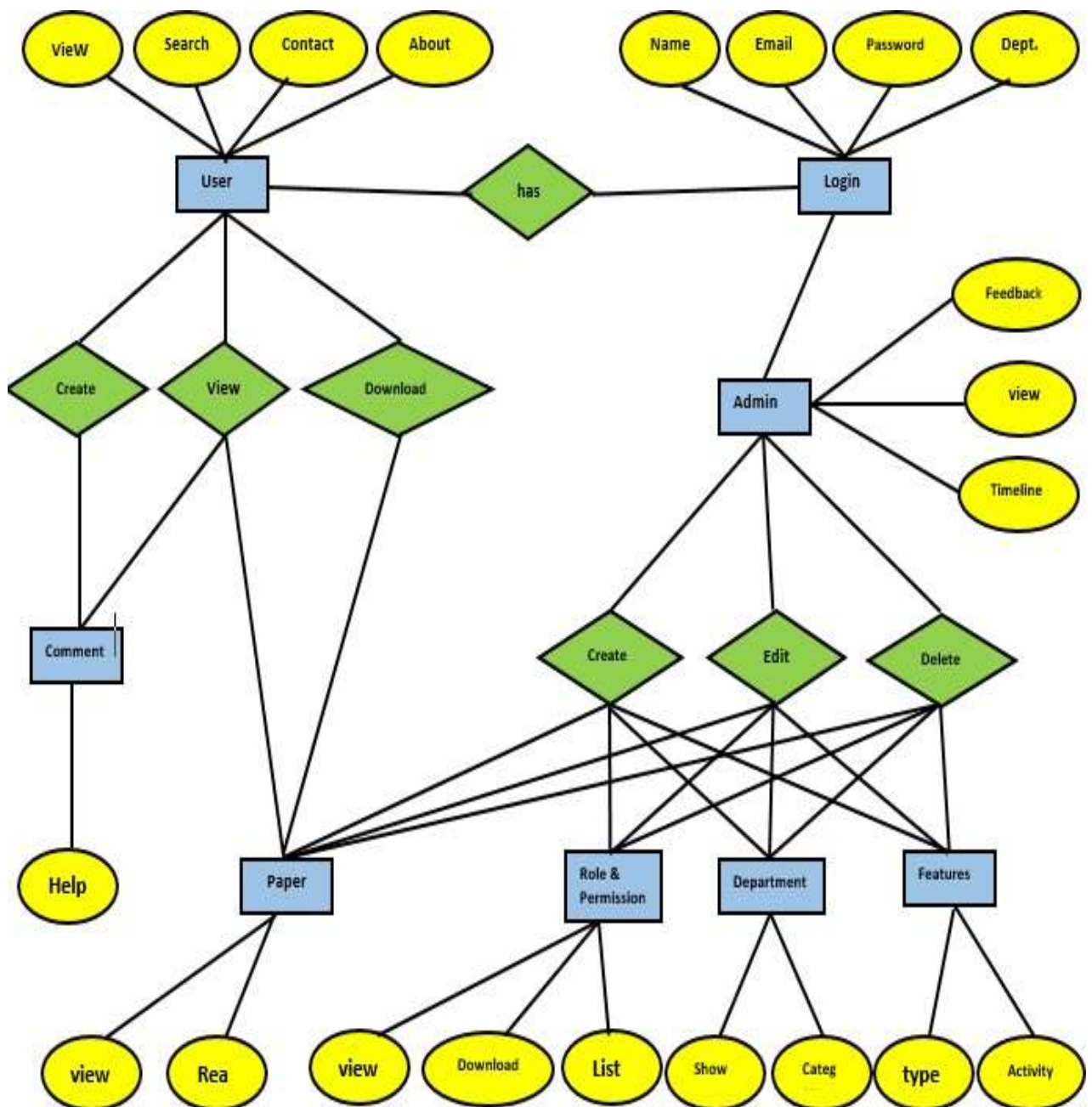


Figure 4.2: ER diagram

## 4.5 Flow Chart:

Flowchart is a step-by-step illustration of a program, here we have shown about system flowchart, a system flowchart discusses the data flow, processing, storage and results of a program. In this flowchart we have covered step by step the whole process of paper archive and paper distribution and view starting from student and admin registration and login.

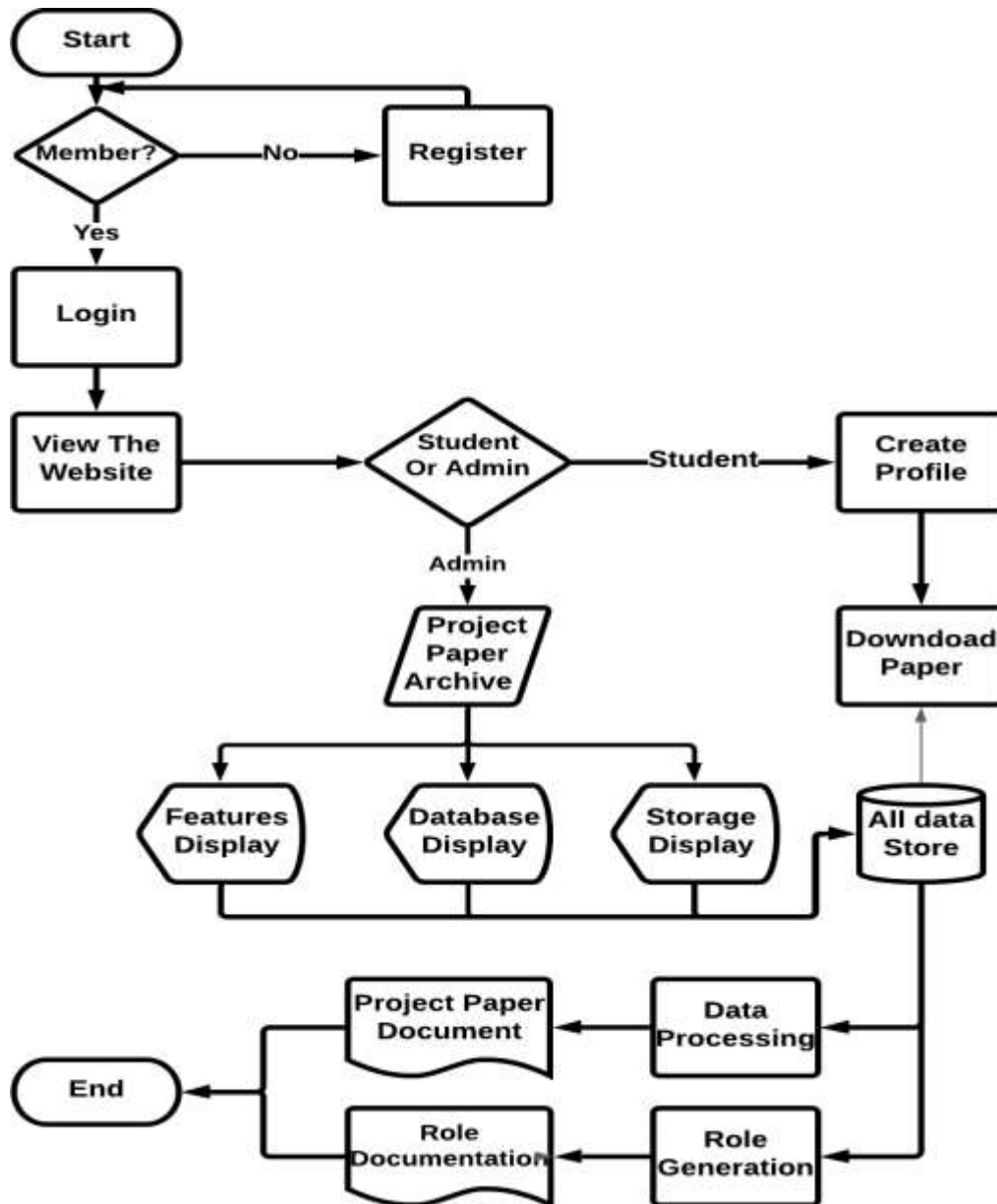


Figure 4.3: Flow Chart

#### 4.6 Data Flow diagram:

Data flow diagrams basically review the data of a system. Data flow diagrams help us to know which system's data are being collected and how it is being reviewed and its flow between a system. We present the theory of data collection through an entity and a process of our project in those diagrams detail.

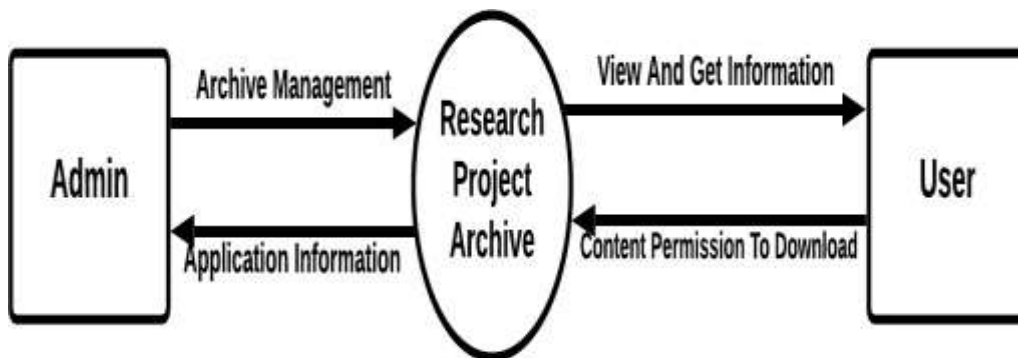


Figure 4.4: DFD-0

DFD-1 discusses DFD-0 process program in more detail. All the steps of admin for website management and all the steps of data reservation and role creation are explained in detail to reach the user.



The flow of process defecation of DFD-1 has been shown in bellow.

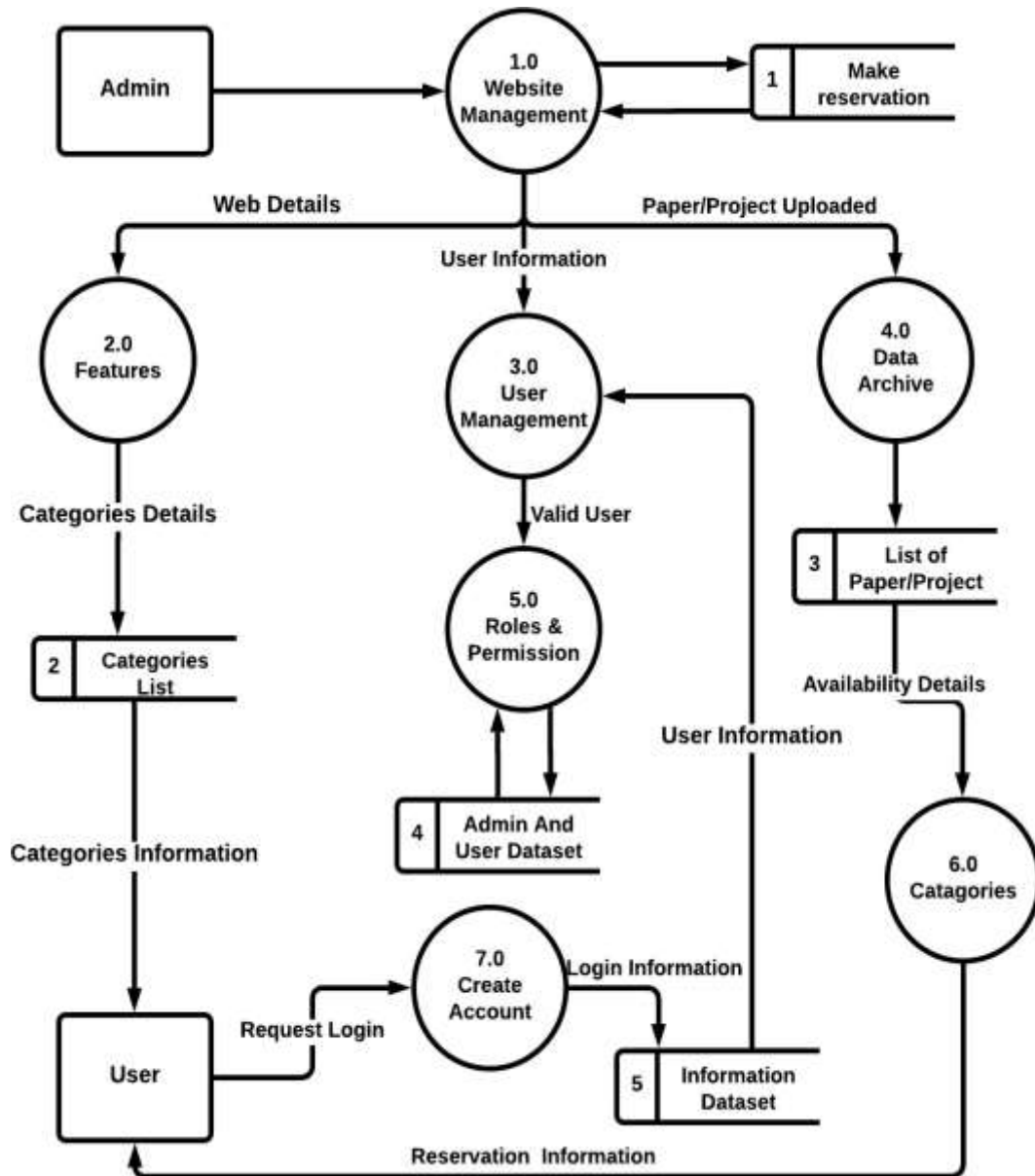


Figure 4.5: DFD-1

The flow of process defecation of DFD-2 has been shown in bellow.

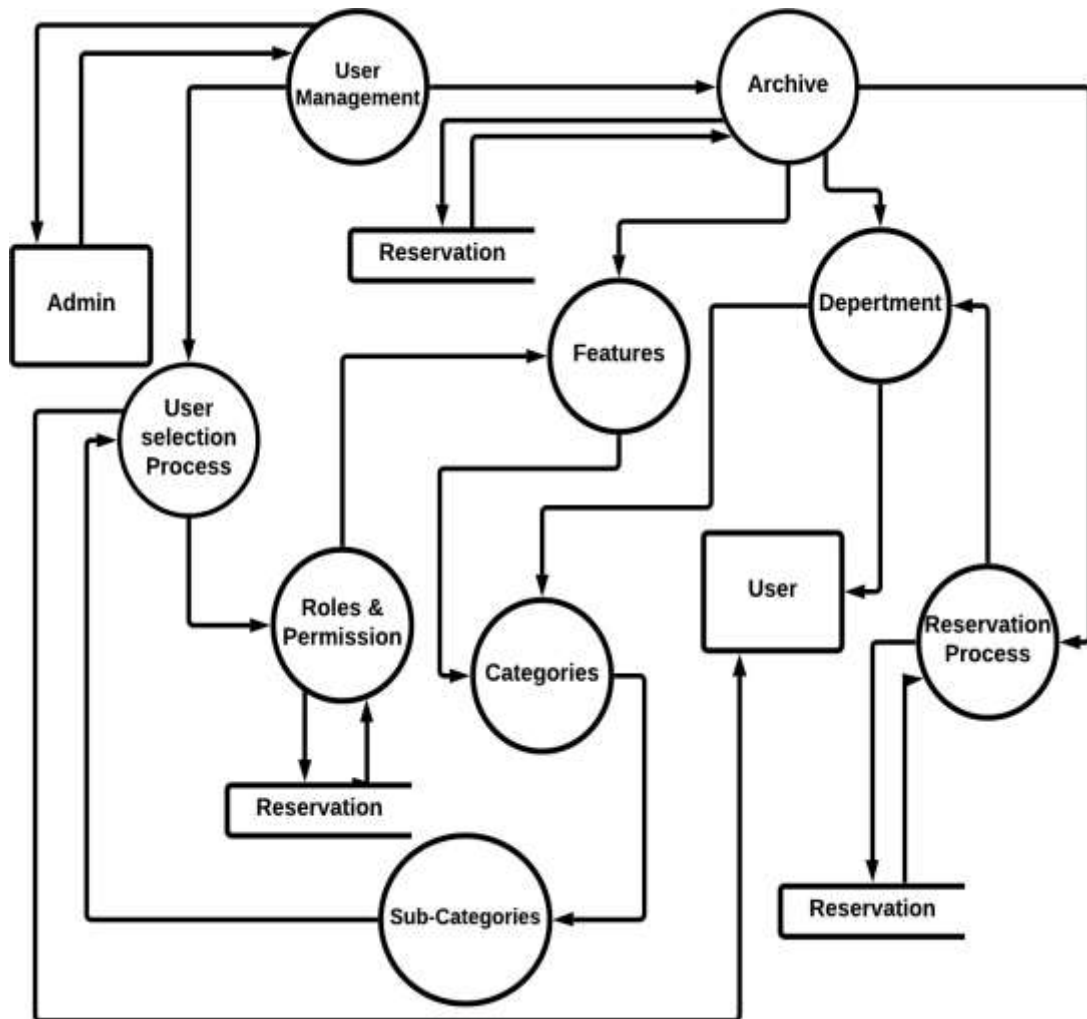


Figure 4.6: DFD-2

# CHAPTER 5

## DESIGN SPECIFICATION

### 5.1 Design Process

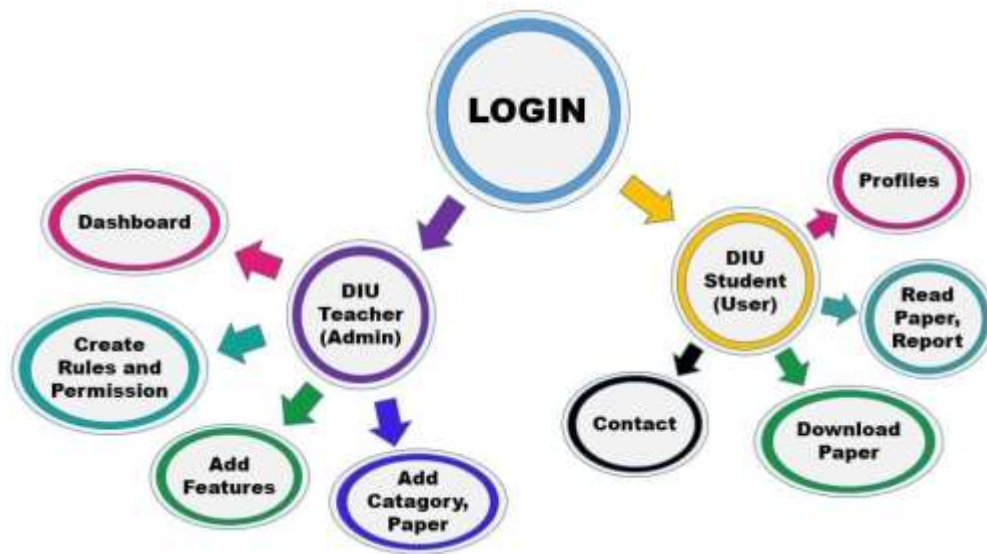


Figure 5.1: Application Overview

Here we can see that there is a log-in section. This is divided into two parts. They are:

1. DIU Teacher (Admin)
2. DIU Student (User)

**Admin:** Basically, it is for admin. Admin can control all the parts of this section. He/she can add or delete anything from this section. Users cannot see this part.

**User:** This is for the user. He/she can log in with his/her user name and password. And can collect information according to their need.

**Admin panel** have these option that given below:

- Admin have permission **to add features.**
- Admin **can see everything on dashboard.**
- Admin **can create rules and permission.**
- Admin have **permission to add different categories and paper.**

User have these option that given below:

- User can view his profile.
- User can view different categories paper and can read it.
- User can download any paper.
- User can contact with the paper owner and also admin.

## 5.2 Front-end Design

The front end is the most crucial part of any software development because the user interacts directly with the software front end. So if the front-end design is good then it is easy for the user to clearly understand the use of the application. So for making this Software we emphasize making the front end very user-friendly.

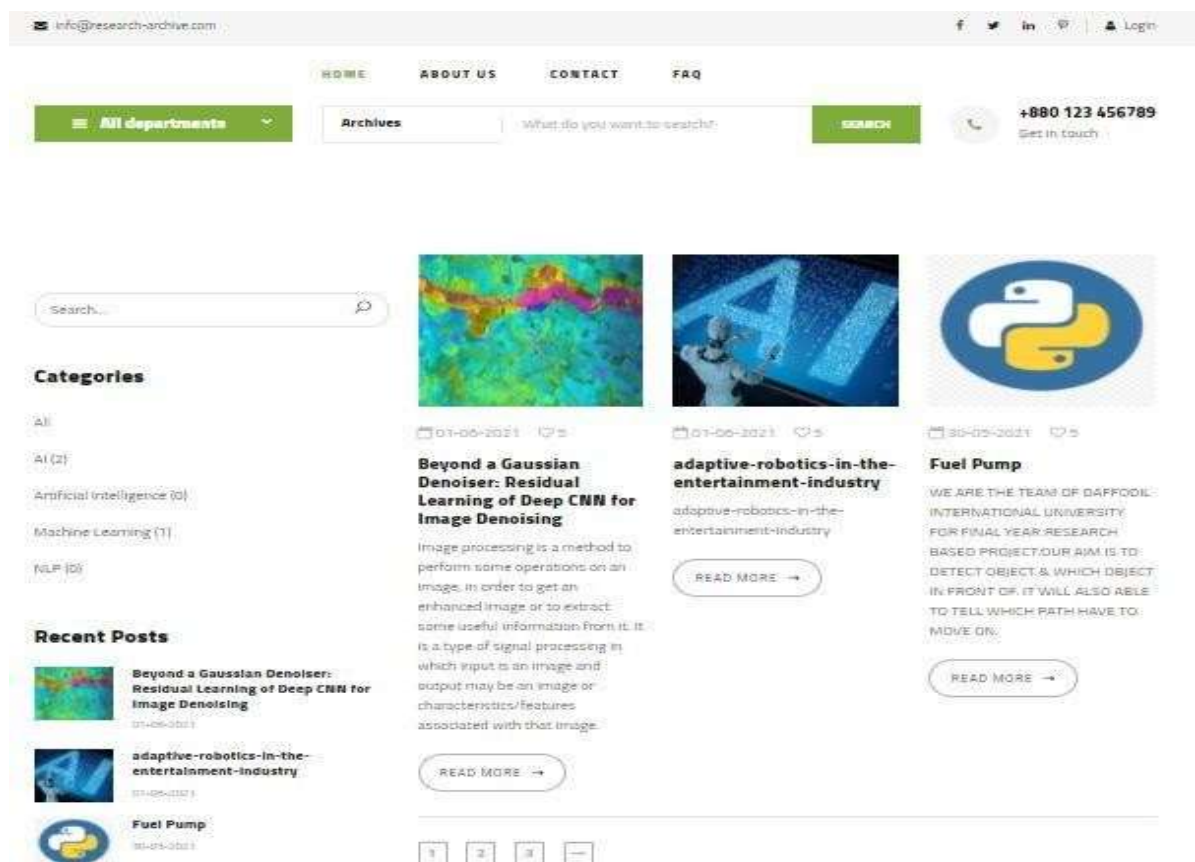
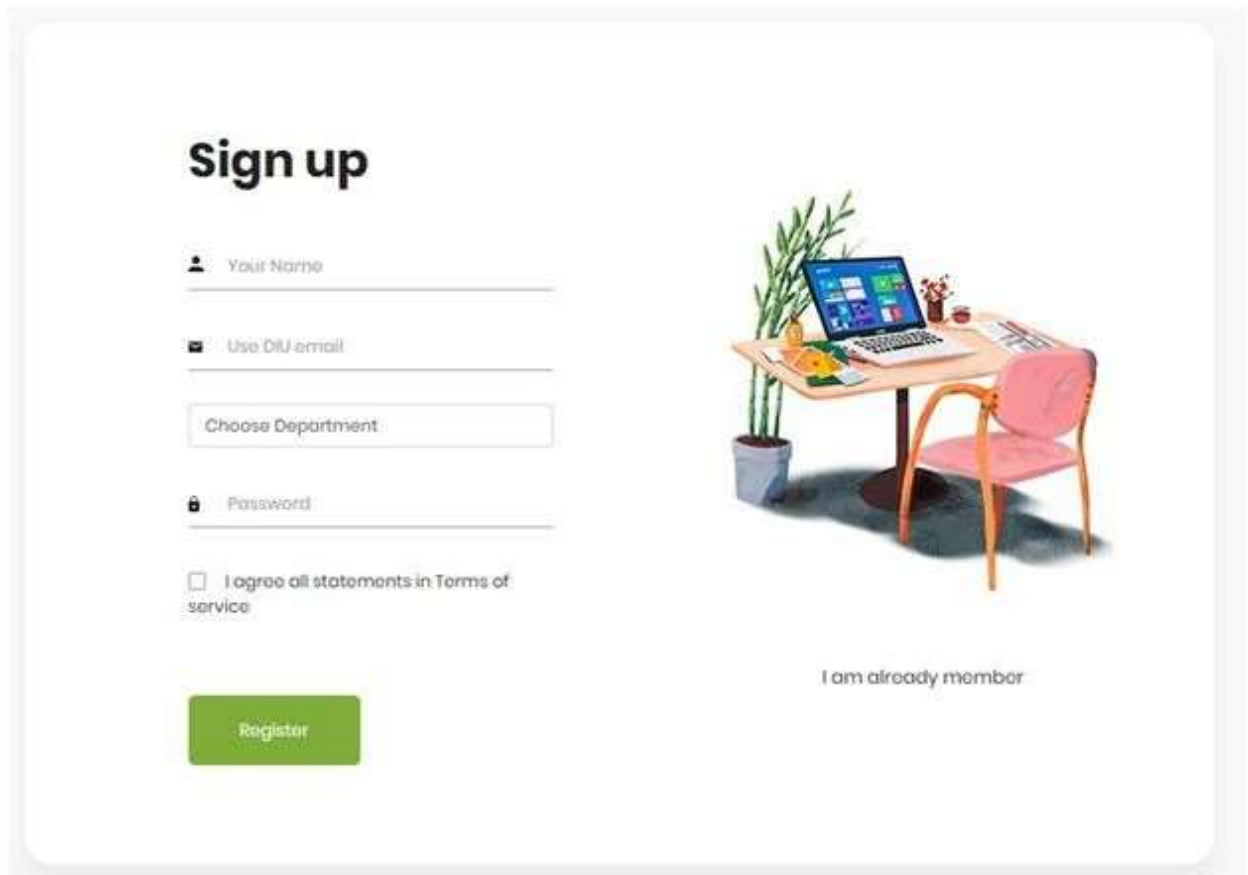


Figure 5.2: Home Page

Figure 5.2: shows the home screen of our application. Any user can see him and read his desired paper here. He can search for the type of papers he wants to read. But for download, he needs to log in first. DIU provided email is necessary to log in. For login, we first keep the option to sign up.



The image displays a 'Sign up' form within a light gray rounded rectangle. The form is titled 'Sign up' in a large, bold, black font. Below the title, there are several input fields and a checkbox. The first field is labeled 'Your Name' with a person icon. The second field is labeled 'Use DIU email' with an envelope icon. The third field is labeled 'Choose Department'. The fourth field is labeled 'Password' with a lock icon. Below these fields is a checkbox labeled 'I agree all statements in Terms of service'. At the bottom left of the form is a green 'Register' button. To the right of the form is an illustration of a desk with a laptop, a potted plant, and a pink chair. Below the illustration is the text 'I am already member'.

Figure 5.3: Sign up Section.

Using DIU email and providing department one can easily sign up for the application. If anyone want to try Signup without DIU provided email then he/she can't be able to sign up.

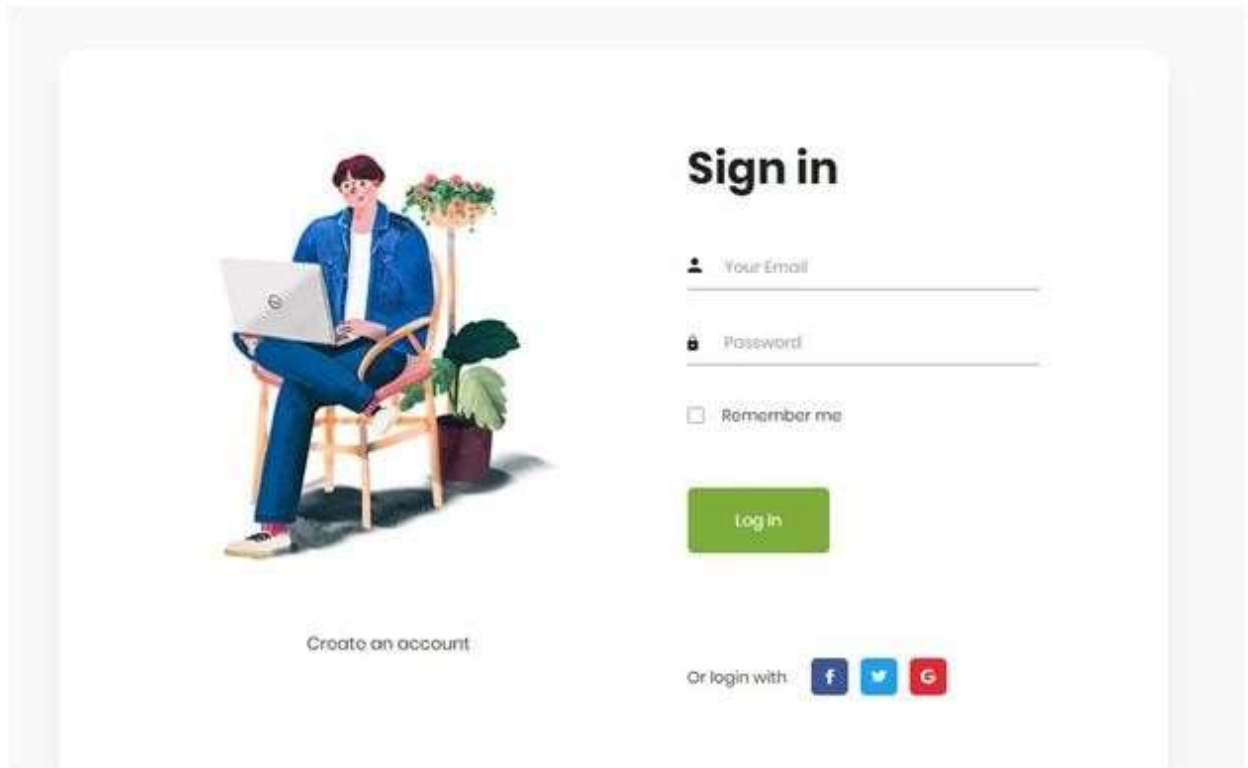


Figure 5.4: Sign in Section.

After successfully signing in, any student can see his profile as well as all the papers he downloaded first. A complete profile of his activity will be shown on the dashboard. He can download any paper from the application and contact the writer of the page.

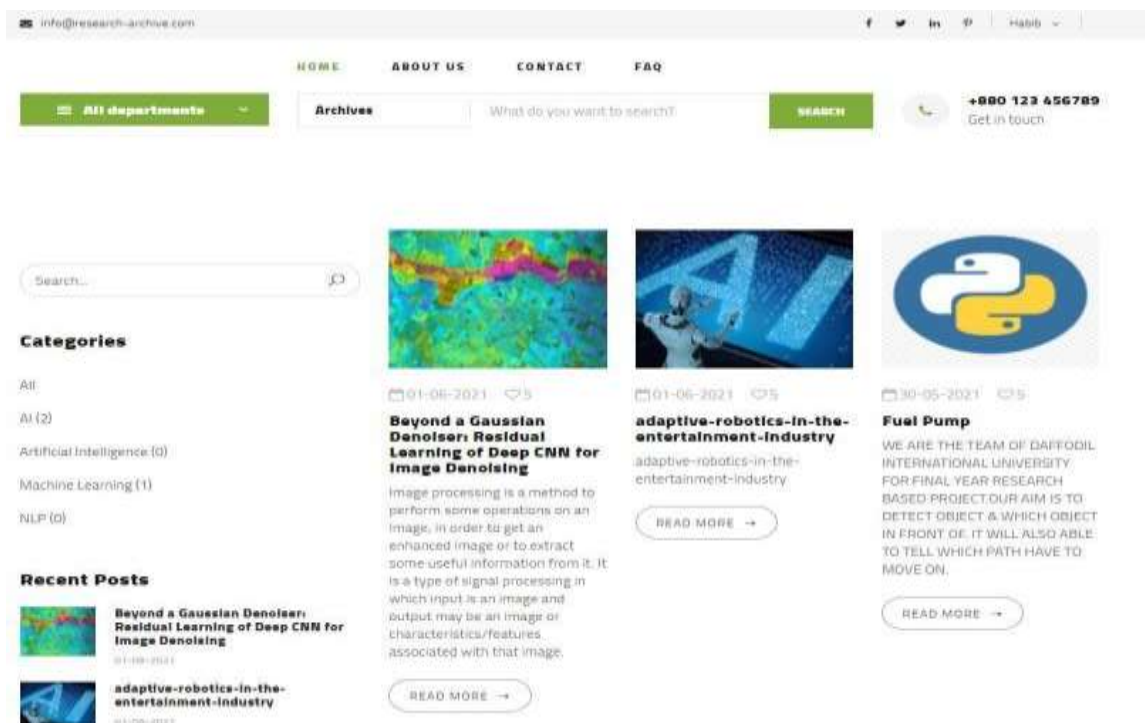


Figure 5.5: Home Page after login

Figure 5.5 shows the Home page after login. Here, on the top of the right side, the student name is shown who logs in with his varsity email id. There are search options for paper. If anyone can search with the name of the paper then automatically the paper will be shown below serially. On the left sidebar, we can see a paper number with their category.

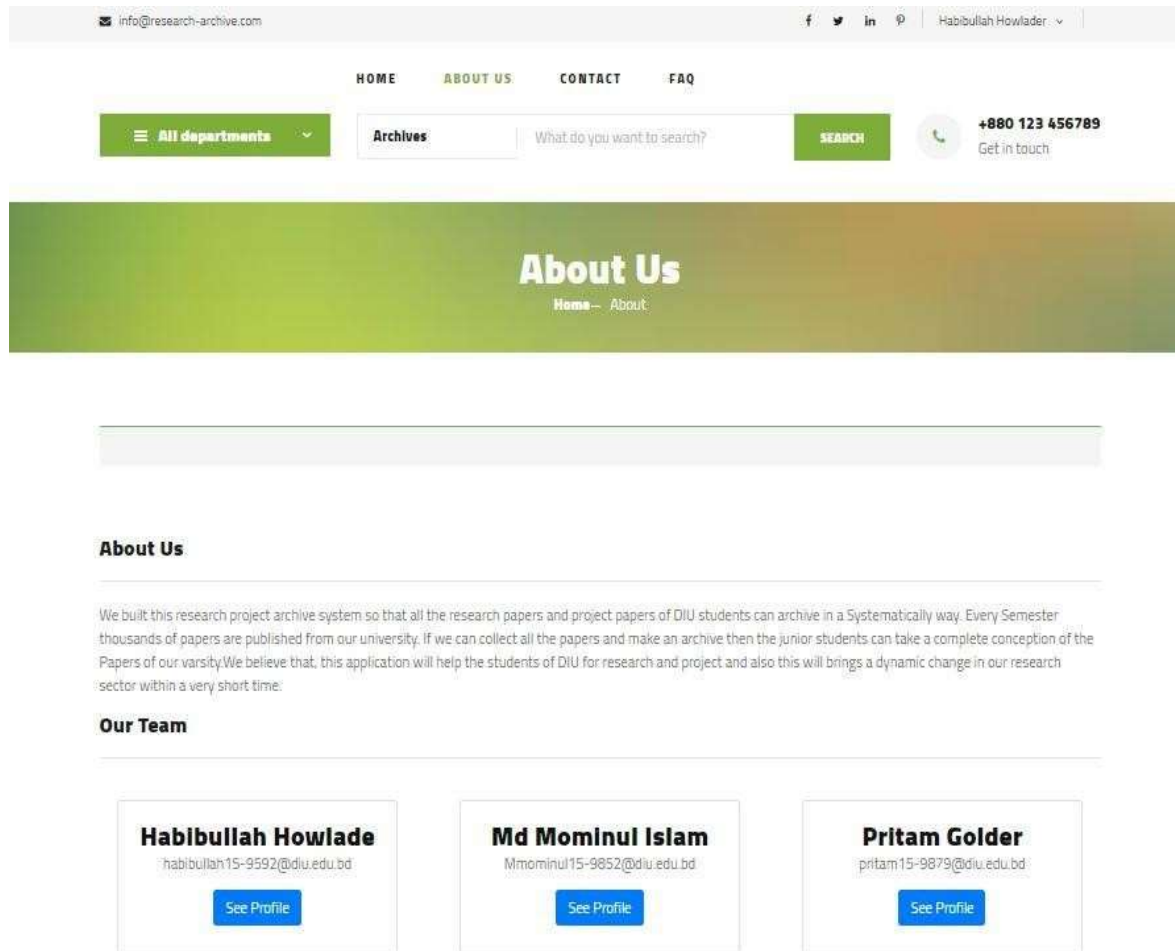


Figure 5.6: About Us

In the about us section, we provide the necessary information about this project and also our team member's information. As email is provided so anyone can contact us through email.

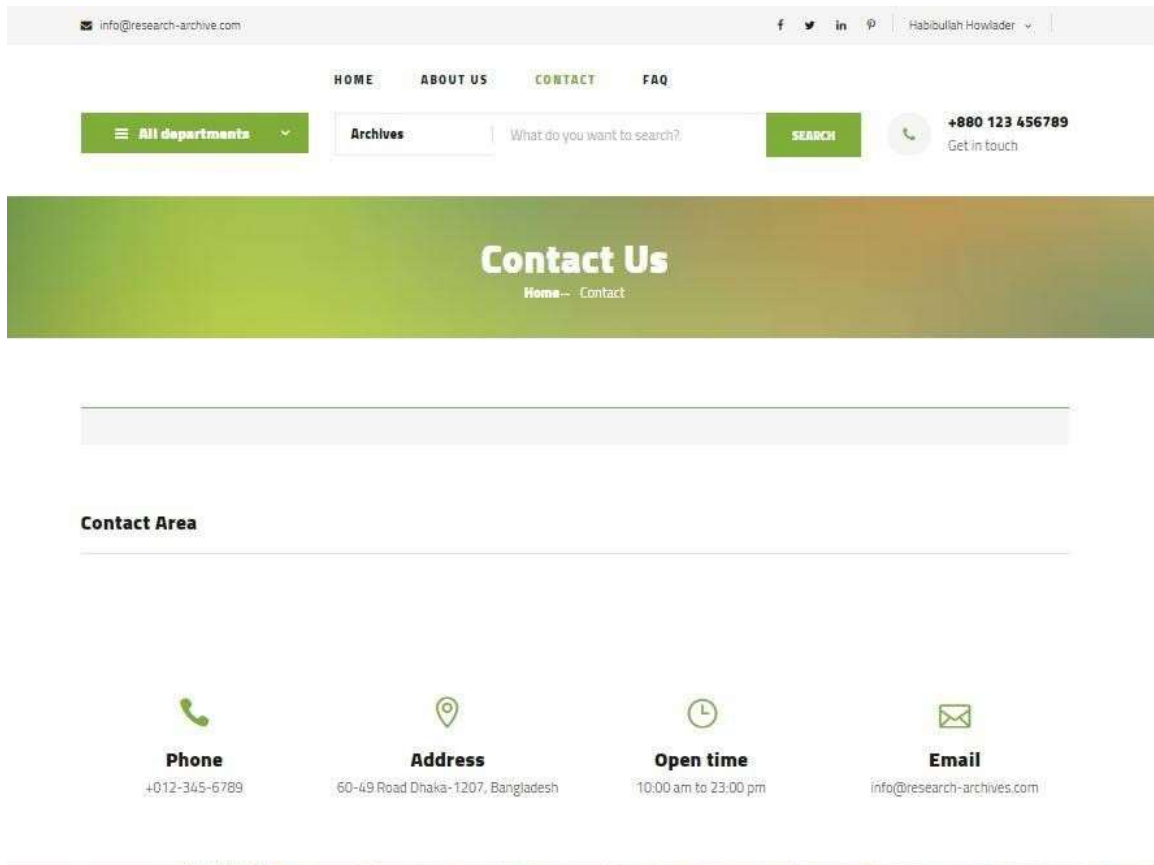


Figure 5.7: Contact Us

Contact Area is very simple where anyone will get the information to contact with the Admin and his email for any other necessary information. There is also an FAQ option where one can know any information about the application.



info@research-archive.com Facebook Twitter LinkedIn Habibullah Howlader

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## Hello, Habibullah Howlader

Home Profile

---

### Your Profile Info

First Name\*  Last Name\*

University\*

Department\*

#### Your Activities

Activity	Counts
Total Login	75 Times
Paper Views	52
Likes	65 Times

Address\*

Street Address

Town/City\*

Country/State\*

Postcode / ZIP\*

Phone\*  Email\*

Bio

Additional notes

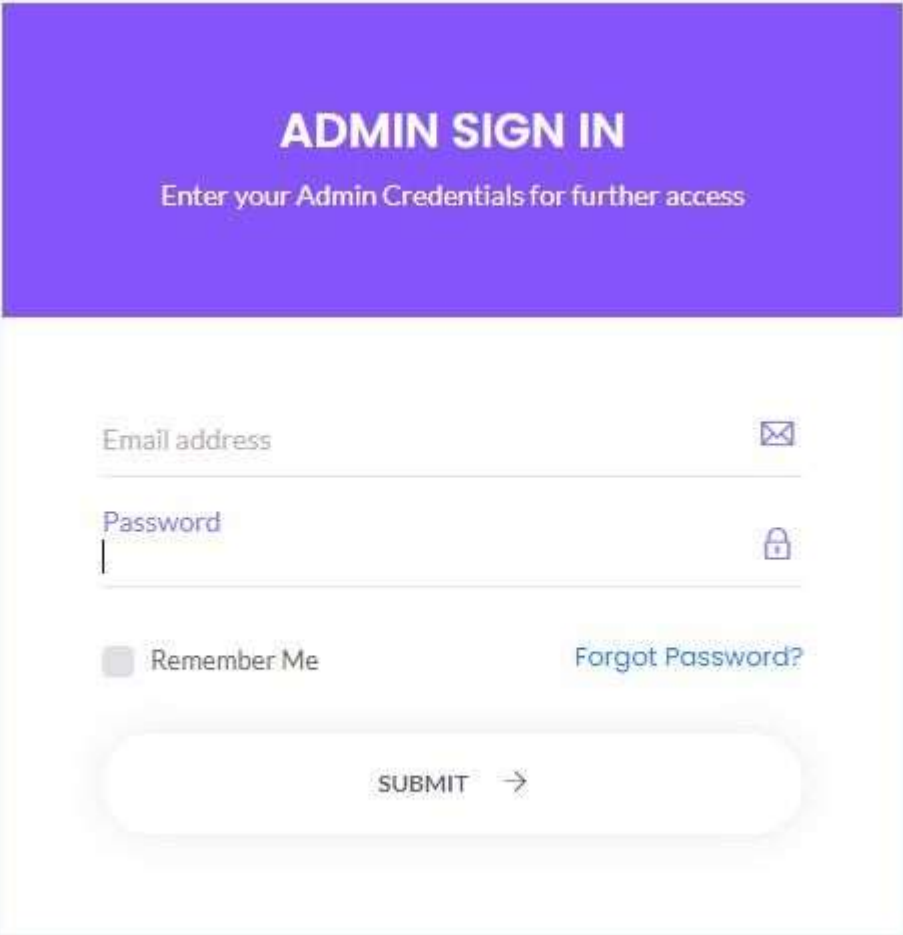
**UPDATE**

Figure 5.8: User Profile

Figure 5.8 shows us the profile of the student. After login, a user can see how many papers he/she reads, likes and downloads. Users can update their profiles by providing all of their necessary information at any time.

### 5.3 Back-end Design:

In the backend section, an admin can log in with his email and password



The image shows a web form titled "ADMIN SIGN IN" with the subtitle "Enter your Admin Credentials for further access". The form is set against a purple header. It contains two input fields: "Email address" with an envelope icon and "Password" with a lock icon. Below these is a "Remember Me" checkbox and a "Forgot Password?" link. At the bottom is a large "SUBMIT" button with a right-pointing arrow.

Figure 5.9: Admin login Section.

If the admin wants he can change his password or also can update the password, his name, address, etc. after going to the setting option. He can update any information about him.

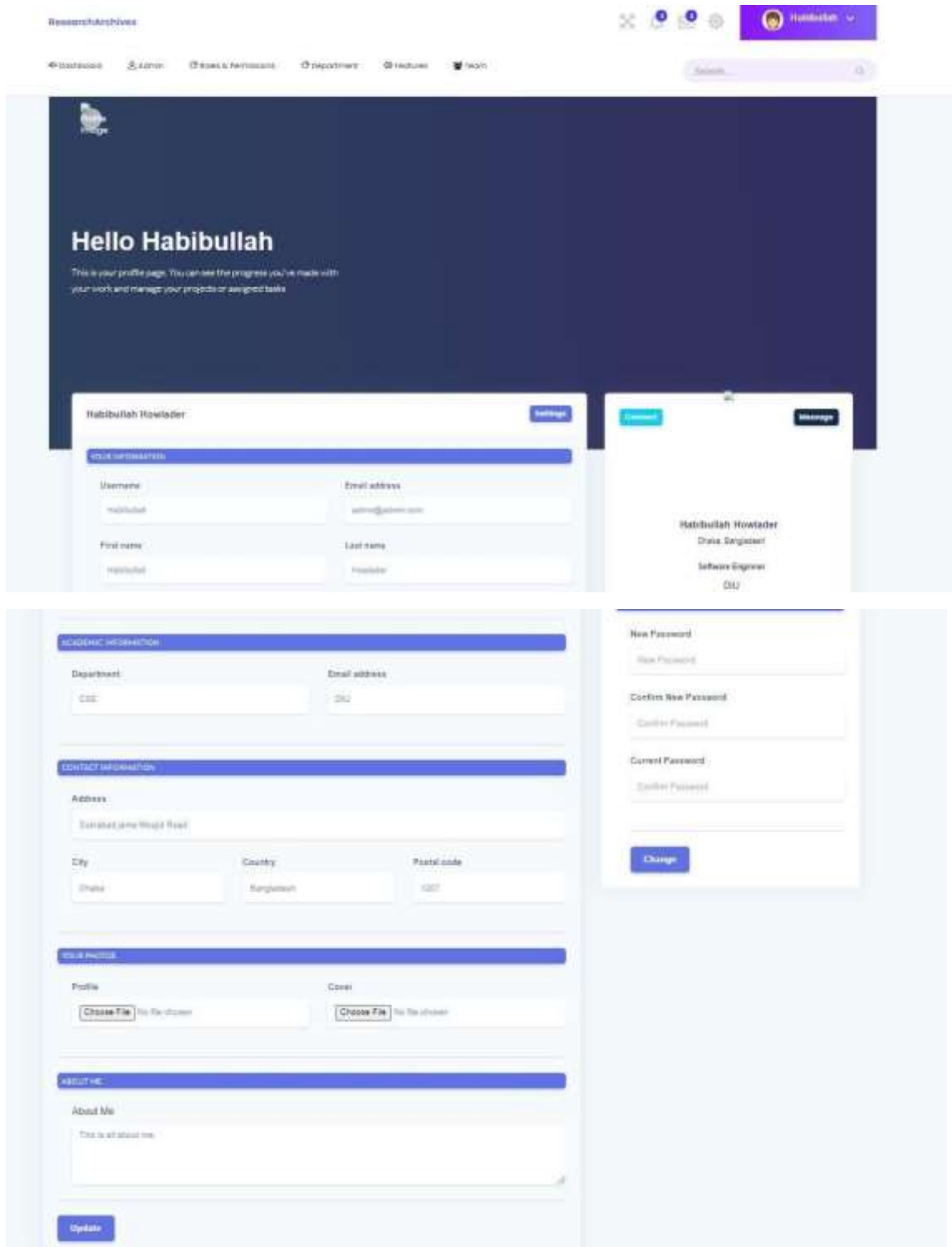


Figure 5.10: Admin Panel Update Option

Admin can see all the activities of the application going to the dashboard.

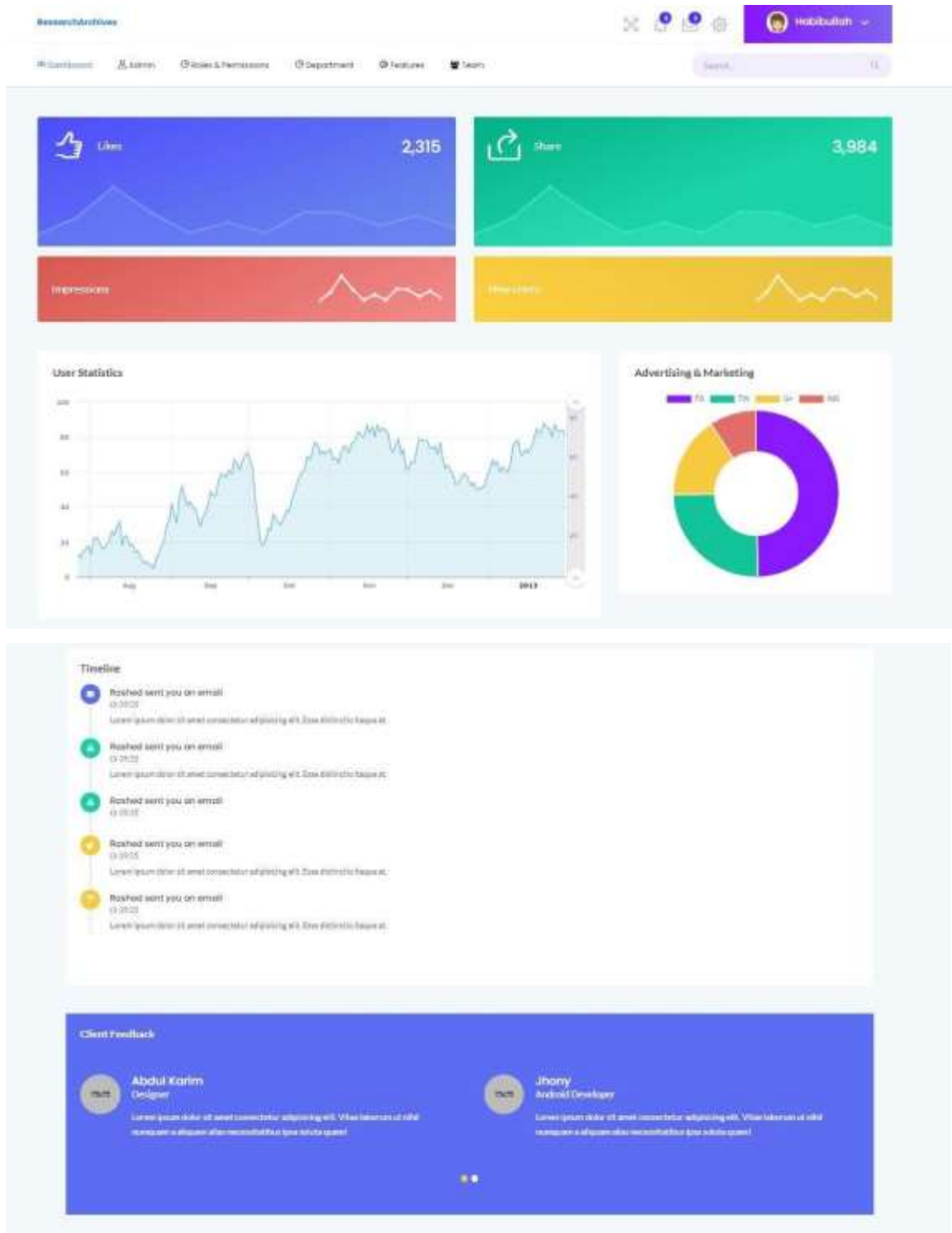


Figure 5.11: Dashboard

In the dashboard, all departments' total number of papers, likes, comments, emails, etc. are shown graphically so that the admin can easily understand it.

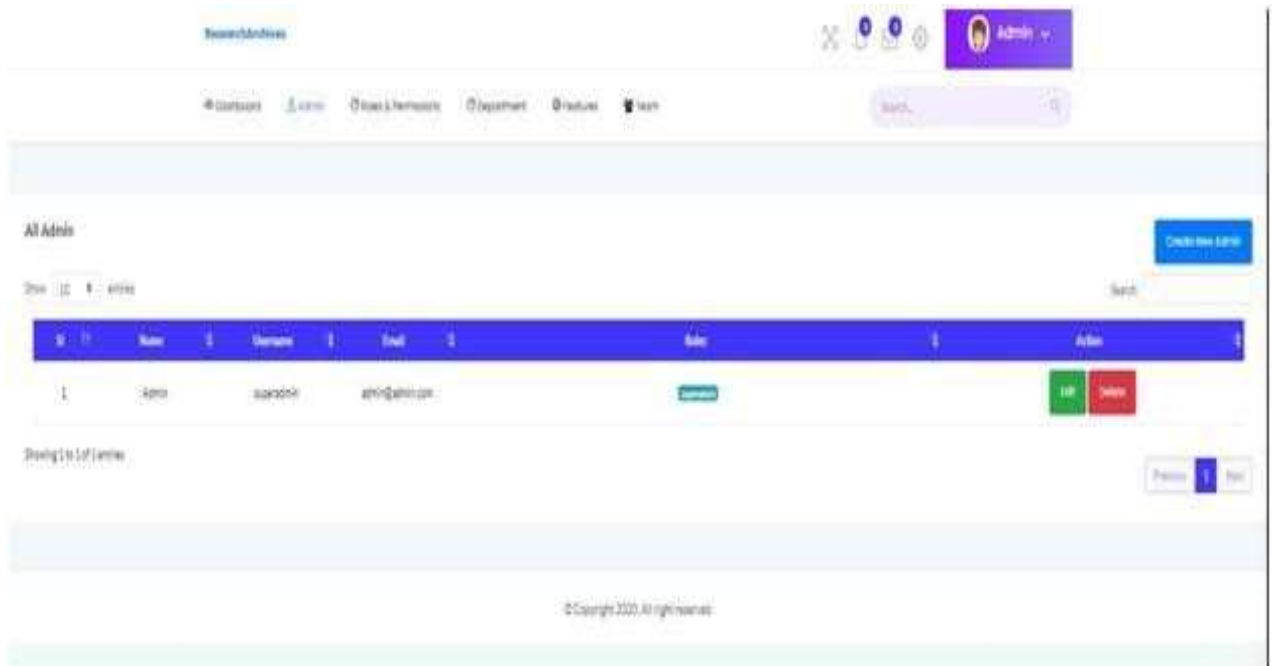


Figure 5.12: Admin Panel

Figure 5.12 shows the admin panel. In the admin panel, there will be a Superadmin who can add other admins, delete the admin, and also can control anything.

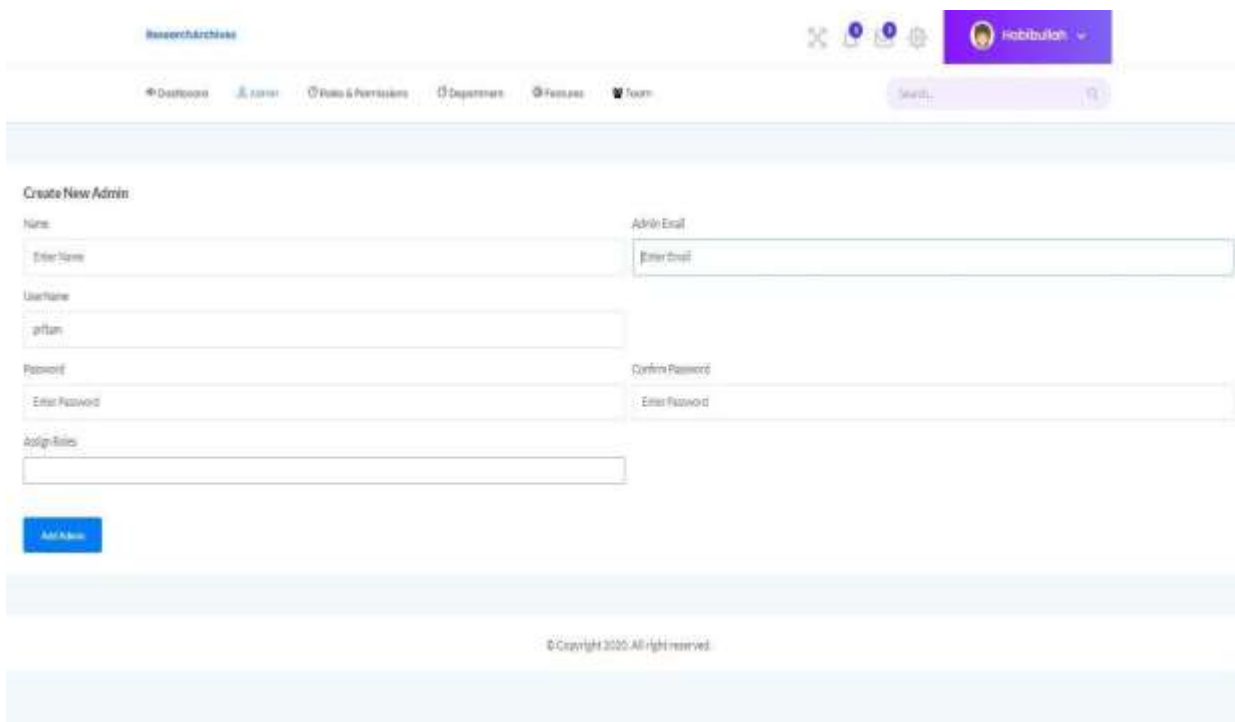


Figure 5.13: Creation of Admin Panel

Figure 5.13 shows that how Superadmin can add other admins, delete the admin, and also can control anything.

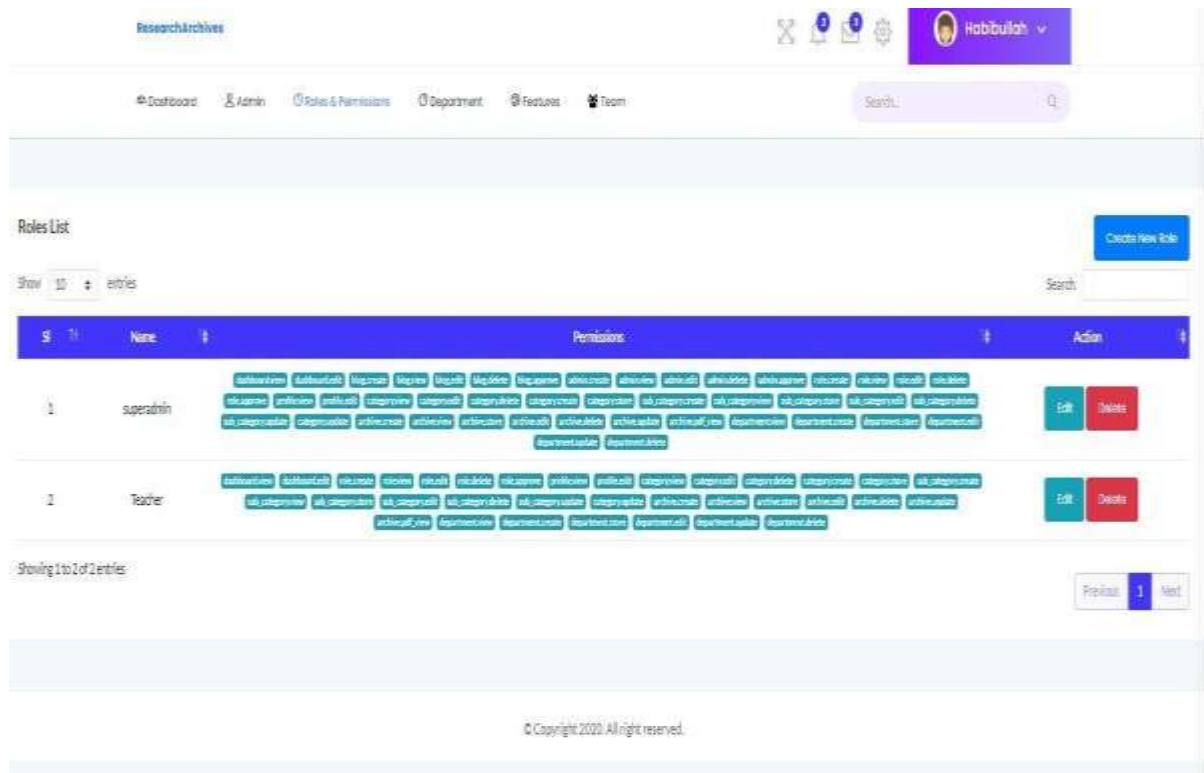


Figure 5.14: Roles and Permissions section.

Here you can see the super admin has all the authority. There is also another admin set by the Superadmin. Roles and permissions of other admin can be added and can be also deleted.

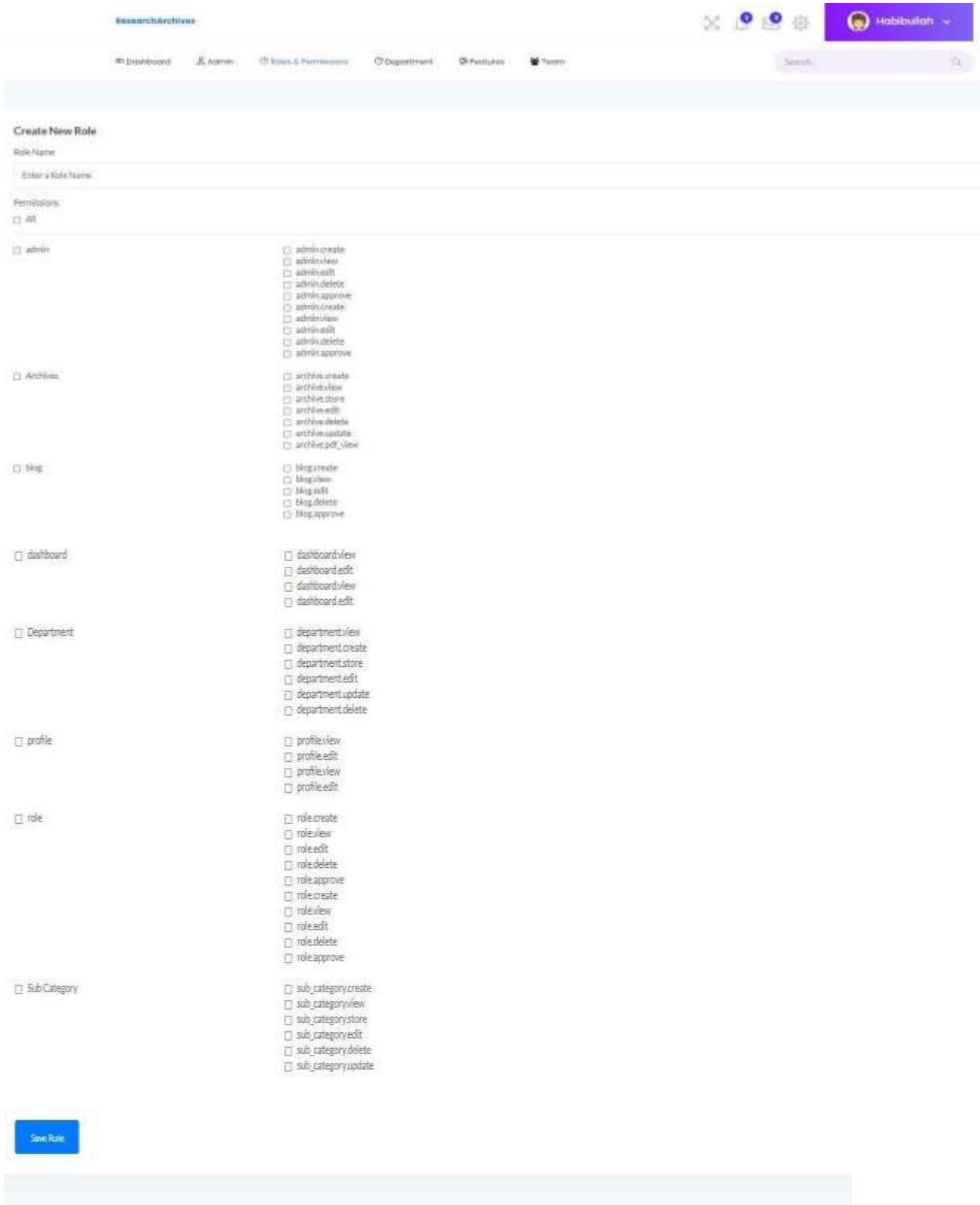


Figure 5.15: Adding Roles and Permissions section.

Figure 5.15 shows that how Superadmin can create rules and permission. He can give any access to any admin depend on their activities.

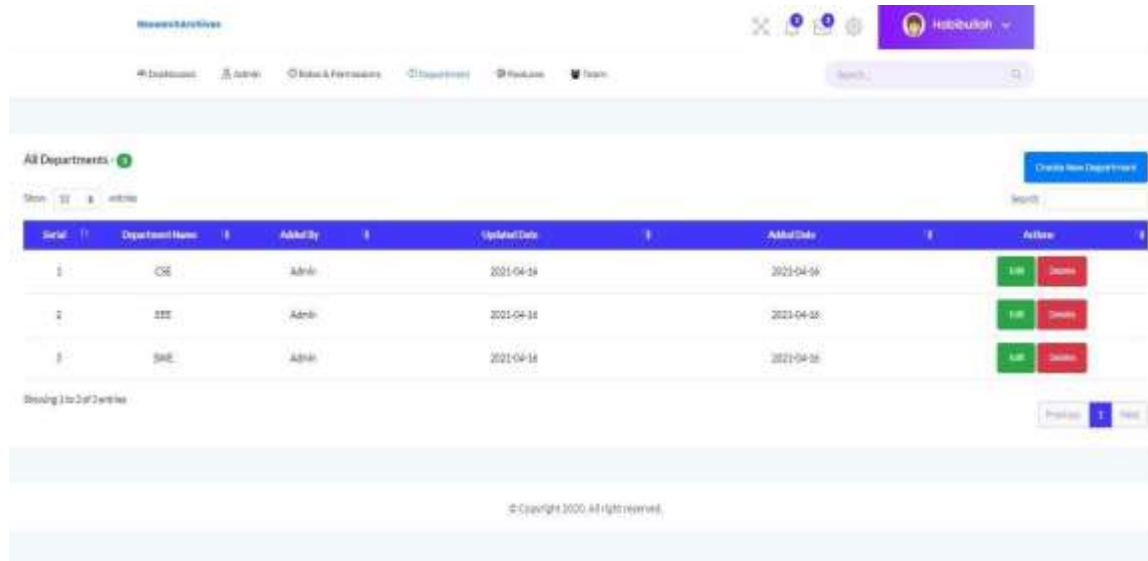


Figure 5.16: All Department

In this section, the admin can add see all departments and its information. If he wants he can add other departments by clicking on the right-side button “Create New Department”.

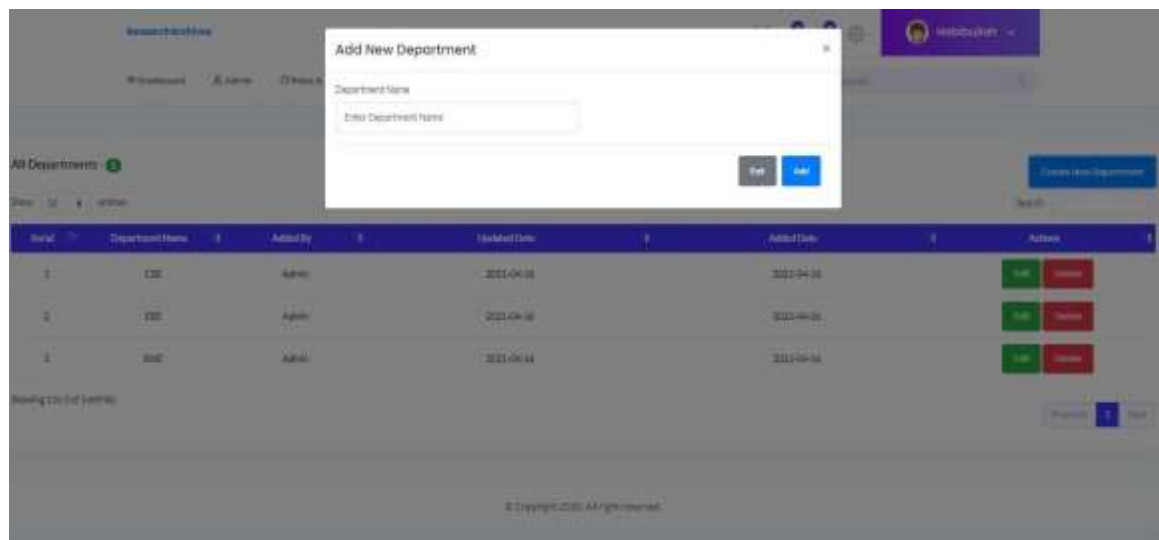


Figure 5.17: Adding New Department.

In this section, the admin can create a new department. If the admin wants to collect paper of a new department then he needs to add a department.



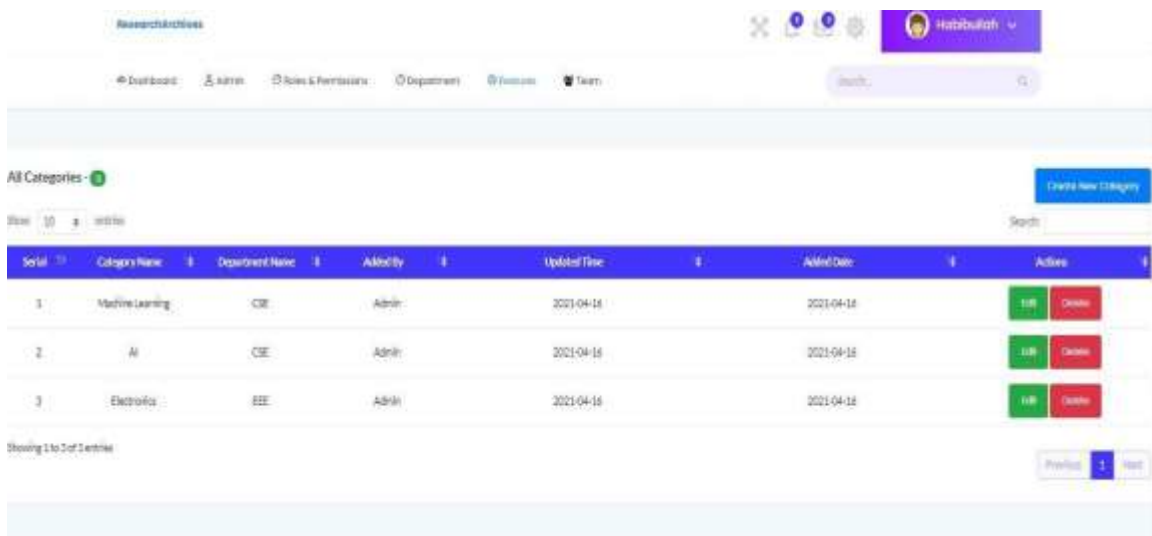


Figure 5.18: Features

In this features section admin can see any department's category and subcategory. Admin can edit and delete any of the serial. He can also add new category.

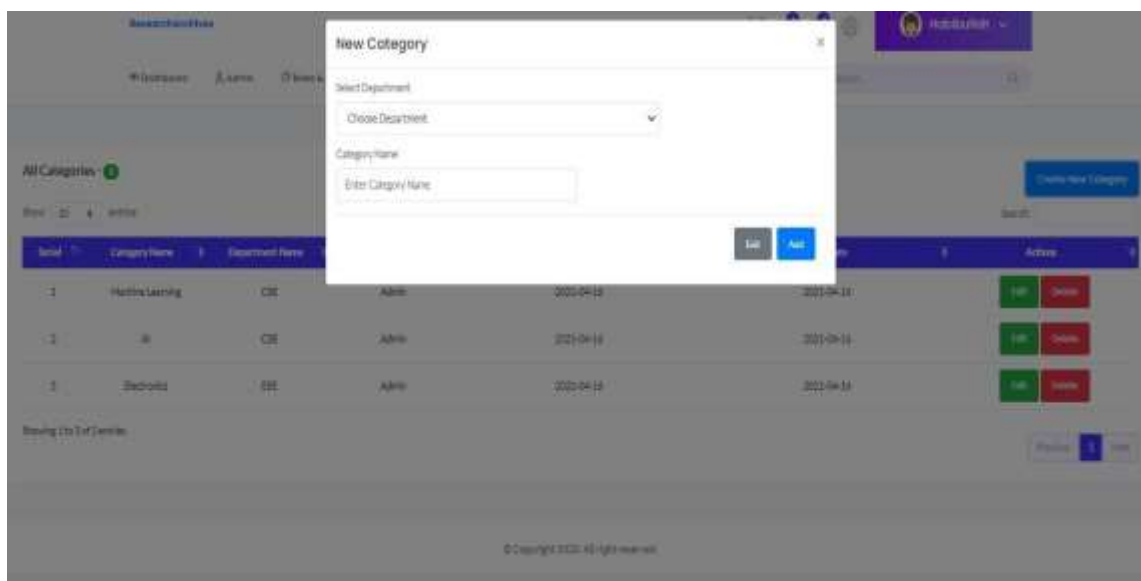


Figure 5.19: Adding Category

After adding the category, the category will be added on the features section but the department should be mentioned so that the category remains in this particular department.

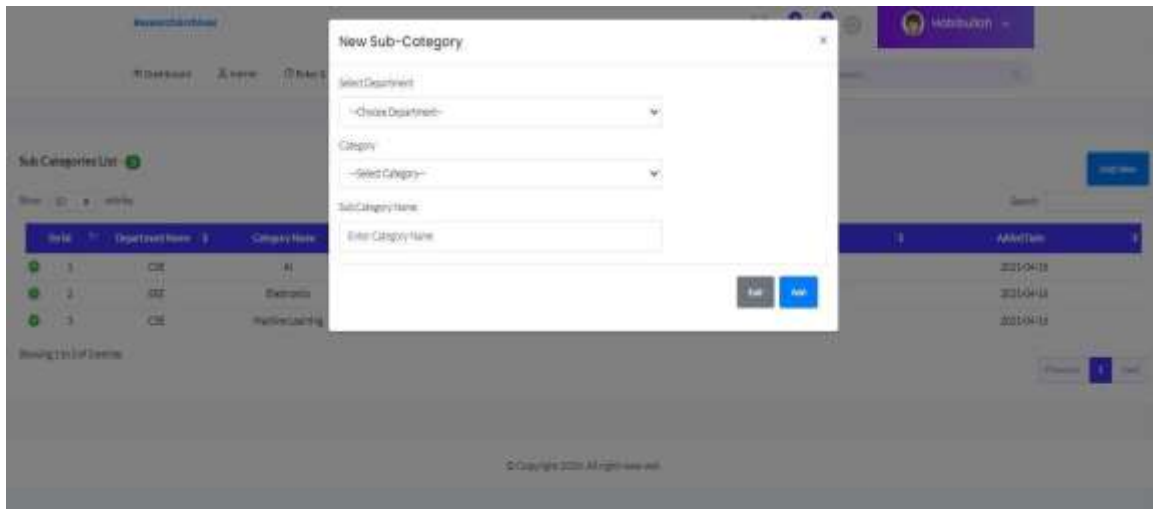


Figure 5.20: Adding Subcategory

After adding the Subcategory, the Subcategory will be added to the features section but the department and category should be mentioned so that the subcategory remains in this particular department and its category.

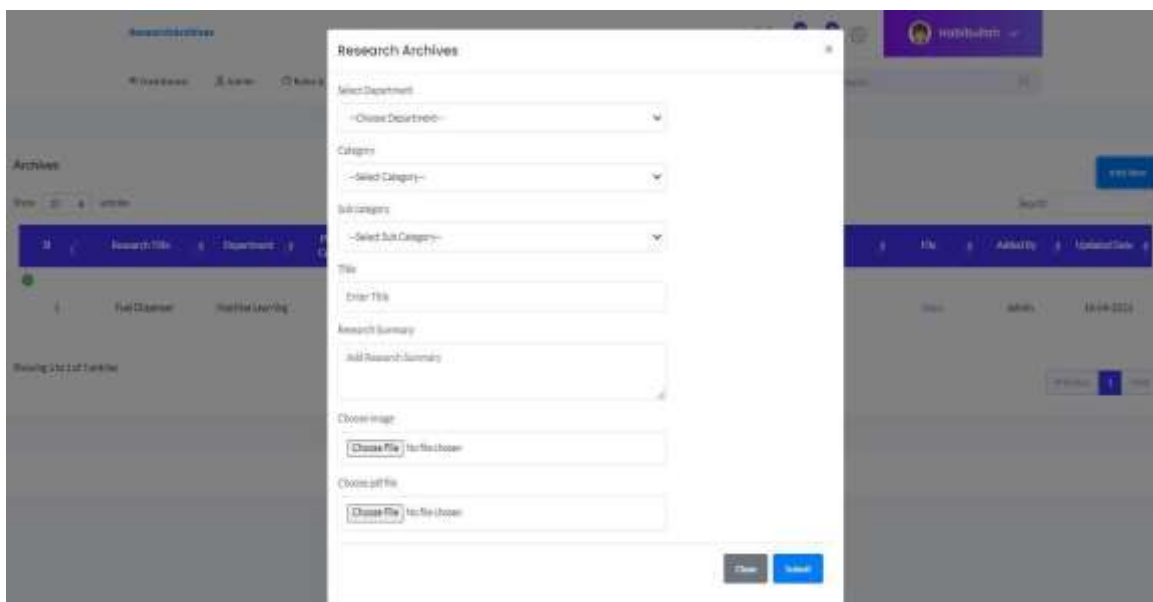


Figure 5.21: Adding Paper.

In the features section, the admin can add a new research paper to the archive. For this he needs to fulfill all this so that paper can be archived in right category, subcategory. In this part, admin provide the title and summary of the paper

## CHAPTER 6

### IMPLEMENTATION AND TESTING

#### 6.1 Database Implementation

In this chapter, we will discuss how the database is implemented in our application. We've used MySQL as our database.

#### 6.2 Database Design

For web applications, MySQL is a great choice for the user.

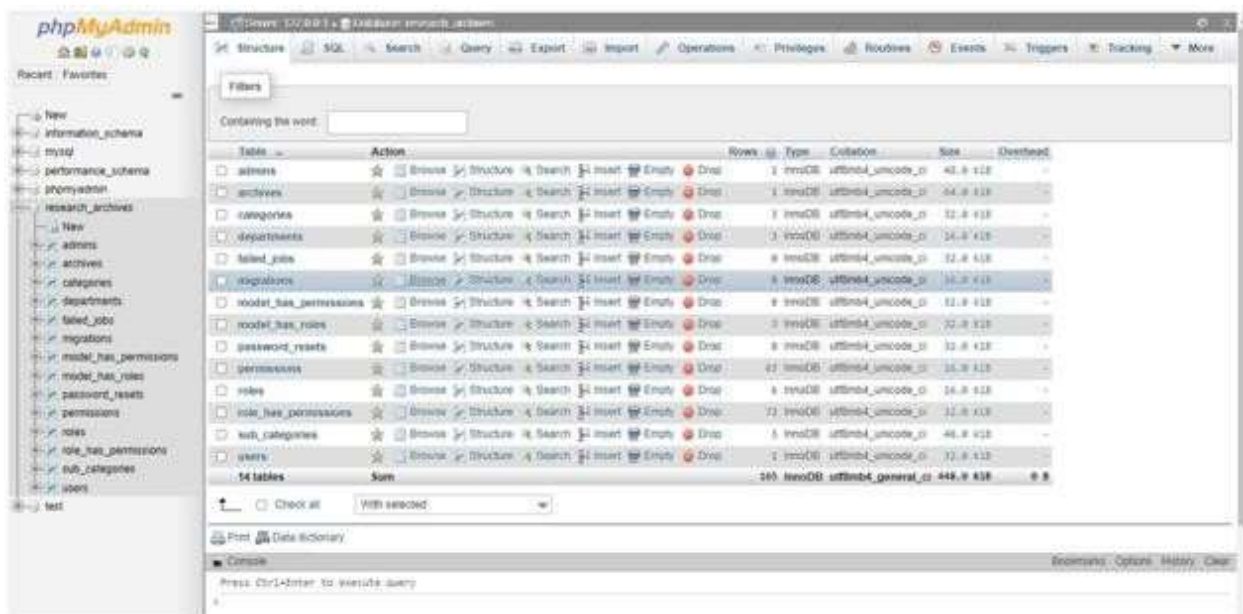


Figure 6.1: Database

In MySQL we create a database named “research\_achieve” and there are a total 14 table in the database.

#### 6.3 Testing:

Testing is very important for any kind of software because that helps to ensure the quality, performance and functionalities of the application and also reduce the cost,

saving development time, according to the requirements. For our application we tried to test our application almost all possible ways to ensure its quality, performance, functionalities and user satisfaction.

**Table Name:** Testing Application

<b>Test case</b>	<b>Device OS</b>	<b>Test input</b>	<b>Expected outcome</b>	<b>Obtained outcome</b>	<b>Passed/Failed</b>	<b>Testing Period</b>
Install	Windows 11	Installed by valid Computer	Successfully Installed	Successfully Installed	Passed	10-02-2021
	Windows 10	Installed by valid Computer	Successfully Installed	Successfully Installed	Passed	10-02-2021
	Windows 10	Installed by invalid Computer	Re-enter warning for failure	Installed denied	Failed	10-02-2021
	Windows 7	Installed by valid Computer	Successfully Installed	Installed denied	Passed	12-02-2021
	Kali Linux	Installed by valid Computer	Successfully Installed	Successfully Installed	Passed	15-02-2021
	Linux	Installed by valid Computer	Successfully Installed	Successfully Installed	Passed	15-02-2021
Sign Up	Windows 10	Not registered access	Access restricted	Restriction done	Passed	15-02-2021
Email Or Password	Windows 10	Incorrect Password Or Varsity Email	Varsity email and password	Warning shown	Passed	15-02-2021

Password	<b>Windows 10</b>	Incorrect Password	Showing Warning	Warning	Passed	15-02-2021
Login	<b>Windows 10</b>	Varsity Email and Password	Showing Warning	Warning	Passed	15-02-2021
Homepage	<b>Windows 10</b>	Provide Varsity Email and Password	Show Homepage	Homepage Shown	Passed	15-02-2021
Search	<b>Windows 10</b>	Correct Name	Paper list	Paper Shown	Passed	15-02-2021

## CHAPTER 7

# CONCLUSION AND FUTURE SCOPE

### **7.1 Conclusion:**

Finally, our work for this project has been finished. Research and Projects represent the excellence of a university and it is the scope to make a difference. This application is especially made for the students of Daffodil International University. In the early stage, Most of the students here don't feel interested in doing research because of proper knowledge. But every year thousands of papers are published by our university's students in different journals. In our application, we will collect all the research papers in an efficient way so that all the students can know which type of works already has been done in our university. They can download any papers and also can contact the paper's owner for any kind of help and information.

We strongly believe that this application will help the students of DIU for research and project and also this will bring a dynamic change in our research sector within a very short time.

### **7.2 Limitations:**

- Real time discussion with others.
- Lack of attractive UI design
- Student can't add any paper
- Difficult and time consuming to understand the paper source

### **7.3 Future Development scope:**

We will add some newer features to this application. We can make this application more user friendly by developing and upgrading its features and modules. This application is

designed for the students only, In future we will add a section for teachers. We will use a new UI design if most of the students recommend us and real time discussion with other user's features also will be added.

This application is web based. We want to make an android app and an ios app so that everyone can access the application within a short time.

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