

# **DESIGN AND DEVELOPMENT OF STUDENT MANAGEMENT SYSTEM**

**BY**

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

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**DHAKA, BANGLADESH**

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## **APPROVAL**

This Project titled “Design and Development Student Management System” submitted by Md. Morshed Hossain ID: 162-15-8193 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 July 09, 2020.

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## DECLARATION

I hereby declare that, this project has been done by me under the supervisor of **Mr.Narayan Ranjan Chakraborty, Assistant Professor and Department of CSE** daffodil International University. I 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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First I want to thank God for giving us the much-needed patience in order to complete my project. I want to thank my beloved parents for believing me. For their support, it would be impossible for me to complete this project.

I really grateful and wish of my profound our indebtedness to **Asst. Prof. Narayan Ranjan Chakraborty, Assistant professor**, department of CSE Daffodil International University, Dhaka. Keen interest of our supervisor in the field of “**web development and design**” to carry out this project. Without his direction, Support, Precious Ideas it would be very hard to us complete this project. He remain very helpful and kindly to us through the entire period of making the project.

## **ABSTRACT**

This application is based on web applications. My project name “Design and Development of Student Management System.” This project is made especially made for students, teachers, and parents. By this application, teachers can easily find students in his/her class and also contact with students and parents. The students can easily get information for their exams through this application. Here admin is the main controller in this application. Admin can remove a user. There is an option of changing the theme in my web application. I try my label best to make it user friendly. The user gets benefitted from my application.

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# CHAPTER 1

## Introduction

### 1.1 Introduction

Recent internet is available for everyone. Maximum people have a smartphone and the internet is available everywhere. Our teachers and guardians are very concerned about their children. They can use my application system. My application is completely made for students and teachers. In this application, the teacher can create his account and upload various kinds of course for their students. Students also get various kinds of courses from their teachers. Guardians also can contact teachers for enquires of their sons/daughters.

This application is slightly different from other application systems. Here teacher can upload his/her course as if students can view course whenever he/she needed.

### 1.2 Motivation

Student motivation and engagement are essential components of academic success. This is the challenge facing faculty is how to relate to students who are often very different from their teachers and who may best learn and process information differently than previous generations. One of the driving factors in this change is a new technology that is having a significant impact on society and the average college students. Today in the era of technology everything can find on the internet. In recent times peoples are interested to forget the information easily. Every educational institute wants to upgrade its education system. There are so many student management systems are available on the internet. Peoples have not so much patience to browse this type of system for so long. So we thought to make a simple web application where teachers and students are easily interacting with each other. We wanted to create a platform where a student can easily find their various kind of questions answer by their teacher.

### 1.3 Objectives of the web application

We worked with a specific area. Here's some of our objectives of the web application are given below.

- Admin can create a Teacher's account.
- Teachers can upload various kinds of sources and their solutions.
- Students can easily find their course and various kind of solution
- Providing an online interface for students, faculty, etc.

### 1.4 Expected Outcome

Here's some of my expected outcomes of the web application are given below:

- My project specially created for teachers and students. Easy way to find various kinds of courses and solutions.
- Teachers get a professional teaching Community
- Students will be able to see the teacher's profile without calling them.
  - Students can enroll in any course through this application.
- Teachers will be able to update their profile, provide the previous kind of course solutions, and much other information for finding appropriate questions.
- My web application saves time for the student as well as teaching staff.
- Lots of testing are done by me to make the project errors free. I have found many errors and tried with my best to remove all the errors from my project. In this moment I got the expected outcome. I try my best to make this project more efficient to the user. I hope that user will not find any problems during using my application. I think. All of my users get comfort to use my web application.

## **1.5 Report Layout**

A report layout is very important for a project report. I maintain the standard layout of writing my project report.

Chapter one I try to give the basic idea of my project. I've discussed my project what can users expect from this application.

In chapter two I discussed similar works to my project. I've discussed the objections and that makes my project different from other projects.

In chapter three I've discussed business process management (BPM), use case and logical databases as well as requirements for my project.

I've tried to give a nice preview of my project in chapter four.

I've discussed the testing part in chapter five.

Chapter six gives a total overview of my project and future development.

## CHAPTER 2

### Background

#### 2.1 Introduction

My system will be a web application that can be accessed from any browser. In my application users have to be signed up by his/her email. Users who have done registration can upload his/her own information then the system will automatically make a profile by using that information. Students can easily get a copy of questions solutions in pdf form by clicking a button called download. If the user wants, he can edit, delete his profile at any time.

#### 2.2 Related Works

Before starting the project we've seen some related websites to this area. spagreen.net is among of them.



Figure 2.2: spagreen.net

## **2.3 Comparative Studies**

This web application differs from all other web applications. My application stores the full information on the education institute. Students can see all the job teachers' information. Students can also any course.

## **2.4 Scope of the problem**

Every web application has some simple problems. This app also has some scope of problems.

- Students can create account with false skills.
- False students can harass teacher and education institute.

## **2.5 Challenges**

Web development applications have hues demand in the online market. Thanks to the curious students base that visit institute websites, apps and the social platforms to discover more about their information, their value for money, and for other product and company-related details.

Web application development has faced a lot of challenges and difficulties. Here some shortlist for this:-

- Must have to use valid email to registration and log in.
- One email can be created only one account.
- UI and UX design similarity.
- Performance of the website.
- Less Scalable.
- Security system of the application.

## **Chapter 3**

### **Requirement Specification**

#### **3.1 Requirement Collection and Analysis**

To build any kind of project at first we need some basic requirements for starting this project. Requirements collection is very important for the project. The requirement is also important for the manage the project function. Through requirements, the project manager can determine the end deliveries of the project and how the end deliveries should address the client's specific requirements. .The requirements should be documented, actionable, Requirement analysis defined to a level of system design. Some requirements are needed in data collection for implementing the web application. There are some requirements written below.

- An equine and a valid email is needed for registration.
- Valid user name and password is needed to login.
- Needed valid email to send message.
- Needed active phone number.

#### **3.2 Use case modeling And Description**

We create a use case model for the whole system. A use case describes scenarios that will be perceived by different characters. In our project, there are two types of characters who execute their performance according to their sections. They are:-

- Administrator.
- Faculty.
- Students.
- Users.

### 3.2.1 Use case diagram

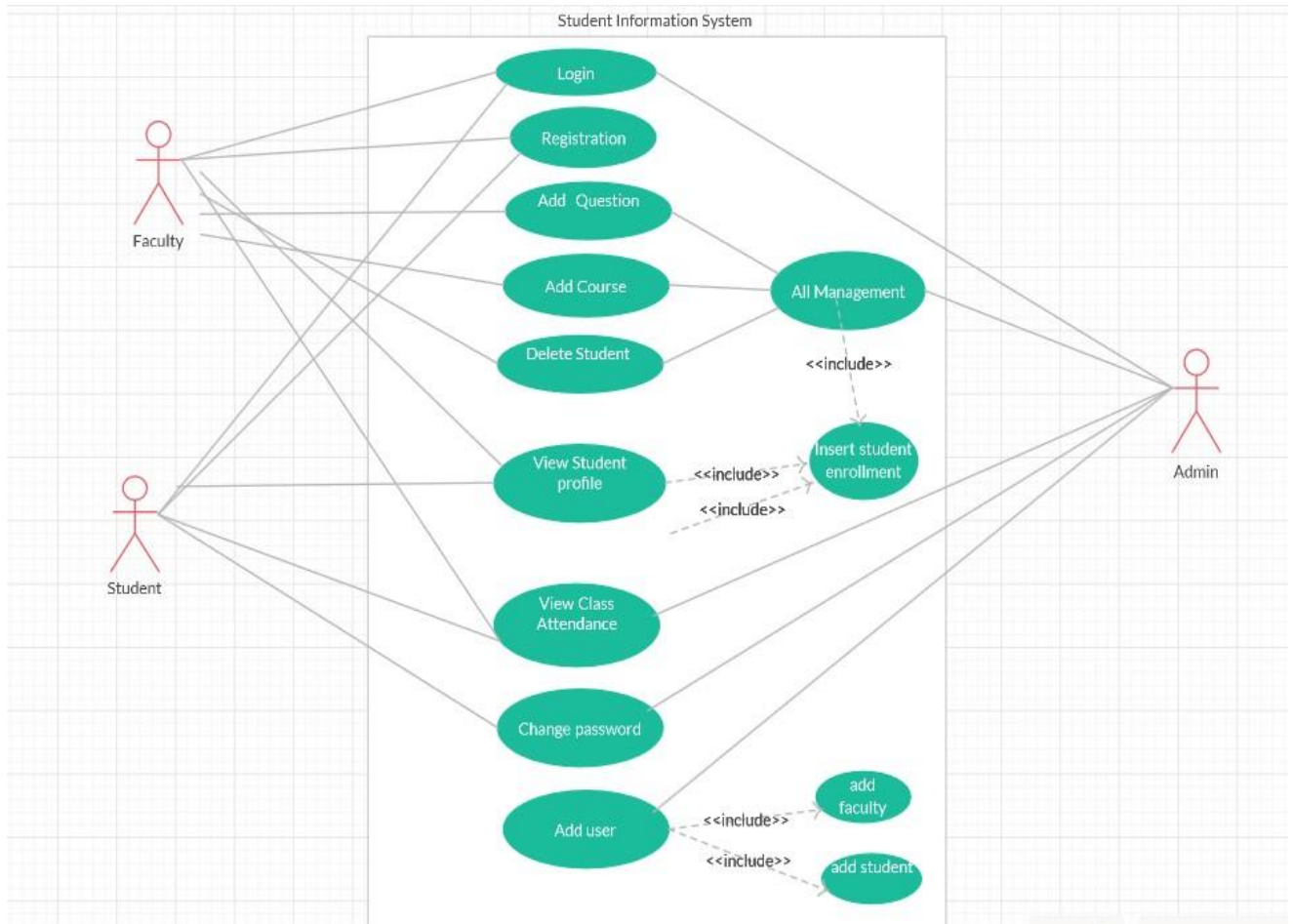


Figure 3.2.1: Use case diagram

### 3.2.2 Detailed use case

**Table 3.2.2.1: Use case description of signup.**

<b>Name of the use case</b>	Signup
<b>Primary Actor</b>	user
<b>Secondary Actor</b>	system
<b>Pre-condition</b>	Go to the application
<b>Scenario</b>	<ol style="list-style-type: none"><li>1. Enter valid and unique email.</li><li>2. Enter password.</li><li>3. Confirm password</li><li>4. Enter other information.</li><li>5. Enter phone number.</li><li>6. 5. Click “signup” button.</li></ol>
<b>Post condition</b>	Sign up complete or failed.

**Table 3.2.2.2: Use case Description of login page.**

<b>Name of the use case</b>	<b>Login</b>
<b>Primary Actor</b>	User
<b>Secondary Actor</b>	System
<b>Pre-condition</b>	Complete registration.
<b>Scenario</b>	<ol style="list-style-type: none"><li>1. Enter valid and unique email.</li><li>2. Enter correct password.</li><li>3. Click “login” button.</li></ol>
<b>Post condition</b>	Show the dashboard or failed.



### 3.3 Logical Data Model

The logical data model very important to make any kind of project. At first, I make a logical data model to make my project understandable to the users. I use object-oriented programming to build my project.

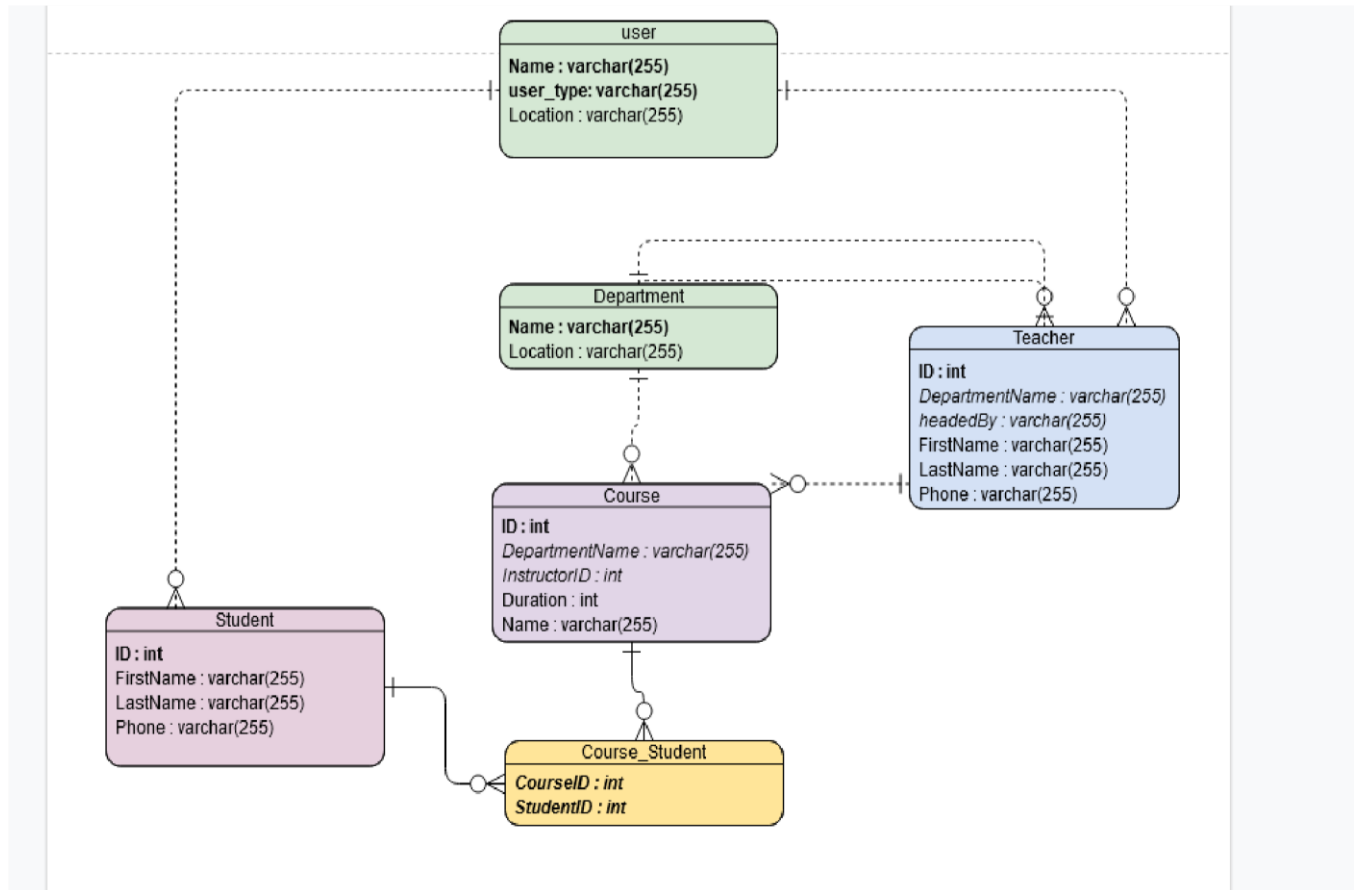


Figure3.3.1: Logical Data Model

### 3.4 Design Requirements

I used many elements to build my project. Here some of the elements given below –

- HTML: I used HTML to design font-end layout.
- CSS: CSS called a cascading style sheet. I used CSS3 to design my project.
- Bootstrap: I made this website responsive using Bootstrap 4.
- JavaScript: I used JavaScript to make our site more attractive.
- Pixie: It is used to get color codes.
- Photoshop: It is used to make a logo, banner and get exact measurement to design this project.
- Ajax: AJAX stands for Asynchronous JavaScript And XML I use ajax for error handling and Session message
- PHP: I use PHP for back-end programming language.
- XAMPP 7.4: I use the XAMPP server as my local server to develop my project.

# Chapter 4

## Design Specification

### 4.1 Front-End Design

This is the home page of my web application. This part is directly interacting with users. That's why I give more importance to beautifully design my system. I tried to make this project as many users friendly as I can.

#### 4.1.1 Home Page

- This is the main page design for every user.
- Here Admin and teacher can log in their dashboard clicking Faculty as teacher, Admin as admin and student as user.

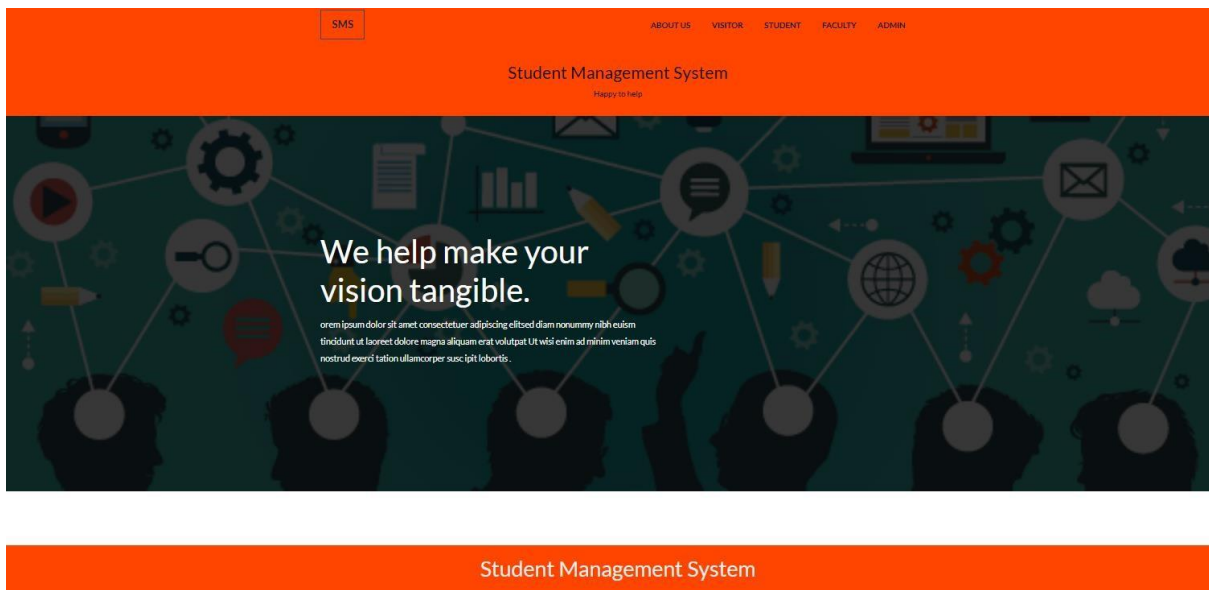
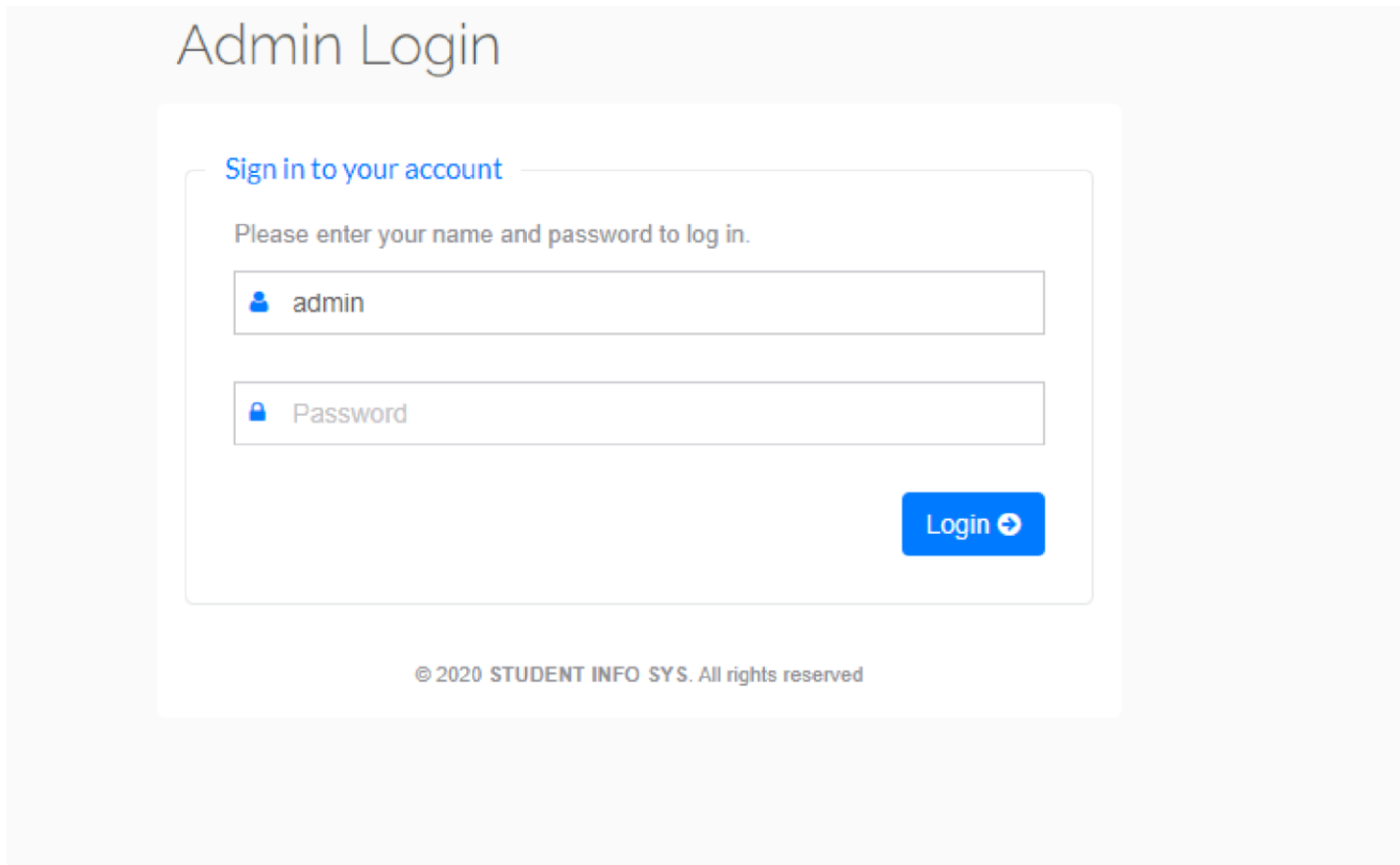


Figure 4.1.1: Home page

## 4.1.2 Login Page

Here admin can login by using his/her username or email and password. User must be use a valid email.

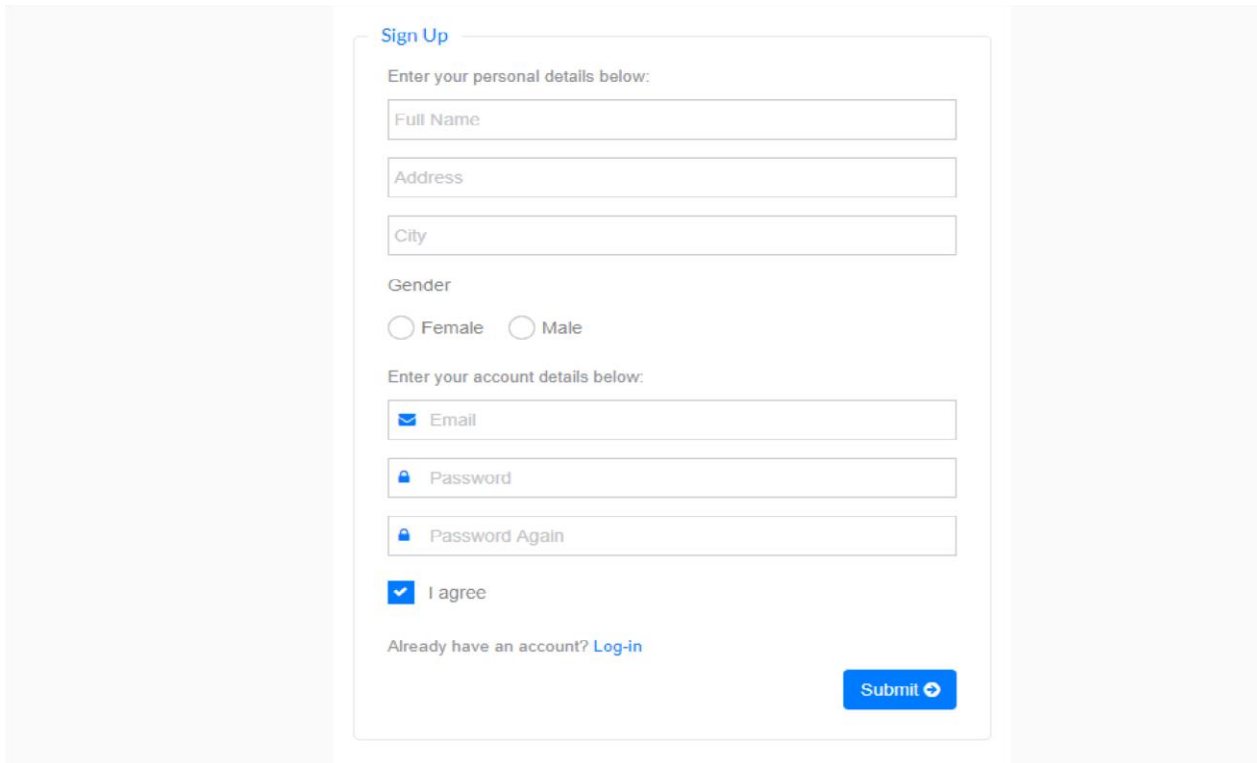


The image shows a web page titled "Admin Login". At the top, it says "Sign in to your account". Below that, it prompts the user to "Please enter your name and password to log in." There are two input fields: the first is for the username, which contains the text "admin", and the second is for the password, which contains the text "Password". A blue "Login" button with a right-pointing arrow is located to the right of the password field. At the bottom of the page, there is a copyright notice: "© 2020 STUDENT INFO SYS. All rights reserved".

**Figure 4.1.2: login Page**

### 4.1.3 Registration Page

Here user can registration by providing required information. User must be full fill all the requirement in this page.

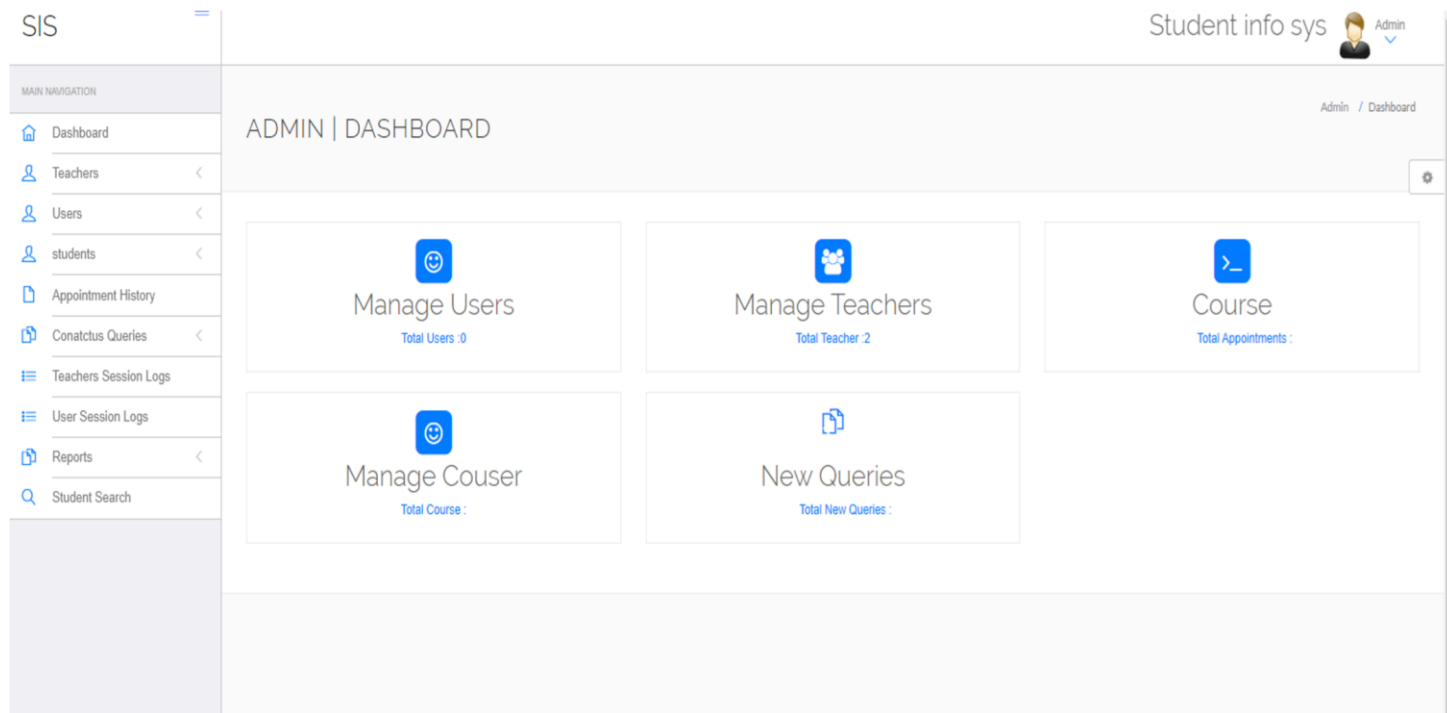


The registration form is titled "Sign Up" and is contained within a light gray border. It is divided into two main sections: "Enter your personal details below:" and "Enter your account details below:". The personal details section includes input fields for "Full Name", "Address", and "City", followed by a "Gender" section with radio buttons for "Female" and "Male". The account details section includes input fields for "Email", "Password", and "Password Again", each with a small icon (envelope, lock, and lock respectively). Below these fields is a checked checkbox labeled "I agree". At the bottom left, there is a link "Already have an account? [Log-in](#)". At the bottom right, there is a blue "Submit" button with a right-pointing arrow.

**Figure 4.1.3: Registration page**

## 4.1.4 Dashboard Page

This is admin Dashboard page. Here the admin can maintain the full system. Here admin can create teacher account. He also see the visitor message.



**Figure 4.1.4: Dashboard page**

## 4.1.5: Visitor Page

➤ This Page visitor ask question to the institution.

SMS ABOUT US VISITOR STUDENT FACULTY ADMIN

Student Management System  
Happy to help

Name To see

Email Visit(Official/Personal)  
 Official  
 Personal

Contact Purpose of visit

Submit Information

Student Management System

**Figure 4.1.5: Visitor page**

## 4.1.6 Add Teacher Page

- Here Admin add teacher for their institute.

Add Teacher

Teacher Name

Teacher Subject

Teacher Address

Course Fees

Teacher Contact no

Teacher Email

Password

Confirm Password

**Figure 4.1.6: Add teacher page**



## 4.2 Back End Design

It is the most important part in a web application. No web application will work without a good back end design. I designed the back end in this project by using object oriented programming and PHP.

Admin can add teacher account, then teacher can update their profile and add student of their various kind of course the user whenever he/she want. Admin can modify, delete, and add his information at any time

### 4.2.1 Database design

Here users can update his/her information. Admin can maintain this web application.

**Table 4.2.1.1: User table**

Column Name	Data Type (size)	Index
<b>id</b>	int (11)	Primary key
<b>fullname</b>	Varchar(55)	
<b>address</b>	Varchar(55)	
<b>city</b>	Varchar(55)	
<b>email</b>	Varchar(55)	
<b>gender</b>	Varchar(55)	
<b>password</b>	Varchar(55)	
<b>regDate</b>	timestamp	
<b>updatationDate</b>	timestamp	

**Table 4.2.1.2: Subject table**

Column Name	Data Type (size)	Index
<b>id</b>	int (11)	Primary key
<b>subject</b>	Varchar(255)	
<b>address</b>	Varchar(255)	
<b>updatationDate</b>	timestamp	

**Table 4.2.1.3: Question table**

Column Name	Data Type (size)	Index
<b>id</b>	int (11)	Primary key
<b>question</b>	Varchar(255)	
<b>ans1</b>	Varchar(255)	
<b>ans2</b>	Varchar(255)	
<b>ans3</b>	Varchar(255)	
<b>ans4</b>	Tinyint(11)	
<b>correct_ans</b>	Tinyint(11)	
<b>updatetion</b>	datetime	

**Table 4.2.1.4: Add student table**

Column Name	Data Type (size)	Index
<b>id</b>	Int (11)	Primary key
<b>teac_id</b>	Int (11)	
<b>student_name</b>	Varchar(255)	
<b>phone</b>	Varchar(255)	
<b>student_email</b>	Varchar(255)	
<b>student_address</b>	Varchar(255)	
<b>student_age</b>	Varchar(255)	
<b>student_gender</b>	Varchar(255)	
<b>course</b>	Varchar(255)	
<b>creation_date</b>	timestamp	
<b>updation_Date</b>	timestamp	

**Table 4.2.1.5: Teacher table**

Column Name	Data Type (size)	Index
<b>id</b>	Int (11)	Primary key
<b>teacher_name</b>	Varchar(255)	
<b>subject</b>	Varchar(255)	
<b>address</b>	Varchar(255)	
<b>course_Fees</b>	Varchar(255)	
<b>contactno</b>	Varchar(255)	
<b>email</b>	Varchar(255)	
<b>password</b>	Varchar(255)	
<b>creationDate</b>	timestamp	
<b>updationDate</b>	timestamp	

**Table 4.2.1.6: Admin table**

Column Name	Data Type (size)	Index
<b>id</b>	Int (11)	Primary key
<b>user_name</b>	Int (11)	
<b>password</b>	Varchar(255)	
<b>updataionDate</b>	timestamp	

**Table 4.2.1.7: Visitor table**

Column Name	Data Type (size)	Index
<b>Id</b>	Int (11)	Primary key
<b>fullname</b>	Varchar(255)	
<b>email</b>	Varchar(255)	
<b>contactno</b>	Varchar(255)	
<b>message</b>	Varchar(255)	
<b>postingDate</b>	Varchar(255)	
<b>adminremark</b>	Varchar(255)	
<b>lastupdataion</b>	timestamp	
<b>isRead</b>	int(4)	

### **4.3 Implementation Requirements**

My web application run with the help of apache web server and MySQL server database system and PHP. This time PHP is the most popular web server platform in the world.

My web application have some advance functionality, so I have needed some configuration requirements.

- Needed to install apache web server.
- Needed to install MySQL server.
- Apache with configured PHP must be needed.
- Google API.

## **CHAPTER 5**

### **Implementation and Testing**

#### **5.1 Implementation of Database**

The database is the big factor of all application systems. It's online storage where any kind of data can be store. Because storing data in hardware is not so secure. So it's been always a major part of a project to implement a database. Web developer uses this data in various sector of the project. Now a day's people are generally want to store all their information on the digital platforms so that they can get access to it anytime and from anywhere. But it's a very sensitive thing that user's information is very valuable for the user. As usual user will not want that somehow his/her information being misused and leaked.

So it's very essential and important work for any developer to secure the database. The more secure database is the more attractive and useful for users. And that's the reason I've tried my best to secure my database. My system authorized client can update their data through the system. I've used their mail verification technique for verified users. I also used unique email id that's why a user can use only one email for registration,

#### **5.2 Implementation of Front-End Design**

Front-End design I use HTML, CSS, many jQuery libraries and JavaScript. It is very big challenge for front-end developer to design the whole back-end and front-end design. I make my front end of a website change constantly and so the developer needs to constantly be aware of how the field is developing in back-end development.

It's very important to look at a web application beautiful and attractive so I have tried a lot to look my project very attractive and user-friendly. I have done a lots of research on user-friendly templates.

So finally I think of a template that is very simple and easy to use.

To implement this template I used HTML5, CSS3, jQuery, JavaScript, Bootstrap4.

### **5.3 Implementation of Interactions**

User interaction is a more important thing than making a web application. Because it's the user for whom I created the web application. So it's the main challenge for me to create a user-friendly web application. So that I have tried my best to make our project to easy, simple and user friendly. I hope my application will be easy to use for users and effective. As I worked with a selective area, I think the user will accept my application with a happy face and they will be benefitted. I will see how the user response to my project and then in the basis of response I will do lots of research on it and make sure users pleasure.

### **5.4 Testing implementation**

There are many important efforts need to build a web application better. Among them, testing is one of the important parts of web design and development. Before releasing a web application to the user it's the final step. The drawbacks and errors of a web application come in front of developer due to testing process. After the testing developer can think of the next step. So testing is very essential in the field of web engineering.

In my web project I have done a lots of testing, some of them discuss in below here-

- Error testing: I've tested lots of input to find whether there was an error had or not. Whenever I found an error, I solved it and made sure that it never could happen again. I had done this process more and more till I got desired result.
  
- Data validation: Data validation is a very essential part of the web applications. Because security is the main prospect of any application. I've test data validation by giving some valid and invalid input data and check the desired result.
  
- Unlimited data store: Unlimited data can reduce systems speed. It increases unwanted loading time. Which makes the application heard and uncomfortable to use. So I use

validation in my application that's why users can't push large size images and data in my system. I recover the problem and tested the application.

## **5.5 Test Results and Reports**

I test my application many times and make the application error-free. I have found hundreds of errors and tried with our hearts and soul to remove all the errors. Finally, I got the expected outcome that I want. I do my best to make this project more efficient to the user. I hope that the user will not find any errors during using this web application. My application is easy to use. I hope it will be very helpful to the user and my application will get lots of responses from the user.



## **CHAPTER 6**

### **Conclusion and Future Extension**

#### **6.1 Discussion and Conclusion**

Covid-19 pandemic has stopped our education system. All schools and colleges are closed during this pandemic. For this reason, our students can't able to maintain their studies. This situation all the student need a platform where they can maintain their study. I want to make this web application to make the educational platform, where the student can easily contact their teacher and discuss their problems. This application is also very important for digital Bangladesh. I want to build a stage where faculty can immediately contact with their students. In this situation, this kind of application is much needed. I made this web app for educational section. I design my database in the best way that's why my application stores lots of data. I think our students and teacher will be benefited from this application.

#### **6.2 Extension for Future Development**

I've to make this web app for continuing our education system during the COVID-19 pandemic time. I've thought about the future development of my project. I will improve our search system so that people can feel easier to use the app and students can easily find their course. I will also add chat boot in the future. I will try to add a payment system in my application. So our teaching community will get money for their course.

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**PLAGIARISM TEST OF MY PROJECT REPORT**  
**DESIGN AND DEVELOPMENT OF STUDENT MANAGEMENT SYSTEM**

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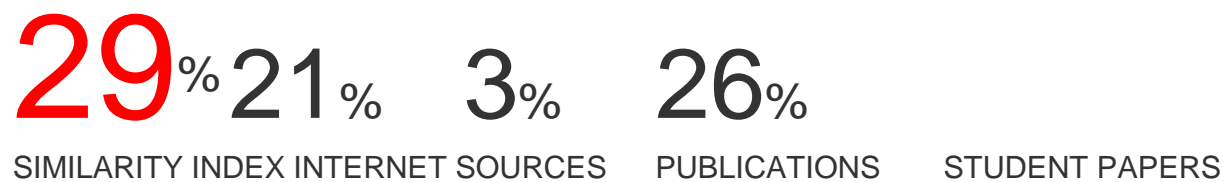
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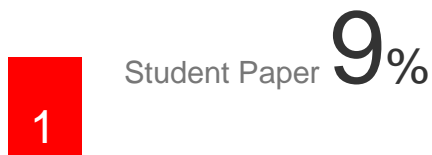


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