

"Shushikkha": A Distributed Learning Platform

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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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APPROVAL

This Project titled “"Shushikkha": A Distributed Learning Platform” submitted by Abdul Aziz, Md. Rakibur Rahman Rabin, Sadia Afrin Suma and Md Arifur Rahman 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 was held on 1st June ,2021.

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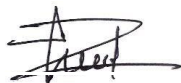
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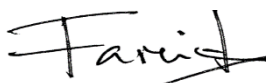
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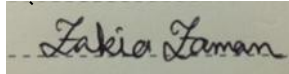
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DECLARATION

We hereby declare that this project has been done by us under the supervision of **Ms. Zakia Zaman, Lecturer (Senior Scale), Department of CSE, Daffodil International University**. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

"Shushikkha": A Distributed Learning Platform is a web application which is mainly developed for students of class 9-10 and 11-12 where students can have all the information and important classes according to their particular subjects. This web application is mainly developed because we have so many online education platforms for university students but there are few for schools and colleges student. Students can get all subject-wise important classes, lectures, video contents, document contents uploaded by their own teachers from the respected schools and colleges. From the front-end part, this website interacts with the user(students), admin, teacher, and from the back-end, it provides data that is required or called. Students can get the lectures, video contents, documents visually. By using this web application student from classes 9 to 12 can find their lectures solution so easily and fast.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The central nucleus of this web project is to get easy solutions for those students who are not able to take private classes but learn in a distributed form. With the help of this project, students can find the information that they want to understand about important class lectures with video content as well as document content. They can understand what kind of inconvenience they face and get an easy solution for their classes. Mainly those students will be benefited from the villages that cannot afford the private tuition. For them, it would be an opportunity to gain their knowledge using this web application. Students can learn so easily because the content is designed in a way so that students can find the requisite class content spontaneously.

1.2 Motivation

Online education is very popular at present for some of the selective sectors. Because of having vast worldwide web facilities, education features are going to spread very easily. In spite of having that, our Mediate and Intermediate (class 9-12) students do not have proper use of it. Nowadays a huge percentage of students in our country want their study content to be much more clear than water. They use the internet and learn the mixture for the respected topic that he/she is looking for. As an ending, they get confused about that wanted portion of their study. We also look up that online education is not a big deal in Bangladesh. We also think the written content and user(students) are friendly lessons for the young generation. After seeing and analyzing we are motivated to create a system that would be able to fully fill students gapping in their study process.

1.3 Objectives

1. Implement a central system to provide content to the institutions.
2. We need a judging panel to verify the contents which we will provide.
3. Implement a user system to get our content.
4. For making a utilized content sometimes we may use Graphic video animations, Slide representations, Live Streaming, Well hand notes, etc. for better understanding to the students
6. Class 9 – 12 Syllabus must be followed by the educational Board and we make it easier for students.

1.4 Expected Outcome

As previously briefed that this project is mainly for those students who don't have taken any private tuitions and don't understand in a form of text reading only. Students get crystal clear ideas about their class content thus they don't need extra tuition besides their educational institutions. It is not the quantity but the quality of knowledge that determines the mind's dignity. Absence of mind will be benefited. Reliance on private tuition will be decreasing. Teaching jobs will be available in our system.

1.5 Report Layout

In chapter two, we described the background of our application. We discussed the introduction, PHP, and related work. In chapter three, we described the Software requirement specification where we discussed all descriptions of admin, teacher, and student. We also added a use case diagram and ER diagram. In chapter four, the frontend design and backend design were discussed. In chapter five, we described the implementation and testing part of our application. In the last chapter, we described the future scope and conclusion.

CHAPTER 2

BACKGROUND

2.1 Introduction

In this chapter, we describe the technologies that we used in our web application. This section also has a detailed description of the related works and comparative studies along with project management, database, development platform, and programming language. We implement this web application with our previously gained web development knowledge and also take the help from various informative YouTube tech channels and udemy courses

2.2 PHP

Since the introduction of the Composer package manager and the PHP standards, writing PHP became easier and more manageable, whereas in the past you were almost forced to use a framework to maintain your project in a professional matter, nowadays this is not necessary, and today I will show you how to glue together a small API project with basic routing, third party packages, and testing without a framework. There are few reasons why you don't want to use a framework. You are creating a library, a small app/API, have more control, and so forth. Depending on our cases we might want to use a framework, don't get us wrong.

2.3 Comparative Studies

During the implementation of our web application, we learn so many other technologies and use those in our project

There are

Project management: It is very significant to developing any project because efficient project management assures that the project is completed within a previously fixed time. We tried to use efficient project management to complete this project.

Database: In this project, we have used MySQL database in the back-end to store data and fetch data whenever required.

System analysis: We used software development methodologies to implement this web application.

Development platform: To develop this project we have used Basic PHP without any framework like laravel, symphony, cakephp etc.

Programming Language: We have used php version 8.0.1 to implement this project.

CHAPTER 3

SOFTWARE REQUIREMENTS SPECIFICATION

3.1 Introduction

This portion represents the role of this website's admin, super admin, and users. It also describes who or how users can maintain this website. It visualizes how users can access content and how the admin can add students, teachers, and content. It also represents how students can only see classes without harming any other data and how teachers can add class content and add students.

3.2 Overall Description

This web application will be get-at-able for three persons. They are admin, students, and teachers. In this application, the admin will take any necessary steps if needed immediately. This web application is responsive. Now the description of every action is given below.

3.2.1 Admin

· Admin has all the control over this application. He can add, delete, edit any content or user's information. Admin can add class content, subjects, departments, teachers, students and also can edit files.

3.2.2 Teachers

After log in every user will find a homepage. where every feature will be shown on the side. But teachers do not have access to all the features. They can only add students, classes, and subjects

3.2.3 Students

After login, students will find only one feature named class. Where they will find every class content based on their subject name.

3.3 Use Case Diagram

The diagram which is shown below represents the entire use case of this web application. This diagram visualizes the authority of the admin, students, and teachers. What an admin can do with

this web application is visualizes by this diagram. From the diagram, it is clearly seen that superadmin is all in all in this web application. An admin has full power to delete or inactive any of the general admin. Super admin can give authority to any general admin as admin in his\her absence. So, the super admin is the main controller in this web application. A general admin can add content and users. A student can only access classes but can't delete any content. A teacher can add classes and students but can't delete any content from the classes. So, this diagram is the overall overview of this project.

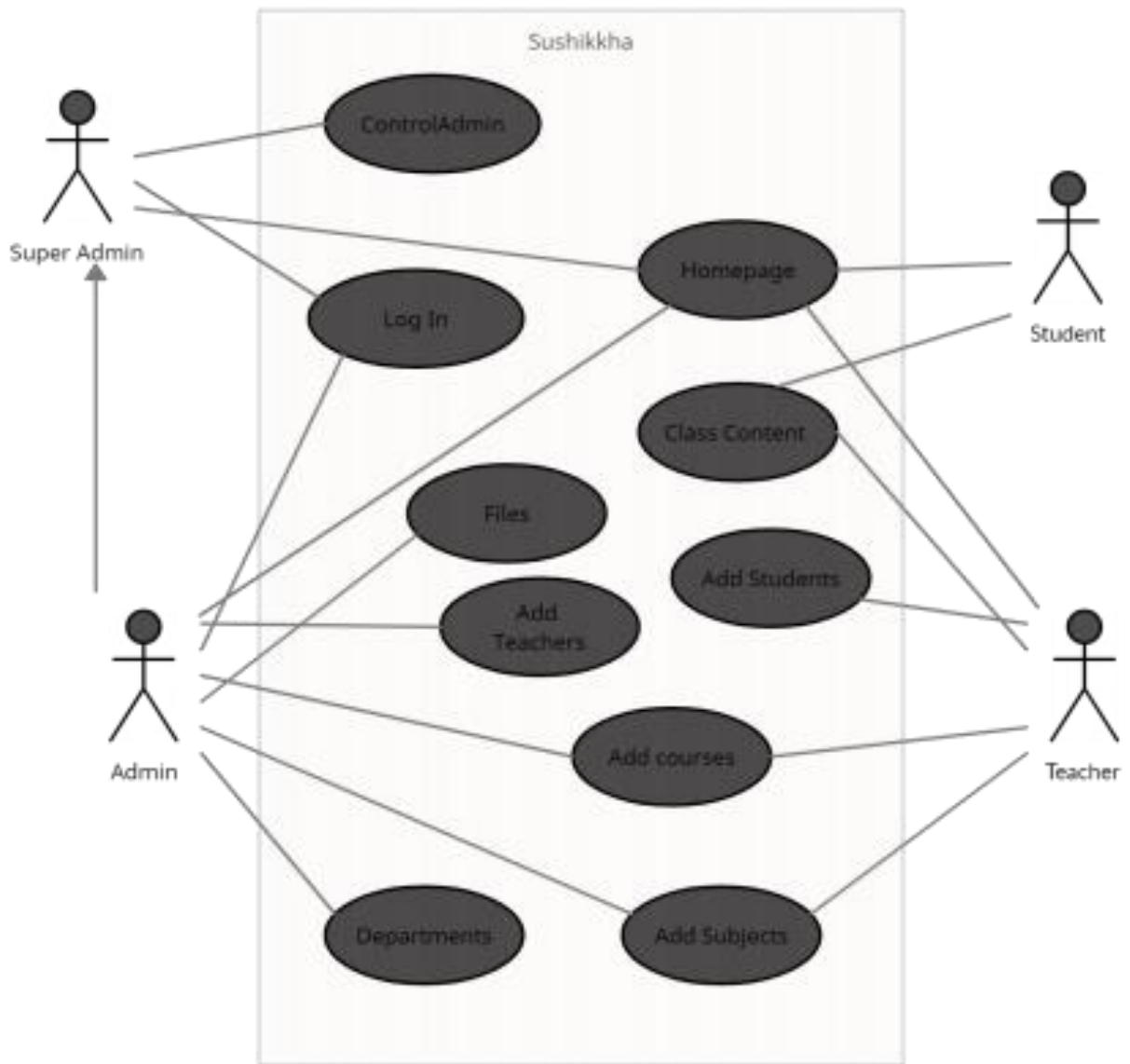


Figure 3.3.1: Use case diagram

3.4 ER Diagram

The entity-relationship diagram is a visualization of the database connection. It represents the relationship between different data tables in a database. ER diagram is an abstract data model. It is mainly developed for databases where each entity connects with each other with different kinds of relationships like generalization and specialization. ER diagram does not define the business process but it analyzes data to define and describe what is important to process in an area of business.

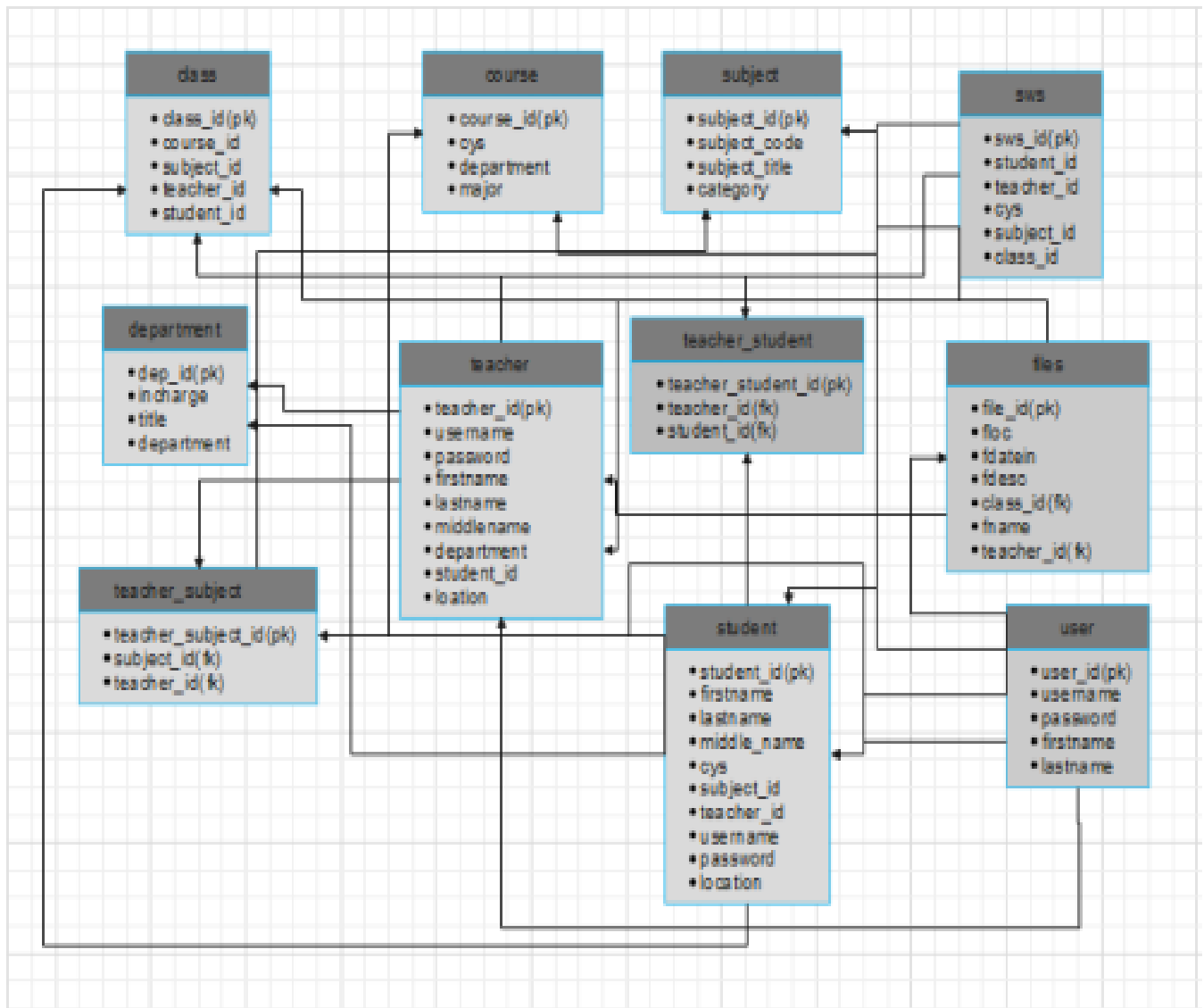


Figure 3.4.1: E-R diagram

CHAPTER 4

DESIGN SPECIFICATION

4.1 Introduction

This section describes how the User Interface (UI) of this web project has been designed. UI is a circumstance where users can directly interact with the web application. From the beginning of this project, our main goal is that the User Interface (UI) of this web application should be user-friendly.

4.2 Front-end Design

The front-end of any web application is so important. This is the first impression for any workflow of the web application. In this project, we used HTML5 (HyperText Markup Language), CSS3(Cascading Style Sheet), Bootstrap4, jQuery to implement the UI.

Figure 4.2.1 is the Home page of our web application which will appear when users browse our website.



Figure 4.2.1: Home Page

Figure 4.2.2 is the login panel and figure 4.2.3 ,4.2.4 and 4.2.5 shows the admin, teacher and student login option.



Figure 4.2.2: login Panel

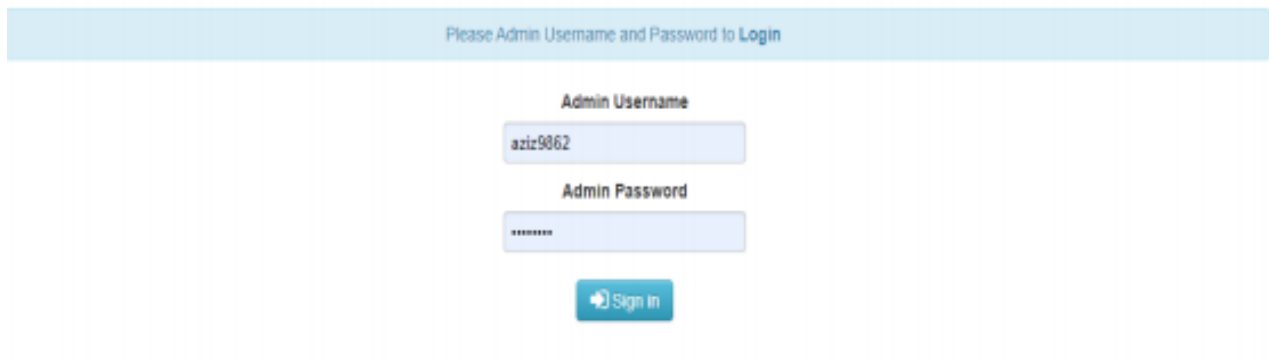
A screenshot of an admin login form. At the top is a light blue horizontal bar with the text "Please Admin Username and Password to Login". Below this bar are two input fields. The first is labeled "Admin Username" and contains the text "aziz9862". The second is labeled "Admin Password" and contains seven asterisks. Below the password field is a blue button with a white right-pointing arrow and the text "Sign in".

Figure 4.2.3: Login as an admin



Figure 4.2.4: Login as Teacher

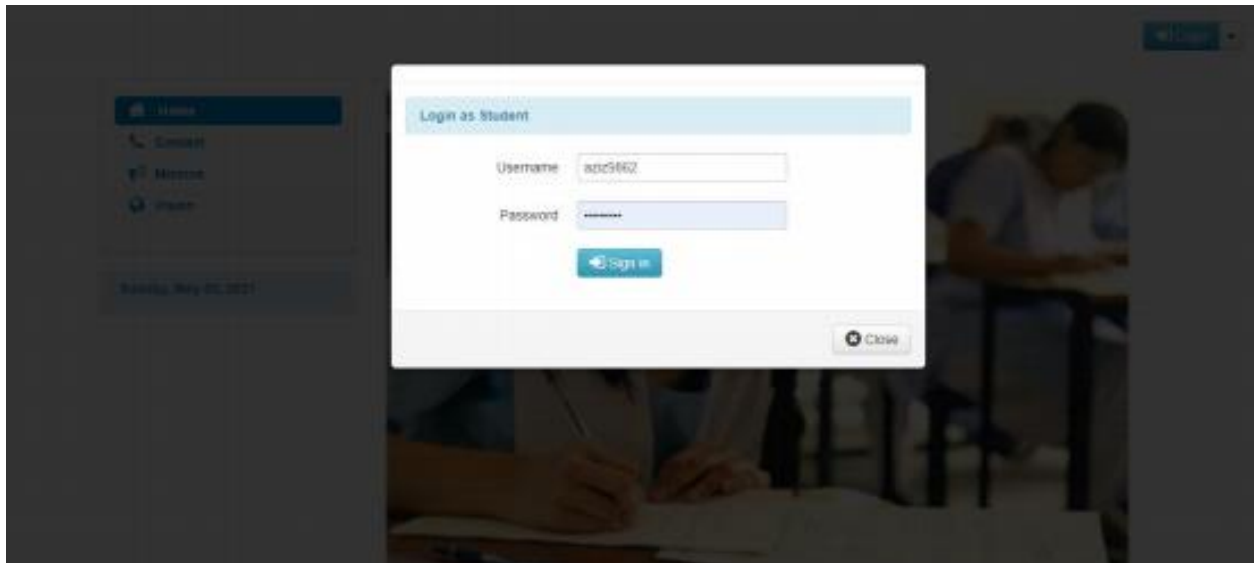


Figure 4.2.5: Login as a Student

Figure 4.2.6 shows how many task that admin can perform.



Figure 4.2.6: Admin Page

Figure 4.2.7 shows that admin can add important file






Figure 4.2.7: Adding file by admin

[Add Course](#)

Courses

10 records per page Search:

Course Code	Department	Major	Action
SSC-2021	Science Dept	Major	 
Nine-2021	Humanity Dept	Major	 

Showing 1 to 2 of 2 entries







[← Previous](#) 1 [Next →](#)

Figure 4.2.8: Adding Course by Admin

[Add Subject](#)

Subjects

10 records per page Search:



Subject Code	Subject Title	Category	Action
Ban10	Bangla	Minor	 
Bio9	Biology	Major	 
Phy10	Physics	Major	 

Showing 1 to 3 of 3 entries

[← Previous](#) 1 [Next →](#)

Figure 4.2.9: Adding Subject by Admin

[+ Add Department](#)




Departments			
10 records per page	Search: <input type="text"/>		
Department	Person in charge	Title	Action
Humanity Dept	Arif	Humanity	 
Science Dept	Shawun	Science	 

Showing 1 to 2 of 2 entries

[← Previous](#) 1 [Next →](#)

Figure 4.2.10: Adding department by Admin

[+ Add Student](#)

Students				
10 records per page	Search: <input type="text"/>			
Photo	Name	Username	Password	Action
	abdul shaon aziz	aziz9862	password	 

Showing 1 to 1 of 1 entries

[← Previous](#) 1 [Next →](#)

Figure 4.2.11: Adding student by admin

← Back

Username:

Password:

Firstname:

Lastname:

Middlename:

Image: No file chosen

Figure 4.2.12: Create a new student info and add by admin

Super Admin

Teachers

10 records per page Search:

Photo	Username	Password	Name	Department	Action
	shawun	password	Shawun Ahmed Shawun	Science Dept	<input type="button" value="Delete"/> <input type="button" value="Edit"/>

Showing 1 to 1 of 1 entries ← Previous | 1 | Next →

Figure 4.2.13: Adding teachers by admin

Super Admin

Add User

Users

10 records per page Search:

Username	Password	Firstname	Lastname	Action
admin	password	Super	Admin	<input type="button" value="Delete"/> <input type="button" value="Edit"/>

Showing 1 to 1 of 1 entries

Figure 4.2.14: Adding another admin by admin

Figure 4.2.15 shows the teacher panel

Shawun Shawun

- Home
- Class
- Subject
- Student

Saturday, June 05, 2021



Figure 4.2.15: Teacher Panel



+ Add Subject

Subjects

10 records per page Search:

Course Code	Course Description	Action
Ban10	Bangla	
Bio9	Biology	
Phy10	Physics	

Showing 1 to 3 of 3 entries

← Previous 1 Next →

Figure 4.2.16: teacher can add subject in classes

← Back

Physics

+ Add Student Upload a File

10 records per page Search:

Uploaded Files

Photo	Name	Action
No data available in table		

Showing 0 to 0 of 0 entries

← Previous Next →

Name	Action
Lesson 1	
Lesson 1	
Lesson 2	

Figure 4.2.17: Teacher Activity Panel

[← Back](#)

Upload a File

Subject: Physics

File No file chosen

Title

Description

Figure 4.2.18: Teacher can add Class Content

Figure 4.2.19 shows the Student Section



Figure 4.2.19: Student Panel

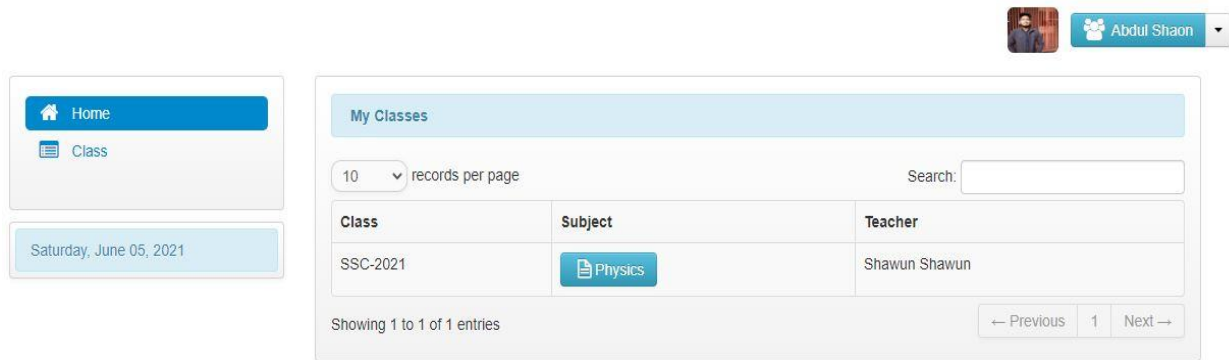


Figure 4.2.20: Student have their class content subject wise

The screenshot displays a web application interface. At the top right, there is a user profile for 'Abdul Shaon'. On the left, a sidebar contains a 'Home' button and a 'Class' button, along with a date display for 'Saturday, June 05, 2021'. The main content area features a 'Class Content' section with a table listing three entries. The table has columns for 'File Name', 'Description', 'Date Uploaded', and 'Action'. Each entry has an eye icon in the 'Action' column. Below the table, there is a pagination control showing 'Showing 1 to 3 of 3 entries' and navigation buttons for 'Previous', '1', and 'Next'.

File Name	Description	Date Uploaded	Action
ICT	MCQ FOR ICT	2021-06-05 13:57:25	
Lesson 1	Lesson 1	2021-04-28 03:48:49	
Lesson 1	Part 2	2021-04-28 03:49:25	

Figure 4.2.21: Student have subject wise description and action button to see content

4.3 Back-end Design

With the help of the Back-end, data can be inserted, edited, deleted, or manipulated into a database. The back-end is mainly a server-side thing that controls web applications without showing the complexity to the user. Users only can experience the front-end part and the back-end is mainly given front-end functionality. Without the back-end, front-end can't be functional.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Introduction

This part actually shows how our web applications respond in production before deploying it. How can it be a smooth user experience with help of front and back end technologies? Also shows that this web application stores the data in the database. Hence, the front end takes data, and the back end stores the data. By giving Subject wise class content like videos, pdf, handwriting images, etc. Does it also verify that this project is deployable in the real world by testing or not?

5.2 Unit Test

In unit testing, each of the components of the web application is tested individually. It tests each of the components and modules that work properly or not. Isolate each unit of the system to identify, fix the issues.

5.3 Integration Test

This testing is the opposite of unit testing. In unit tests, we test the component individually but in the integration test, it tests all the components together. Integration tests developed materials together also.

5.4 System Test

This test is basically a test where a complete and integrated software system is tested. It is a black-box testing method performed to evaluate the complete system. In this system test, the whole software application has to evaluate fully.

5.5 Acceptance Test

This test actually stands for if the system is acceptable or not. This testing method defines whether the system has met the required specifications or not. The requirements of acceptance

tests have to be defined clearly at the beginning stages of product development. Acceptance Testing is the final phase of software testing performed after System Testing and before making the system for real-world uses. This testing is categorized,

- Internal Acceptance Test
- External Acceptance Testing
- Customer Acceptance Testing
- User Acceptance Testing (UAT)



Figure 5.5.1: Steps of testing process

CHAPTER 6

FUTURE SCOPE AND COMPLETION

6.1 Introduction

This portion discusses the future scope for the development of this web application and conclusion.

6.2 Completion

The actual purpose of this project idea is to help a certain group of students by providing easy educational content to gain and overcome their obstacles in learning. This project is made to help students so that they can get clear about their class content and don't need any private tuition. There is no intention to monetize this web application and make money.

6.3 Further Developments

We are very hopeful for our project because we believe nothing is impossible. We want our project to be centralized by Education Board Bangladesh. Though we implemented this project only for the final year project in Daffodil International University (DIU), it can be extended by implementing it for all schools and colleges all over Bangladesh. If it can be implemented in all the schools and colleges in Bangladesh it can be so helpful for the students, researchers, and teachers that they can know what is happening and what kind of things are being done by the students of Bangladesh. It can be easy and user-friendly to conduct classes for the students. It can be an Organized database so any schools and colleges can collaborate with their students using this web application easily.

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Sushikkha

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