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Registration management system for Online Learning

By

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Bachelors, Nalla Malla Reddy Engineering College 2020

GRADUATE CAPSTONE SEMINAR PROJECT

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For the Degree of Master of Science,

With a Major in Computer Science



Governors State University
University Park, IL 60484

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ABSTRACT

As there are so many changes occurring in the current education system. If we see the last 2 years, most of the student community faced a lot of issues in attending classes. To overcome all those issues, all the educational organizations transformed their current manual teaching-learning system into an online learning system. Sudden transformation to an E-Learning system is creating issues like managing the students, schedules, communication, and other information. Keeping all this in mind, we want to manage all the student and teacher data with the help of automating the current manual system.

To learn the courses online, educational institutes need to automate physical services. For doing this, a registration management system needs to be implemented. This registration system will be managing the data of students, teachers, course details, etc. For doing such operations the application will be categorizing the users into 3 types of students, teacher, and admin.

The main objective of this application is to manage the student's and teachers' data. Students who want to learn need to register with the application and then they need to sign up. This will add security to the application and the student will be identified with the help of a username and password. All the personal information of students and teachers will be maintained, they will be given additional features like adding the details, updating the data, deleting the data, searching for the data, etc. Existing applications will not suit the requirements of our system, that is the reason a new application needs to be developed. As per the requirements of the application, the estimated project completion date is 12th December 2022.

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1 Project Description

As per the requirements of the registration system for online learning, users are classified into different types. They are

- a. Teacher.
- b. Student
- c. Admin

Teacher: To become a teacher in the online learning environment, teacher should register with the application. After registering with the application, they will be getting the username and password. With these details they will be logging into the application. Every teacher will be having their own dashboard with different operations where they can perform. This module provides all the operations that will be done by the teachers in relation with the students like they can view their student data, they can post the information, they can edit their profiles, they can do the search operations etc. [1]

Student: This is another module where students will have the user interface to register with the application. After registrations they will be logging into the application by using username and password. This kind of process enables the security and prevents unauthorized access. After entering into the application, every student will be having dashboard, he will be having the right to change their details, to select the course, to communicate with the teachers etc. [4]

Administrator: He is another privileged user where he will be having the total control on the application. He will be restricting different types of users in doing the operations, he can block the user, he can be able to communicate with the user, he can delete the user, add the user etc. [3]

Apart from the above data, we can even add some static information to the application related to the students and the teachers. We can even include profit calculations and even tax information can be shown by using this application.

1.1 Competitive Information

There are different similar applications are there on the net. All these applications are built based on the general requirements of the registration management of online learning system. This application is designed

based on the requirements for an organization and it will also use as a product for the registration purpose. This application is not a competitive application and no application is competitor for it.

1.2 Relationship to Other Applications/Projects

No Relationships with any other application.

1.3 Assumptions and Dependencies

Assumptions:

- This application is used by only 3 types of users like teacher, student, and administrator.
- Information of one user is kept private to the other user.
- This is used for the registration process.
- Data, which is entered by the users, will be stored in the application database. Whenever needed, user can retrieve that data.

Dependencies:

- User should register with the application, then only he can be able to log into the application.
- Student depends on the teacher module.

1.4 Future Enhancements

Currently, we are developing the web application, in future we can implement this application as a mobile application.

1.5 Definitions and Acronyms

HTML – Hyper Text Markup Language.

SQL – Structure Query Language

CSS – Cascading Style Sheets.

2 Project Technical Description

To develop this application, we need different technologies for design and development of the application. In order to have the GUI, we will be using HTML, CSS3, Bootstrap etc. We can write the queries with

jQuery and then want to use the core PHP for developing the application. In storing the data, we will be using MySQL database.

2.1 Application Architecture

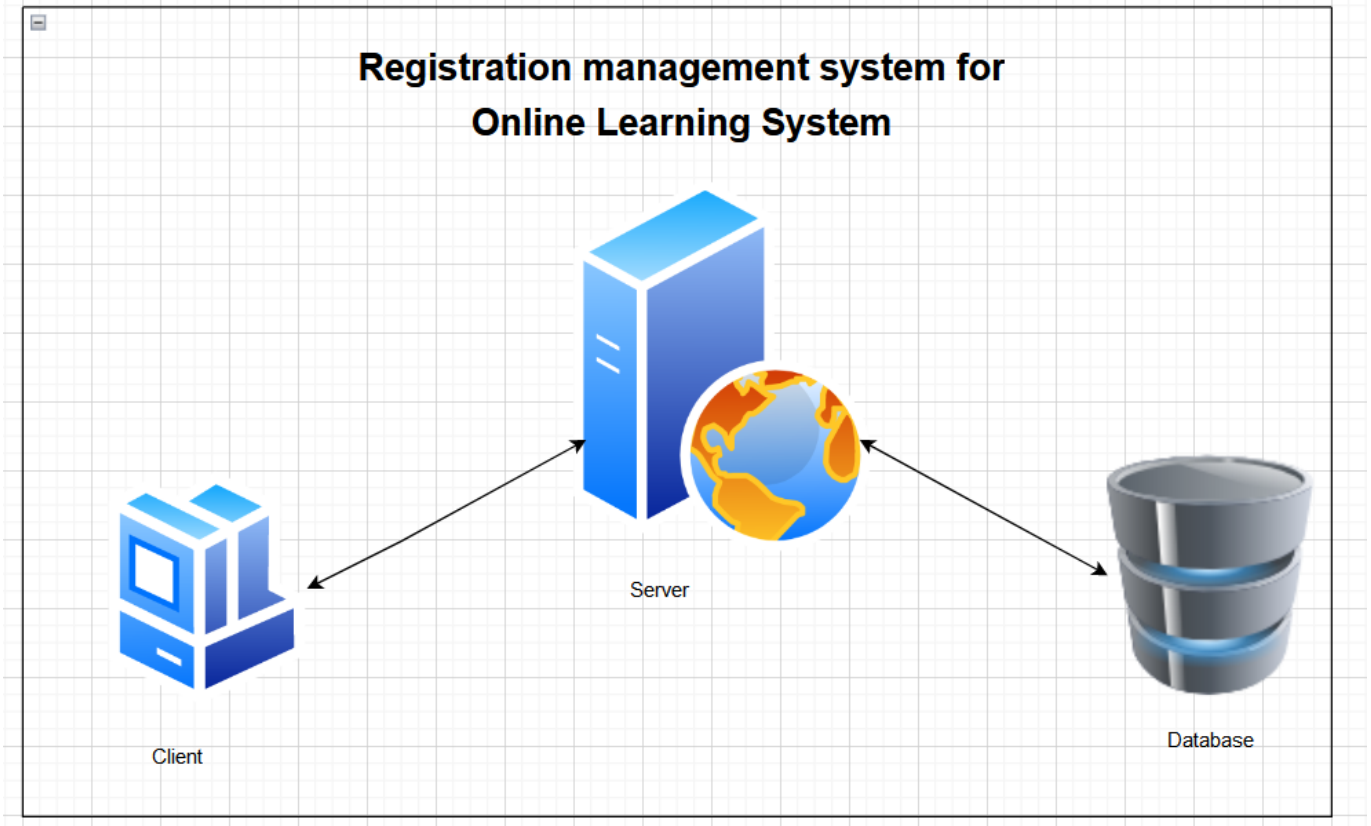


Figure 1. Application architecture

2.2 Application Information flows

Every user is having their own dashboard. After entering the dashboard, they can see their operations. Student is one of the users who will be having the right to change his personal details, he can view the teachers, selecting the courses etc. All these details will be saved in the database.

Teacher will be posting the information, they can view their student details, they can search the information and they can edit their details. Similarly, admin will have view operations, delete operations etc.

2.3 Interactions with other Projects (if Any)

No interactions.

2.4 Interactions with other Applications

As this is an individual application, there won't be any interaction with the other applications. If possible, we can develop it as a product and integrate that in different other applications.

2.5 Capabilities

Student: [5]

Edit

Select course.

Communication.

Teacher:

Register

Login

View

Post

Search

Edit

Admin

View user.

Add user.

Delete user.

Search

Communicate user.

2.6 Risk Assessment and Management

Risk assessment is one of the tasks which is used to identify the risk. After identification of the risks, all these risks need to be evaluated. With the evaluation of risks, one will know the impact of the risks. If we know the impact of the risk, then we can take the necessary steps to manage such kind of risks. [2]

Risk assessment has been applied on our project from the initial stages. In the initial stages itself we have identified the risks; this initial identification of the risks helped us to take necessary steps in overcoming them. That is the reason we don't have much impact of the risks.

3 Project Requirements

3.1 Identification of Requirements

Following are the requirements of the application. They are

Student Requirements:

<GSU-2022_online_learning_student-Registrations-000100>

To use this application, student should register. This application is used for making registration in having the online learning. Without the registration process, application cannot be used. [6]

<GSU-2022_online_learning_student-login-000101>

To use this application, one need to enter into the application. After entering the application, every user will be getting their own operations.

<GSU-2022_online_learning_student-view-000102>

To use this application, one need to enter into the application. After entering the application, every user will be getting their own operations.

<GSU-2022_online_learning_student-search-000103>

This feature helps the user to search the information in the database.

<GSU-2022_online_learning_student-communication-000104>

Students can communicate with the teachers by using this feature.

Teacher Requirements:

<GSU-2022_online_learning_Teacher-Registrations-000100>

As a teacher user should register with the application. If the registration is done, then only he will become as a user.

<GSU-2022_online_learning_Teacher_login-000101>

To do the operations, teacher should login into the application. After logging into the application, they will be viewing all the operation that can be done by them.

<GSU-2022_online_learning_Teacher_view students-000103>

Teacher can be able to view the students registered in the courses which they are handling.

<GSU-2022_online_learning_Teacher_post-000104>

With this feature teacher will be able to post the information related to the courses.

<GSU-2022_online_learning_Teacher_edit-000105>

After registering with the application, teacher can be able to edit the information if needed.

<GSU-2022_online_learning_Teacher_search-000106>

Teacher will be searching the required information.

Admin operations:

<GSU-2022_online_learning_Admin_login-000101>

Admin will be logging into the application with the help of this feature.

<GSU-2022_online_learning_Admin_view users-000102>

Admin is having the right to view all types of users.

<GSU-2022_online_learning_Admin_Delete users-000103>

Admin will have the right to delete the users.

3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)

This application is storing the data in the database by performing different operations. All this information which is stored need to be protected. If any loss has been occurred because of data breaches, data theft and

because of any other miscellaneous activities then there should be some mechanism which should be able to recover the data. Organization should establish some recovery procedures.

3.3 Security and Fraud Prevention

In this project, we have implemented authentication and authorization. Authentication is implemented with the help of username and password. Authorization is implemented by giving different access rights to different users. Unauthorized access is prevented in this application. [6]

3.4 Release and Transition Plan

No.	Project phase	Start Date	End date	Status
1	Gathering requirements	02-09-2022	12-09-2022	Finished
2	SRS Document	13-09-2022	25-09-2022	Finished
3	Design	26-09-2022	15-10-2022	Finished
4	Implementation	16-10-2022	10-11-2022	Finished
5	Testing	11-11-2022	18-11-2022	Finished
6	Documentations	19-11-2022	27-11-2022	Finished
7	Presentation	27-11-2022	1-12-2022	Finished

Table 1: Project schedule

4 Project Design Description

Database design:

Db:

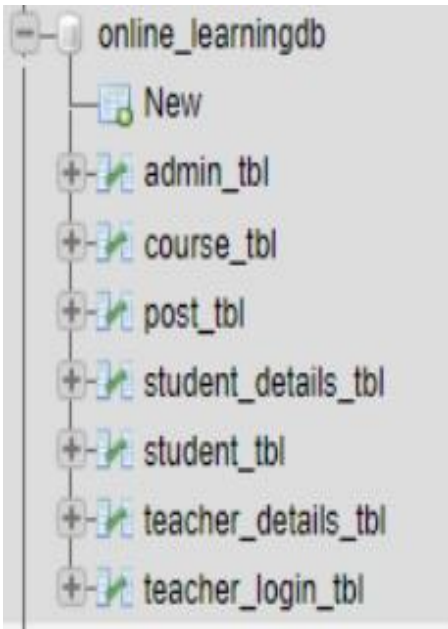


Figure 2: list of database tables

Tables:

Table	Action	Rows	Type	Collation	Size	Overhead
admin_tbl	<input type="checkbox"/> Browse <input type="checkbox"/> Structure <input type="checkbox"/> Search <input type="checkbox"/> Insert <input type="checkbox"/> Empty <input type="checkbox"/> Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
course_tbl	<input type="checkbox"/> Browse <input type="checkbox"/> Structure <input type="checkbox"/> Search <input type="checkbox"/> Insert <input type="checkbox"/> Empty <input type="checkbox"/> Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
post_tbl	<input type="checkbox"/> Browse <input type="checkbox"/> Structure <input type="checkbox"/> Search <input type="checkbox"/> Insert <input type="checkbox"/> Empty <input type="checkbox"/> Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
student_details_tbl	<input checked="" type="checkbox"/> Browse <input type="checkbox"/> Structure <input type="checkbox"/> Search <input type="checkbox"/> Insert <input type="checkbox"/> Empty <input type="checkbox"/> Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
student_tbl	<input type="checkbox"/> Browse <input type="checkbox"/> Structure <input type="checkbox"/> Search <input type="checkbox"/> Insert <input type="checkbox"/> Empty <input type="checkbox"/> Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
teacher_details_tbl	<input type="checkbox"/> Browse <input type="checkbox"/> Structure <input type="checkbox"/> Search <input type="checkbox"/> Insert <input type="checkbox"/> Empty <input type="checkbox"/> Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
teacher_login_tbl	<input type="checkbox"/> Browse <input type="checkbox"/> Structure <input type="checkbox"/> Search <input type="checkbox"/> Insert <input type="checkbox"/> Empty <input type="checkbox"/> Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
7 tables	Sum	0	InnoDB	utf8mb4_general_ci	112.0 KiB	0 B

Figure 3: List of tables and its structures

E-r diagram:

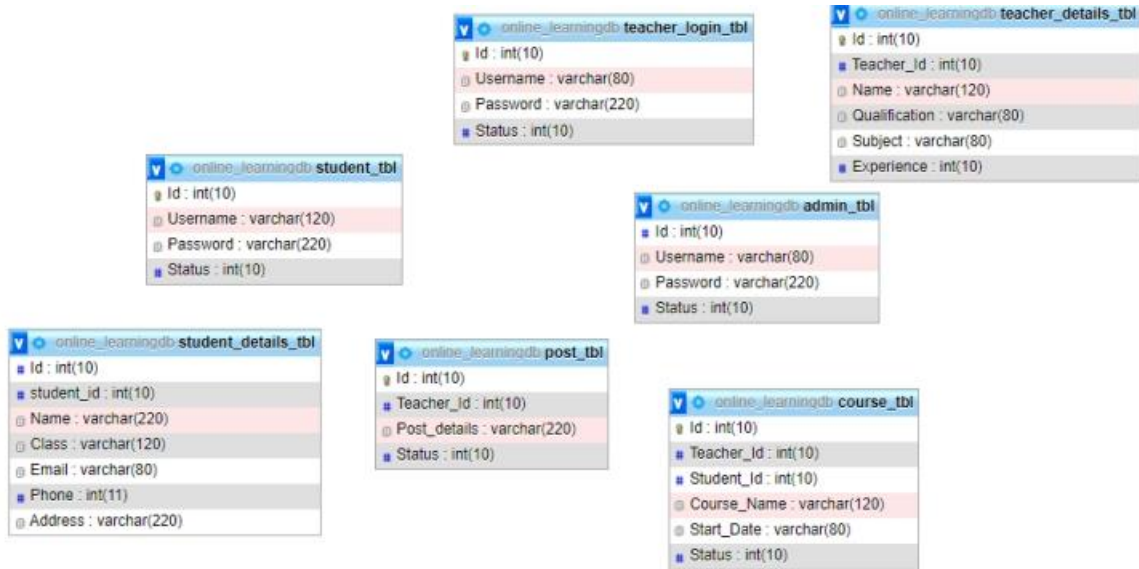


Figure 4: Relationship Diagram

User Interfaces:

Admin Panel:

View student records:

Here we can sort the data from any column in the table. We have custom option show records in a page based up on the count of records.

View:

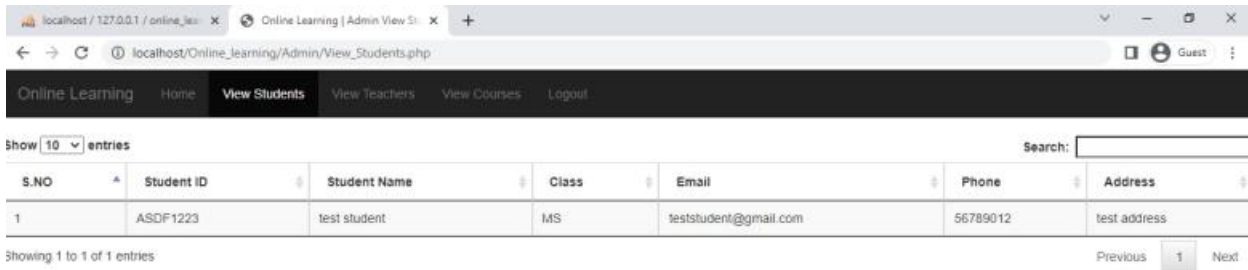


Figure 5: View student details

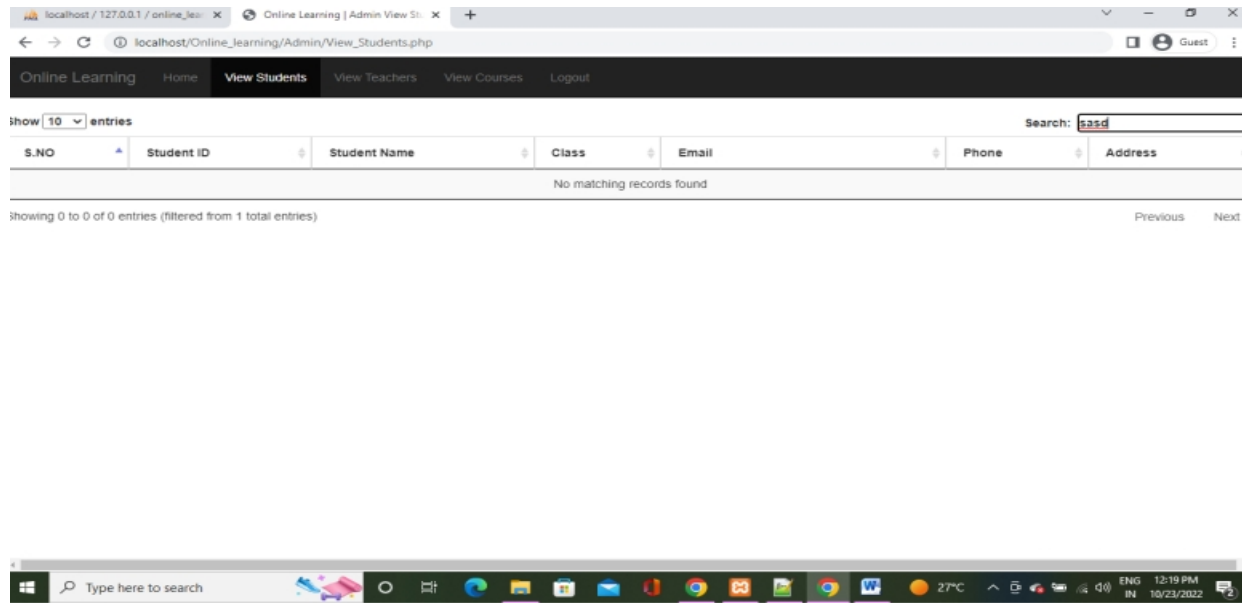


Figure 6: View Student Records

View teachers:

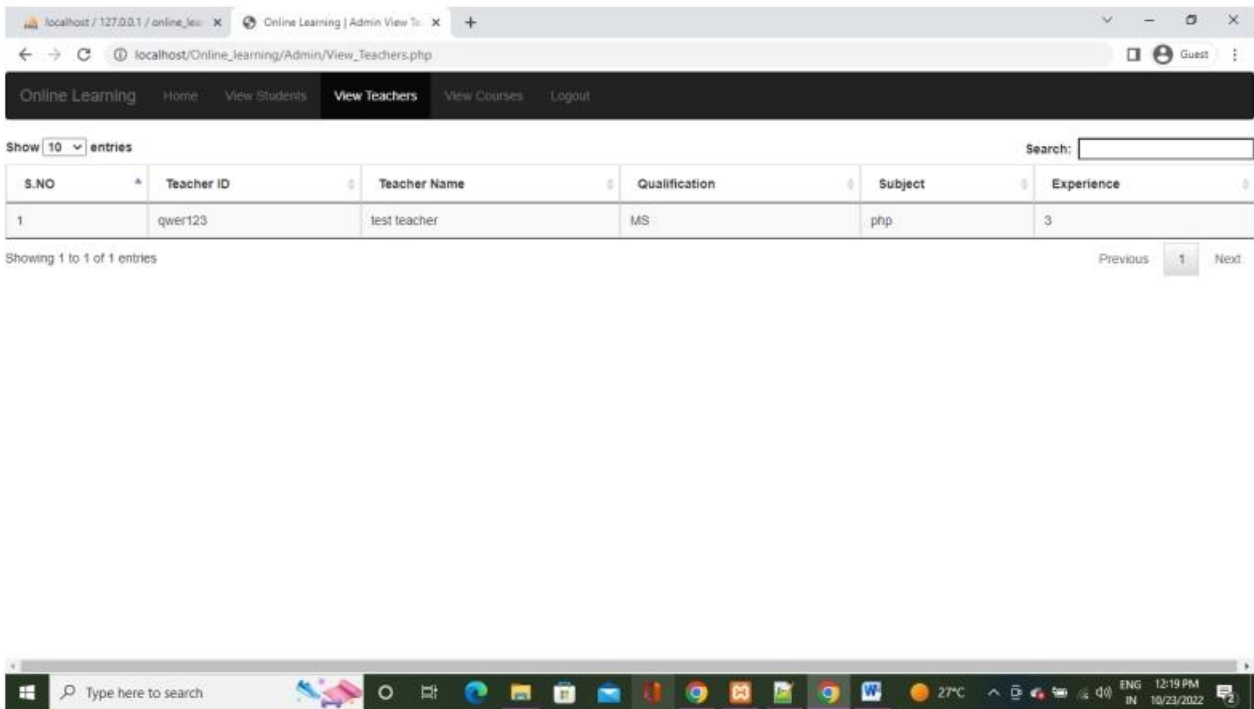


Figure 7: View teacher's details

View courses:

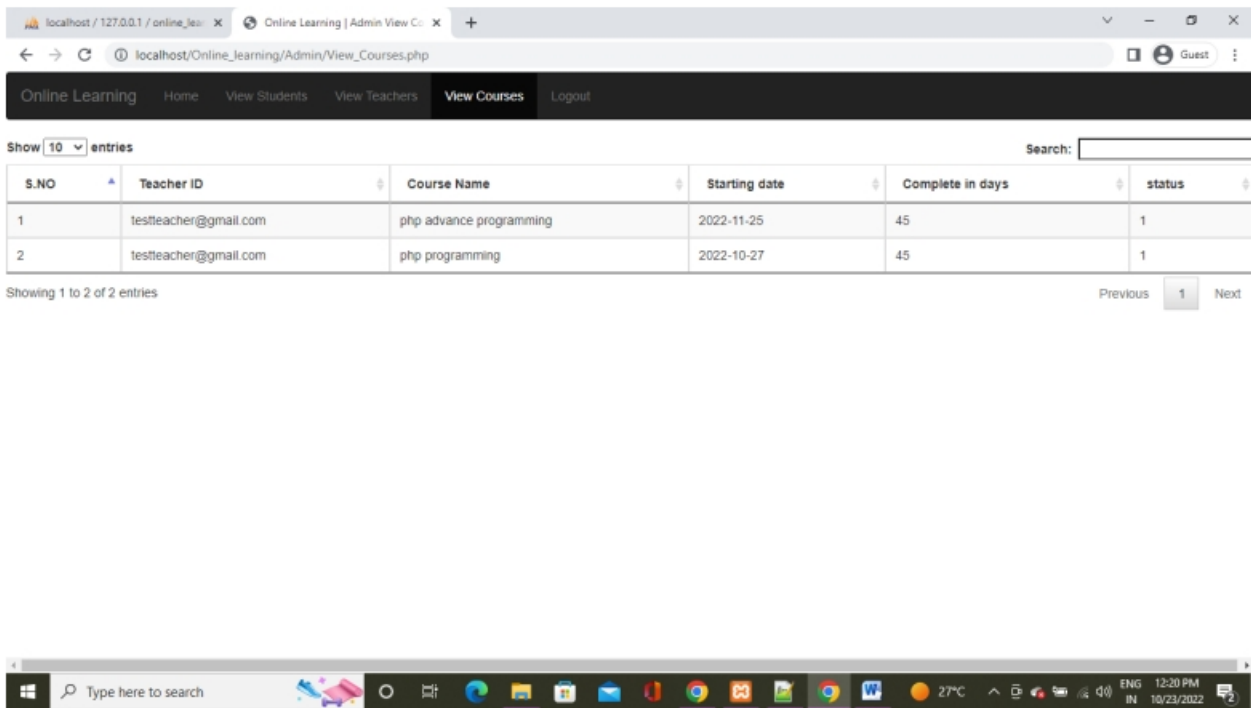


Figure 8: View course details

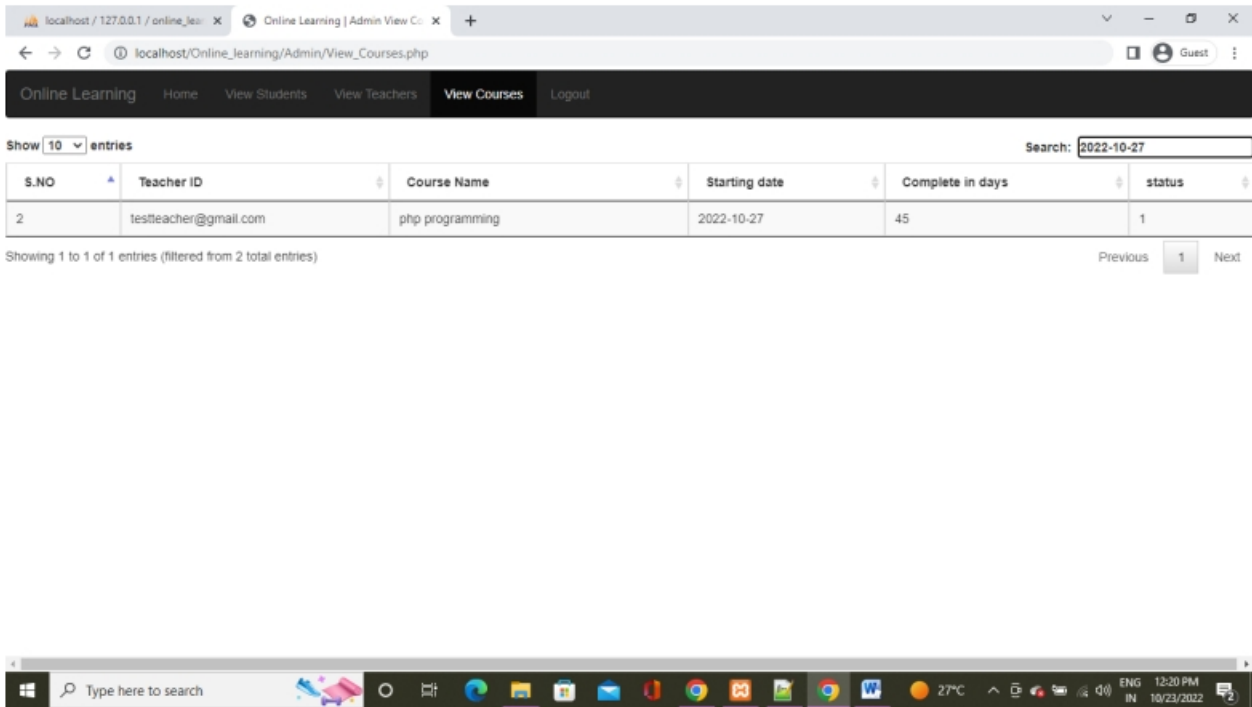


Figure 9: View Teacher details

Teacher panel:

Add courses:

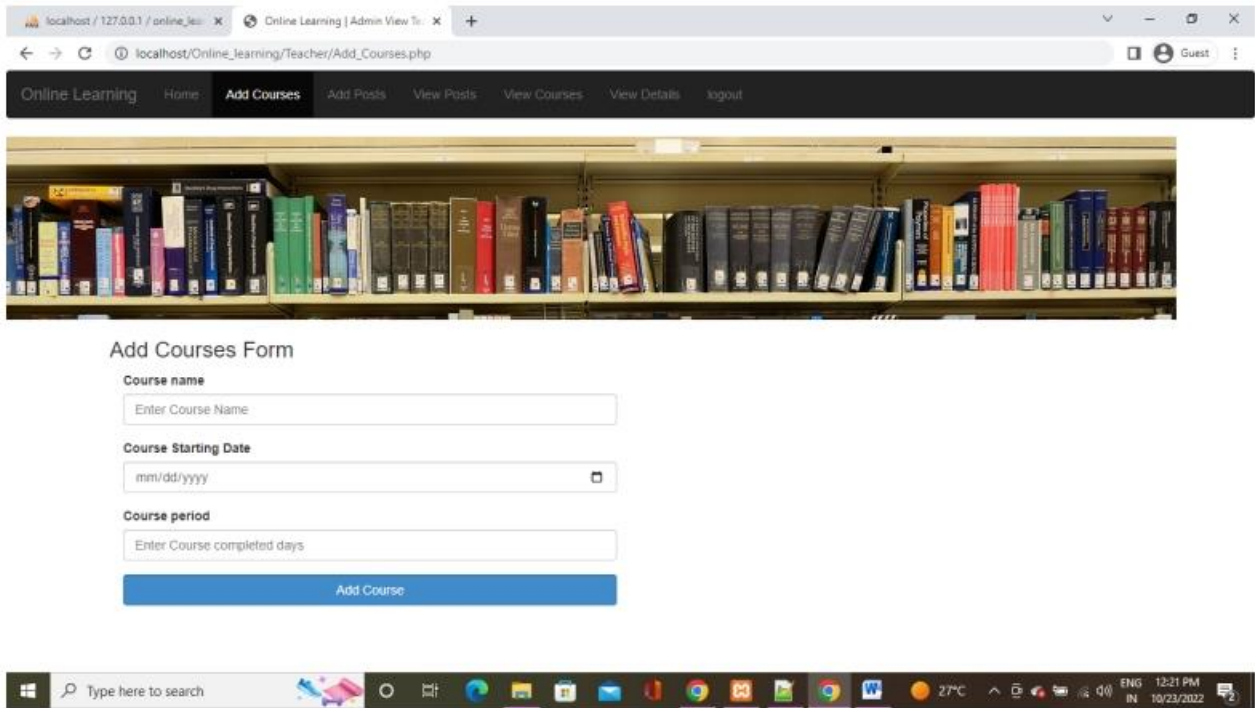


Figure 10: Add course details

Add posts:

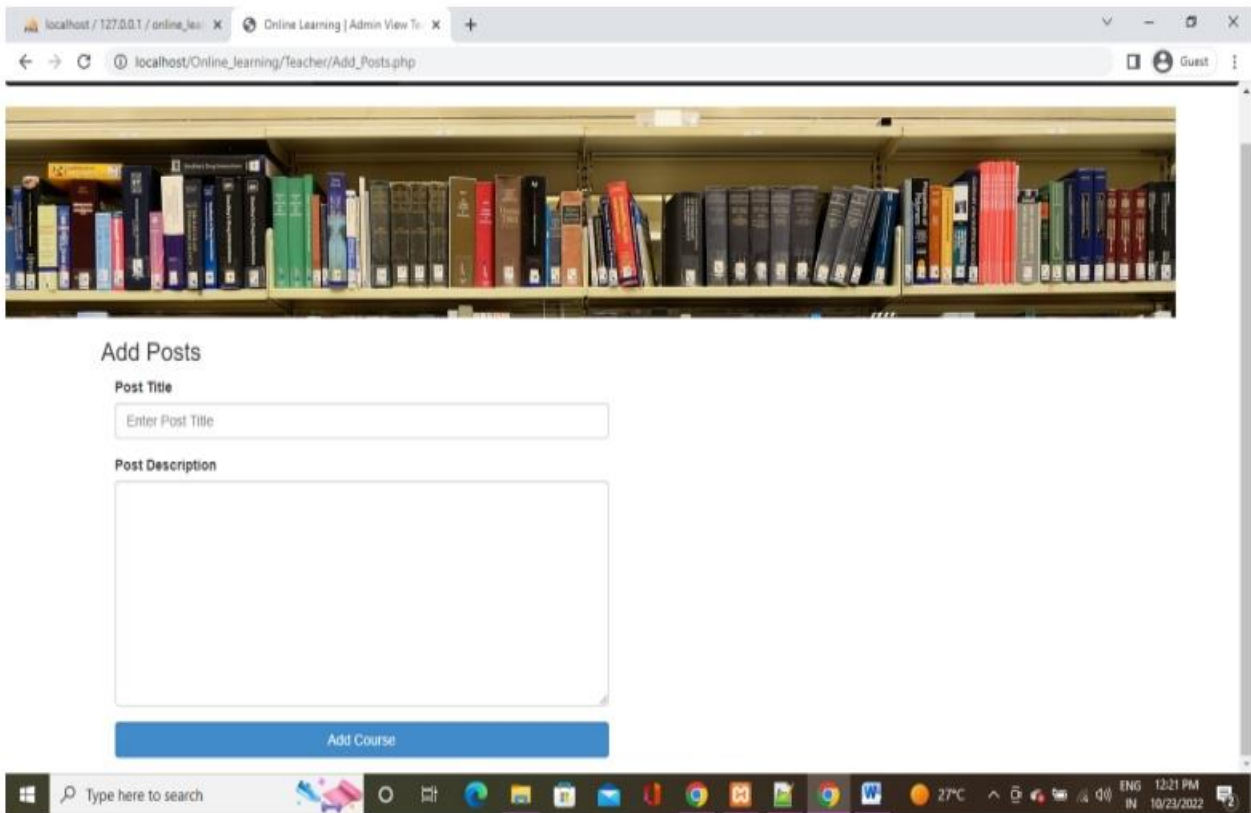


Figure 11: Add posts

View posts:

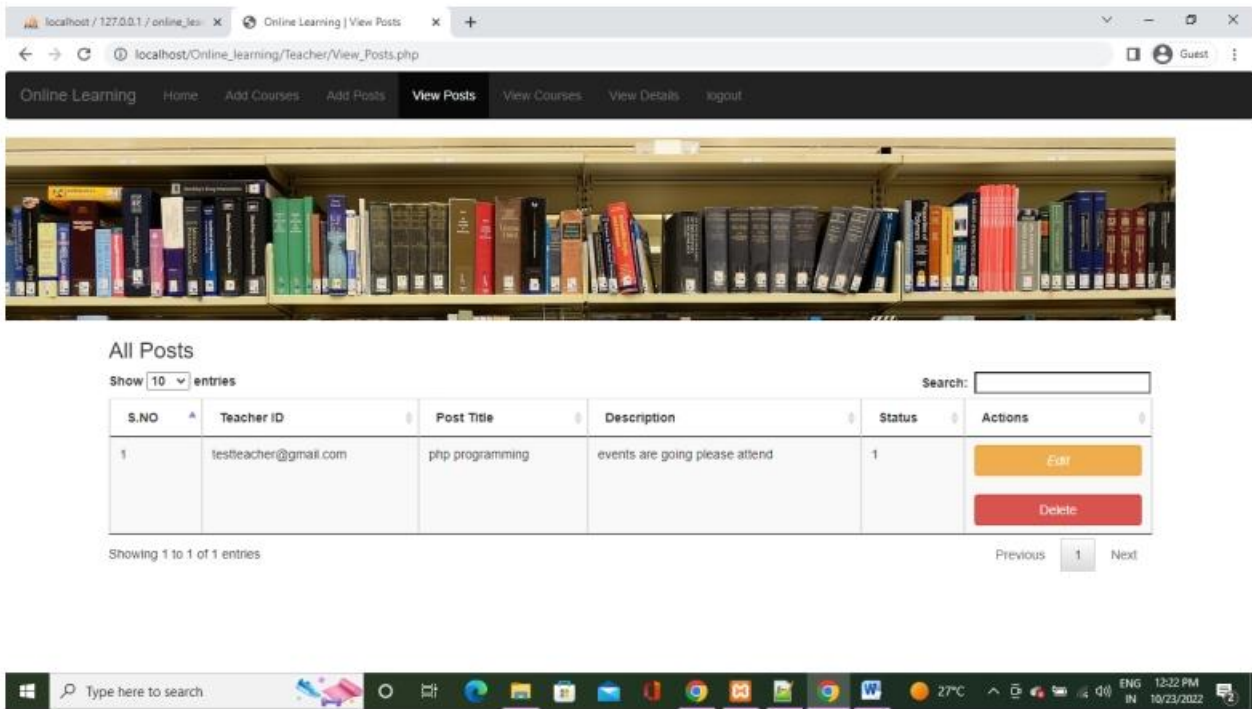


Figure 12: View all posts

Edit particular post:

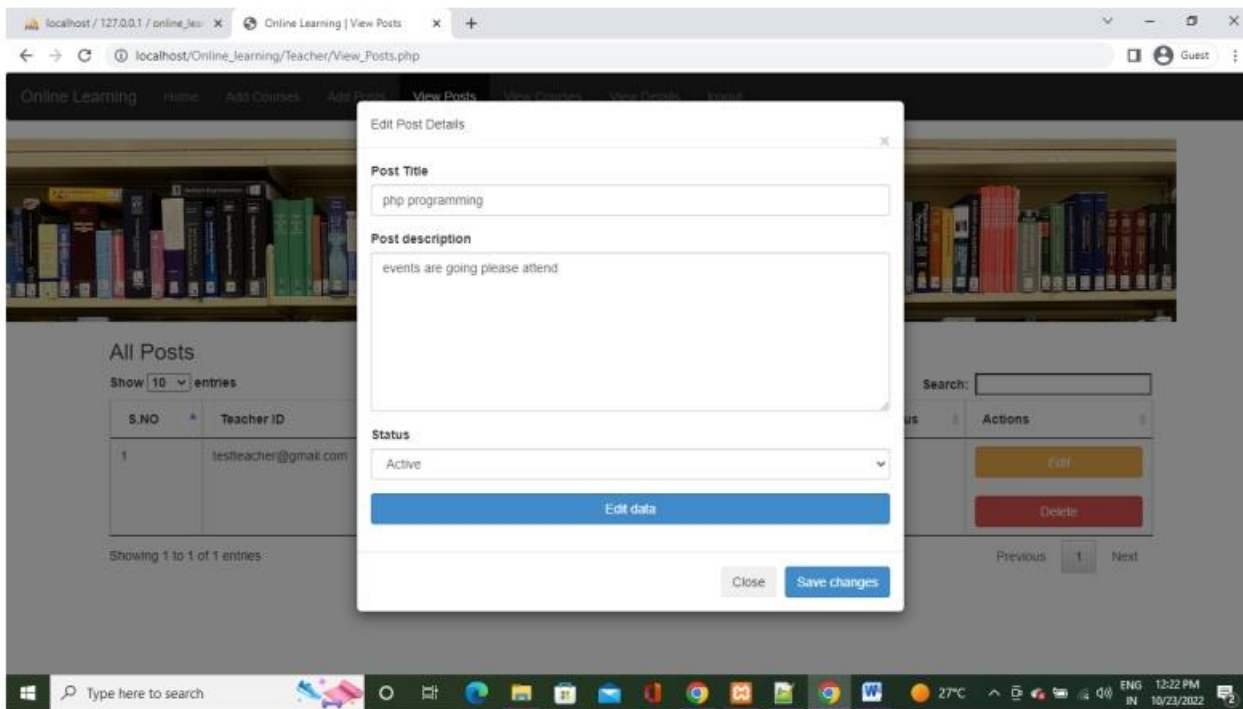


Figure 14: Edit post details

Delete particular post:

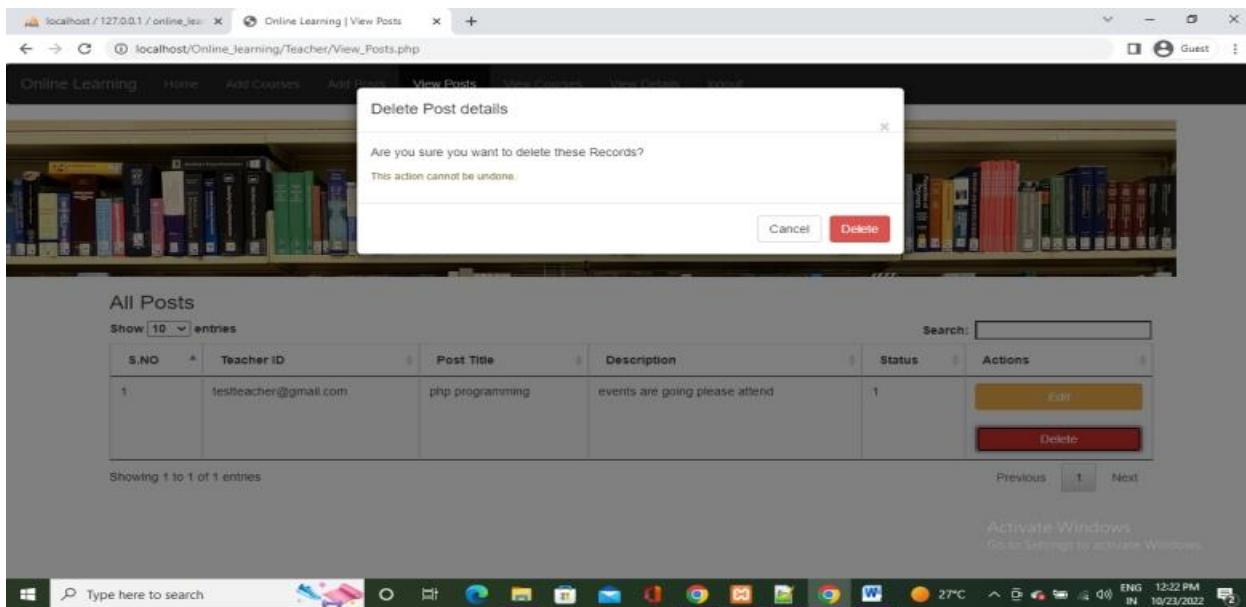


Figure 15: Delete particular post

View courses:

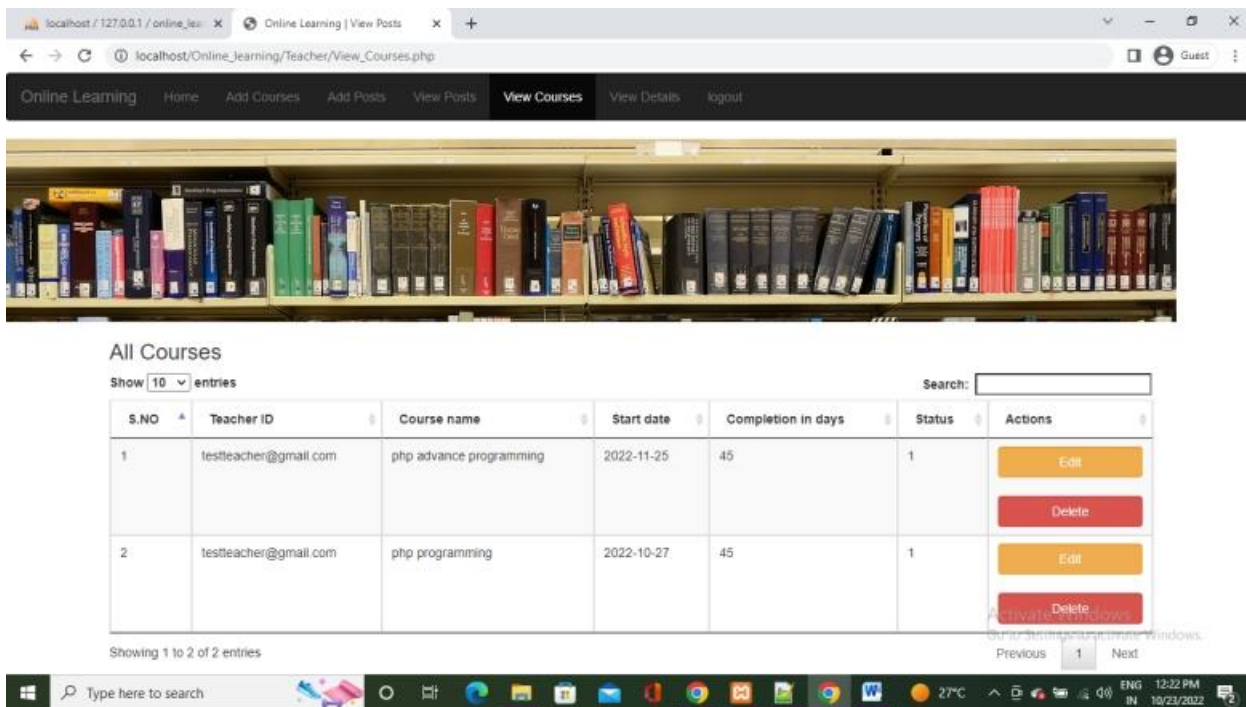


Figure 16: View courses

Edit courses:

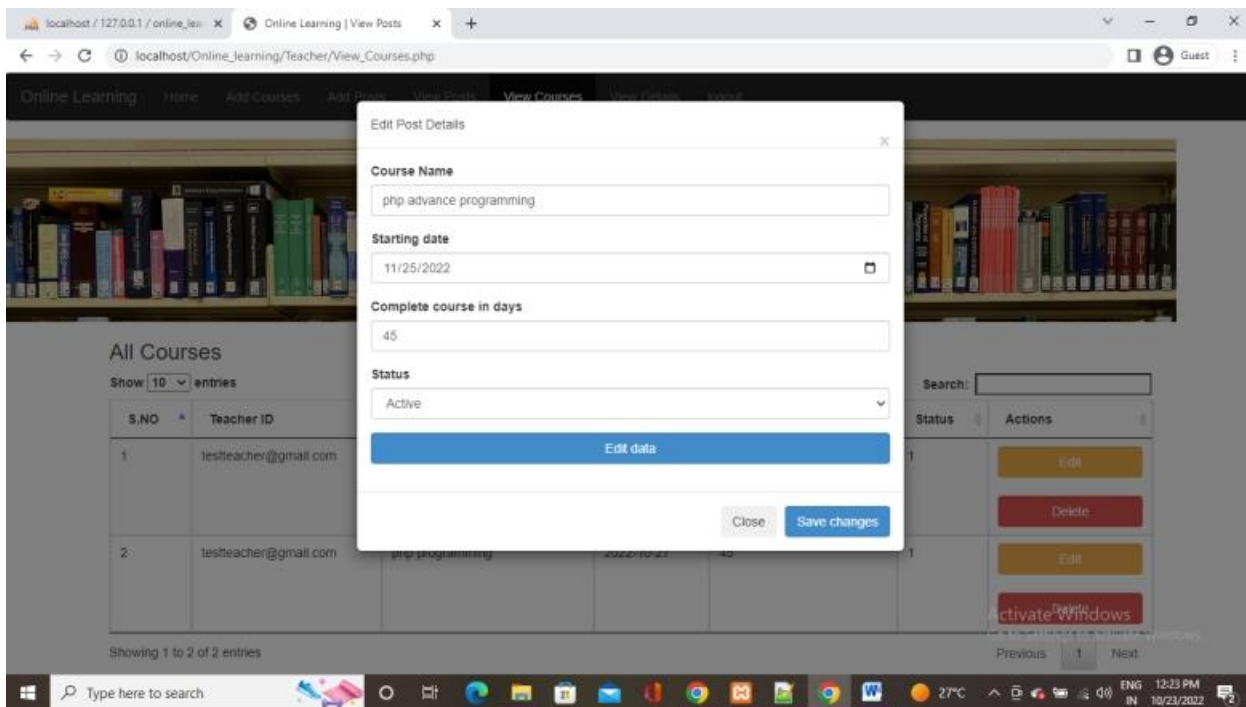


Figure 17: Edit courses

Delete course:

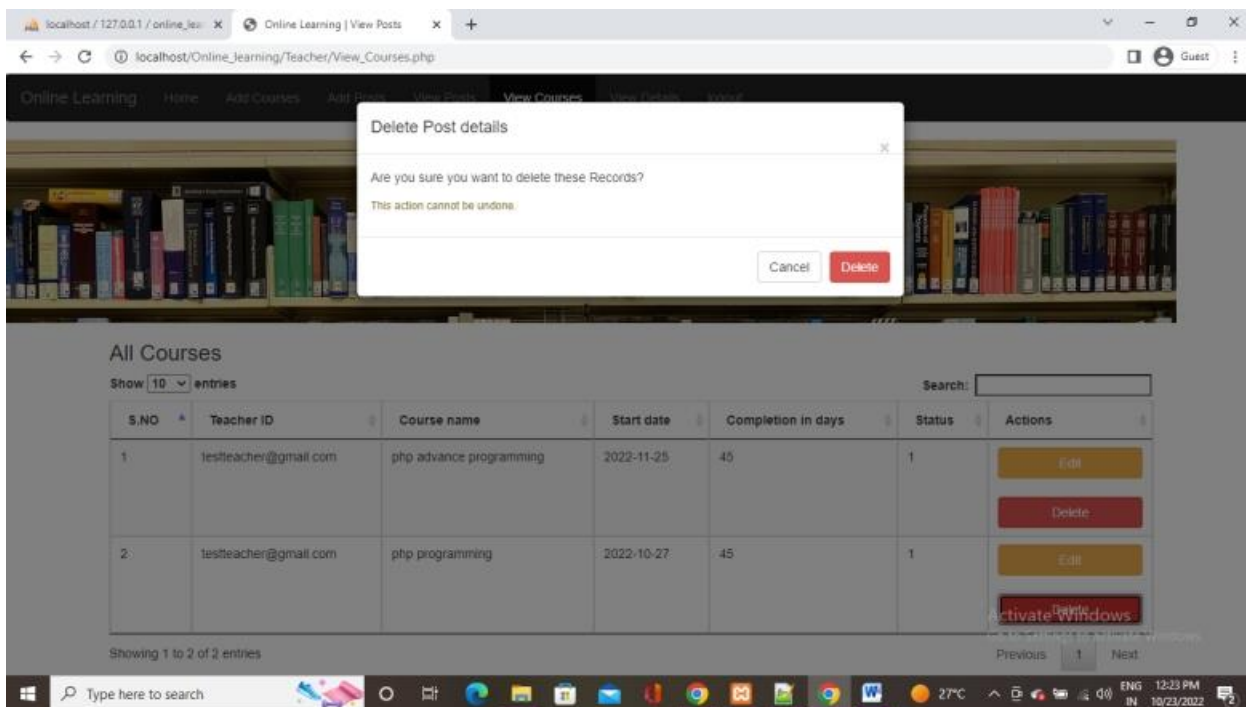


Figure 18: Delete courses

View details:

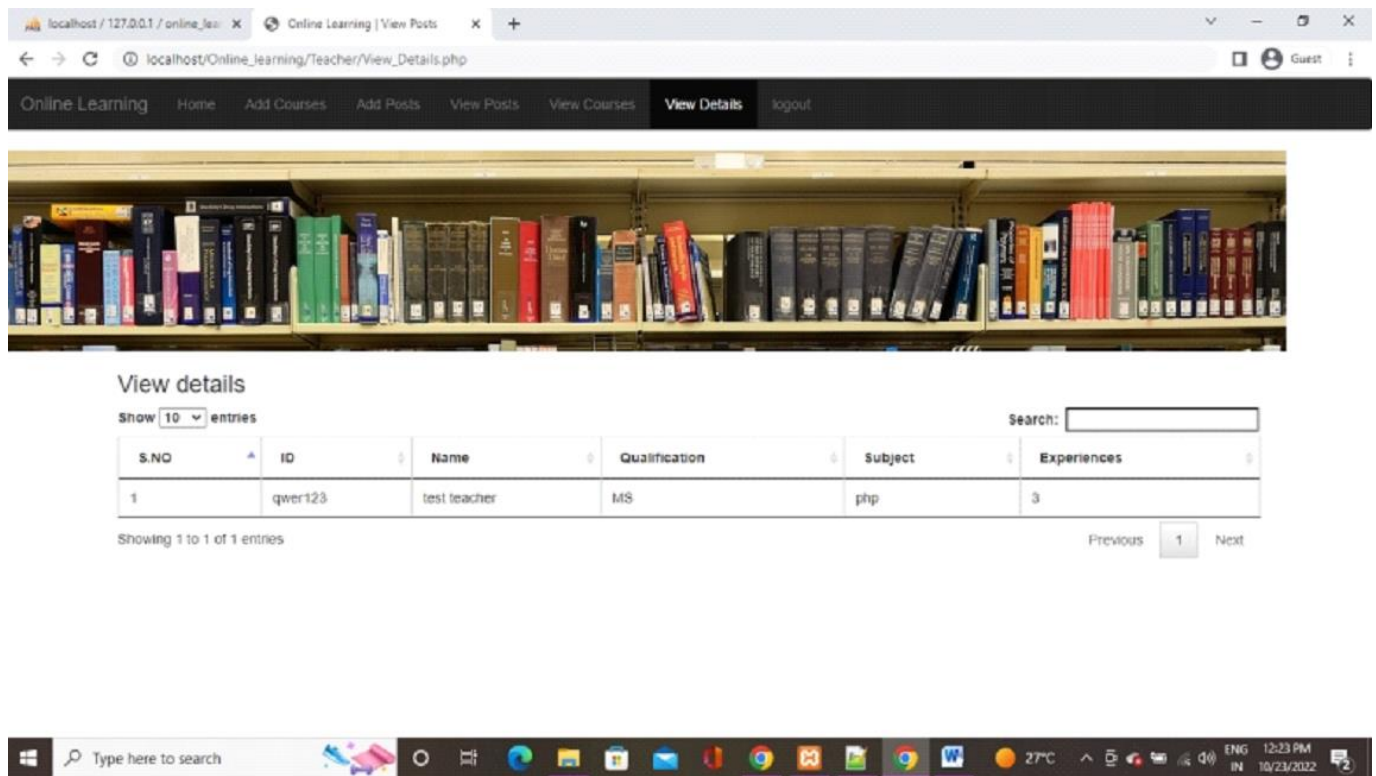


Figure 19: View student and course details

5 Internal/external Interface Impacts and Specification

By using this application, online learning process registration becomes very easy. Students can register from wherever they are there. Even teachers can view all the student's information who has joined in their courses. So much of time and effort will be saved with this application. People who will be using this application need not require any kind of training, they can directly use this application with minimum computer knowledge.

6 Design Units Impacts

Design is one of the important parts of the project development. Implementing the application without the design may leads to ambiguity. Sometimes people will not understand some points with the requirements. With the design, people will get clarity on the requirements. We will be knowing the flow of information

in the application with the help of design. To represent the requirements, one can use different types of design tools like UML diagrams, UI design, system architecture, data flow diagrams etc.

6.1 Functional Area A/Design Unit A

6.1.1 Functional Overview

Functionalities of the application are identified based on the users. In this application there are 3 different types of users are there. They are:

Teacher: To know the information about the student by the teachers is very difficult. With this application, student information as per the course will be gathered immediately. Teachers can communicate with the students; registration process will be automated, and online operations will be done with the help of this application.

Student: with the physical registration process, it became very difficult to the students to register with any of the course. This application gives you such facility and establishes the communication. From any corner in the globe, student can register to any of the course for online learning. Similarly, admin will have some of the rights, he will be having additional privileges like delete operation etc.

Administrator: He is another privileged user where he will be having the total control on the application. He will be restricting different types of users in doing the operations, he can block the user, he can be able to communicate with the user, he can delete the user, add the user etc.

6.1.2 Impacts

Doing the operations physically is very difficult to the student and teacher. There will not be any kind of face-to-face interaction and through the application every kind of interaction will be done. Student and teacher operations are automated and their paper work is reduced.

6.1.3 Requirements

Requirements of the application was clearly dealt in the previous section. Every requirement is having a requirement id, and the functionality that is going to be implemented. This kind of numbering the requirements helps the people to design, to know the flow, to code etc.

7 *Open Issues*

As the application is developed as per the requirements and the requirement analysis was done. With such kind of process, we won't get any issues. While implementing we got some technical issues like database connection, implementation of some concepts, but we have tried our level best to resolve those issues.

8 *Acknowledgements*

We thank each and every individual who helped us to complete this project successfully.

9 *References*

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