Computer to Computer Learning System

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Abstract

Computer to computer learning system is the modern way of education. It is more successful than traditional forms of learning because it offers more variety of instructional methods such as text, videos, audio and graphics, which can be tailored according to the needs of the learner. In this project we are mainly focus on three modules such as Admin, College Faculty and Student in which admin handle the whole scenarios like admin can give access to college and student and can also delete them if he feels that they are unauthorized members of this system. College which can handle student and faculty details and also update their profile, students have any query related to study materials so they can request to college to provide specific materials with proper documentation. Generally, an existing system the educational institutions provide online material which is one-way uploading and hence the database is limited to a single person and hence the information updating needs time, But in this project, the database was made online so the database was accessible to multiple users. This system provides student to easily navigate through the application for more information in a most secure manner and easy access to their particular account so that student can access their study materials as per their convenience.

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Introduction

The objective of this project is to develop the environment were various college institutes will provide their respective materials in form of text document, pdf, etc. and students will able to refer those materials at any point of time when they need, so that they can grasp their study materials in a better way.

The system is a computerized system which is maintained at Centralized databases i.e., in automated forms it's a very fast process. And maintaining all the records in online systems database which makes it very easy to access and retrieve data from the database. If they want any articles, they can easily upload and download. It provides multiple user accessibility and also has different user privileges. So the system is accessible for all the students of the college. In this system, there are three modules

1. Admin

Admin can view the institutes and students registered and delete them if he feels unnecessary. Admin can also view the complaints given by students All the users are controlled by admin. Administrator services are

> 1.Approve the institute
>
> 2.Delete institute
>
> 3.View students and colleges
>
> 4.View and send response

2. College Faculty

The college needs to register and log in and upload the articles on different topics providing the information and maintains the faculty details and view the responses and requests provided by students.

College is an Organization which can handle the all the student details. The College services are

1. Registration

2. Upload articles

3. Faculty management

4. Update profile of college

5. Send responses

6. view request and send feedback

3. Student

The student will log in with a valid username and password and he can send a request to college he can view the response from college and he can also give feedback to admin. He can also update his profile .The Student services are

1. Registration

2. Download articles

3. Update Profile

4. Send request

5. View response

Problem Statement

The Existing system is a computerized system but which is maintained at individual databases i.e., in excel sheets, it's a time delay process. And maintaining all the records in Excel sheets is difficult. If they want any record, they have to search all the records. It doesn't provide multiple user accessibility and also doesn't have different user privileges. So, the system is not accessible for all the students of the college.

Limitations in Existing System

- The current system is not completely complete computerized and manual system in entering students and faculty data and handling it.
- There is no centralized database maintenance.
- There is no easy access to the particular students records and articles.
- The student cannot easily navigate through the database.

So, to solve the above problem statement we have used these software/tool or

Processes: -

1. Java 8
2. MySQL
3. MySQL thin driver for java
4. Tomcat
5. Eclipse ide

Possible outcome of the project

These are the possible outcome of this project-:

1.In this system college can easily handle the specific faculty and student details because of centralized database.

2.It provides multiple user accessibility and also has different user privileges so that system is accessible for all the students of particular college.

3.This system provides student to easily navigate through the application for more information in a most secure manner respectively.

4.Easy access to the particular students records and information for colleges so that they can handle data in appropriate way.

Work Done Completed

In this project we have completed the frontend and backend part of all the three modules like we have Admin, College Faculty and Student modules and in each module, we have different functions such as admin services are approving the institute, delete institute and other functions similarly college services are upload articles, update profile, send response for appropriate requests, view requests and same as for student update profile, send request to the college, send feedback, etc.

While making the frontend part we have used HTML, CSS, JavaScript and made one Folder, attach all the programs in one folder with particular images.

HTML is used to describe the structure of information on a web page, it allows the user To create and structure sections, paragraphs, headings, links, and blockquotes for web Pages and applications.

CSS, for describing the presentation of web pages, including colors, layouts and fonts. It allows one to adapt the presentation to different types of devices, such as large Screens, as well as variety of other effects.

And JavaScript allows us to implement complex features on web pages and used to Modify website content and make it behave in different ways in response to a user's Actions.

Steps by Steps Work Done Process

1. In this project for frontend part, first we made a login page of computer to computer Learning system having the features of Home, Login, About us, Contact us. In Login page we have three modules like Admin, College and Student, Modules act as button in login page they have their own username and password which we have to fill correctly then only you can enter in other functions and it has two more buttons Login and Reset respectively.
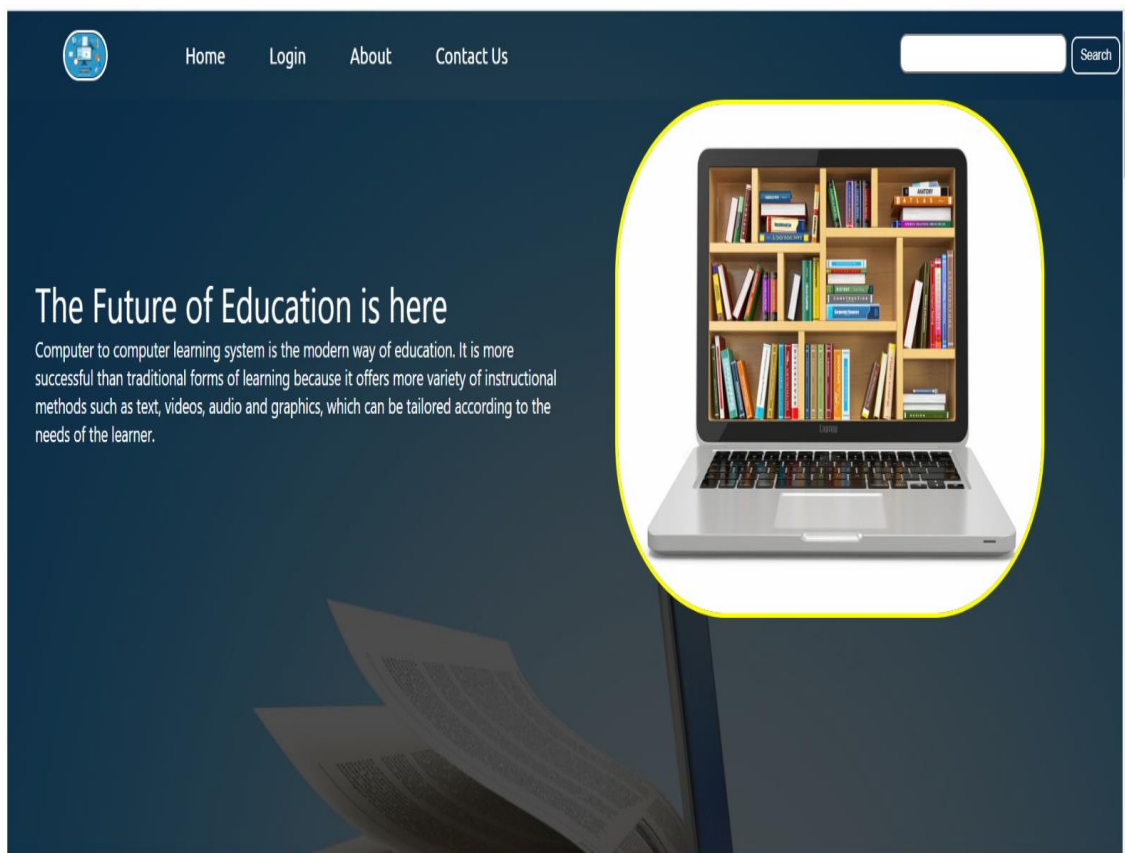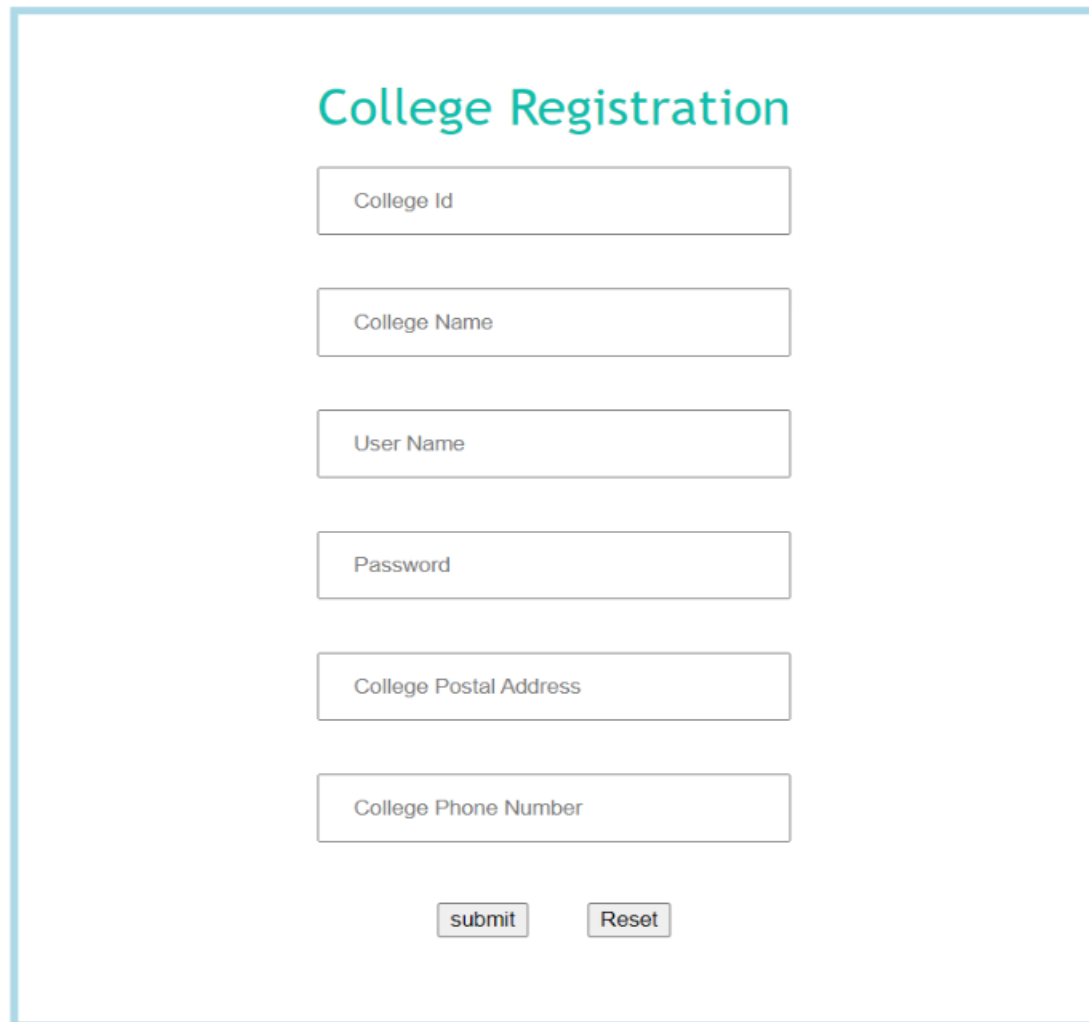

Figure 1: Login Page

2. In the registration page we have College registration and Student registration Options in which if you enter in college registration then you have to fill required Details like College name, User name, Password, College postal address,

College phone number and it has text fields for input purpose, it is used for registration of various college after this process verification will be done by admin and then specific college will be the part of college module.

Figure 2: College Registration

3. In Student registration options, we have to fill First name, Last name, User name, Password, Mobile, Email id, Address, College having two buttons Update

and Reset if you want to save the details click on Submit or else if you want to fill fresh details then click on reset, it is used for the registration of students, so that no fake id could be the part of student module and the details of student will be stored in student database respectively.

Figure 3: Student Registration

4. While in Admin login the options are approve institute, delete institute, view students and colleges, view and send response, each option has its own

features like in approve Institute admin has the capability to add any institute as per admin choice, and in delete institute if admin found that college has filled the wrong information in college registration or inappropriate management by college then admin can delete the specific college at that time also able to see response details which are given by students.
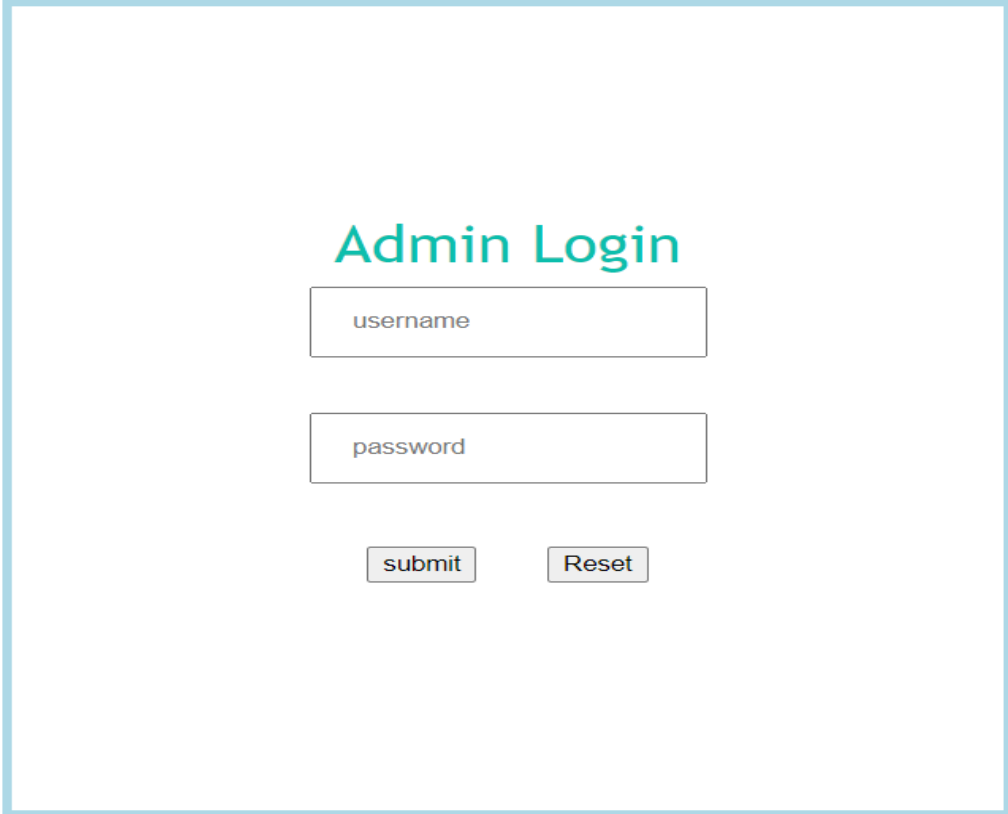

Figure 4: Admin Login

5. In College page, functions have Upload articles, Faculty management, Update Profile, send response, View students requests respectively. Like in faculty

management it has two features Add faculty and Update faculty information, in add faculty it has Faculty name, Qualification, Experience, Skill and having two buttons Submit and Reset, like in upload articles college has the capability to upload different materials on regular basis on the portal.
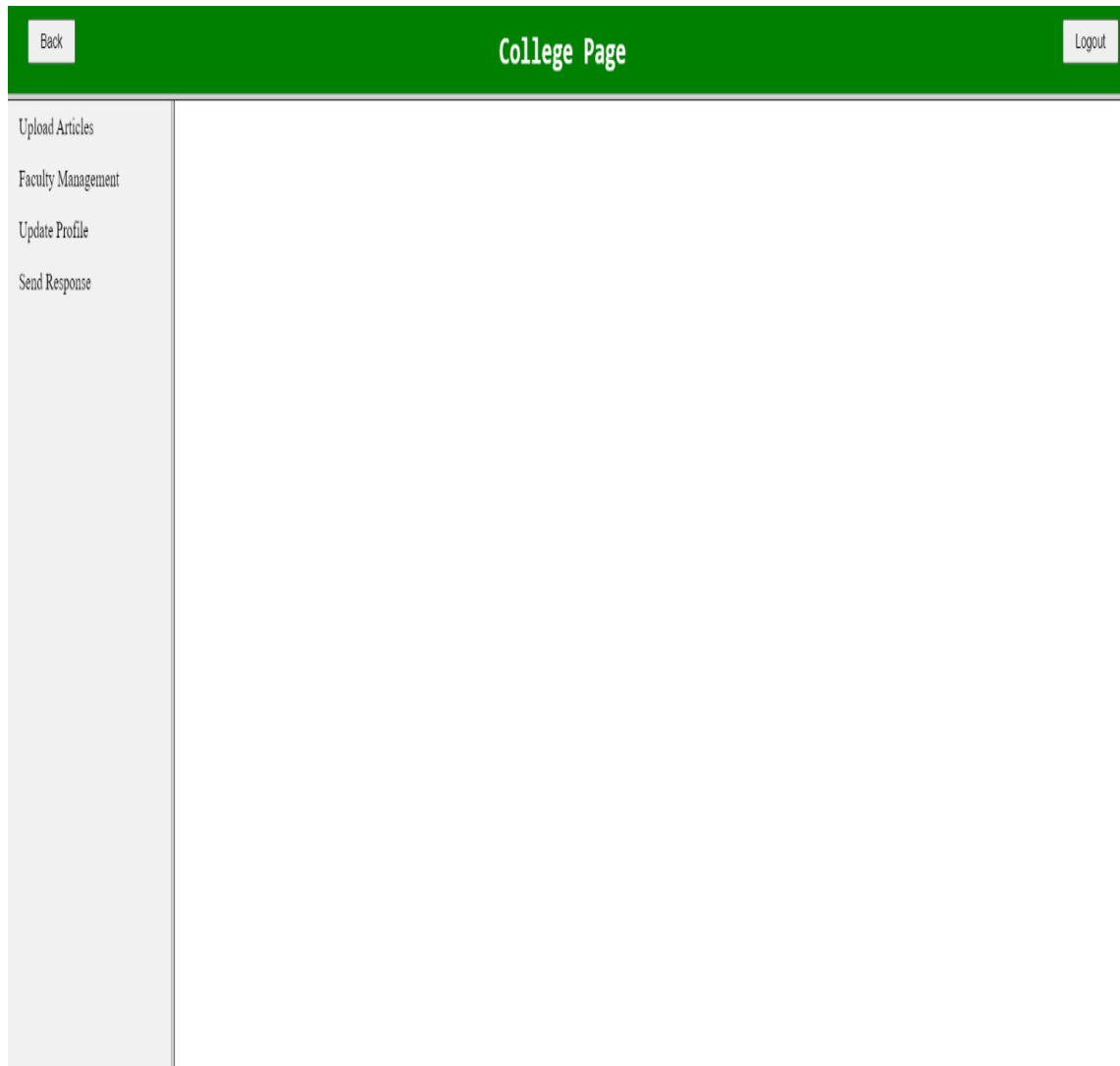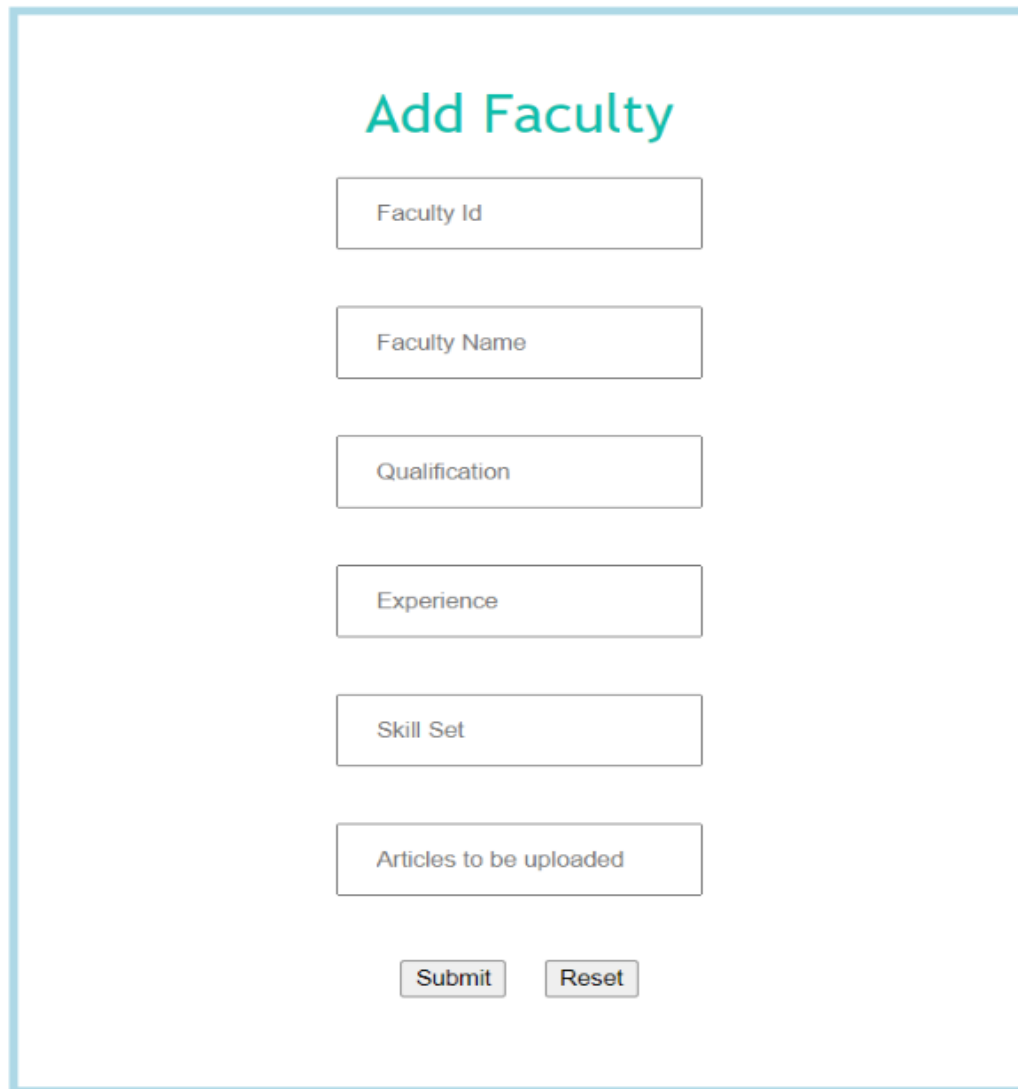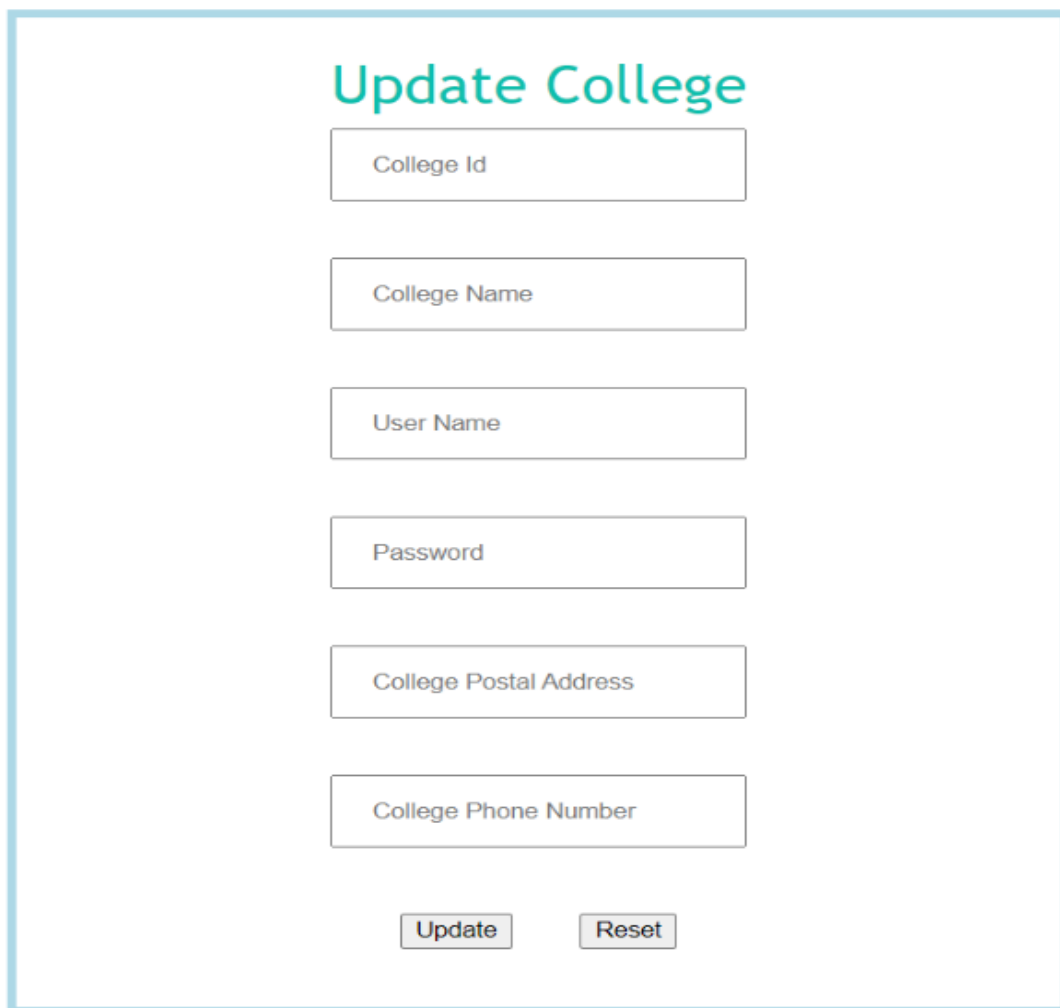

Figure 5: College Page

6. For Storing the data of faculty, we created add faculty page so that different colleges having their faculty details could be managed in proper way in database and for the update faculty there is list of faculties information present in which it has two actions update and delete if you want to change something in faculty profile like experience details, skill set and all then simply click on update.

Add Faculty

Faculty Id

Faculty Name

Qualification

Experience

Skill Set

Articles to be uploaded

Submit   Reset

Figure 6: Add Faculty

7. In Update profile of College login, it has College name, User name, Password, College Postal address, College phone number for upgradation of college profile Like colleges want to change their college phone number, user name and Password for their convenience in a certain time interval and update college page is required because by mistake if some information has entered incorrectly then college can change their details immediately.

Figure 7: Update College

8. If student sent a request to particular college, then college can identify the Details with student name, request for (reasons for sending the message), Requested date (when the request was delivered) and also has the option to Send feedback to students so that mis information cannot be created between the student and college respectively.
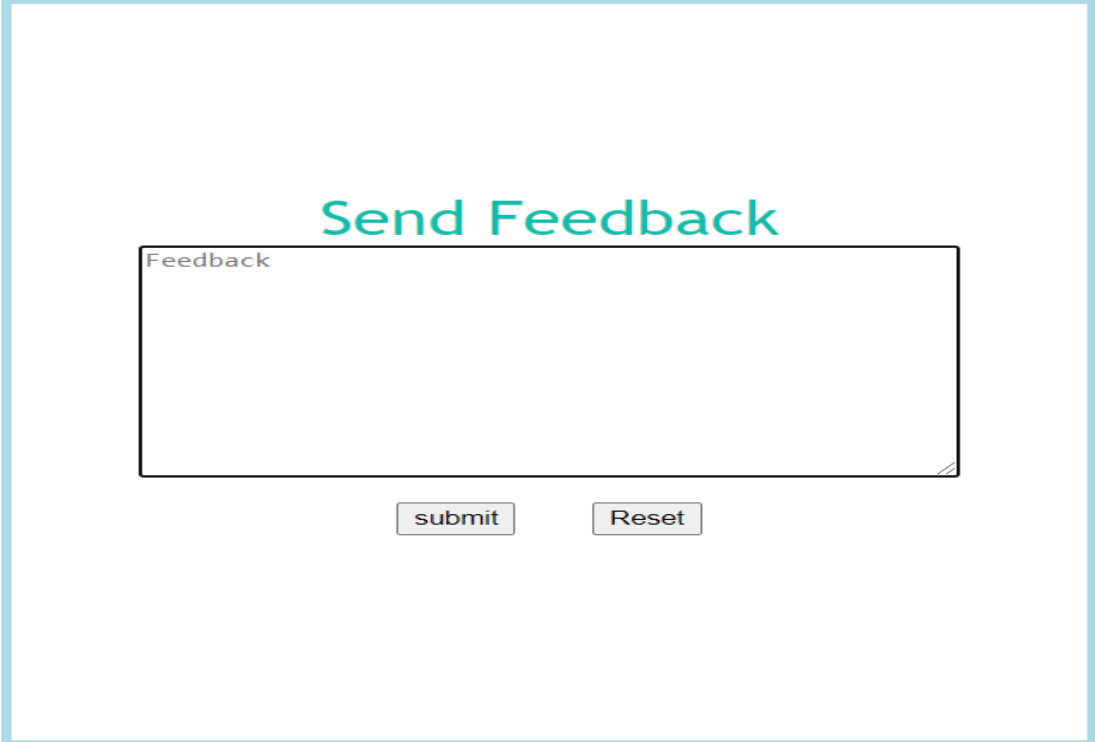

Figure 8: Send Feedback

9. In Student page, functions are Download articles, Update profile, Send requests To college, View response. Like if any student wants to download materials at any point of time, he can do as per his convenience so that he could not face

any difficulty to fetch any articles, if student has entered wrong or outdated information then he can update his profile at that point of time and any student wants specific article for his preparation then he can send request to his college to upload that article in system.
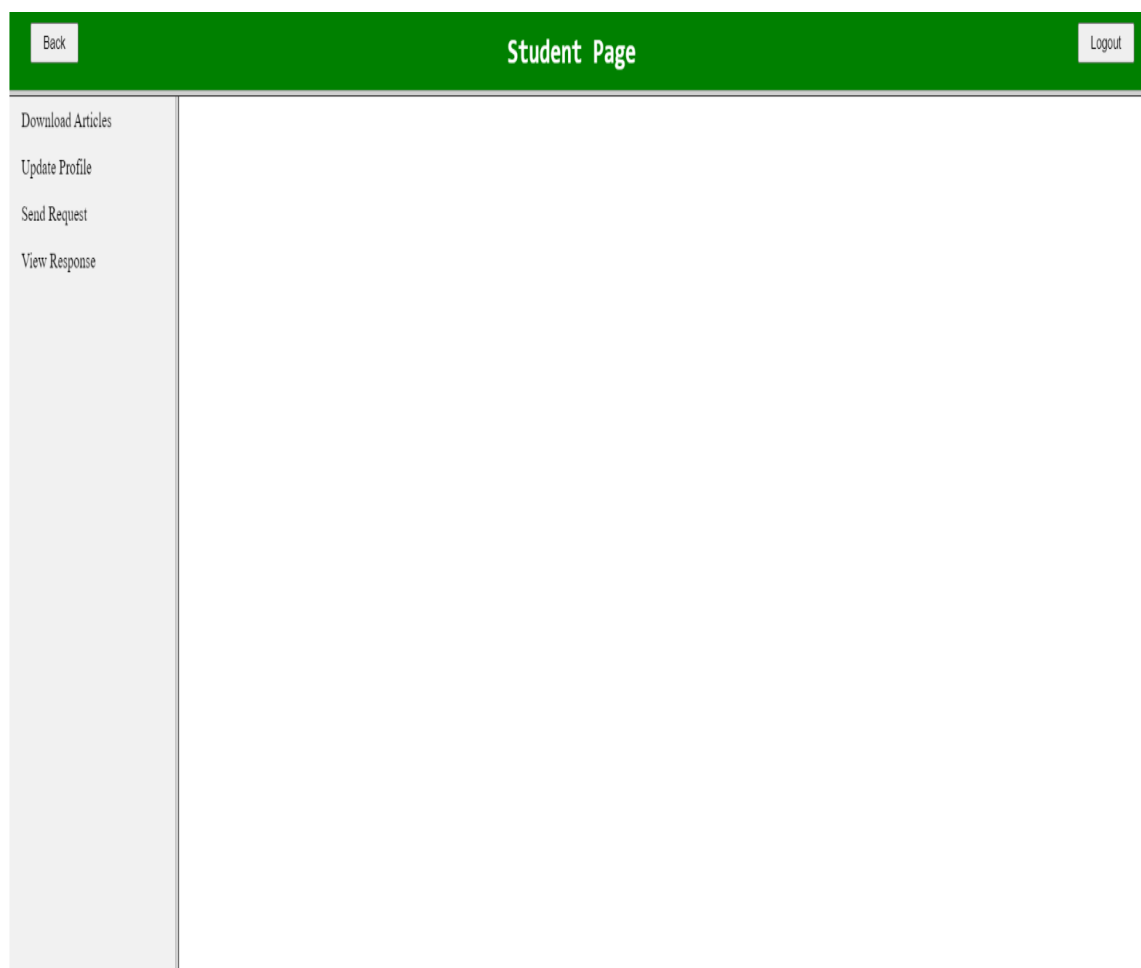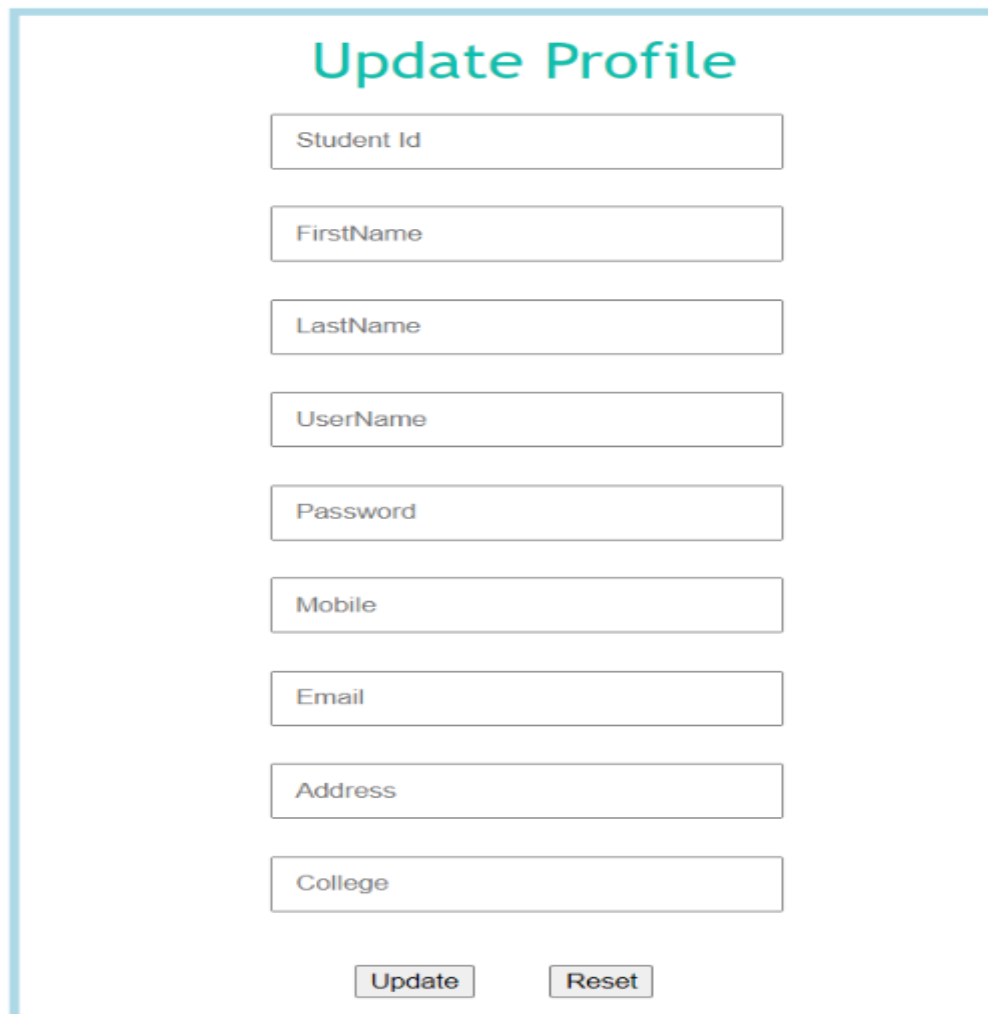

Figure 9: Student Page
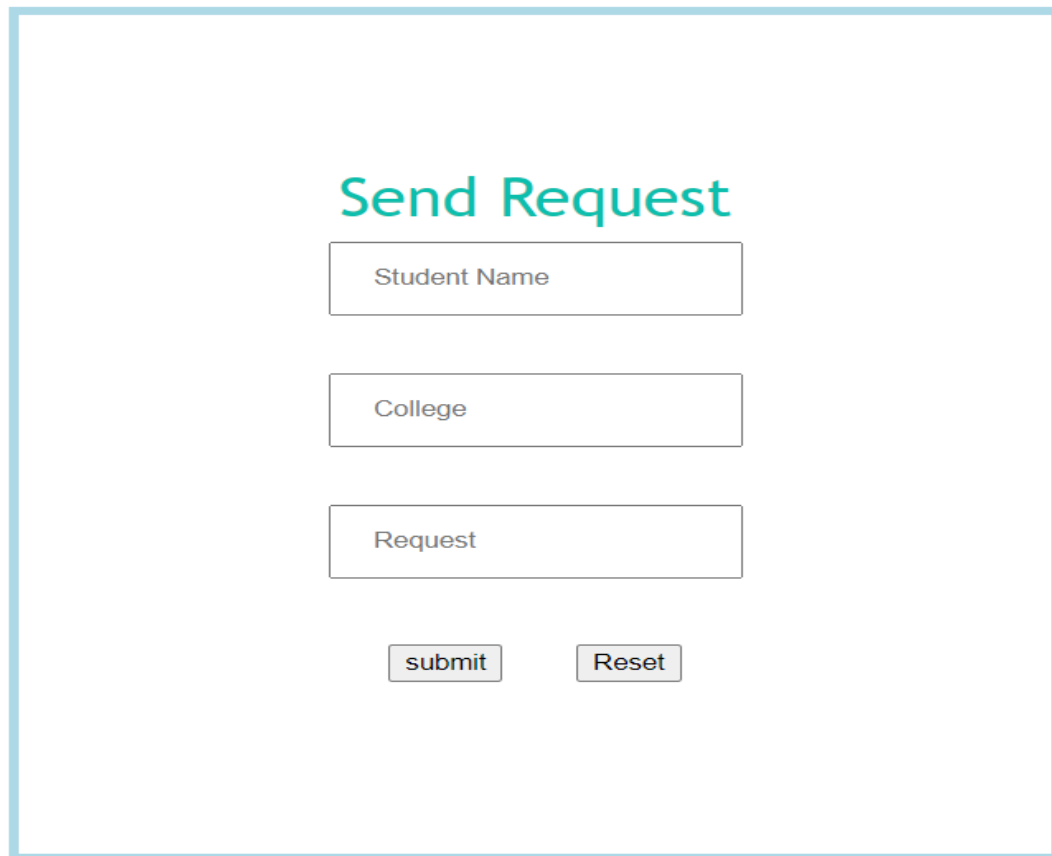
10. In update profile of Student page, First name, Last name, User name, Password, Mobile, Email, Address, College name functions are there and one update button for upgradation of particular student profile, if students want to change certain data for their correction, generally students forget their username and password for login so after retrieving the new username and password they can update the same in their profile for further use and the data will be directly updated on the student database.

Figure 10: Update Profile

11. In Student profile, it has also the features of send request so that if any student Face any problem regarding fetching details of study materials or any request to College to post particular materials in website so that they can get information As per their needs for enhancement in academic profile and the request will be visible to college and the admin as well.

Figure 11: Send Request

Future Work

Now the next part of our project is to make this website more secure for use. We have Used Java programming language for backend and web applications are JDBC, JSP With MySQL database. Create the folder structure of a web application archive file and Then deploy it to a Tom EE web server for execution.

And import jdbc packages, load and register the jdbc driver, open a connection to the Database, create a statement object to perform a query, execute the statement object And return a query result set, process the result set, close the result set and statement Objects and close the connection for connectivity with database respectively.

The Byte code

The key that allows the Java to solve the security and portability problems is that the output of Java compiler is Byte code. Byte code is a highly optimized set of instructions designed to be executed by the Java run-time system, which is called the Java Virtual Machine (JVM). That is, in its standard form, the JVM is an interpreter for byte code. Translating a Java program into byte code helps makes it much easier to run a program in a wide variety of environments. The reason is, once the run-time package exists for a given system, any Java program can run on it.

Although Java was designed for interpretation, there is technically nothing about Java that prevents on-the-fly compilation of byte code into native code. Sun has just completed its Just in Time (JIT) compiler for byte code. When the JIT compiler is a part of JVM, it compiles byte code into executable code in real time, on a piece-by-piece, demand basis. It is not possible to compile an entire Java program into executable code

all at once, because Java performs various run-time checks that can be done only at run time. The JIT compiles code, as it is needed, during execution.

Java Virtual Machine (JVM)

Beyond the language, there is the Java virtual machine. The Java virtual machine is an important element of the Java technology. The virtual machine can be embedded within a web browser or an operating system. Once a piece of Java code is loaded onto a machine, it is verified. As part of the loading process, a class loader is invoked and does byte code verification makes sure that the code that's has been generated by the compiler will not corrupt the machine that it's loaded on. Byte code verification takes place at the end of the compilation process to make sure that is all accurate and correct. So, byte code verification is integral to the compiling and executing of Java code.
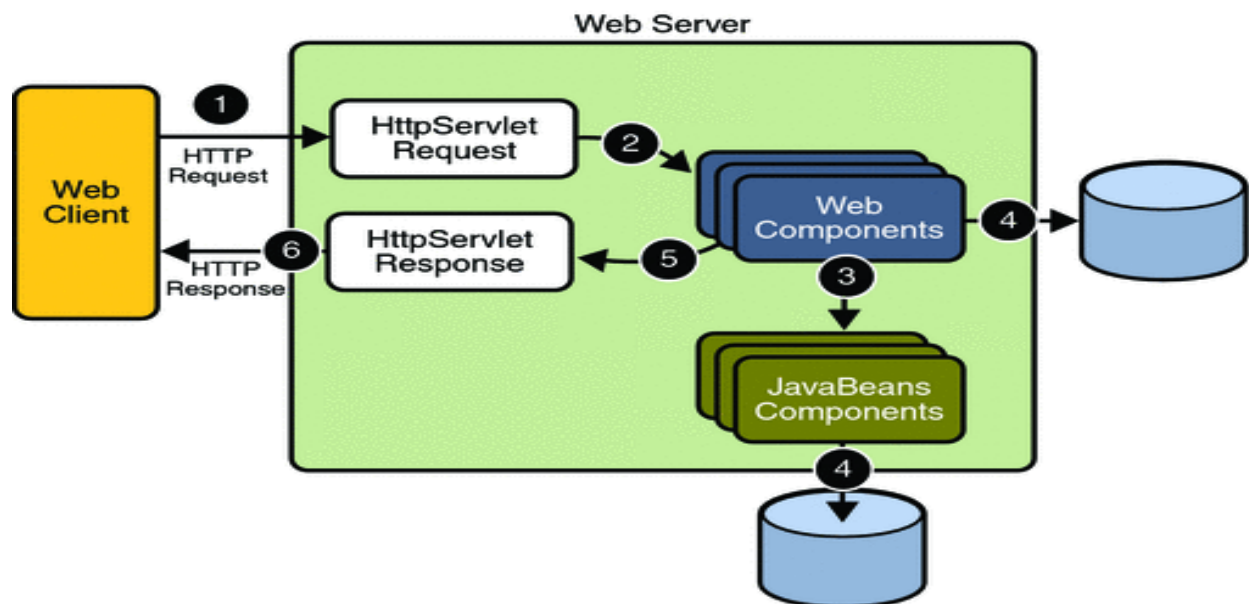

Figure 12: Architecture diagram

These are the process for understanding the above architecture diagram: -

- The user sends the command to the server through the internet, using the browser or the interface of the application.

- The web server is responsible for forwarding the command to the requested server.

- The server finds the results of requested commands (either the data processing or the database querying).

- The web application delivers the processed information to the server.

- The server provides the user with the requested data respectively.

Conclusion

In this project we used multiple access databases like three modules admin, college and student can perform the operations as per their requirements and it is automatically updated with the multiple users on the system so this makes the system fast and it provides easy navigation for all the users like different institutes can upload articles and manage the records of particular faculty and student and college has facilities to send response to appropriate requests so it makes it makes the environment with two way communication as student has any problem regarding unable to understand and confused in any topic for learning so they can directly contact to specific college to solve that problem as soon as possible and able to ask admin as well. This project provides student and college to easily navigate through the application for any information in a most secure manner.

References

1. Core Java 2 Volume II – Advanced Pearson Education – Sun Microsystems (Cay S. Hortsman, Gary Cornell)

2. Effective Java – Programming Language Guide Pearson Education – Sun Microsystems (Joshua Bloch)

3. Java Database Best Practices O'Reilly – SPD (George Reese)

4. Head First Servlets & JSP O'Reilly - SPD (Eric Freeman, Elisabeth Freeman)

5. The Book of JavaScript 2nd Edition SPD (thau)