CHAPTER 1

INTRODUCTION AND OBJECTIVES

1.1) INTRODUCTION

Today, most of the engineering student have so many contents to study that they often get troubled that what should they read and what they can keep for later study.

And here comes the "Easy Online Study".

Our project is based on the idea that emphasis the major issue faced by the engineering student by providing them only quality content that are quite enough for the exam point of view as well as for knowledge.

 "Easy Online Study" helps to identify the principle and important facts of any engineering college student. This will help in studying only those contents or materials which are best suitable for the clearing the exam and gathering the initial and fundamental knowledge.

The major idea behind this project is based on the problem faced by us when we were in college and didn't know that what to read if we are unable to take notes anyhow or by any means then he/she can visit this online portal and study each and every subject through.

1.2) AIMS AND OBJECTIVES

1.2.1) Initial Project Belief

In the text below, the brief description of the initial aims and objectives for the project given in the list of potential projects. Eventually these aims were altered to more general purpose of such a project and accordingly to what time allowed.

Initial belief:

"There are so many online websites are available for study but very few has such contents and materials which can help engineering college student to clear the exam for all the branches other than CSE. So it very difficult to find all the contents and materials at one single place and so it is one of the major problem in engineering college"

1.2.2) Alteration to The Project Aims

The altered aims for the project are as follows-

- Produce a use friendly online study portal-
    - ➤ in which user can browse all the study materials and contents which is kept branch wise and year wise.
    - ➤ Which contains all the major engineering branch's study materials like civil, mechanical, Electrical & Electronics, Biotechnology etc.

CHAPTER 2

LITERATURE REVIEW

2.1) INTRODUCTION TO WAMP SERVER

Stands for "Windows, Apache, MySQL, and PHP." WAMP is a variation of LAMP for Windows systems and is often installed as a software bundle (Apache, MySQL, and PHP). It is often used for web development and internal testing but may also be used to serve live websites.

- W = Windows
- A = Apache
- M = MySQL
- P = PHP

The most important part of the WAMP package is Apache (or "Apache HTTP Server") which is used run the web server within Windows. By running a local Apache web server on a Windows machine, a web developer can test webpages in a web browser without publishing them live on the Internet.

WAMP also includes MySQL and PHP, which are two of the most common technologies used for creating dynamic websites. MySQL is a high-speed database, while PHP is a scripting language that can be used to access data from the database. By installing these two components locally, a developer can build and test a dynamic website before publishing it to a public web server.

- **Windows** = Windows is Microsoft's flagship operating system (OS), the de facto standard for home and business computers. The graphical user interface (GUI)-based OS was introduced in 1985 and has been released in many versions since then
- **MySQL =** MySQL is a database system, used for developing web-based software applications.
- **Apache =** Apache is a public-domain (i.e. open source) Web Server developed by a loosely-knit group of programmers. The first version of Apache, based on the NCSA httpd Web server, was developed in 1995.
- **PHP** = PHP started out as a small open source project that evolved as more and more people found out how useful it was.

Web.xml file

Every Web application deployed in a servlet container must have a web.xml file present in its WEB-INF/ directory. The structure of every web.xml conforms to a DTD published as part of the J2EE specification.

The purpose of the web.xml is to specify the general configuration of the Web application as required by the J2EE standard. Specifically:

- initialization parameter values are provided for the Web application
- servlet classes used by the Web application may be declared and given names
- each servlet class is mapped to one or more URL patterns: when the servlet container receives a request, whose URL matches a pattern defined in the web.xml file, then the corresponding servlet is used to process the request
- initialization parameter values are provided for each servlet if required
- session information (such as time out)
- the location of custom tag libraries used by the JS pages

Java Script Pages (JS)

Early Java-based Web applications used only servlets to generate the HTML that was sent back to users' Web browsers. Over time, template mechanisms were introduced that enabled Web developers to generate dynamic content by using templates to generate the HTML. Several such template systems are available; however the architecture has settled on the use of JS (Java Script) pages to display content.

When a server receives a request from a user's browser, it first processes the request to extract parameters from the request and to perform business logic initiated by the request. Once the processing is complete, the Web application must dispatch the request to a JS page: it does this by using a request dispatcher. Typically, the servlet context invokes a request dispatcher by passing the target JS page to the dispatcher and then the request and response objects are forwarded by the request dispatcher.

A JS page comprises a combination of HTML, JS tags, and scripting elements such as scriptlets.

Data is passed to a JS page using a variety of mechanisms, the most important of which are implicit objects and beans.

2.2) ARCHITECTURAL MODEL

The application is designed to conform to Sun's "Model 2" architecture. In this architecture, three functional components referred to as the Model, View, and Controller (MVC) partition the functionality of the Web application into logically distinct components.

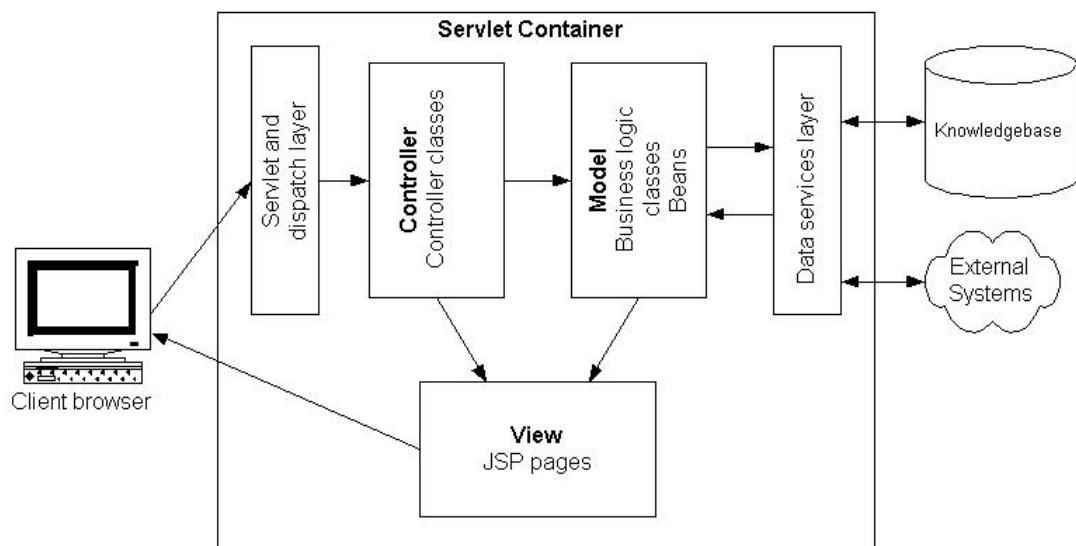The following figure illustrates the architecture of the model:

Fig:2.2) Model 2 Architecture

Model: This component manages the data and business objects that are used by the system. The objects that represent data in the system are maintained by the model component.

View: This component is responsible for generating the content displayed to the user. The user interface of the Web application is served to the browser using JSP pages.

Controller: This component determines the logical flow of the application. It determines what actions are performed on the model and manages the communication between model and view components.

2.3) THE SOFTWARE DEVELOPMENT LIFE CYCLE (SDLC) MODEL
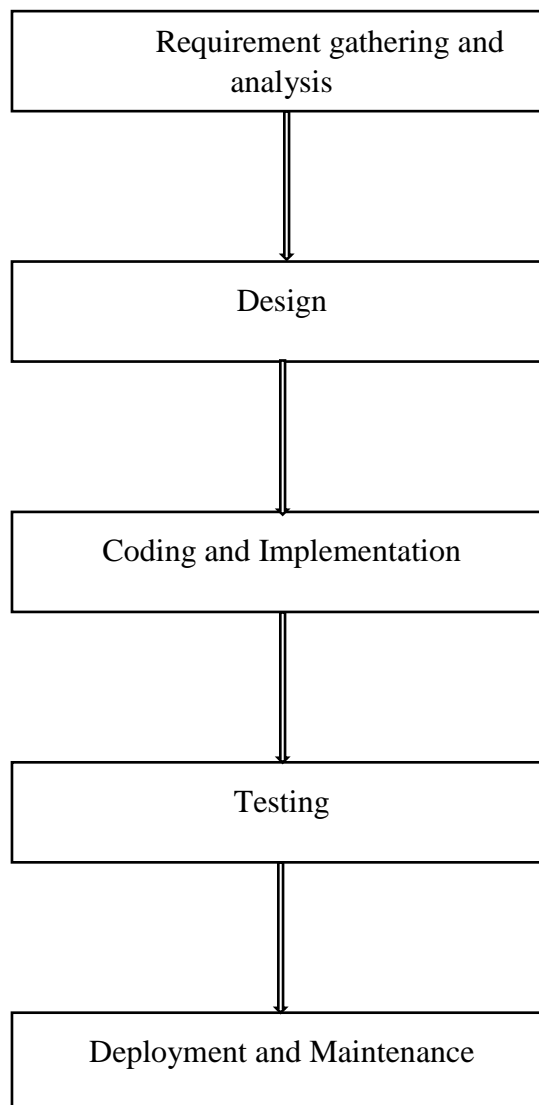
The five phases of SDLC are:

```
┌─────────────────────────────────┐
│   Requirement gathering and     │
│            analysis             │
└─────────────────────────────────┘
                 │
                 ▼
┌─────────────────────────────────┐
│             Design              │
└─────────────────────────────────┘
                 │
                 ▼
┌─────────────────────────────────┐
│    Coding and Implementation    │
└─────────────────────────────────┘
                 │
                 ▼
┌─────────────────────────────────┐
│            Testing              │
└─────────────────────────────────┘
                 │
                 ▼
┌─────────────────────────────────┐
│   Deployment and Maintenance    │
└─────────────────────────────────┘
```

Fig:2.3) SDLC Model

Software development lifecycle (SDLC) is a framework that defines the steps involved in the development of software. It covers the detailed plan for building, deploying and maintaining the software. SDLC defines the complete cycle of development i.e. all the tasks involved in gathering a requirement for the maintenance of a Product.

The different phases of SDLC model are described as below:

Phase 1: Requirement gathering and analysis

During this phase, all the relevant information is collected from the customer to develop a product as per their expectation. Any ambiguities must be resolved in this phase only.

The objective of this phase is to answer the following question.

1. What is the perceived problem?
2. How the solution is to be implemented?
3. What are the goals to be achieved by the solution?
4. What benefits will result from the solution?
5. What will be the scope of the project?
6. What is the expected result of any part of the software?

Once the requirement is clearly understood, SRS (Software Requirement Specification) document is created.

Phase 2: Design

In this phase, the requirement gathered in the SRS document is used as an input and software architecture that is used for implementing system development is derived. The design specification should specify:

1. Exactly how each input, output, operation and control requirement will be handled?
2. Acceptance test plan/schedule

3. Manual procedure to operate the system

Phase 3: Coding and Implementation

Implementation/Coding starts once the developer gets the Design document. The Software design is translated into source code. All the components of the software are implemented in this phase.

Phase 4: Testing

Testing starts once the coding is complete and the modules are released for testing. In this phase, the developed software is tested thoroughly, and any defects found are assigned to developers to get them fixed.

Retesting, regression testing is done till the point at which the software is as per the customer's expectation. Testers refer SRS document to make sure that the software is as per the customer's standard.

Phase 5: Deployment and Maintenance

Once the product is tested, it is deployed in the production environment or first UAT (User Acceptance testing) is done depending on the customer expectation.

In the case of UAT, a replica of the production environment is created and the customer along with the developers does the testing. If the customer finds the application as expected, then sign off is provided by the customer to go live.

After the deployment of a product on the production environment, maintenance of the product i.e. if any issue comes up and needs to be fixed or any enhancement is to be done is taken care by the developers.

CHAPTER 3

EXPERIMENTAL SETUP

3.1) RESOURCES

This chapter section discusses what resources have been used during this project. It goes on details on what hardware and software tools have been used to create the interactive web application.

3.1.1) HARDWARE

The computer workstation is the most essential item of this project. Computer system basic specifications:

- OS: Windows 10
- CPU: intel core i5
- RAM: 4 Gb

3.1.2) SOFTWARE

The following software are used during the project development and implementation.

- Sublime Text Editor
- WAMPP controller
- MySQL database
- PHP
- Internet Browser

3.2) TECHNOLOGY

The following were technology were used to develop application.

- HTML
- CSS
- JAVASCRIPT
- PHP
- MySQL

3.3) MINIMUM SPECIFICATION REQUIREMENTS TO RUN SOFTWARE

- Windows 7/8/10 or Linux distribution like ubuntu, Kali …

- Latest version of browsers like Google Chrome, Mozilla Firefox, Safari for smooth experience
- Internet connection

CHAPTER 4

IMPLEMENTATION

4.1) STUDENT REGISTRATION

The web application has compulsion provision that the person who want to use the service must have a registered account. The following screenshot shows our design for registration form. The username, email address and phone numbers of every user should be unique. We have also implemented a validation rule for those fields.

4.1.1) FLOWCHART FOR USER REGITRATION FORM

```
                    ┌─────────┐
                    │  Start  │
                    └─────────┘
                         │
                         ↓
   ┌──────────────────────────────────────────────────┐
   │  Name, Admission number, Department, Password      │
   └──────────────────────────────────────────────────┘
                         │
                         ↓
                    ╱─────────╲
                   ╱  Check     ╲
                  ╱ Validation for╲
                 ╱  User name,     ╲──── False
                 ╲  Email and      ╱
                  ╲  phone        ╱
                   ╲─────────────╱
                         │
                       True
                         ↓
   ┌──────────────────────────────────────────────────┐
   │              Redirect to Login Page                │
   └──────────────────────────────────────────────────┘
                         │
                         ↓
                    ┌─────────┐
                    │  Stop   │
                    └─────────┘
```

4.1.2) SCREENSHOT OF USER REGISTRATION FORM

Fig 4.1.2) Screenshot of user registration form

4.2) LOGIN SYSTEM: -

Login System for this website is divided into two main steps so that students can able to get more specialized contents.

Steps are given below-

A) Step-1: -

The website has a login page. The user inputs the unique user name and password, then the system will check in the database and compares the user given inputs to the registered one in the database. It is the process of user authentication. On successful authentication, user is directed to dashboard.

The login page also has a facility of viewing password during typing and 'Remember me' option.

4.2.1) SCREENSHOT OF USER LOGIN PAGE
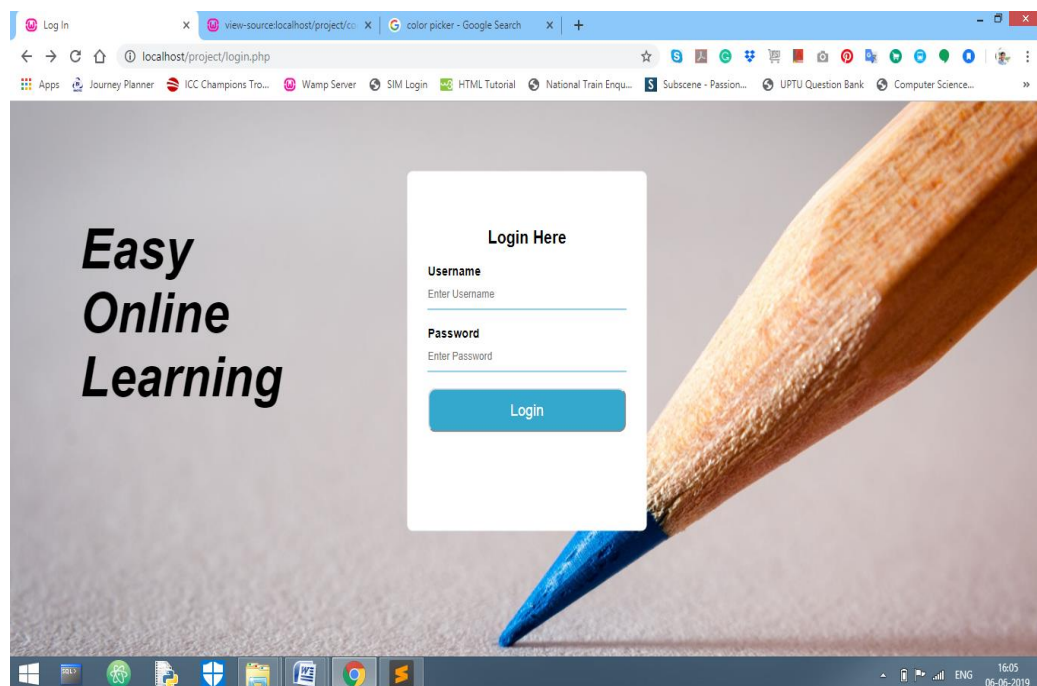
Fig 4.2.2) Screenshot of user Login form

B) Step-2: -

After completing the step-1 user will be redirected to step-2 where user have to enter their respective engineering branch and year so that they can be able to access to more specialized content

4.2.2) FLOWCHART FOR USER LOGIN PAGE

Start

Input Username, Password

True

Authenticate User name, Password from database

False

True

Redirect to Dashboard

Stop
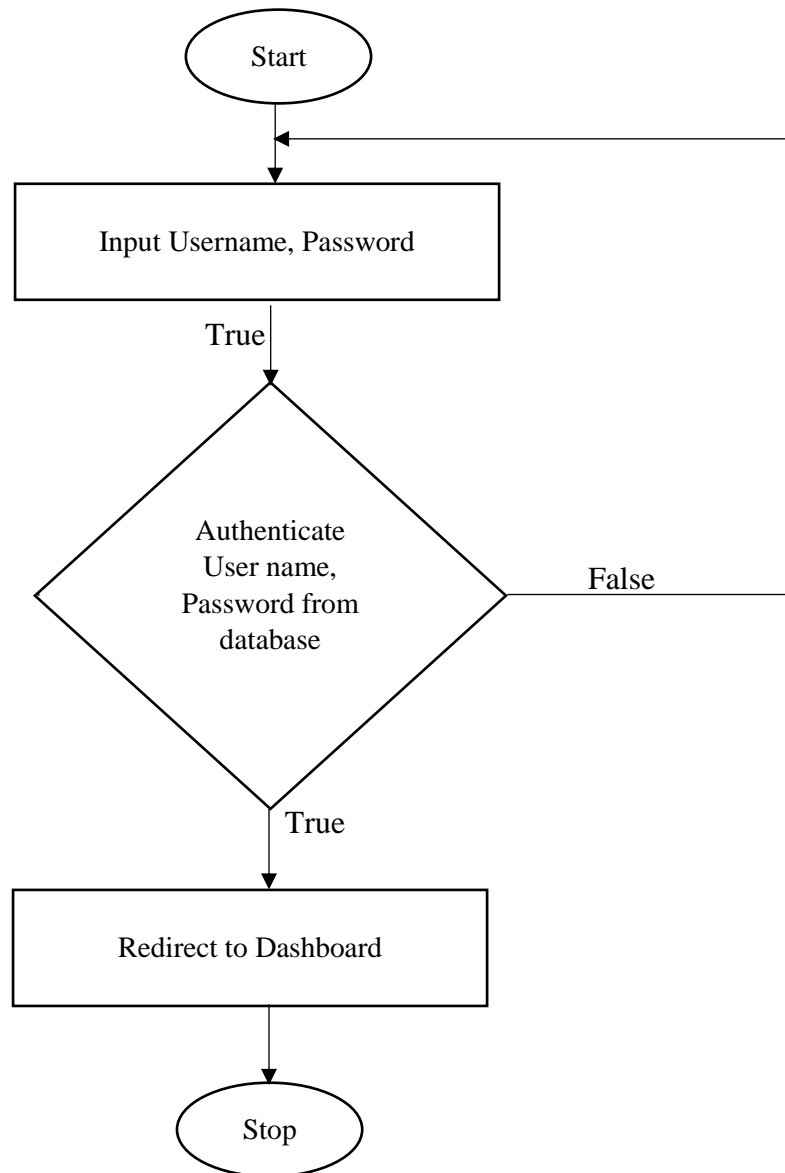
Fig. 4.2.2) Flowchart for user login form

4.3) SUBMITTING ACADEMIC DETAILS

Now student have to enter their academic details like department name and year in which student is studying

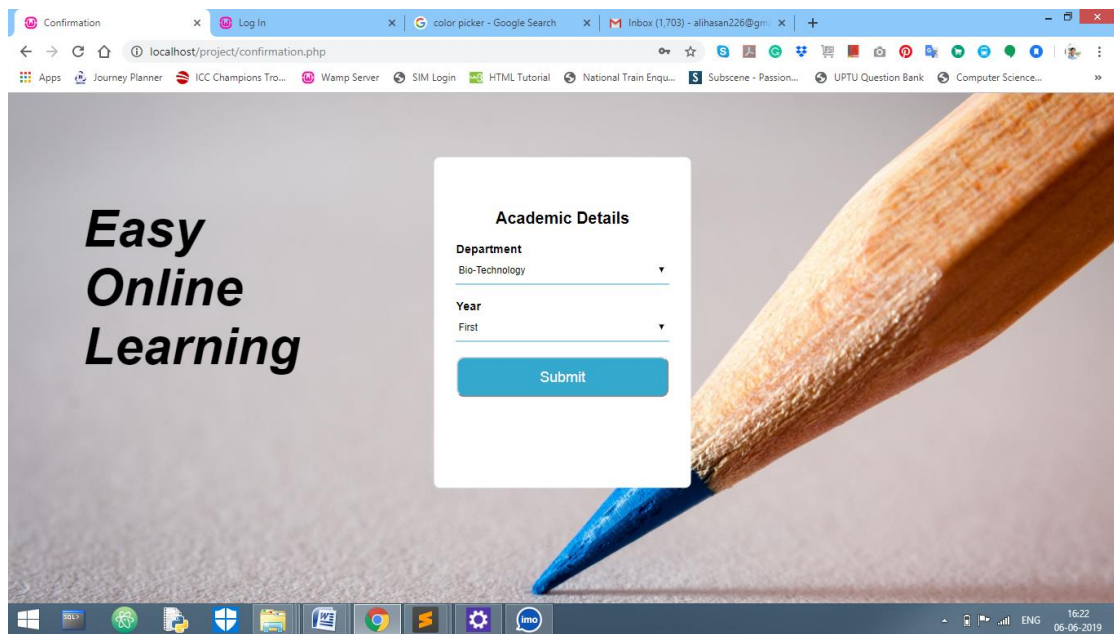## 4.3.1) SCREENSHOT OF STUDENT ACADEMIC DETAIL

Fig 4.3.1 SCREENSHOT OF STUDENT ACADEMIC DETAIL

4.4) DASHBOARD

The dashboard is the page that the user will first get directed to, once he is successfully authenticated. After a success login user will be redirected to the "Dashboard" page. Dashboard page contains "HOME" , "LIBRERY" and "ABOUT" section which contain the information about the various part of the page.

We can access the different desired topics or subjects accordingly listed on left side of the page. Every page contains a different branch subject.

- **HOME:** Home contains the main part of the portal such as subject list and semesters.

- **LIBRARY:** Library contains the all the various books for different branch.

- **ABOUT:** About section contains the information about the developer so that any one can contact to them in any cases.
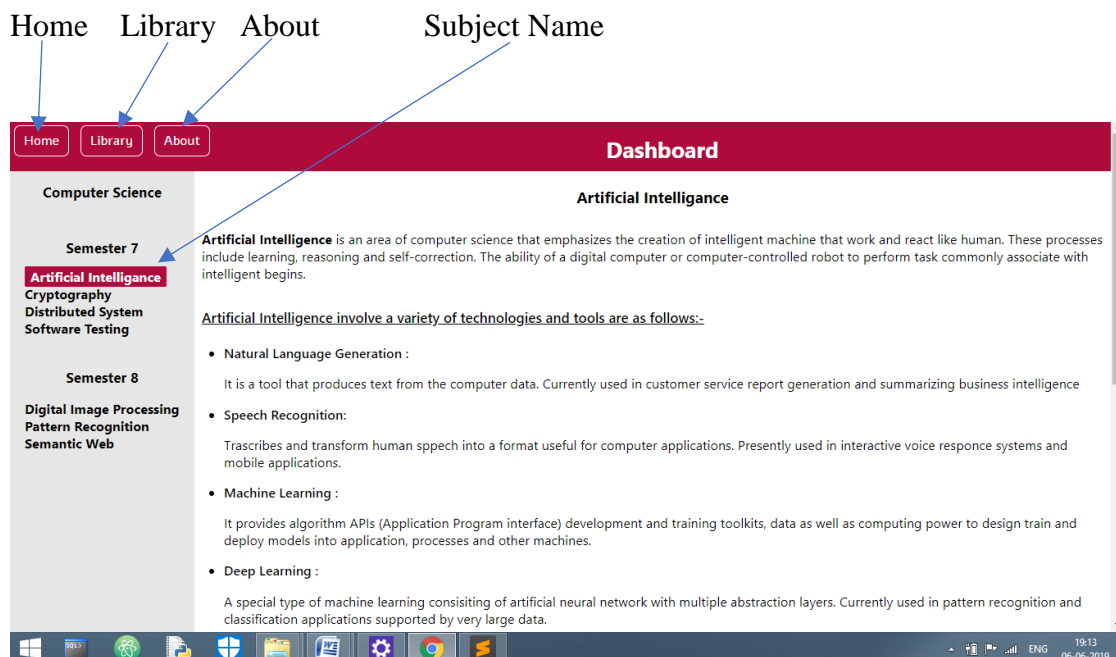
Fig 4.3.1) Screenshot of Dashboard Page
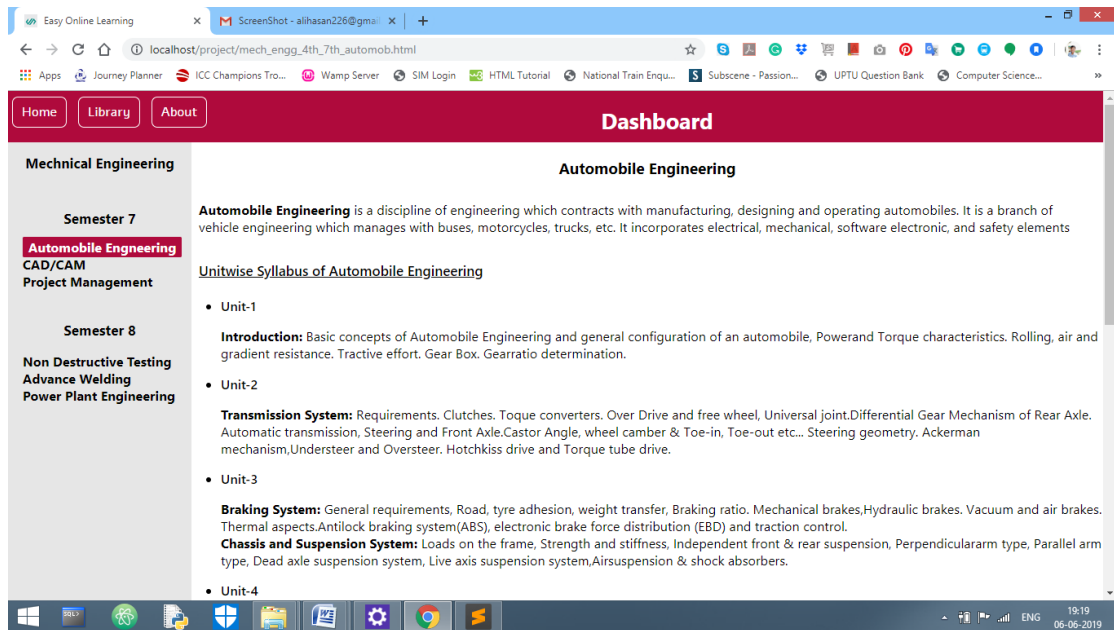
Fig 4.3.2) Screenshot of Dashboard Page with toggled side-navigation

4.5) MENU

Menu is nothing but just a overview of all the pages in very short so that user would not have to visit all the pages to search any specific page or information.

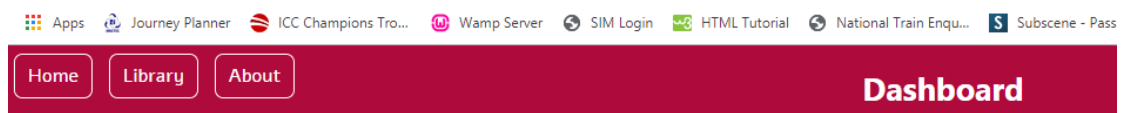For this we have put three major menu buttons for user simplicity.

Fig 4.1 Screenshot of Menu

4.5.1) HOME

Home contain the link of the such web pages which are directly linked with the Dashboard and can be accessed directly from the menu page. This page is the main part of the portal because it is one of the main parts of the page.

.
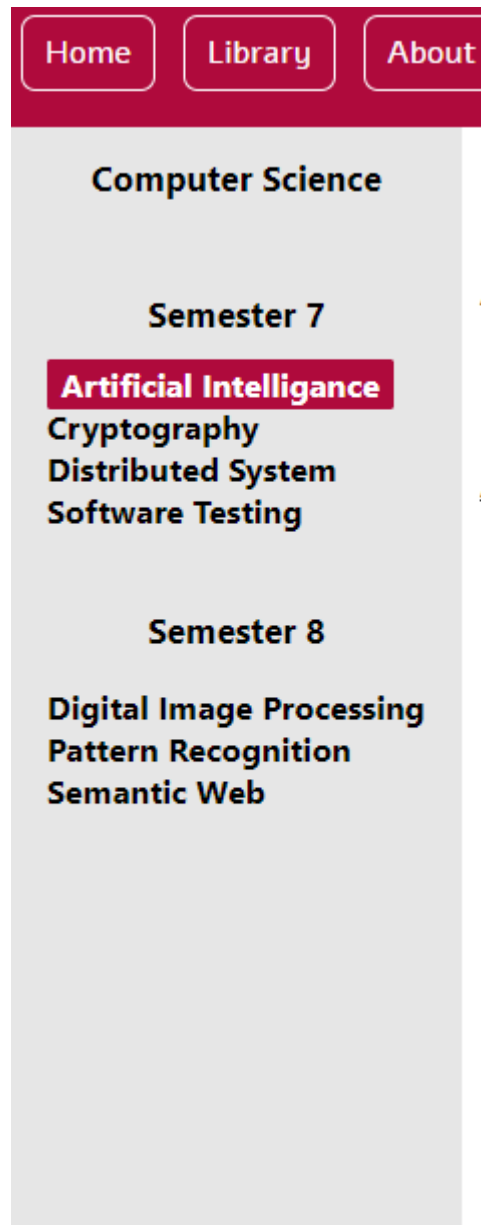
Fig 4.2 Screenshot of the HOME

As we can see that all the option available in the home button is displayed in the screenshot. Home page is directly redirected to home page so that no any difficulty is faced by the user.

4.5.2) LIBRARY

Library button contains the study materials and various for all the different engineering branches which are listed in this section branch wise.

Every branch has a sufficient amount of contents and books for exam point of the vies and as well as for knowledge purpose.

Following engineering branches are mentioned-

- **Computer Science & Engineering**
- **Mechanical Engineering**
- **Civil Engineering**
- **Electrical Engineering**
- **Electronics Engineering**
- **Bio Technology**

4.5.3) ABOUT

About section contain the information about the members of the development group of this portal. It contains mail address of all the members so that any user can contact to team in any cases or in any issues.

About section contains following information

- **Mail address**

- **Name of the member**

- **Domain of the member**

4.6) VIEW/LIST

View is the element of the page which tells about the various pages and views of the portal.

Fig 4.3 Screenshot of View

4.6.1) RESPACTIVE YEAR'S SEMESTER

Respective semesters of the years of the different branches are given in the given below screenshot.
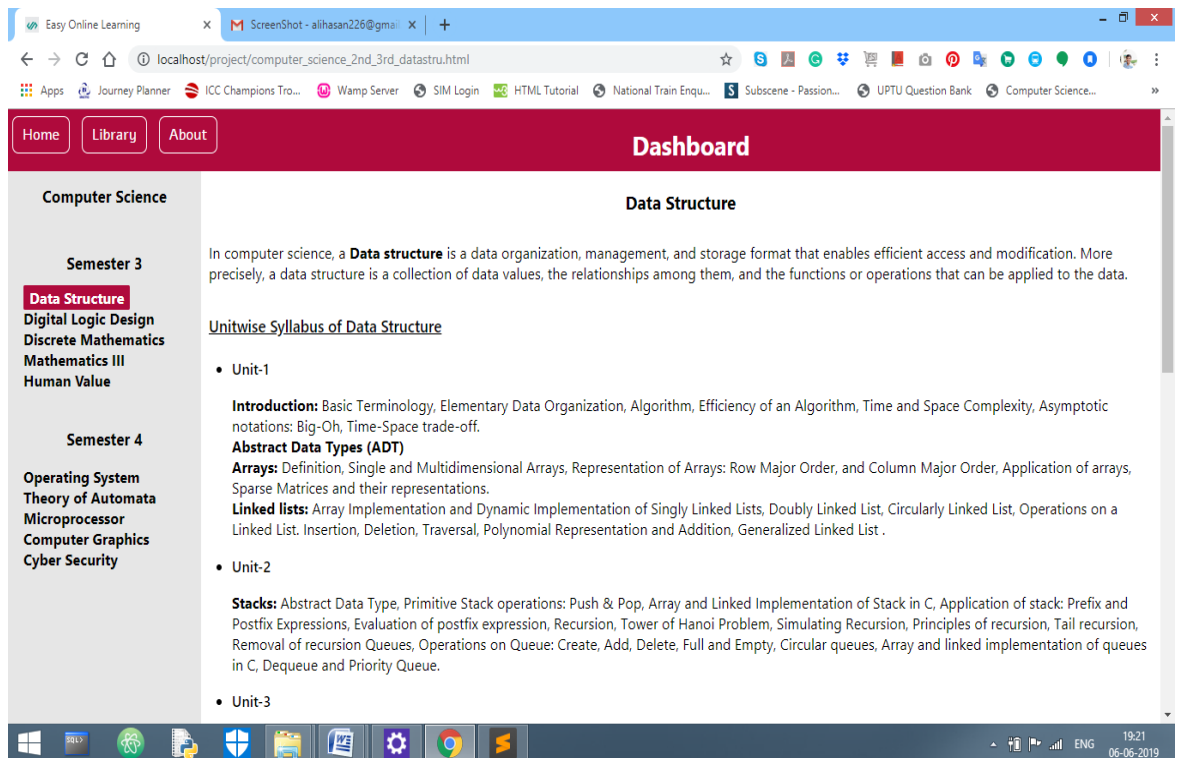
- **THIRD AND FOURTH SEMESTER**

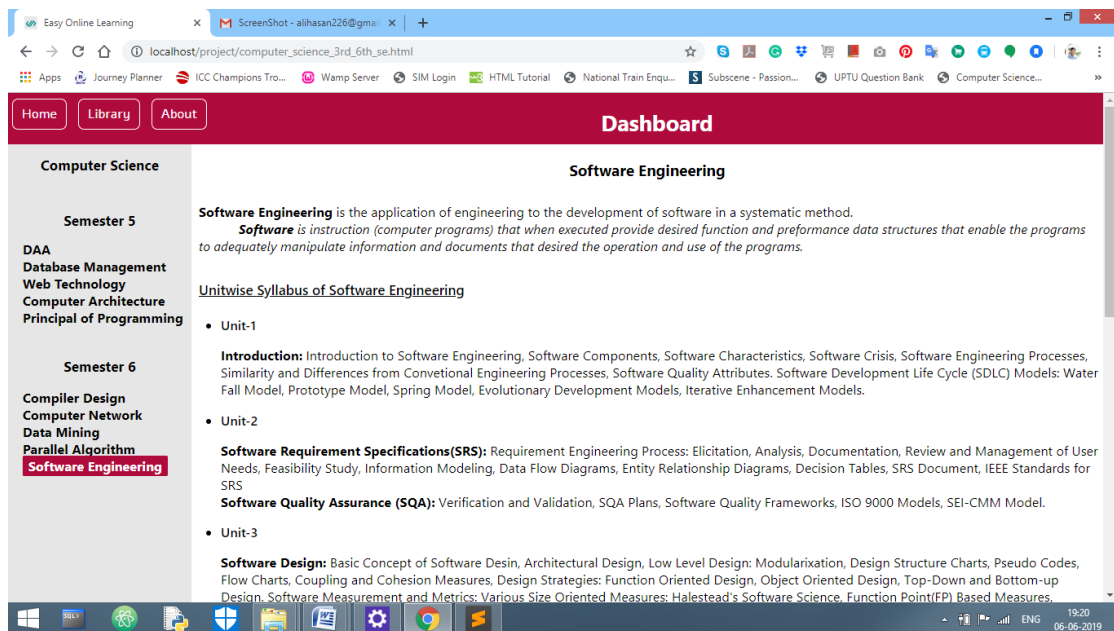Fig:- 4.6.1 Semester wise Subject Details

- **FIFTH AND SIXTH SEMESTER**

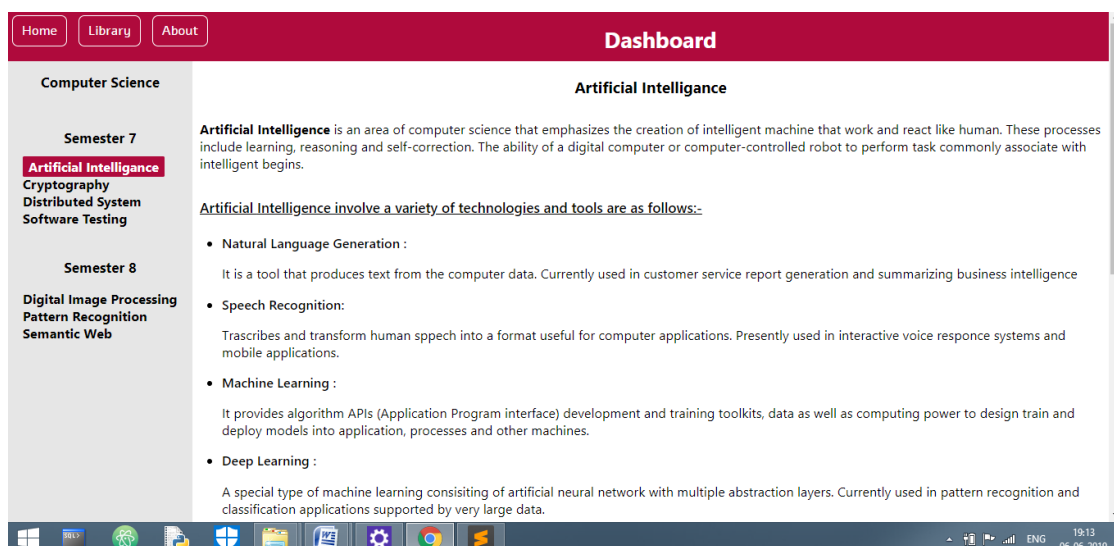Fig:- 4.6.1 Fifth and Sixth Semester

- **SEVENTH AD EIGHTH SEMESTER**

Fig:- 4.6.1 Seventh and Eight Semester

4.6.2) RESPACTIVE SUBJECTS OF SEMESTER

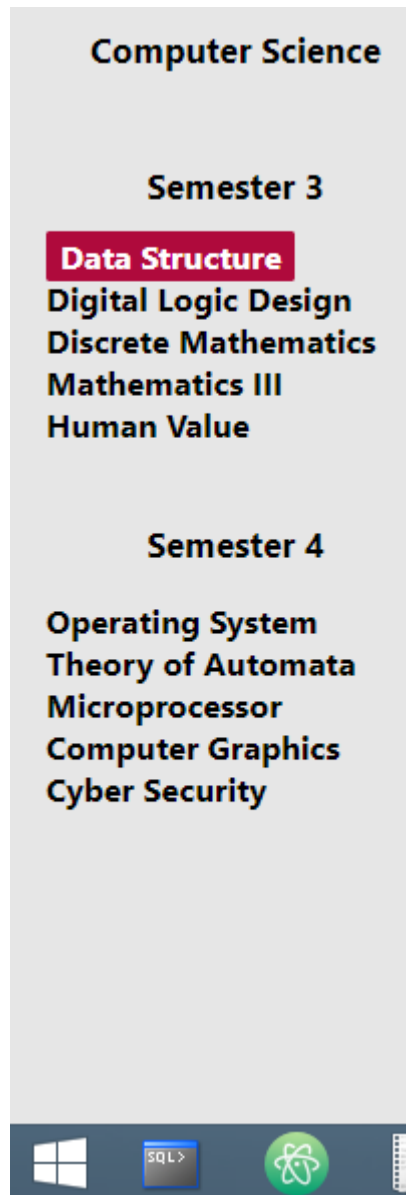- **CSE 2nd YEAR SUBJECTS**

Fig:-4.6.2 Year Wise Subject

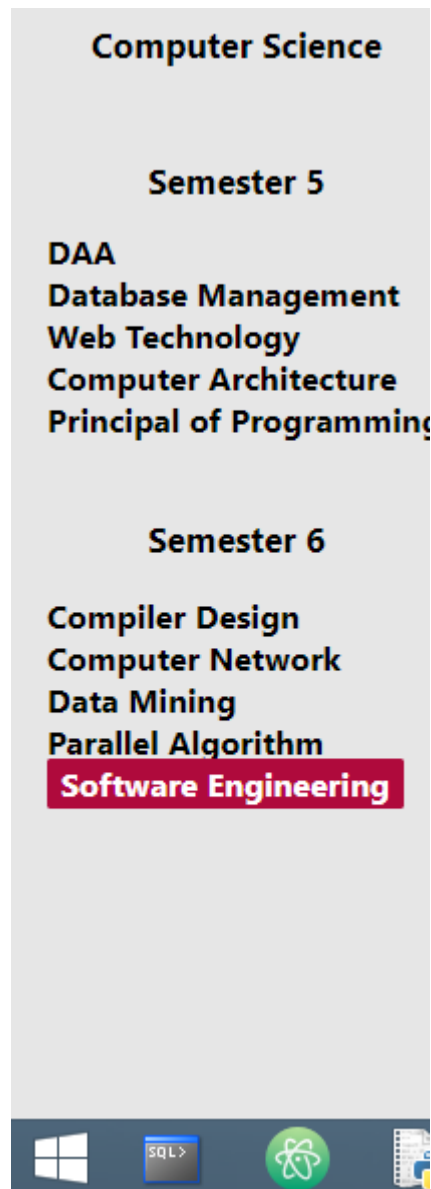- **CSE 3rd YEAR SUJECTS**

Fig:- 4.6.2 Year Subject

- **CSE 4th YEAR SUBJECTS**

Fig:-4.6.2 Year Subject

- **NOTES**

Notes of the Software Enginering

1 2 3 4 5

Fig:- 4.6.2 Unit Note

Here digits 1,2,3,4,5 represent corresponding unit number of the respective subjects and syllabus.

Since every subjects of the each and every subjects have only 5 units but some of them have 4 units also but we are assuming there are uniformly five units.

- **BOOKS**

In Each page the book of the respective subject will be provided where student can download the book
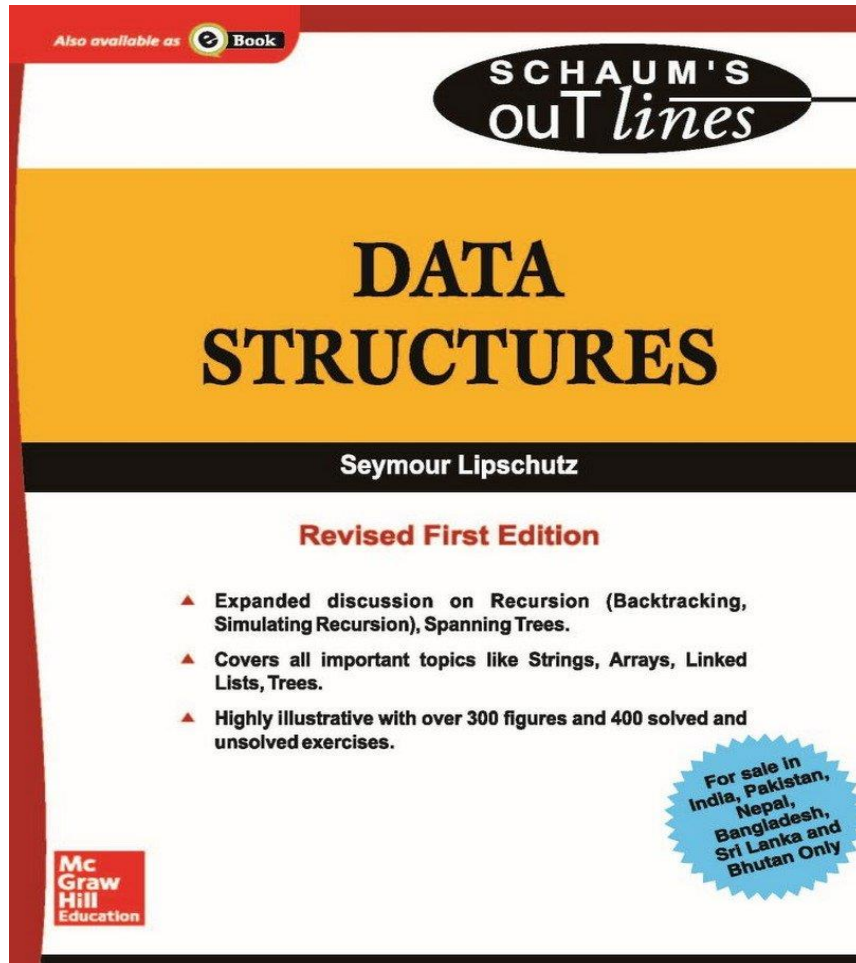

Fig:- 4.6.2 Book Example

4.7) Library

Library section contains all the study materials of all different branches. It include unit wise chapter or notes and some standard textbook

Fig 4.7.1 Computer Science Library

4.8) About

About section contain the information about the developing team of this online portal it includes email address, name and domain of the members so that any user can contact to the team for any issues.

- Shivam Yadav

    Email   - shivamviru119@gmail.com
    Domain - Network Security

- Mohammad Shoab

    Email   - shoabarkkhan@gmail.com
    Domain - Networking

- Ali Hasan

    Email   -   alihasan226@gmail.com
    Domain -   Java Developer

- Sant Bakhsh Singh

    Email   - Shikhary24.sy@gmail.com
    Domain - Cyber Security

4.9) Database

Database section contains the information about login data input by registered user if the user are not registered then he/she can registered themselves.

We have used MySQL server to store the database and PHP to link that data with the web pages.
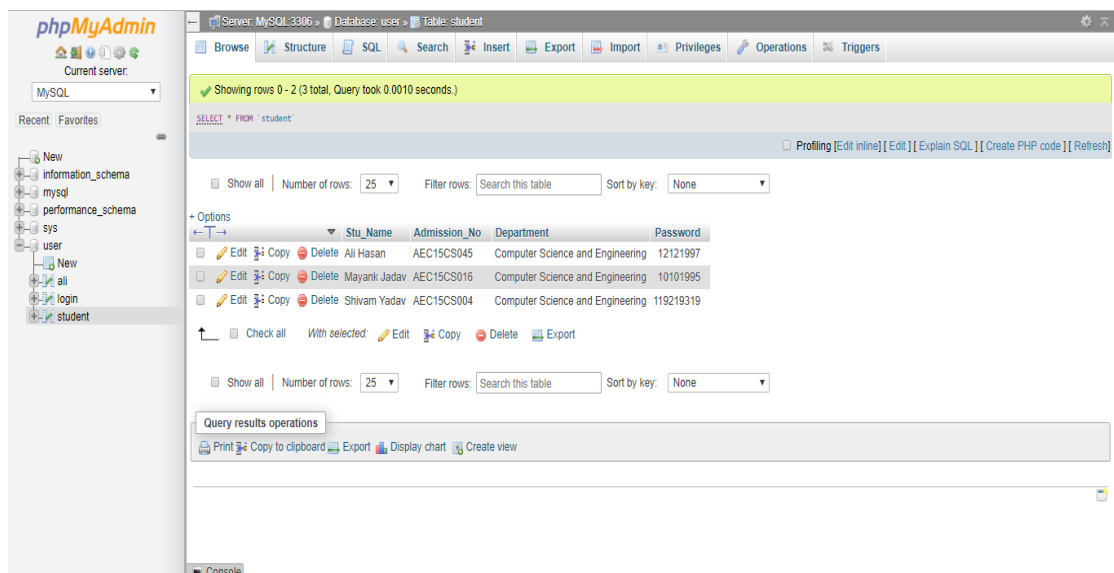

Fig:-4.9 Student Database ScreenShot

As we can see that the above database contains all the essential information such as student name student ID, Branch, Password.

These credentials are used to validate the user and to check that user is registered or not.

4.9) Database Information

We have store the following data in MySQL database.

- **Student name**

  user have to enter the corresponding user name so that system can identify the different user

- **Admission number**

  User have to enter the corresponding admission number so that system can identify the different user.

- **Department**

  User have to enter the corresponding department number so that system can identify the different user.

- **Password**

  User have to enter their own password so that user can use that password to login.

CHAPTER 5
CONCLUSION

Considering all the above given information and data we hope that this Online study portal will help in much quicker way to Engineering College students with the help of this portal every student can get exactly the right study contents for the exam point of view as well as knowledge purpose we hope that we are able to achieve the major target which was providing the quality content to all the engineering students because we know that there are majority of portal which only provides CSE based study material and information so we tried to overcome that problems.

Reference

Websites accessed during project development

1). HTML   https://www.w3schools.com/html/default.asp

                  https://www.tutorialspoint.com/html

2) CSS   https://www.w3schools.com/css/default.asp

                  https://www.tutorialspoint.com/css

3) PHP   https://www.w3schools.com/php/default.asp

                  https://www.tutorialspoint.com/php

4) Javascript   https://www.w3schools.com/js/default.asp

                  https://www.tutorialspoint.com/javascript

5) MySQL   https://www.w3schools.com/sql/default.asp

                  https://www.tutorialspoint.com/sql