Tribhuvan University

Faculty of Humanities and Social Sciences

Project report

On

"E-learning(Brain booster)"

Submitted to:

Department of Computer Application

Kathmandu Business Campus

In partial fulfillment of the requirements for the Bachelors in Computer Application

Submitted by:

Name: Uchit Shrestha

Roll No: 28

Name: Nishan Shrestha

Roll no: 13

Under the supervisor of

Binod Thapa

Tribhuvan University

Faculty of Humanities and Social Sciences

Kathmandu Business Campus

Supervisor's Recommendation

I here by recommend that this project prepared under my supervision by **Nishan Shrestha** and **Uchit shrestha** entitled **"E-learning(Brain booster)"** in partial fulfillment of the requirements for the degree of Bachelor of Computer Application is recommended for the final evaluation.

Binod thapa

Supervisor

Tribhuvan University

Faculty of Humanities and Social Sciences

Kathmandu Business Campus

LETTER OF APPROVAL

This is to certify that this project prepared by **Uchit Shrestha** and **Nishan Shrestha** entitled **"E-learning(BrainBooster)"** in partial fulfillment of the requirements for the degree of Bachelor in Computer Application has been evaluated. In our opinion it is satisfactory in the scope and quality as a project for the required degree.

SIGNATURE of Supervisor	**SIGNATURE of HOD/ Coordinator**
SIGNATURE of Internal Examiner	**SIGNATURE of External Examiner**

Kathmandu Business Campus

Ref No:

Date:

Subject: Approval of Project Proposal

The project entitled **"E-learning(Brain booster)"** in proposed by **Mr.Uchit Shrestha** and **Mr. Nishan Shrestha** for the partial fulfillment of the requirement for Bachelor in Computer Application (BCA), fourth semester has been approved for further development.

Proposal Evaluation Committee

1. _____

2. _____

3. _____

4. _____

Mr.

Campus Chief (.)

ABSTRACT

E-Learning has gained significant attention in the education sector globally, and its impact has been particularly notable in developing countries like Nepal.

In Nepal, e-learning refers to the use of digital technologies and online platforms to facilitate remote education and training..

However, e-learning in Nepal also faces several challenges. Limited internet infrastructure in certain areas, particularly rural regions, access to e-learning platforms. Additionally, the lack of digital literacy and technical skills among students, teachers, and parents poses a barrier to effective e-learning implementation.

ACKNOWLEDGEMENT

We would like to express our special thanks of gratitude to our supervisor Mr. Binod Thapa who gave us the golden opportunity to do this wonderful project on the topic of "E-learning(Brain booster)", which also helped us in doing a lot of research and we came to know about so many new tools and technologies.

We would like to express our special thanks of gratitude to our Campus CEO/Principal Mr. Naresh Prasad Shrestha who gave us permission for doing this Project.

I would like to express my special gratitude and thanks to our BCA Program Coordinator Mr. Ram Prasad Subedi for his support and help for our personnel development and mainly for the completion of this Project.

I am highly indebted to Kathmandu Business Campus for their guidance and constant supervision as well as for providing necessary information regarding the Project and support in the completion.

We would also like to express my gratitude towards library and member of Kathmandu Business Campus for their kind co-operation and encouragement which help me in completion of this Project

We would also like to thank our parents and friends who helped us a lot in finalizing this project within the limited time frame.

In the end, we would also like to thank Tribhuvan University for giving us this opportunity via the course of Computer Application to help us understand the project ethics at this early stage and helped us to evaluate my knowledge and expand it a little more.

Yours sincerely

Uchit Shrestha

Nishan Shrestha

LIST OF ABBREVIATIONS

CRUD	**Create, Read, Update and Delete**
CSS	**Cascading Style Sheet**
DFD	**Data Flow Diagram**
ERD	**Entity Relationship Diagram**
HTML	**Hyper Text Markup Language**
JS	**Java Script**
MySQL	**Microsoft Server Structured Query Language**
PHP	**Hypertext Preprocessor**
UI	**User Interface**

LIST OF FIGURE

TABLE OF CONTENTS

CHAPTER: 1 INTRODUCTION

1.1 Introduction

E-learning refers to the process of delivering education and training using digital resources and technologies. It allows learners to access educational materials and participate in courses through electronic devices such as computers, tablets, and smartphones connected to the internet.

The main advantage of e-learning is its flexibility, as it enables students to learn anytime and anywhere, breaking the barriers of traditional classroom settings. Learners have the freedom to choose from a wide range of courses and classes, tailoring their learning experience according to their needs and preferences. This accessibility and convenience make e-learning an efficient and popular option for many individuals seeking to acquire new knowledge or enhance their skills.

In terms of project development, mentioned the use of the "waterfall model." The waterfall model is a traditional software development approach that follows a linear, sequential process. It consists of distinct phases, including requirements gathering, design, implementation, testing, and maintenance. Each phase has specific deliverables and typically relies on completing the previous phase before moving forward.

While the waterfall model is widely known and used in software development, its applicability to e-learning projects may vary depending on the specific context and requirements. Other project management approaches, such as agile methodologies, are often preferred for e-learning projects due to their flexibility and iterative nature.

It's important to note that the success of an e-learning project depends not only on the chosen development model but also on factors such as instructional design, content creation, learner engagement, and technical considerations.

1.2 Problem Statement

- If proper guidance is not giving to the students, they may not fully engage in the lesson on their own.
- Going to the university to attend lectures during the pandemic carries risks.
- The entire university cost is more than online lectures.

1.3 Objectives

The system give remedies for the problem that are currently being faced by the people.

Some of the objectives of system are as follow:

- Allow learners to access educational content and resources anytime, anywhere, and at their own base
  .

1.4 Scope

1.4.1 Scope

- User can learn anywhere and anytime.
- User can easily communicate and express themselves.

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CHAPTER: 2 LITERATURE REVIEW

2.1 Literature Review

For this project, we have researched and analyzed some if the related websites like google and YouTube to gather information for our project. We found out websites and application are also providing the service as we offering but our project has only gather ides from those project our project is totally different and got more features than those other websites.

E-learning today gained so much popularity because it essential technologies are working out at huge steps. We are even offered to provide video and audio of the lecturer for better study for the students. In this benefits why to go out somewhere else when all you have to do is attend, choose the course, stay in your comfortable place and start gathering knowledge. All the management will be done by the user and provide all the course and keep all the database of the User. E learning can help students to gather more knowledge apart from school education.

Other flaw we saw was that their UI/design were not appealing at all in terms of our design.

CHAPTER: 3 SYSTEM ANALYSIS AND DESIGN

3.1 System Analysis

This system is designed with the series of processes starting with requirement analysis, design, implementation, testing and maintenance. During requirement analysis, all the functional and nonfunctional requirement are analyzed and system is developed according to the requirement then designing of the system is carried out. After the design process, coding and development part is started then after integrating the system there is testing of the system. If the testing is positive then system is implemented otherwise some maintenance is done and system come in operation.

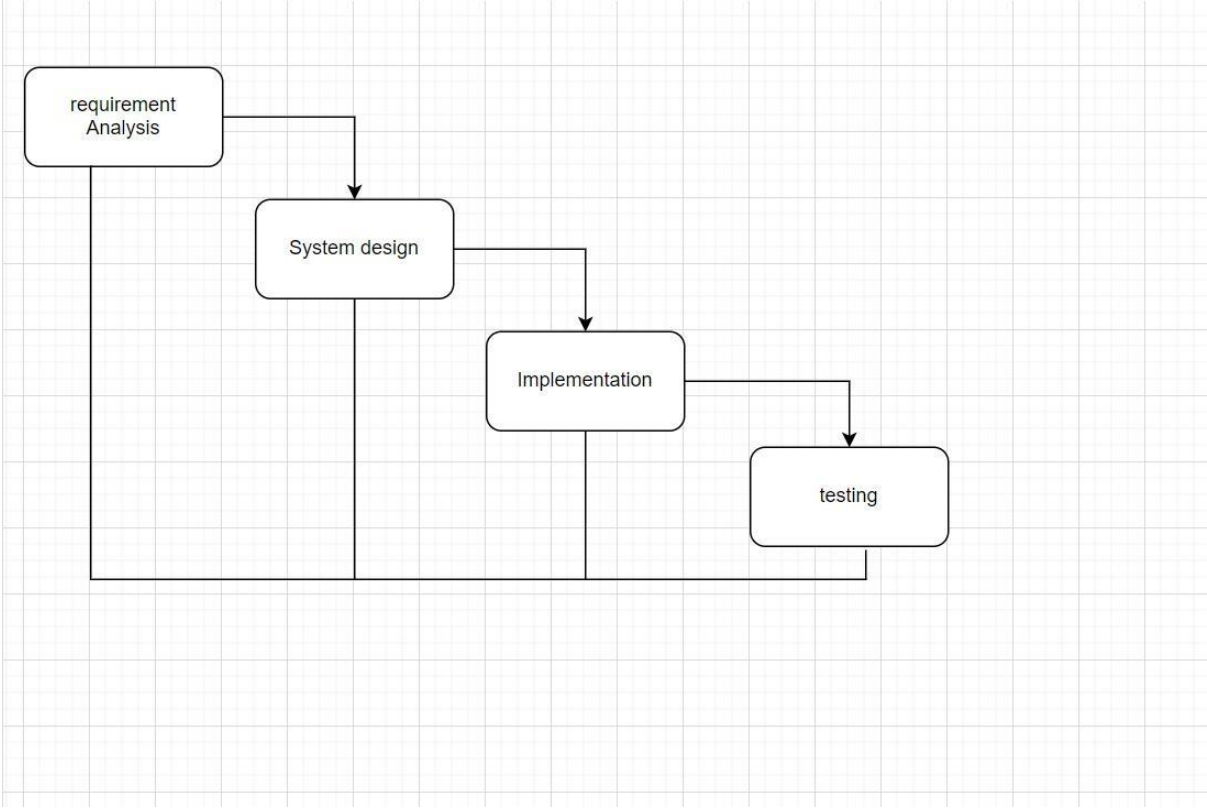


Figure 3.1: Waterfall Methodology

3.1.1 Requirement Analysis

Requirement analysis is done while developing a system and before implementing it, it is necessary to analyses the whole system requirement. For any system there are functional and non-functional requirements to be considered while determining the requirements of the system. The functional requirements are user "visible" features that are typically initiated by stakeholders of the system, such as generate report, login, and signup. On the other hand, non-functional requirements are requirements that describe how the system will do what it is supposed to do, for example, usability, reliability & availability, performance, security and maintainability.

i. Functional Requirement

The requirements are to be collected before starting projects' development life cycle. To design and develop system, functional as well as non-functional requirement of the system has been studied. The functional requirements in the project are mentioned below.

1. User module

- Users will be able to register and login.
- User can view course and category.
- User can search different course.
- User can get pdf and videos.
- Users can logout after you finish using the system.

2. Admin module

- Admin can see course details.
- Admin can manage user (add, update, delete).
- Admin can add and delete courses and category.
- Admin can see the registered users.
- Admin has right to delete the user.

USECASE DIAGRAM

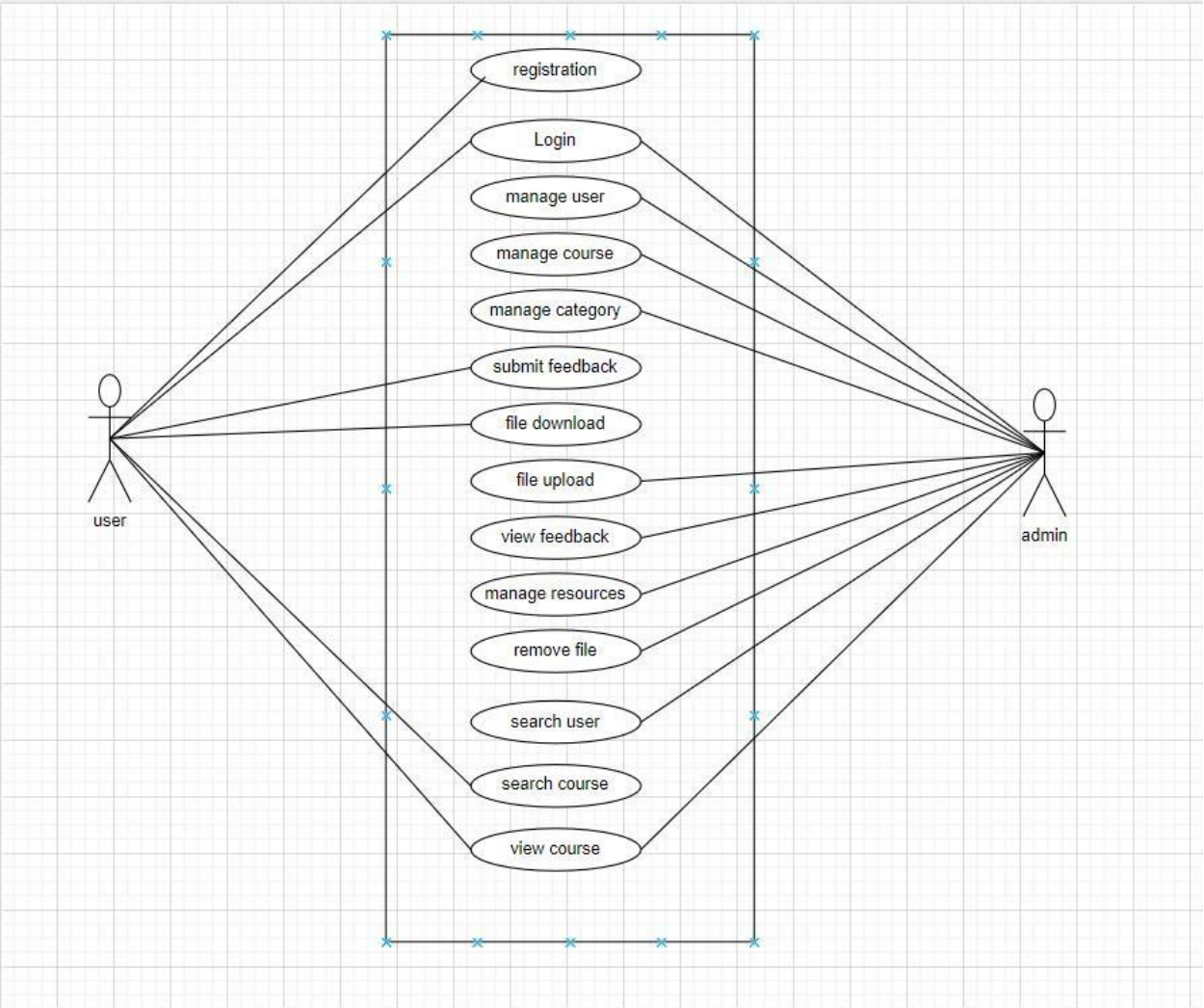


Figure 3.2 : Use Case Diagram

ii. Non Functional Requirement

Different non-functional requirement have been studied and identified and are listed as below:

- Security – Our e-learning system, such as encryption, authentication, and access control.
- Maintainability - The system should be easy to maintain and update. New course modules and features are easy to add.
- Portability - The system should be portable across devices like mobile, tablets, laptops, etc.
- Accessibility - The interface should follow accessibility standards to support students with disabilities.
- Reusability - The UI components, course content modules, and other elements should be reusable across the system. Duplication of effort should be minimized.

3.1.2 Feasibility Analysis

A feasibility study is an analysis that consider all of a project's affecting factors like economic, technical, legal and scheduling considerations.

i. Technical Feasibility

- The UI of our project is very simple.
- User will require internet browser and internet to use it.

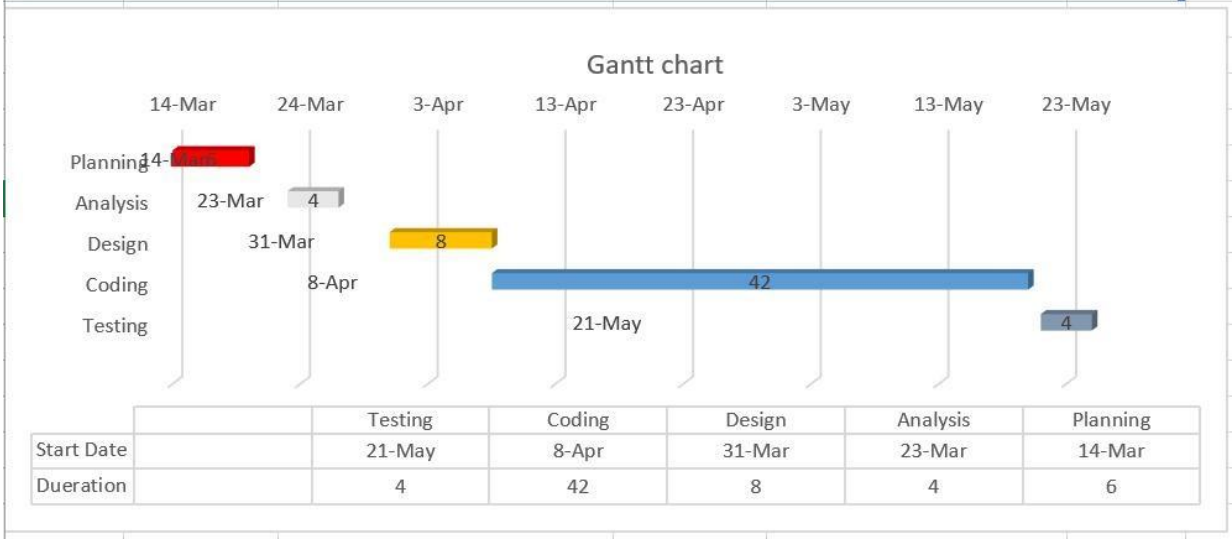
ii. Operational Feasibility

These include the reliability, maintainability, usability, supportability. The proposed system is operationally feasible as it is reliable for all type of user i.e whether or not the user has the knowledge of computer or not. This system uses simple technology to design. So, it is user friendly.

iii. Schedule Feasibility

The system that we developed is scheduling feasible as it does not require more time for the development phase. The data collection takes more time to collect the data about for the development phase. The data collection takes more time to collect the data about various products and the quality. After data is collected, the other development phase can be within a month.

Task	Start Date	expected completion time	Dueration	actual completion time	status
Planning	14-Mar	18-Mar	6	20-Mar	complete
Analysis	23-Mar	30-Mar	4	27-Mar	complete
Design	31-Mar	6-Apr	8	8-Apr	complete
Coding	8-Apr	15-May	42	20-May	active
Testing	21-May	25-May	4		upcoming



		Testing	Coding	Design	Analysis	Planning
Start Date		21-May	8-Apr	31-Mar	23-Mar	14-Mar
Dueration		4	42	8	4	6

Figure 3.3: Gantt chart

3.1.3 Data Modeling (ER-Diagram)

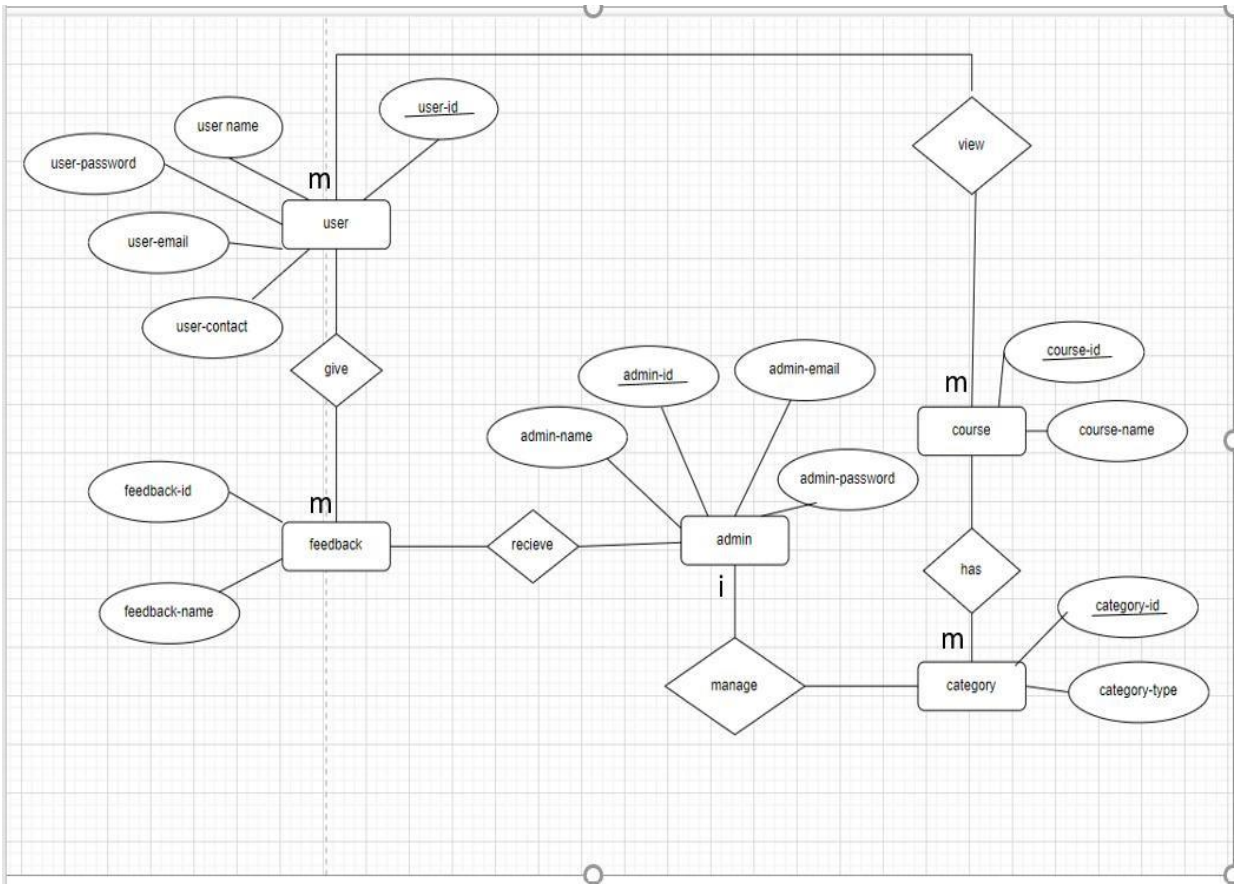


Figure 3.4: Entity Relational Diagram

3.1.4 Process Modeling (DFD)

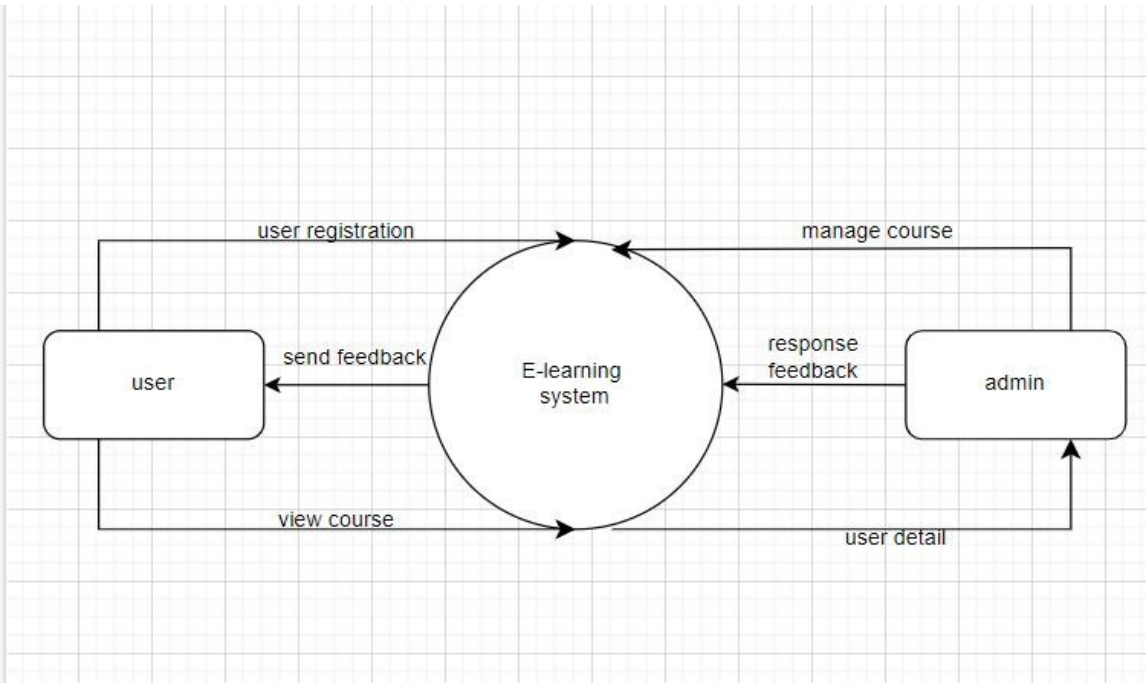


Figure 3.5: level 0 DFD

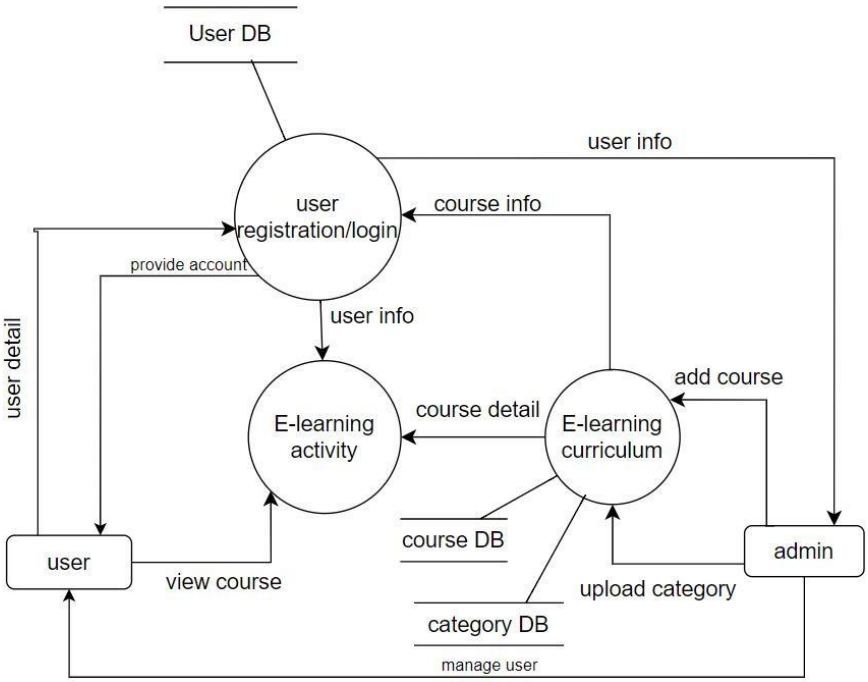


Figure 3. 6: Level 1 DFD

3.2. System Design

To realize the different functional requirement of the system in graphical form, different design diagram of the system has been prepared which are as follows:

3.2.1. Architectural Design

In the e-learning website, users interact with the system through a simple user interface. The e-learning website uses three tire architecture. The data is collected form the users and stored in the database through which server provide courses detail to the user. In order to perform transaction to the user, the system user different database tables including different attribute for each entity. User has a unique account number which make them different from other users. In this way out system architecture is designed which is an abstract view of the system.

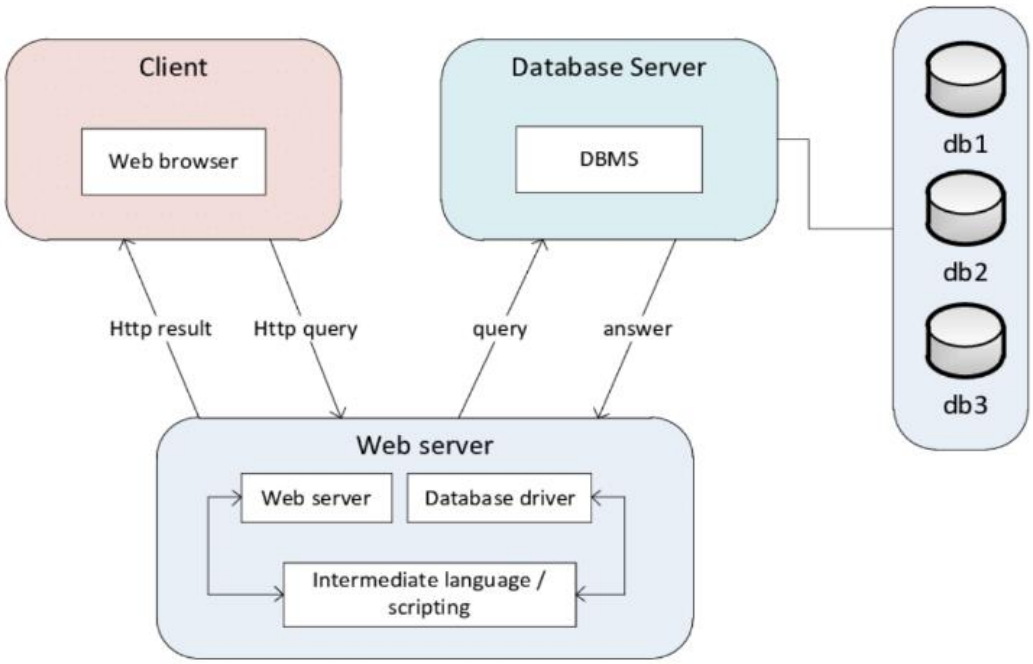


Figure 3.7: Architectural Design

3.2.2 System Flowchart

For Admin

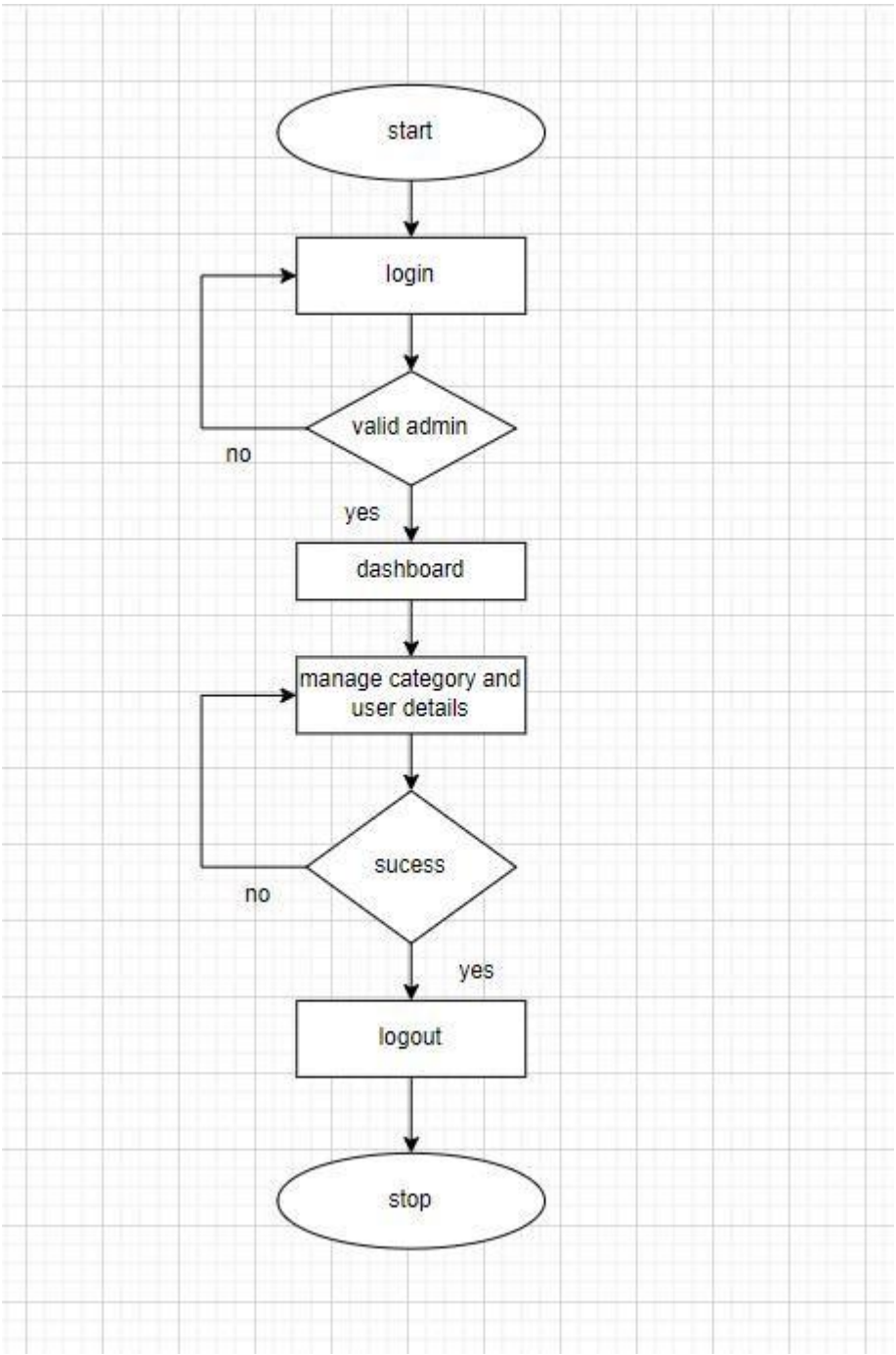


Figure 3.8: Flow chart of E-learning for Admin

For User

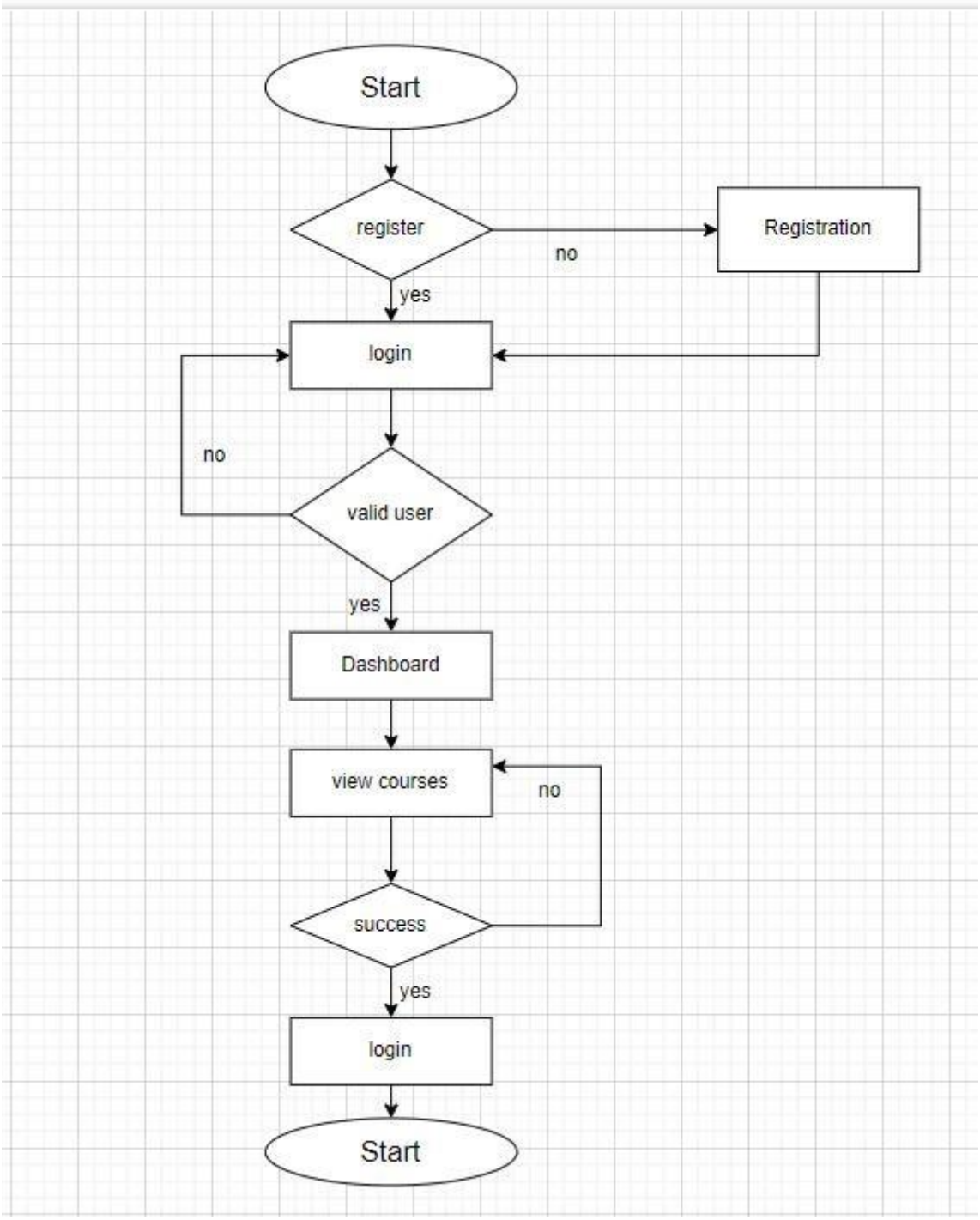


Figure 3.9: Flow chart of E-learning for user

3.2.3. Database Schema Design

The figure below is the database schema design of **"Brain booster".** Data schema design is used to show basic structure of the system. In this system, there are four table in the databases each of them has their own fields where their id is primary key. Shown in the diagram.

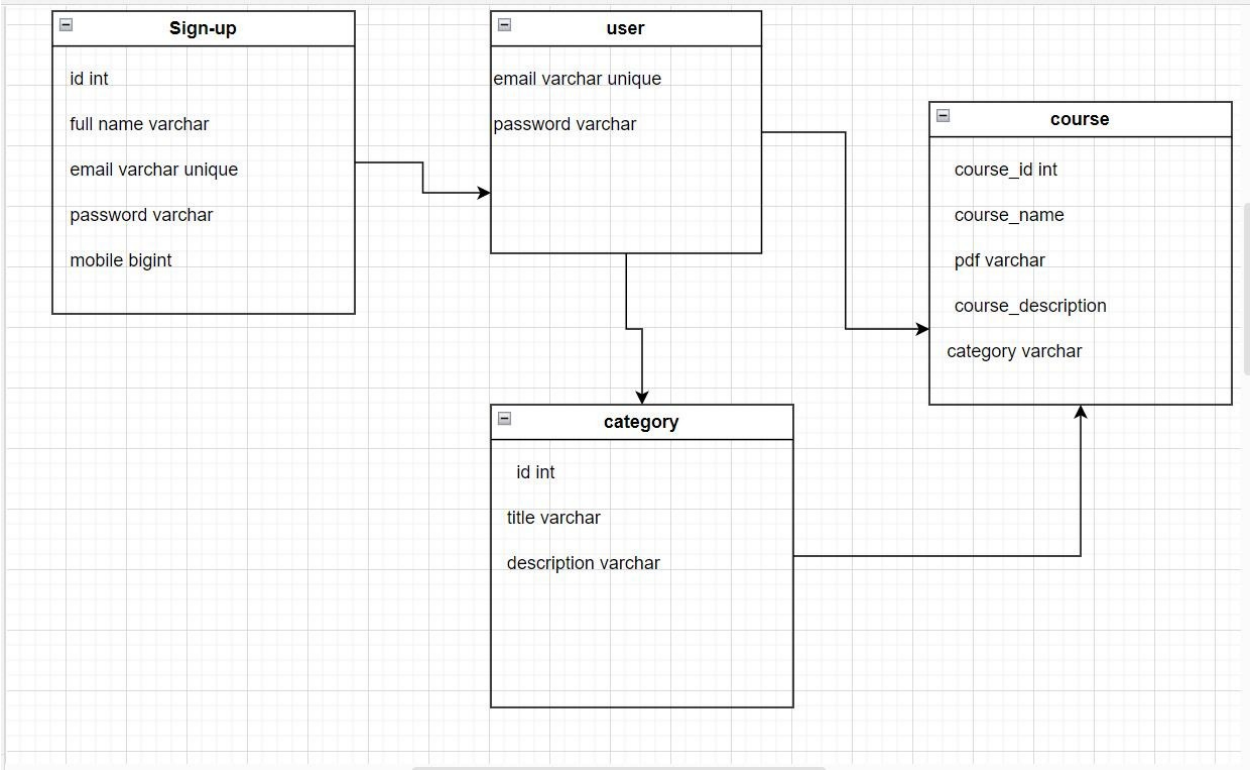


Figure 3. 10: Database Schema

CHAPTER: 4 IMPLEMENTATION

4.1. Implementation

4.1.1. Tools Used (CASE tools, Programming language, Database platforms)

Following are the tools and framework used for the accomplishment of this project:

Front End Tools

- **HTML**
  In E-learning, html is used for creating different webpage and sites. It is used to create and structure sections, headings, links, paragraphs using various tags and elements. We also define headers, paragraphs, links, and images of E-learning by using html.
- **CSS**
  In E-learning, css is used for designing different tags of html. It is also used to design different component by the help of class and id. Different css are used such as inline css, internal css, and external css to design this system. It is used for defining the styles for web pages. By using css, we can control the text color, font style, the spacing between paragraphs, sizing of columns, layout designs, and many more.
- **JavaScript**
  In E-learning, JavaScript is used for client-side validation and to make dynamic, interactive and responsive web pages. It is used to add dynamic behavior to the webpage and add special effects to the webpage.

Back End Tools

- **PHP**
  In E-learning, PHP is used for the backend purpose and for making dynamic web pages. It is used for server side scripting purpose to add connectivity to the database and also used to encrypt the data, validate the user data, confirm user to go to certain pages, login pages. It also includes add, update and delete the data from the database.

Server

- **APACHE SERVER**
  In E-learning, apache server is used to run php files and creating fast and dynamic web pages.

Database

- **MYSQL**
  MySQL is use for storing all the information required to the database in E-learning. It is used for performing CRUD operation such as create, delete and update data from the database as requested by the user.

Documentation Tools

- **MS Office**
  This is used for writing and editing the documentation of E-learning.
- **Draw.io**
  This is used to generate diagrams for system analysis and design of E-learning. Diagrams were created using this tool in order to save time since all components are available with drag and drop functions.

4.1.2. Implementation Details of Modules (Description of procedures/functions)

Different modules of this system are described as below:

Admin Module

- **Admin add/edit/delete category**
  In this module, there are different categories for course. Admin can add , update and delete the categories in this existing system. The admin start the action add by clicking on add category item button, admin can add category.

- **Admin Manage course**
  Admin can also manages the details and information about course and can delete, update and edit course in the system.

Login Module

In login module, we have implemented two sub modules they are admin login and user login. Admin and user login into the system using their validate email and password.

Register Module

In register module, we have implemented one sub modules they are user register .User register into the system by entering all details, And then can login into the system.

CHAPTER: 5 CONCLUSION AND FUTURE RECOMMENDATIONS

5.1. Lesson Learnt / Outcome

Every project makes us to learn and gain the knowledge in different aspects. In the following project, we have learned lots of problem-solving skills and learn things like team work, finding the solution on our own, proper use of guidelines, communication and writing skills and management of team.

- **Teamwork**
  Since this is a team project, it teaches how to work with group members and develop the system together. We have learned how to work with team and divide our task with each other and deal with the problem and error occur in this system.
- **Problem Solving Skills**
  From this project, we have learned lots of problem-solving skills and also learned to recognize different errors occur in this system and solve it.
- **Writing Skills**
  We have learned how to prepare proposal and documentation related with project and also learned to use different case tools for use case diagram, schema diagram, data flow diagram, and ER- diagram and so on.
- **Manage time**
  The most important lesson learnt was management of time according to the complexity of the system components i.e. know which components to prioritize.

5.2. Conclusion

E-learning has been successfully developed with predefined objectives. This system fulfill all the objectives that have been set to develop this system and this system can be viewed by any user without registering but the user have to register and login the system to view course. This system also provide easy and smooth user interface that can be used by non-technical users.

5.3. Future Recommendations

The development project could have been more efficiently handled with regards to design and development. The documentation process might have been better programming the project to any documentation. The system can be updated based on the users' requirements recommendation. The page load and server load speed might be improved.

Some of the future recommendation for this system are:

- Forgot password feature will be added.
- User feedback will be provided.
- Improve UI design.

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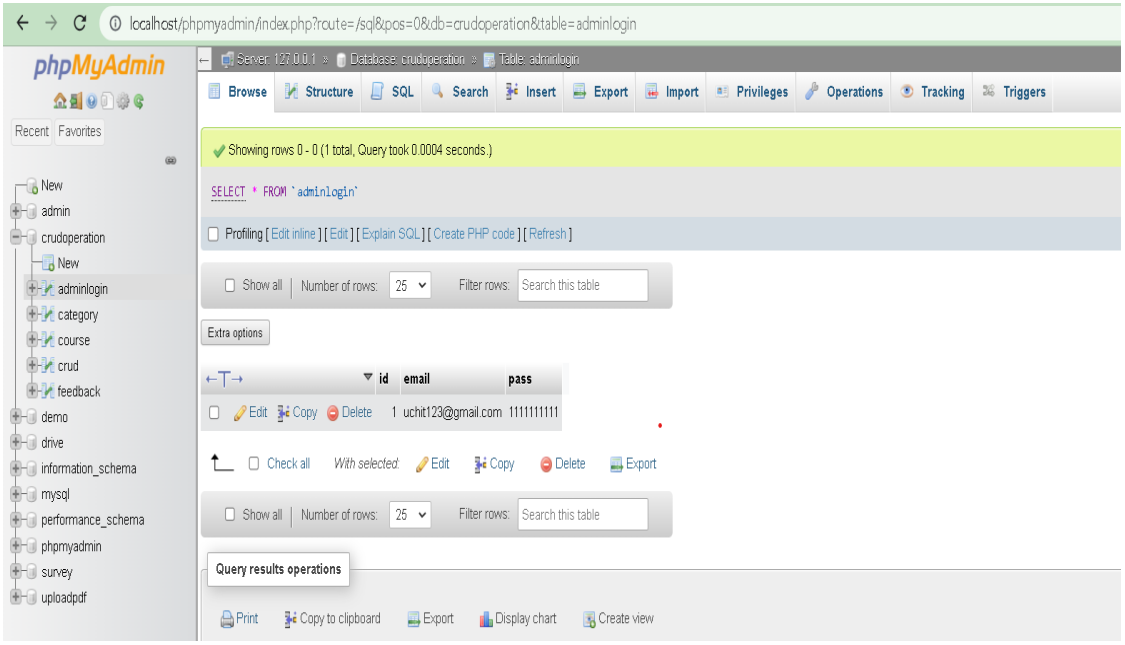
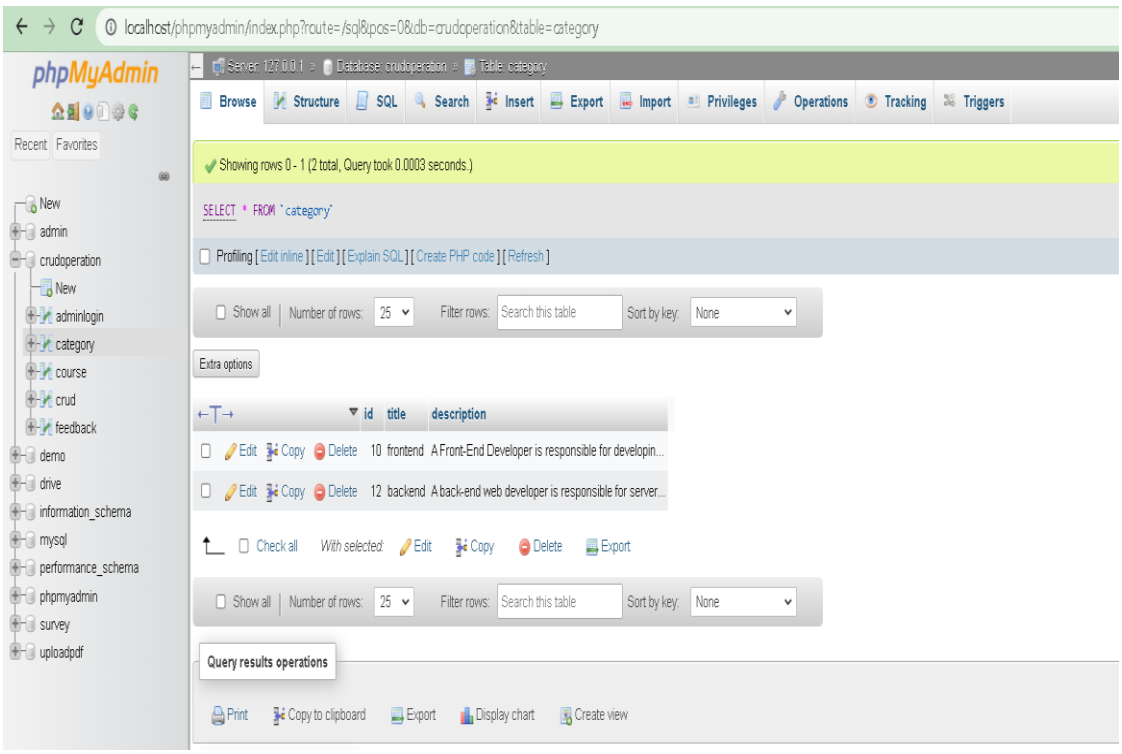
4. MasterClass,"[online]: https://www.masterclass.com/
5. Udemy,"[online]:https://www.udemy.com/

APPENDIX: SYSTEM SCREENSHOTS

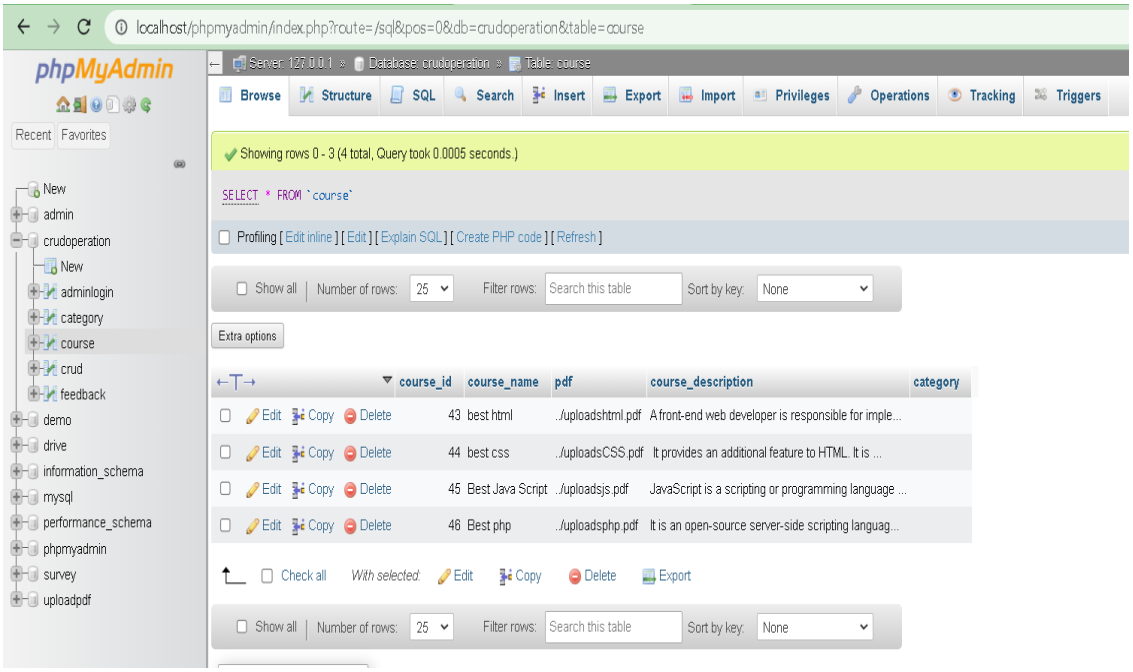
➢ Database overviews



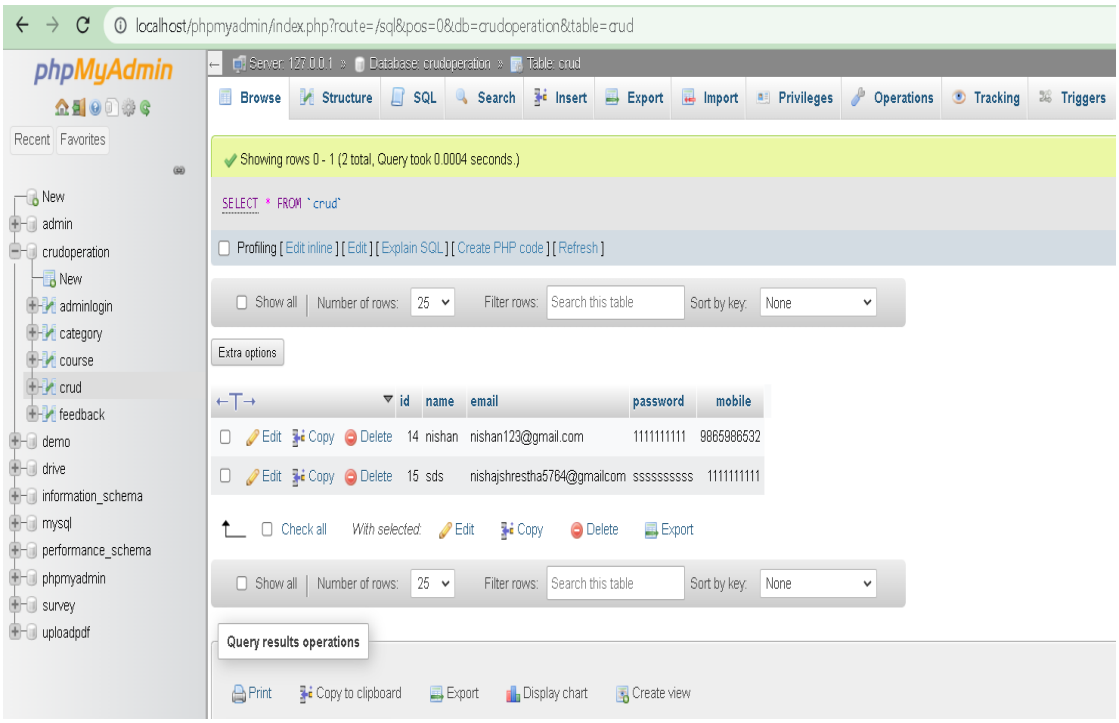
Admin database



Category Database



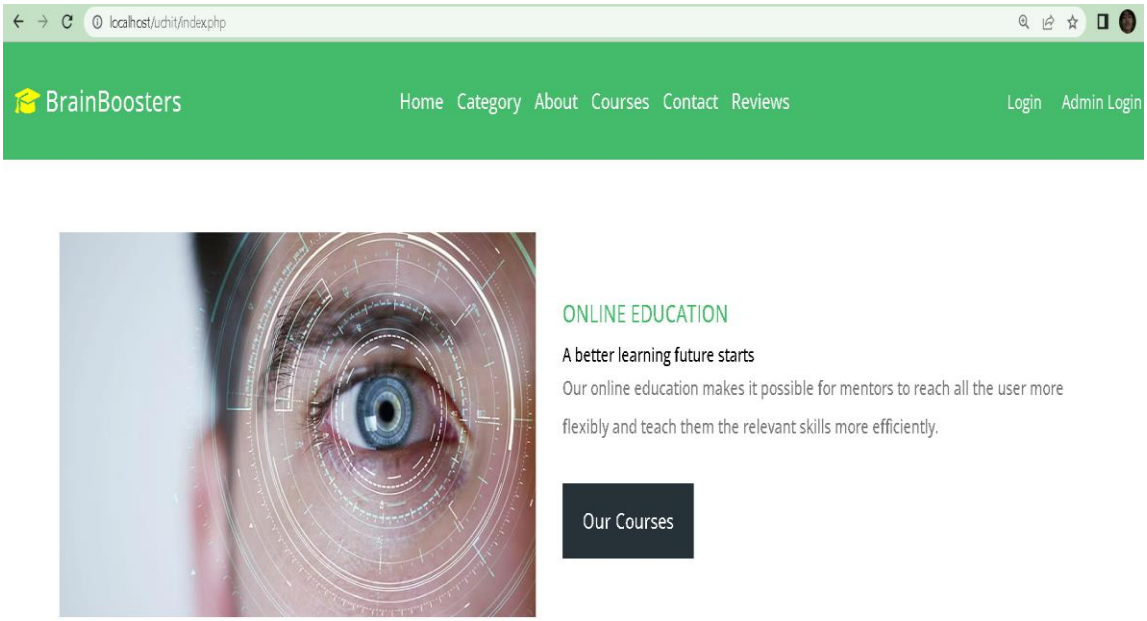
Course database

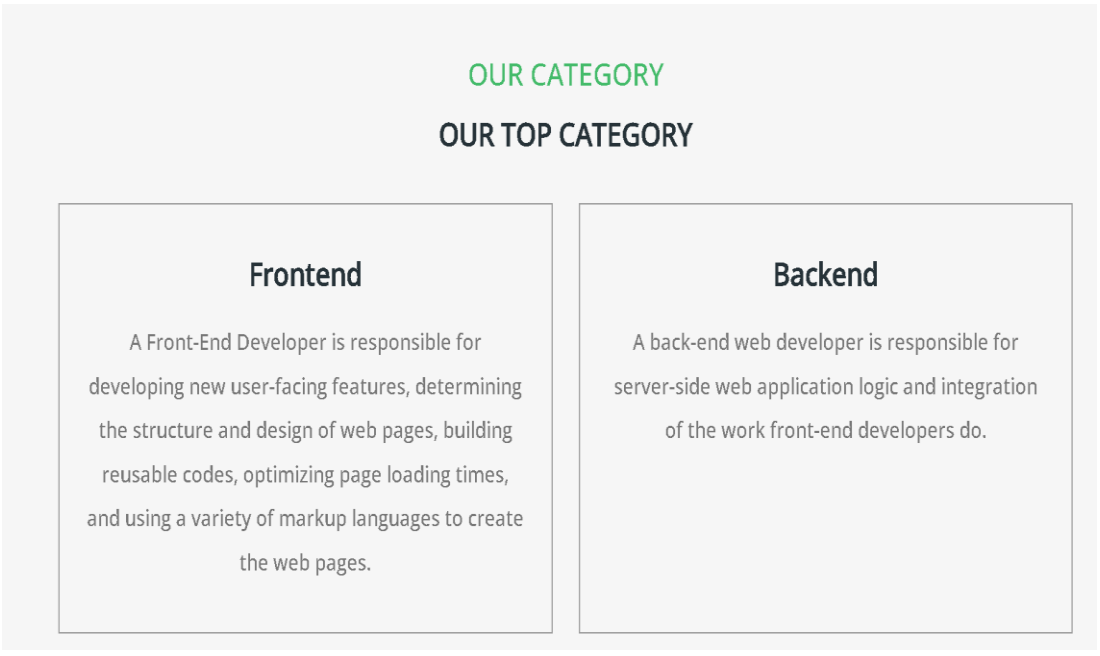


User database

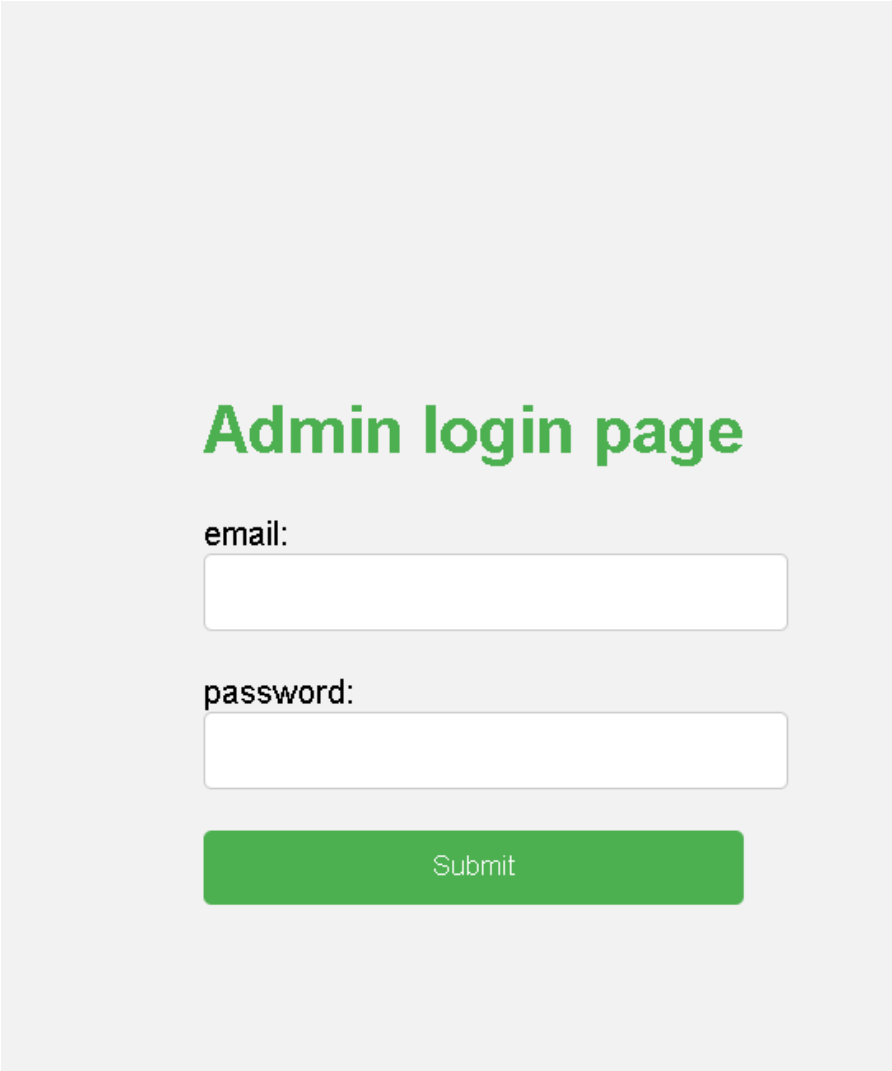
➢ Frontend Overview

- **Home page**

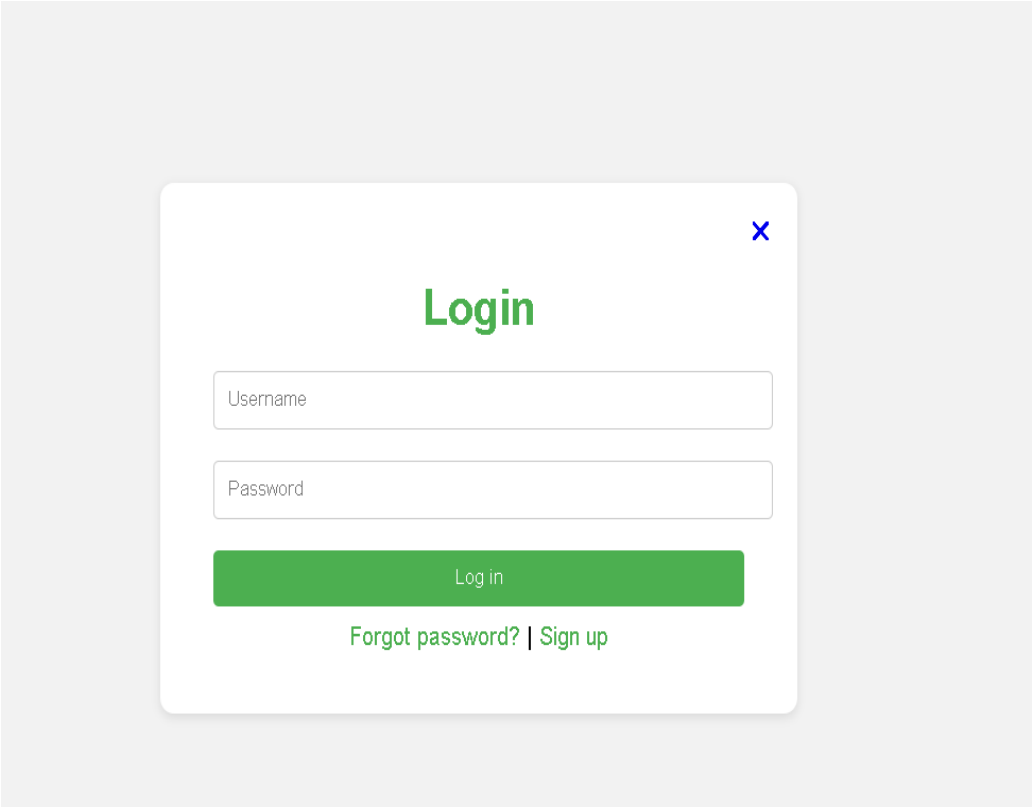




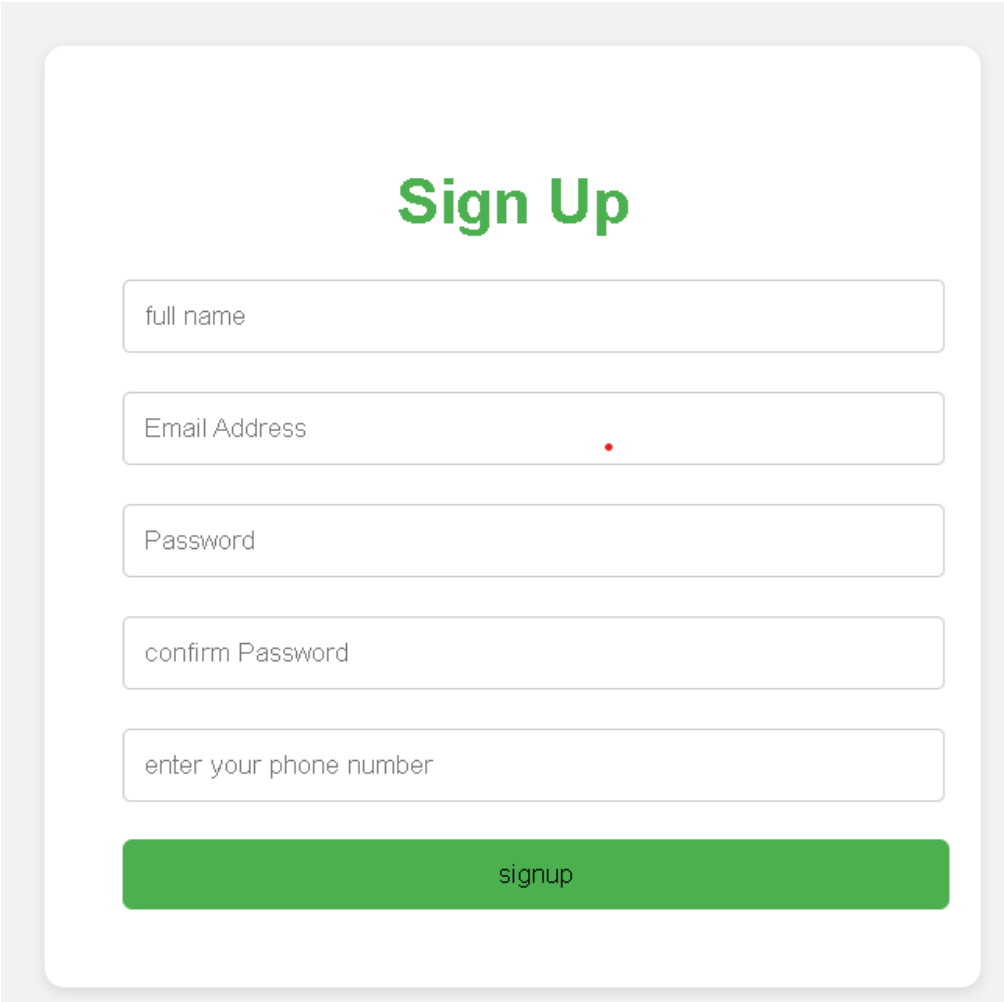
- **login page for admin**



- **login Page for user**

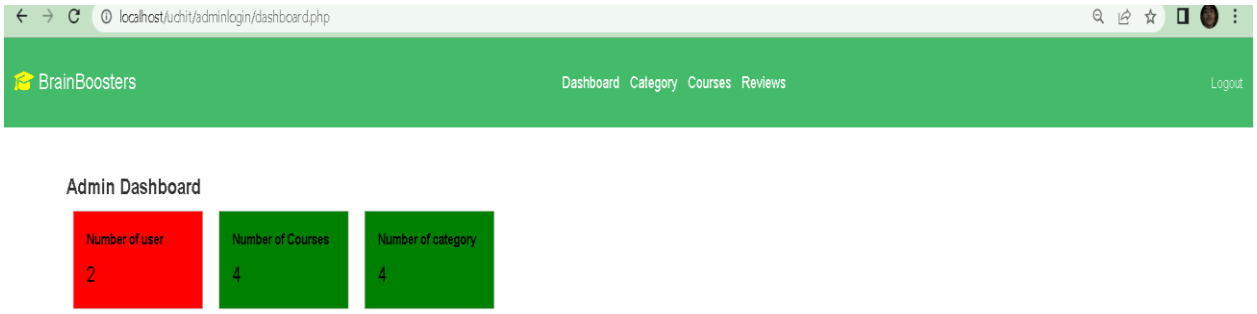


- **Register Page**

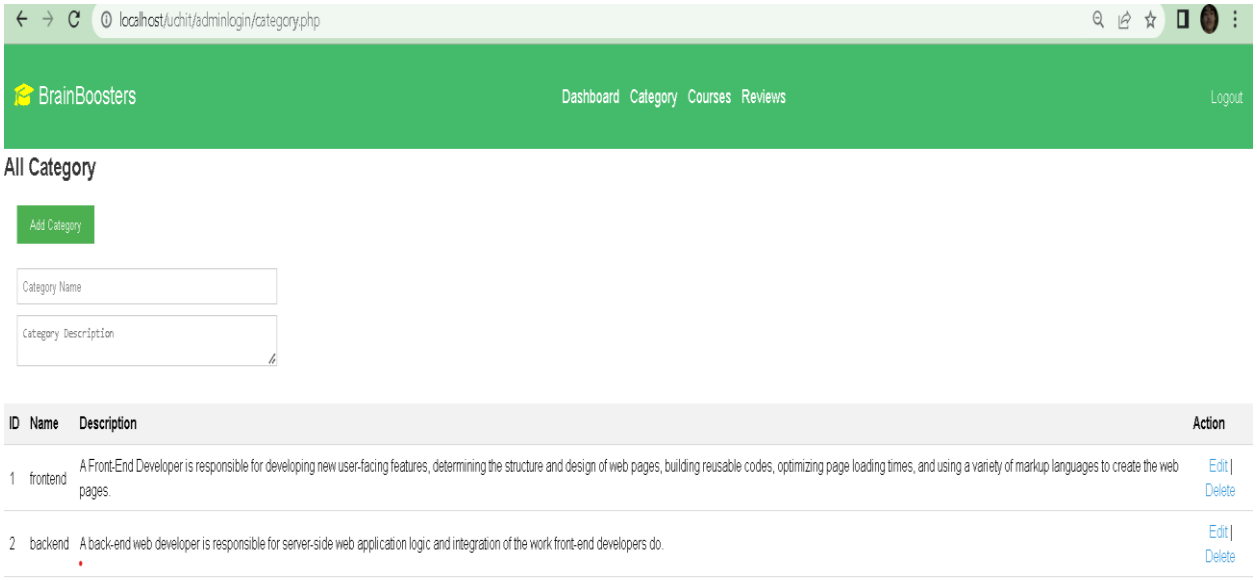


➢ Admin Page

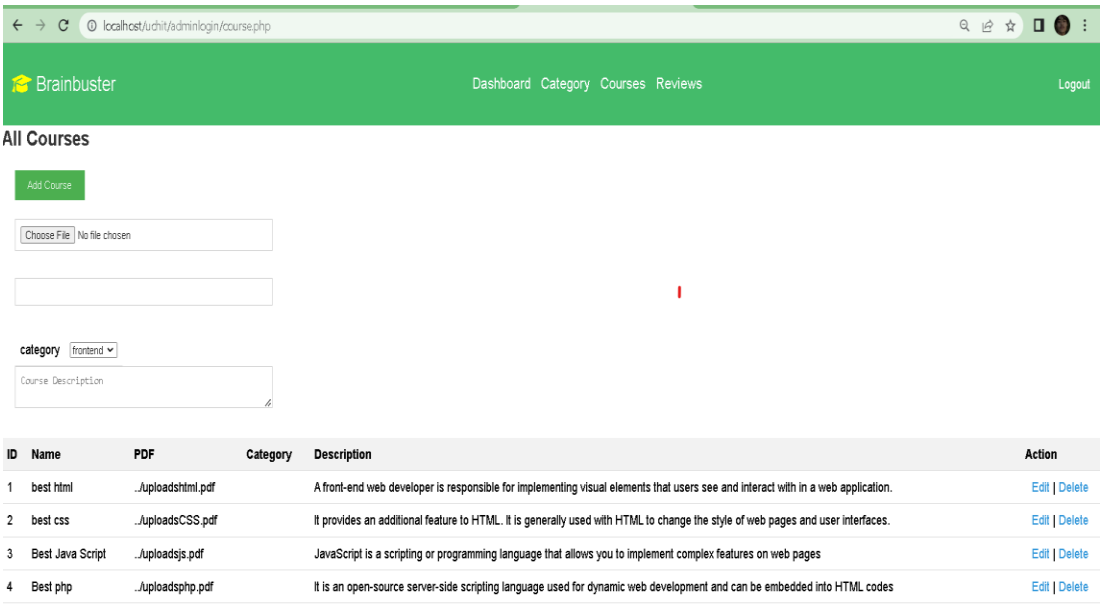
- **Dashboard**



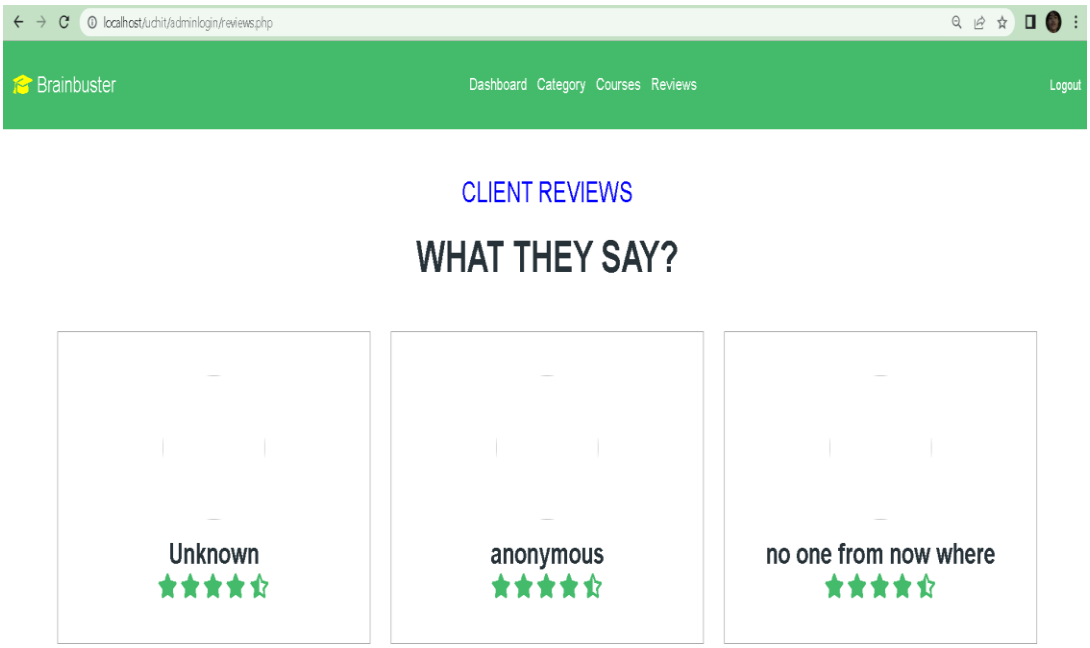
- **Category Page**



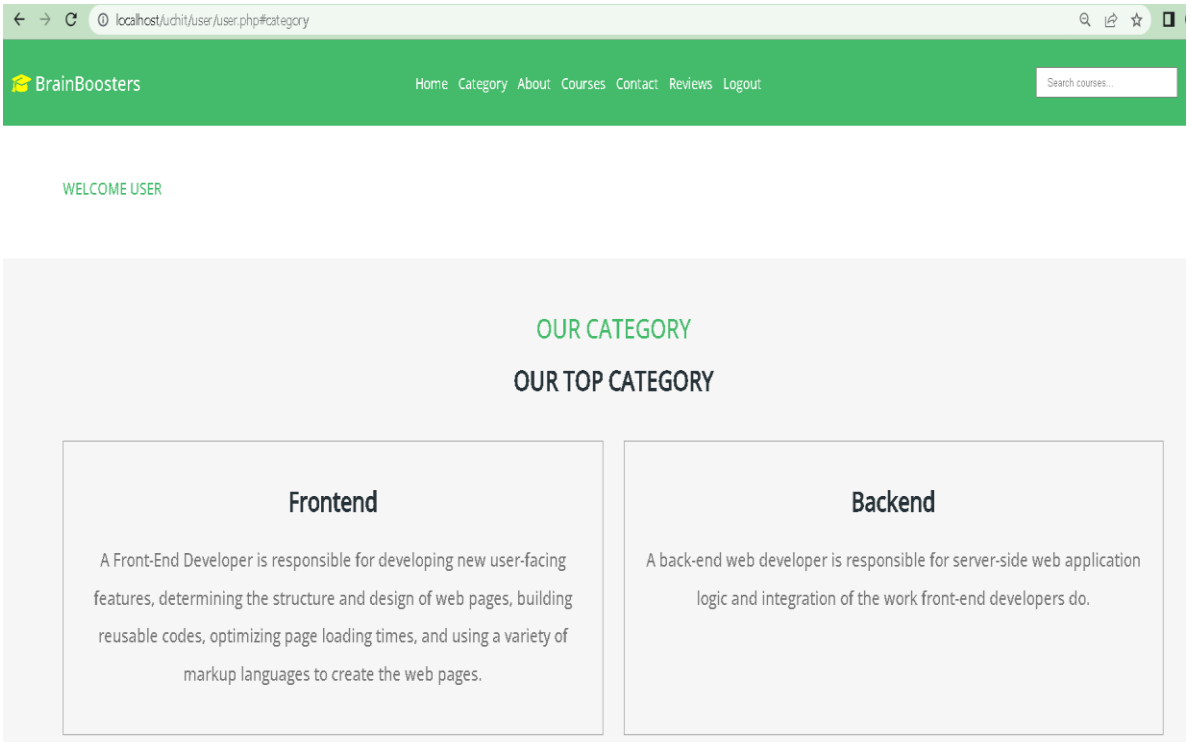
- **Courses Page**



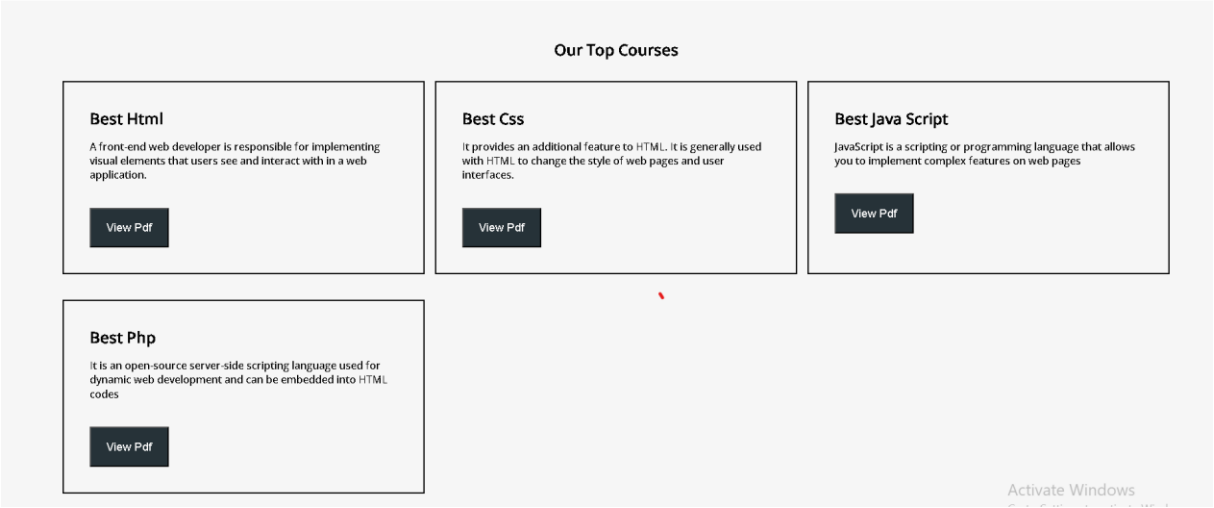
- **Reviews**



➢ User Page



- **View course**



- **View category**