

ORC- ONLINE READERS' COMMUNITY

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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

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Md. Sadekur Rahman, Assistant Professor, 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

Education plays a great role in development of any country. Many of education organizations is trying to increase education quality. One of the aspects of this implementation allows learners to read a book from anywhere in the world and aims to provide a learning experience that is similar to a real library. It connects students from all around the globe for online discussion. It also helps independent teachers reach students from every country in the world to guide them for the better future. The main purpose of the project into provides a convenient communication environment for distance learners, read different books to improve their skill & to share with others who need help. The scope of this project is to develop an effective web application to provide a learning experience that is similar to a real group discussion. This virtual library is 24/7 open, anyone will be able to read anytime from anywhere. It will save time & money for who need to buy many books. Using this system searching information will be easy and fast. Any information can be retrieved within seconds. Student, and teacher will be able to see notice, questions, solutions from any place. Student will be able to read a book & discuss about any topic from anywhere in the world. The web app makes it easy& fast to find a better solution for any problem.

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CHAPTER 1

Introduction

1.1 Introduction

This is the era of information &technology. And these things are based on internet. Every necessary things of our daily life are going through the internet. Buying home appliances? Online shopping, need accompanies? Go online. Social media is a part of our life now. That means many things we need are find in internet. So, why don't we use this technology to grow our educational skill to fulfill our purpose for a better future? Third world countries like ours, we face a lot of problem every day, living with pride & dignity is not easy here. We struggle, we suffer through poverty also with so many people it is getting harder & harder to get a better life & only solution is to get educated, gathering skills. Sometimes students can't buy every book they want to, can't get enough help for their problem or some life changing good advice. Based on the demands of times we developed a system in where people will find various types of book like academicals, non-academicals (Novels, Stories, History, Articles, Researches and many more)& can discuss about those books, ask for suggestions, solutions or any advice. Literally anybody (students, teachers) can help by providing that piece of information who might need help. People will find many more features on this system.

1.2 Motivation of the work

The *Prophet Muhammad* (S.A.W) said "Seek knowledge even unto China". As to the actual meaning about this sentence: China was a very far, almost the farthest, geographical area for Islamic world back to then. So, we can imagine how much important it's for being a proper human. Reading book is the key element to gain knowledge.

There are many problems finding desired books. like,

- Out of publication
- Not found in a certain area
- Foreign books
- Needed in a hurry

Often, we need to get some specific books in a short time. But lacking of time and others insufficiency we can't find the needed books. And we thought that we can make platform that where many of people can read books, makes an online community. Thinking of various

issues, we developed this system. It will bring people closer, discussion about think make people versatile.

1.3 Problem Statement

We know that the student who live in divisional cities or towns may be able to find educational institutions offering relevant courses or classes easily, but this is not the case for the student who live in more remote districts because .There is also another fact that if the good courses is in a specialist area of education, it may not even be available in some major areas. To solve this kind of problem, we decided to build this online platform which helps to read any books like a real library, to discuss about any problem or idea like what we do now in social media nowadays but of course under some sort of specific rules & department.

1.4 Objectives of the project

- **Learning from anywhere**
- **One to one communication**
- **Sharing of Learning Resources**
- **Live Group Chat Support**

Also, some key points we can mention,

- To bring various people in a specific place
- To find various books
- To read books
- To discuss about topics
- To gain knowledge about out-world
- To find the academic books
- To create a friendly community with good people

1.5 Product Scope

People will find many types of books here, discuss about things and get help from others. There will be online discussion section where people can discuss live. Find their expected books from the system or from other people. People can post their articles, opinions as blog.

1.5.1 Benefits

Using this system searching books, searching information will be easy and fast. Any information can be retrieved within seconds. Student, and teacher will be able to see notice from any place. Student will be able to attend a live group discussion from anywhere in the world. The web app makes it easy to find new books that students want to read.

1.6 Report Layout

In the Introduction chapter objectives motivation and the expected outcome of the project has been discussed. We talked about our objectives, from where we got motivations & expected outcome in details about this project.

In the Background chapter Our project's background circumstances has been discussed. The scope of the problem and challenges of the project, related work, comparison to other candidate systems has been also discussed here. We tried to compare our project with different platform like google classroom, social platforms etc.

Requirement Specification chapter contains the logical relational database model and the design requirements, the use case model of the project and their description, business process modeling, the requirement collection and analysis has been discussed here.

Design Specification chapter is all about the front-end design of ORC – Online Readers' Community. UX analysis & details about it has been discussed here. We tried to make our website as simple as possible.

Implementation and Testing contains Implementation of database, interactions. Various test results of the project have been discussed here.

Conclusion and Future Scope contains conclusion and the scope for further developments which pretty much the future idea about the project has been discussed here.

CHAPTER 2

Background

2.1 Introduction

Now students need more books on a subject to learn & grow their skill. Being an engineering student, we know one book is not enough to learn a programming language, to learn designing & of course it requires more than a book to get better & better at it. It requires human companies, some guidelines, little advice or some tricks. But living in a third world country like us it's really difficult to get all those books, or to get admitted in a course. It requires money as well as time. We designed a web application which can be running in different devices like computer, mobile phone and tablet through internet. This is basically a community platform where people can read books, comment, post their own opinion or problems as blog in different category.

2.2 Related Works

There are so many works in the past regarding virtual Classroom. For example, there are some platforms named:

2.2.1 Google Classroom

Google Classroom is a service from Google. Its free for students & teacher. School, college & university student can use this platform to enhance their ability, connect each other easily & discuss about their study. Google Classroom helps to keep it paperless. Teacher & student can easily stream & share the study easily between them & it's Google's primary purpose. Google Drive, Docs, Sheets, Slides, Gmail, and Google Calendar services helps this platform to provide better experience for sending mails, sharing files, scheduling, writing etc. Through a private code any student can join any class or it can be an automated process through school domain. Each class creates a separate folder in the respective user's Drive, where the student can submit work to be graded by a teacher. Android & iOS application is available for Google classroom, this application let users take photos and attach to assignments, share files from other apps, and access information offline. Teacher can control any schedule, take assignment, monitor individually every student to help them and most importantly user can join from anywhere [1].

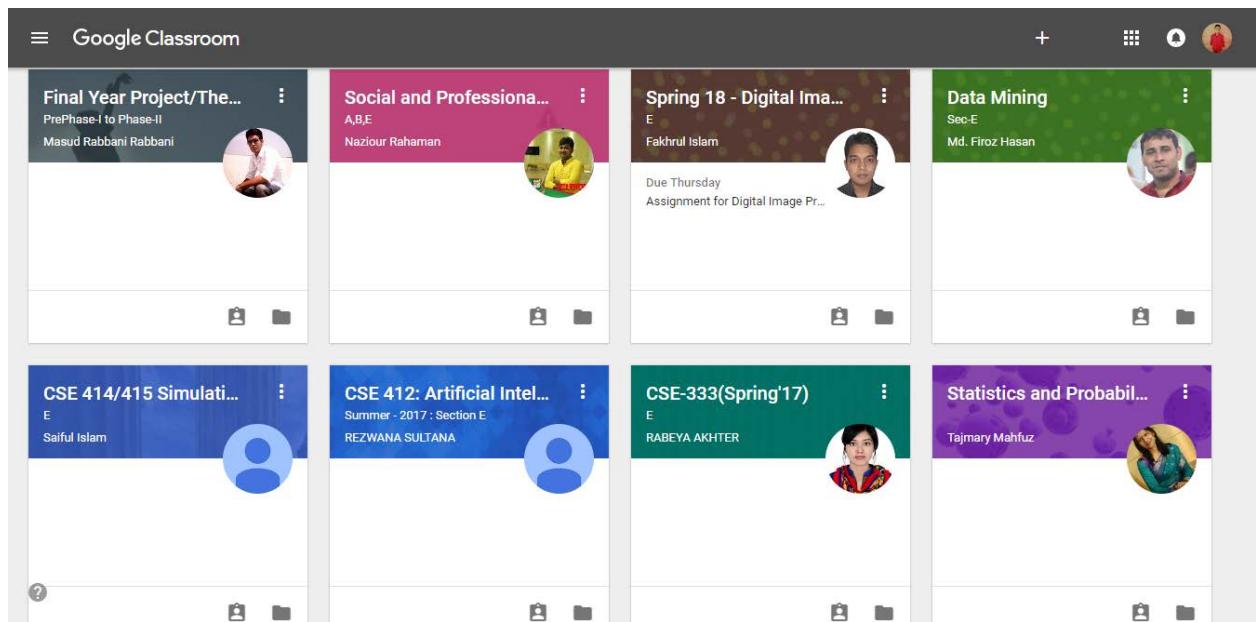


Fig 2.1: A Screenshot of Google Classroom

This is the screenshot of Google Class room home page where one can see all of his enrolled courses. It can save times, papers & can help to stay organized.

2.2.2 The National Curriculum & Textbook Board (NCTB)

The National Curriculum and Textbook Board is an autonomous organization under the Ministry of Education in Bangladesh. This organization develop curriculum, production it and distribute the textbooks at primary, secondary and higher secondary levels. Every public school of Bangladeshis under the National Curriculum & Textbook Board. Board books are free from class I-X. Every student gets free books for this organization, these books comprise most of the curriculum of all public Bangladeshi schools. Bangla version and English version are available under national curriculum. [2]. Anyone can download PDF version of any books from primary to higher secondary. There is no option to read it online, to discuss about anything or comment. Also, there is no support for undergraduate students or for any non-academic books.

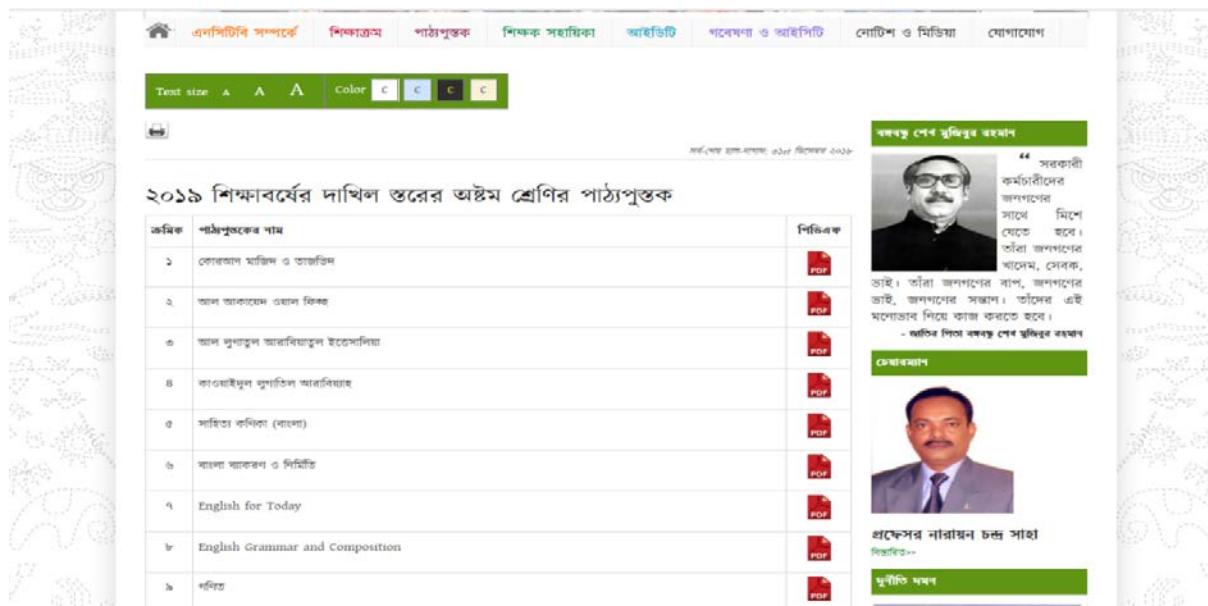


Fig 2.2: A Screenshot of The National Curriculum & Textbook Board (NCTB)

2.2.3 Social Groups (Facebook)

There are many books related groups in Bangladesh on Facebook. But there is nothing actually same as our project. We found many groups on Facebook which is a social media. There people can talk about books, review them, suggest books etc. but actually they are only for non-academic books& frankly they are nothing like us. We made our platform for both academic and no-academic books. Basically, it will be an online virtual library where people will find various types of books and can download them. People will see the list of books, recent activities etc. they can chat with others.

2.3 Comparative Studies

In the previous topic I mention some web application name these applications have some problems, drawbacks and limitations. Most of these applications there is no real-time communication system. Most of the application is no Sharing of Learning Resources and large virtual library collections both for academic & non-academic but in my project, I try to fix all of the problems, drawbacks and limitations. In my web application student will be able to read free books. User will be able to see and download class notes, files and see their problems details solutions. Students can also communicate with other students and Teachers. Teachers will be able to create new discussion post, upload files, assignments, and take live class in the discussion section. User can send messages. Not only it has the features of virtual class room but also it has the features of social network site with virtual books.

And the groups we found on Facebook are very much different from our platform.

We will provide a nice user interface where every section will be well decorated and sorted where people will find their desired books quickly. But on Facebook there are some limitations. Because posts which are people posted on there they are actually not sorted. Our platform is actually only for reading based, so here every member will respond quickly whereas social sites do not provide these facilities.

2.4 Scope of the problem

- Time will be taken to put up numbers of books.
- Free books will be found but paid books should be bought.
- Needed to be online to access to the system.
- User must be frequent to provide a solution alongside to get one.
- Number of user matters.
- The application should be strong enough to deal with huge traffic.

2.5 Challenges

- Needed much marketing to reach more people.
- Needed to collect numbers of books for the system.
- Needed to manage sponsor for the books.
- Needed to reach teachers who can provide free service for society.

CHAPTER 3

Requirement Specification

3.1 Business Process Model

To be analyzed, improved, and automated current process business process modeling (BPM) in business process management and systems engineering is the activity of representing processes of an enterprise. Business analysts, who provide expertise in the modeling discipline perform to make a BPM efficient [3]. The main characteristic of the methodology is based on diagram as ‘Flow Diagram’.

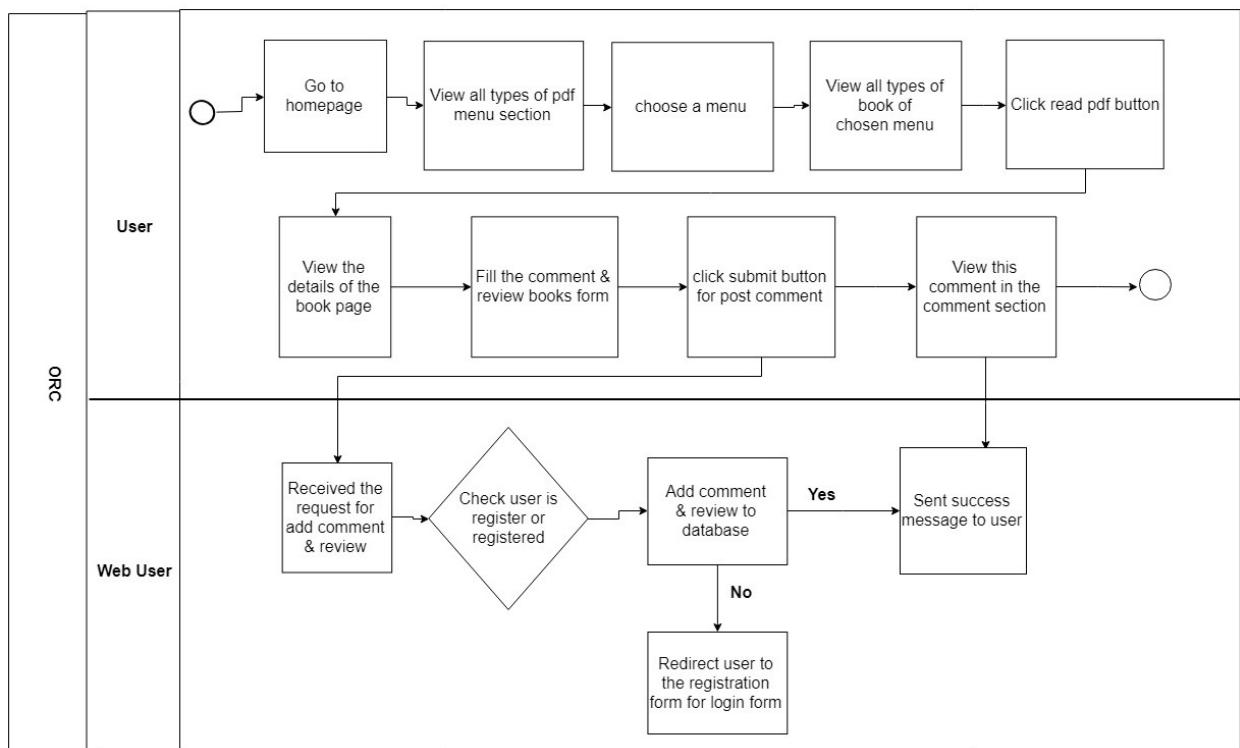


Figure 3.1: BPM of Reading a Pdf Book and Review of a Pdf Book

In the figure 3.1 we tried to show the BPM for reading a pdf book and it review system. When a user creates new account then our system checks the information. If all the information is correct then a user can review a book. Without registration a non-registered user can read book from our web application. If user is not registered and wants to make a review then the server redirects the user to the registration page. When a user completes his/her registration then he or she able to comment and review a pdf book.

3.2 Requirement Collection & Analysis

Requirement Analysis, also known as Requirement Engineering, is the process of defining user expectations for a new software being built or modified. In software engineering, it is sometimes referred to loosely by names such as requirements gathering or requirements capturing. Requirements analysis encompasses those tasks that go into determining the needs or conditions to meet for a new or altered product or project, taking account of the possibly conflicting requirements of the various stakeholders, analyzing, documenting, validating and managing software or system requirements [4]. For the project development process, there are two types of requirements. One is the functional requirement and another is the non-fictional requirement.

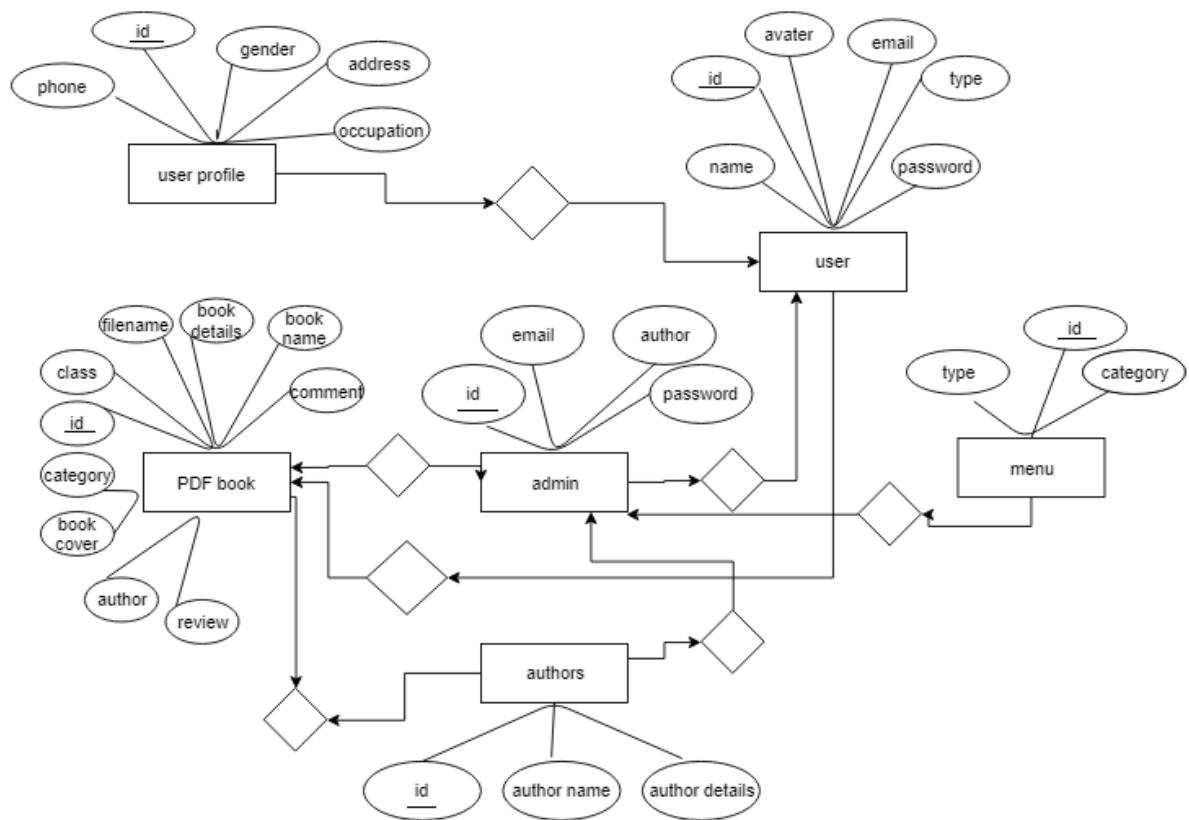


Fig 3.2: ER-Diagram of the system

3.3 ER Diagram

ER Diagram or ER model is Entity Relationship Diagram, also known as ERD. It's a specific type of structural diagram. ERD for use in database design. Different symbols and connectors visualize two important information in ERD: The major entities which remains within the system scope, and the inter-relationships among these entities.

And that's why it's called "Entity" "Relationship" diagram (ERD) [5]. In the figure 3.2 we tried to draw a level of ER diagram for our system.

3.4 Use Case Modeling and Description

A use-case model is a specific kind of model to represent the system. It's a system model that intended functions and its surroundings. It shows the contract between the customer and the developers. Use cases serve as a unifying thread throughout system development. The same use-case model is the result of the Requirements discipline, and is used as input to Analysis & Design and Test disciplines [6]. Several ways to write a use case in text,

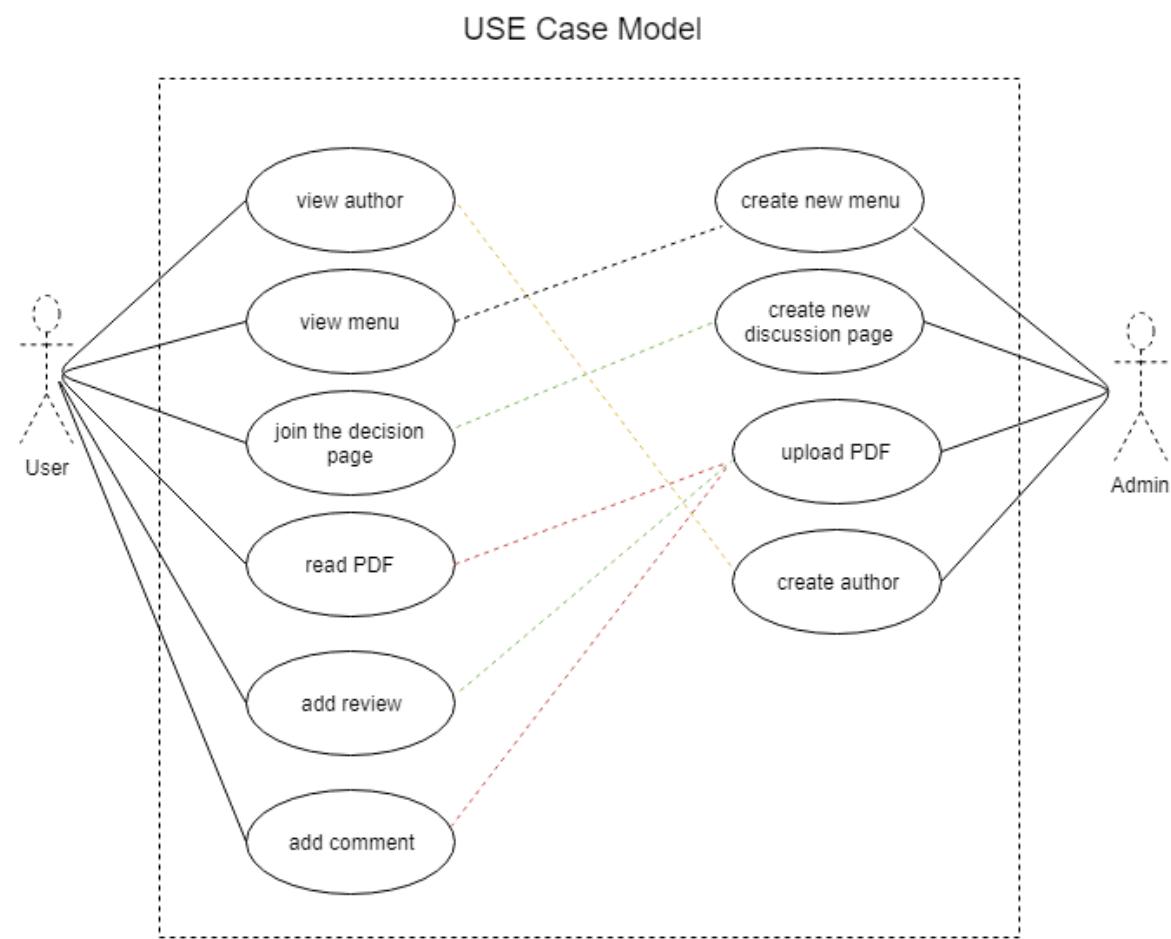


Figure 3.3: Use Case Model Diagram of User and Admin

from use case casual, brief, outline to fully dressed etc. and with varied templates. In the figure 3.3 we tried to draw relationship between user and admin use case of our system. In Figure 3.4 represent the user activity use case.

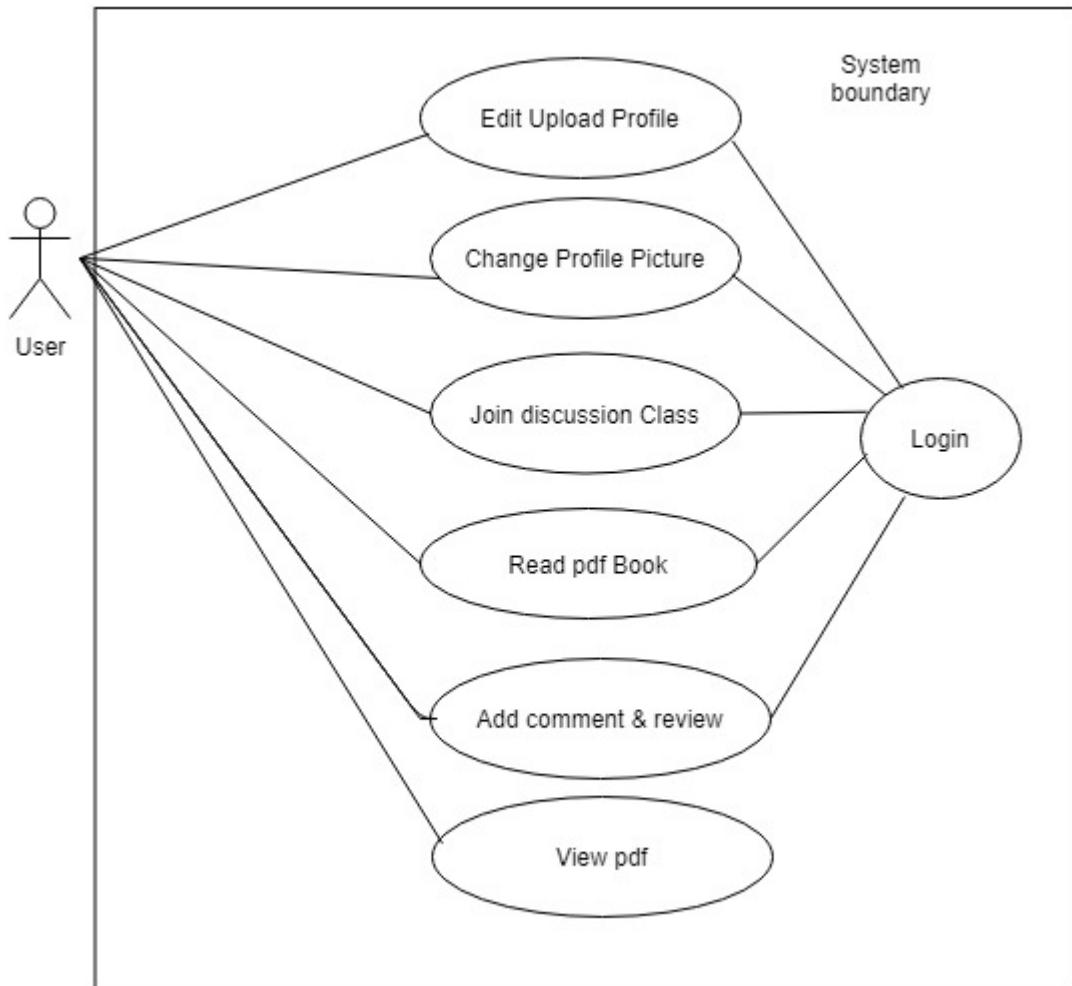


Figure 3.4: Use Case Model Diagram of User Activity

3.5 Logical Data Model

Logical data modeling process helps to represent data architecture and organization. It is a graphical way without any regard to the physical implementation or the database management system technology involved in storing the data. A logical data model provides all the information about the various entities and the relationships between the entities present in a database [7].

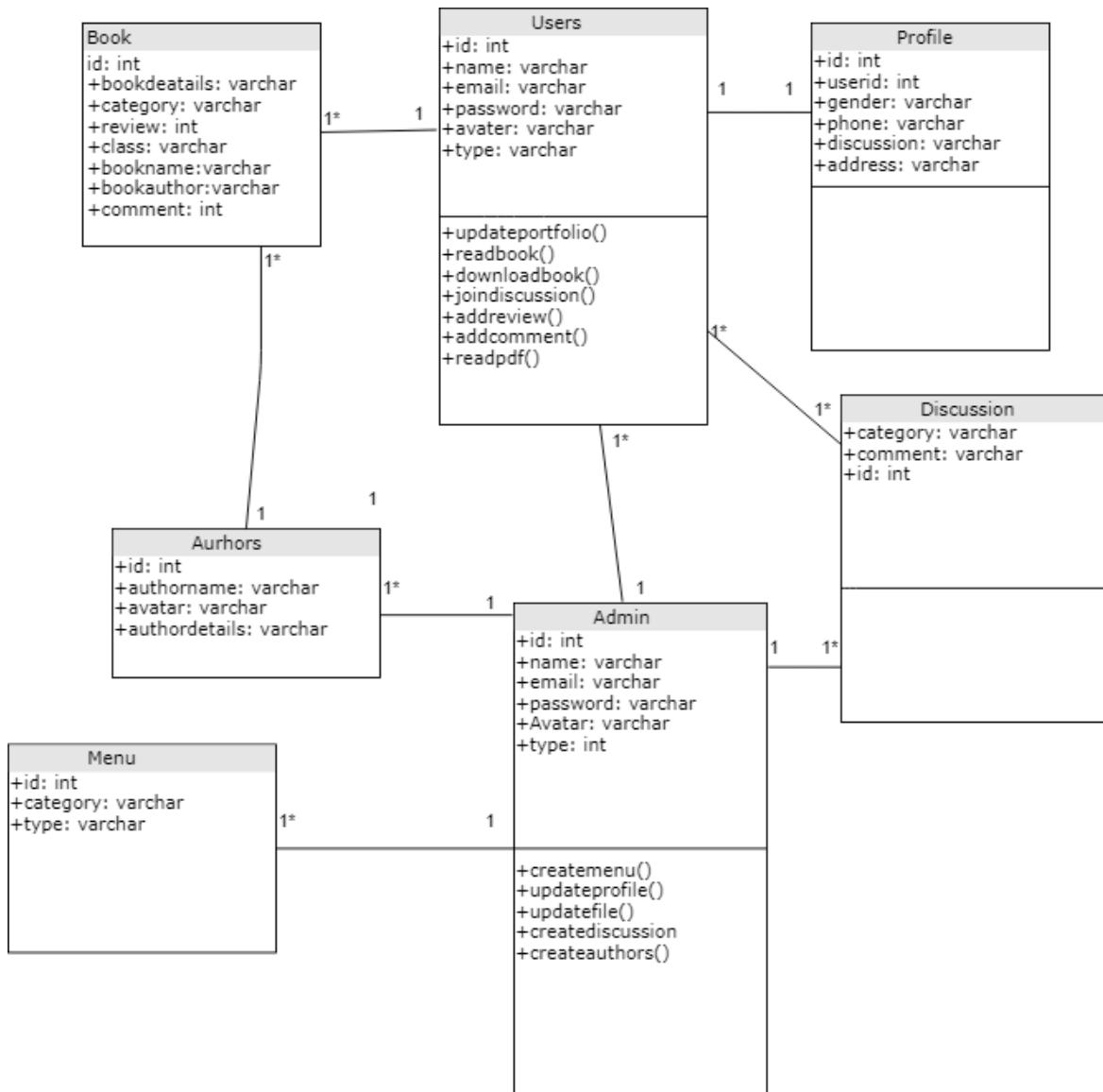


Fig 3.5: Logical Data Model

fig 3.5 is the logical data model for our system. It explains properties, functions, available relationships in different classes.

3.6 Design Requirements

The design requirements for our project will be creating deference between other projects. Because at first, we were simulated some projects and also found out some problem of these project. Then we are working for designing our project which is based on to solve specific problems and our problem statements. We try our best from our heart for designing our project. we try to make our project user friendly. Our team will provide all elements to our project which are necessary for a user to using our application easily. As like we provide a lot of virtual

classroom features real-time chat, desktop sharing, file download system, social communications, notifications system and so on.

- In our web application, we design a normal front page so that any user can easily understand our application.
- We design PDF Viewer and also connect with database for providing a lot of information to user.
- We design online version as a real-time solution. That means our application is not statics, it is dynamic version. •
- We design profile picture of student and Teacher
- We design an email option. By using our application, User can send mail to me, if he/she faces any type of problem.
- We design real time chat system and social communication system. Because of thinking about helping to students and teacher.

CHAPTER 4

Design Specification

4.1 System Architecture

I follow the MVC pattern in my project for design and implementation. How the system interacts with the users and how it works. The following figure 4.1.1 shows System Architecture.

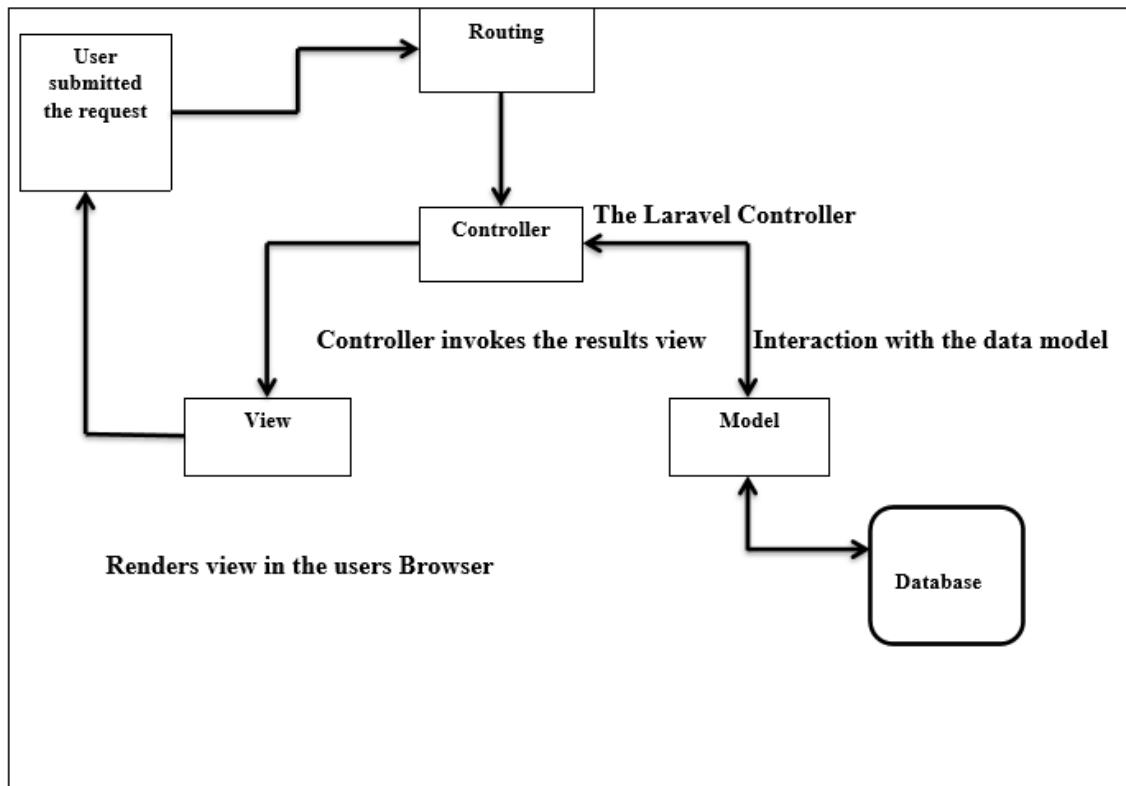


Figure 4.1: System Architecture

Traditional Model-View-Controller design pattern is followed by Laravel applications. It provides Controllers to handle user requests and retrieve data, by leveraging Models to interact with your database and retrieve your objects' information Views to render pages [8]. It is very popular.

4.2 Back-end Design

A properly designed database can be handy always. It can provide you with access to up-to-date, accurate information. Because with a correct design to you can achieve your goals in

working with a database. It is essential to investing the time required to learn the principles of good design[9]. Figure below dictates the Database Design of my developed application.

Table	Action	Rows	Type	Collation	Size	Overhead
answers	Browse Structure Search Insert Empty Drop	0	InnoDB	latin1_swedish_ci	16 Kib	-
authors	Browse Structure Search Insert Empty Drop	0	InnoDB	latin1_swedish_ci	16 Kib	-
books	Browse Structure Search Insert Empty Drop	0	InnoDB	latin1_swedish_ci	16 Kib	-
comments	Browse Structure Search Insert Empty Drop	0	InnoDB	latin1_swedish_ci	16 Kib	-
discussions	Browse Structure Search Insert Empty Drop	0	InnoDB	latin1_swedish_ci	16 Kib	-
menus	Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_unicode_ci	16 Kib	-
migrations	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16 Kib	-
password_resets	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16 Kib	-
users	Browse Structure Search Insert Empty Drop	3	InnoDB	utf8mb4_unicode_ci	32 Kib	-
9 tables	Sum				160 Kib	0 B

Figure 4.2: A Screenshot of Database Table

In figure 4.2, it shows Database table of my application where the tables are created. This is the main table as orc. Under this table there are a lot of data table created by us. These tables names as like users, answers, authors, books, comments, discussions, menus, password resets etc. A lot of data contains in these table.

4.3 Front-end Design

“ORC” is a 100% responsive website. Any device can be able to properly show this website & user will get a modern feel. This UI guidance includes a flexible grid. This grid ensures consistency across layouts, breakpoint details about how content reflows on different screens, and a description of how an app can scale from small to extra-large screens. That’s why mobile, tablet & pc screen will automatically adjust the screen size without any problem.

4.3.1 Index page

In The index page there are six menu items, each item contains different type of pdf book for students which is uploaded by admin. Login and Sign-up option are displayed when a user choose any one of the menu items. The new user can see the popular pdf book below the read the top popular book for you text.

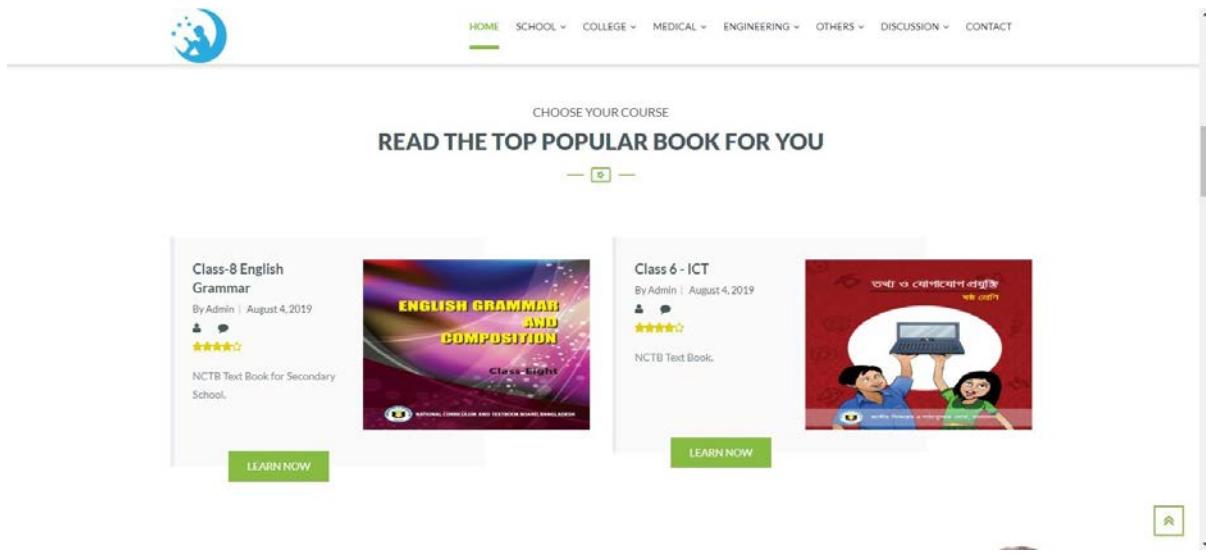


Figure 4.3: A Screenshot of Index Page

4.3.2 Register page

A new user can easily sign-up. A new user registration page is given below.

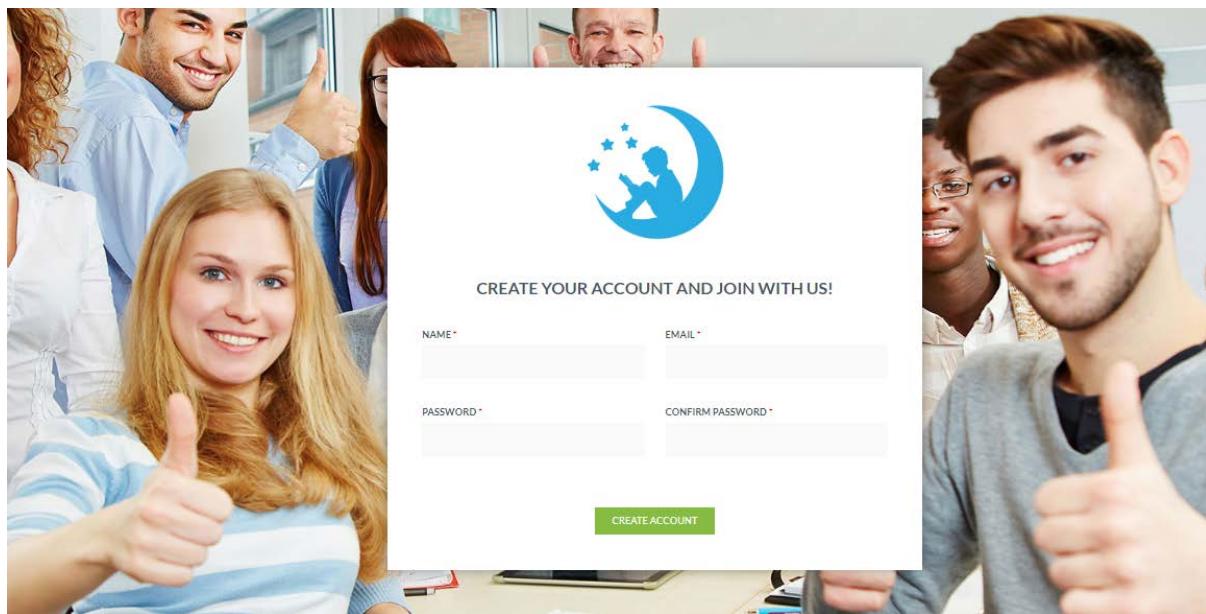


Figure 4.4: A Screenshot of The New User Sign-Up Page

4.3.3 Login page

After completing registration user can log in their own dashboard. A new user login page is given below

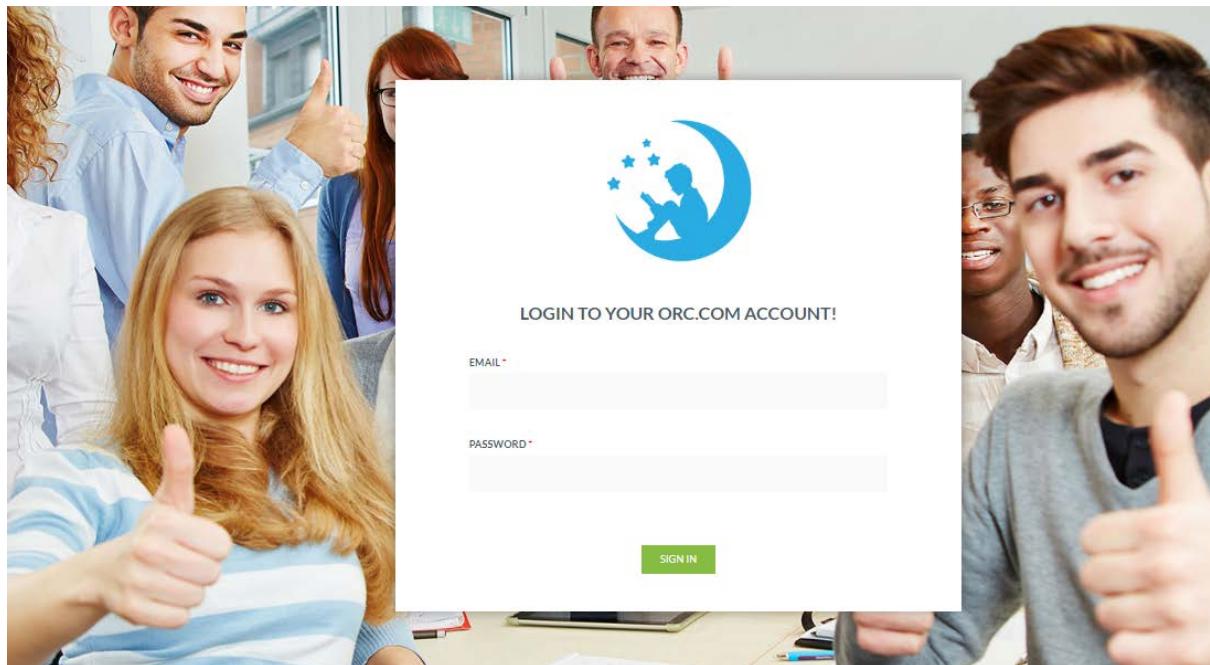


Figure 4.5: A Screenshot of The User Login Page.

4.3.4 Reading a pdf Book

When a user hit to the learn now button it redirect user to that pdf page. After going to reading section user can easily read the pdf book and download the book without login. A reading pdf page is given below

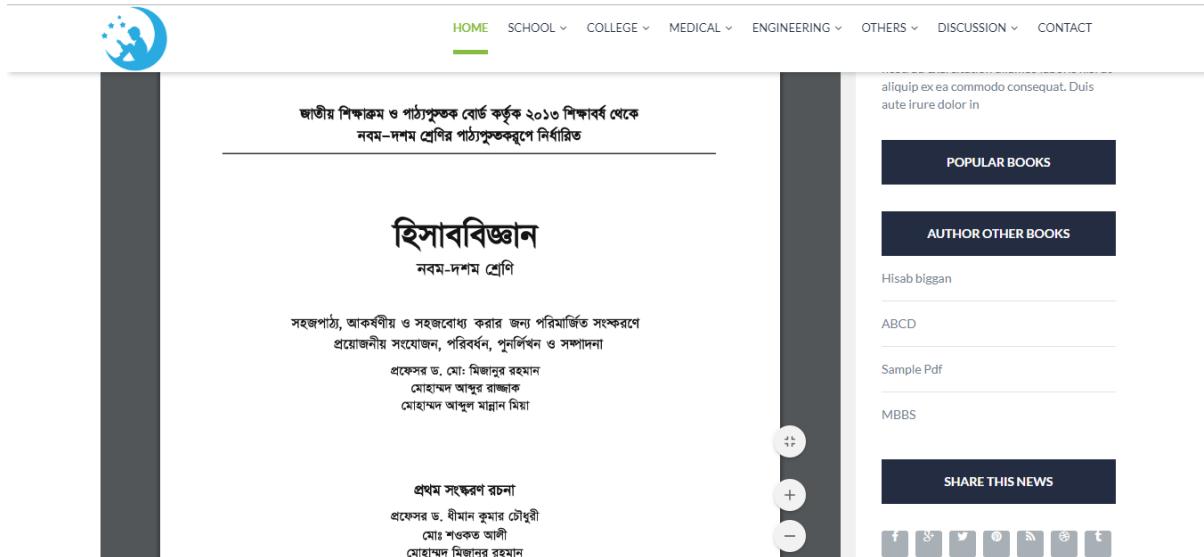


Figure 4.6: A Screenshot of Pdf Reader

From the right-side menu bar of the page user can also choose this topic related book.

4.3.5 Leave a comment and review of a book

After reading a book a user can leave a comment and review of the book in the book comment section. In this case user have to login to the application.

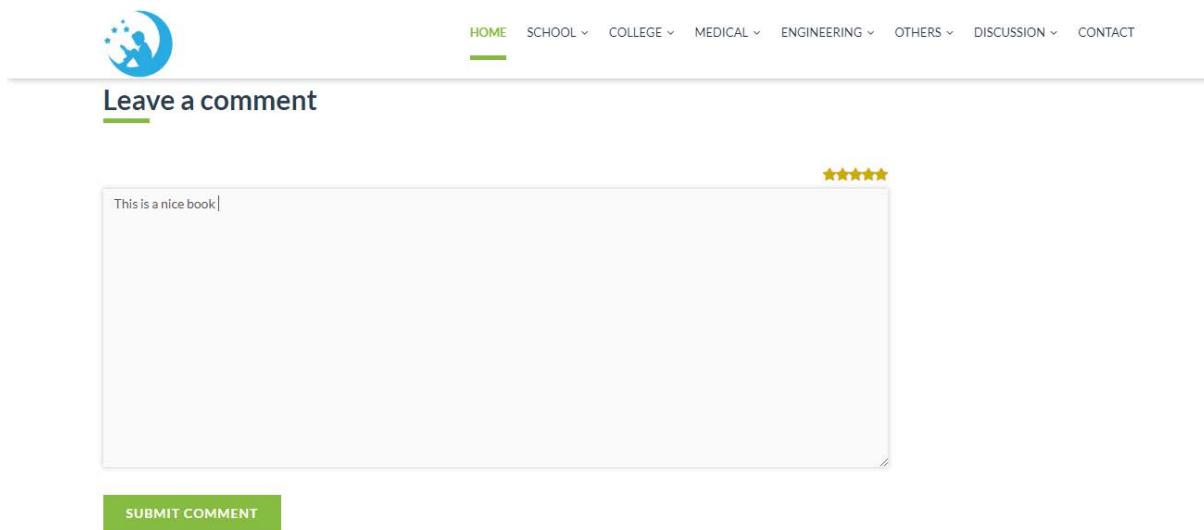


Figure 4.7: A Screenshot of Comment Section

4.3.6 Discussion Section

In the discussion section there are many different discussion topics are present. User can choose his discussion and go to his discussion page and he can ask any question related to the discussion page. A user can also reply other user question answer in the discussion page.

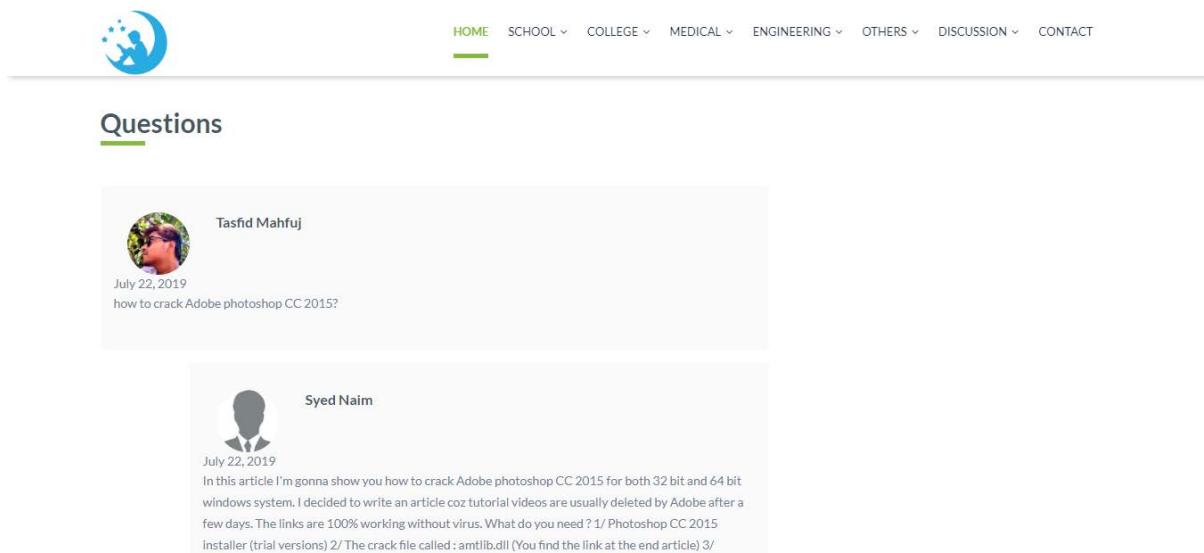


Figure 4.8: A Screenshot of Discussion Page

4.3.7 Admin Login Page

In this application there are two types of user, one is admin mode and other is normal user mode. Admin can control the site, modify anything, can update edit and create menu and discussion pages. There is a special login page for admin panel.



Figure 4.9: A Screenshot of Admin Login Page

4.3.8 Create Submenu

Only admin can create sub menu. When admin go to his profile, he can find a menu to create a new submenu belongs to a root menu. Admin can also edit delete the submenu.

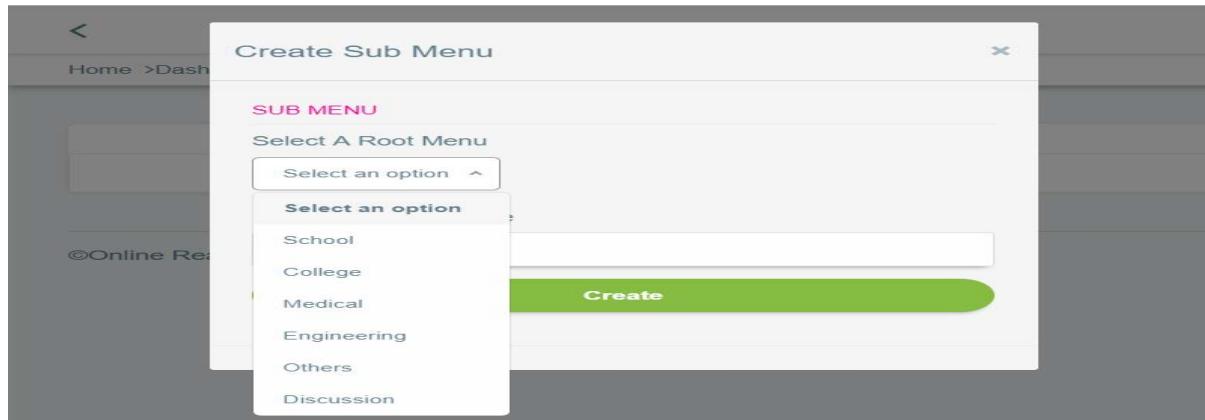


Figure 4.10: A Screenshot of Create Sub Menu Page

4.3.9 Create an Author

Admin can create Author. When admin go to his profile, he can find a menu to create a new author. Admin can also edit and delete the authors name details etc.



Figure 4.11: A Screenshot of Create Author Page

4.3.10 Edit profile

In this section admin and user can edit his profile. They can also update their avatar in this section

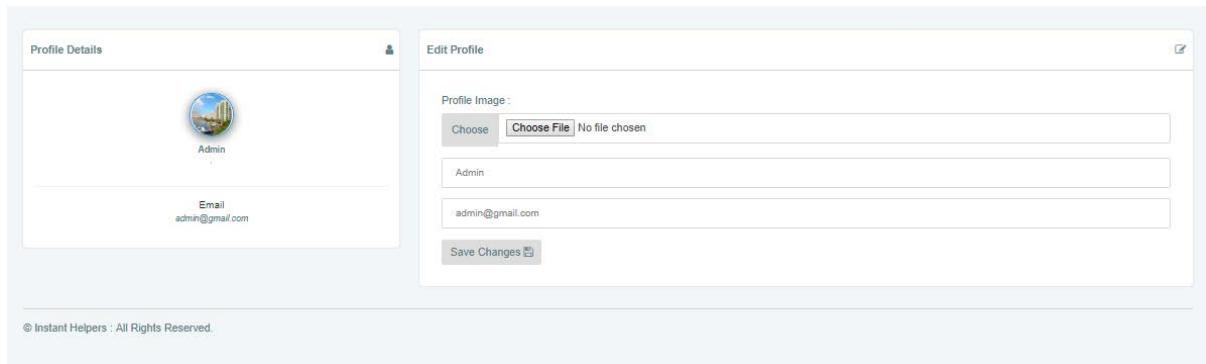


Figure 4.12: A Screenshot of Edit Profile Page

4.4 Tools and Software Applications

- Sublime Text 3
- PHP Storm
- XAMPP
- Laravel

CHAPTER 5

Testing and Evaluation

5.1 Implementation of Front-end Design

Front-End Design is the small grey area that collaborate the amazing world of design with back end coding. Shapes, Textures, Balance, Color, and Symmetry and the Logical Entity are the main focus of front-end design. There are also Border-radius, Background-image, Floats, Grids [10]. We tried to make our design as minimalistic as possible. Therefore, user will feel comfort to spend more times to search & read books, won't feel any complications at all. There are so many types of device out there in the market and that's why we implemented bootstrap 3 to make our project easy to interact. HTML, CSS, JavaScript and JQuery technologies are also implemented.

There are some factors of implementing the front-end design are given below

- Two user mode, Admin & normal User.
- Every user should register before login.
- With registered email and password user can login easily.
- From forget password option any user can reset their password.
- Before update any info system will ask to provide the password for security purpose.

5.2 Unit Test

Unit testing is used in a detail designing and implementing of a project. Unit testing is a process of application development in which the smallest testable parts of an application, called units, are individually and independently tested and implemented after passing the test. To test specific characteristics unit test, perform well. It helps to understand system performances individually under different categories.

The Unit test was done in time of implementing the codes of this application and also upon completion of this project. The results of the Unit test are shown below in Table 5.1

5.2.1 Result of Unit Test

Table 5.1: Test case evaluation for Project ORC-Online Readers' Community

Test Case	Test Input	Expected outcome	Obtained outcome	Pass / fail	Tested on
Interface visibility	Tested on Desktop and Mobile Web Browsers	Interface are display correctly.	Interface are displayed correctly.	Pass	28-03-2019
Correct Response for each button	Tested on Desktop and Mobile Web Browsers	Display correct activity	Displayed correctly	Pass	28-03-2019
Click to see popular books	Tested on Desktop and Mobile Web Browsers	It should scroll page in Popular Books section	scroll successfully Popular Books section	Pass	28-03-2019
Login	Login from devices Smartphone, PC etc	Login Successful	Login Successful	Pass	28-03-2019
Registration	Giving test inputs like username, password.	Filling all the fields warning	Fields must be filled by required data	Pass	28-03-2019
Email Verification	Tested on Desktop and Mobile Web Browsers	It should send auto Email verification message to the User email Account	Verification Email send Successfully	Pass	28-03-2019
Password	Incorrect password or empty field	Warn about the incorrect password or field is empty	Show warning	Pass	28-03-2019
User Profile	View profile, Update profile	Show and update profile information	Show and update information successfully	Pass	28-03-2019
Update a new book	Admin can update a new book.	New book adds under specific menu	Updated successfully	Pass	28-03-2019
Post a new Discussion	Edit, update, delete	Updates successful	Successfully updated	Pass	28-03-2019
Logout	Click logout button	Logout from the account	Logged out successfully	Pass	28-03-2019

5.3 Usability Test

In usability testing basically, I as tester tests the ease with which the user interfaces can be used. It is tests that whether the application or the product built is user-friendly or not. I ran a survey among 30 users, aged between 18-35, where 20 of them were male and 10 were female. We asked few questions to complete this survey which had some parameters. These parameters ensured the success of this survey. The pattern of the survey form with questions is given in the Appendix. The output of the survey is given below as a bar chart:

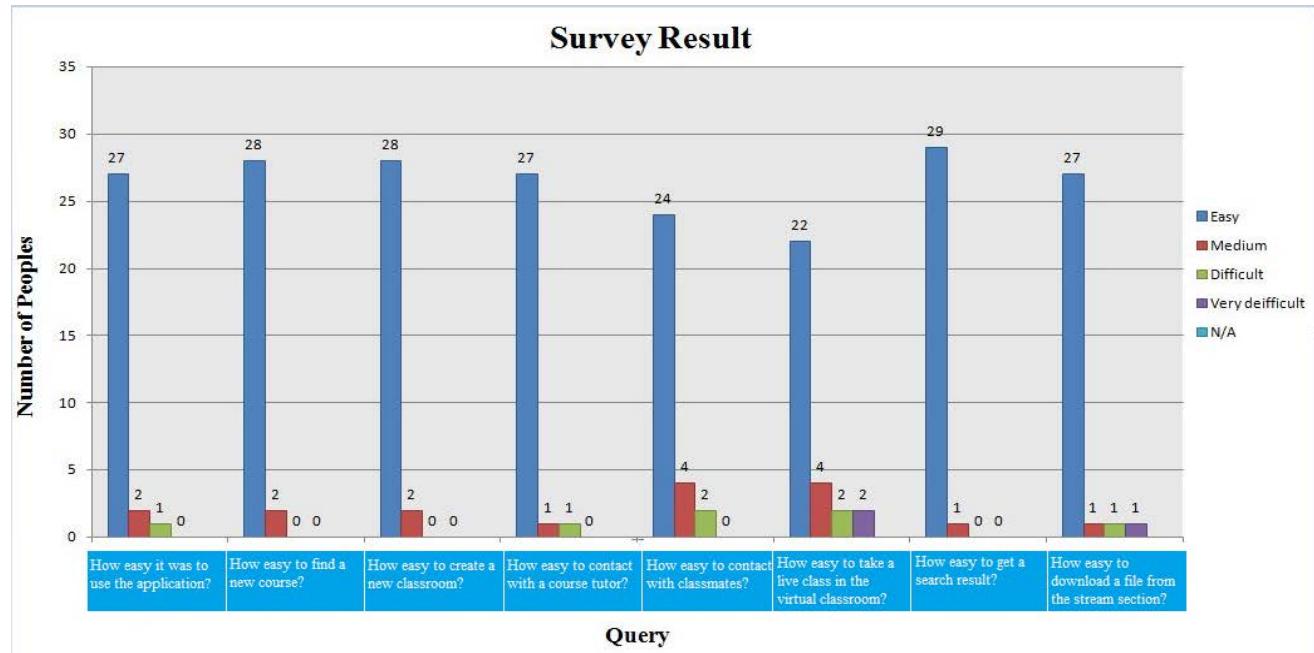


Figure 5.1: Survey Result

Test Report is needed to be reflected of testing results in a formal way, which will make opportunity to get quick testing results. It is a document that records data obtained from an evaluation experiment in an organized manner, describes the environmental or operating conditions, and shows the comparison of test results with test objectives [4].

Test report is very important and it is needed to know that the system is ready/ not ready for implementation? It is a document that records data obtained from an evaluation experiment. We need to run through many types of testing.

There are many types of testing:

- Inversion recovery
- Improvement
- Security
- Performance Test

- Usability
- Installation test or the upgrade test.
- Test for Scalability
- Localization
- Test for Functionality

After passing through all these types of testing system is finally ready for providing service. Now we can carry out the results as the benefits of usability testing.

- Simple fonts and color.
- User Friendly.
- Easy access.
- Simple UI.
- Device friendly.

CHAPTER 6

Conclusion and Future Scope

6.1 Discussion and Conclusion

ORC – Online Readers’ Community is a web-based application which supports the learners to read a book online & discuss about it or any problem with other users from anywhere in the world and aims to provide a learning experience that is similar to a real library. It connects students & teachers around the world for online lessons. It also provides the features of social network site. Both teachers & students can get benefit from it. Assignments & work in one safe place. Creating, copying, assigning, supervising, collecting, grading, real-time group chatting, and returning work to students is a process requiring a great deal of time and steps [11]. This app will undoubtedly save time, trouble & money for both students & teachers.

6.2 Scope for Further Developments

There are some limitations of our system which should be more specifically developed. In future we will surely upgrade our system to make easier to the users.

- UI will be more good looking
- AI will be added for security and other purposes
- Notification system will be added
- Video support will be added
- Payment system will be added for paid books
- New features will be added day by day

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APPENDIX

Appendix A

Database table Structure:

The screenshot shows the MySQL Workbench interface with the 'users' table selected. The table has 9 columns: id, type, name, email, password, avatar, remember_token, created_at, and updated_at. The 'id' column is defined as int(10) with a primary key constraint and auto-increment. Other columns are of type varchar(191) or timestamp.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(10)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	type	int(11)			No	None			Change Drop More
3	name	varchar(191)	utf8mb4_unicode_ci		No	None			Change Drop More
4	email	varchar(191)	utf8mb4_unicode_ci		No	None			Change Drop More
5	password	varchar(191)	utf8mb4_unicode_ci		No	None			Change Drop More
6	avatar	varchar(191)	utf8mb4_unicode_ci		No	default.jpg			Change Drop More
7	remember_token	varchar(100)	utf8mb4_unicode_ci		Yes	None			Change Drop More
8	created_at	timestamp			Yes	None			Change Drop More
9	updated_at	timestamp			Yes	None			Change Drop More

Check all With selected: Browse Change Drop Primary Unique Index Fulltext Add to central columns Remove from central columns

Figure 4.13: A Screenshot Of users table

The screenshot shows the MySQL Workbench interface with the 'books' table selected. The table has 13 columns: id, category, class, bookname, authorid, review, comment, bookcover, bookdetails, pdffilename, breading, created_at, and updated_at. The 'id' column is defined as int(11) with a primary key constraint and auto-increment. The 'category', 'class', 'bookname', and 'authorid' columns are of type varchar(191). The 'bookdetails' column is of type text. The 'pdffilename' column is of type varchar(191). The 'created_at' and 'updated_at' columns are of type timestamp with specific default values.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	category	varchar(191)	latin1_swedish_ci		No	None			Change Drop More
3	class	varchar(191)	latin1_swedish_ci		No	None			Change Drop More
4	bookname	varchar(191)	latin1_swedish_ci		No	None			Change Drop More
5	authorid	int(11)			No	None			Change Drop More
6	review	int(11)			Yes	None			Change Drop More
7	comment	int(11)			Yes	None			Change Drop More
8	bookcover	varchar(191)	latin1_swedish_ci		No	None			Change Drop More
9	bookdetails	text	latin1_swedish_ci		No	None			Change Drop More
10	pdffilename	varchar(191)	latin1_swedish_ci		No	None			Change Drop More
11	breading	int(11)			Yes	None			Change Drop More
12	created_at	timestamp		on update CURRENT_TIMESTAMP	No	CURRENT_TIMESTAMP		ON UPDATE CURRENT_TIMESTAMP	Change Drop More
13	updated_at	timestamp				0000-00-00 00:00:00			Change Drop More

Check all With selected: Browse Change Drop Primary Unique Index Fulltext Add to central columns Remove from central columns

Figure 4.18: A Screenshot Of books table

Server: 127.0.0.1 » Database: orc » Table: comments

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Drop
2	userid	int(11)			No	None			Change Drop
3	bookid	int(11)			No	None			Change Drop
4	star	int(11)			Yes	None			Change Drop
5	comment	text	latin1_swedish_ci		No	None			Change Drop
6	created_at	timestamp		on update CURRENT_TIMESTAMP	No	CURRENT_TIMESTAMP		ON UPDATE CURRENT_TIMESTAMP	Change Drop
7	updated_at	timestamp			No	0000-00-00 00:00:00			Change Drop

Check all With selected: Browse Change Drop Primary Unique Index Fulltext Add to central columns
 Remove from central columns

Figure 4.15: A Screenshot Of comments table

Server: 127.0.0.1 » Database: orc » Table: discussions

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Dr
2	category	varchar(191)	latin1_swedish_ci		No	None			Change Dr
3	questions	text	latin1_swedish_ci		No	None			Change Dr
4	userid	int(11)			No	None			Change Dr
5	created_at	timestamp		on update CURRENT_TIMESTAMP	No	CURRENT_TIMESTAMP		ON UPDATE CURRENT_TIMESTAMP	Change Dr
6	updated_at	timestamp			No	0000-00-00 00:00:00			Change Dr

Check all With selected: Browse Change Drop Primary Unique Index Fulltext Add to central columns
 Remove from central columns

Figure 4.16: A Screenshot Of discussions table

Server: 127.0.0.1 » Database: orc » Table: menus

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(11)			No	None		AUTO_INCREMENT	Change Dr
2	category	varchar(191)	latin1_swedish_ci		No	None			Change Dr
3	type	varchar(191)	latin1_swedish_ci		No	None			Change Dr
4	created_at	timestamp		on update CURRENT_TIMESTAMP	No	CURRENT_TIMESTAMP		ON UPDATE CURRENT_TIMESTAMP	Change Dr
5	updated_at	timestamp			No	0000-00-00 00:00:00			Change Dr

Check all With selected: Browse Change Drop Primary Unique Index Fulltext Add to central columns
 Remove from central columns

Figure 4.17: A Screenshot Of menus table

The screenshot shows the 'users' table structure in MySQL Workbench. The table has 9 columns:

- id**: int(10) UNSIGNED, No, None, AUTO_INCREMENT
- type**: int(11)
- name**: varchar(191) utf8mb4_unicode_ci
- email**: varchar(191) utf8mb4_unicode_ci
- password**: varchar(191) utf8mb4_unicode_ci
- avatar**: varchar(191) utf8mb4_unicode_ci, default.default.jpg
- remember_token**: varchar(100) utf8mb4_unicode_ci
- created_at**: timestamp
- updated_at**: timestamp

Action buttons for each column include Change, Drop, and More.

Figure 4.18: A Screenshot Of users table

Survey Form for application

Serial No	Query	Easy	Medium	Difficult	Very difficult	N/A
1	How easy it was to use the application?	<input type="checkbox"/>				
2	How easy to find a new pdf book?	<input type="checkbox"/>				
3	How easy to create a new sub menu?	<input type="checkbox"/>				
4	How easy to create an author?	<input type="checkbox"/>				
5	How easy to use discussion page?	<input type="checkbox"/>				
6	How easy to ask a question in the orc discussion page?	<input type="checkbox"/>				
7	How easy to get a search result	<input type="checkbox"/>				
8	How easy to download a file from the pdf section	<input type="checkbox"/>				

Appendix B

Plagiarism Check Report

I have the opportunity to check my report for plagiarism. It's completely free of charge unlimited number of times. I checked my plagiarism from this link:<https://www.plagramme.com/>. The plagiarism scanner for research papers is easy to handle. After checking my report, I have gotten the result from the plagiarism scanner. The plagiarism report result is given below.