

Web-based PDF-shelf: e-Library

BY

SHEIKH SHAHRIAR PARVEZ

ID: 151-15-4711

This Report is Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

Supervised By

MOUSHUMI ZAMAN BONNY

Assistant Professor

Department of CSE

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

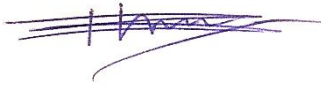
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APPROVAL

This Project titled “**Web-based PDF-shelf: e-Library**” submitted by **Sheikh Shahriar Parvez**, ID No: **151-15-4711** to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on **11 September, 2021**.

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Dr. Touhid Bhuiyan

Professor and Head

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University

Internal Examiner



Abdus Sattar

Assistant Professor

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



Internal Examiner

Md. Riazur Rahman

Assistant Professor

Department of Computer Science and Engineering

Faculty of Science & Information Technology

Daffodil International University



External Examiner

Dr. Dewan Md. Farid

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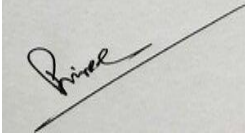
Department of Computer Science and Engineering

United International University

DECLARATION

I hereby declare that this project has been done by me under the supervision of **Moushumi Zaman Bonny**, Assistant Professor, **Department of CSE** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Submitted by:



Sheikh Shahriar Parvez

ID: 151-15-4711

Department of CSE

Daffodil International University

Supervised by:



Moushumi Zaman Bonny

Assistant Professor

Department of CSE

Daffodil International University

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I would like to express our heartiest gratitude to **Dr. Touhid Bhuiyan Chairman** Professor and Head, Department of CSE, for his kind help to finish our project and also to other faculty members and the staff of CSE department of Daffodil International University.

Finally, I must acknowledge with due respect the constant support and patients of my parents.

ABSTRACT

Web-based PDF-shelf: e-Library is a platform for the knowledge seekers to gain knowledge as well as a little earning opportunity.

In this system, I have included a visionary method that can bring a revolutionary change to the education of Bangladesh. In this platform, I have included the option ‘create account’ for a user who can log in with the login option. This is a website that allows a user to research PDF books. Besides, they are allowed to share their books in their account through which they can earn points. They can use the points to read more books or withdraw money. The vital advantage is that the whole process is real-time and online. It means the user can study from anywhere. Any age of people is allowed to create accounts except the violent kinds. Now everyone will be able to get the opportunity not only to get PDF books or documents but also an opportunity to earn by sharing their valuable PDF books or documents on this platform. **Web-based PDF-shelf: e-Library** also allows the expensive books on the website to make it available to the users with a little cost. Giving an opportunity to be hassle-free in traveling with so many books. Putting contribution to the world's education is the aim of **Web-based PDF-shelf: e-Library**.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This site contains functional requirements for the creation of a web-based platform named **“Web-based PDF-shelf: e-Library”**

PDF refers to Portable Document Format which can be used as a replacement for any documents [1].

Recently PDF is appreciated among book lovers, especially the young generation. People search pdf books on the internet platforms rather than the physical marketplace. Generally, a shelf is a place where anything can be kept arranged. Here, PDF SHELF is a platform where books will be available in PDF format. Every platform is being created for different tasks. The site is created very user-friendly and it's like viewing a library of pdf books on the screen and reading books based on choices. To access the website, a browser and internet connection is required.

The source codes are free and there are no royalty fees for using web languages like JavaScript Vue js framework and popular PHP Laravel Framework.

My website **“Web-based PDF-shelf: e-Library”** can be used by any modern device which supports the internet and has browsing features.

1.2 Motivation

Books are the best friend of humans. Books help us to develop and evolve as well. Mostly, we cannot but depend on books to gain more knowledge [2]. With a view to gaining more knowledge, we need more books to read. Books are not that cheap in our country. On the contrary, they are a little expensive too. Even some books are too rare to find.

Moreover, we are a lower-middle-income country [3]. So, the students can't spend so much money on their educational chores. On traveling, the boring times can turn into

awesome with a wonderful book. It becomes a difficult task to find a book in such a condition.

Not only books but also important documents are not easily found on any platform. I've come with a solution for these limitations with the idea of creating “**Web-based PDF-shelf: e-Library**”. Now everyone will be able to get the opportunity not only to get PDF books or documents but also an opportunity to earn by sharing their valuable PDF books or documents on this platform. And it is an online platform that is going to be evolving, updating the PDFs by its users and writers, and publishers.

1.3 Objective

- Create a website that can give the users an online PDF library platform.
- To develop a website that allows learning unlimited from anywhere.
- Students can practice from anywhere.
- Travelers can find books anytime.
- Any users can upload their PDF books or documents and share it to the other viewers.
- Writers and publishers or any user also can publish their PDF books and collect points to earn money.
- Users can also purchase points to get PDF books.
- Users get points for free with user experience.
- Users use points to get more books.
- Users use points to withdraw money.
- Users get expensive PDF books cheaply.

1.4 Expected Outcome

- Users, especially, students can get education in an unconventional path and would be able to spread their knowledge among others.
- The knowledge seekers can spend their time with lots of books to grab lots of knowledge.
- People living abroad can easily find books of their language instantly by using an internet browser.
- “Create account” for free by providing general information.
- User friendly and sophisticated in getting points for activities.
- Quick in searching a PDF.
- Cheaply provide expensive eBooks to the students and new learners.
- New writers and publisher’s platform to get closer to the open readers and get more recognition globally.
- Globally works like a platform, as an electronic library by providing PDF books and documents to the world.

1.5 Management and Finance

Planning is a must for a project to run. After selecting the project, I came with an idea to run the project “Web-based PDF-shelf: e-Library”. The website will earn from advertising and selling expensive books. A trained expert team will be working for the website management and distribution of points and withdraw money using points.

1.6 Report Layout

The report contains the whole of part as follows:

- In Chapter 1, I have discussed this project idea and why I want to build up this project. Here I also mentioned what is the motive of this project.

- In Chapter 2, I have discussed some related projects like this project and the challenges that I faced. I also discussed why my project is better than others.
- In Chapter 3, I have discussed Requirement and specifications where I discussed the Business Process Model to represent the structure of my project. Here I also mentioned the use case diagram of our project.
- In Chapter 4, I have discussed the design specification of our project and the framework and tools I used.
- In Chapter 5, I have discussed Implementation of Database and testing.
- In Chapter 6, it is concluded and here I discussed what is the future.

CHAPTER 2

BACKGROUND

2.1 Introduction

A great role in human life has been played by education. Conventional book traders usually sell books that are found to be popular and running in the market. Even abroad books are less available in the physical marketplace. At present in this internet world, it is possible to add “e” before almost everything such as e-mail, e-commerce, e-business, e-government, e-learning, etc. Why not get a platform for books globally?

Electronic books can be very useful for all to get different books globally. Students get books from anywhere anytime online, travelers get books without having weight hassle, poor’s can get expensive books cheaply, workers learn at their work online. Knowledge becomes so easy to get just for a click in the browser.

2.2 Related Work

Some websites are available on the internet. Some examples are given below.

2.2.1 eBOOK Government Bangladesh

eBOOK Government Bangladesh is a platform for the students of secondary level to get their academic books. Students can download academic books through the website, although the books are unable to be found to be the latest edition all the time [4].



(a)



(b)

Fig 2.1: (a) eBOOK government Bangladesh homepage, (b) ebook government Bangladesh 2nd page.

2.2.2 NCTB

NCTB website provides government information and academic books for primary, secondary, higher secondary in pdf [5].

বাংলাদেশ জাতীয় তথ্য বাতায়ন

অফিসের খরপ

Go

Search

English

জাতীয় শিক্ষাক্রম ও পাঠ্যপুস্তক বোর্ড (এনসিটিবি)

এনসিটিবি সম্পর্কে শিক্ষাক্রম পাঠ্যপুস্তক শিক্ষক সহায়িকা আইসিটি নোটিশ ও মিডিয়া যোগাযোগ

Text size A A A Color C C C C

সর্বশেষ হাল-নাগাদ: ১৯ ফেব্রুয়ারি ২০১৯

বঙ্গবন্ধু শেখ মুজিবুর রহমান

২০১৯ শিক্ষাবর্ষের সকল স্তরের পাঠ্যপুস্তকের তালিকা

চাহিদা মোতাবেক শ্রেণিতে ক্লিক করুনঃ

প্রাক-প্রাথমিক স্তর	প্রাথমিক স্তর	ইবতেদায়ী স্তর	মাধ্যমিক স্তর
প্রাক-প্রাথমিক শিক্ষা	প্রথম শ্রেণি	প্রথম শ্রেণি	ষষ্ঠ শ্রেণি
মাণ্ডি-লিঙ্গুয়েল এডুকেশন	দ্বিতীয় শ্রেণি	দ্বিতীয় শ্রেণি	সপ্তম শ্রেণি
পারো চাকমা	তৃতীয় শ্রেণি	তৃতীয় শ্রেণি	অষ্টম শ্রেণি
মারমা বিপুরা	চতুর্থ শ্রেণি	চতুর্থ শ্রেণি	নবম-দশম শ্রেণি
সাদরি	পঞ্চম শ্রেণি	পঞ্চম শ্রেণি	

“সরকারী কর্মচারীদের জনগণের সাথে মিশে যেতে হবে। তাঁরা জনগণের খাদেম, সেবক, ভাই। তাঁরা জনগণের বাপ, জনগণের ভাই, জনগণের সন্তান। তাঁদের এই মনোভাব নিয়ে কাজ করতে হবে।

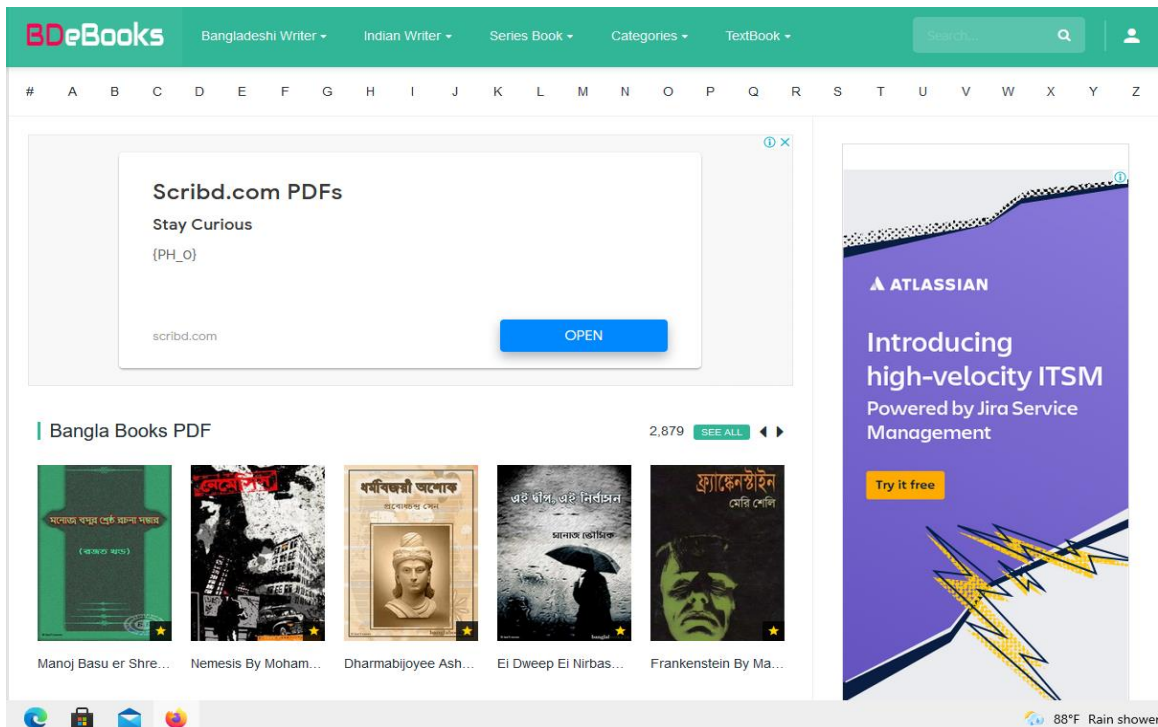
- জাতির পিতা বঙ্গবন্ধু শেখ মুজিবুর রহমান

Fig 2.2: NCTB Government Bangladesh

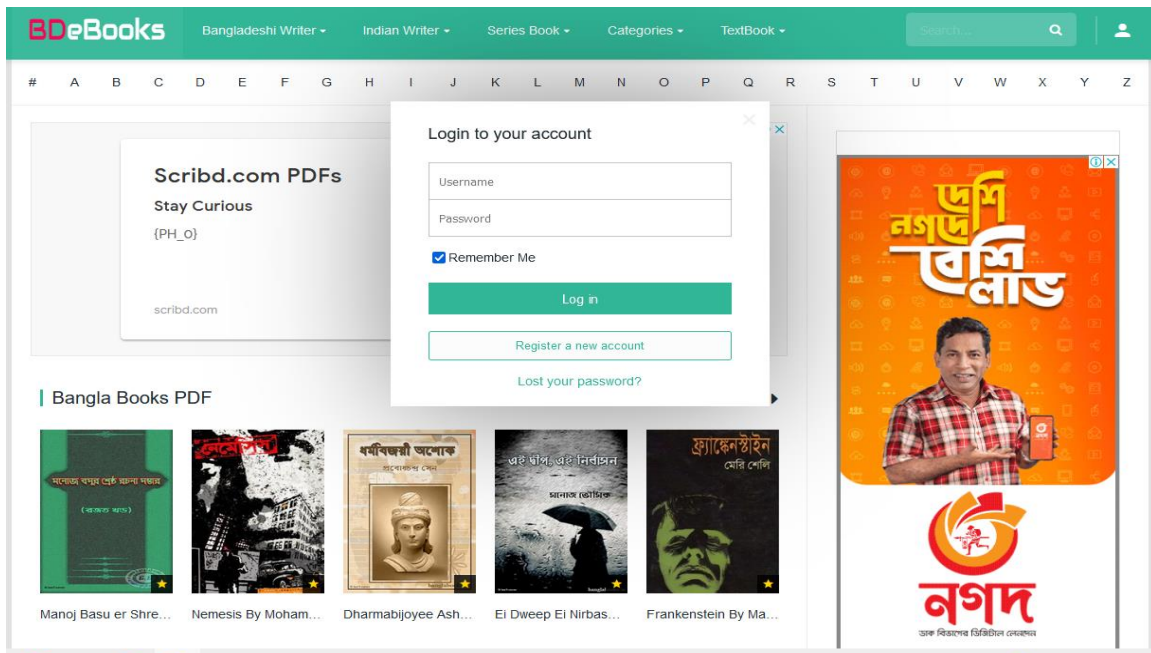
2.2.3 BDeBooks

BDebooks is a platform focused on Bangla books. There are some English dubbed books of the English language to Bangla [6]. Only Bangla readers can read books from the site as there are no other books in other languages.

Moreover, the site doesn't allow registering a new account which is a default error.



(a)



(b)

Fig 2.3: (a) BDeBooks homepage, (b) BDeBooks register page

2.2.4 Easy Pace Learning

This site only provides English books focused on academics [7].



Fig 2.4: Homepage of Easy Pace learning

2.3 Comparative Studies

When I started developing this site, some other sites worked on PDF books. There were some lacking in their websites. Some of them only focused on academic education, some were strict with only Bangla literature, some sites are in English, but there is no global solution. Besides, other sites don't allow users, writers, or publishers to share their content directly. So, I got to come up with a solution with my website that would be solving all the odds and letting everyone earn through their activities.

2.4 Scope of the Problem

After having an analysis, I found some problems. The users would have to face advertisements which might be annoying to some of them. Moreover, it's a web-based platform, so the users have to know how to do internet chores. Users must have a device that allows web browsers to run with an internet connection.

2.5 Challenges

The students and users must possess a minimum level of internet browsing knowledge to function the website. Knowledgeable in the online environment. To enjoy the facilities of this website, a student or a user must know how to deal with online chores and be active in getting points.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Business process modeling in web engineering is the work of representation of processes of an enterprise so that the current process can be analyzed or improved. The process modeling typically performed by business analysts who provide expertise in the modeling discipline and subject matter experts who have been specialized knowledge of the processes being modeled or generally by the developer. On the other hand, the process model can be derived directly from events log using process mining tools [8].

3.2 Requirement Collection and Analysis

Requirement analysis is also called requirements engineering. It is the process that determines user expectations for new or modified work. All those features are called terms and have to be quantifiable, relevant, and exposed. Requirement analysis is an unavoidable aspect of project management [9].

3.2.1 Functional Requirements

Functional Requirements include the function of a system and its materials. It's a very well-known phrase in the area of software engineering. Calculations, technical details, data manipulation and processing, and other specific functionality that define a function's works to achieve are functional requirements. All the cases describing behavioral demand where the website uses some functional requirements are captured in use cases [10].

Books Management

- Add books
- Books category
- Download option

Users Profile

- User Name
- Email address
- Phone number

3.2.2 Non-Functional Requirement

A non-functional requirement is a requirement of specified criteria that can judge the operation of a system rather than specific behaviors. Planning form implementation of functional requirements is designed in the functional architecture because they are generally Architecturally significant requirements [11].

- Usability and human requirements
- Performance requirements
- Web Server requirements
- Security

3.3 Use Case Modeling

A use case represents its most simple diagram of a user's interaction with the system that shows the relationship between the user and the various use cases in which the user gets involved. The different types of users of a system and different use cases can identify a use case diagram. And will be associated with other types of figures as well [12].

There are mainly 2 kinds of users such as. 1)Admin & 2) User. The following figure: 3.1 shows the activity.

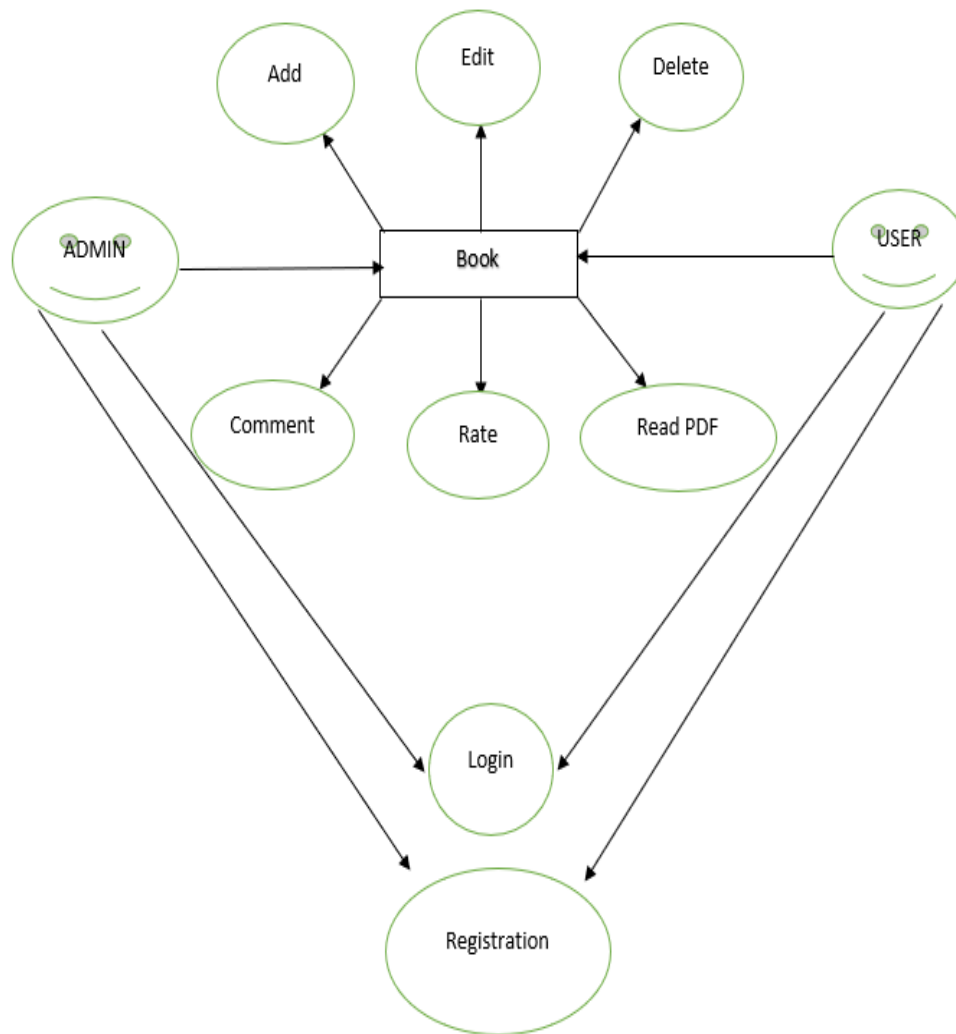
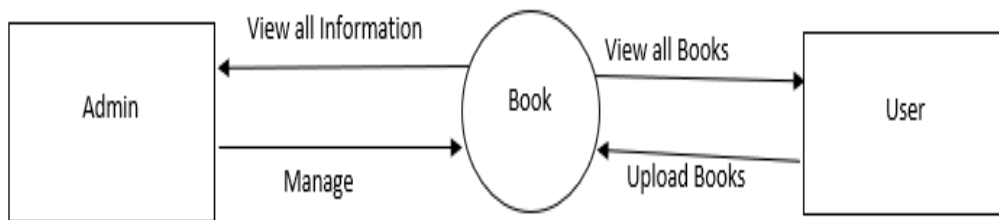


Fig 3.1: Use Case Model Diagram

3.4 Logical Data Model

Data flow Diagram (DFD) represents that data processed by a system for inputs & outputs. Since the name indicating its focus is on the flow of information, where data comes from, where it goes and how it gets stored.

Here I tried to show my Data flow Diagram in figure 3.2. There is a “Level-0” Diagram or context diagram and a “Level-1” Diagram on my website.



(a)

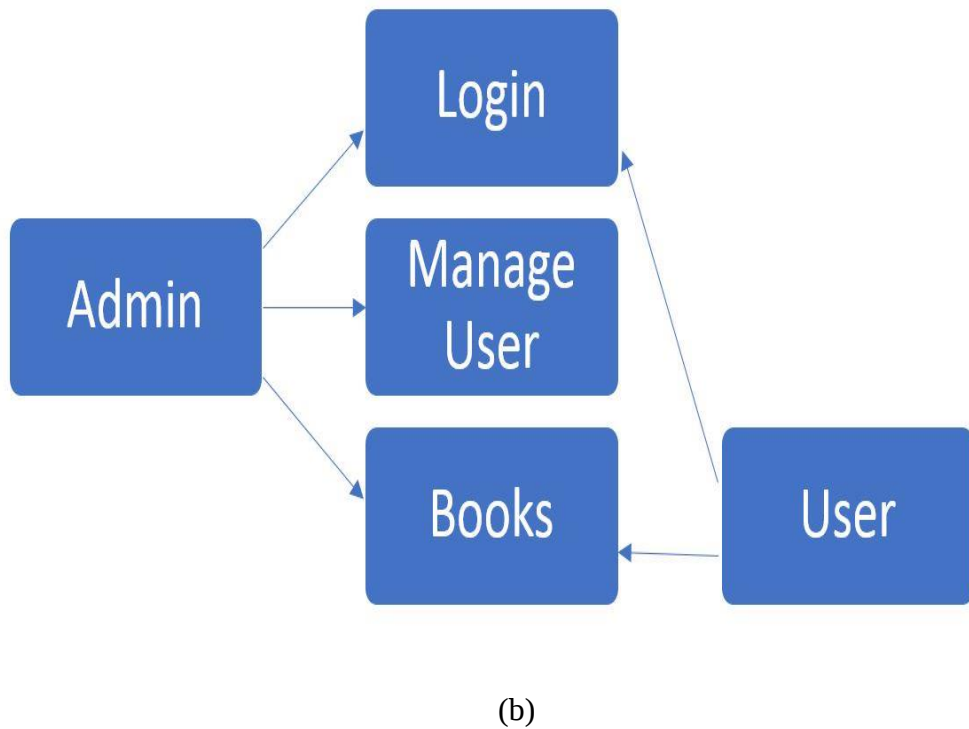


Fig 3.2: (a) Data Flow Diagram (level-1), (b) Data Flow Diagram (level-0)

3.5 Entity Relationship Diagram

An entity relationship diagram (ERD) represents relationships of entity sets stored in the database. Moreover, an entity in the context is a component of data. On the other hand, ER diagrams show the logical structure of databases.

Here I have tried to expose my whole database component and their relationship between each other's in figure 3.3.

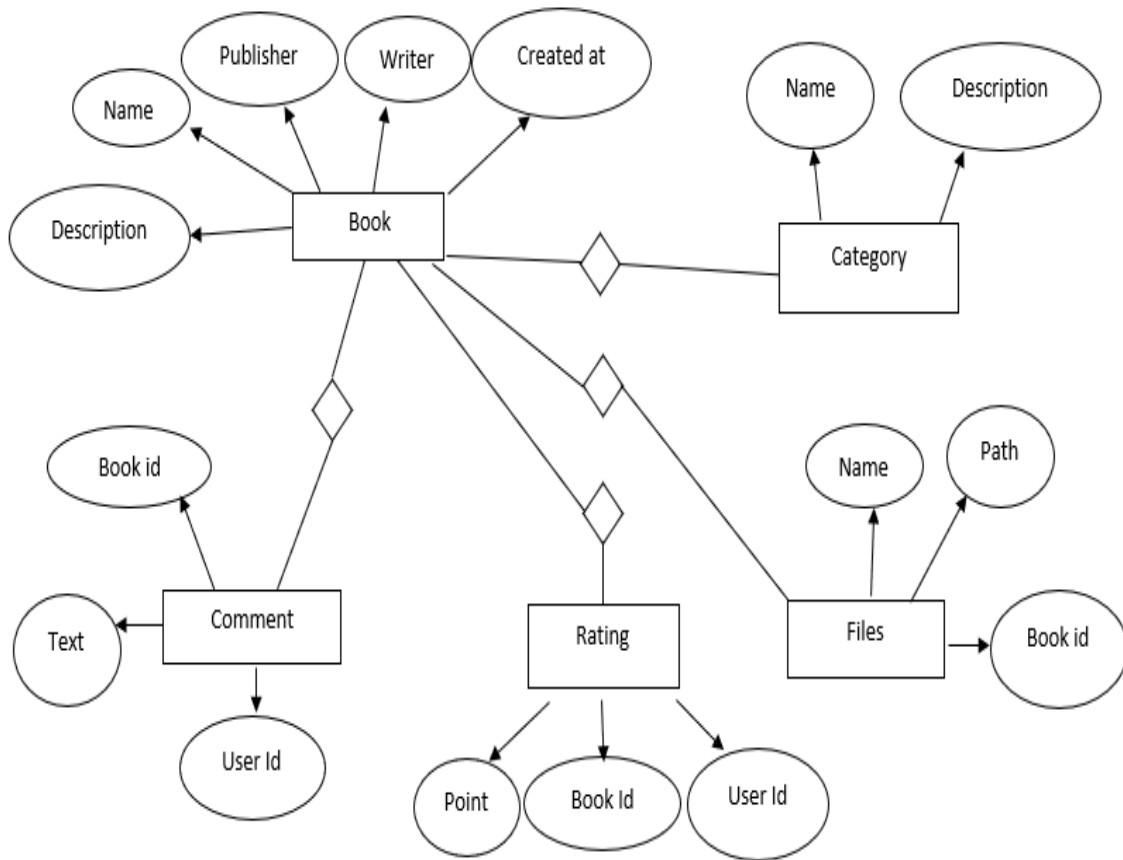


Fig 3.3: Entity Relationship Diagram

3.6 Design Requirement

Figma: Vector graphics editor and prototyping tool for the initial design of the website.

React: JavaScript library for building user interfaces that we designed on Figma.

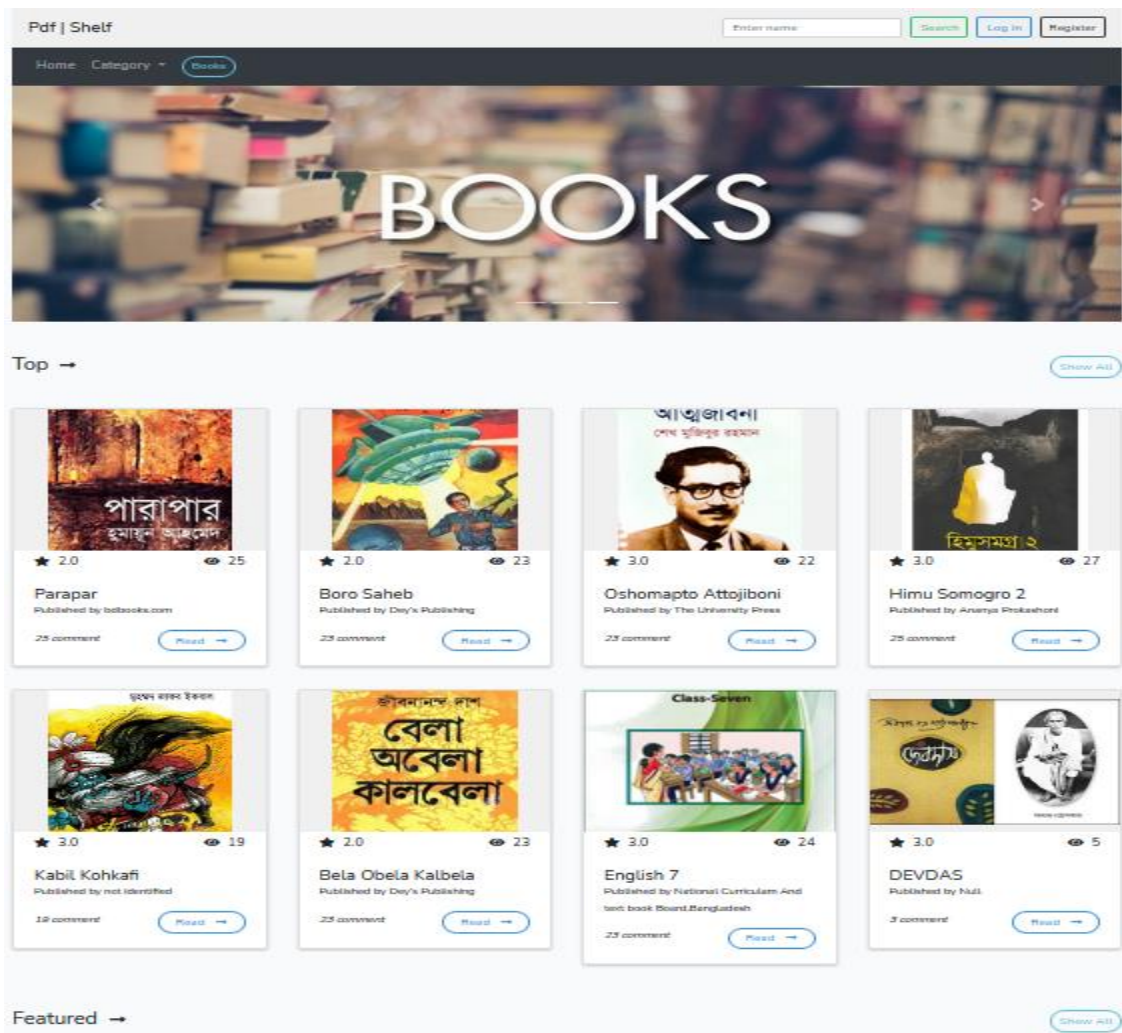
CHAPTER 4

DESIGN AND SPECIFICATION

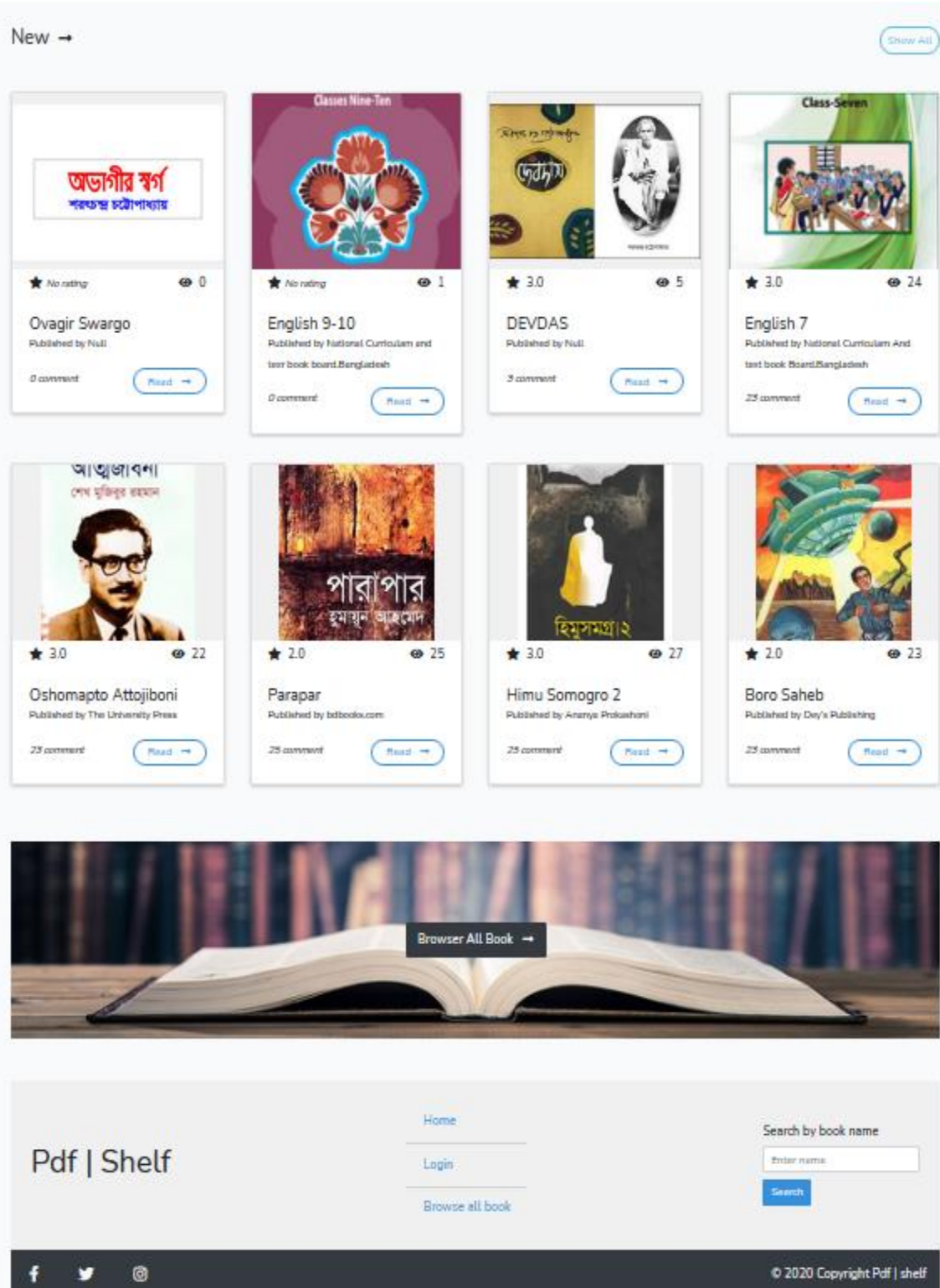
4.1 Front-end Design

Front-end design contains personas, pixels, and polish and engineering a world of logic, loops and Linux. Front-end design involves creating HTML, CSS, and JavaScript code which creates a user interface.

4.1.1 Home Screen



(a)



(b)

Fig 4.1: Home Screen (a) &(b)

4.1.2 Category

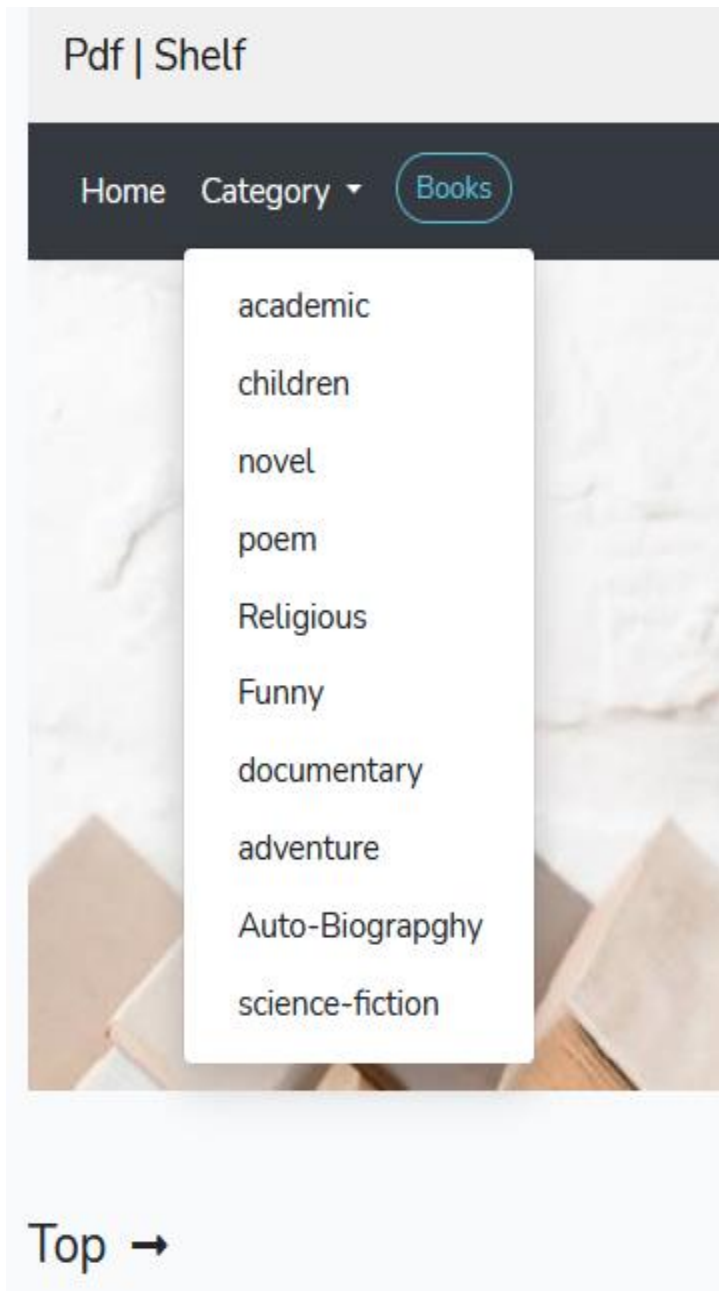


Fig 4.2: Category

4.1.3 Books

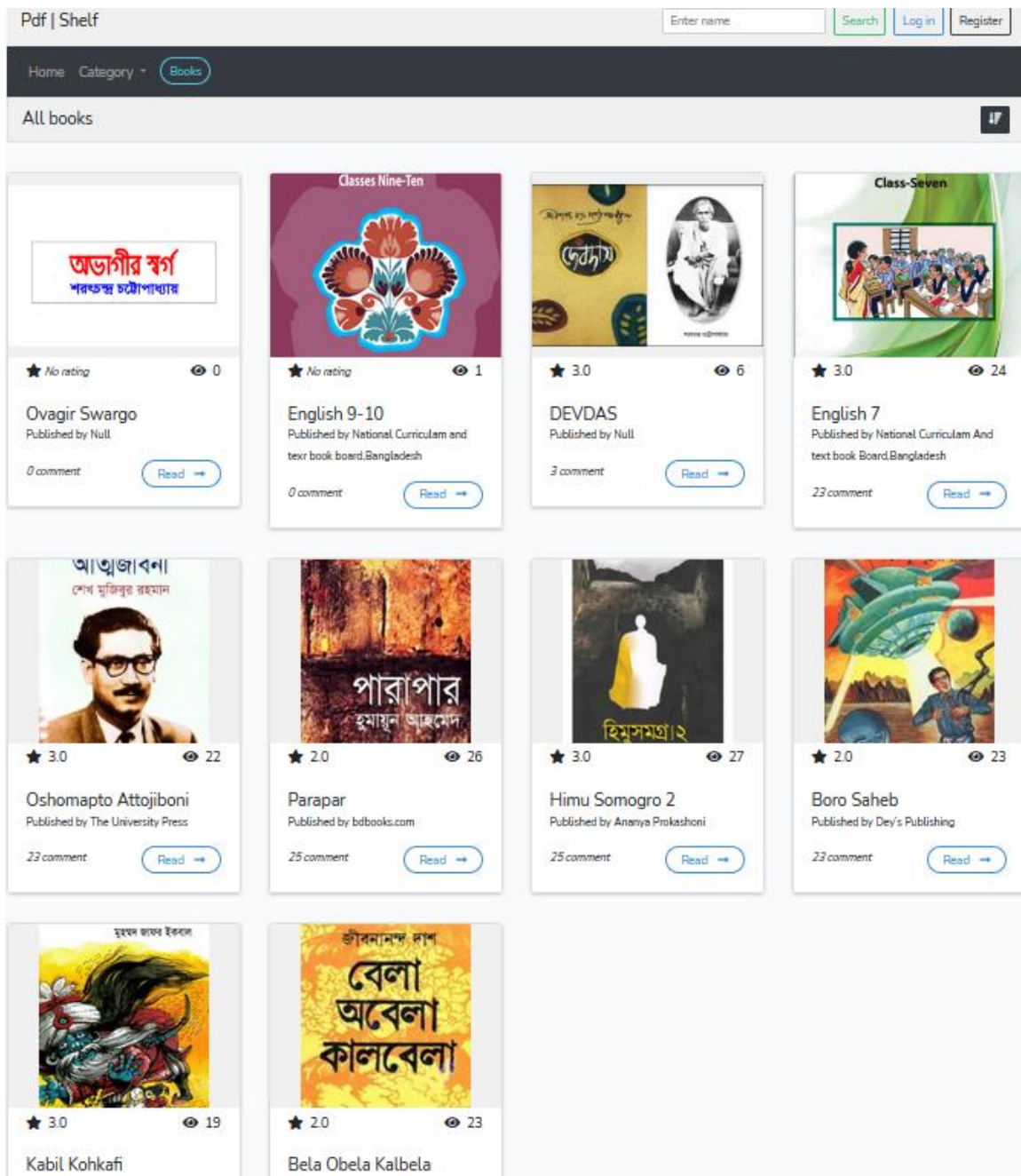
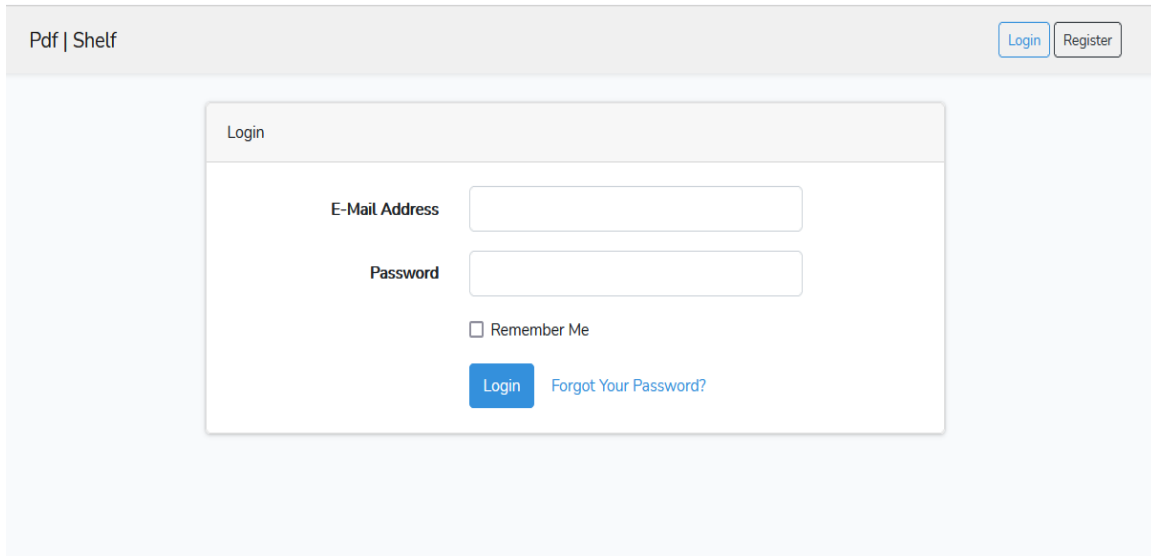


Fig 4.3: Books

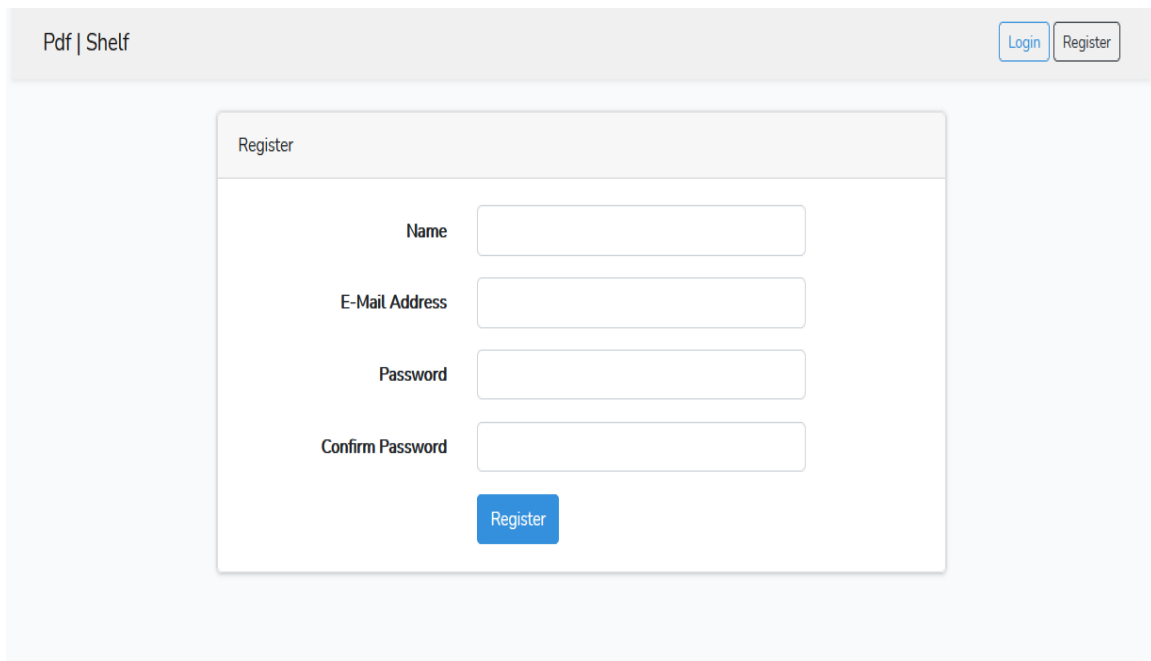
4.1.4 Login



The login form is displayed within a light gray header bar. The header contains the text "Pdf | Shelf" on the left and two buttons, "Login" and "Register", on the right. The login form itself is a white box with a light gray border. It has a title "Login" at the top. Below the title, there are two input fields: "E-Mail Address" and "Password". Below the "Password" field, there is a checkbox labeled "Remember Me". At the bottom of the form, there is a blue "Login" button and a link "Forgot Your Password?".

Fig 4.4: Login

4.1.5 Register



The register form is displayed within a light gray header bar. The header contains the text "Pdf | Shelf" on the left and two buttons, "Login" and "Register", on the right. The register form itself is a white box with a light gray border. It has a title "Register" at the top. Below the title, there are four input fields: "Name", "E-Mail Address", "Password", and "Confirm Password". At the bottom of the form, there is a blue "Register" button.

Fig 4.5: Register

4.2 Back-end Design

The front-end is also considered to be the client-side and it's sometimes considered “Web Design”. The Back-end design of the web sector is generally called the server-side code. Usually when someone says they are web developers they are saying that they work on the back-end of web sites.

4.2.1 Admin Dashboard

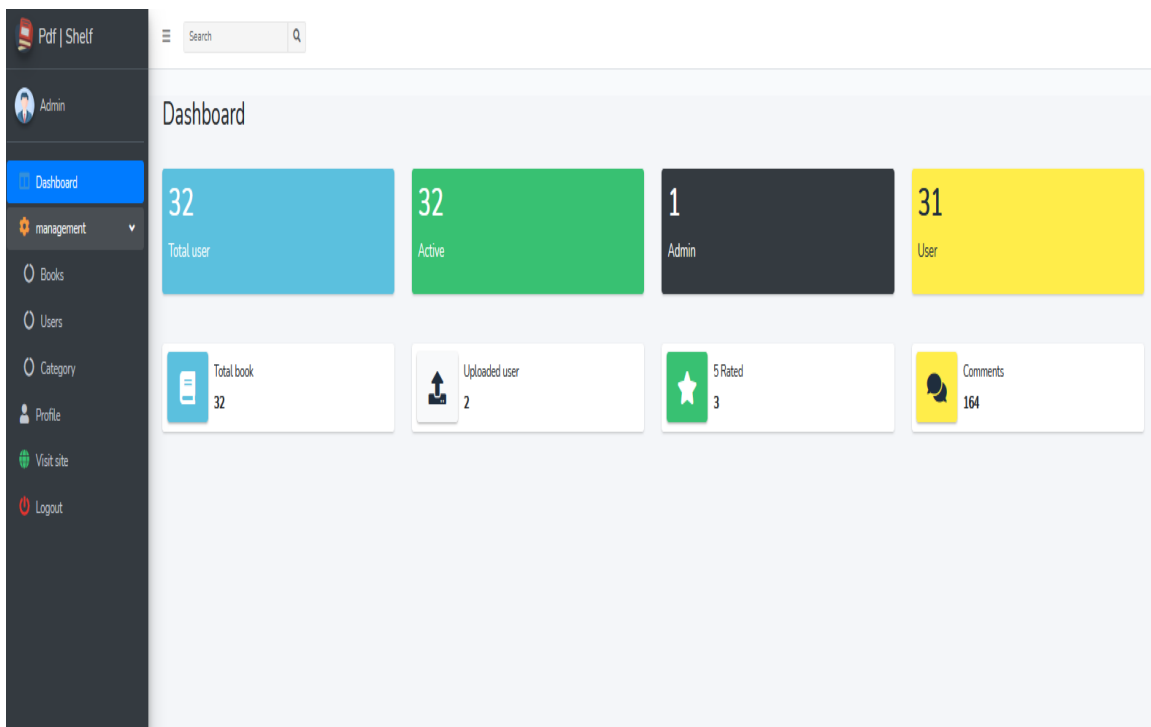


Fig 4.6: Admin Dashboard

4.2.2 Books Management

Pdf | Shelf

Search

Books

Add Book

Sr	Name	Witer	Uploaded by	Views	Category	Rating	Actions
1	 Ovagir Swargo	Sarat Chandra Chattopadhyay	App Admin	0	novel	NaN	<button>👁️</button> <button>⭐</button> <button>❌</button>
2	 English 9-10	Raihana Shams, Md Zulfiqar Haida,Goutam Roy,Surajit Roy Majumdar, Md Abdur Razzaque, Naina Shahzadi	SHEIKH SHAHRIAR PARVEZ	1	academic	NaN	<button>👁️</button> <button>⭐</button> <button>❌</button>
3	 DEVIDAS	Saratchandra Chattapaddhay	App Admin	6	novel	3.35	<button>👁️</button> <button>⭐</button> <button>❌</button>
4	 English 7	MS Hoque, Raihana Shams, Md Zulfiqar Haider, Gautam Roy, Md Abdur Razzak, Rozina Parvin	App Admin	24	academic	3.44	<button>👁️</button> <button>⭐</button> <button>❌</button>
5	 Oshompto Attojiboni	Sheikh Mujibur Rahman	App Admin	22	Auto-Biography	3.10	<button>👁️</button> <button>⭐</button> <button>❌</button>
6	 Parapar	Humayun Ahmed	App Admin	26	novel	2.80	<button>👁️</button> <button>⭐</button> <button>❌</button>
7	 Himu Somogro 2	Humayun Ahmed	App Admin	27	novel	3.04	<button>👁️</button> <button>⭐</button> <button>❌</button>
8	 Boro Saheb	Shirshendu Mukhopadhyay	App Admin	23	science-fiction	2.85	<button>👁️</button> <button>⭐</button> <button>❌</button>
9	 Kabil Kohkafi	Mohammed Zafar Iqbal	App Admin	19	Funny	3.05	<button>👁️</button> <button>⭐</button> <button>❌</button>
10	 Bela Obela Kalbela	Jibananda Das	App Admin	23	poem	2.71	<button>👁️</button> <button>⭐</button> <button>❌</button>

Fig 4.7: Books Management

4.2.3 Users Management

Pdf | Shelf

Admin

Dashboard

management

Books

Users

Category

Profile

Visit site

Logout

Search

Users

Sr	Name	email	role	Uploaded books	Actions
1	AA App Admin	admin@demo.com	admin	9	
2	User Prince	user@demo.com	user	0	
3	V Ted Mosby	tedmosby@gmail.com	user	0	
4	Dr. Noah Swaniawski IV	wayne.kemmer@example.net	user	0	
5	M Queen Lubowitz	monahan.anita@example.net	user	0	
6	Jeramie Franecki	oward@example.com	user	0	
7	G Columbus Anderson	christy94@example.org	user	0	
8	Itzel Hoppe	btrantow@example.com	user	0	
9	BG Tony Boehm V	ciabadie@example.org	user	0	
10	H Korbin Lang	gerhold.elisabeth@example.com	user	0	

1

2

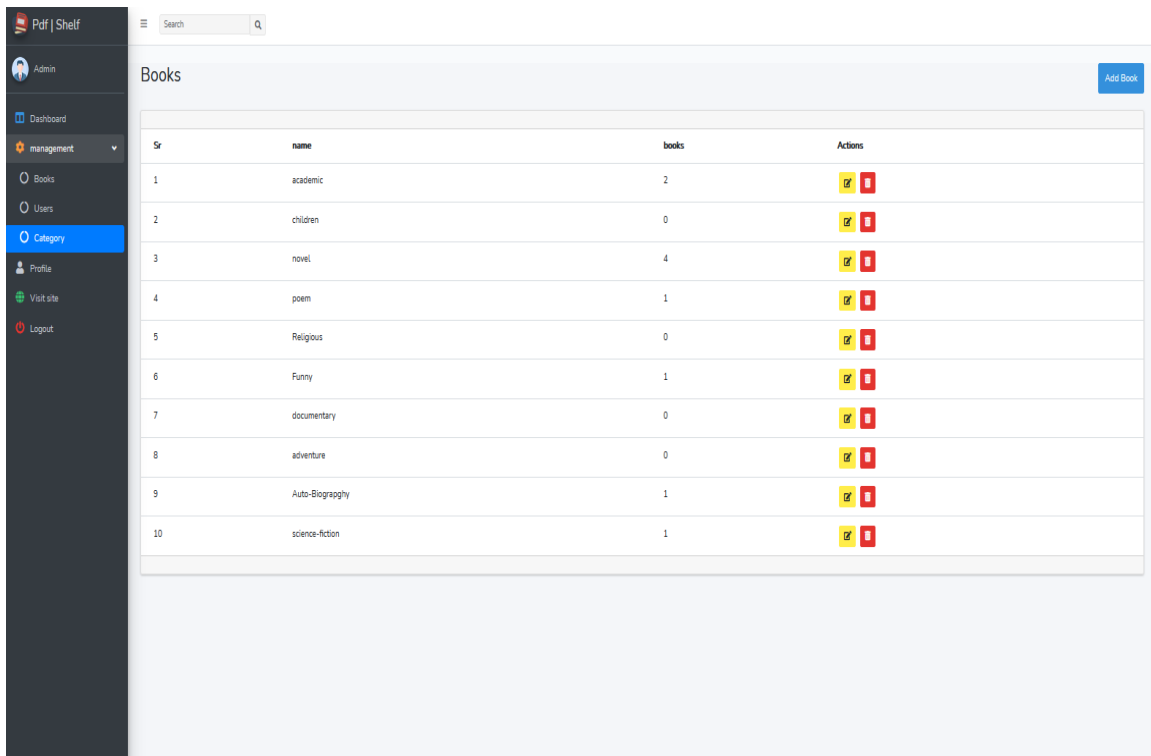
3

4

>

Fig 4.8: Users Management

4.2.4 Category Management



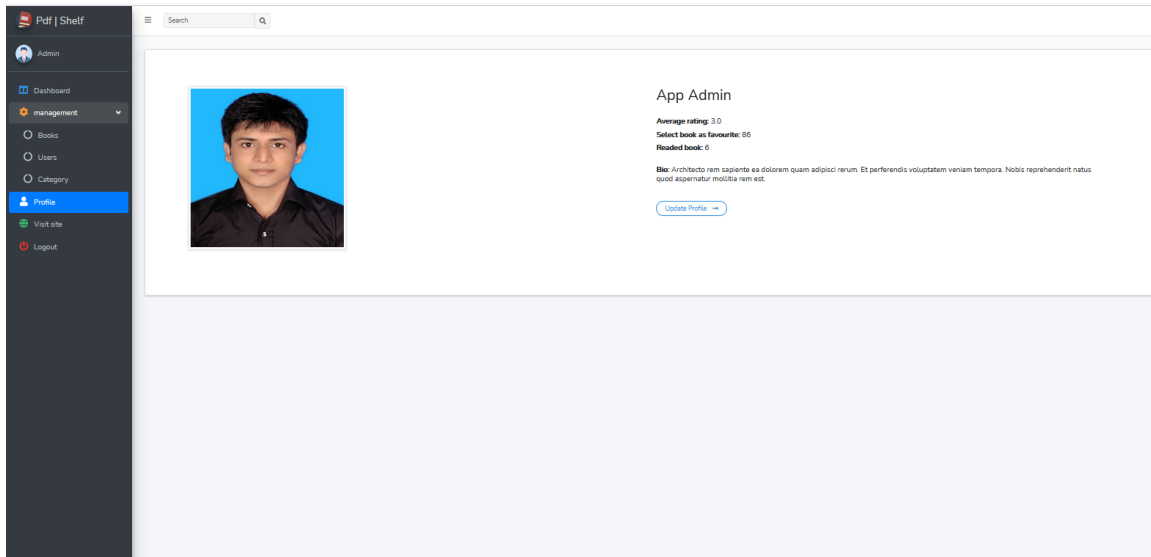
The screenshot displays the 'Category Management' interface. On the left, a dark sidebar contains navigation links: Admin, Dashboard, management (expanded), Books, Users, Category (selected), Profile, Visit site, and Logout. The main content area is titled 'Books' and features a table with the following data:

Sr	name	books	Actions
1	academic	2	 
2	children	0	 
3	novel	4	 
4	poem	1	 
5	Religious	0	 
6	Funny	1	 
7	documentary	0	 
8	adventure	0	 
9	Auto-Biography	1	 
10	science-fiction	1	 

An 'Add Book' button is located in the top right corner of the table area.

Fig 4.9: Category Management

4.2.5 Admin Profile



The screenshot displays the 'Admin Profile' interface. On the left, the same dark sidebar is visible, with the 'Profile' menu item selected. The main content area shows a profile card for 'App Admin' with the following details:

- Profile Picture:** A blue square image of a man.
- App Admin**
- Average rating:** 3.0
- Select book as favourite:** 86
- Readed book:** 6
- Bio:** Architecto nem sapiente ea dolore quam adipisci rerum. Et perferendis voluptatem veniam tempora. Nobis reprehenderit natus quod aspernatur mollitia nem est.
- Update Profile:** A button with a right-pointing arrow.

Fig 4.10: Admin Profile

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Architecture used in the building of the application is shown in Figure 5.1.

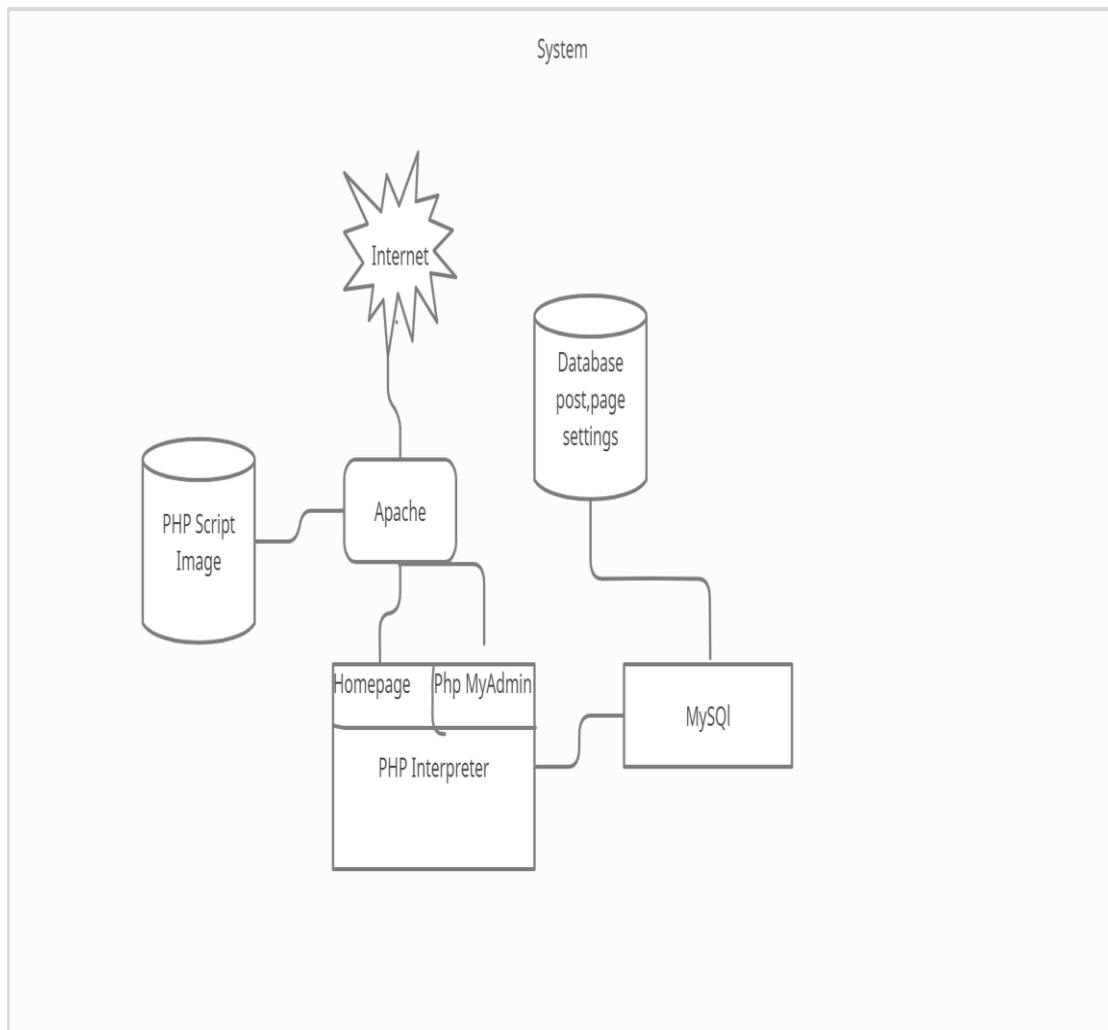


Fig 5.1: Architecture design [13].

5.1.1 Database Design

A database model is a sort of information model that may decide the sensible structure of a database.

In figure 5.2 the database model of the website has been explained through UML diagram in bellow:

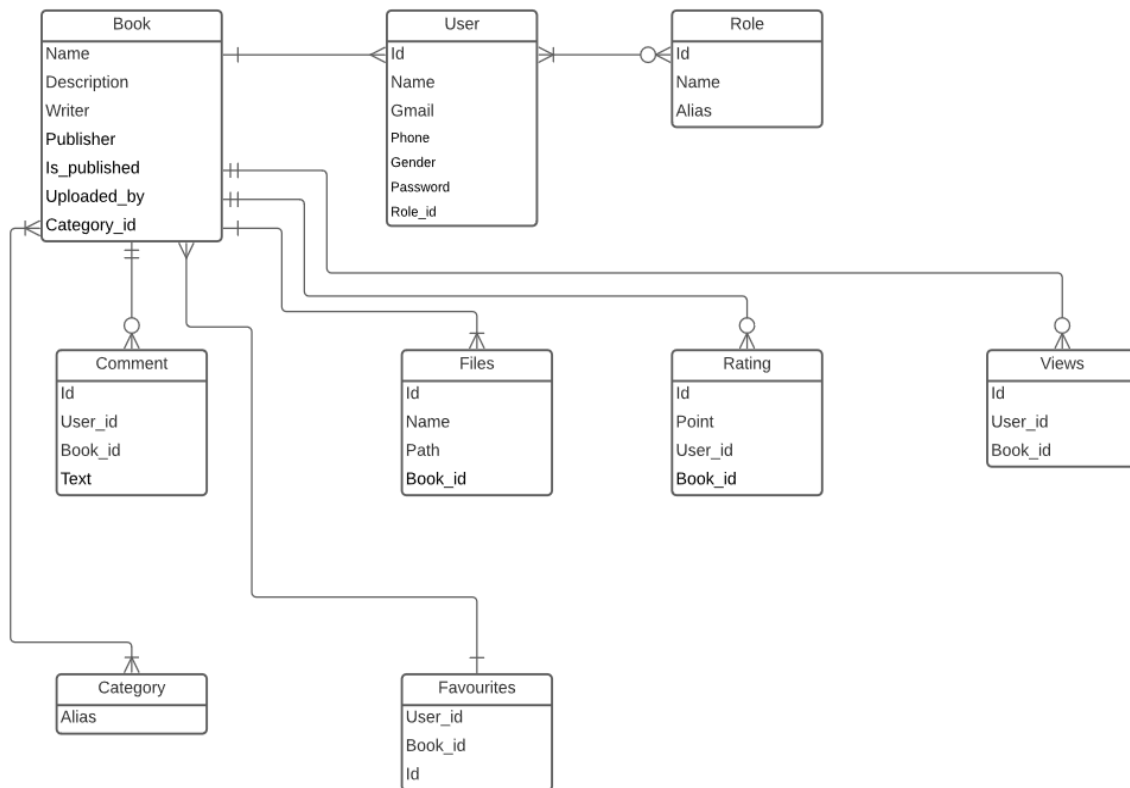


Fig 5.2: Database design through UML Diagram

5.1.2 Implementation Tools

The tools were used while building the Web application.

- MySQL
- APACHE

5.1.3 MySQL

MySQL is a social driver that has been utilized in the PHP programming language to give an interface to the MySQL information base.

There are three fundamental API choices when interfacing with a MySQL data set worker:

- PHP's MySQL Extension
- PHP's MySQLi Extension
- PHP Data Objects (PDO)

The PHP code comprises a center with discretionary augmentations to the principal usefulness.

PHP's MySQL - related builds like the MySQLi improvement, the MySQL development that finishes utilizing the PHP augmentation, are executed using the PHP increment system. An extension that opens an API to the PHP creator so the PHP software engineer might permit its work environments should utilize generally. At any rate, a couple of expands that utilization the PHP expansion system don't open an API to the PHP engineer. The PDO MySQL driver augmentation for viewpoint doesn't open an API to the PHP planner gives an interface to the PDO layer above it. MySQLi is a further developed variety of the more pre-arranged PHP MySQL driver offering different kinds of comfort [14].

Here are a few kinds of utilizations and MySQLi assisting with making.

- Website Blogs
- Custom Dynamic Database Driven Website
- Ecommerce and Custom online store programming

- Social Network people group
- Guestbook
- Entire Website
- Client and Customer Information

5.1.4 APACHE

The Apache HTTP server called Apache is the world's most utilized web server programming. Because of the NCSA HTTPd trained professional, the movement of Apache started in mid-1995 after work on the NCSA code toned down. Apache acknowledged a significant part in the essential progress of the "general web", which immediately overwhelmed NCSA HTTPd as the extraordinary HTTP worker. It has remained normally well known since 1996. In 2009, it changed into the central web expert programming to serve in excess of 100 million regions.

Apache is made and remained mindful of by an open neighborhood fashioner under the assistance of the Apache Software Foundation. By and large utilized on a Unix-like framework (Linux) The Apache HTTP laborer, called Apache is the world's most used web specialist programming. Considering the NCSA HTTPd specialist, the headway of Apache began in mid-1995 after work on the NCSA code dialed back. Apache expected an essential part in the hidden progression of the "general web", which quickly outperformed NCSA HTTPd as the prevalent HTTP laborer. It has remained commonly well known since 1996. In 2009, it transformed into the chief web specialist programming to serve more than 100 million locales.

Apache is made and stayed aware of by an open neighborhood engineer under the assurance of the Apache Software Foundation. For the most part used on a Unix like structure (Linux)

The item is found worldwide for a wide collection of working structures other than UNIX, including eComstation, Microsoft Windows, NetWare, open VMS, OS/2, and TPF. Conveyed with an Apache License, Apache is free and open-source programming [15].

5.1.5 Security

Security is the most vital component of this system. Applying the exact security in this system, the system may be protected from hacking or stealing data. of the system. To create a high secured application, proper validate server-side ion is obviously needed. This web application is built using both client side and server-side validation. But to create a great class website, Using the security protocols is obviously needed.

So, I propose a lot of security protocols which may be used in the system to make it more secure.

HTTPS

HTTPS is brought HTTP over TLS, HTTP over SSL, and HTTP gets which is a convention for secure correspondence over a PC organization, which is generally utilized on the web. HTTPS comprises of correspondence over Hypertext Transfer Protocol (HTTP) inside a conn HTTPS is brought HTTP over TLS, HTTP over SSL, and HTTP gets which is a show for secure correspondence over a PC affiliation, which is generally utilized on the web. HTTPS incorporates correspondence over Hypertext Transfer Protocol (HTTP) inside a connection encoded by Transport Layer Security or its model, Secure Sockets Layer. The essential inspiration for HTTPS is to check the visited site and assurance of the security and uprightness of the traded information activity scrambled by Transport Layer Security or its archetype, Secure Sockets Layer. The essential inspiration for HTTPS is verification of the visited site and security of the protection and uprightness of the traded information [16].

SSL

The Secure Sockets Layer (SSL) and Transport Layer Security (TLS) is the most generally utilized security convention today. It is essentially a convention which gives a safe channel

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between two machines working over the web or an inward organization. By and by, in an Internet centered world the SSL convention is consistently utilized while an internet browser needs to safely associate with a web worker over the intrinsically unreliable web [17].

Security Algorithm

In the case of consideration of high-level security, there must be use of a security algorithm. Such as AES means Advance Encryption Security), DES means data Encrypt Security, 3DES means Triple Data Encrypt Security etc. [18].

5.1.6 Backup

Backup system is very essential for security purposes. Here there may be a backup system so that in case of the system being hacked or corrupted, this application will be resolved by using a backup system.

5.2 Implementation of Front-end design

Framework improvement is a fundamental part of the framework advancement life cycle. This is the most common way of characterizing, planning, testing, and carrying out another web application. or then again, the program. It might incorporate the inner improvement of tweaked frameworks. The creation of a data set framework or the securing of outsider-created programming [19].

5.2.1 Implementation Tools and Software's

- HTML
- CSS
- CSS3
- JAVASCRIPT
- JQUERY
- PHPSTORM
- OBJECT ORIENTED PHP
- PHP LARAVEL

The tools and software details are discussed below.

5.2.2 HTML

Hypertext markup language which is normally called HTML, is the standard markup language used to create web pages. Beside CSS and JavaScript, HTML is a cornerstone technology used to create web pages and building user interfaces for mobile and web applications.

Web browsers may read HTML files and make them visible. HTML describes the structure of a website semantically before the advent of cascading style sheets (CSS).

Included for the presentation or visibility of the web page. Making it a markup language, rather than a programming language [20].

5.2.3 CSS

CSS is a falling template which gets site pages from numerous sources with a characterized request of priority where the meanings of any style component struggle. The falling template level 1 (CSS1) proposal from the World Wide Web Consortium(W3C) and that is introduced in the most recent form of the Netscape and Microsoft internet browsers. It shows the conceivable templates or proclamations that might decide how a given part is introduced in a site.

A portion of the extraordinary advantages of CSS are given underneath.

- CSS can handle the design of colossal reports from one template.
- The layout is all the more unequivocally controlled.
- Wca can show various designs by CSS on different media types.
- Numerous advances and modern strategies can be utilized by CSS [21].

5.2.4 CSS3

CSS level 3 is a current work in progress. The W3C puts up a CSS3 advance report as well as with the developing xHTML in particular, CSS3 will comprise a few separate instructions and recommendations. An introduction to the CSS3 guide will be the starting stage. The biggest advantage of CSS3 is that it has been parted up into various segments called modules. All of these modules are advancing through the W3C in different phases of the proposal procedure [21].

5.2.5 JavaScript

A customer-side prearranging language is called JavaScript. It implies the source code is handled by the customer's internet browser as opposed to on the web worker. This implies a JavaScript capacity might pursue a site that has been stacked without speaking with the worker. For instance, a JavaScript capacity can check a web structure before it has been submitted to ensure every one of the necessary fields has been rounded out. The JavaScript code can create a mistake message before any information is really sent to the worker. Here jQuery has been utilized which is a JavaScript library [22].

5.2.6 PHPStorm

Phpstorm is a commercially cross-platform integrated development environment (IDE) for PHP built on the JetBrains IntelliJ IDEA platform. Phpstorm provides an editor for PHP, HTML, and JavaScript with on-the-fly code analysis, error prevention, and automated refactoring's for PHP and JavaScript code. Phpstorm's code completion supports PHP5.3,5.4,5.5,5.6,5.7 and 7.0(modern and legacy projects), including generators, coroutines, and finally keyword, list in each namespace, closures, traits, and short array syntax. It includes a full-fledged SQL editor with editable query results [23].

5.2.7 Object Oriented PHP

In a programming language, object-oriented PHP is mostly used. It's easy to code and create a nice structure of a programming language.

Class- This is a programmer-defined data type that includes local functions as well as local data. Thinking of a class as a template to make many instances of the same kind or class of object.

Object- A singular case of the information structure characterized by a class. Characterizing a class once and afterward making many items that have a place with it. Items are otherwise called cases.

Member Variable-These are the factors characterized inside a class. This information will be imperceptible to the outside of the class and can be gotten to by means of part works. These factors are called properties of the article once an item is made.

Member function- these are the functions defined inside a class and are used to access object data.

Inheritance- While a class is defined by inheriting the existing function of a parent class and it's called inheritance. Here a child class would inherit all or few member functions and variables of a parent class.

Parent class-A class that is acquired from another class. This is likewise called a base class or superclass.

Child class-A class that acquires from another class. It is likewise called a subclass or determined class.

Polymorphism-This is an article situated idea where a similar capacity can be utilized for various purposes. For instance, the capacity name will continue as before yet it takes various quantities of contentions and can-do various assignments.

Overloading- A type of polymorphism in which some or all operators have different implementations depending on the types of their arguments. Similarly, functions can also be overloaded with different implementations.

Information Abstraction-Any addressing data that execution subtleties are covered up.

Exemplification- alludes to an idea where all information and part works are epitomized from an item.

Constructor-alludes to an uncommon kind of capacity which will be called naturally at whatever point there is an item organizing from an article.

Destructor- refers to a special type of function which will be called automatically whenever an object is deleted or goes out of scope [24].

5.3 Implementation of Interactions

Collaboration configuration centers around making drawing-in interfaces with thoroughly examined practices.

Seeing how clients and innovation speak with one another is key to this field. With this agreement, you can expect how somebody may collaborate with the framework, fix issues right on time, just as design new methods of getting things done.

5.4 Testing Implementation

Testing is an essential part of any system. By testing a system, it can get away.

Any kind of bugs can earn new requirements which can add in the future.

5.4.1 Testing Methodology

What do we understand by software testing? Software testing uses to find out the system errors so that developers can resolve those errors. There are lots of techniques to test software. A software test can do examining codes, design, and execution of the whole system. Testing is unavoidable to improve the quality of the system. For getting to some extent, it is necessary for the verification and the validation (V & V) of a system.

5.4.2 Unit Test

Unit testing is a product testing strategy through which singular units of source code, sets of at least one PC program modules together with related control information,

utilization techniques, and working systems. They try to decide if they are fit for utilize. Automatically, one can perceive a unit as the tiniest testable portion of an application. In technical programming, a unit could be a whole module, and still, it is more commonly a separate measurement or method. In question positioned programming, a unit is frequently a total edge, For example, a class could be, individual technique. Unit tests are short code pieces made by software engineers or once in a while by white box analyzers amid the advancement procedure. It frames the reason for segment testing [25].

5.4.3 Link Test

Link testing of a cluster of modules to confirm that the modules operate properly in the mixture. It is usually performed subsequently the separate modules have been verified in separation and preceding to the combination testing that is performed for the whole system [26].

5.4.4 System Test

System testing of software and hardware are testing showed on a whole, combined system to estimate the system's amenability with its itemized necessities. System testing cascades within the opportunity of black-box testing, and as such, should need no knowledge of the core design of the code or logic [27].

5.4.5 Usability Test

Usability testing is a method used as a part of customer-focused relationship formation to calculate an item by testing it on customers. This can be watched as a vital suitability practice since it gives coordinated influence on how genuine customers use the framework. This is fascinating with ease of using examination techniques where specialists use various strategies to measure a UI

without counting customers. Usability testing middles around measuring a human-made item's ability to meet its intentional reason. Cases of items that generally benefit from ease-of-use testing are sustenance, shopper items, sites or web applications, PC interfaces, reports, and devices. Ease of use testing measures the ease of use, or convenience, of a specific objection or set of articles, though broad human-PC association reflects an attempt to define general standards [28].

5.4.6 Compatibility Testing

Compatibility testing is a sort of programming testing used to guarantee similarity of the motor application/site worked with different protests, for example, another web programs, equipment stages, clients (on the off chance that if it's a certain kind of, for example, a client who talks and can read just a specific dialect), working frameworks and so on. This kind of testing discovers how well a framework perf e domain that incorporates equipment, organize, working framework, and other programming and so forth [29].

5.4.7 Implementation

A significant feature of a systems expert's job is ensuring that the advanced design has applied to recognized standards. The term application has unique meanings, extending from the change of a primary application to a whole replacement of a computer system. The process, however, is nearly the same. Implementation has been using here to mean the process of changing a new or a reviewed system design into an effective one. Alteration is implementations one feature. The other sides are the post-implementation evaluation and software preservation. Implementations are three types such as:

- Implementation of a computer system to substitute a labor-intensive. The complications met are changing files, training users, making correct files and confirming printouts for integrity.
- Usage of another PC framework to displace a present one which is usually a worrying conversation. Unless justifiably organized, there can be many issues.

Nearly vast PC frameworks have reserved the distance of a year to alteration over. Usage of an altered application to displace a present one, using a similar to PC.

This kind of change is abstemiously humble to deal with, given there are no significant changes in the papers [30].

5.4.8 Conversion

Transformation implies changing starting with one framework then onto the next.

The out the tried framework into operation while holding costs, dangers, and workforce bothering to a base. It includes (1) Creating PC perfect documents (2)

Training the working staff (3) Installing terminals and equipment. A basic part of change is not disturbing the working of the association [31].

5.4.9 User Training

A breakdown of user training emphasizes the two schemes installed. Users' range of fuse working out emphases on two issues:

(1) User competencies and the nature of not installed.

(2) Users range from the inherent to the highly sophisticated. Development research offers stimulating visions into how to inherent computer users

think about their first experience with a new system. They approach it as an original learner, learning how to use a system without trying to comprehend which intellectual principles control which function. The difference between the original and the formal knowledge says much about what one can imagine from beginners usually [32].

5.5 TEST RESULTS AND REPORTS

SL	Type of Testing	Grade	Remarks
01	Unite Test	10	
02	Link Test	10	
03	System Test	10	
04	Usability	10	
05	Compatibility Testing	10	
06	User Training	10	
07	Security	10	
08	Performance	10	
09	Functionality	10	

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Conclusion

PDF Shelf has a great positive impact on the internet world. It has given convenience to the internet people to be in touch with more books and gain knowledge, writers can have their recognition more through this platform, even earning opportunity is also open for the users of this platform too. It also gives an opportunity to be hassle-free in traveling with so many books. Knowledge is always available for just a click ahead to the internet world.

6.2 Future Scope

PDF Shelf is launched because of the need for books globally. But to fulfill its agenda marketing and funds are needed very much. The users must be encouraged to upload their books here. But to get this site popular around the world, especially in foreign countries, there must be campaigns to learn about.

Add companies' involvement is also another scope to fund rising as well.

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APPENDIX

```
public function store(Book $book)
{
    $this->service
        →setModel(User::query()→find(\auth()→id()))
        →setBook($book)
        →setAttr('text', \request()→get('text'))
        →validations()
        →saveComments();
}

public function addReplies(Comment $comment)
{
    $this->service
        →setModel(User::query()→find(Auth::id()))
        →setComment($comment)
        →setAttr('text', \request()→get('text'))
        →validations()
        →addCommentReplies();
}

public function commentLike(Comment $comment)
{
    $this->service
        →setModel(User::query()→find(Auth::id()))
        →setComment($comment)
```

```

public function savePdf(): self
{
    if ($this->hasAttr('pdf') && $this->getAttr('pdf')){
        $this->book->files()->delete();
        $this->book->attachments()->updateOrCreate([
            'type' => 'pdf',
            'name' => 'image',
            'path' => $this->storeFile($this->getAttr('pdf'), 'pdf')
        ]);
    }

    return $this;
}

public function saveImage(): self
{
    if ($this->hasAttr('image') && $this->getAttr('image')){
        $this->book->images()->delete();
        $this->book->attachments()->updateOrCreate([
            'type' => 'image',
            'name' => 'image',
            'path' => $this->storeFile($this->getAttr('image'), 'images')
        ]);
    }

    return $this;
}

```

```
public function saveView(): self
{
    $this->book->views()->save(new View([
        'user_id' => $this->model->id,
    ]));

    return $this;
}

public function setBook(Book $book): self
{
    $this->book = $book;

    return $this;
}

public function save(): self
{
    $this->book
        ->fill($this->getFillAble())
        ->save();

    $this->savePdf()
        ->saveImage();
}
```

```

class BookService extends BaseService
{
    use FileHandler;
    public Book $book;
    public Comment $comment;

    public function saveRating(): self
    {
        $this->book->ratings()->save(new Rating([
            'point' => $this->getAttr('point'),
            'user_id' => $this->model->id,
        ]));

        return $this;
    }

    public function saveFavourite(): self
    {
        $this->book->favourites()->save(new Favourite([
            'user_id' => $this->model->id,
        ]));

        return $this;
    }
}

```

```

class BookController extends Controller
{
    use HasWhen;

    public function __construct(BookService $service)
    {
        $this->service = $service;
    }

    public function index()
    {
        return Book::query()
            ->addSelect([
                'rating' => Rating::whereColumn('book_id', 'books.id')
                    ->selectRaw(DB::raw('AVG(point) AS points')),
            ])->withCount(['views', 'favourites', 'comments'])
            ->with([
                'uploader:id,name',
                'category:id,name',
                'images',
                'ratings' => function($builder){
                    $builder->where('user_id', request()->get('user', auth()->id()));
                },
                'favourites' => function($builder){
                    $builder->where('user_id', request()->get('user', auth()->id()));
                }
            ]);
    }
}

```

```

<template>
  <div>
    <app-page-title title="Books" @buttonAction="openAddBookModal" btn-title="Add Book" />

    <app-table
      :options="options"
      :id="tableId"
      @action="actionTrigger"
    />

    <book-create-edit-modal
      id="book-modal"
      v-model="isBookCreateEditModalActive"
      v-if="isBookCreateEditModalActive"
      :table-id="tableId"
      :selected-url="selectedUrl"
    />

  </div>
</template>

<script>
import ...

```

```

export default {
  name: 'books',
  mixins: [bookMixins, ActionHelperMixin],
  components: {bookCreateEditModal},
  data() {
    return {
      isBookCreateEditModalActive: false,
      selectedUrl: '',
    }
  },
  methods: {
    editAction(row){
      this.selectedUrl = `${this.options.url}/${row.id}`;
      this.isBookCreateEditModalActive = true;
    },
    deleteAction(row){
      axiosDelete(`${this.options.url}/${row.id}`).then((response) => {
        this.$hub.$emit('reload-'+this.tableId)
      })
    },
    viewAction(row){
      // let routeData = this.$router.resolve({path: urlGenerator(`app/view-book/${row.id}`)})
      window.open(urlGenerator(`app/view-book/${row.id}`), '_blank');
    },
  },

```

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