BAKLIWAL FOUNDATION
College of Arts, Commerce & Science

A

Project Report

On

ReadWeb : Learning Website

Submitted in partial fulfillment of the requirement for the award of degree of

Bachelor of Computer Applications (BCA)

of

Kavikulaguru kalidas sanskrit University

Submitted by

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Kavikulaguru Kalidas Sanskrit University's

Bakliwal Foundation College of Arts, Commerce And Science

BATCH: 2022-2025

KaviKulaguru Kalidas Sanskrit University's

Bakliwal Foundation College of Arts, Commerce & Science

Vashi

CERTIFICATE

This is to certify that the project entitled **ReadWeb: Learning Website** undertaken. at the Bakliwal Foundation College of Arts, Commerce & Science, Vashi, New Mumbai by **Shaikh Kashfiya Kausar Aminuddin**, holding **Seat No. (PRN:202208100095612)**. Studying **Bachelors of Computer Applications** Semester-VI has been satisfactorily completed as prescribed by the KaviKulaguru Kalidas Sanskrit University, during the year 2024-2025.

Project In-charge **Co-Ordinator**

External Examiner

Internal Examiner **Principal**

Declaration

I, **Shaikh Kashfiya Kausar Aminuddin**, hereby declare that the project titled **"ReadWeb – Learning Website"** submitted to **Bakliwal Foundation College of Arts, Commerce and Science**, under **Kavikulaguru kalidas Sanskrit University**, is a record of original work carried out by me under the guidance of **Prof. Sneha Shashikant Lokhande**.

This project is a self-initiated effort and has not been submitted to any other university or institute for the award of any degree or diploma.

I have developed this project with utmost sincerity and care. However, I understand that future improvements can be made based on user feedback and technological advancements.

Shaikh Kashfiya Kausar Aminuddin

Acknowledgment

I would like to extend my sincere gratitude to everyone who has supported and guided me in the completion of my final-year project, *ReadWeb: Learning Website*. This project marks a significant milestone in my academic journey, and it would not have been possible without the encouragement and assistance I received along the way.

First and foremost, I express my deepest appreciation to my project guide, **Prof.Sneha Shashikant Shashikant Lokhande**, for his invaluable support, guidance, and constructive feedback throughout the development of this project. His mentorship played a critical role in shaping the direction of the project and ensuring its successful completion.

I would also like to extend my gratitude to **Principal Dr. Sharadkumar Shah**, **H.O.D Prof. Sneha Shashikant Lokhande**, **Prof.Mohammad Umar Shaikh**, **Prof. Divya Patil**, **Prof. Kalyani Kulkarni** and **Prof. Ankit Srivastava** for their support and valuable contributions during this project.

Finally, I would like to express my heartfelt thanks to my family and friends for their constant encouragement, patience, and belief in my abilities. Their unwavering support has been a constant source of strength and motivation throughout this journey.

Table of Contents

1.ABSTRACT

1.1 Introduction

- The objective of this project is to provide an interactive, student-friendly learning platform.
- It helps learners explore programming concepts through structured content, quizzes, and feedback.
- Many online platforms lack interactivity or require paid subscriptions.
- ReadWeb aims to bridge this gap by offering a free and easy-to-use learning website.
- Key features include Login, Register, Newsletter subscription, and Quiz module.
- Students can register and log in securely.
- After logging in, users get access to learning materials, programming notes, and topic-wise quizzes.
- The project is developed using PHP, HTML, CSS, JavaScript, and database.
- The website is dynamic and responsive.
- It works on any standard web browser.
- This is a self-developed project.
- It is designed to help students prepare for exams, interviews, or improve coding skills.

About Client

As this is a **self-initiated project**, there is no specific external client involved. The application is designed keeping in mind the **general needs of students** pursuing computer science, especially those studying programming languages and preparing for academic or placement-related assessments.

2.LITERATURE SURVEY

- Rapid growth of internet usage and mobile accessibility has made online learning vital in education.
- Students rely on digital platforms to study programming, technical subjects, and prepare for exams.
- Existing platforms like YouTube, blogs, and paid coding websites offer fragmented or premium-only content.
- Many platforms lack a quiz-based learning assessment system for self-evaluation.
- ReadWeb – Learning Website is a simple, free, and educational web platform.
- It provides readable, beginner-friendly programming content, secure login/registration, a functional newsletter, and a quiz module.
- Analysis of platforms like W3Schools, GeeksforGeeks, HackerRank, and StackOverflow reveals they are either overwhelming or lack full free access.
- ReadWeb fills the gap by offering a simpler, student-focused, and quiz-based content delivery platform.
- The platform aims to help beginners by making code-learning easier, interactive, and assessment-oriented.

3. ACQUISITION OF KNOWLEDGE

This project involves a combination of technologies from different layers of web development starting from user interface design to backend data processing and database storage. Building the **ReadWeb – Learning Website** helped in understanding the full-stack web development cycle in a practical manner.

This chapter highlights the technologies and tools used, along with the theoretical and hands-on knowledge acquired during project development.

1. PHP (Hypertext Preprocessor)

PHP is a widely-used open source server-side scripting language especially suited for web development and can be embedded into HTML.

In this project, PHP was used to handle:

- **User Authentication:** Login and registration functionalities are securely handled via PHP and form submissions.
- **Data Processing:** Newsletter subscriptions, login attempts, and quiz answers are processed server-side.
- **Database Integration:** All communication with MySQL was done using PHP and SQL queries.
- **Session Handling:** PHP also manages session tracking for secure user access.

Learning PHP included understanding its syntax, superglobals like $_POST, $_SESSION, and $_GET, error handling, and using conditional and loop structures in backend logic.

2. MySQL (Structured Query Language)

MySQL is one of the most popular relational database management systems. It was used to:

- Store user data like names, emails, passwords (hashed if implemented),
- Track newsletter subscriptions,
- Optionally, store quiz questions and user responses (or load them from files if static),
- Allow CRUD (Create, Read, Update, Delete) operations through backend scripts.

Hands-on knowledge included:

- Designing normalized tables,
- Creating connections using mysqli_connect(),
- Writing SELECT, INSERT, UPDATE, DELETE queries,
- Preventing SQL injection by validating inputs.

3. HTML (HyperText Markup Language)

HTML forms the backbone of the project. It was used to:

- Structure all the web pages like login forms, registration page, quiz sections,
- Embed input fields, buttons, divs, links, and images,
- Connect forms to PHP actions using action="" and method="POST".

Mastering HTML helped in understanding proper use of tags, form validation structures, input types, semantic layout (headers, sections), and hyperlink routing.

4. CSS (Cascading Style Sheets)

CSS was used to design and enhance the visual experience of the ReadWeb project.

Key features implemented:

- Designing **responsive layouts**,
- Adding **shadows, hover effects, animations**,
- Stylizing input fields and buttons for modern UI,

- Applying **media queries** to support different screen sizes.

CSS made the forms, dashboard, and quiz screens look professional and appealing. It helped in understanding box model, flexbox layout, transitions, and pseudo-classes.

5. JavaScript

JavaScript brought interactivity and dynamic features to the project.

Major functionality achieved using JS:

- Switching between login and register tabs,
- Making quizzes function dynamically (show/hide questions),
- Form validations and visual effects,
- Event listeners for UI responsiveness.

It helped understand DOM manipulation, variable scoping, function definitions, and browser-based scripting.

6. VS Code (Visual Studio Code)

The entire codebase was written in **Visual Studio Code**, a powerful and lightweight IDE. It allowed:

- Easy integration of extensions for PHP and MySQL,
- Real-time linting and error tracking,
- Managing multiple files and folders through a clean project explorer.

7. XAMPP Server

To run the project locally, **XAMPP** was used — it provides Apache server, MySQL, and PHP in one bundle.

With XAMPP:

- The project was run on localhost,
- Database was managed using **phpMyAdmin**,
- Debugging was made easier through error logs and real-time execution.

8. GitHub & Online Resources

- **GitHub** was referred for understanding PHP projects.
- **Stack Overflow** and **W3Schools** were key for syntax issues and feature implementation.
- Learning was reinforced by watching YouTube videos on form handling, SQL integration, and full-stack login systems.

Final Outcome:

After working on this project, a complete understanding was gained of:

- How front-end and back-end communicate,
- Real-time data flow between browser and server,
- How secure login systems are built,
- How modular design and clean code practices improve maintainability.

This practical exposure laid the foundation for future projects using advanced frameworks like Laravel (PHP), React (JS), or Node.js for backend scripting.

4. DOMAIN KNOWLEDGE

4.1 Introduction:

- The education industry, especially the **EdTech domain**, is growing rapidly due to increased use of internet-connected devices. Technology is being used to transform traditional classroom learning into **flexible, accessible, and personalized digital learning experiences**.

- Today, students prefer **online platforms** over printed textbooks. These platforms allow them to access learning materials anytime, practice with quizzes, and revise concepts using interactive tools. The **COVID-19 pandemic** made online learning even more common, pushing schools, colleges, and students to adopt digital tools for teaching and studying.

- In this scenario, **e-learning websites** like **ReadWeb** play an important role. They give learners an easy way to read study notes and test their understanding through quizzes. These websites are available 24x7 and work on both mobile and desktop devices.

- Popular platforms such as **W3Schools, GeeksforGeeks, CodeWithHarry**, and **TutorialsPoint** provide similar services. But most of these are either complex for beginners or do not include a built-in quiz system. **ReadWeb** is specially designed to solve this problem by being simple, user-friendly, and providing **learning + practice in one place**.

- EdTech websites usually include features like **video lectures, practice questions, notes, progress tracking**, and sometimes even **certification**. While ReadWeb currently offers reading content and quizzes, it can later be expanded to include these advanced features too.

- This domain is not just about teaching, but also about helping students become **independent learners**, allowing them to study at their own pace, repeat concepts if needed, and feel more confident.

4.2 Advantages of Domain Knowledge

- **Understanding of learner needs**
  As a student myself, I understand what other students expect from a learning website. This helped in designing useful and relevant features.

- **Clear idea of industry trends**
  By observing current education websites, I understood what features are popular and what is missing. This helped me make ReadWeb better.

- **Time and effort saving**
  Since I already had basic web development knowledge, I was able to focus more on planning and logic building instead of spending too much time learning new tools.

- **Better planning for future upgrades**
  Knowing about the EdTech domain helps me plan the next versions of the site — like adding video content, login for teachers, or downloadable PDFs.

5. SYSTEM STUDY

5.1 Benefits of Proposed System

The proposed system, **ReadWeb – Learning Website**, is developed to cater to the needs of students who are looking for a free, easy-to-access, and efficient learning platform for coding and computer science concepts. It overcomes various limitations found in existing learning portals and focuses on delivering content in an organized, interactive format.

The following are the key benefits of the proposed system:

- **User-Friendly Interface:**
  The platform is designed with simplicity in mind, ensuring that even beginners can navigate easily without requiring prior experience with learning platforms.

- **Secure Login and Registration:**
  Only registered users can access the main features of the application. This ensures that user data remains secure and protected.

- **Interactive Learning Modules:**
  Learning materials are made available in a concise and engaging manner. Modules include structured notes, readable content, and a quiz system for evaluation.

- **Integrated Quiz System:**
  The platform provides a quiz feature that allows students to assess their understanding. This not only reinforces learning but also boosts self-confidence and preparedness for exams.

- **Newsletter Updates:**
  Students can subscribe to updates via a newsletter module to receive important announcements, tips, or newly added content.

- **Responsive Web Design:**
  The website is compatible with various screen sizes, including smartphones, tablets, and desktops. This allows students to learn on-the-go.

- **Backend Integration with MySQL:**
  All user-related and learning data is stored in a backend MySQL database, ensuring persistence and reliability.

6. PROBLEM DEFINITION & SCOPE OF PROJECT

Problem Definition

- This application is produced individually. So no any existing application is developed or updated or altered.

- So there is no any problem occurrence here only the thing is to get more publicity to the movie through the android smart phones.

6.1 Objective

Here primary objective of the ReadWeb project is to **build a comprehensive learning website for students** to:

- Read and understand core programming concepts,

- Get structured notes and coding material,

- Test their understanding through quizzes,

- Stay updated via newsletters and announcements.

This platform not only focuses on **delivering educational content** but also helps improve student engagement through interactive and responsive design.

6.2 Proposed System:

The proposed system, **ReadWeb – Learning Website**, is a fully functional educational web platform that focuses on helping students learn programming concepts through reading materials and quizzes. It is designed to be lightweight, fast, and accessible on any device with internet access.

The application is developed using **HTML, CSS, JavaScript, PHP, and MySQL** and can be deployed using **XAMPP or any PHP-supported server**.

Key features of the proposed system include:

- **Login & Registration:**
  Students can create an account and log in securely. Session handling ensures that only authenticated users can access the main learning modules.

- **Newsletter Subscription:**
  Users can enter their email to receive educational updates, tips, and new content notifications. The data is stored in the MySQL database.

- **Quiz Module:**
  Topic-wise quizzes are presented through interactive forms. Students can attempt quizzes, get results instantly, and repeat them for practice.

- **Dynamic Frontend + Backend:**
  The front end is designed with clean HTML/CSS, while the backend uses PHP and MySQL to store and retrieve data dynamically.

- **Responsive Layout:**
  The application is mobile-friendly and can run smoothly on desktops, laptops, and mobile devices with responsive layout design.

7. REQUIREMENT ANALYSIS

7.1 Analysis

- Requirements are descriptions of the services that a software system must provide and the constraints under which it must operate.
- Requirements can range from high-level abstract statements of services or system constraints to detailed mathematical functional specifications.
- Requirements Engineering is the process of establishing the services that the customer requires from the system and the constraints under which it is to be developed and operated.

Requirements can be classified in following category

- User Requirement.
- Functional Requirement
- Non-Function Requirement
- System Requirement

System Requirements

- This application should be available on standard web browsers and does not require installation on the user's system.
- It should be used by individuals familiar with basic internet usage and computer operations.
- The application must run on systems having XAMPP or any PHP-supported local server environment.
- A stable internet connection is required for newsletter subscriptions and accessing quiz content when hosted online.

7.2 Feasibility Study

As we know each and every project need to have a feasibility study for the complete understandability of the project. We will consider feasibility study it is technical feasibility and economical feasibility.

The system feasibility can be divided into various checkpoints:

- Technical feasibility
- Economical feasibility

Technical Feasibility:

- This deals with the hardware to be used in the proposed system, which should be economical reliable and easily maintainable. This raises a few questions to availability of the equipments and its delivery timing.

Economical Feasibility:

- Economical feasibility study is the most frequently used technique for evaluating the effectiveness of the proposed system. The approach that we followed for the economic feasibility checking was COST-BENEFIT ANALYSIS the procedure is to determine the benefits and saving and compare them with the costs it benefits outweigh costs, a decision is taken to design and implement the system.

7.3 Minimum Hardware Requirements

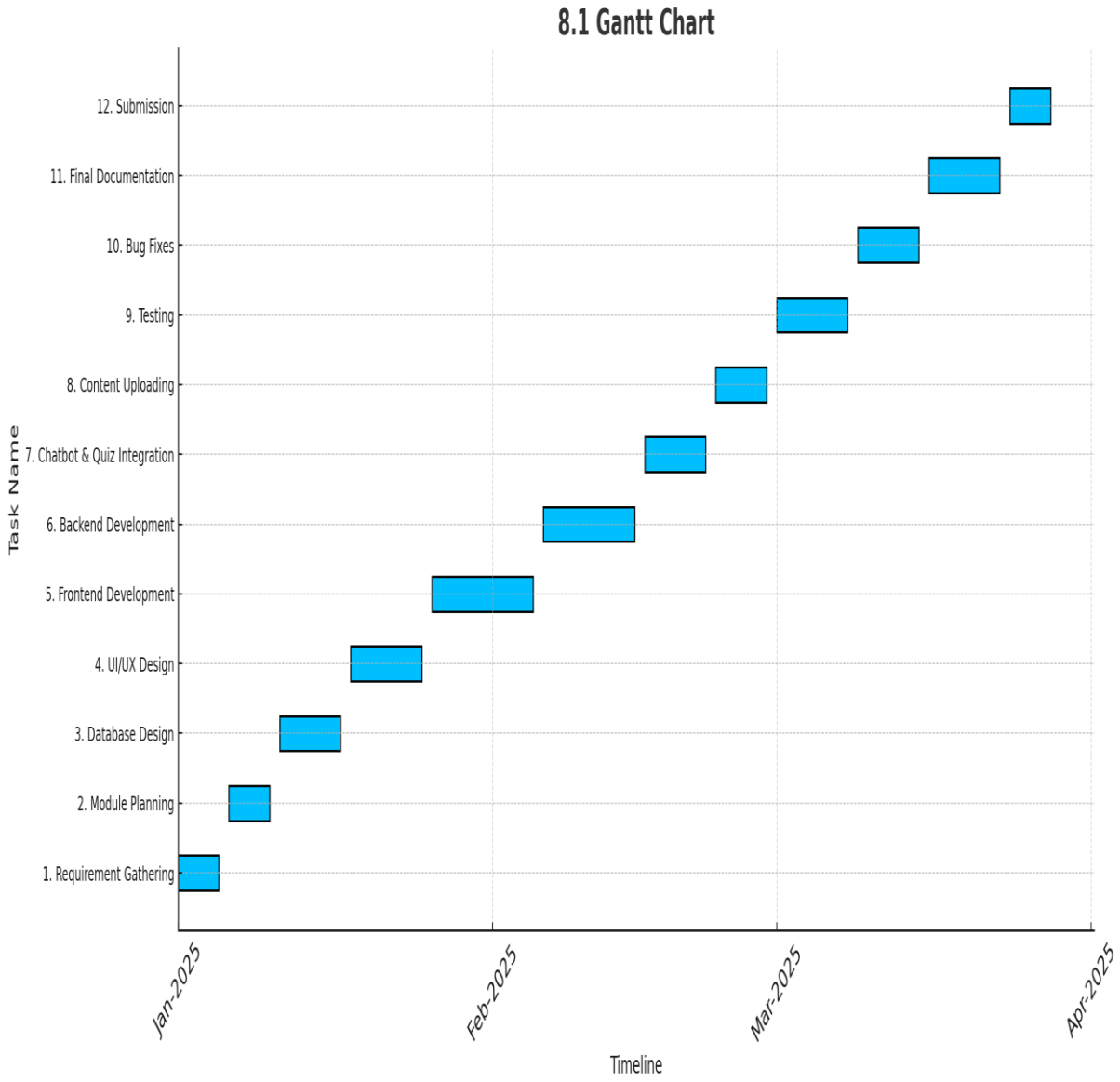
- **Processor:** Intel Core i3 or above
- **RAM:** Minimum 2 GB (Recommended 4 GB)
- **Hard Disk:** 500 MB of free storage
- **Monitor Resolution:** 1024x768 or higher
- **Internet Connection:** Required for newsletter and quiz content updates

7.3 Software Requirements

- **Operating System:** Windows 10 / 11, Linux (Ubuntu/Fedora), or macOS
- **Web Server:** Apache (via XAMPP / WAMP / LAMP stack)
- **Database Server:** MySQL
- **Server-side Language:** PHP 7.0 or higher
- **Frontend Technologies:** HTML5, CSS3, JavaScript
- **Browser Support:** Google Chrome, Mozilla Firefox, Microsoft Edge
- **IDE / Code Editor:** Visual Studio Code / Sublime Text / Notepad++
- **Database Tool:** phpMyAdmin (for managing MySQL database)

8. ESTIMATION AND PLANNING

8.1GanntChart



9.METHODOLOGY

9.1 Spiral Model

The **Spiral Life Cycle Model** is a type of **iterative software development model** which is generally implemented in high risk projects. It was first proposed by Boehm. In this system development method, we combine the features of both, waterfall model and prototype model. In Spiral model we can arrange all the activities in the form of a spiral.

9.2 Objective of Spiral Model

Each loop in a spiral represents a development phase and we can have any number of loops according to the project.

To determine the objectives, alternatives and constraints.

We try to understand the product objectives, alternatives in design and constraints imposed because of cost, technology, schedule, etc.

Risk analysis and evaluation of alternatives.

Here we try to find which other approaches can be implemented in order to fulfill the identified constraints.Operational issues are addressed here. Risk mitigation is in focus in this phase. And evaluation of all these factors determines future action.

Execution of that phase of development.

In this phase we develop the planned product. Testing is also done. In order to do development, waterfall or incremental approach can be implemented.

Planning the next phase.

Here we review the progress and judge it considering all parameters. Issues which need to be resolved are identified in this phase and necessary steps are taken. Subsequent loops of spiral model involve similar phases. Analysis and engineering efforts are applied in this model. Large, expensive or complicated projects use this type of life cycle. If at any point of time one feels the risk involved in the project is a lot more than anticipated, one can abort it. Reviews at different phases can be done by an in-house person or by an external client.

Advantages of Spiral Model.

- Spiral Life Cycle Model is one of the most flexible SDLC models in place. Development phases can be determined by the project manager, according to the complexity of the project.

- Project Monitoring is very easy and effective. Each phase, as well as each loop, requires a review from concerned people. This makes the model more transparent.

- Risk management is one of the in-built features of the model, which makes it extra attractive compared to other models.

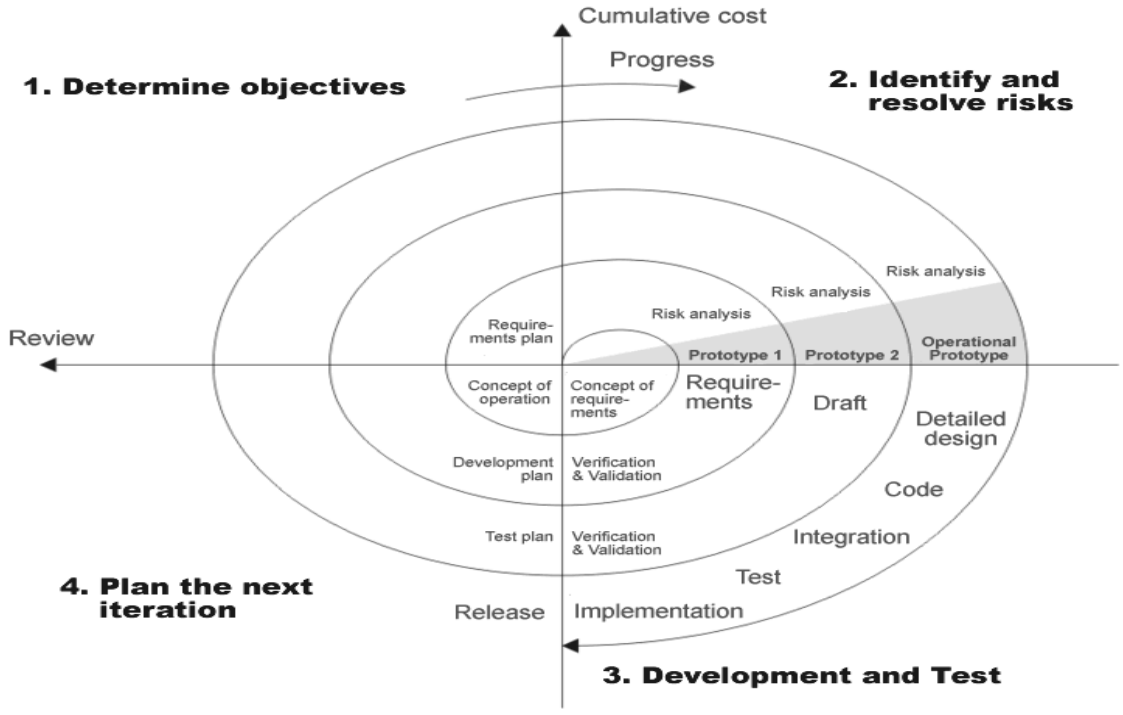
- Changes can be introduced later in the life cycle as well. And coping with these changes isn't a very big headache for the project manager.

- Project estimates in terms of schedule, cost etc become more and more realistic as the project moves forward and loops in spiral get completed.

- It is suitable for high risk projects, where business needs may be unstable. A highly customized product can be developed using this.

Phases of Spiral Model

- **Plan:** In this phase, the objectives, alternatives and constraints of the project are determined and are documented. The objectives and other specifications are fixed in order to decide which strategies/approaches to follow during the project life cycle.
- **Risk Analysis:** This phase is the most important part of "Spiral Model". In this phase all possible (and available) alternatives, which can help in developing a cost effective project are analyzed and strategies are decided to use them. This phase has been added specially in order to identify and resolve all the possible risks in the project development. If risks indicate any kind of uncertainty in requirements, prototyping may be used to proceed with the available data and find out possible solution in order to deal with the potential changes in the requirements.
- **Engineering:** In this phase, the actual development of the project is carried out. The output of this phase is passed through all the phases iteratively in order to obtain improvements in the same.
- **Customer Evaluation:** In this phase, developed product is passed on to the customer in order to receive customer's comments and suggestions which can help in identifying and resolving potential problems/errors in the software developed. This phase is very much similar to TESTING phase.



10. Operating Tools and Development Environment

The tools and technologies used play a critical role in the development of any software project. They not only determine the structure and efficiency of the code but also impact the user interface, functionality, performance, and deployment of the application. For the development of the **ReadWeb – Learning Website**, a wide range of tools were carefully selected based on the nature of the project and the features to be implemented.

This chapter highlights the primary tools, programming languages, environments, and frameworks used throughout the lifecycle of the ReadWeb project. The tools mentioned here were essential in ensuring that the application worked efficiently across different browsers and provided a responsive experience to end-users.

10.1 PHP

PHP is a server-side scripting language designed specifically for web development. It plays a vital role in the backend development of dynamic websites. In this project, PHP was used to manage user authentication (login/register), newsletter submission, feedback handling, and connecting with the MySQL database.

All the core functionalities such as form submissions, validation, session management, database CRUD operations, and redirection logic were written in PHP. Its simplicity and integration with MySQL made it the most suitable backend language for the ReadWeb platform.

Additionally, PHP helped separate frontend design from backend logic, which made the code easier to manage and debug. Error reporting in PHP was helpful during the development and testing phases.

10.2 MySQL

MySQL is an open-source relational database management system widely used for managing and storing structured data. In this project, MySQL was used to store registered users' details, login credentials, newsletter subscriber emails, and other dynamic content.

The integration of MySQL with PHP using mysqli_connect() allowed real-time data interaction. All tables were designed using normalization to maintain data integrity and avoid redundancy. With phpMyAdmin, developers were able to create, alter, and inspect tables during development and testing phases.

HTML

HTML5 (HyperText Markup Language) is the backbone of all web pages. It was used to create the structure of every single page in the ReadWeb application. From the login form to the quiz layout, HTML provided the basic skeleton of the platform.

Using semantic tags such as <header>, <form>, <input>, , and <section>, the layout was built to be clean and accessible. HTML also facilitated linking pages, embedding images, and integrating forms with PHP scripts via the POST method.

declare your layout in XML. If you're interested in instantiating View objects at runtime, refer to the ViewGroup and View class references.

CSS

CSS3 (Cascading Style Sheets) was used for designing and styling the user interface of the application. It enhanced the aesthetic appeal of the pages by applying colors, gradients, animations, and responsive design principles.

10.3 JavaScript

JavaScript is a client-side scripting language that adds interactivity to static HTML pages. It was used in this project to perform various actions such as:

- Switching between login and registration forms.
- Validating checkbox input during registration.
- Toggling menus in mobile view.
- Displaying quiz questions dynamically.
- Enhancing the user interface through real-time feedback and form control.

JavaScript improved the user experience by making the platform more interactive and user-friendly.

Visual Studio Code

Visual Studio Code (VS Code) is a powerful source-code editor developed by Microsoft. It was used as the primary Integrated Development Environment (IDE) for writing code in PHP, HTML, CSS, and JavaScript.

Key features of VS Code that helped during the development include:

- Syntax highlighting and error detection.
- Integrated terminal and live server support.
- GitHub integration for version control.
- Auto-complete and extensions for PHP and database connectors.

VS Code helped in managing files efficiently and improving productivity throughout the project.

10.4 XAMPP Server

XAMPP is a free and open-source cross-platform web server solution stack package that includes Apache, MySQL, PHP, and Perl. It allowed the ReadWeb website to run locally before deployment.

XAMPP created a **localhost environment** where all PHP files could be tested with database connectivity. Its control panel made it easy to start/stop services like Apache and MySQL, and ensured that the full web stack worked together smoothly.

phpMyAdmin

phpMyAdmin is a browser-based tool written in PHP used for managing MySQL databases. It provided a graphical user interface to:

- Create and modify tables,
- Execute SQL queries,
- Browse records,
- Backup and export databases.

This tool simplified database management during development, especially for creating login systems and storing quiz or feedback data.

By using this combination of open-source tools, modern web languages, and local server environments, the development of ReadWeb was completed efficiently with all essential functionalities working as intended. The selected tools ensured **cross-platform compatibility, ease of development**, and a **responsive design**, making the system reliable and expandable for future enhancements.

11. DESIGINING

Overview

Design document define the overall flow and working concept of the system which will be implemented. There are different approaches of creating design document, one among widely used is UML (Uniform Modeling Language). In order to design the this application, firstly identify all the required interfaces/screens. This results in to documented concept that describes the flow of Application. The concept is then converted into design document with UML diagrams. UML is modeling language used to specify, visualize, modify, construct, and document the artifacts of an object oriented system under development. UML combines technique from data modelling (entity relationship diagrams), business modelling (work flows), object modelling, and component modelling. It can be used with all processes, throughout the software development life cycle, and across different implementation technologies. UML diagrams represent two different views of a system model: Static (or structural) view: Emphasizes the static structure of the system using objects, attributes, operations and relationships. The structural view includes:

- Class diagrams
- Composite structure diagrams
- Sequence diagram

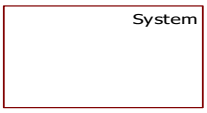
11.1 Use Case Diagram:

Use case diagram Description:

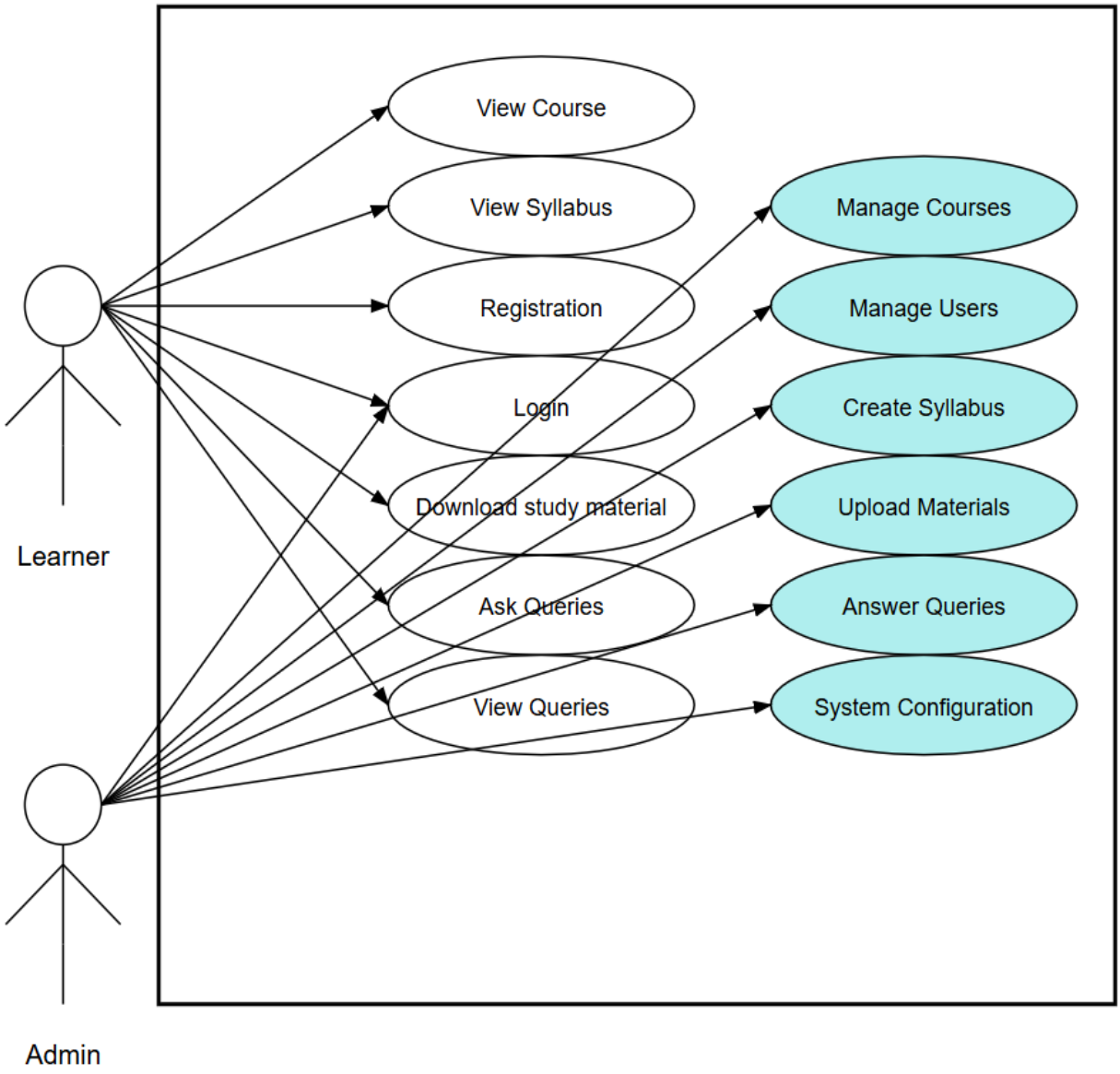
A use case diagram depicts participation relationships between actors and use cases. The diagram has an association between an actor and each use case in which the actor participates. This diagram contains three basic components:

- SystemActor
- Usecase

Notations used in Use case diagram are as follows:

Tool Name	Notation	Description
System		System boundary where all use cases will reside.
User		Actor which uses the system.
Use Case		It is generally function or process in the system.
Association		It shows direct association between actor and use cases.

System Use-Case:

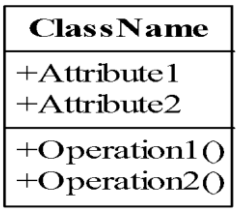
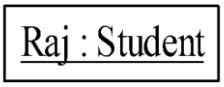
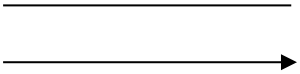


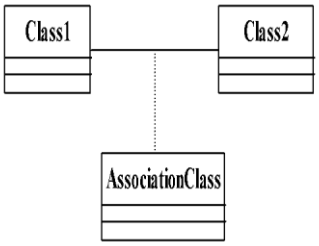
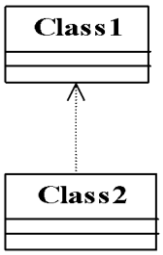
11.2 CLASS DIAGRAM:

Description:

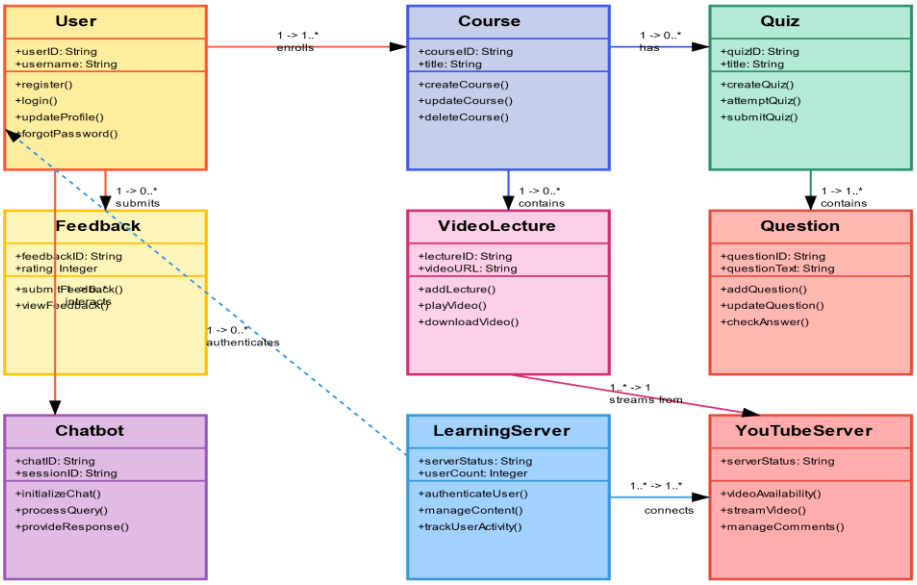
A Class diagram is a visual representation of an application showing its classes and the relationships between those classes. When you open a Class diagram, the IDE displays a specific selection of UML element icons in the Modeling Palette. Using the Class diagram model, you describe the static structure of the elements in your application. The IDE lets you graphically create diagrams that contain classes. The classes are arranged in hierarchies that share common structure and behavior and are associated with other classes.

Notations used in Class Diagram are as follows:

Tool Name	Notation	Description
Class		A *class* defines a collection of similar instances. It exists at compilation time and serves as a type. It defines the interface and implementation of its instances.
Object		An object is a particular instance of a class. Each object represents a particular instance of something in the problem or solution domain and is created as needed.
Association		An association is a relationship between classes in a class diagram.

Association Class		An association can be modeled as a class. Each instance of the class represents a link between objects. An association class is like any other class except that its instances represent links. It can have independent behaviors, and it can be associated with other classes.
Dependency		A dependency is a “catch all” relationship. It can appear in any diagram and is used to model different kinds of relationships.

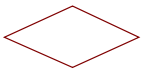
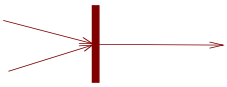
Class Diagram



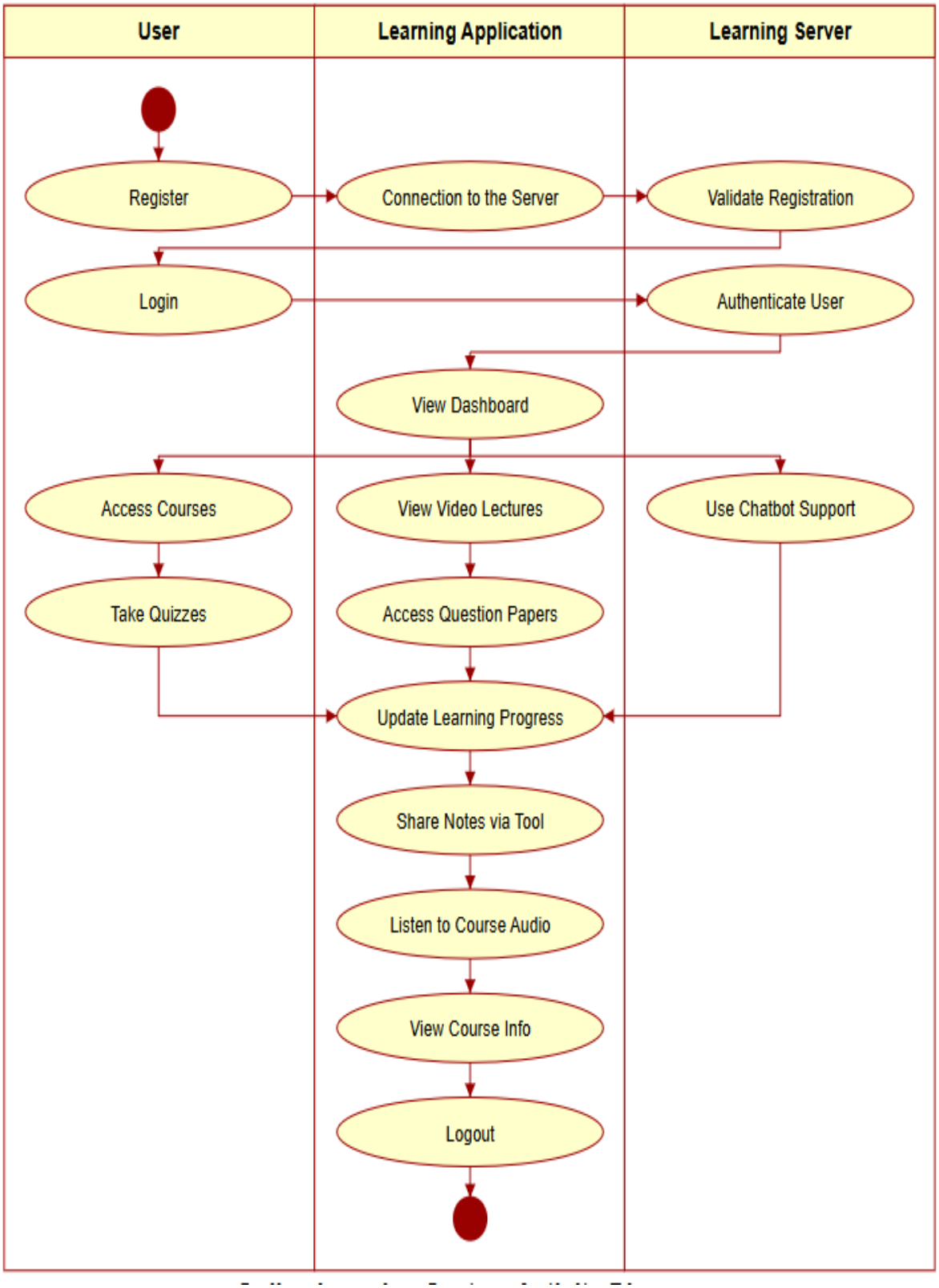
11.3 Activity Diagram:

An activity diagram depicts a workflow view of activities. You can also draw a system-level activity diagram in which each use case is modeled as an activity. That activity diagram specifies the temporal sequencing of the use cases.

Notations used in Activity diagram are as follows:

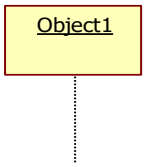
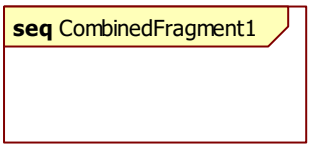
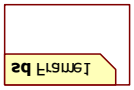
Tool Name	Notation	Description
Initial State		The initial state of the activity.
Action State		Represents the activity.
Decision		One activity conditionally follows another activity.
Synchronization		Multiple activities either follow or precedes synchronization bar.
Transition		Shows the flow between activities.
Signal send state		Used to send the signals.
Flow final		Shows the final flow of activity.
Final state		Shows the final state i.e. end of activity.

Activity diagram:

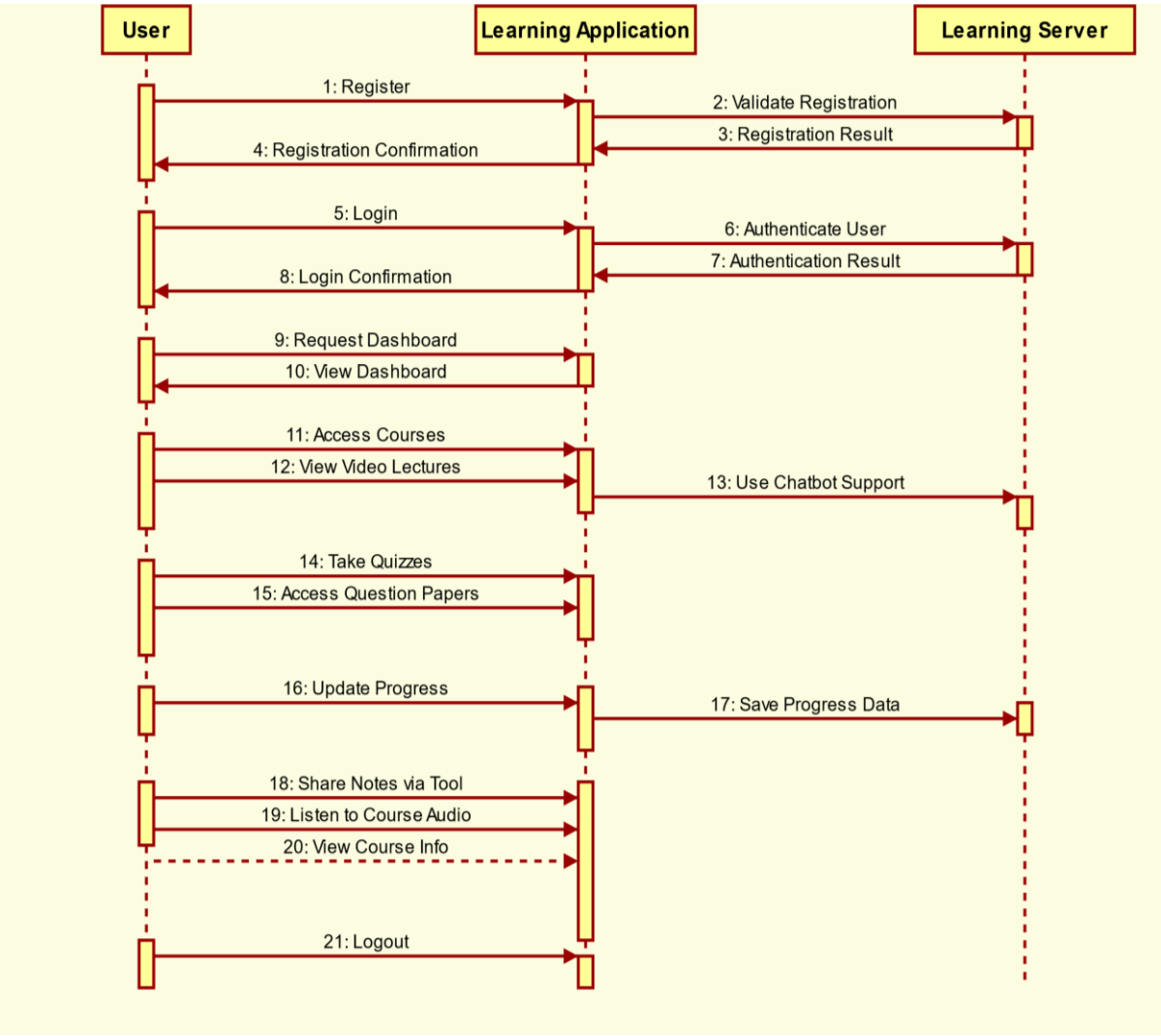


11.4 Sequence Diagram

A sequence diagram is an interaction diagram that details how operations are carried out: what messages are sent and when. Sequence diagrams are organized according to time. The time progresses as you go down the page. The objects involved in the operation are listed from left to right according to when they take part in the message sequence.

Tool Name	Notation	Description
Object		Represents an individual participant in a sequence diagram.
Stimulus		Messages are displayed as arrows.
SelfStimulus		Represent a recursive call of an operation, or one method calling another method belonging to the same object.
Combined Fragment		A combined fragment is one or more processing sequence enclosed in a frame and executed under specific named circumstances.
Interaction Operand		an interaction operand is a container that groups the interaction fragments in a combined fragment and that represents a scenario that you add to a combined fragment.
Frame		

Sequence Diagram:



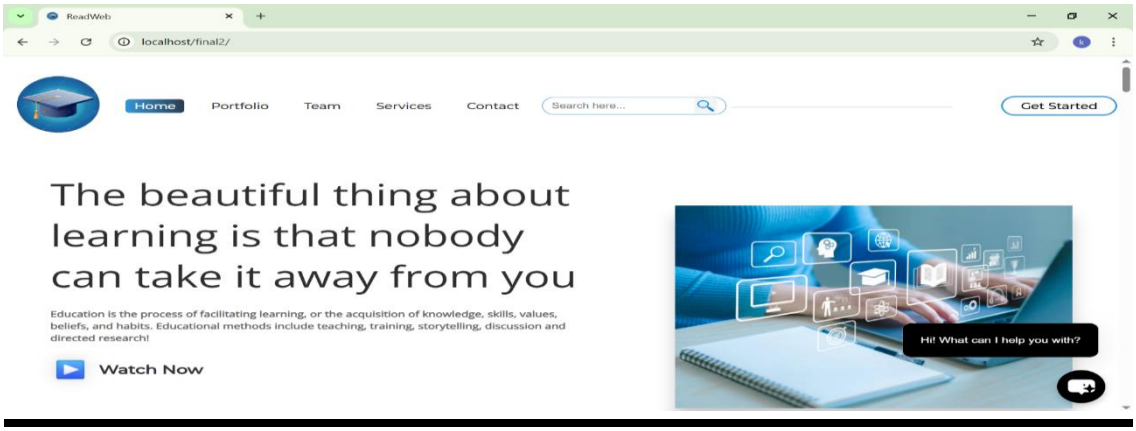
12.Implementation

12.1 Screenshots

- **Splash Screen**

Description:

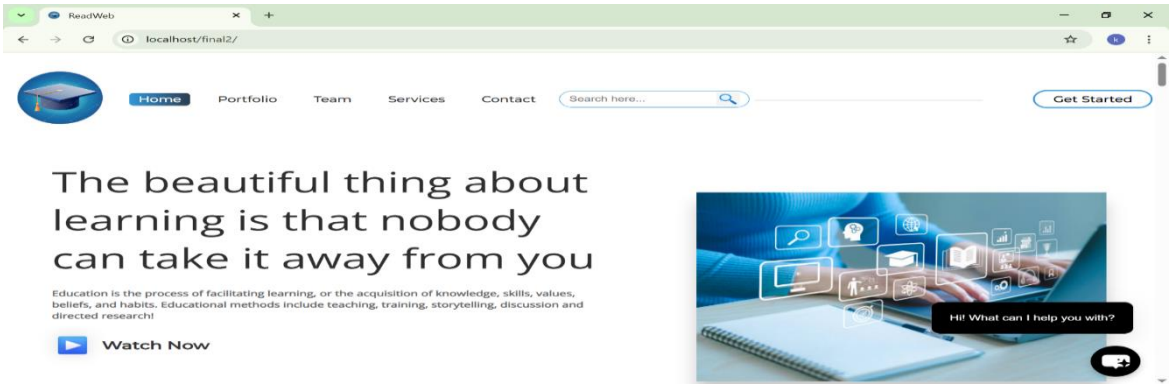
Splash screen appear when we go to website.



- **Dashboard**

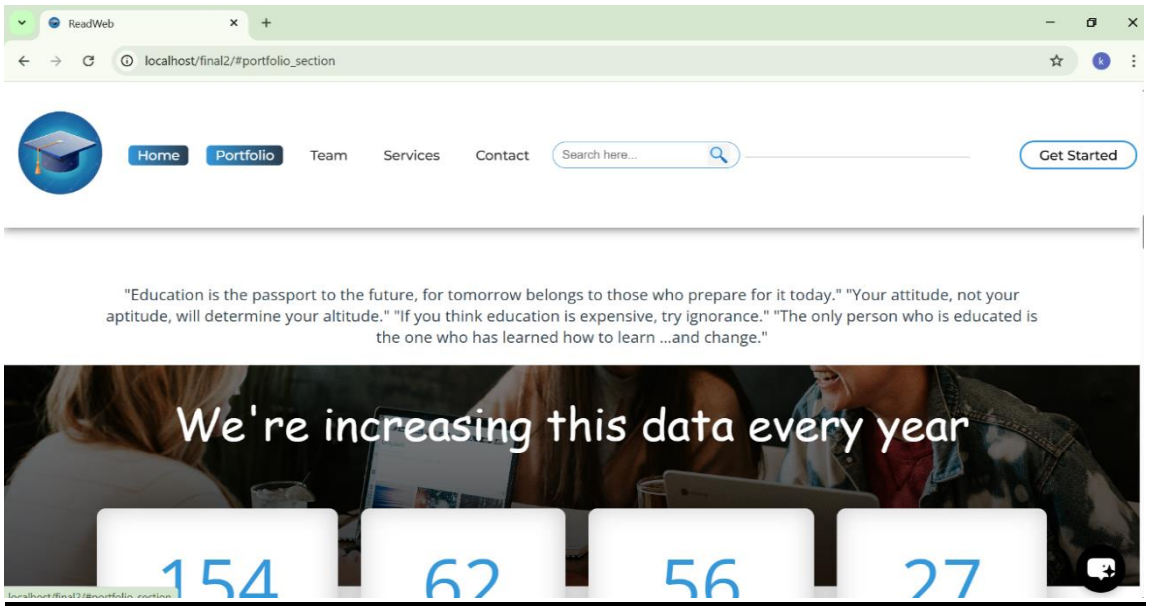
Description:

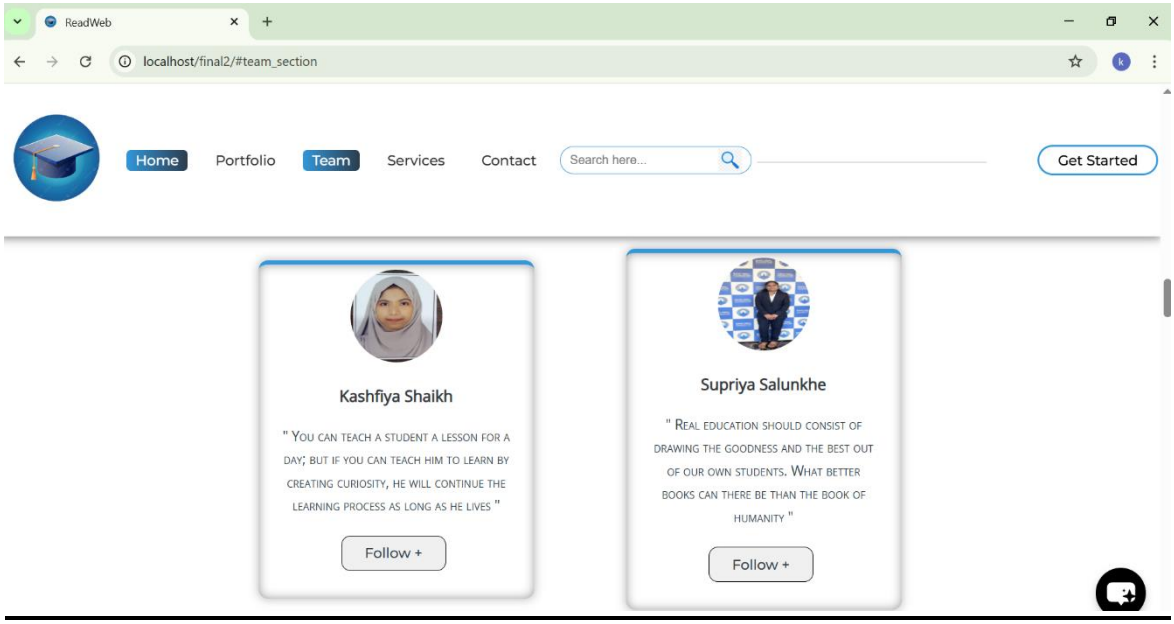
Dashboard is Main screen of the project. All the brands with their slides also filter option are displayed on Dashboard with proper alignment Dashboard is nothing but Home screen of project.

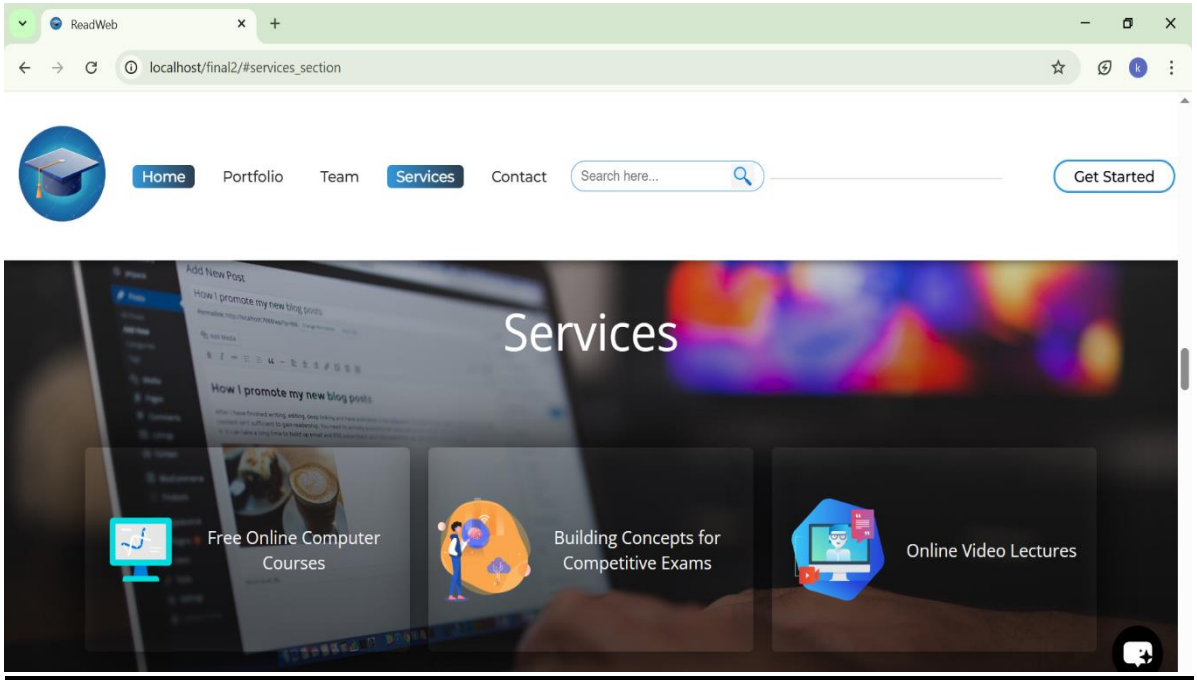


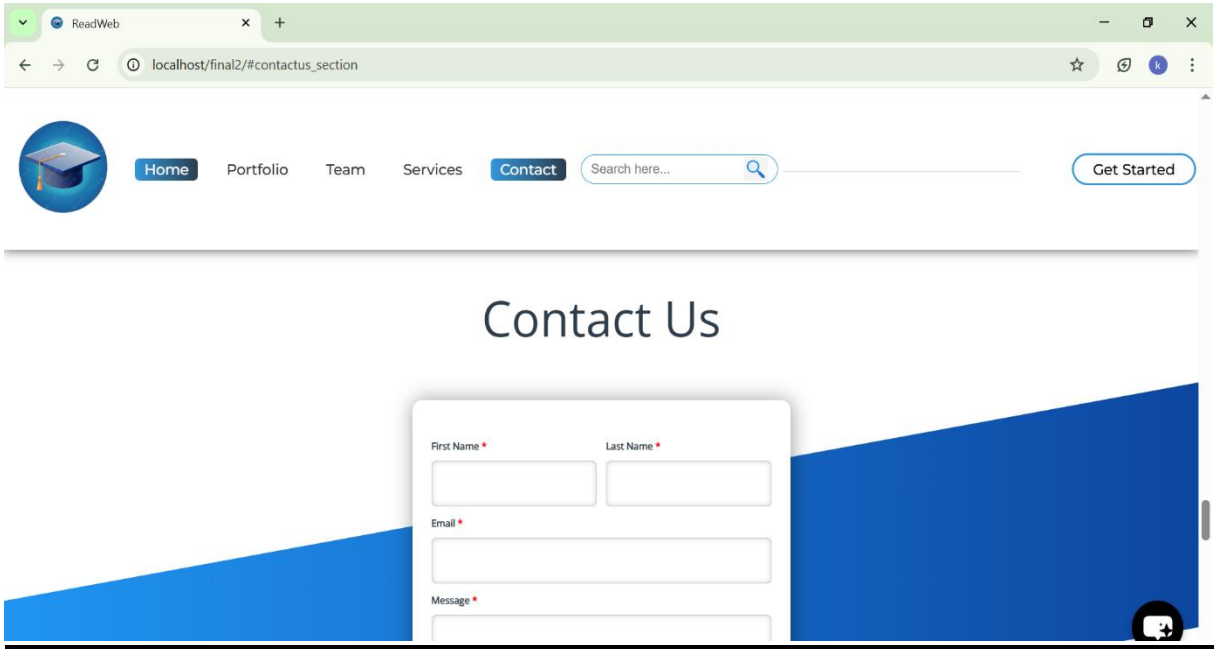
Description:

On **Navigation menu** there are options like home,portfolio,team,services contact,by clicking on this option yu can redirect in the same .





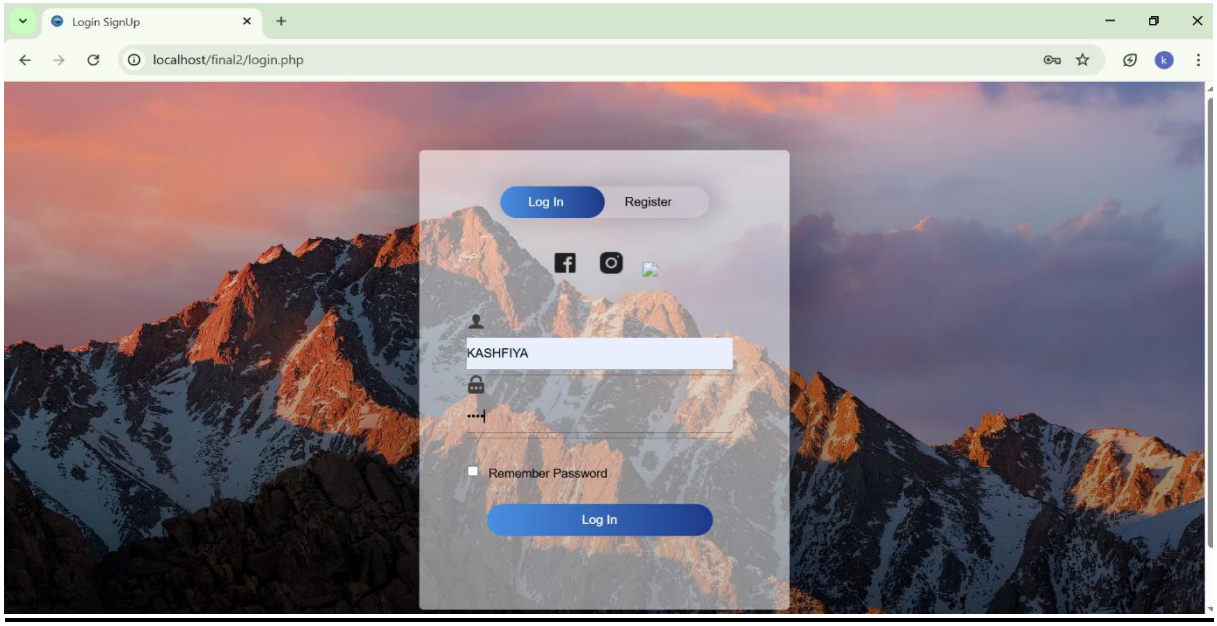

ReadWeb
localhost/final2/#services_section
Home
Portfolio
Team
Services
Contact
Search here...
Get Started
Services
Free Online Computer Courses
Building Concepts for Competitive Exams
Online Video Lectures

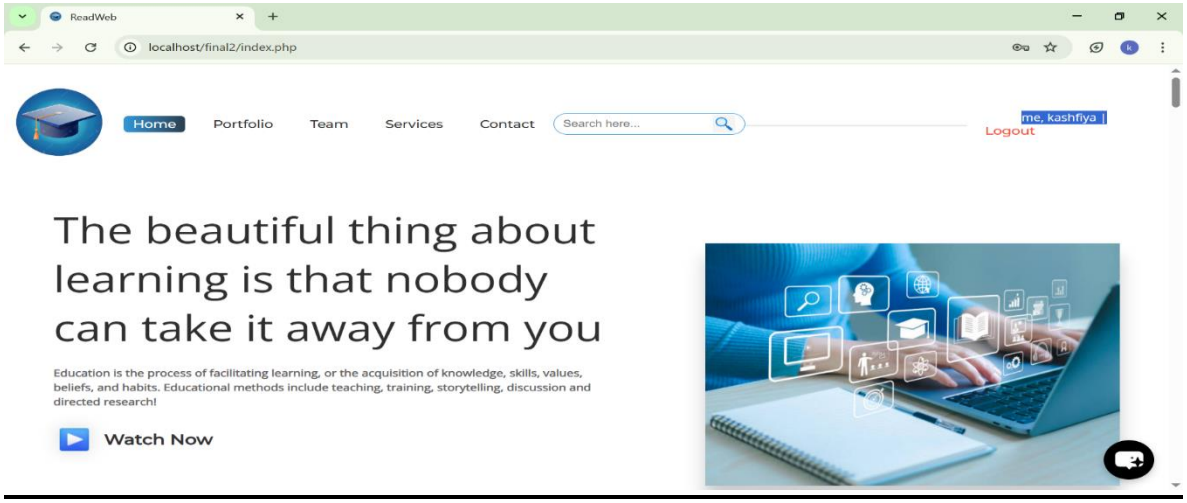

ReadWeb
localhost/final2/#contactus_section
Home
Portfolio
Team
Services
Contact
Search here...
Get Started
Contact Us
First Name *
Last Name *
Email *
Message *

➢ Login And Register Screen:

Description:

When youclick on get started button ,login and register form will open ,you can Easily login and register your self.

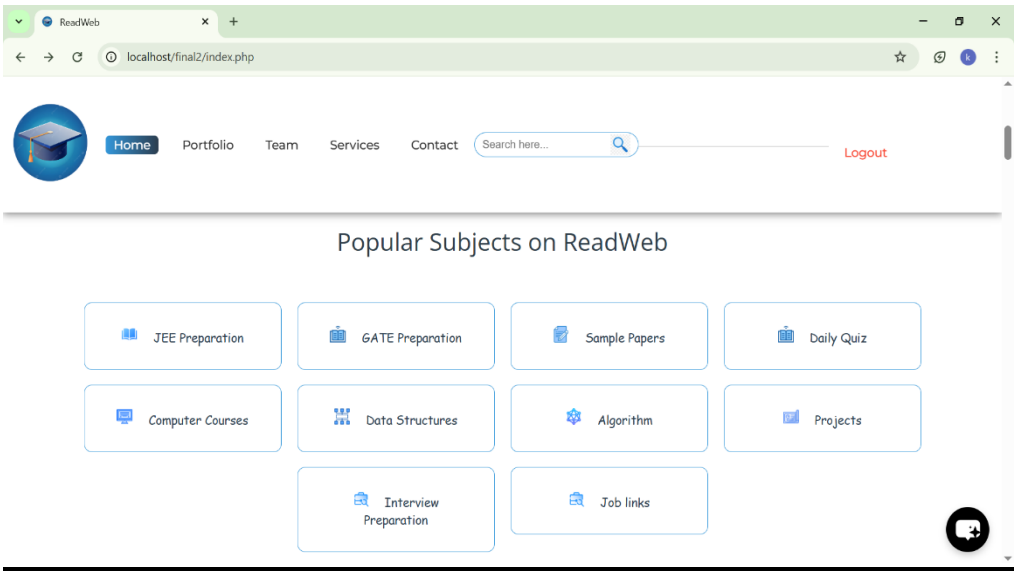


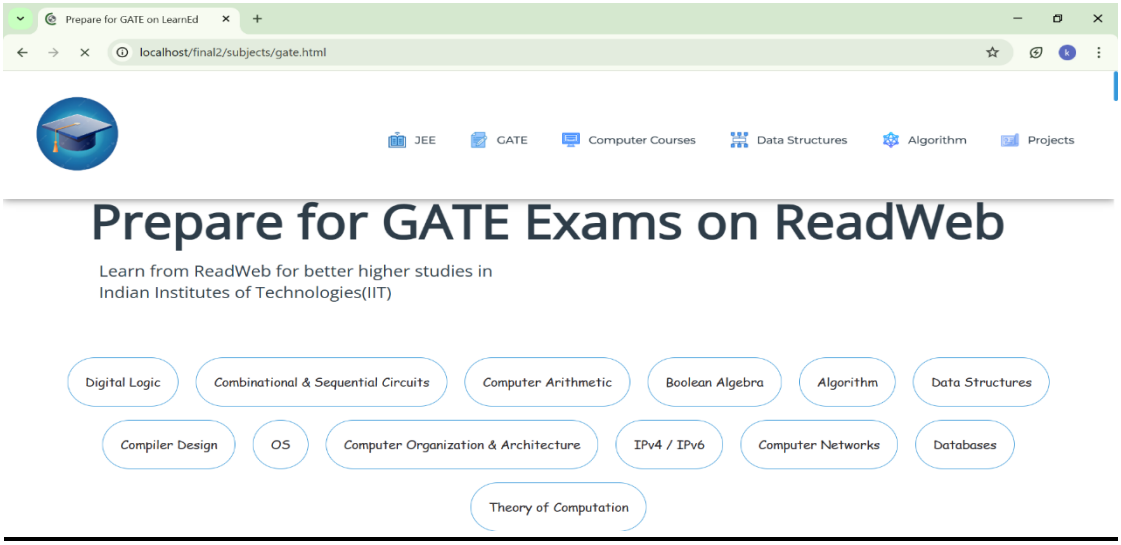


➢ Popular Subjects Screen

Description:

When you click on popular subjects There will be opend multiple subjects like jee preparation,Codinf courses etc.

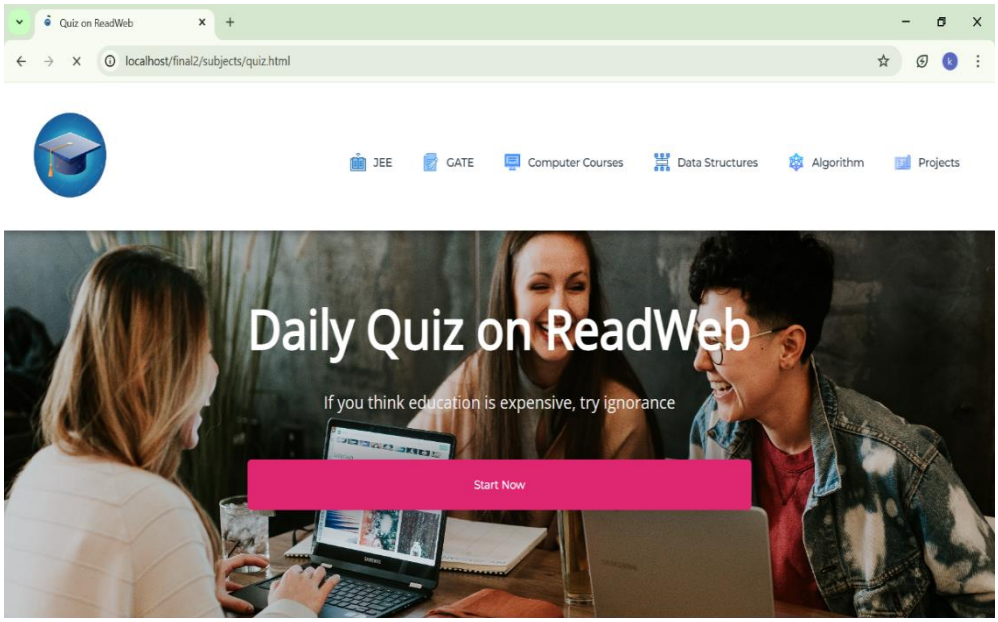




➢ Quiz Screen

Description:

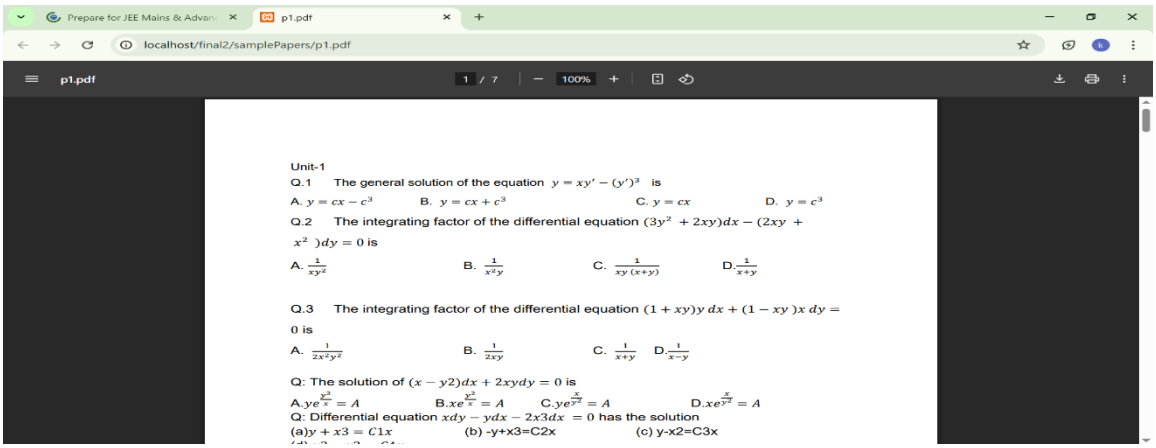
When you click on quiz option you will got to the page of Quiz for entrance exam subjects like JEE etc.



➢ Question paper Screen

Description:

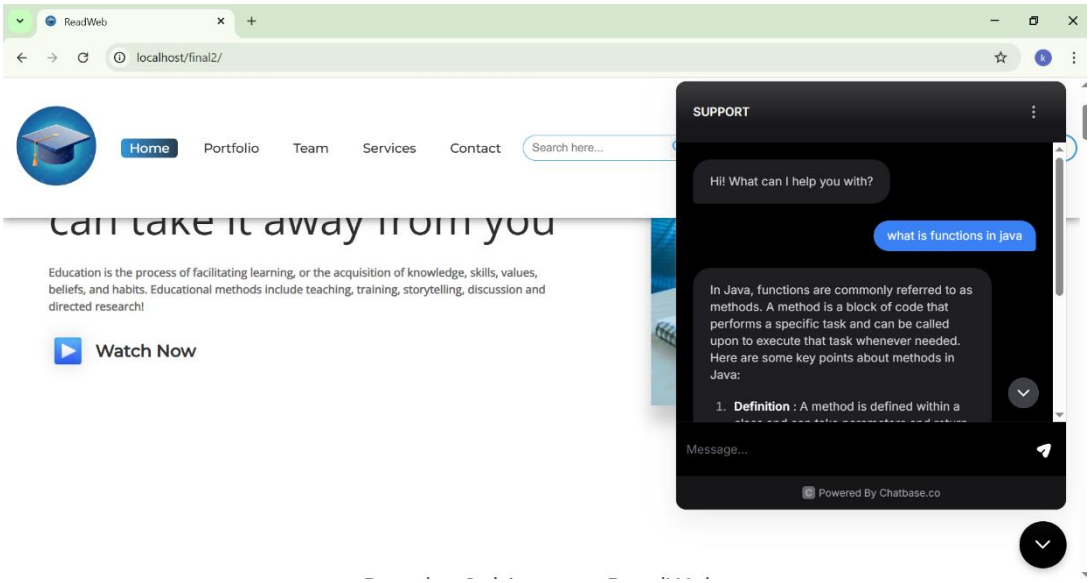
When you click on question paper option ,then you will get Question papers of multiple years .



➢ Chatbot screen

Description:

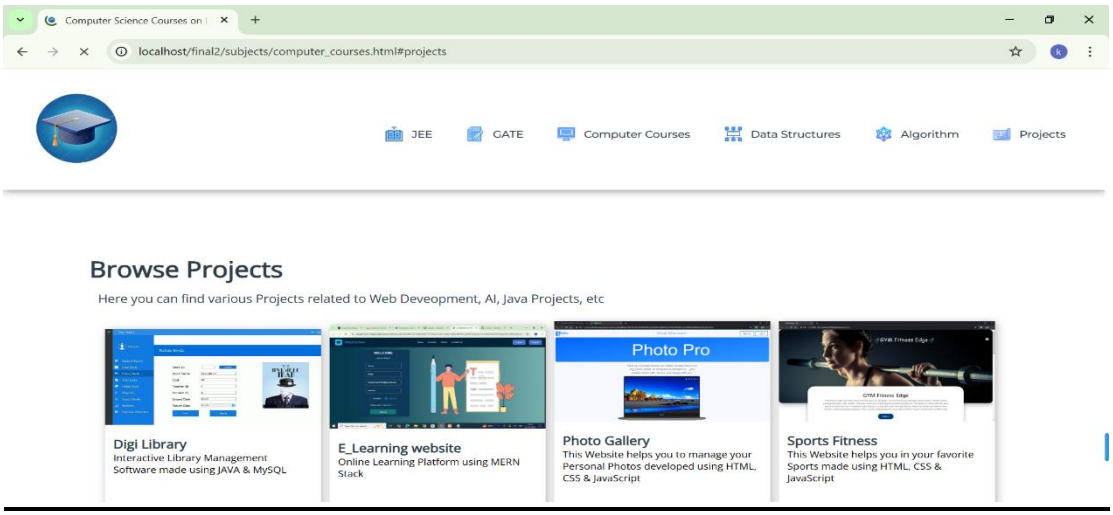
At home screen ,u can see symbol of chatbot which is black box, when you will click on that box ,chatbot will open and then you ca resolve your doubt by asking questions.



➢ Projects Screen

Description:

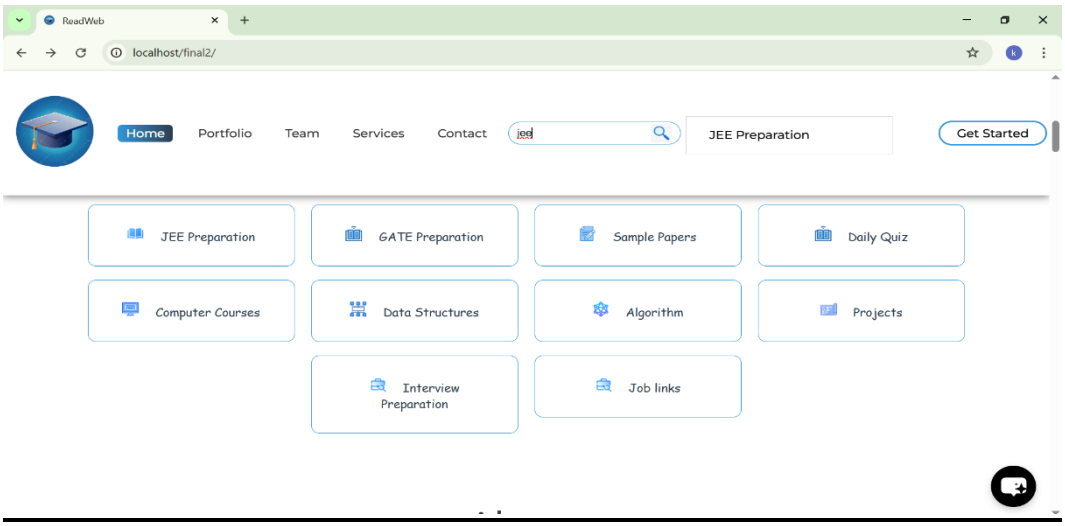
On home page there is option of projects ,when you will click on the same, there will be open multiple projects from GitHub, which can be access by anyone.



➢ Search bar Screen

Description:

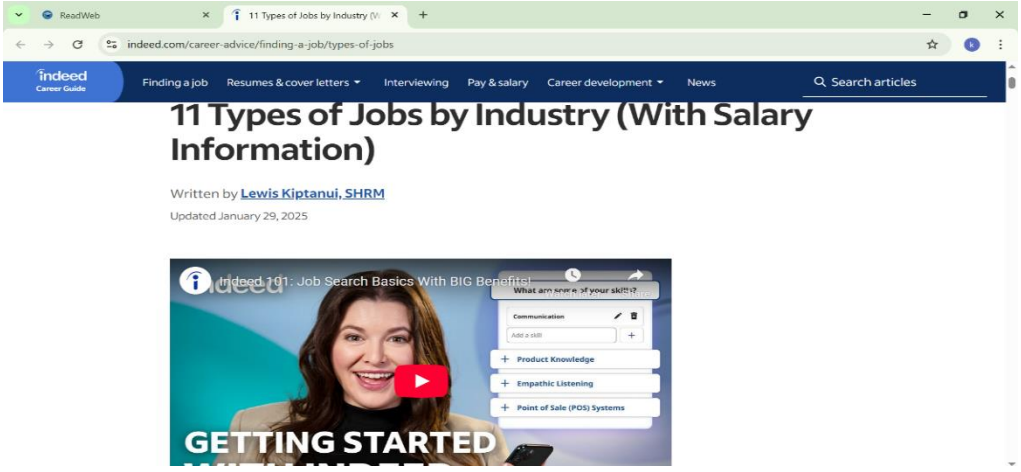
At the top of home page ,there is seach bar ,where you can search subjects present on ReadWeb Website.



➢ Job Links Screen

Description:

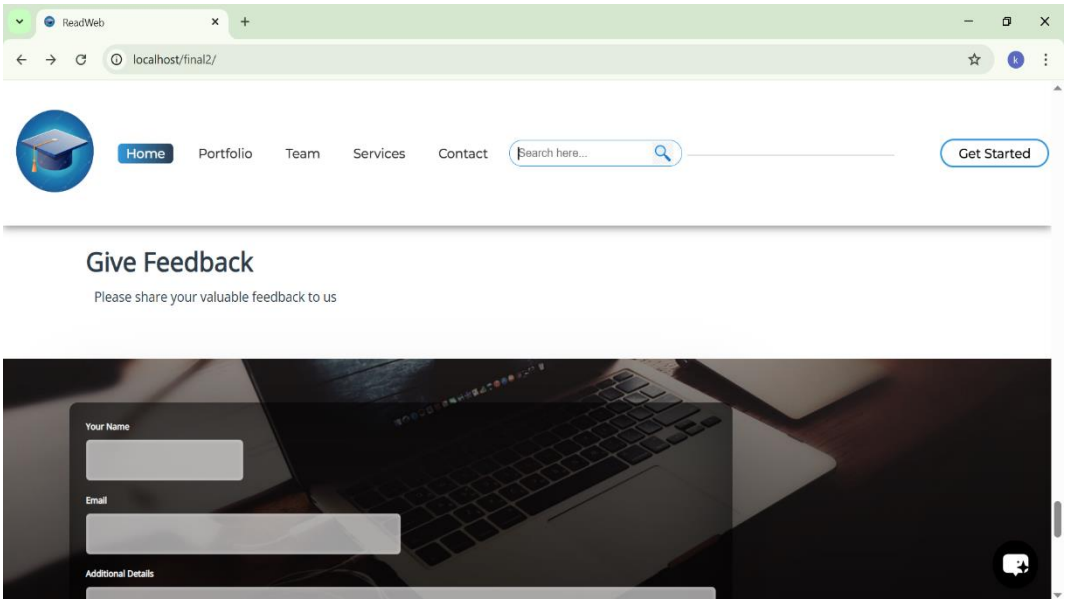
At home page, there is option of Job links, when you click on it, you will be redirected to the website,where you can find various jobs and internships.



➢ FeedBack Screen

Description:

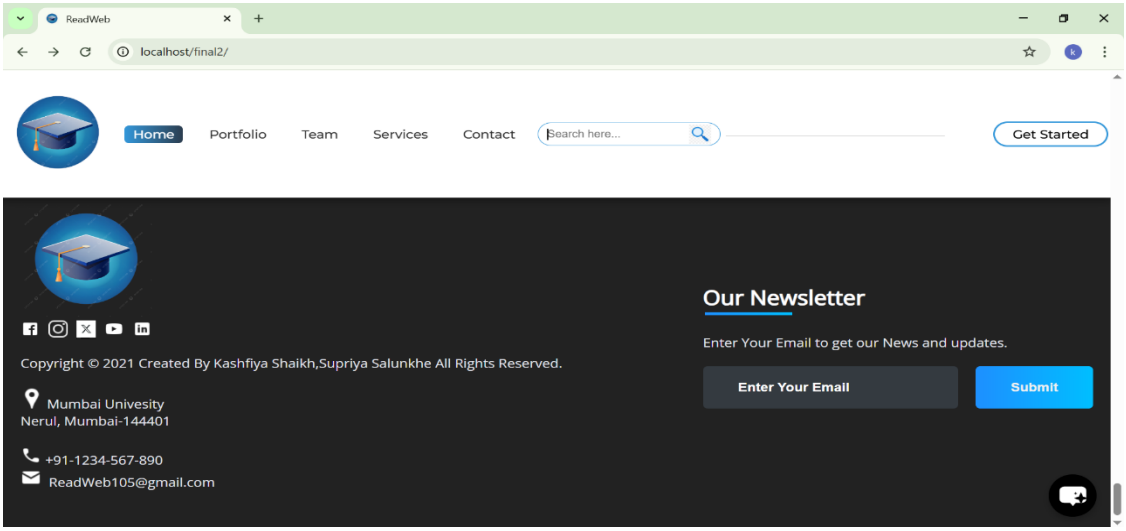
When you scroll home page, there is Feedback Form ,where you can give us Feedback about the website.



➢ Newsletter Screen

Description:

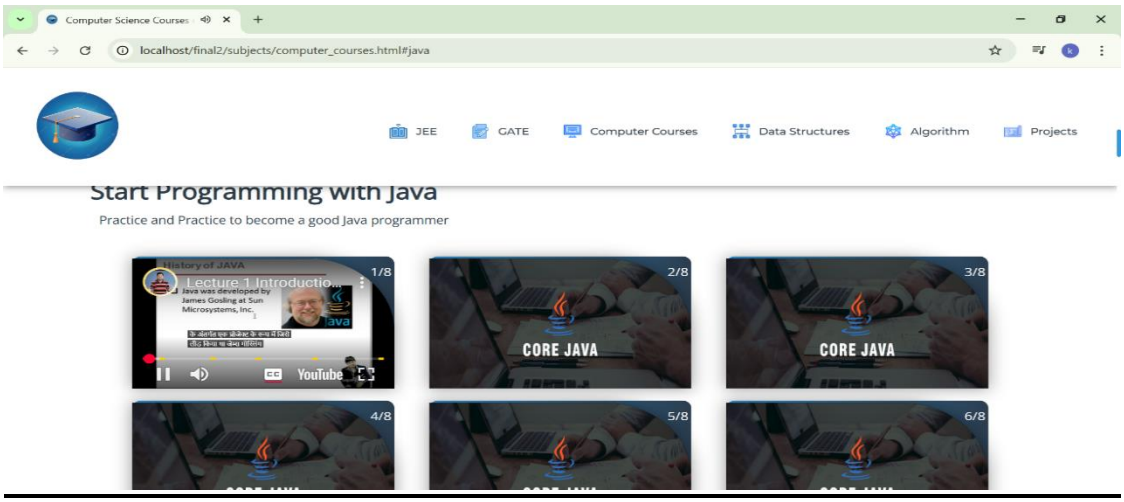
Beside the feedback form there is newsletter,from where you can subscribe and can get our daily update by email.



- **Video Lectures Screen**

Description:

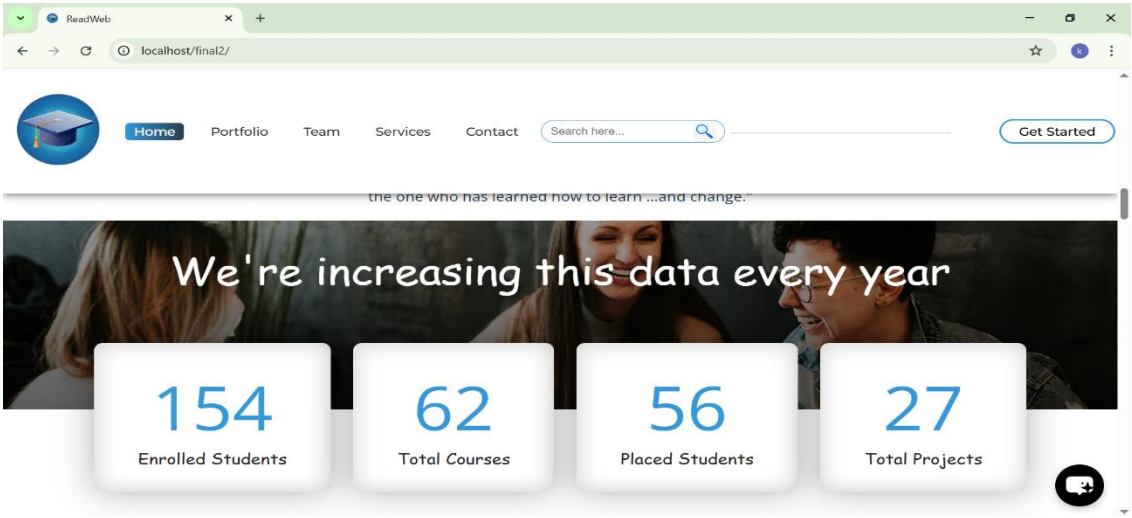
When you click on Computer Science Corses then tou Scroll that page You will Get video lectures **of Data Structure,JavaScript,Python,Core Java,C++,Web Development .**



- **<u>Portfolio Screen</u>**

Description:

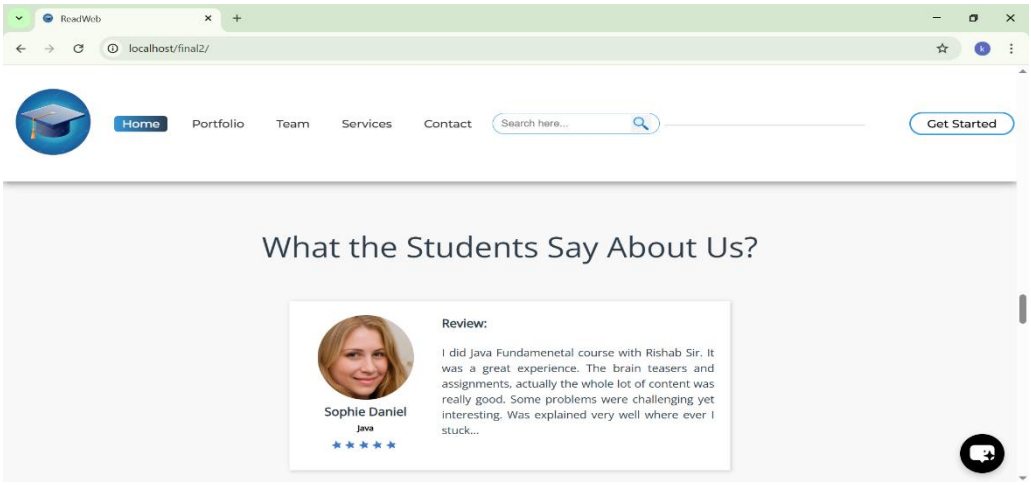
When you Scroll the home page you get portfolio section, where you will get information about hoe much projects are there, how many students are learning from this website etc.



➢ Review Section Screen

Description:

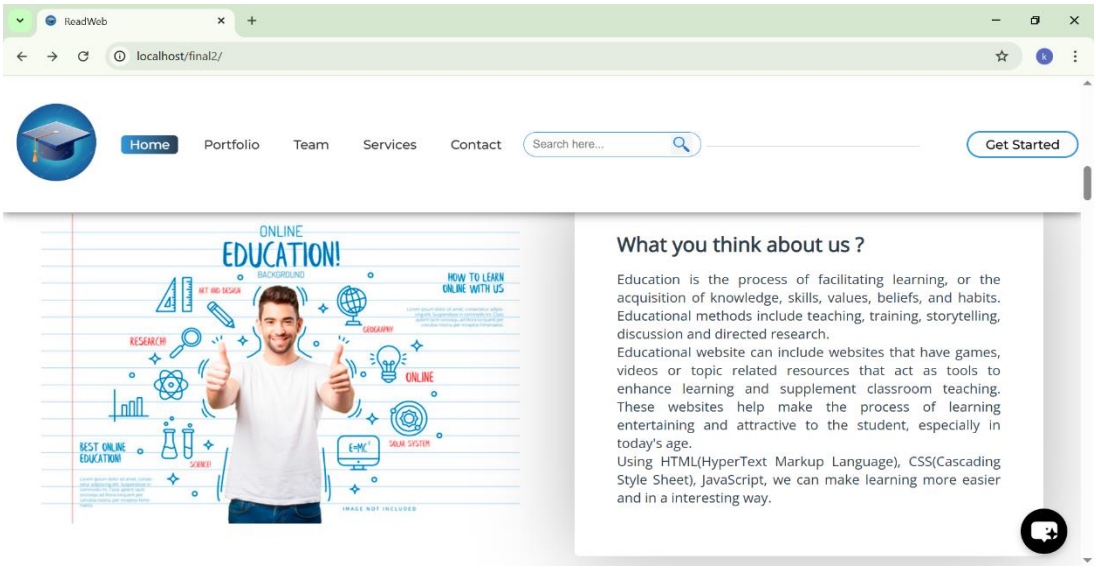
When you scroll the home page ,then you will get Review section ,where you can see what students tell aout us.



➢ About us Screen:

Description:

When You Scroll the Home page you get About us section,where You can know easily information about th website.



13.Testing

The process of testing was conducted using unit testing, integration testing, and operational testing.

13.1 Unit Testing (Developer)

Unit Testing is a level of the software testing process where individual units/components of a software/system are tested. The purpose is to validate that each unit of the software performs as designed.

A unit is the smallest testable part of software. It usually has one or a few inputs and usually a single output. In procedural programming a unit may be an individual program, function, procedure, etc. In object-oriented programming, the smallest unit is a method, which may belong to a base/super class, abstract class or derived/child class. (Some treat a module of an application as a unit. This is to be discouraged as there will probably be many individual units within that module.)

Unit testing frameworks, drivers, stubs and mock or fake objects are used to assist in unit testing.

Method

Unit testing is performed by using the White Box Testing method.

When is it performed?

Unit testing is the first level of testing and is performed prior to Integration Testing.

Who performs it?

Unit Testing is normally performed by software developers themselves or their peers. In rare cases it may also be performed by independent software testers.

Tasks

- Unit Test Plan :- Prepare, Review, Rework, Baseline
- Unit Test Cases/Scripts :-Prepare, Review, Rework, Baseline
- Unit Test :- Perform

Benefits

- Unit testing increases confidence in changing/maintaining code. If good unit tests are written and if they are run every time any code is changed, the likelihood of any defects due to the change being promptly caught is very high. If unit testing is not in place, the most one can do is hope for the best and wait till the test results at higher levels of testing are out. Also, if codes are already made less interdependent to make unit testing possible, the unintended impact of changes to any code is less.
- Codes are more reusable. In order to make unit testing possible, codes need to be modular. This means that codes are easier to reuse.
- Development is faster. How? If you do not have unit testing in place, you write your code and perform that fuzzy 'developer test' (You set some breakpoints, fire up the GUI, provide a few inputs that hopefully hit your code and hope that you are all set.) In case you have unit testing in place, you write the test, code and run the tests. Writing tests takes time but the time is compensated by the time it takes to run the tests. The test runs take very less time: You need not fire up the GUI and provide all those inputs. And, of course, unit tests are more reliable than 'developer tests'. Development is faster in the long run too. How? The effort required to find and fix defects found during unit testing is peanuts in comparison to those found during system testing or acceptance testing.
- The cost of fixing a defect detected during unit testing is lesser in comparison to that of defects detected at higher levels. Compare the cost (time, effort, destruction, humiliation) of a defect detected during acceptance testing or say when the software is live.
- Debugging is easy. When a test fails, only the latest changes need to be debugged. With testing at higher levels, changes made over the span of several days/weeks/months need to be debugged.
- Codes are more reliable. Why? I think there is no need to explain this to a sane person.

13.2 System testing (Test Manager)

System Testing is a level of the software testing process where a complete, integrated system/software is tested.

The purpose of this test is to evaluate the system's compliance with the specified requirements.

Here we had tested the entire application. The reference document for this process was the requirements document and the goal was to see that if the application meets the requirements.

13.3 Operational testing

It was performed on the realistic data to demonstrate that the application is working satisfactorily. Testing here was done to focus on the external behavior of the system; internal logic of the program is not emphasized.

Test Cases:

Component Name	Dashboard/Main screen				
Purpose	To check Login				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
1	Verify login with valid credentials	Email, Password	Redirect to dashboard	As expected	Passed
2.	Verify login with invalid password	Email, Wrong Password	Show "Invalid Credentials" message	As expected	Passed
Component Name	Register Module				
Purpose	Validation for Register				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
3.	Verify registration with valid input	Name, Email, Password	Show success message	As expected	Passed

4.	Check error on mismatched passwords	Password, Confirm PW not matching	Show "Passwords do not match"	As expected	Passed
Component Name	Logout Module				
Purpose	Validation for Logout Module				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
8.	Click logout	Logged-in state	Destroy session and redirect to login	As expected.	Passed
Component Name	Quiz Module				
Purpose	Validation for Quiz				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
11.	Submit quiz with complete answers	Selected answers	Display final score	As expected	Passed
12.	Submit without answering all questions	Partial answers	Show alert "Complete all questions"	As expected	Passed

Component Name	Chatbot Module				
Purpose	Validation for Chatbot functionality				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
13.	Ask a basic coding question	"What is a loop?"	Show chatbot response with explanation	As expected	Passed
Component Name	Question paper Module				
Purpose	Validate functionality of question paper module				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
16.	Access previous year questions	Click subject name	Load question paper PDF	As expected	Passed

Component Name	About us Module				
Purpose	Validation for news letter Module				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
8.	Navigate to about page	Click on "About Us"	Display information about the site and team	As expected	Passed
Component Name	Review Module				
Purpose	Validation of Review Module				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
11.	Submit a review	Name, Review Text	Show "Review submitted" message	As expected	Passed

Component Name	Video Lectures Module				
Purpose	Validation for video lectures				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
8.	Click and play a video	Click YouTube link or video box	Play lecture in embedded mode	As expected	Passed
Component Name	Chatbot Module				
Purpose	Validation of Chtbot Module				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
11.	Submit feedback via form	“What is a loop?”	Show chatbot response with explanation	As expected	Passed

Component Name	Newsletter Module				
Purpose	Validation for news letter Module				
Sr no.	**Test Case**	**Test Input**	**Expected Output**	**Actual Output**	**Remark**
8.	Subscribe with valid email	Valid Email	Show "Subscribed successfully" message	As expected.	Passed
9	Subscribe with invalid email format	Invalid Email	Show "Enter a valid email" message	As expected	Passed

13.4 Maintenance

- **Software maintenance** in software engineering is the modification of a software product after delivery to correct faults, to improve performance or other attributes.

- A common perception of maintenance is that it merely involves fixing defects. However, one study indicated that the majority, over 80%, of the maintenance effort is used for non-corrective actions. This perception is perpetuated by users submitting problem reports that in reality are functionality enhancements to the system.

- The key software maintenance issues are both managerial and technical. Key management issues are:

  - ✓ Alignment with customer priorities,
  - ✓ Staffing, which organization does maintenance,
  - ✓ Estimating costs.

- Key technical issues are:
  - ✓ Limited understanding,
  - ✓ Impact analysis,
  - ✓ Testing,
  - ✓ Maintainability .

14. LIMITATION & ENHANCEMENT

➢ Limitations

- The system is currently **web-based only** and requires an active internet connection to access all modules.

- The application is **not optimized for mobile view**, which may affect the user experience on smaller screens.

- Only **basic level quizzes** are included; advanced levels and topic-wise categories are still under development.

- **Admin panel functionalities** are limited to course and user management without deeper analytics/report generation.

- Users cannot currently **upload their own content** or contribute learning material.

➢ Enhancement

Looking at the current limitations, the following enhancements are proposed for the next release of the ReadWeb application:

- A fully responsive **mobile version or Android app** will be developed to increase accessibility on smartphones.
- Advanced quizzes with **timer-based modules and ranking system** will be added to challenge users and provide insights.
- The admin panel will be extended with **analytics, reporting tools**, and real-time user tracking.
- **Community features** such as discussion forums and comment systems will be integrated for better peer learning.
- A separate **upload section for contributors** will be provided so educators and students can share materials.

15. BIBLIOGRAPHY

➢ Books & References:

- PHP & MySQL Web Development – Luke Welling, Laura Thomson
- Web Technologies – Uttam K. Roy
- Internet & Web Technology – Dr. V. K. Jain

➢ Websites:

- https://www.w3schools.com
- https://www.geeksforgeeks.org
- https://stackoverflow.com
- https://www.php.net
- https://www.mysql.com