

# PROJECT REPORT: LEARNHUB

## 1. INTRODUCTION

### 1.1 Project Overview

LearnHub is a modern, full-stack educational platform designed to connect students, teachers, and administrators. It provides a seamless environment for managing courses, enrollments, and educational content, empowering users to enhance their skills and knowledge efficiently.

### 1.2 Purpose

The purpose of LearnHub is to simplify and modernize the process of online learning and course management. It offers a centralized platform where users can create, manage, and participate in courses, ensuring a smooth and interactive learning experience for all stakeholders.

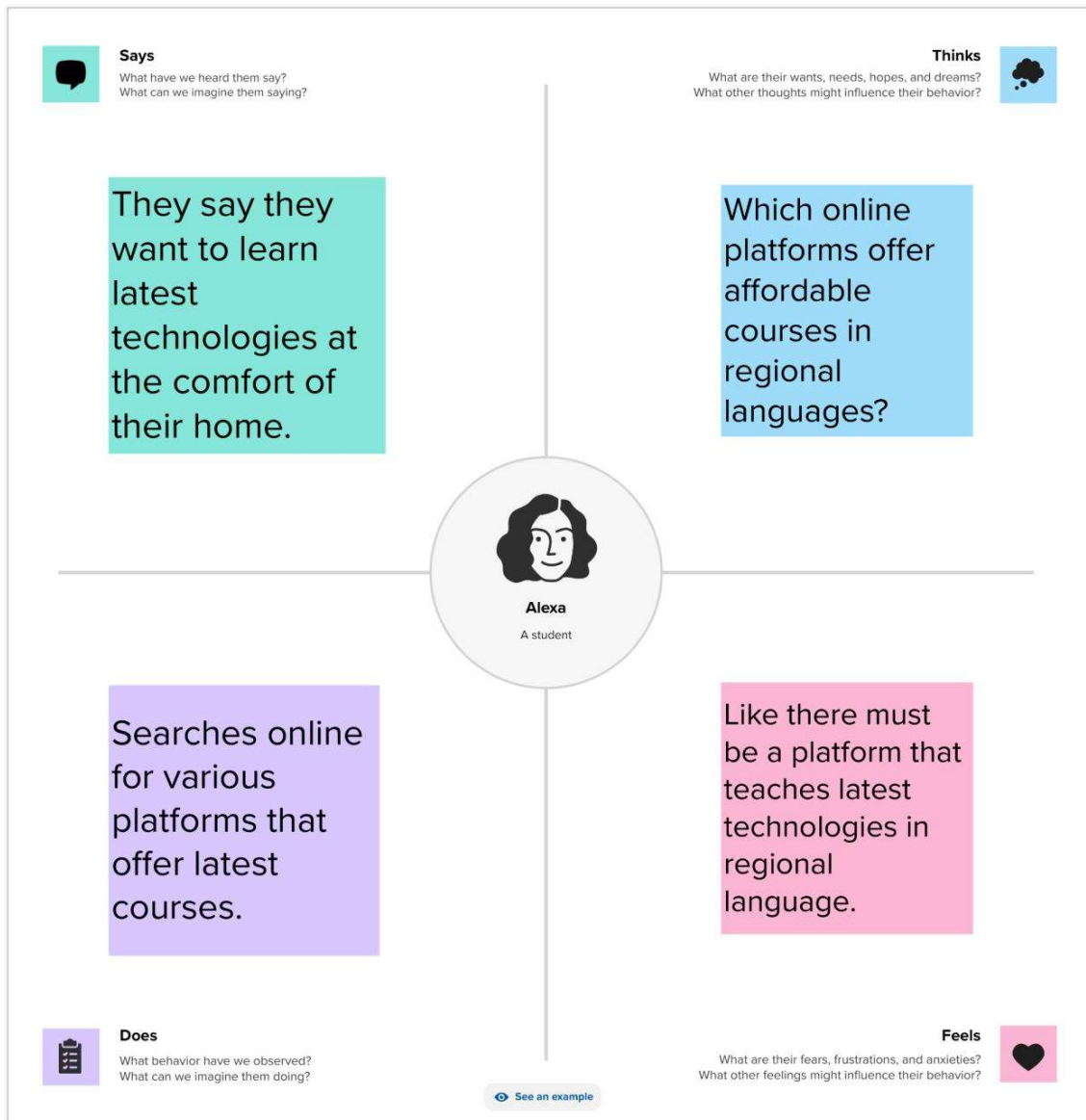
## 2. IDEATION PHASE

### 2.1 Problem Statement

Traditional learning management systems often lack user-friendly interfaces and seamless integration across user roles. There is a growing need for a modern platform that simplifies course management, enrollment, and content delivery.

### 2.2 Empathy Map Canvas

- Users: Students, Teachers, Administrators
- Says: "I want easy access to courses and materials."
- Thinks: "Is my progress being tracked? Is my data secure?"
- Does: Enrolls in courses, uploads content, manages users
- Feels: Motivated to learn, needs support, values efficiency



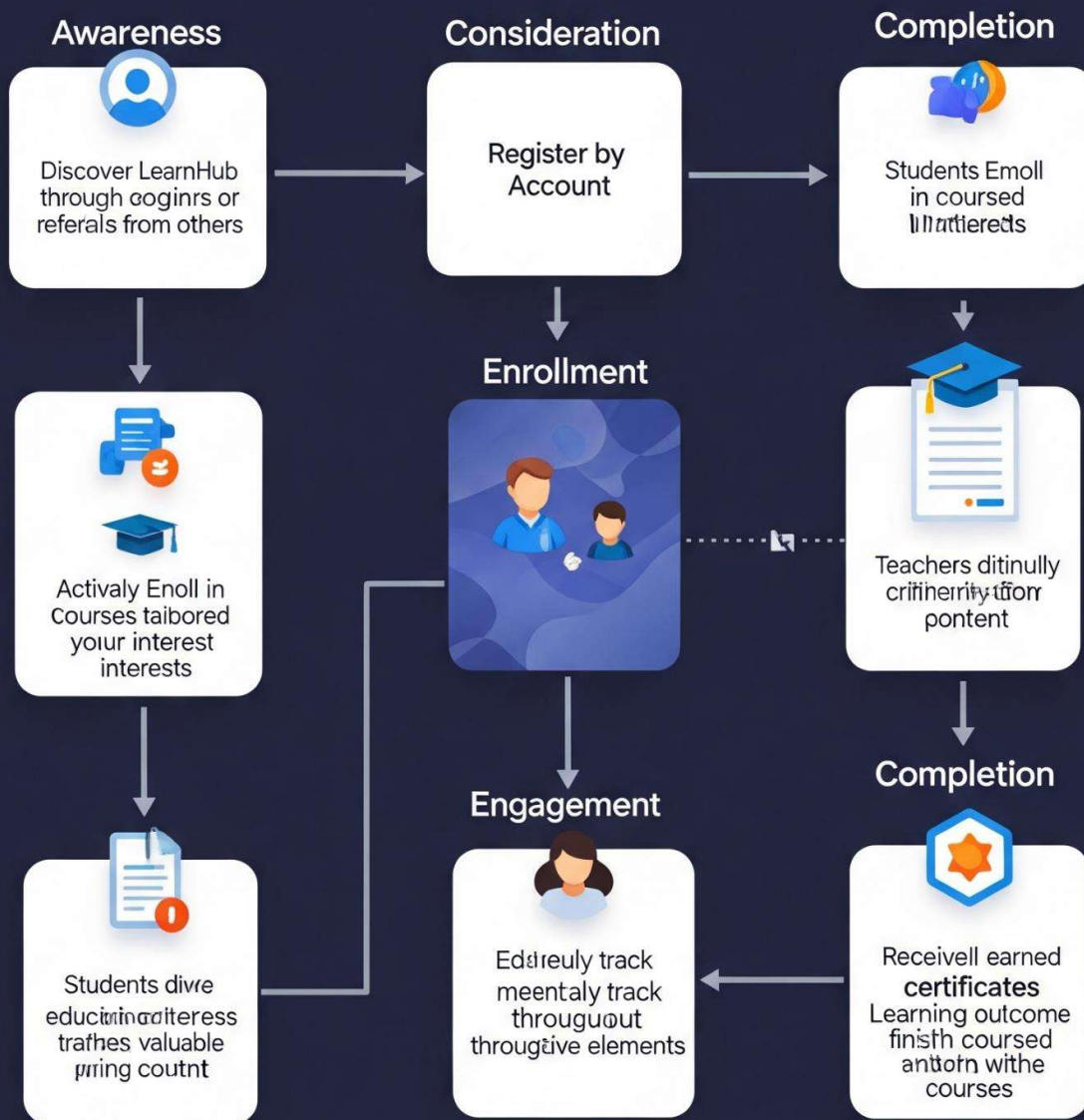
## 2.3 Brainstorming

- Centralized dashboard for all users
- Secure authentication and role-based access
- Easy course creation and management
- Media uploads and streaming
- Progress tracking and analytics

## 3. REQUIREMENT ANALYSIS

### 3.1 Customer Journey Map

- **Awareness:** Users discover LearnHub through search or referrals
- **Consideration:** Users explore features and register
- **Enrollment:** Students enroll; teachers create content
- **Engagement:** Users access content, track progress, and interact
- **Completion:** Students finish courses and receive certificates



### 3.2 Solution Requirements

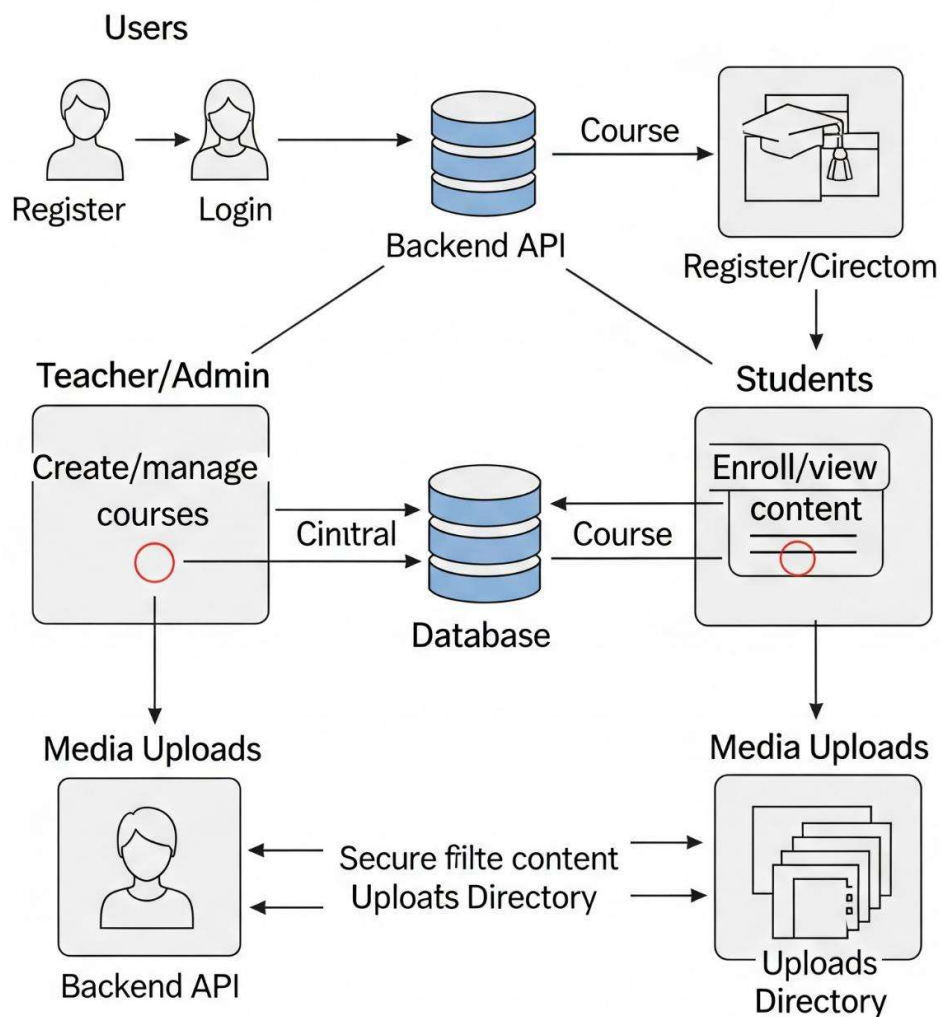
- Secure authentication for all user roles
- Role-based dashboards (Admin, Teacher, Student)
- Course creation, enrollment, and management
- Media upload and streaming support

- Progress tracking and analytics
- Responsive, user-friendly interface

### 3.3 Data Flow Diagram

- User → (register/login) → Backend API → Database
- Teacher/Admin → (create/manage courses) → Backend API → Database
- Student → (enroll/view content) → Backend API → Database
- Media Uploads → Backend → Uploads Directory

## Detaild System Architecture



### 3.4 Technology Stack

- Frontend: React.js, Bootstrap, Material UI, Axios, Ant Design, MDB React UI Kit

- Backend: Node.js, Express.js, MongoDB, Mongoose, Multer, JWT, bcryptjs, dotenv, cors, nodemon

## **4. PROJECT DESIGN**

### **4.1 Problem-Solution Fit**

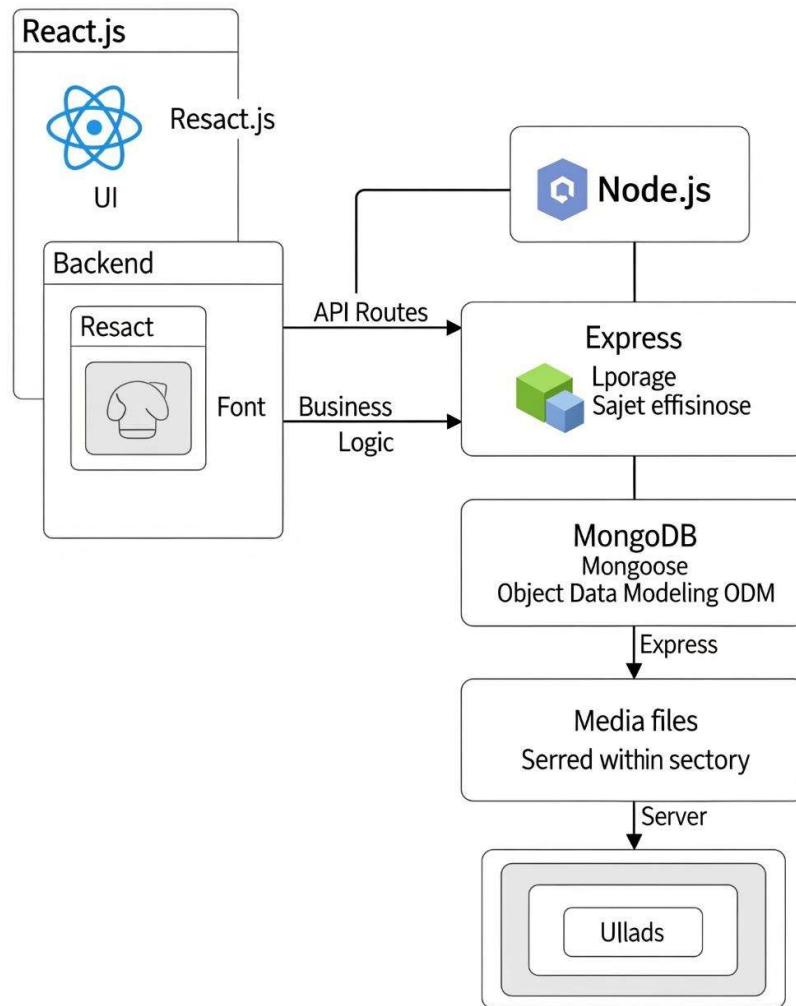
LearnHub addresses the lack of integration and usability in traditional systems by offering a unified, role-based platform with media handling and analytics support.

### **4.2 Proposed Solution**

- Secure login and JWT-based authentication
- Dashboards for admins, teachers, and students
- Course creation, Enrollment, and management features
- Media upload and streaming functionality
- Real-time progress tracking and analytics

### **4.3 Solution Architecture**

- Frontend: Built using React.js for responsive UI
- Backend: Node.js with Express for API routes and business logic
- Database: MongoDB with Mongoose for data modeling
- Media Storage: Files stored on the server in a designated uploads directory

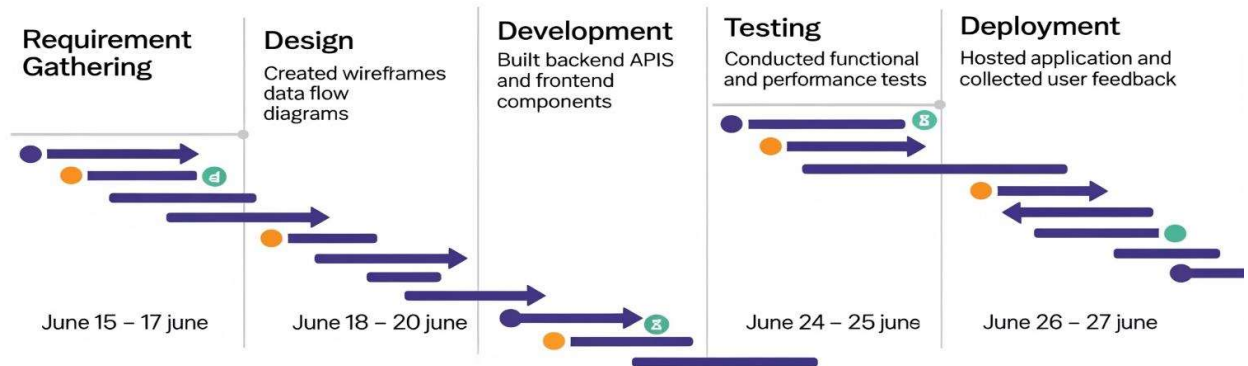


## 5. PROJECT PLANNING & SCHEDULING

### 5.1 Development Phases

- **Requirement Gathering:** Collected user needs
- **Design:** Created wireframes and data flow diagrams
- **Development:** Built backend APIs and frontend components
- **Testing:** Conducted functional and performance tests
- **Deployment:** Hosted application and collected user feedback

## Project Phases



## 6. FUNCTIONAL AND PERFORMANCE TESTING

All major features were tested to ensure smooth operation:

- User registration and login
- Course creation and enrollment
- Role-based dashboard access
- Media upload and playback

### 6.1 Performance Testing

- API endpoints tested for speed and reliability
- Media handling tested for smooth upload and playback
- UI checked for responsiveness and cross-device compatibility

## 7. RESULTS

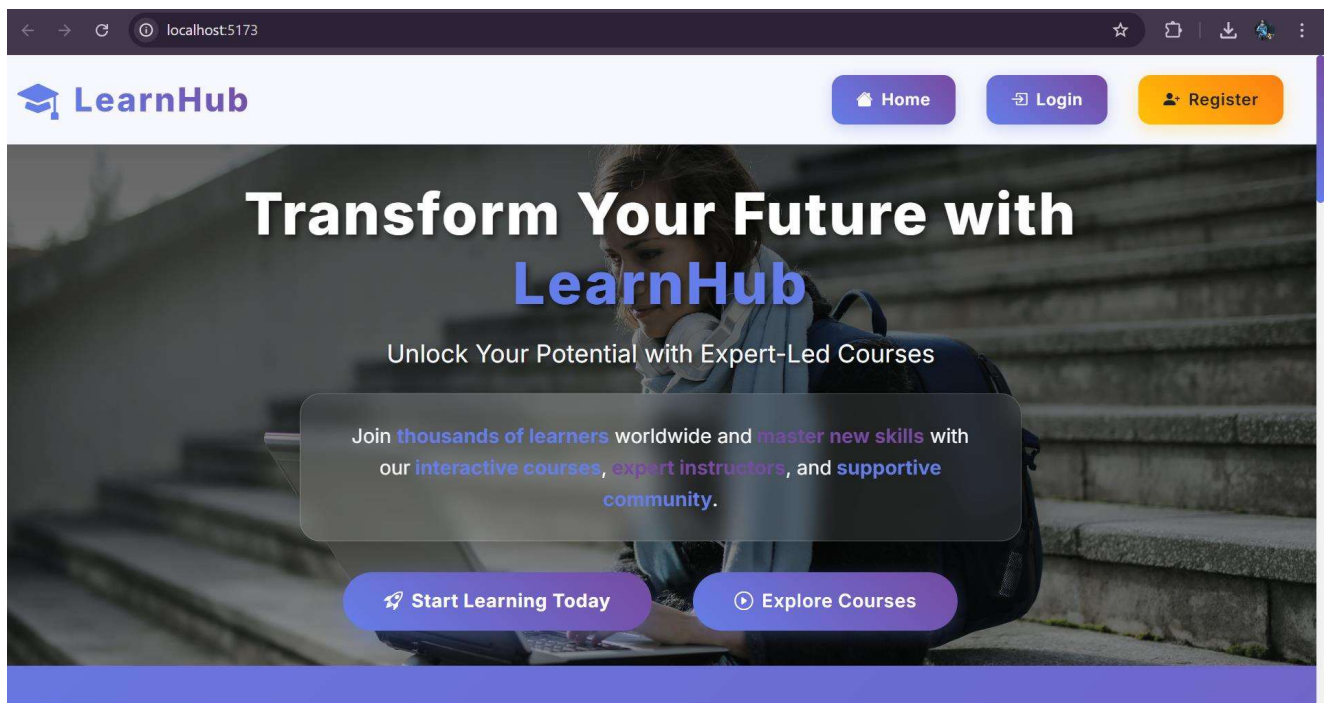
LearnHub provides a robust, unified educational platform.

Features like authentication, dashboards, course handling, and media uploads work as intended.

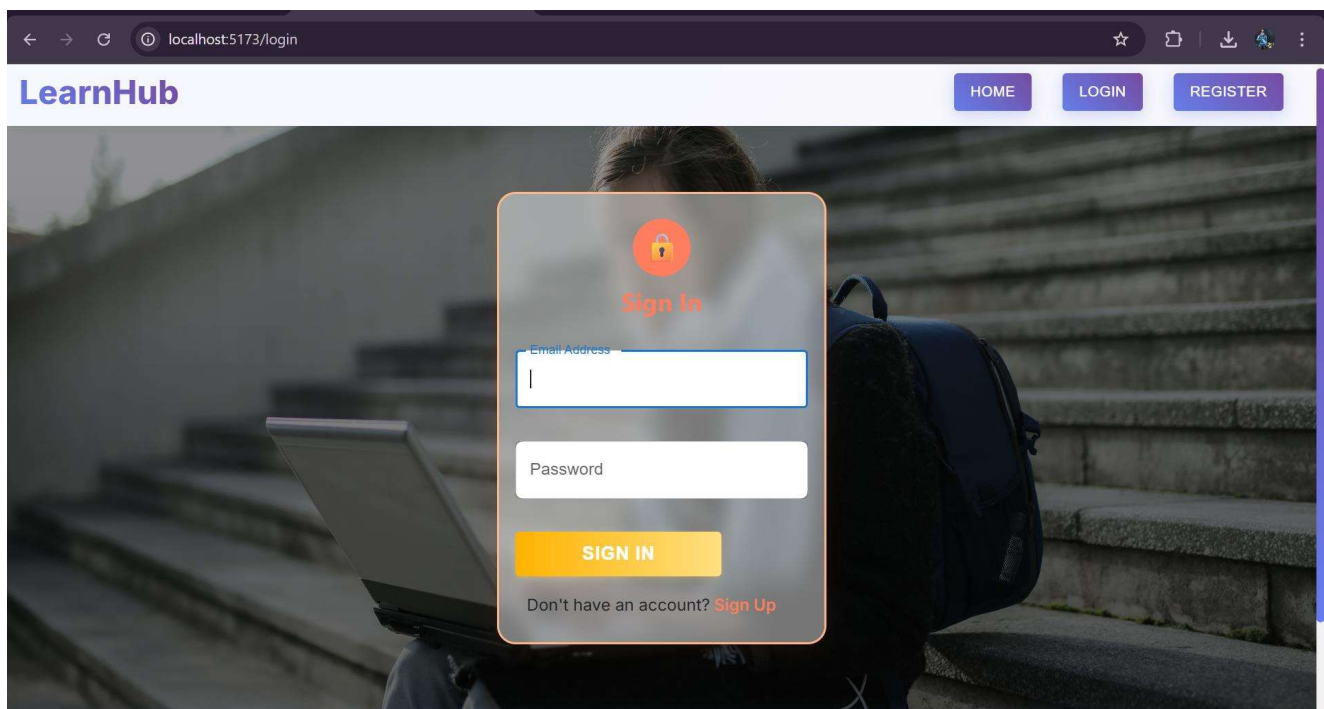
Application is responsive across various devices and browsers.

### 7.1 Output Screenshots

■ Home Page



## Login Page



## Registration Page



localhost:5173/register

LearnHub

HOME LOGIN REGISTER

Register

Full Name

Email Address

Password

Select User

SIGN UP

## Admin Dashboard

localhost:5173/dashboard


LearnHub Dashboard Manage Courses

Rajatkumar Admin

### Admin Dashboard

4 All Users	2 Teachers	2 Students	0 Courses	0 Enrollments
----------------	---------------	---------------	--------------	------------------

ALL USERS TEACHERS STUDENTS COURSES ENROLLMENTS









User	Email	Type	Action
 Rajatkumar RR5e7475712510deRQ31efa4	teacher@gmail.com	Teacher	DELETE

localhost:5173/dashboard

LearnHub Dashboard Manage Courses

Rajatkumar Admin

ALL USERS TEACHERS STUDENTS COURSES ENROLLMENTS

User	Email	Type	Action
 <b>Rajatkumar</b> 685e7175712510dc6931efa4	teacher@gmail.com	Teacher	 DELETE
 <b>Dhumbu</b> 685e71a5712510dc6931efa8	dhumbuteacher@gmail.com	Teacher	 DELETE
 <b>Rajatkumar</b> 685e71be712510dc6931efab	student@gmail.com	Student	 DELETE
 <b>Dhumbu</b> 685e71db712510dc6931efae	dhumbustudent@gmail.com	Student	 DELETE

## Teacher Dashboard

localhost:5173/dashboard

LearnHub Dashboard Add Course

Rajatkumar Teacher

**Body Building**

**Description:** Daily food to eat inorder to strength o [Read More](#)

**Category:** Personal Development

**Sections:** 1

Enrolled students: 0

[Add Sec...](#) [Edit Cou...](#) [Delete](#)

**How to gain money**

**Description:** how to save the money and increase the p [Read More](#)

**Category:** Finance & Accounting

**Sections:** 1

Enrolled students: 1

[Add Section](#) [Edit Course](#)

**CSE**

**Description:** hello welcome to cse section

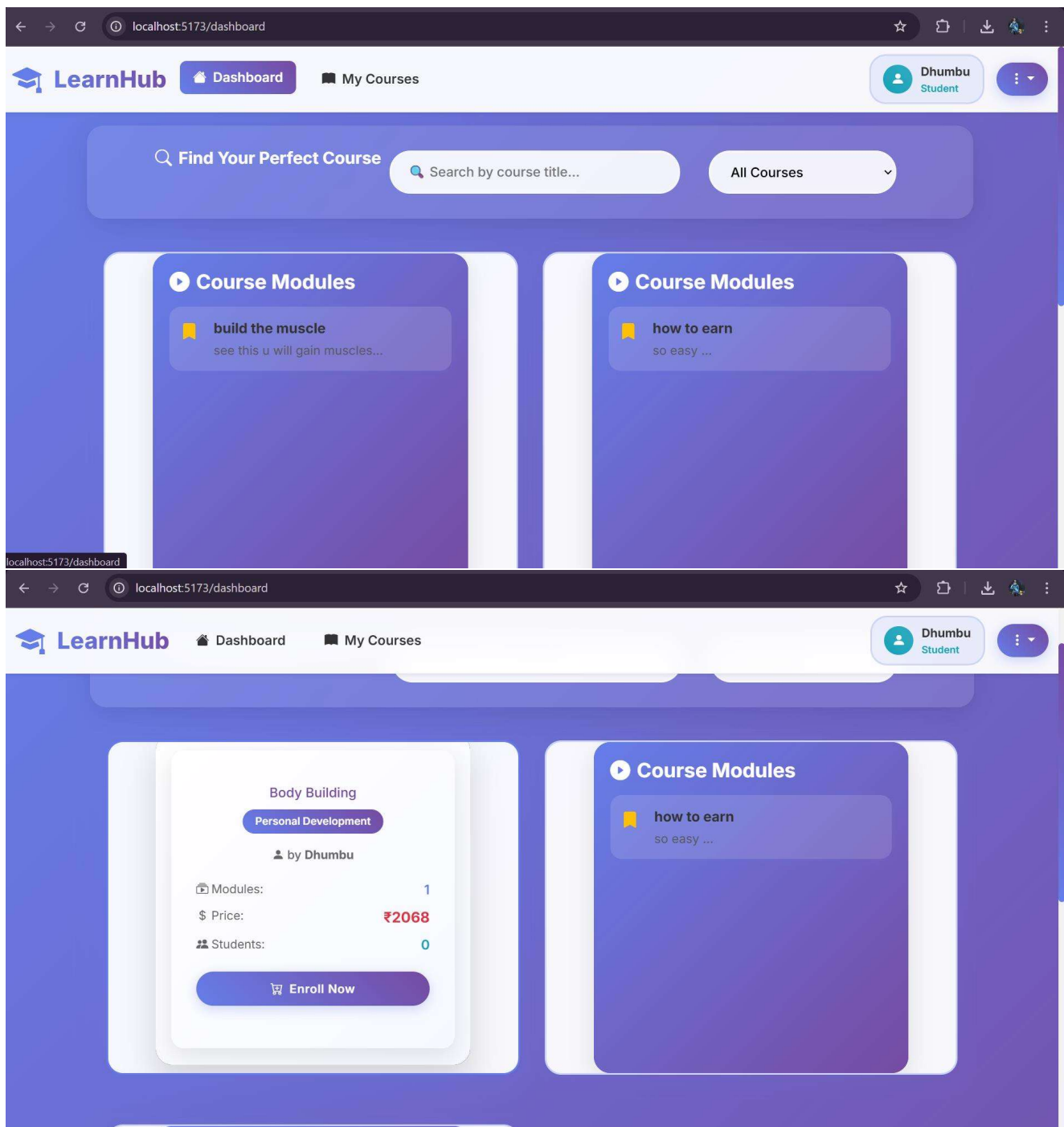
**Category:** IT & Software

**Sections:** 1

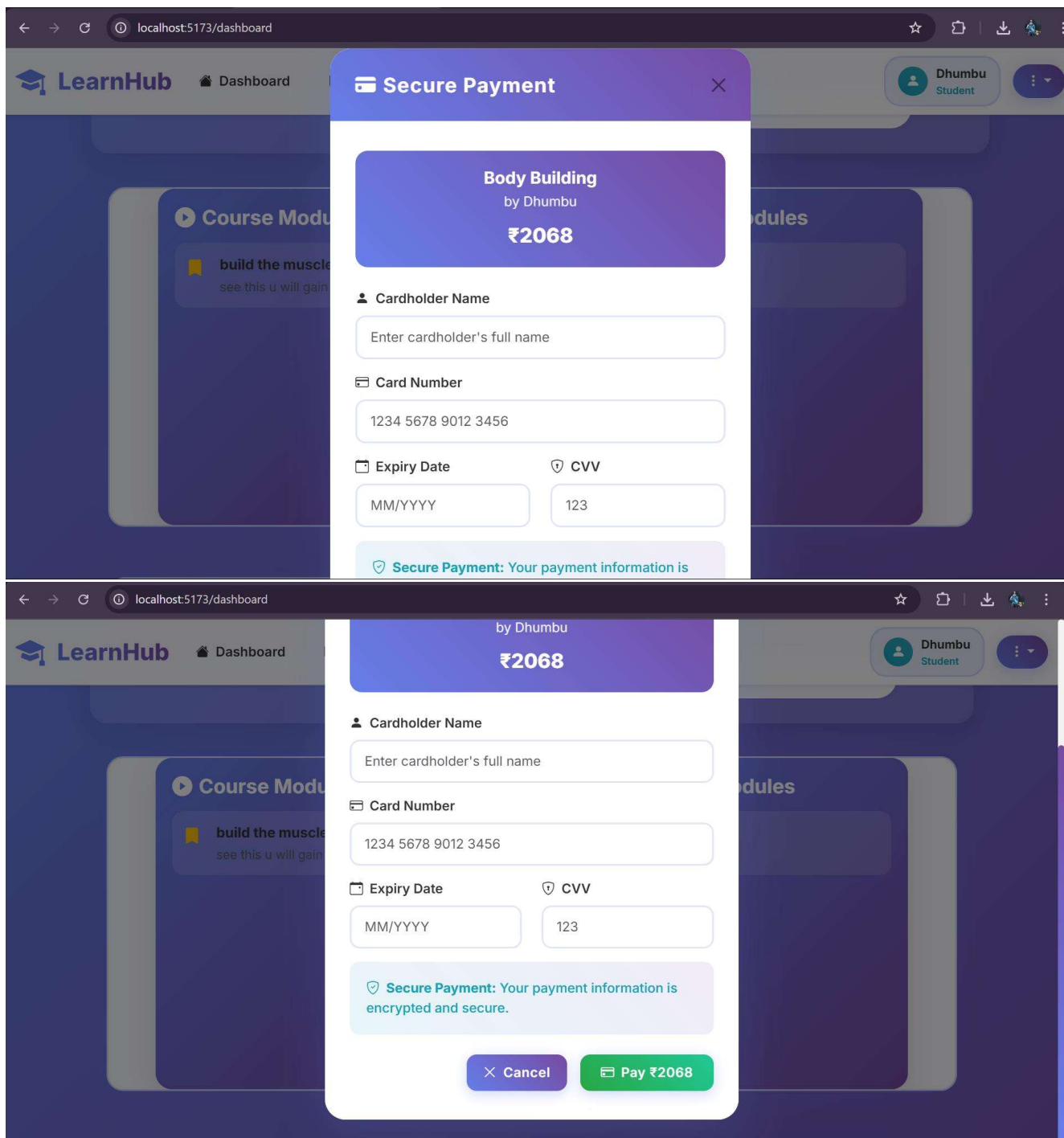
Enrolled students: 1

[Add Section](#) [Edit Course](#)


## Student Dashboard




■ Payment Page



## ■ Course Creation


Dashboard
Add Course


Rajatkumar Teacher

Course Type

Select categories

Course Title

Enter Course Title

Course Educator

Enter Course Educator

Course Price(Rs.)

for free course, enter (

Course Description

Enter Course description

+ Add Section

Submit

## Course Edit Page

localhost:5173/teacher/edit-course/685e73c5712510dc6931efc1

### Edit Course

Body Building

**Description:** Daily food to eat inorder to strength or build the body  
**Category:** Personal Development  
**Sections:** 1  
 Enrolled students: 0

Course Type

Personal Development

Course Title

Body Building

Course Educator

Dhumbu

Course Price

Rs. 2068


Course Description

Daily food to eat inorder to strength or build the body

#### Sections

build the muscle

see this u will gain muscles



Section Title

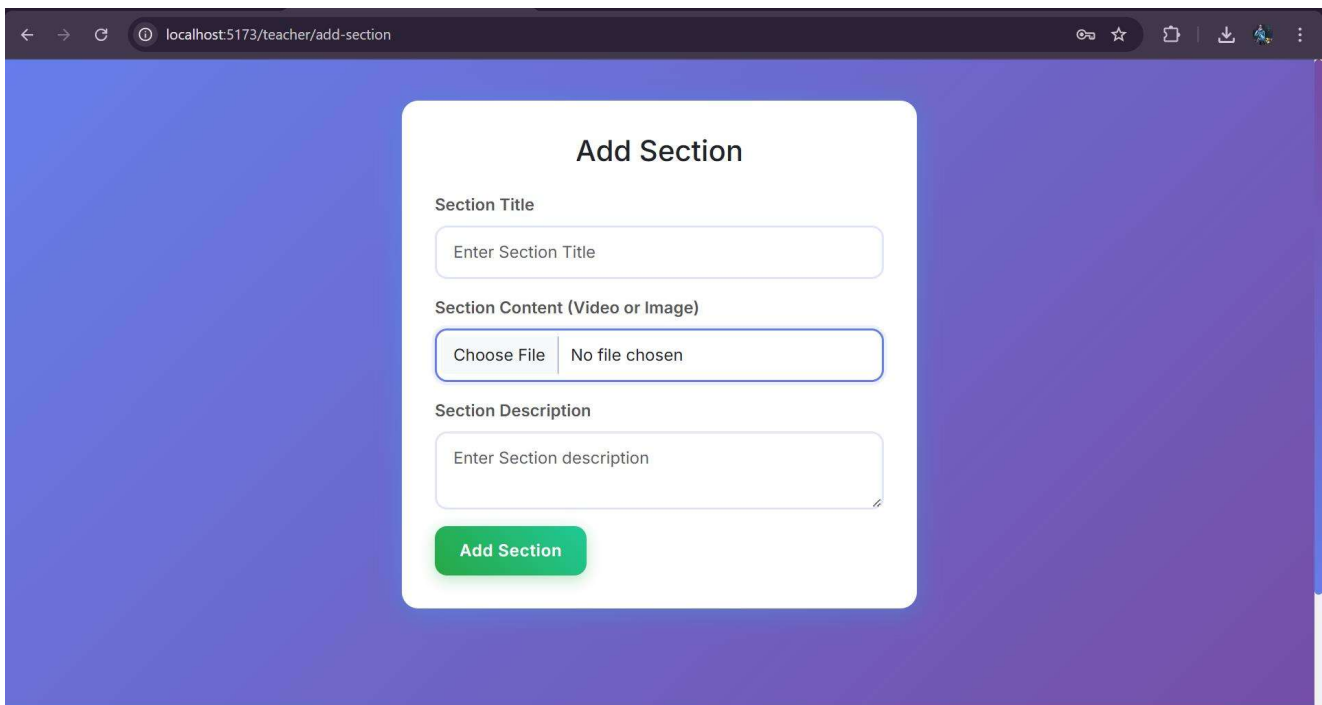
build the muscle

Section Description

see this u will gain muscles

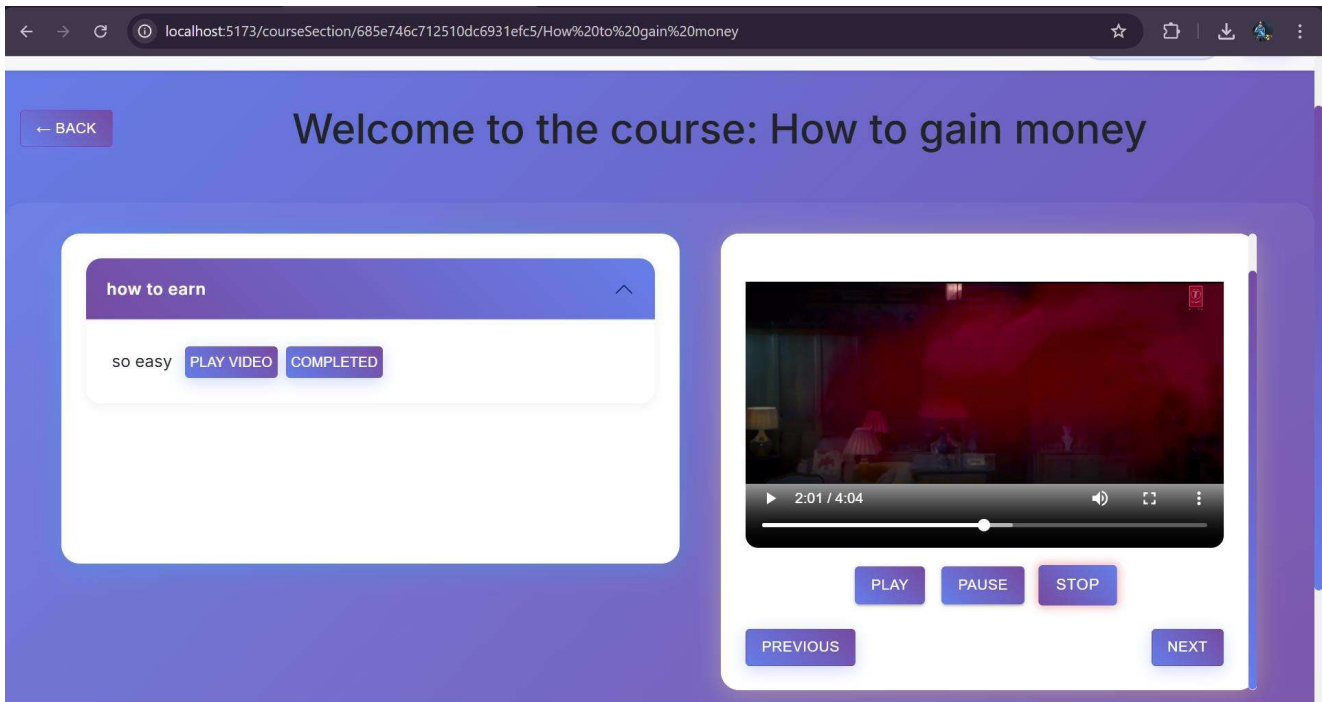
Save Changes

## Media Upload



The screenshot shows a web browser window with the address bar displaying 'localhost:5173/teacher/add-section'. The page has a purple gradient background. In the center, there is a white rounded rectangle titled 'Add Section'. Inside this rectangle, there are three input fields: 'Section Title' with a placeholder 'Enter Section Title', 'Section Content (Video or Image)' with a file selection button 'Choose File' and the text 'No file chosen', and 'Section Description' with a placeholder 'Enter Section description'. At the bottom of the white rectangle is a green button labeled 'Add Section'.

## Media Playback



The screenshot shows a web browser window with the address bar displaying 'localhost:5173/courseSection/685e746c712510dc6931efc5/How%20to%20gain%20money'. The page has a purple gradient background. At the top left, there is a button labeled '← BACK'. In the center, there is a large heading 'Welcome to the course: How to gain money'. Below the heading, there are two main content areas. On the left, there is a white rounded rectangle with a purple header 'how to earn' and a small upward arrow. Inside this rectangle, there is the text 'so easy' followed by two buttons: 'PLAY VIDEO' and 'COMPLETED'. On the right, there is a video player. The video player shows a scene with a red smoke effect. Below the video player, there are three buttons: 'PLAY', 'PAUSE', and 'STOP'. At the bottom of the video player area, there are two buttons: 'PREVIOUS' and 'NEXT'.

## 8. ADVANTAGES & DISADVANTAGES

### Advantages

- Centralized platform for all user roles
- Clean and intuitive user interface
- Secure login and data encryption
- Easy course creation and media handling
- Scalable and maintainable system