Full Stack Development with MERN

LearnHub: Your Center for Skill Enhancement

1. Introduction

Project Title: LearnHub - Your Center for Skill Enhancement\ **Team Leader :** Darshankumar Jain

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Team member : Sigireddy Asritha

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2. Project Overview

Purpose:\ LearnHub is an Online Learning Platform (OLP) aimed at helping students and teachers manage and participate in skill-based courses. The platform provides role-based access for each user type and ensures secure and smooth learning experiences.

Features:

- User Authentication with JWT
- Role-based access: Teacher, Student
- Course creation, enrollment, and content upload
- Teacher: Upload course materials
- Student: View and enroll in courses
- Responsive UI with optional dark mode

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3. Architecture

Frontend:\ Built using React + Vite, integrated with Bootstrap, Material UI, and Ant Design for UI components. Axios is used for API calls.

Backend:\ Node.js with Express.js handles routes and logic. Multer is used for file uploads.

Database:\ MongoDB (via Mongoose) stores users, courses, and enrollments. Each collection has proper references and schema validation.

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4. Setup Instructions

Prerequisites:

- Node.js
- MongoDB
- Git

Installation:

1. Clone the repo:

```
git clone <repo-url>
```

1. Install frontend dependencies:

```
cd client
npm install
```

1. Install backend dependencies:

```
cd server
npm install
```

1. Set up environment variables:

```
PORT=5000
MONGO_URI=<your_mongodb_uri>
JWT_SECRET=<your_secret_key>
```

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5. Folder Structure

Client (React):

```
/client
  /src
    /components
    /pages
    /services
    /routes
    /assets
```

Server (Node.js):

```
/server
  /routes
  /controllers
  /models
  /middleware
  /utils
```

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6. Running the Application

Frontend:

```
cd client
npm run dev
```

Backend:

```
cd server
npm start
```

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7. API Documentation

Authentication:

- `POST /api/register` - Register a user
- `POST /api/login` - Login and receive JWT

Courses:

- `GET /api/courses` - Get all courses
- `POST /api/courses` - Teacher creates course
- `DELETE /api/courses/:id` - Teacher deletes course

Enrollment:

- `POST /api/enroll/:courseId` - Student enrolls in course
- `GET /api/enrollments` - View student enrollments

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8. Authentication

JWT (JSON Web Token) is used for session handling. Each login returns a token stored in localStorage, used to verify and authorize protected routes.

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9. User Interface

- Clean layout with Bootstrap
- Responsive design for mobile and desktop
- Different dashboards for Teacher and Student
- Dark mode toggle available

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10. Testing

Manual testing is done for each user role:

- Registration & login
- Dashboard rendering
- Access restrictions
- API error handling

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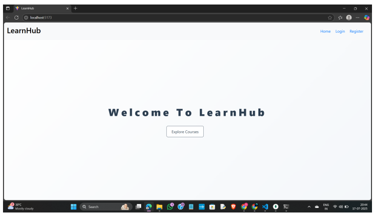
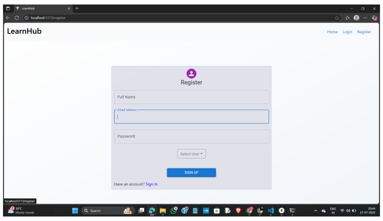
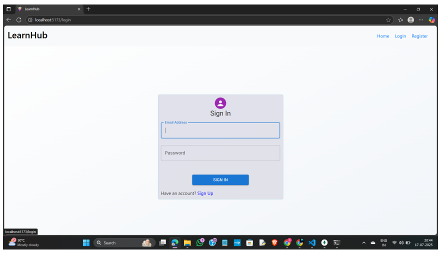
11. Screenshots or Demo

Screenshots:





- Home Page (Before Login) Home Page
- Register Page Register Page
- Login Page Login Page



- Student Dashboard with Course Cards Student Dashboard
- Enrolled Courses Table View Enrolled Courses
- Teacher Add Course Page Teacher Add Course
- Teacher Dashboard with Delete Option Teacher Dashboard

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12. Known Issues

- File uploads need size validation
- No pagination on course listing (to be improved)

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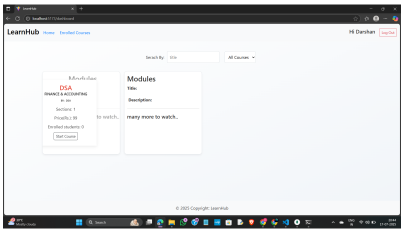
13. Future Enhancements

- Chat feature between teacher and students
- Live class integration via video APIs
- Course rating and feedback system

- Email notifications



Modules

DSA
FINANCE & ACCOUNTING
By: DSA
Sections: 1
Price(Rs.): 99
Enrolled students: 0

to watch..

Modules
Title:
Description:

many more to watch..

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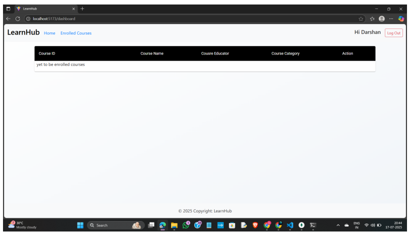

Course ID	Course Name	Cousre Educator	Course Category	Action
yet to be enrolled courses				

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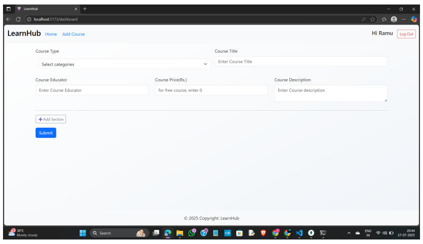

Course Type: Select categories

Course Title: Enter Course Title

Course Educator: Enter Course Educator

Course Price(Rs.): for free course, enter 0

Course Description: Enter Course description

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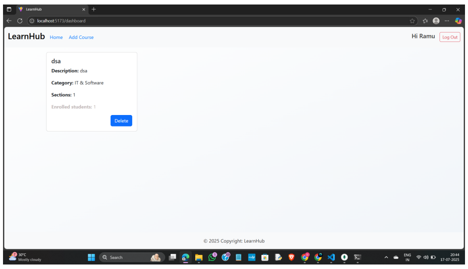

dsa

Description: dsa

Category: IT & Software

Sections: 1

Enrolled students: 1

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