

Project Report for DBMS :
Online Learning Platform



CSE 403L: DBMS LAB

Submitted By:

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INTRODUCTION:

The Online E-Learning Platform is a digital education management system that provides remote access to courses for students and a management interface for teachers and administrators. It bridges the gap between learners and educators through a web-based portal. The platform supports **student and teacher login, course management with associated fees, progress tracking, and enrollment records**. This project simulates the core features of modern LMS (Learning Management Systems) such as Coursera or Udemy, with customization options for organizations and academic institutions.

Implementation:

1. Frontend:

- Built using modern web technologies (likely **React.js** or **Laravel Blade**).
- Responsive UI featuring:
 - Course progress bars
 - User details
 - Enrolled courses list
 - Instructor names
 - Enrollment date tracking
- Navigation bar with **Courses** and **Logout** options.

2. Backend:

- Frameworks like **Django**, **Laravel**, or **Node.js** for server-side processing.
- Admin dashboard for managing:
 - Course content and fees
 - Enrollment records
 - Teacher and student accounts

3. Database:

- Relational database like **MySQL** or **PostgreSQL** to store:
 - User accounts (Student/Teacher)
 - Course metadata
 - Enrollment details and payment status
 - Progress percentage tracking

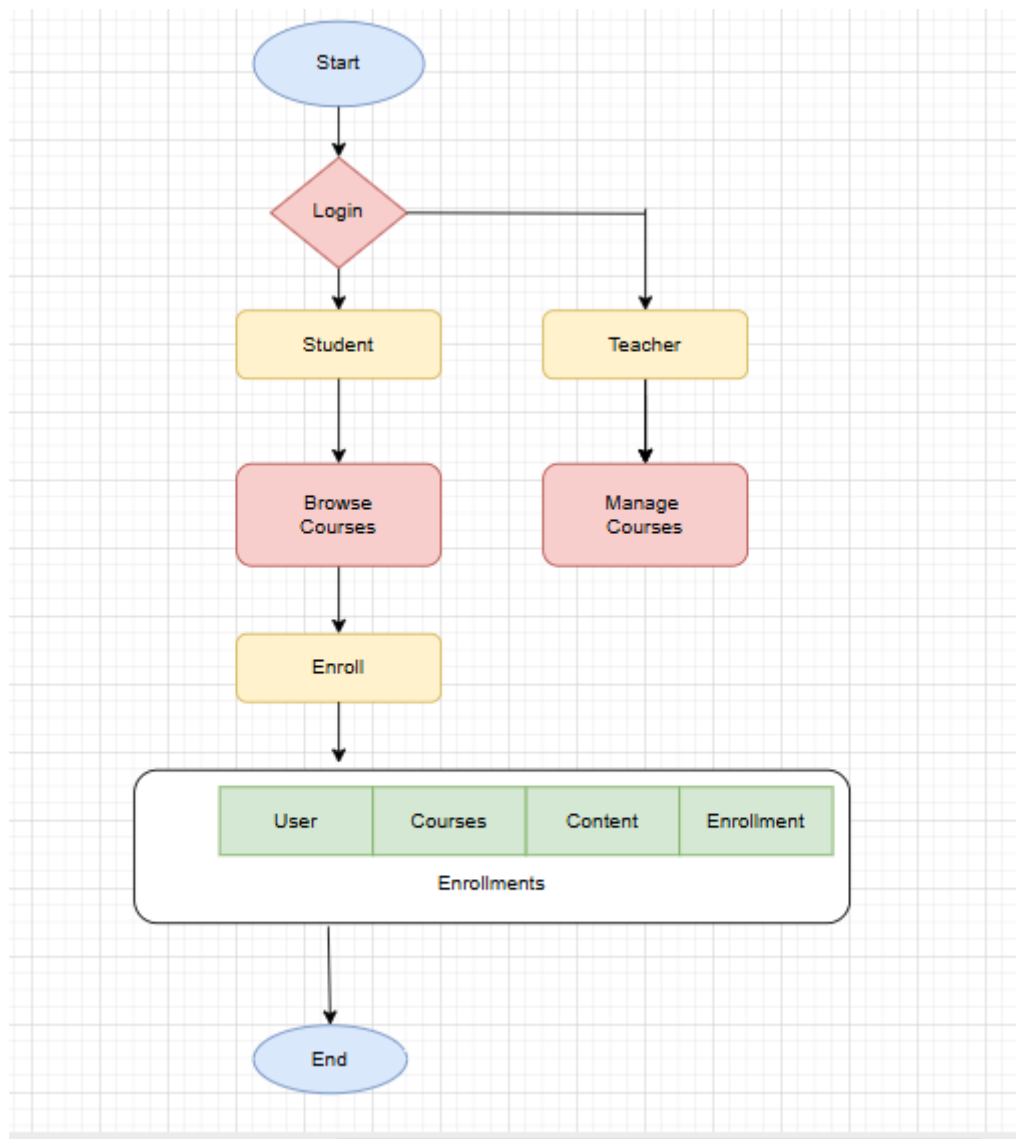
4. Authentication System:

- Separate login for **teachers** and **students** with role-based access control.
- Password security through hashing algorithms (e.g., bcrypt).

5. Other Features (inferred from UI):

- Admin can view all enrollments.
- Teachers are assigned to specific courses.
- Each student's progress is tracked per course.

Flowchart:



Programming languages/:

1. Php (Backend)
2. Laravel 11+
3. Mysql
4. Html
5. CSS 3
6. Java script(Frontend)

Working principle:

The Online E-Learning Platform operates based on the interaction between users and digital learning content through structured courses and enrollment mechanisms.

1. Users (Students, Teachers, Admins):

- **Student Users:**
 - Register or log in to the platform.
 - Browse the available courses (some may be free, others paid).
 - Enroll in a course by submitting payment (if required).
 - View enrolled courses in their personal dashboard.
 - Track their learning progress through progress bars and completion status.
 - Receive certificates upon successful course completion.
- **Teachers/Instructors:**
 - Log in through a separate interface.
 - Create and manage course content (videos, PDFs, quizzes).
 - Monitor student enrollments and their individual progress.
 - Grade quizzes or assignments (if included).
 - Communicate with students through messaging or announcements.
- **Admin:**
 - Access full control over the system through the admin dashboard.
 - Manage all user accounts (teachers and students).
 - Approve courses, assign instructors, and manage fees.
 - View analytics such as student progress, revenue reports, and course popularity.

2. Courses:

- Each course has:
 - A **title**, **description**, and **instructor** assigned.
 - A **fee** (optional) for access.
 - Defined **content modules** such as lectures, readings, quizzes, or assignments.
 - A **progress tracking mechanism** to update student advancement in real-time.
- Courses are visible to all users through a "Courses" page or dashboard.

3. Content:

- Course content includes:
 - **Pre-recorded video lectures**
 - **Downloadable resources** like notes, slides, and eBooks
 - **Interactive quizzes or assignments**
 - **Discussion sections** for engagement
- Students must go through the content **sequentially or module-wise**.
- Progress is updated after every completed module or quiz submission.

4. Enrollments:

- When a student selects a course:
 - The system records an **enrollment entry** linking the student, course, and enrollment date.
 - A **payment gateway** (if integrated) processes the transaction.
 - The enrolled course becomes visible on the student's dashboard (as shown in the screenshot).
 - Each enrollment tracks the **completion percentage**, helping both student and teacher monitor progress.
 - Admin can view all enrollments with details like student email, course name, progress, and instructor.

Improvements and Future Enhancements:

1. **Paid Course Integration:**
 - Add secure payment gateways (PayPal, JazzCash, etc.) for course fees.
 - Auto-generate invoices and track payment status.
2. **Institutional Use (Universities, Academies, Institutes):**
 - Adapt the platform for formal education.
 - Useful for universities, coaching academies, and technical institutes offering online courses or diplomas.
 - Can be customized with branding and official certifications.
3. **Certificates with Verification:**
 - Auto-issue certificates on course completion.
 - Include institution logos, signatures, and a verification link.

4. Dashboard Improvements:

- Create separate dashboards for students, teachers, and admins.
- Show detailed analytics on progress, completion, and performance.

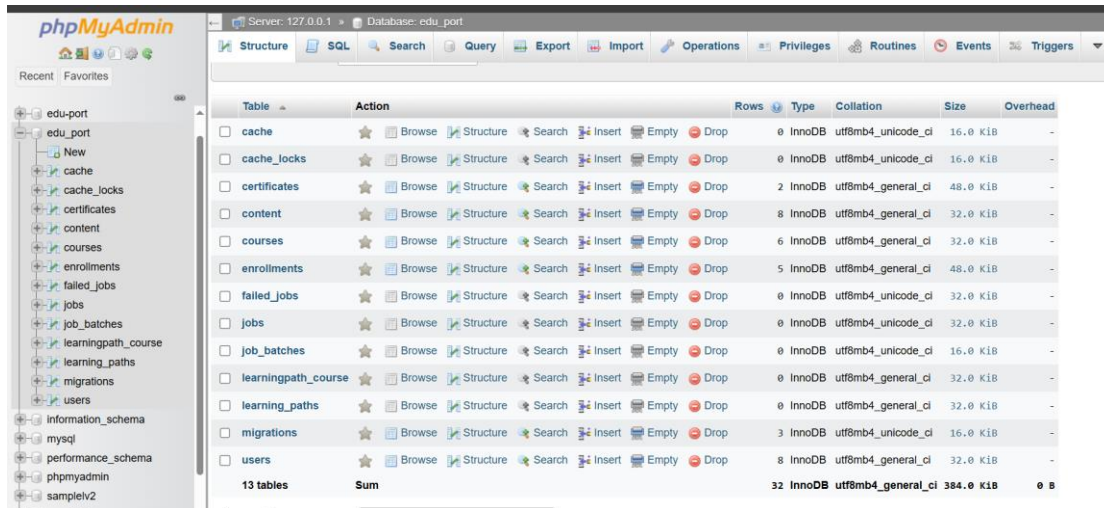
5. Mobile App & Real-time Features:

- Add mobile support for learning on the go.
- Integrate live classes via Zoom/Google Meet and enable in-app chat or discussion forums.

References:

- Chatgpt
- Laraval guide
- Github
- Youtube

SQL Database Table and Queries:



The screenshot shows the phpMyAdmin interface for a database named 'edu_port'. The left sidebar displays a tree view of the database structure, including tables like 'cache', 'cache_locks', 'certificates', 'content', 'courses', 'enrollments', 'failed_jobs', 'jobs', 'job_batches', 'learningpath_course', 'learning_paths', 'migrations', and 'users'. The main panel shows a table list for the 'edu_port' database. The table list includes columns for 'Table', 'Action', 'Rows', 'Type', 'Collation', 'Size', and 'Overhead'. The table list shows 13 tables, with a total of 32 rows and a total size of 384.0 KIB.

Table	Action	Rows	Type	Collation	Size	Overhead
cache	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KIB	-
cache_locks	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KIB	-
certificates	Browse Structure Search Insert Empty Drop	2	InnoDB	utf8mb4_general_ci	48.0 KIB	-
content	Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_general_ci	32.0 KIB	-
courses	Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_general_ci	32.0 KIB	-
enrollments	Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	48.0 KIB	-
failed_jobs	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	32.0 KIB	-
jobs	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	32.0 KIB	-
job_batches	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KIB	-
learningpath_course	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	32.0 KIB	-
learning_paths	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	32.0 KIB	-
migrations	Browse Structure Search Insert Empty Drop	3	InnoDB	utf8mb4_unicode_ci	16.0 KIB	-
users	Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_general_ci	32.0 KIB	-
13 tables	Sum	32	InnoDB	utf8mb4_general_ci	384.0 KIB	0 B

Admin panel for all Enrollments:

127.0.0.1:8000/enrollments

LearnHub Admin

Courses Logout

All Enrollments

ID	Student	Course	Progress	Enrollment Date
1	Student User student@example.com	Web Development Fundamentals John Smith	<div><div>50%</div></div>	Jun 04, 2025
2	Student User student@example.com	Laravel for Beginners Jane Doe	<div><div>74%</div></div>	Jun 12, 2025
3	Student User student@example.com	React.js Complete Guide Mike Johnson	<div><div>99%</div></div>	Jun 15, 2025

Dashboard:

127.0.0.1:8000/dashboard

Logged in as: Teacher Cookie

DashboardCoursesMy EnrollmentsCreate Course

Cookie

Welcome back, Cookie!
Manage your courses and track student progress

0

Courses Created

0

Total Lectures

0

Total Students

0

Total Enrollments

Quick Actions

Create New Course

View All Courses

Manage Enrollments

My Courses

Add Course

Teacher login for Creating the Course:

Logged in as: **Teacher** Cookie

Create New Course

Fill in the details to create an amazing learning experience

Course Title *

e.g., Complete Web Development Bootcamp

Instructor Name *

Cookie

Duration *

e.g., 8 weeks, 40 hours

Course Description *

Describe what students will learn, prerequisites, and course outcomes...

Price (USD) *

\$ 99.99

Course Image URL

https://example.com/course-image.jpg

Set to 0 for free courses

Optional: URL to course cover image

Cancel

Create Course

Course details:

127.0.0.1:8000/courses/8

Gmail Maps WhatsApp New chat Bard Maxip Telecom Maxip Telecom SC Sohrab TEAM D... Muhammad Talha K... Fiverr / mitalha003 /... Watch Movies HD F...

Logged in as: **Teacher** Lakhkar LearnHub Back to Courses Logout

WEB
abc

WEB DEVELOPMENT

About This Course

abc

Course Details

Instructor: Lakhkar

Duration: 6

Price: \$90.00

\$90.00

Enroll Now

30-day money-back guarantee

Edit Course

Add Lecture

Delete Course

Teacher Management

127.0.0.1:8000/courses

Enrollemnt data:

The screenshot shows a web browser window with the URL `127.0.0.1:8000/my/courses`. The page is titled "My Enrolled Courses" and includes a sub-header "Track your learning progress and continue your education journey". Below this, there are four summary cards: "1 Total Enrolled", "0 Completed", "0 In Progress", and "1 Not Started". A detailed view of a course is shown below these cards, featuring a placeholder image, the course title "ai", a progress bar at 0%, the student's name "A. Muhammad Talha Khan", and the enrollment date "Enrolled: Jul 04, 2023". At the bottom, there is a "Start Course" button. A "Quick Actions" bar at the very bottom contains three buttons: "Enroll in More Courses", "View Dashboard", and "Print Progress Report".

Quizes:

The screenshot shows a web browser window with the URL `127.0.0.1:8000/courses/77/lectures/18/quiz`. The page is titled "quiz-1" and includes a sub-header "Lecture: ai for beginner". Below this, there is a pink box with the text "About This Quiz" and "no cheating or use of ai". A purple box contains "Quiz Information" with the following details: "1 Questions", "10 Minutes", "3 Max Attempts", and "Status". Below this, there is a section titled "Instructions" with a list of rules: "Read each question carefully before selecting your answer.", "You have 10 minutes to complete the quiz.", "You can attempt this quiz up to 3 times.", "Your highest score will be recorded.", and "Once you start, you cannot pause the quiz." At the bottom, there is a large blue button with a play icon and the text "Ready to Test Your Knowledge?" and "Make sure you have enough time to complete the quiz." Below this button is a "Start Quiz" button.

Database View:

The screenshot shows the phpMyAdmin interface for the 'edu_port' database. The left sidebar displays a tree view of the database structure, including tables like 'cache', 'courses', 'enrollments', 'failed_jobs', 'jobs', 'lectures', 'migrations', 'password_reset_tokens', 'quizzes', 'quiz_attempts', 'quiz_questions', 'sessions', and 'users'. The main panel shows the 'Structure' tab for the 'edu_port' database, listing 15 tables with their respective actions (Browse, Structure, Search, Insert, Empty, Drop) and details (Rows, Type, Collation, Size, Overhead).

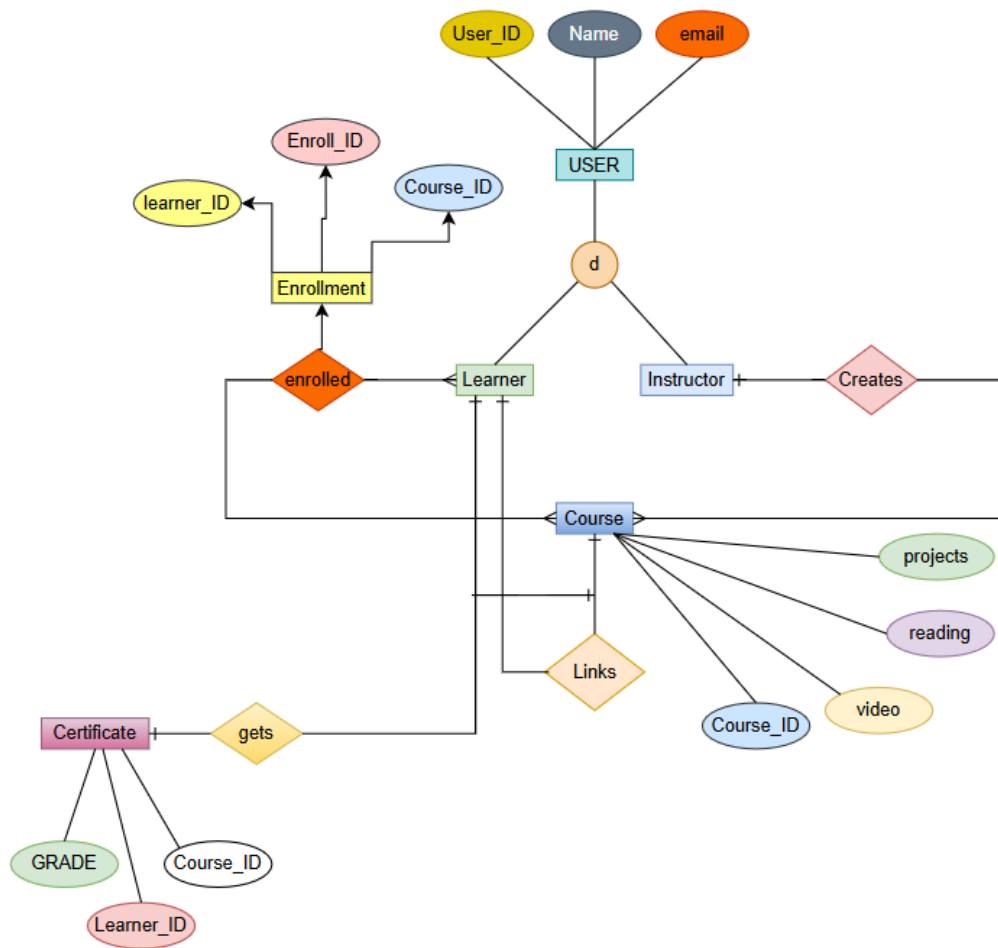
Table	Action	Rows	Type	Collation	Size	Overhead
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cache_locks	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
courses	Browse Structure Search Insert Empty Drop	8	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
enrollments	Browse Structure Search Insert Empty Drop	6	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
failed_jobs	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
jobs	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
job_batches	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
lectures	Browse Structure Search Insert Empty Drop	19	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
migrations	Browse Structure Search Insert Empty Drop	11	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
password_reset_tokens	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
quizzes	Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
quiz_attempts	Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
quiz_questions	Browse Structure Search Insert Empty Drop	1	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
sessions	Browse Structure Search Insert Empty Drop	3	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
users	Browse Structure Search Insert Empty Drop	9	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
15 tables	Sum	58	InnoDB	utf8mb4_general_ci	464.0 KiB	0 B

User:

The screenshot shows the phpMyAdmin interface for the 'users' table in the 'edu_port' database. The left sidebar displays a tree view of the database structure, including tables like 'cache', 'courses', 'enrollments', 'failed_jobs', 'jobs', 'lectures', 'migrations', 'password_reset_tokens', 'quizzes', 'quiz_attempts', 'quiz_questions', 'sessions', and 'users'. The main panel shows the 'Browse' tab for the 'users' table, displaying a list of users with their details (id, name, email, role, email_verified_at, password, remember_token).

	id	name	email	role	email_verified_at	password	remember_token
<input type="checkbox"/>	2	Teacher User	teacher@example.com	teacher	NULL	\$2y\$12\$a19ikZjE5FFSVq/pUuKle2AnP2yrSjW77Bh.7h.XxQ...	NULL
<input type="checkbox"/>	3	John Smith	instructor@example.com	teacher	NULL	\$2y\$12\$xLDRG3JIMZodJlvj2ACneusWA7evNcA7DaZS9pAer00...	NULL
<input type="checkbox"/>	4	Muhammad Talha Khan	teacher1@example.com	teacher	NULL	\$2y\$12\$OQ8gNY1GOkxZvB/lyCDKp.iN1wMphz57Th1dw0M5J4z...	NULL
<input type="checkbox"/>	5	Muhammad Talha Khan	teacher2@example.com	teacher	NULL	\$2y\$12\$3xS9nXlQnvxUHmC7vokmSeJTOJmkpXS5G9FsjWNgJP...	NULL
<input type="checkbox"/>	6	Cookie	teacher3@example.com	teacher	NULL	\$2y\$12\$YfVPf6XRhPzFjgMhkB/eM3R95MuBgHaRxnWNdu5gO...	NULL
<input type="checkbox"/>	7	Admin User	admin@example.com	admin	NULL	\$2y\$12\$mHkOyT53tqTQ1mlEdnYOmckMnGle79k4laROKEG1...	NULL
<input type="checkbox"/>	8	Lakhkar	teacher123@example.com	teacher	NULL	\$2y\$12\$89WxGEVK2s2A2d2sAi34..rfniHMFcfVe6eahMQfrx...	NULL
<input type="checkbox"/>	9	maaz	maaz@gmail.com	student	NULL	\$2y\$12\$YSQwysm0EDi0.EhnTXl.7eRlQ4f1r10Qu6SqH7O....	NULL

EER Diagram:



Conclusion:

This Online E-Learning Platform offers a robust, scalable, and user-friendly solution for modern education delivery. It effectively supports blended and remote learning models, making it a valuable tool for educational institutions, training centers, and individual instructors.

With well-structured course management, detailed tracking, and role-based access, it streamlines the learning process while keeping all stakeholders engaged.

THE END
