

Interactive E – Learning System

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Abstract: *The boom of the digital education world, the need for online systems that can satisfy both instructors and learners is becoming increasingly essential. This project presents a complete Online Learning Management System built with the Laravel PHP framework that enables the instructor to design and publish their free and paid courses and allow students to view and enrol in desired courses and gain access to course material such as videos and documents in an organized manner. The system also offers a variety of features available to a SuperAdmin, Instructor, and Student roles such as shopping cart checkout, categories, and profile management, among others. Thus, this project offers a comprehensive end-to-end e-learning solution that provides an insight into the capabilities of the modern Laravel framework and shows the possibilities of digital education in the current world.*

Keywords: *education world*

1. INTRODUCTION

Education has crossed traditional barriers of the classroom, and students now demand the same accessibility that they expect from others online services; convenience and control that makes finding and learning something new intuitive, easy, and streamlined. These demands have given birth to the eLearning space where learning can be acquired outside of the traditional learning environment. The Online Learning Management System that was the target of development in this project serves this exact purpose by providing a Laravel based solution where course instructors can post their services for the education seekers to find and enroll in at their own pace.

The application was designed with the primary users in mind: those who teach and those who are being taught. Therefore, the Online Learning Management System was developed for Admins, Instructors, Students. For the latter, the application enables course selection and purchase. The former two can create courses and manage their content. The Online Learning Management System has several features, such as authorization and authentication, shopping cart with checkout, and profile management to ensure the functionality of this edutainment platform.

II. METHODOLOGY

The reviewed system was designed using the framework that contributed to rapid application development, enhanced security features, and model-view-controller triad that ultimately determined the choice of Laravel as the main instrument for backend realisation. Using the particular package related to this framework, the user account authorisation system, roles and permissions organisation, and course catalogue were designed. The views were produced using the Blade templating engine that allowed rapid prototyping of dynamic pages. The database was designed using the MySQL system, where the necessary tables for the reviewed system were created.

The frontend was created using HTML, CSS and jQuery, offering functions such as catalogue browsing, course search, their addition to cart, user account login, and checkout. In general, when designing the reviewed system, the author adhered to the progressive development approach, prioritizing the catalogue and accounts development, and postulating the search and checkout stages as more involved. Consequently, the created application was tested for proper functioning of all the related functions following the principle of least privilege.



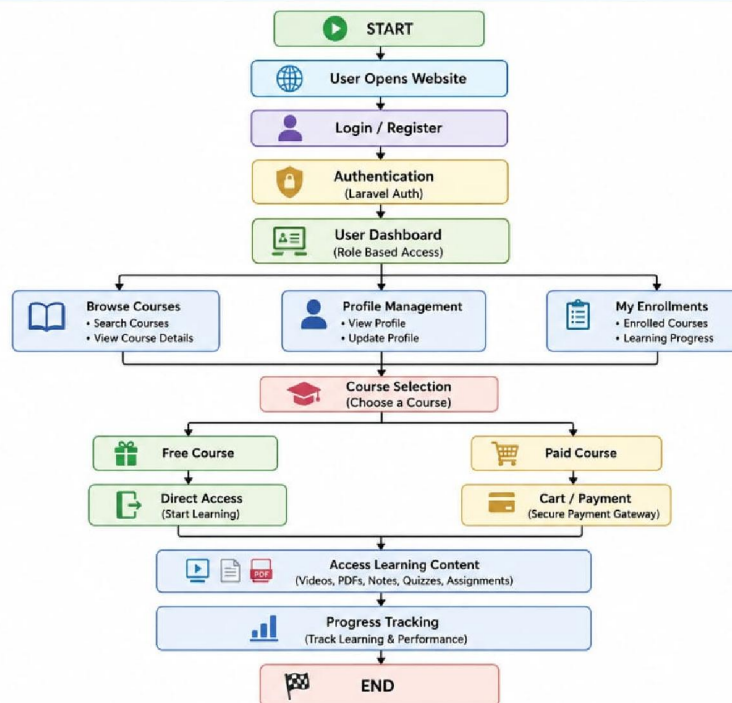
III. MODELING AND ANALYSIS

Table 1. Tools and usage

Sl. No	Material/Tools	Purpose/Usage
1	PHP	Server-side processing, business logic, and session handling
2	Laravel	MVC structure, routing, and application architecture
3	MySQL	Relational database storage for users, courses, and transactions
4	Blade (Laravel Templating Engine)	Dynamic view rendering for pages and dashboards
5	HTML5/CSS3	Page structure and interface design
6	JavaScript/jQuery	Client-side validation and interactive UI elements
7	SCSS/Less	Stylesheet preprocessing for maintainable CSS
8	XAMPP	Local development server (Apache, MySQL, PHP)
9	Composer	PHP package and dependency management
10	npm/Vite	Frontend asset bundling and build management
11	Git/GitHub	Version control and source code management

IV. FLOW DIAGRAM

SYSTEM FLOWCHART – ONLINE LEARNING MANAGEMENT SYSTEM



V. SNAP SHOTS

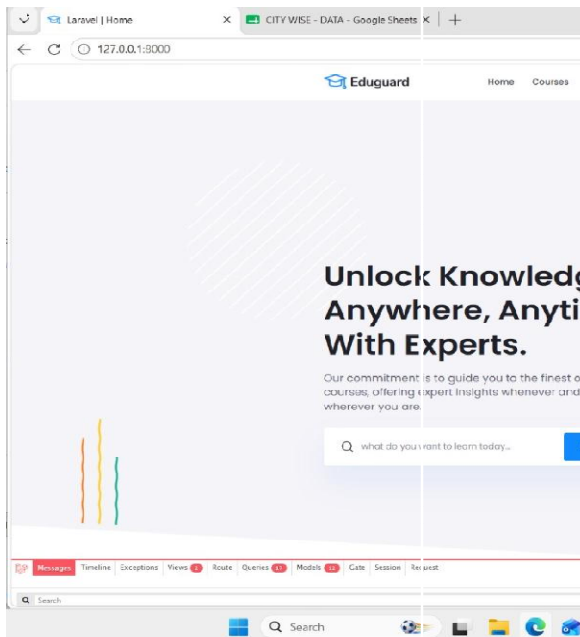


Figure 1: Home Page

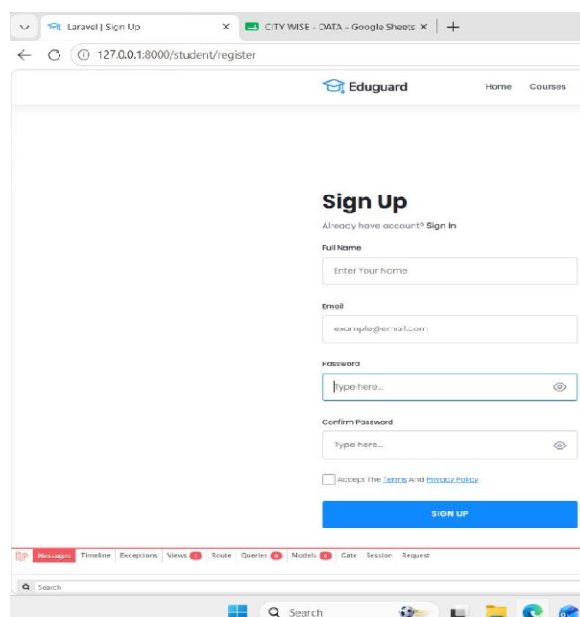


Figure 2: Login Page



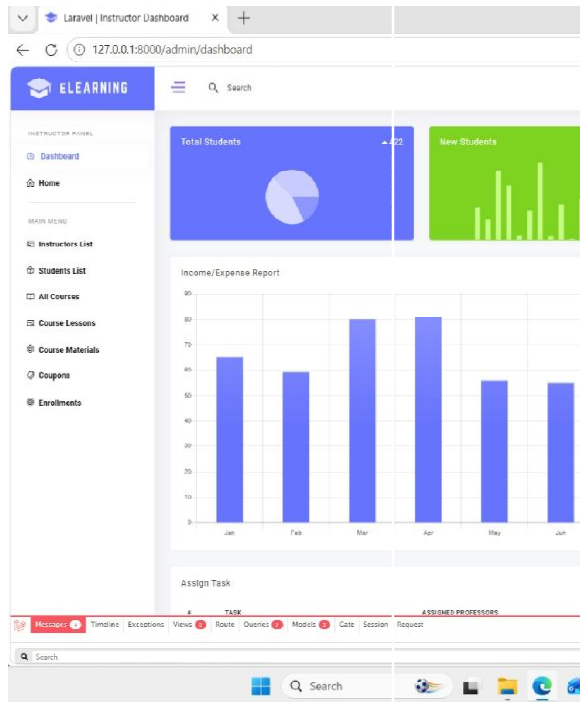


Figure 3: Admin dashboard

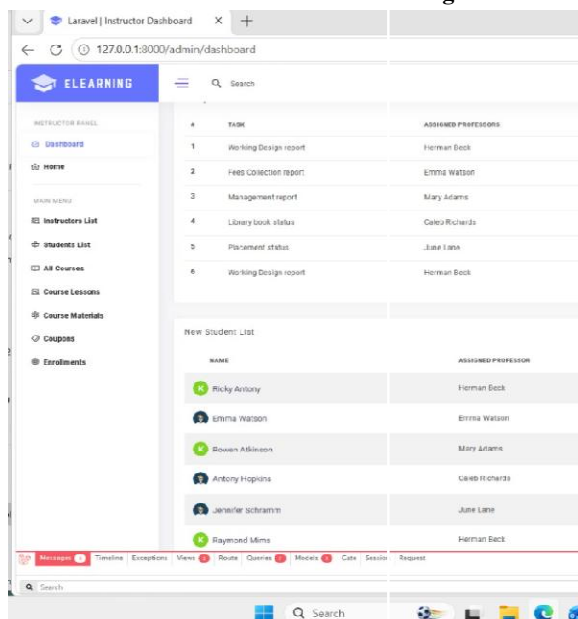


Figure 4: Instructor Dashboard

VI. RESULTS AND DISCUSSION

The developed Online Learning Management System proved to be effective as it provided the established bridge between the lecturers and the audience. As a result of the testing process, the software was evaluated for such basic



requirements as registration/authorization, course creation, posting, checkout, and student access to material. All requirements were fulfilled, and the user was able to use the program's tools for creating and studying electronic courses. To be more specific, roles were clearly defined, indicating that Admin was responsible for the system administration, Instructors – for posting courses, Students – for purchasing and studying them. Besides, the search feature along with filters allowed retrieving required information quickly and efficiently since courses were properly categorized. In this regard, it can be concluded that the program met most of the requirements, being intended to accomplish its purpose of developing an e-learning system. Such issues as checkout page and responsiveness were resolved during the development process. Altogether, the project was completed, creating the online learning platform.

VII. CONCLUSION

This project aimed to design and develop a practical and efficient Learning Management System that could satisfy real-life educational needs. The result is a functional application that allows instructors and students to meet and share valuable information about courses and manage their learning processes online. The application uses a robust Laravel backend combined with a clean frontend to address the main aspects of online education, including permissions, catalogues, and payments. Therefore, it can be concluded that a relatively small-scale project like this can resolve most of the issues arising in the context of large-scale educational platforms.

In addition, this project provided me with a valuable learning experience because working on it allowed me to better understand the concepts of software development and engineering. Specifically, I saw how a team of developers could design a complex application with particular emphasis on the relationships between its multiple components, including backend, frontend, databases, permissions, and others. At the same time, this knowledge helped me realize how much is involved in the seemingly simple process of creating and maintaining online platforms for managing educational content. Therefore, although further improvements and additions, such as the integration with payment systems or additional features, would make the application better, it has proven to be fairly functional and is a competent demonstration of skills related to web application development using Laravel.

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