LEARNING MANAGEMENT SYSTEM

Team Members Details

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Abstract

- The Learning Management System (LMS) is a web-based platform designed to streamline the management and delivery of educational courses, serving two primary roles: the educator and the student.
- Educators, granted administrative authority, can effortlessly create courses, organize content into chapters, and add videos for a structured learning experience.
- They can also track student progress, view enrollment reports, and ensure course popularity based on analytics.
- Students, on the other hand, can sign up, enroll in courses, mark videos as complete, and track their progress through completion percentages.
- The LMS features a user-friendly interface using HTML and CSS, ensuring an intuitive experience for both educators and students.
- The backend, powered by Node.js, handles data management and communication between frontend and backend components, storing course and user data efficiently in a database.

Introduction

- The Learning Management System (LMS) presented here is a sophisticated web-based platform meticulously designed to revolutionize the management and delivery of educational content.
- Tailored to address the needs of both educators and students, the LMS serves as a comprehensive tool for creating, organizing, and participating in online courses.
- This dynamic system facilitates a seamless exchange of information, fostering effective communication and engagement within the educational community.
- With user-friendly interfaces, powerful backend infrastructure, and optional features to enhance the learning experience, the LMS aims to redefine online education by providing a secure, intuitive, and feature-rich environment for educators and students alike.
- Aspiring to elevate the educational paradigm, the LMS integrates optional features like search functionality for course exploration and quizzes at the end of chapters for a more comprehensive understanding.

Existing System

- The current educational landscape features a variety of online learning platforms, each with its own set of features and drawbacks.
- Byju's, known for its interactive video lessons, might be criticized for its subscription-based model, potentially limiting access to certain demographics.
- While the personalized learning approach is a strength, it can also be a disadvantage if the adaptation algorithms do not align with the diverse learning styles of all users.
- Geeks for Geeks, a go-to platform for computer science enthusiasts, excels in content depth but may be perceived as overwhelming for beginners due to its technical focus.
- Subscription fees, content depth, subject breadth, and certification costs are factors that learners need to weigh against the advantages when choosing an online learning platform.
- Each platform has its unique strengths and weaknesses, and understanding these aspects is crucial for making informed decisions based on individual learning preferences and requirements.

Proposed System

- The proposed Learning Management System (LMS) is a user-centric platform designed to simplify online education for both educators and students.
- Featuring an intuitive interface, educators can effortlessly create and manage courses, monitor student progress, and gain insights into course popularity.
- Students benefit from easy sign-up, seamless course enrollment, and progress tracking, ensuring an engaging and personalized learning journey.
- Powered by Node.js for robust functionality and backed by HTML and CSS for a user-friendly interface, the LMS prioritizes accessibility and interactivity.
- Optional features like search functionality and quizzes enhance customization.
- Committed to security, reliability, and original development, the LMS aims to redefine online education by providing a dynamic and feature-rich environment for effective teaching and learning.

Existing <vs> Proposed System

Existing System :

- The existing systems, Byju's and Geeks for Geeks, exhibit certain drawbacks.
- Byju's, with its subscription-based model, presents a potential financial barrier to entry, limiting access for some users.
- Moreover, the adaptive learning algorithms employed by Byju's may not cater to all learning styles, potentially leaving certain students without an optimal learning experience.
- Additionally, the platform primarily focuses on core academic subjects, potentially limiting its suitability for students seeking a broader range of learning experiences.
- On the other hand, Geeks for Geeks, specialized in technical content, may pose limitations for learners interested in diverse subjects beyond programming and computer science.
- The platform's content quality and consistency may vary, given its community-driven approach, raising concerns about accuracy and depth.
- The technical focus of Geeks for Geeks might be overwhelming for beginners or those seeking a more general learning approach.

Existing <vs> Proposed System

Proposed System :

- The proposed Learning Management System (LMS) aims to address several limitations observed in existing platforms such as Byju's and Geeks for Geeks.
- Unlike Byju's subscription-based model, the proposed LMS places a strong emphasis on accessibility and affordability, seeking to offer a comprehensive learning experience without imposing financial barriers.
- Additionally, the LMS focuses on a user-friendly interface, ensuring ease of navigation for both educators and students, a feature that might be lacking in the existing systems.
- In contrast to Geeks for Geeks, which predominantly caters to technical content, the proposed LMS strives for versatility by covering a broader range of subjects provided in form of courses.
- The technical focus of Geeks for Geeks might be limiting for beginners or those with diverse learning interests, a gap the proposed LMS seeks to fill by providing a dynamic and feature-rich learning environment.

Literature Review

- Craig, E. M. (2007). Changing paradigms: Managed learning environments and web 2.0. Campus-Wide Information Systems.
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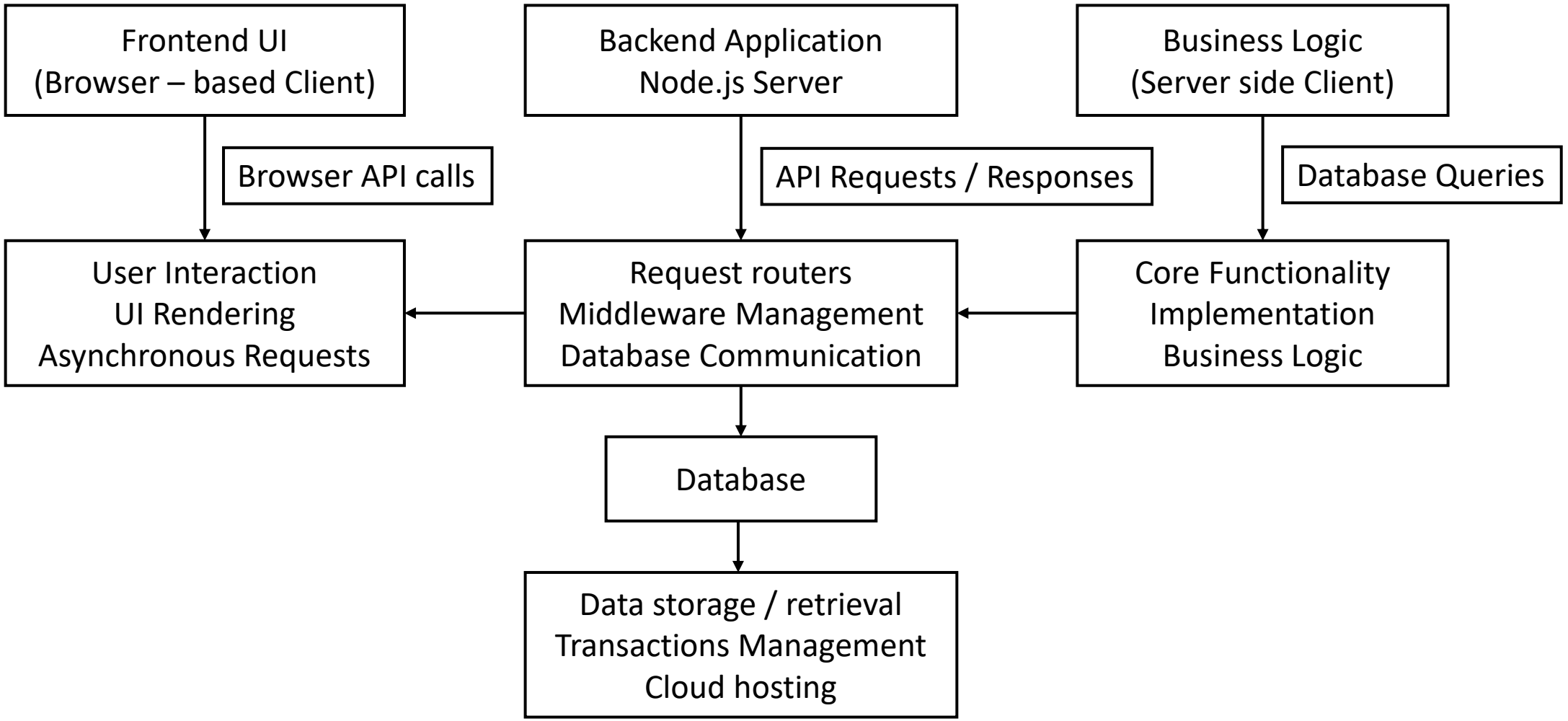
Architecture Diagram
or
System Diagram

System Architecture



Technical Requirements Specifications

Software Requirement Specifications (SRS)

- PostgreSQL Database

- Visual Studio Code with **Node.Js** installed

Hardware Requirement Specifications

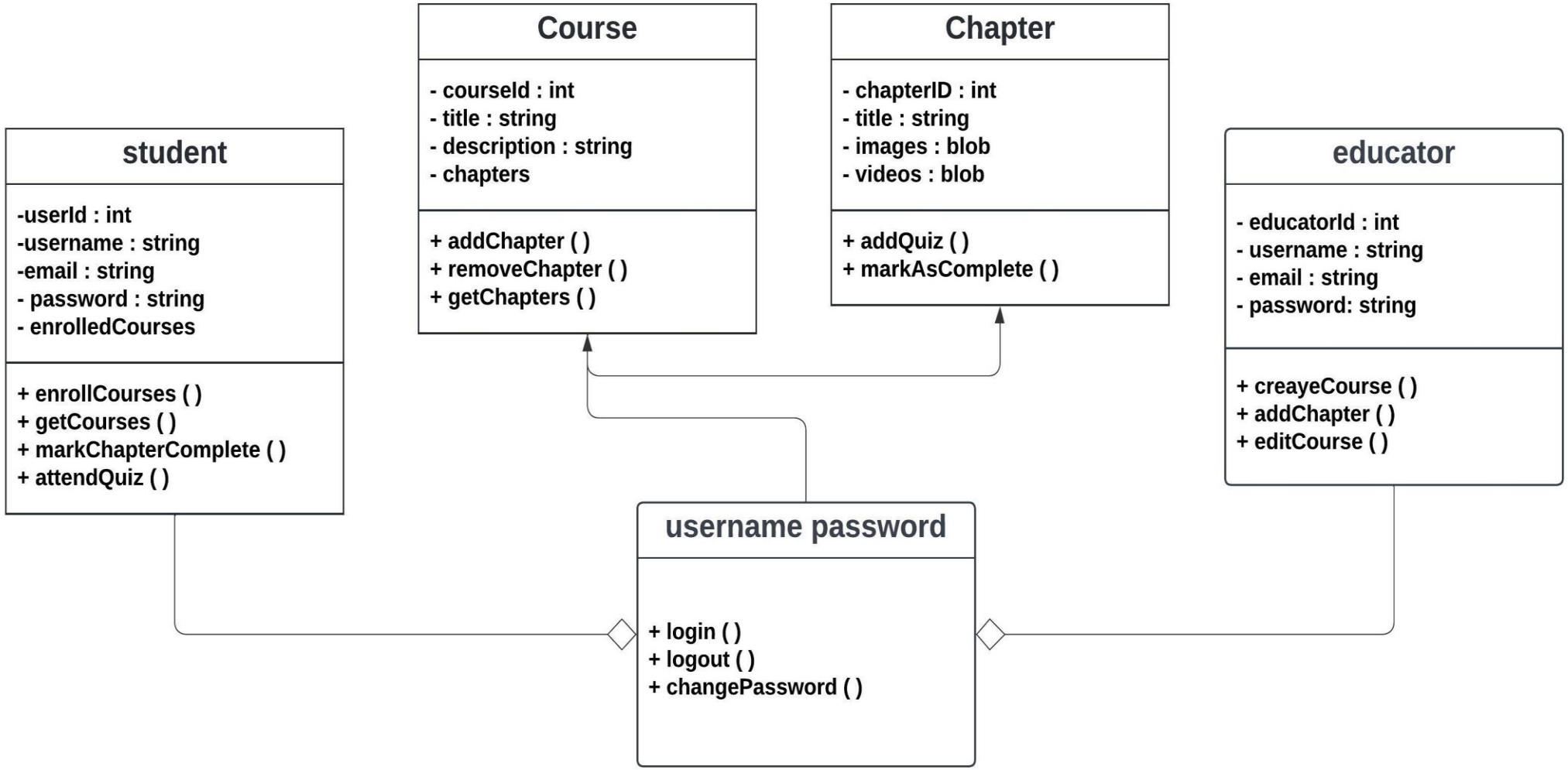
- Processor – Intel core i3 or above
- 64 bit Operating System
- Memory – Min 4 GB RAM
- Hard Disk – 128 GB

Application Modules

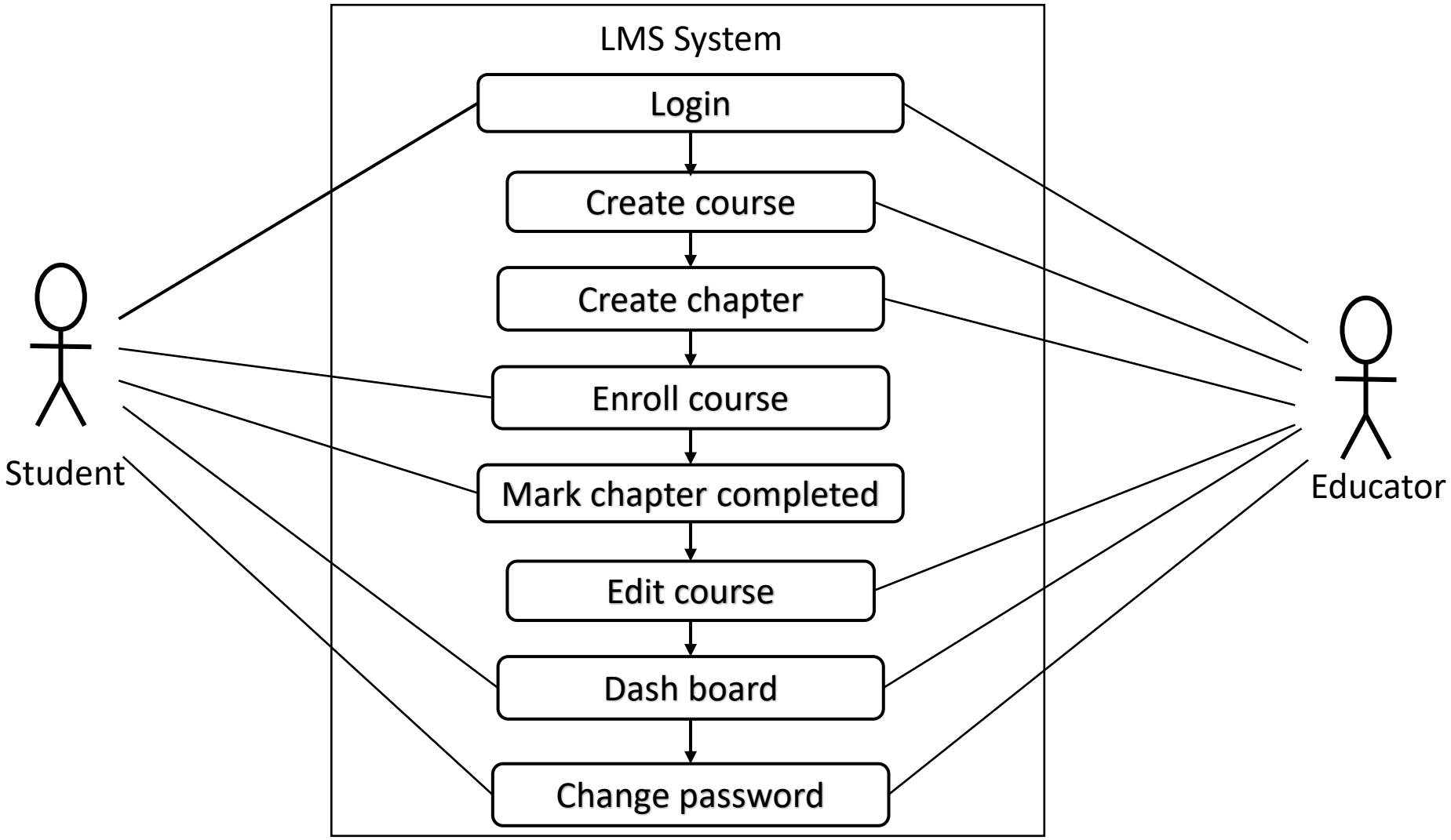
The presence of multiple modules in a Learning Management System (LMS) is driven by the diverse functionalities. Our application has following modules.

- Module -1 : Login Module
- Module -2: Course Management Module
- Module -3: Enrolment Module
- Module -4 : Content Delivery Module
- Module -5: Assessment and Grading Module
- Module -6: Reporting Module
- Module -7: Administration Module
- Module -8: Logout Module

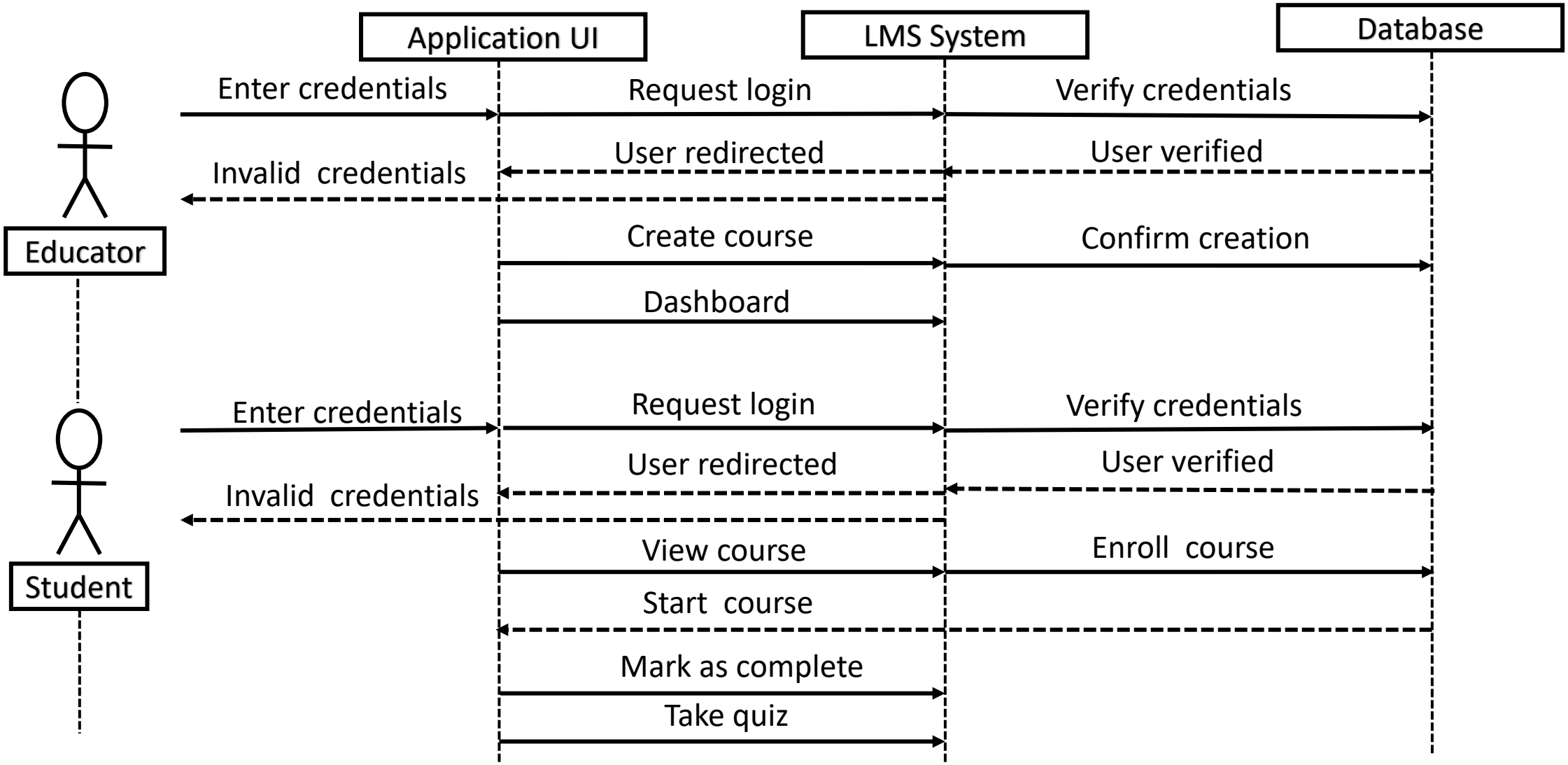
Class Diagram



Use-Case Diagram



Sequence Diagram



About our Application

- A Learning Management System is a robust online platform designed to facilitate the creation, delivery, and management of educational content.
- It serves as a centralized hub where educators can create, organize, and administer courses, while students can access these courses, engage with content, and track their learning progress.

Educator Role :

- Educators use the LMS to create courses, defining objectives, structuring content, and organizing materials into chapters.
- They upload diverse educational content, including videos, documents, and quizzes, ensuring an interactive and engaging learning experience.
- Educators manage user roles, enroll students in courses, and oversee the overall learning journey within the LMS.
- They utilize the platform for creating assessments, quizzes, and assignments, and can assess and grade student performance.

About our Application

- Educators can track student progress, view analytics, and generate reports to assess the effectiveness of courses and adapt teaching strategies accordingly.

Student Role :

- Students sign up on the LMS and enroll in courses of their choice, gaining access to a variety of educational materials.
- They engage with multimedia content, participate in discussions, complete assignments, and progress through the course structure.
- Students take quizzes and assessments, receive grades, and track their overall progress and completion status.
- The LMS provides an intuitive interface for easy navigation, ensuring a seamless learning experience for students.

Testing and Test Cases

- We have written test cases to oyr application using both Jest and Supertest packages.
- Our test file is a mix of unit tests and integration tests.
- Some of our test cases include tests for creating a new course, chapter , page, signup, signin, logout etc.

Status of the Application Development

- We have completed 50% of our project and currently working on the frontend of our project to give more user friendly experience.
- We are currently working on the feature to add videos, image content and probably quizzes as well .

Tentative Date of Application Completion

We are expecting to complete our project by the end of february .

Thank you

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