Systems Requirements Specifications Documents

Project Number : 24

Team Number : 45

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Brief Problem Statement

● Building a cloud based learning management System (LMS) exclusively for AR/VR courses with user authentication, Payment UI, Custom UI, certificate generation like giving badges and also tracking the users' performance. To be built in microservice architecture

System Requirements
1. Backend implemented in NodeJS
2. Frontend Admin Dashboard implemented in React
3. SQL/NoSQL database (like MongoDB) for database
4. Microservice architecture to be followed (A microservice architecture arranges an application as a collection of loosely-coupled services).
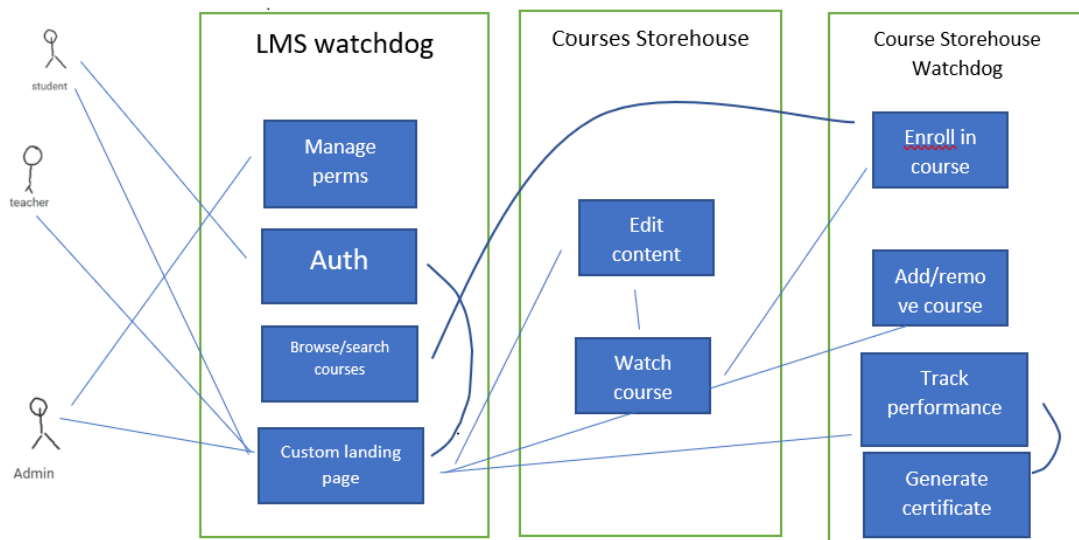
Users Profile:

● Students - will be given login credentials to access course material, questionnaires and will get certificates after completing a particular course. Students can be either school students or college students, and we expect them to be comfortable with using platforms like this one. Focus will be on making a neat and understandable UI so that the platform is easy to use.
● Tutors/Teachers - will add course material and also make questionnaires for the students to use
● Admins-to register the students and teachers/tutors and provide them with the login credentials and role specific permissions.

Feature Requirements

No.	User Case Name	Description	Release
1.	Tutor/teacher login	A new teacher will be asked to first register. Existing tutor will be logged in based on authentication	R1
2.	Students login	Student will be able to register and login.Existing students will be logged in based on authentication	R1
3.	Adding/removing courses	Tutor should be able to add/remove courses	R1
4.	Admin login and providing permissions to teachers/students	Admin should control the permissions being given to students and tutors	R1
5.	Students being able to register for a course	Enabling registration for a course after fee payment	R1
6.	Teachers adding/removing/editing course material	Enabling teachers to add/remove/edit course material for their course	R2

7.	Tracking performance	Tracking student performance based on questions answered in a questionnaire	R2
8.	Generating certificate	Once a student completes a course a certificate must be automatically generated	R2

Use Case Diagram

User Case Description

User case number	UC -1
Use case Name	Tutor/teacher login
Overview	A new Teacher or Tutor will be asked for specific details to register, An existing user will be authenticated based on login credentials.

Actors	Tutor/teacher
Pre-condition	None
Flow	1. Login credentials will be taken as and passed on to the backend. 2. A database query verifies whether the particular details are registered or not. 3. If authentication fails then it prompts to register.
Post Condition	After a successful login, then it moves on to the home page, where one can upload the courses.

User case number	UC -2
Use case Name	Students login
Overview	Student will be able to register and login.Existing students will be logged in based on authentication
Actors	Students
Pre-condition	None
Flow	1. Login credentials will be taken as and passed on to the backend. 2. A database query verifies whether the particular details are registered or not. 3. If authentication fails then it prompts to register
Post Condition	After a successful login, then it moves on to the home page, where one can access the courses.

User case number	UC - 3
Use case Name	Adding/removing courses

Overview	Tutor should be able to add/remove courses
Actors	Tutor/Teacher
Pre-condition	Login
Flow	1. A request for adding or removing courses to the database 2. Database query is made to add or remove the courses
Post Condition	1. If the course is removed, then it is no longer visible in the list of courses. 2. If a new course is added, then the new course will be visible in the list of courses.

User case number	UC - 4
Use case Name	Admin login and providing permissions to teachers/students
Overview	Admin should control the permissions being given to students and tutors
Actors	Admin
Pre-condition	Admin login
Flow	1. Admin gives the special permission to teachers/Tutors to add or remove the courses, but both teachers and student can view them
Post Condition	None

User case number	UC -5
Use case Name	Students being able to register for a course

Overview	Enabling registration for a course after fee payment
Actors	Student
Pre-condition	Login, Do payment
Flow	1. Open the course information page by clicking on the course title. 2. Click Enroll. 3. Read all instructions and follow any prompts you receive.
Post Condition	Once you're enrolled in a course, you'll see it on your home page while logged in.

User case number	UC -6
Use case Name	Teachers adding/removing/editing course material
Overview	Enabling teachers to edit course material for their course
Actors	Tutor/teacher
Pre-condition	Login
Flow	- The tutor can add the course material in a course - A request is made to delete the course material created by the tutor. The course material is deleted from the database. - The tutor can update the course material in an existing course.
Post Condition	None

User case number	UC -7
Use case Name	Tracking performance
Overview	Tracking student performance based on questions answered in a questionnaire
Actors	Tutor/teacher
Pre-condition	Login
Flow	The tutor can analyze the performance of the student based on the questions answered by him in the exam (get the data from the backend by an API request and perform the analytics)
Post Condition	None

User case number	UC -8
Use case Name	Generating certificate
Overview	Once a student completes a course a certificate must be automatically generated
Actors	Tutor/teacher
Pre-condition	Student should have completed the course
Flow	Make a request to the backend to get the data of the student in that particular course and analyze the performance to give some grades and generate the certificate
Post Condition	None