

Product Design

**Team Number: 45, Gautam Ghai, Yash Mehan, Manaswini Tharigopula,
Mandyam Brunda**

Design Overview

Architectural design

In our project there are 3 types of users: admin, teachers and students. After registering oneself as a teacher/student and then logging in, the dashboards will be different for both teacher and the student.

The student will be able to view all the courses he has taken and upon clicking a particular course, he'll see all the details of the course like course topics and modules for that course. He'll also be able to view what percentage of that course has been completed by him. Within a module there can be reading material, videos and a quiz for that module. Upon completing a course a certificate will be generated automatically which will be shown in the student's profile.

The teacher will have the ability to register a course, break that into modules and upload/update content for each module. The teacher can view the courses he is instructing and can see the progress of his students who are taking a particular course. Both the teacher and student can view/edit their respective profiles.

The admin will have the ability to provide staff permissions, configure portal and create and customise certificate

Learning Management System Use Case



System Interfaces

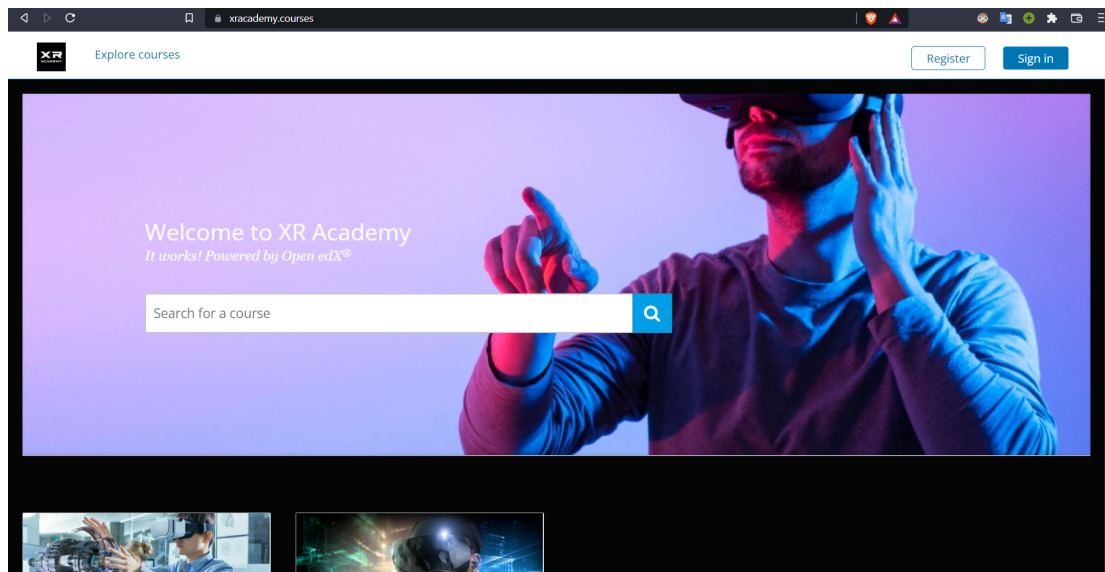
User Interface:

The system caters to 3 types of users: students, Staff and the administrator. Students can sign up, search for a course and register for it. The student can see the list of the courses he has taken and upon clicking a course he can see the topics, modules and also his progress in that course. After completing the quizzes in each course, they'll get a certificate that they can see in their profile. The student can edit the personal details in his profile as well.



Teachers can sign up, register a course, break it into modules and upload/update the content for these modules. They can see the list of courses that they are instructing and on clicking a particular course they can see the list of students enrolled in that course and their progress.

The teacher can edit the personal details in his profile as well.

Below are the screenshots for register and login page:



Course Listing

 <p>edX DemoX Introduction to VR</p> <p>Starts: Feb 5, 2013</p>	 <p>XR_Academy S01 Introduction to AR</p> <p>Starts: Jan 1, 2020</p>
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Authentication page

Already have an XR Academy account? [Sign in.](#)

Create an Account

☐ Support education research by providing additional information

☐ I agree to the XR Academy [Terms of Service](#)

Create Account

Landing page

XR Academy

Courses

Discover New

Help

xracad_admin

My Courses

Introduction to AR

XR Academy - S01

Started - Jan 1, 2020

Resume Course

Search Your Courses

About

Blog

Contact

Donate

XR Academy

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Overview of a course

XR Academy S01

Introduction to AR

Help

xracad_admin

View this course as:

Staff

View course in:

Studio

Course

Progress

Dates

Instructor

Introduction to AR

Resume course

Expand all

Section1

Subsection1 (2 Questions) 1 min + 2 activities

Subsection2

Final Exam due Apr 22, 2022, 7:00 AM GMT+5:30

Course Tools

Bookmarks

Course Handouts

XR Academy

Assessment Module

XR Academy S01

Introduction to AR

Helpym

CourseProgressDates

Course / Section1 / Subsection1

< Previous

Next >

Unit

Bookmark this page

Final Exam due Apr 22, 2022 07:00 IST

uyyfyfu

Numerical Input

100/100 points (graded)

You can use this template as a guide to the simple editor markdown and OLX markup to use for numerical input problems. Edit this component to replace this template with your own assessment.

hnhk

Add the question text, or prompt, here. This text is required.

You can add an optional tip or note related to the prompt like this.

100

✓

100

Show answer

Submit

You have used 1 of 1 attempt

✓ Correct (100/100 points)

Discussion

Show Discussion

Topic: Week 1 / Topic-Level Student-Visible Label

Multiple Choice

1/1 point (graded)

You can use this template as a guide to the simple editor markdown and OLX markup to use for multiple choice problems. Edit this component to replace this template with your own assessment.

Add the question text, or prompt, here. This text is required.

You can add an optional tip or note related to the prompt like this.

☐ an incorrect answer

☒ the correct answer

☐ an incorrect answer

✓

Show answer

Submit

✓ Correct (1/1 point)

< Previous

Next >

Media Module

XR Academy S01

Introduction to AR

Helpym

CourseProgressDates

Course / Section1 / Subsection1

< Previous

Next >

Unit

Bookmark this page

LTI (External resource)

Please provide launch_url. Click "Edit", and fill in the required fields.

LTI (External resource)

View resource in a new window

< Previous

Next >

Progress Page

Your progress

Course completion

This represents how much of the course content you have completed. Note that some content may not yet be released.

100%

completed

Certificate status

Congratulations, you qualified for a certificate! In order to access your certificate, request it below.

Request certificate

Grades

This represents your weighted grade against the grade needed to pass this course.

50%

Passing grade

100%

Your current grade

You're currently passing this course

Grade summary

Assignment type	Weight	Grade	Weighted grade
Homework ¹	15%	0%	0%
Lab ²	15%	0%	0%
Midterm Exam	30%	0%	0%
Final Exam	100%	100%	100%
Your current weighted grade summary			100%

¹The lowest 2 Homework scores are dropped.

²The lowest 2 Lab scores are dropped.

Detailed grades

Section1	Score
Subsection1	101/101

For progress on ungraded aspects of the course, view your [Course Outline](#).

Related links

- Dates
A schedule view of your course due dates and upcoming assignments.
- Course Outline
A birds-eye view of your course content.

Certificate Generation

Introduction to AR

Congratulations! Your certificate is ready.


Request certificate

Generated certificate



ym, you earned a certificate!

Congratulations! This page summarizes what you accomplished. Show it off to family, friends, and colleagues in your social and professional networks.

 Print Certificate

XR Academy acknowledges the following student accomplishment

XR_Academy S01 Certificate | XR Academy

ym

successfully completed, received a passing grade, and was awarded this XR Academy None Certificate of Completion in

XR_Academy S01: small course

a course of study offered by XR_Academy, an online learning initiative of XR_Academy.



More about ym's accomplishment



ym

ym @ XR Academy

Certificate ID Number:

884843ec486c43018092ff2a66c9023d

Issued On:

April 21, 2022

Studio Portal for managing individual Course

Content

Course Outline

+ New Section

Reindex

+ Collapse All Sections

View Live

Course Highlight Emails

Enable Now

Learn more

▼ Section1

✓ Released: Jan 01, 2020 at 00:00 UTC

0

Section Highlights

▶ Subsection1

✓ Released: Jan 01, 2020 at 00:00 UTC

✓ Final Exam Due: Apr 22, 2022 at 01:30 UTC

▶ Subsection2

✓ Released: Jan 01, 2020 at 00:00 UTC

+ New Subsection

+ New Section

Creating your course organization

You add sections, subsections, and units directly in the outline.

Create a section, then add subsections and units. Open a unit to add course components.

Reorganizing your course

Drag sections, subsections, and units to new locations in the outline.

Learn more about the course outline

Setting release dates and grading policies

Select the Configure icon for a section or subsection to set its release date. When you configure a subsection, you can also set the grading policy and due date.

Learn more about grading policy settings

Changing the content learners see

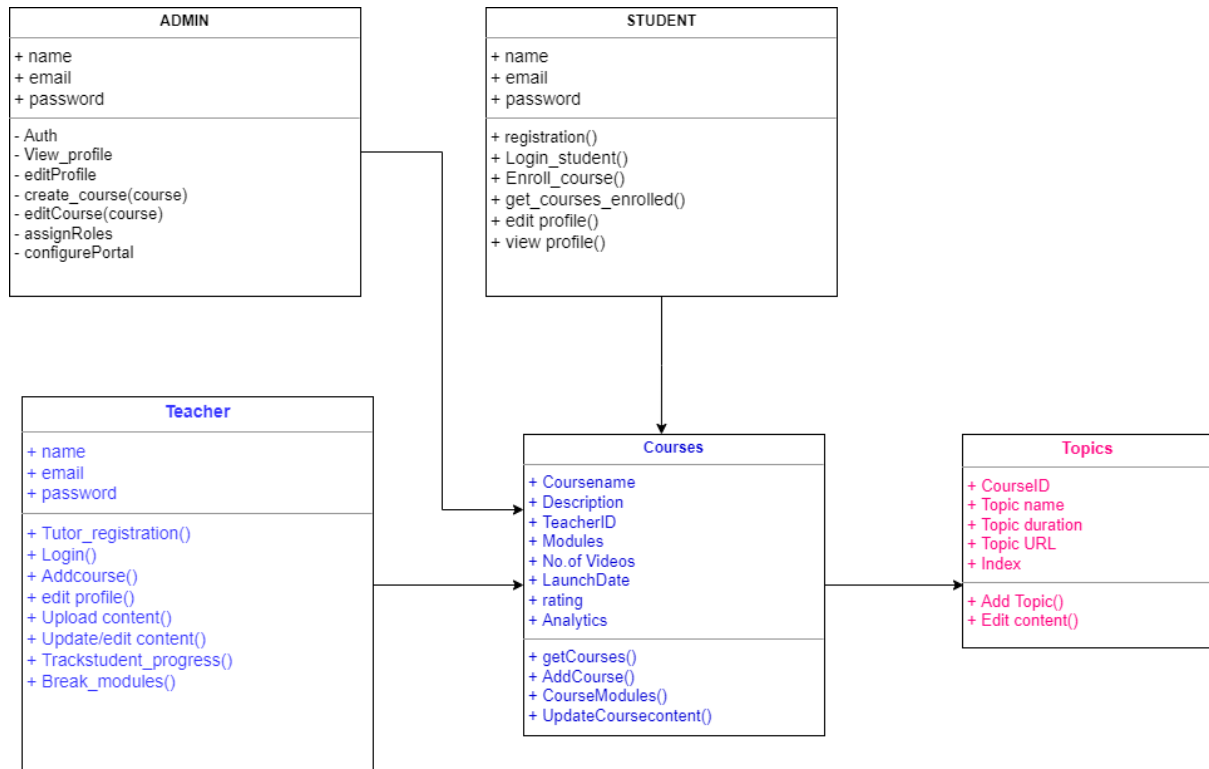
To publish draft content, select the Publish icon for a section, subsection, or unit.

To make a section, subsection, or unit unavailable to learners, select the Configure icon for that level, then select the appropriate **Hide** option. Grades for hidden sections, subsections, and units are not included in grade calculations.

To hide the content of a subsection from learners after the subsection due date has

Model

Diagram link: https://app.diagrams.net/#G1OLpA_dE7SwuLELqETzPEvUowy0WoIM4c

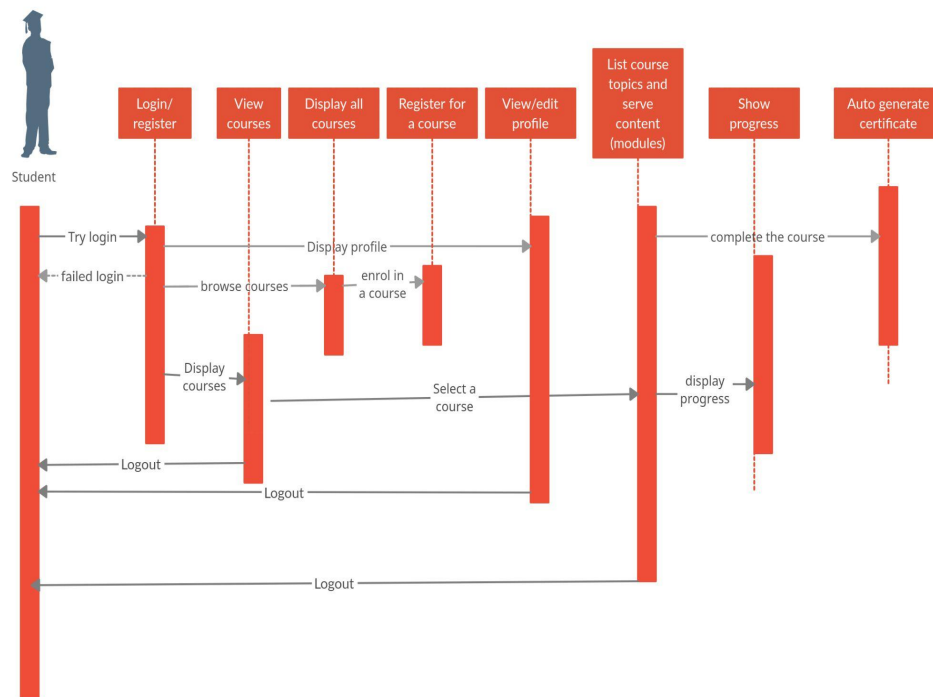


STUDENT	<p>Class state</p> <ul style="list-style-type: none"> • Name • Email <p>Class Behaviour</p> <ul style="list-style-type: none"> • Login() • Register() • Enroll_course() • get_courses_enrolled() • view/edit profile
TEACHER	<p>Class state</p> <ul style="list-style-type: none"> • Name • email <p>Class Behaviour</p> <ul style="list-style-type: none"> • Login() • Tutor_registration() • Trackstudent_progress() • Break_modules() • view/edit profile
ADMIN	Class State

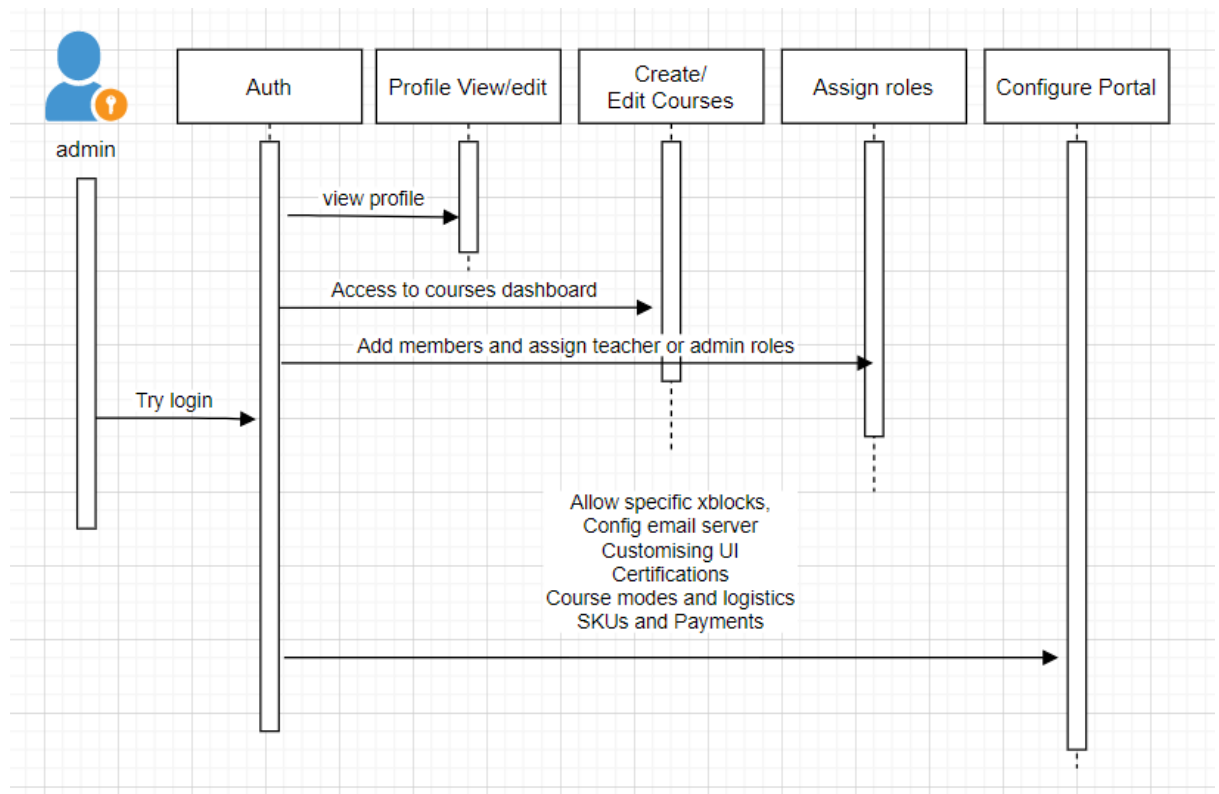
	<ul style="list-style-type: none"> • Name • email <p>Class Behaviour</p> <ul style="list-style-type: none"> • Auth • viewProfile • editProfile • createCourse • editCourse • addContent • assignRoles • configurePortal
COURSES	<p>Class state</p> <ul style="list-style-type: none"> • Course name • TeacherID • Description <p>Class Behaviour</p> <ul style="list-style-type: none"> • Course_modules() • AddCourses()
TOPICS	<p>Class state</p> <ul style="list-style-type: none"> • CourseID • TopicName • Topic URL <p>Class Behaviour</p> <ul style="list-style-type: none"> • AddTopic() • EditContent()

Sequence Diagrams

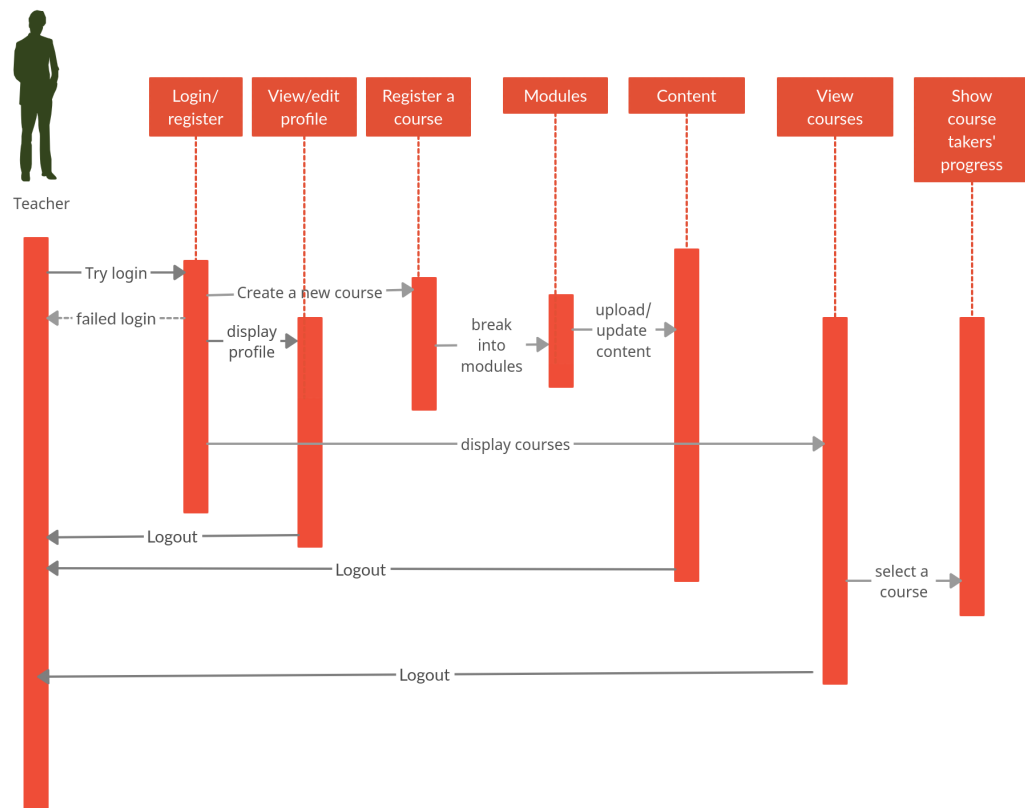
1. For student



2. For admin



3. Teacher



Design Rationale

1. Initially the client proposed that the backend be built using .NET. However, due to limited object relational support, the idea was dropped and instead node js was used for backend
2. Initially the client gave the option of using either SQL or Nosql databases but due more scalability and deep query ability, mongodb was chosen over SQL.
3. The client's initial proposal was that we build the entire LMS from scratch. However, later on the client proposed that we use an open source LMS instead so the final LMS has been built on tutor, a distribution of Openedx.