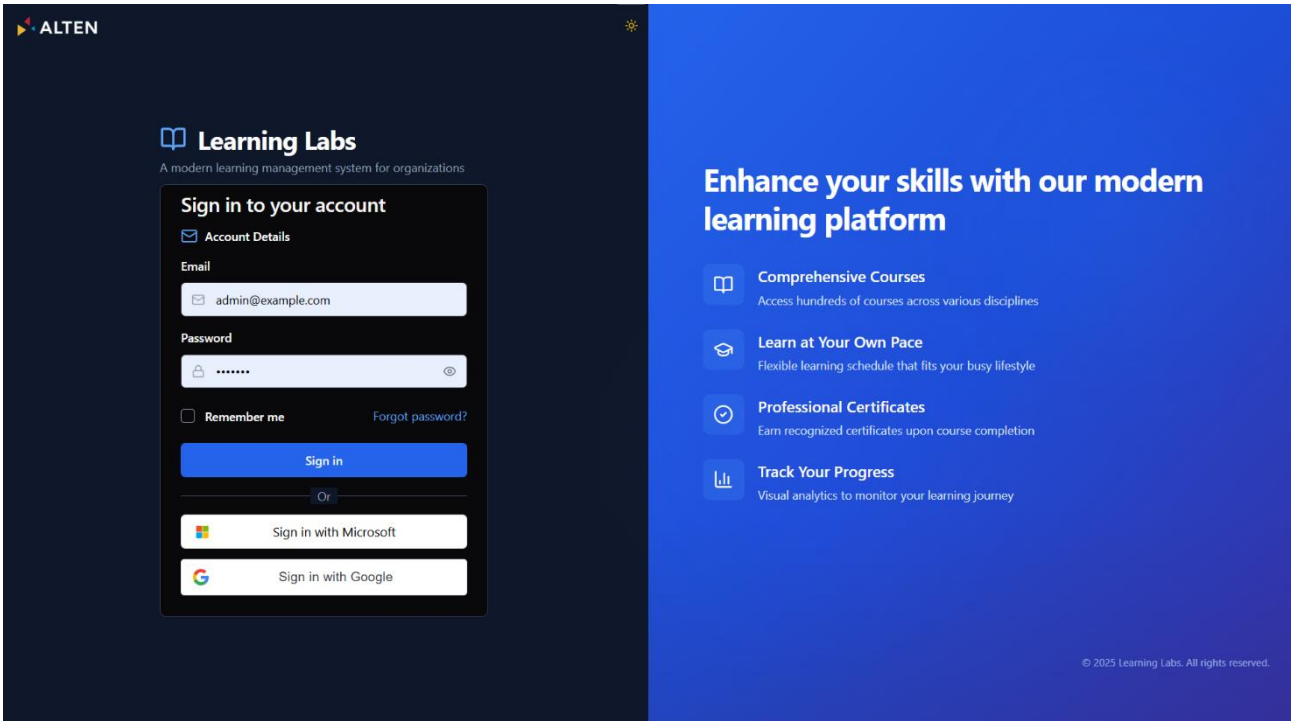
User Guide

Learning Labs



CONTACT INFORMATION

Alten Global Technologies Pvt. Ltd
No.72 & 73, 1st Floor, Krishna Reddy Colony, Domlur layout,
Bangalore 560071, INDIA

LIST OF ABBREVIATIONS

Abbreviation	Meaning
AI	Artificial Intelligence
ALTEN GT	Alten Global Technologies Private Limited
IP	Internet Protocol
Js	Java-Script (Programming Language)
LLM	Large Language Model
LMS	Learning Management System
MCQ	Multiple Choice Questions
ML	Machine Learning
SSO	Single Sign-on
URL	Uniform Resource Locator

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1 Introduction

1.1 Purpose of the User Guide

This user guide is intended to help content creators efficiently use the **Learning Labs' Learning Management System (LMS)**. It provides step-by-step instructions about the system's features, including AI-powered enhancements, to ensure smooth and productive user experience.

1.2 Overview of Learning Labs LMS

Learning Labs is a modern, web-based LMS designed to streamline online learning through intelligent content management, personalized learning paths, and AI-powered automation. The platform allows administrators to manage users and courses, content creators to upload engaging course material, and learners to complete modules, take assessments, and receive certifications. Integrated with powerful AI/ML modules, Learning Labs enhance learning outcomes by automating tasks like video captioning, question generation, and summarization.

1.3 Key Features

- **Role-Based Access** for Admins, Content Creators, and Learners
    - As a content creator you will not be able to see features of Admin privileges
- **Course Approval Workflow** and Group-Based Assignments
- **AI-Assisted Course Uploads** including thumbnail generation, transcript extraction, summarization, and MCQ creation
- **Auto-Captioning** of video content for accessibility
- **LLM-Based Chatbot** for real-time learner support
- **Progress Tracking** and **Certificate Generation**
- **User-Friendly Interface** built with React for responsive and intuitive navigation

1.4 Target Audience

This guide is designed for **Content Creators**, responsible for uploading and managing educational content

2 Scope

2.1 What This Guide Covers

This user guide covers the end-to-end usage of the **Learning Labs LMS** platform from the perspective **Content Creator** role. It provides detailed instructions on how to:

- Access and navigate the LMS
- Create courses
- Upload and structure course content
- Utilize AI-powered features such as automatic thumbnail generation, transcript summarization, MCQ creation, and video captioning
- Engage with the intelligent chatbot for learner support
- Track course progress and download certificates

This guide also includes troubleshooting tips, frequently asked questions, and a glossary of terms for easy reference.

2.2 What This Guide Does Not Cover

This guide does **not** include:

- Features which are exclusively present to Admin roles
- Technical implementation details or source code of the LMS
- Backend system setup or deployment instructions
- React frontend development or customization instructions
- External third-party integration setups (e.g., SSO, analytics tools)

3 Getting Started

3.1 System Requirements

To use the Learning Management System (LMS), ensure the following requirements are met:

- **Operating System:**
  - The LMS supports both **Windows** and **Linux** operating systems.
- **Web Browser:**
  - Compatible with any modern browser, including:
    - **Google Chrome**
    - **Mozilla Firefox**
    - **Microsoft Edge**
- **Network Access:**
  - The LMS can be accessed depending on where it's hosted:
    - If hosted **locally** on a specific machine system:
      - Access it via: `http://localhost:5000`
    - If hosted on a system within a **local network**:
      - Access it via: `http://< system_ip>:5000`

Note: Replace `<system_ip>` with the actual IP address of the system running the LMS.

3.2 Accessing the LMS

- On first-time startup with an empty PostgreSQL database, the system automatically creates a default admin user.
- The default admin credentials are:
  - Email: `admin@example.com`
  - Password: `admin123`
- Use this account to log in for the first time.
- After logging in, the admin can proceed to create and manage other user accounts in the system.

3.3 Creating an Account

There are two methods to create a user account in the LMS:

- **Admin-Created Account:**
  When an account is created by the administrator:
  - The contributor will receive an email once the account is ready.
  - The account is set with the **Contributor** role.
  - The **Contributor** can log in using the given credentials.

3.4 Signing In and Out

Signing In

Users can log in using one of the following methods:

1. **Admin Credentials** – For the default or manually created accounts.
2. **Sign in with Google** – For external or public users.
3. **Sign in with Microsoft** – If supported in the corporate environment.

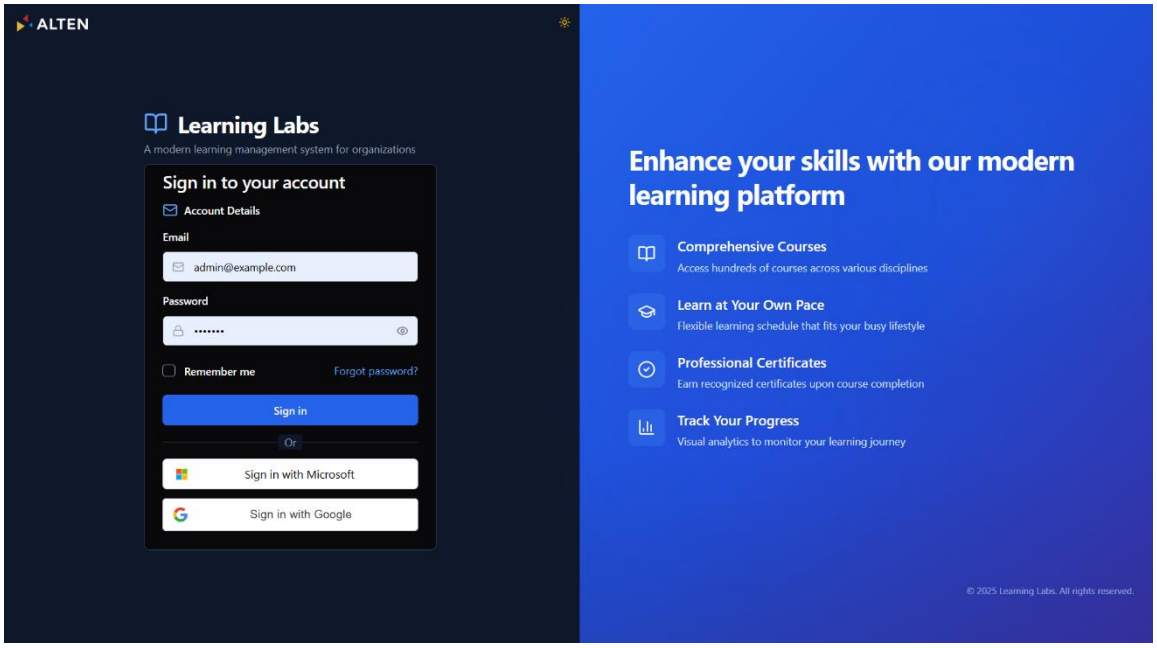

Figure 1: Login Page

Signing Out

Users can securely log out from the application by clicking the **Sign Out** button located in the bottom – left corner.

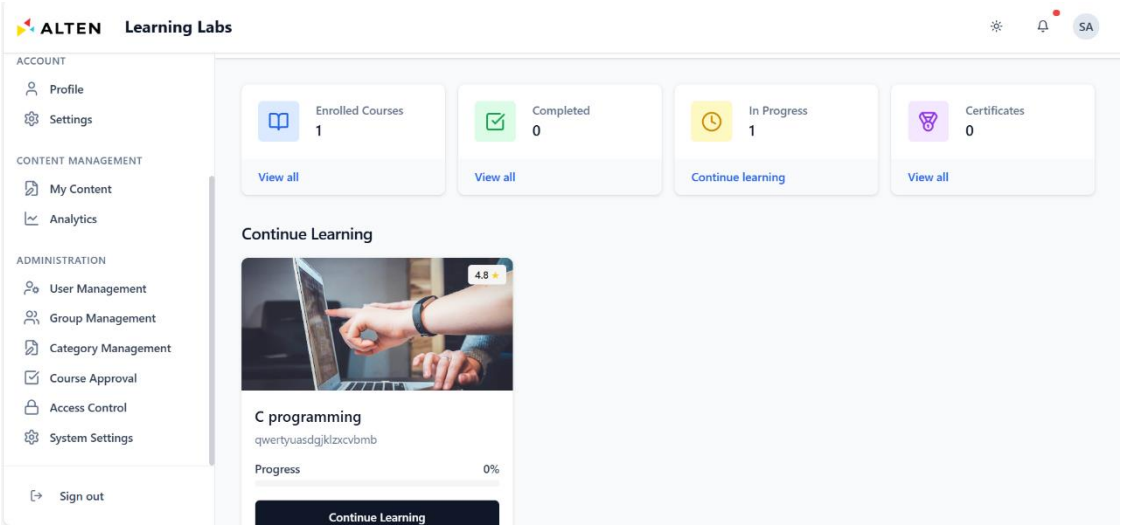

Figure 2: Sign out Page

4 Role-Based User Management

4.1 Overview of User Roles

There are Three unique roles supported by the system. (a) Admin Role (b) Content Creator Role (c) Learner/User role. This user guide is targeted towards Content Creators. Hence, Admin roles related privileges are not explained.

4.2 Content Creator Role

Uploading a New Course

- Once a contributor logs in for the first time, they will have an empty dashboard and the option to create a course.
- The contributor selects the appropriate category and begins creating the course.
- The LMS interface may show four images, from which the contributor can choose one for the course.
- After course creation, contributors can add modules and lessons by uploading course content.

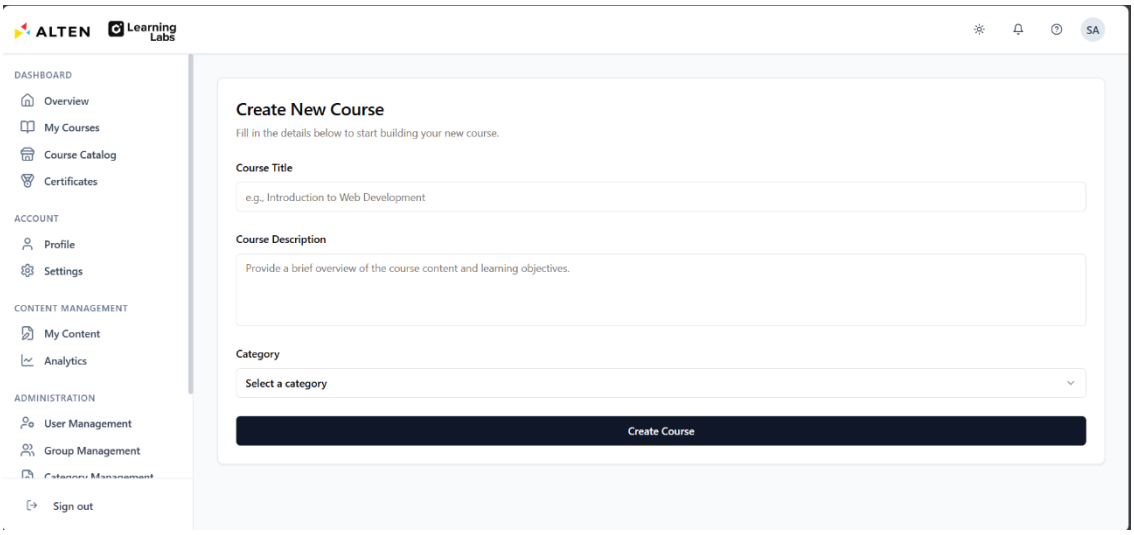

Figure 3: Course Creation Page

4.3 Learner/User Role

4.3.1 Accessing Assigned Courses

- Users can view courses they are enrolled in from their dashboard.
- The dashboard will display the user's name, date, and options to explore courses.
- Clicking on "Explore Courses" will redirect the user to the course catalogue.
- If users haven't enrolled in a course, they can click "Start Learning" to begin the course, automatically enrolling them in that course.
- The system will track which courses are "In Progress" and which are "Completed."

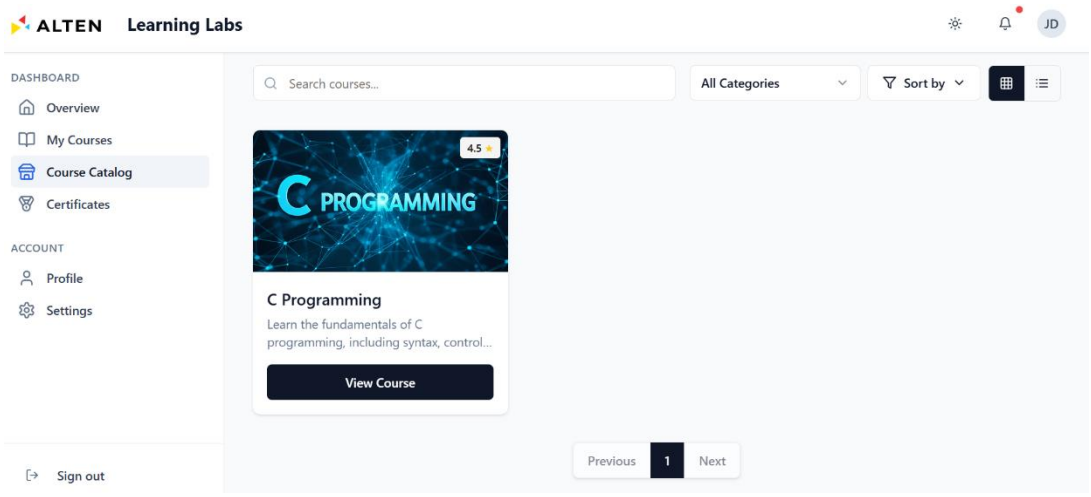

Figure 4: Assigned Courses Page

4.3.2 Tracking Course Progress

- Users can continue learning from where they left off in the course by clicking "Continue Learning" (or "Start Learning" if they haven't started yet).
- The course progress will be saved for each user and can be resumed at any point.
- If the user is watching a video, they can mark it as complete when finished.
- A live Bot powered by an LLM model allows the user to ask any questions related to the course while watching the video.
- Once the video is marked as complete, users can proceed to assessments, which can only be accessed after completing the video.

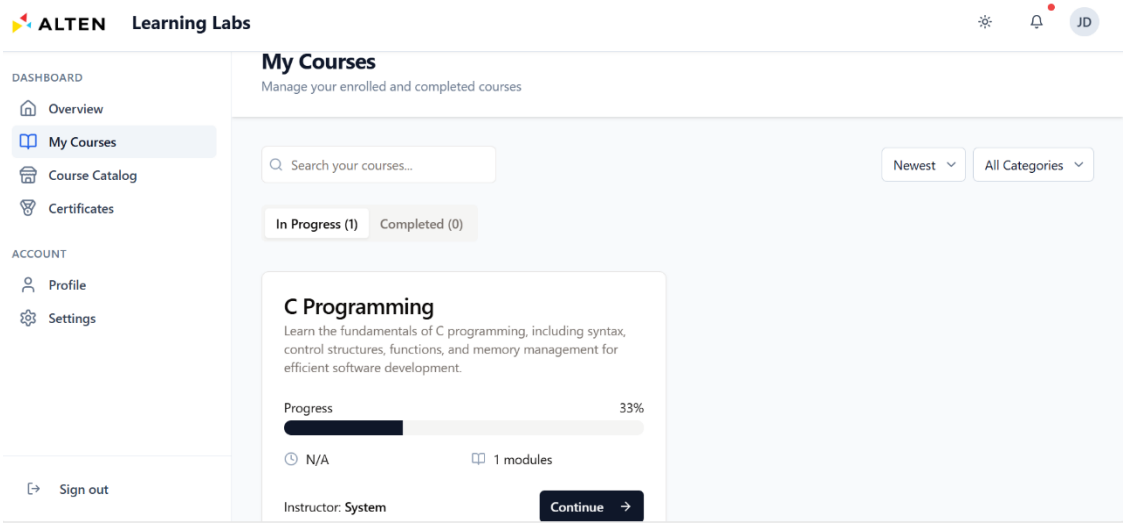

Figure 5: Course Progress Tracker Page

4.3.3 Completing Modules and Exams

- After marking a video as complete, users can take the assessment for that video or module.
- The user will see their score after completing the assessment.

- To earn a certificate, users need to score at least 80%. If they don't, they need to retake the assessment.

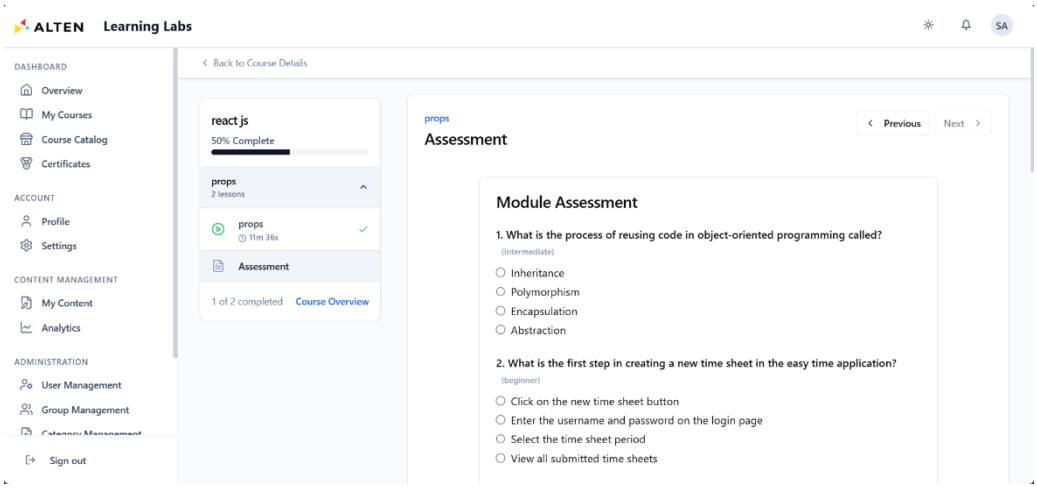

Figure 6: Learning Progress Page

4.3.4 Viewing and Downloading Certificates

- After passing the assessment, users can view and download their certificate.
- The certificate includes a **Unique ID** that can be validated by visiting a public URL (ensuring the certificate's authenticity).
- Users can track their certificate status after completing each assessment.

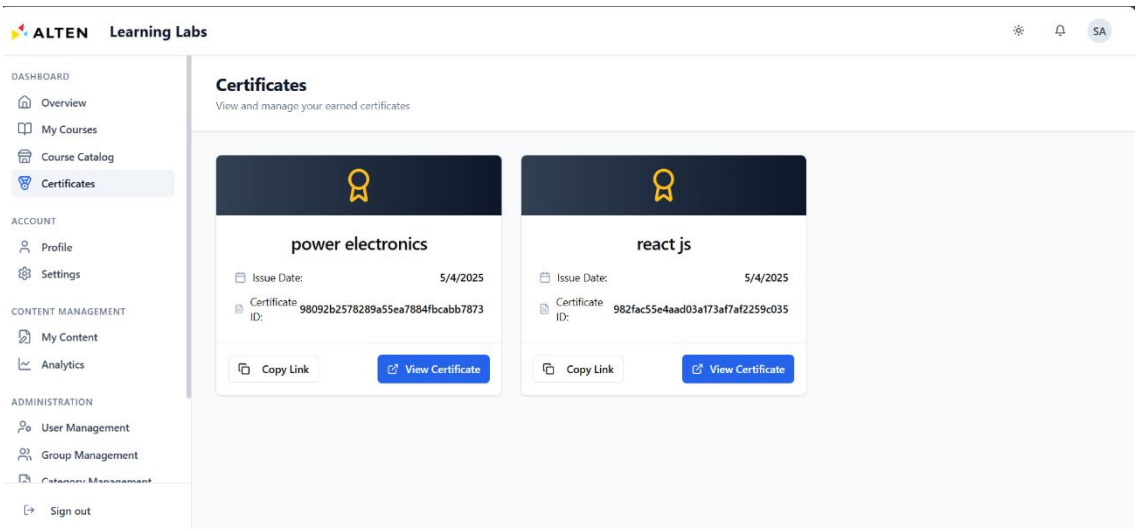

Figure 7: Certificate Dashboard page

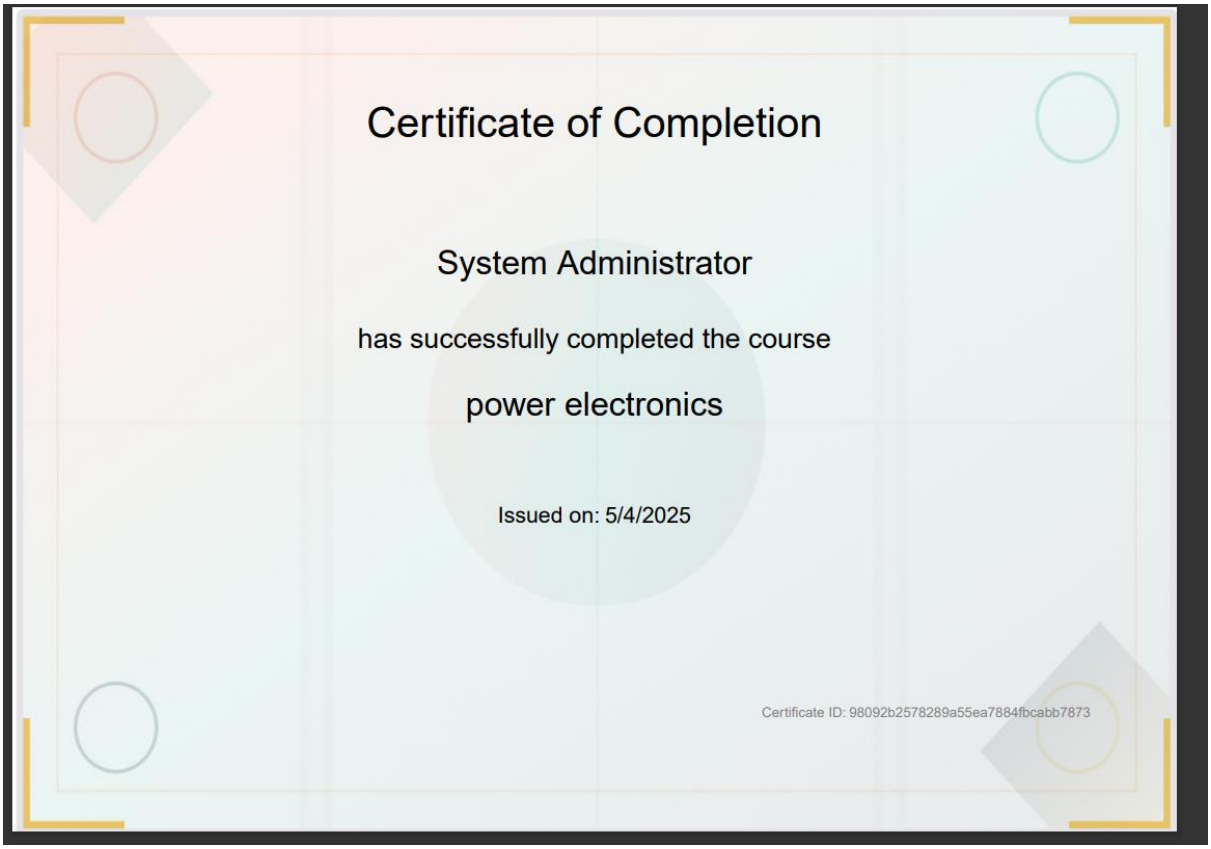

Figure 8: Certificate page

5 Analytics Dashboard

Accessible to Admins and Contributors Only

The Learning Management System (LMS) offers a robust analytics dashboard that provides comprehensive insights into learner behaviour, course performance, and platform engagement. The dashboard is organized into key sections for better visibility and decision-making.

5.1 Overview Metrics

- Total Users - Displays the total number of active learners currently using the platform.
- Course Completion - Represents the average completion rate across all courses. A course is considered complete only if the learner has finished all modules, including videos, assignments, and assessments.
- Average Engagement - Indicates the average weekly time spent learning by each user. This metric helps gauge user involvement and consistency.
- Certificates Issued - Shows the number of certificates issued within the last 30 days based on course completion.

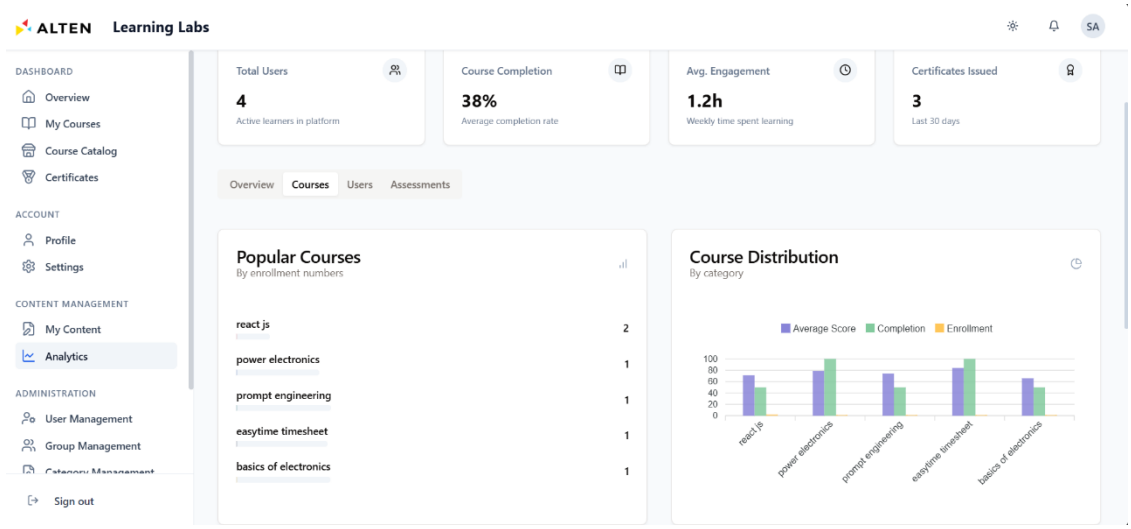

Figure 9: Analytics Page (Popular courses and Course distribution)

5.2 Engagement Overview

- Course Enrolments - Indicates how many users have started each course. Enrolment is recorded when a user clicks to begin the course, regardless of completion.
- Course Completion Rates - Shows the percentage of learners who have completed all components of a course, including videos, assignments, and assessments.
- User Activity and Engagement - Reflects how frequently and for how long users interact with the platform. This includes weekly learning hours and platform visits.

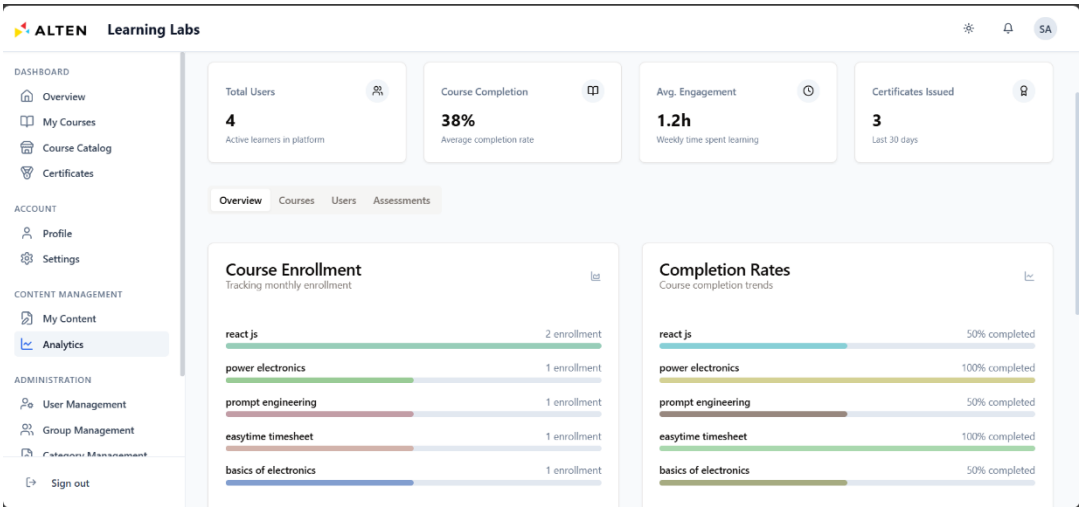

Figure 10: Analysis Page (Course enrolment and completion rates)

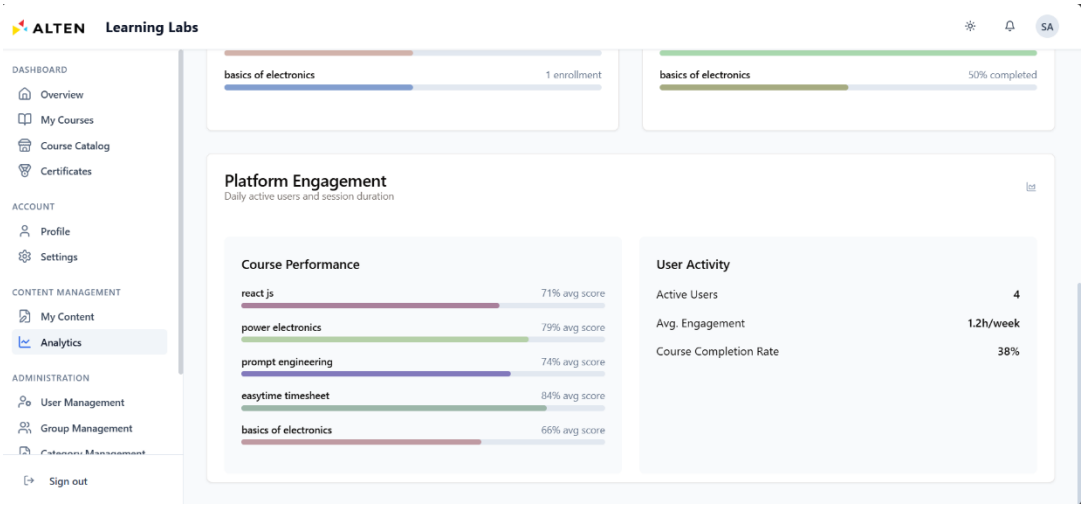

Figure 11: Analysis page (Platform Engagement)

5.3 Course Analytics

- Most Popular Courses - Lists courses based on usage metrics and learner access frequency. Typically sorted in descending order of access or engagement.
- Course Distribution - Visual representation of how users are distributed across different available courses. Often displayed using a donut chart for clarity.
- Course Performance
  Shows detailed analytics per course, including:
  - Number of enrolments
  - Percentage of completion
  - Average assessment scores

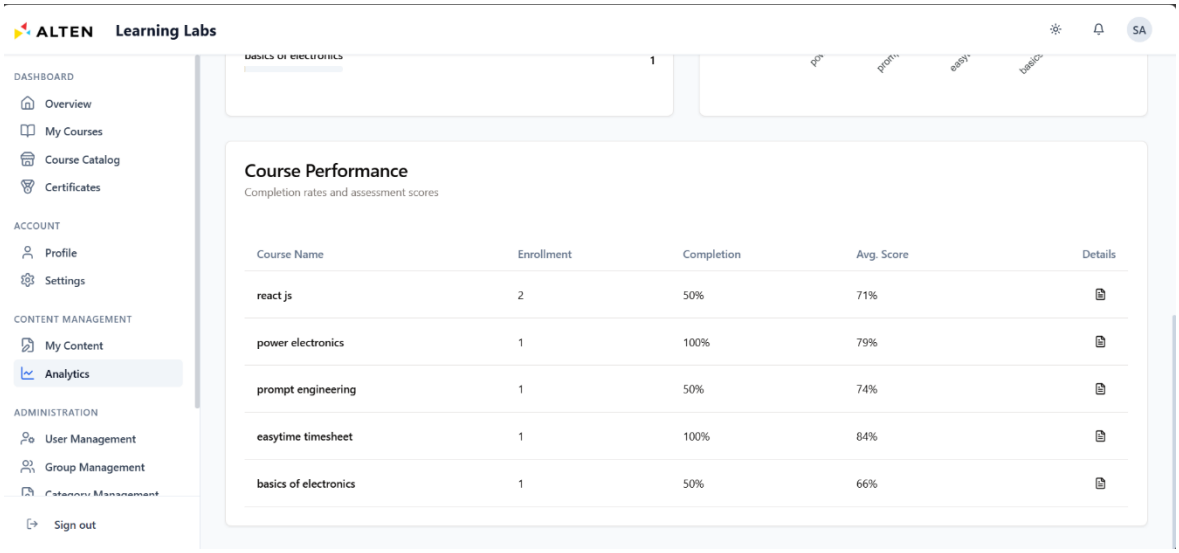

Figure 12: Analysis page (Course Performance)

5.4 Assessment Analytics

Enrolments by Course - Presents the number of users enrolled in each course, useful for analyzing course popularity and reach.

Course Status

- Displays the current state of each course:
- Published
- Rejected
- In Draft

Enrolments Over Time - Tracks how course enrolments change over time. This is shown using a line chart and reflects daily or weekly activity. A rising graph indicates increased user activity, while a dip may highlight declining interest.

All analytical charts provide the following interactive and export features:

- Downloadable in SVG, PNG, and CSV formats
- Reset to default view
- Zoom in and out functionality
- Date-range based zoom options for time-series graphs.

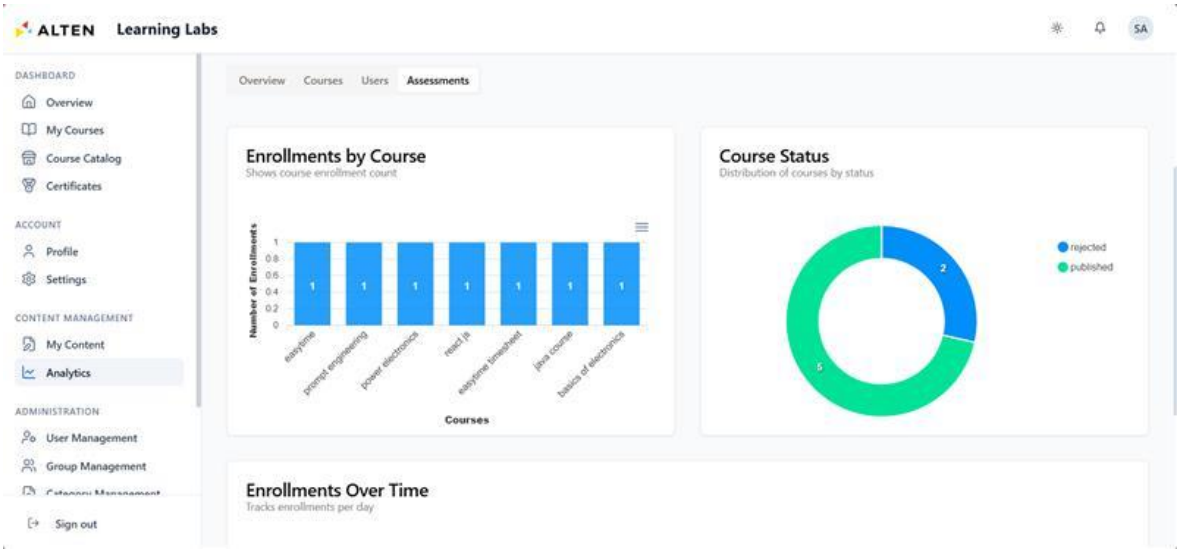

Figure 13: Analysis Page (Enrolments by course and Course status)

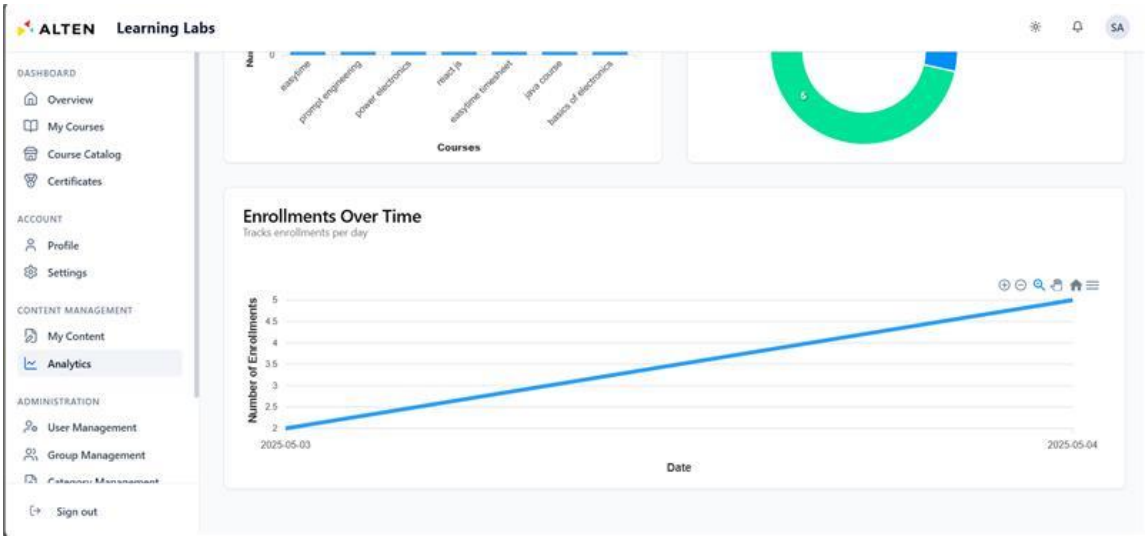

Figure 14: Analysis Page (Enrolments over time)

6 Course Management

6.1 Creating a Course

Only **contributors** and **admins** can create courses. Although both can initiate the creation, **course creation primarily belongs to the contributor role**.

Steps to Create a Course:

- **Log in as a Contributor**: Upon first login, the dashboard will appear empty, but options to create a course will be available.
- **Select a Category**: Choose from the list of available course categories.
- **Enter Course Details**:
    a. **Title** and **Description** must be provided.
    b. Once filled, an **AI model** will automatically generate **4 course images** based on the title and description.
    c. The contributor can select one image of their choice to represent the course.
    d. The selected image is saved in the database.

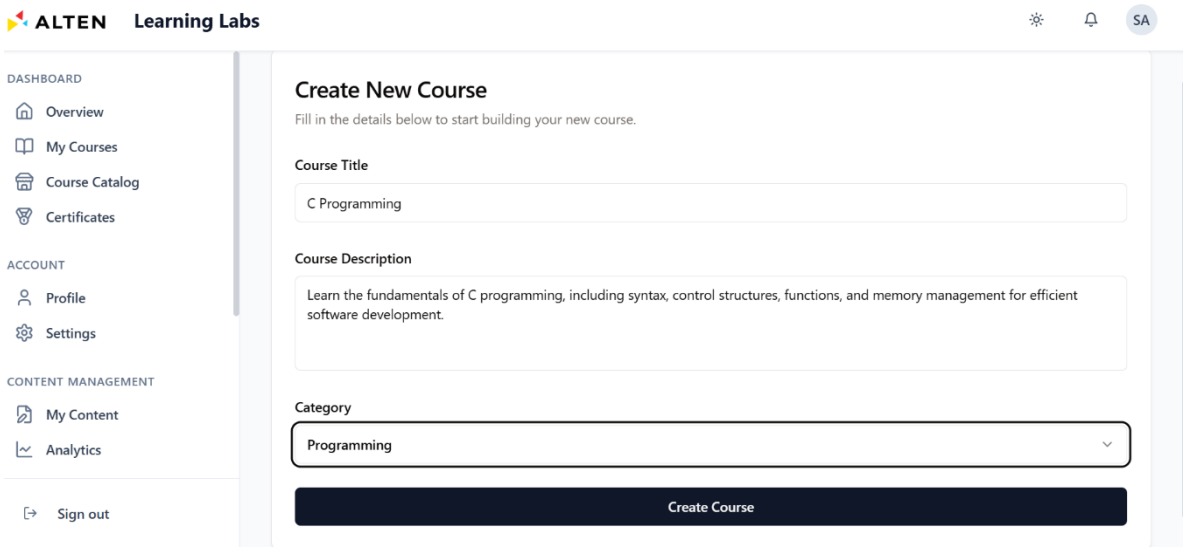

Figure 15: Course Creation page

6.2 Adding Modules

Once the course is created:

- Navigate to the course page and click on **“Add Module”**.
- Provide the module title and other necessary information.
- Click **“Save Changes”** to store the module data.

6.3 Uploading Video Content

Within each module:

- Use the **“Add Lesson”** option to upload content.

- Upload **videos** or other lesson materials.
- After uploading, click **"Save Changes"**.

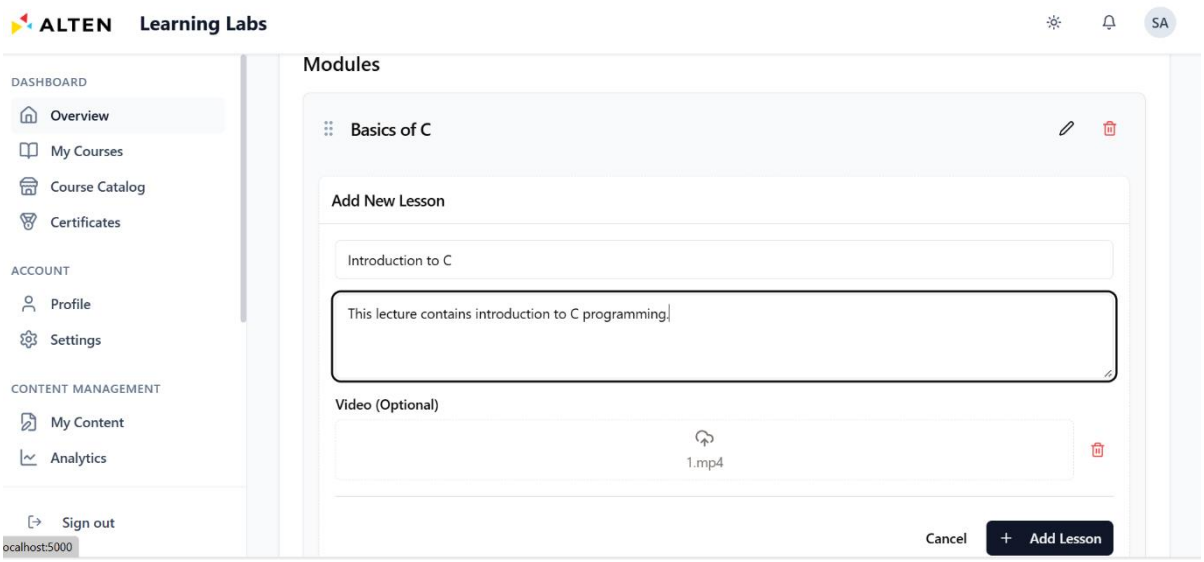

Figure 16: Video Upload Page

6.4 Managing Course Content

When a contributor clicks **"Save Changes"** after uploading lesson content:

- An **ML pipeline** is triggered.
- It **automatically generates**:
  - **Transcript**
  - **Summary**
  - **Questions**
- All generated content is saved directly to the **database**.
- Contributors can **review and manage** these generated resources within the lesson interface.

7 AI Features

Our Learning Management System (LMS) is enhanced with cutting-edge AI technologies to improve user engagement, content delivery, and learning outcomes. Below are the key AI features and their functionalities:

7.1 Auto-Generated Course Thumbnails

Automatically generates visually appealing and context-relevant thumbnails for each course based on course title, description, or video content. This helps maintain a consistent design aesthetic across the platform without requiring manual image editing.

How it helps:

- Saves time and effort for instructors.
- Enhances visual appeal of course listings.
- Improves learner engagement through better visual cues.

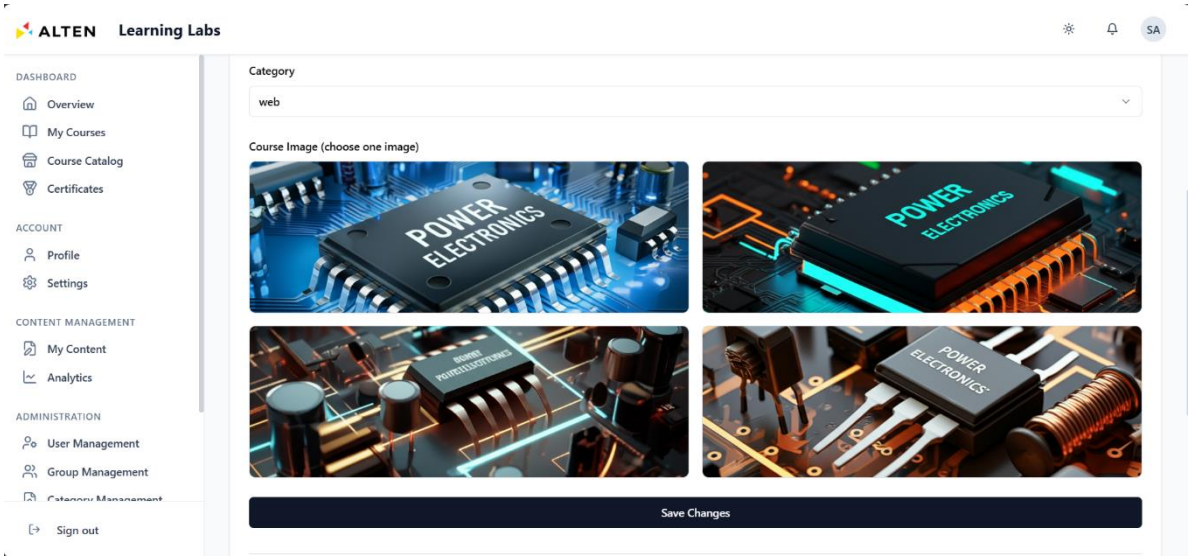

Figure 17: Auto Thumbnail Generator page

7.2 Transcript Extraction and Summarization

Uses speech-to-text and NLP techniques to extract the full transcript from video lectures and summarize it into concise, readable content.

How it helps:

- Enables quick review of lengthy video content.
- Improves accessibility for hearing-impaired users.
- Supports note taking and study material generation.

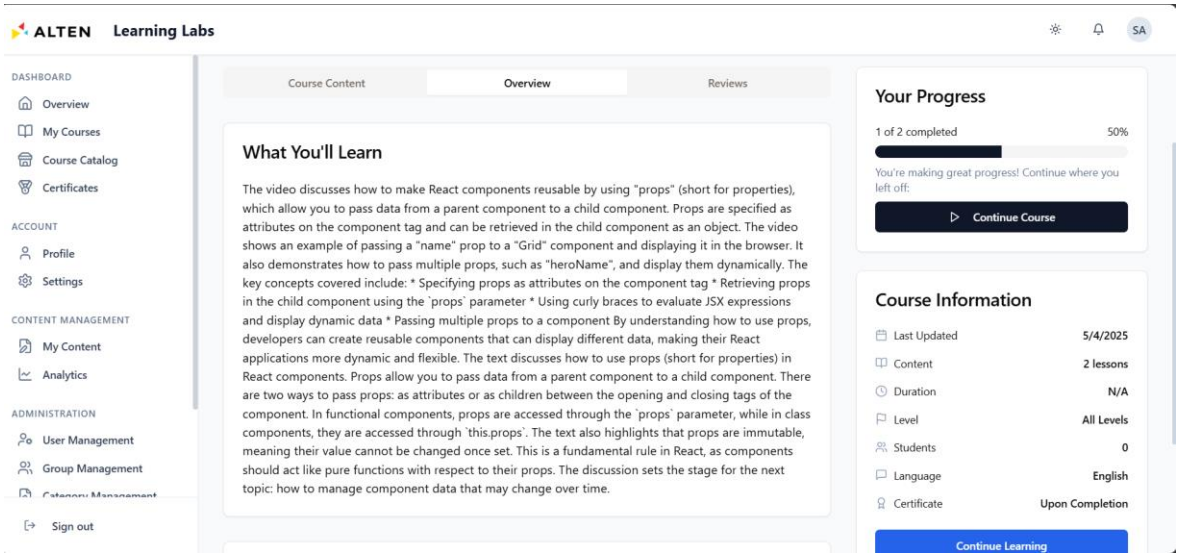

Figure 18: Transcript Extraction & Summary Page

7.3 LLM-Based MCQ Generation

Leverages Large Language Models (LLMs) to automatically generate Multiple Choice Questions (MCQs) from lecture content, transcripts, or uploaded documents.

How it helps:

- Helps instructors create quizzes effortlessly.
- Enhances student practice and assessment opportunities.
- Customizable difficulty levels and topics.

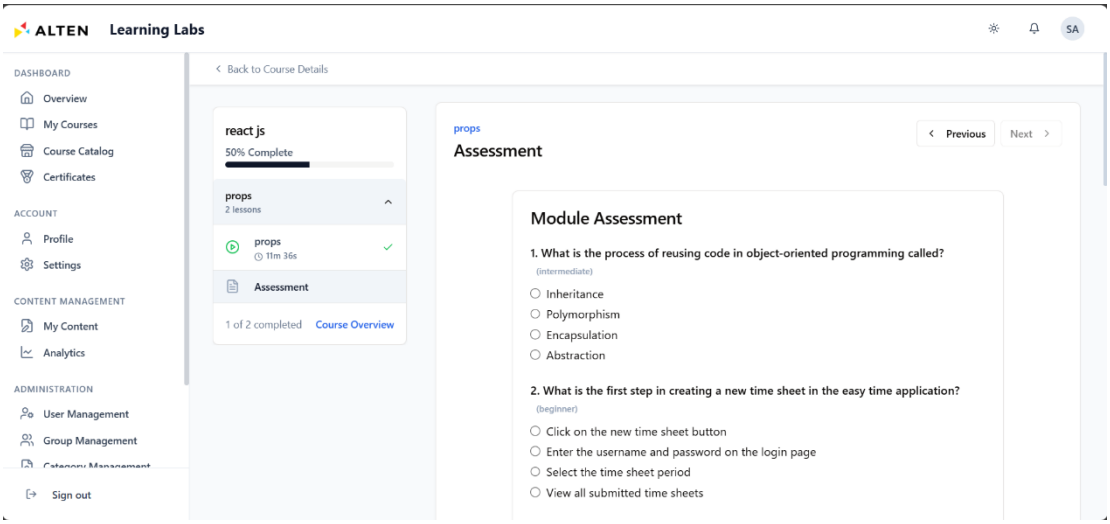

Figure 19: Automated MCQ Creation page

7.4 Video Auto-Captioning

Automatically generates captions for video content in real-time or post-upload using AI-based speech recognition.

How it helps:

- Increases accessibility for all learners.
- Supports multilingual learning environments.
- Allows for better understanding of lectures in noisy environments.

Figure 20: Auto Captioning page

7.5 Intelligent Chatbot for Doubt Resolution

An always-available AI assistant that answers student queries related to course content, schedules, , or general doubts using contextual understanding.

How it helps:

- Provides instant responses to students.
- Reduces instructor workload.
- Improves student satisfaction and retention.

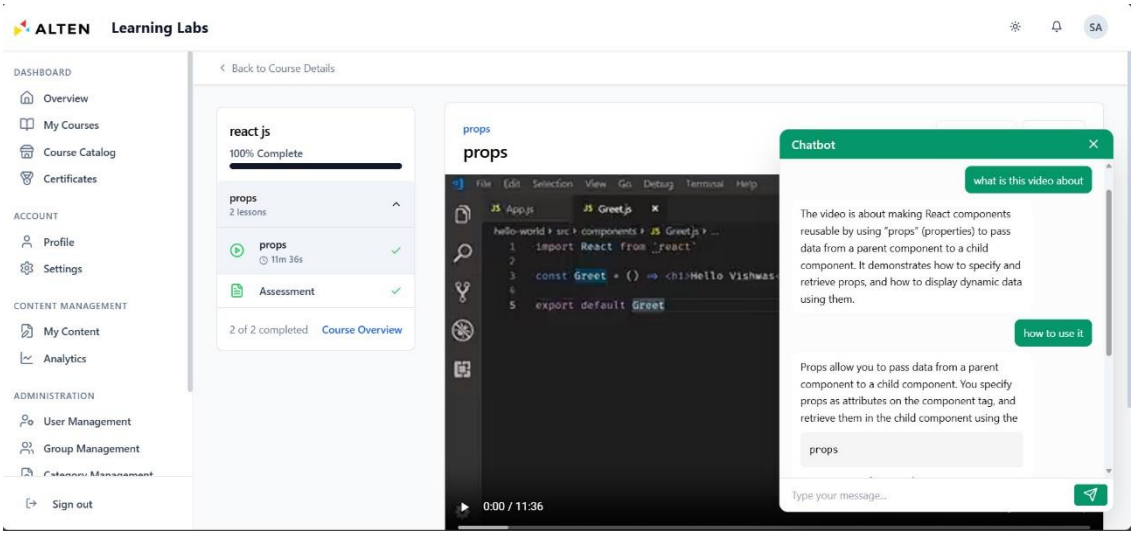

Figure 21: Chabot

8 Communication and Notifications

The Learning Management System (LMS) uses both **in-app notifications** and **emails** to keep users informed about important events, access rights, and system updates.

8.1 In-App Notifications

When a user logs in to the LMS, they may see notifications in their dashboard. These notifications typically cover:

- **New course access granted**
- **Password reset alerts**
- **User accepted into the application**

These notifications are designed to alert users about actions that affect their learning or contribution activities directly within the platform.

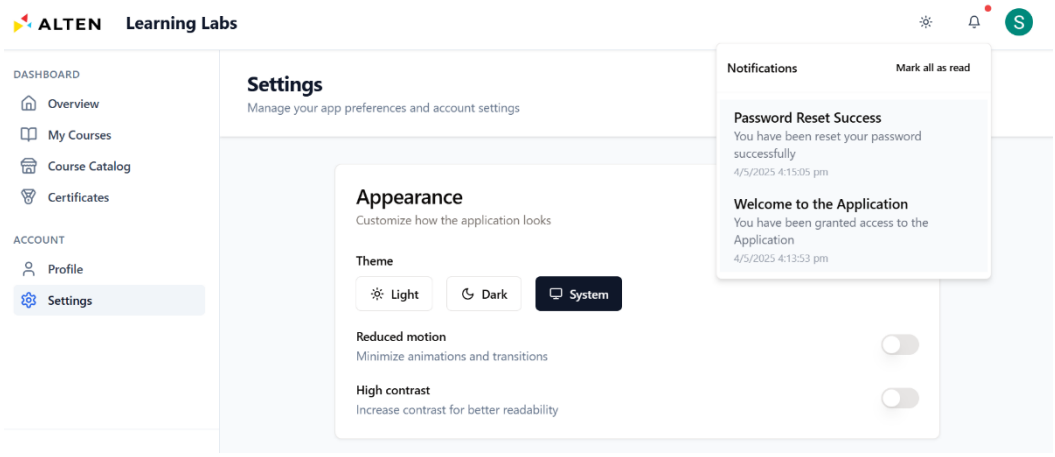

Figure 22: Notifications page

8.2 Email Alerts

Email communication works in parallel with the in-app notification system. Emails are triggered for the following events:

- **Login credentials shared**: When a user is added to the system, they receive an email with their **username and password**.
- **Successful login** confirmation.
- **Course access granted** emails.
- **Password reset instructions**.
- **Contributor notifications** when their course is approved or rejected by the admin.

All these emails ensure that users remain informed, even if they are not actively logged into the LMS.

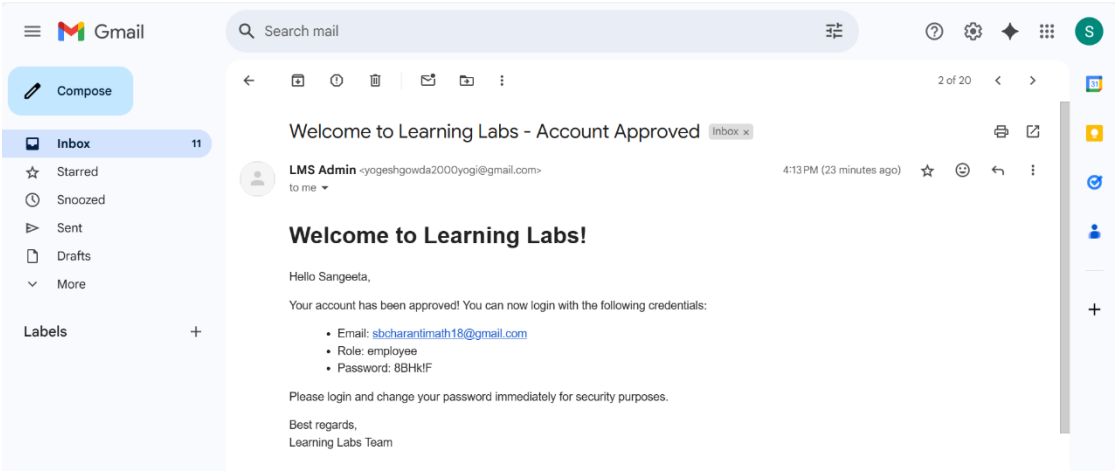

Figure 23: Email alert Page

8.3 Admin-to-User Messaging

Admins can:

- **Create groups** and assign users.
- Upon assignment, users will receive both:
  - **An email** stating they've been added to a group or granted course access.
  - **An in-app notification** for the same.

This feature supports streamlined communication between admins and learners or contributors, making sure no one misses important updates.

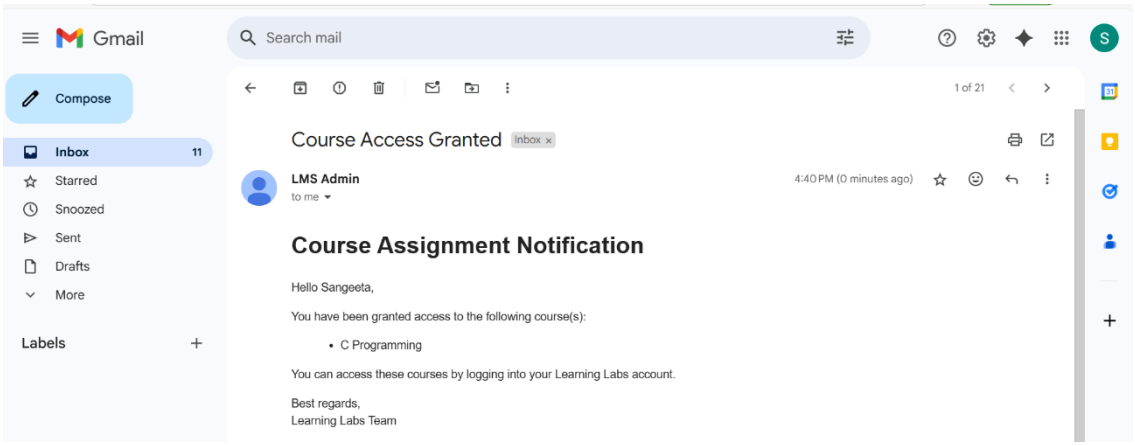

Figure 24: Email-notification page

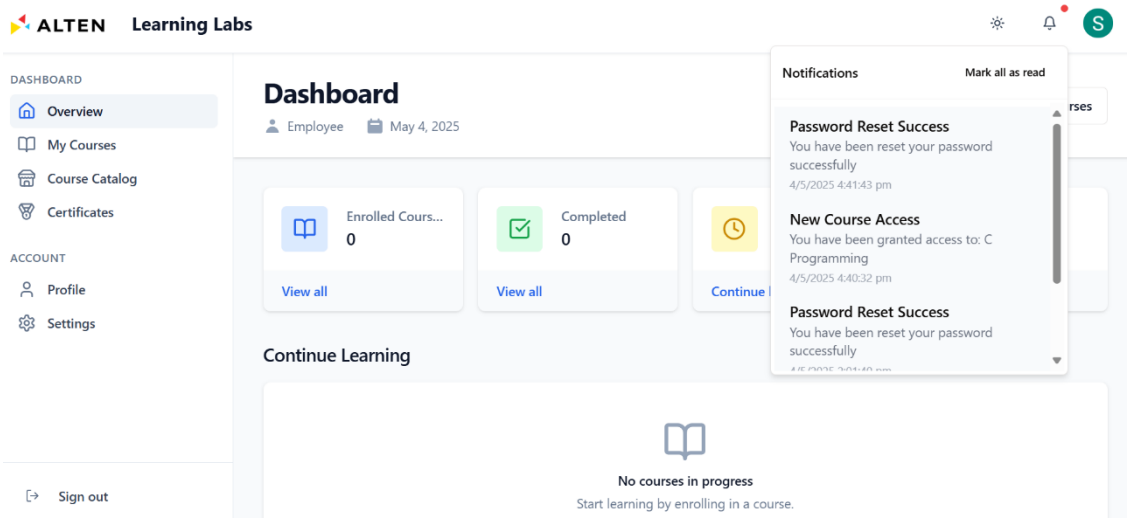

Figure 25: Dashboard page

9 Profile Management

The User Dashboard provides quick access to personal information, course progress, and key settings. It serves as the central hub for managing the user's learning journey.

9.1 Overview

Once logged in, users land on their dashboard, where they can:

- View enrolled courses
- Access learning modules
- Receive system notifications (e.g., course access, password resets)
- Navigate to profile and settings

9.2 Viewing Profile Information

Under the **Profile** or **Personal Info** tab, users can view and edit their personal details:

- Editable fields: **First Name**, **Last Name**, **Profile Picture**
- Non-editable fields: **Username**, **Email ID** (display-only for security purposes)

After making changes, clicking **Save Changes** updates the information in the database and reflects immediately in the profile view.

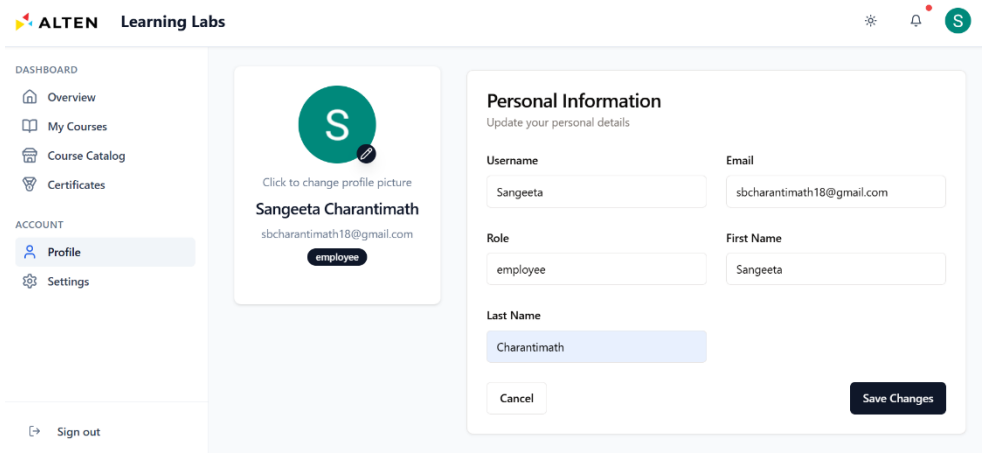

Figure 26: Profile information page

9.3 Managing Settings

Within the **Settings** section of the profile:

- Users can change their password by entering the current password and generating a new one.
- Forgot Password functionality is also available:
- Users enter their registered email address.
- They receive a reset password link via email.
- By using the new password, the user can log in successfully.
- A "Password Reset Successful" notification confirms the change.

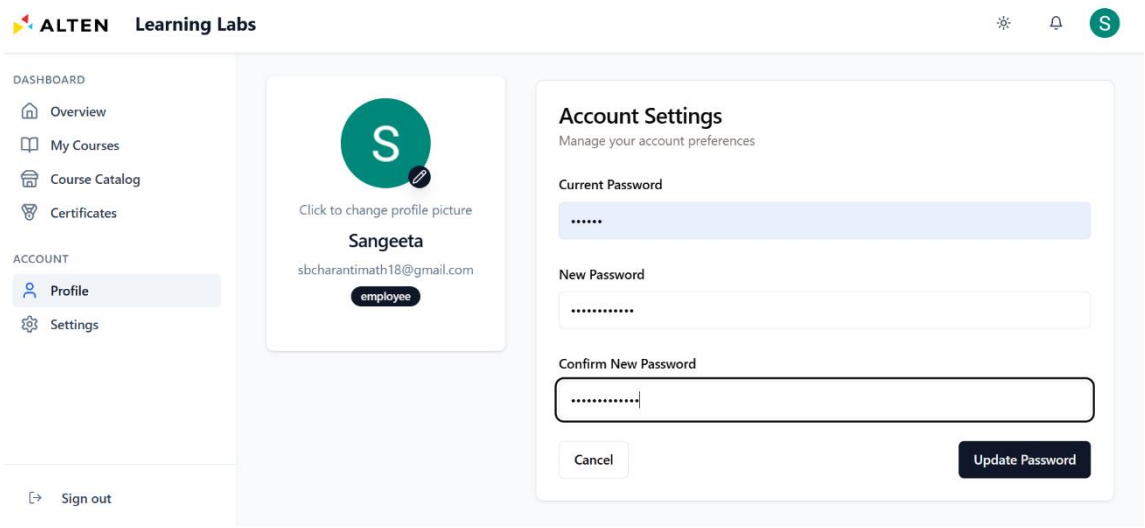

Figure 27: Reset password page

10 Appendix

10.1 Change Log

Table 1: Software change log

Version	Date	Change
1.1	05-May-2025	Released after team review
1.0	25-April-2025	Baser version

10.2 Acknowledgements

We thank **Replit** for supporting our web UI development, **Google AI Studio** for providing LLM-based image generation, and **AltenGT** for hosting our neural network models on their AI/ML server using OLLAMA.

10.3 Contacting Support

In case of any technical issues please contact us via:

Abishek Samuel	abishek.babu@alten.com
Ambika P	ambika.pudkaje@alten.com
Jothi L	jothi.laxmikanth@alten.com
Sangeeta Charantimath	sangeeta.charantimath@alten.com
Yogesha S R	yogesha.ravi@alten.com