

# LEARNING MANAGEMENT SYSTEM - L3

IIHT

Time To Complete: 10 to 12 hr

## CONTENTS

---

1	Project Abstract	3
2	Problem Statement	3
3	Proposed Learning Management System Wireframe	4
3.1	Welcome Page	4
3.2	Screenshots	5
4	Business-Requirement:	7
5	Constraints	7
6	Mandatory Assessment Guidelines	8

## 1 PROJECT ABSTRACT

---

In the ever-evolving realm of education, there's a growing necessity for digital platforms that facilitate efficient learning experiences, foster collaboration between educators and learners, and empower individuals to achieve their educational goals. With this vision in mind, the CEO of an educational technology startup, Ms. Garcia, assigns a team of developers with the task of creating a Learning Management System (LMS) using Angular.

Your task is to develop a digital solution that allows users to create and view a list of courses, enroll students in those courses, and track their progress throughout the learning journey. Additionally, the platform should provide tools for managing assignments, grading, and giving an overview of students' progress within each course, ensuring a comprehensive and efficient learning management experience.

## 2 PROBLEM STATEMENT

---

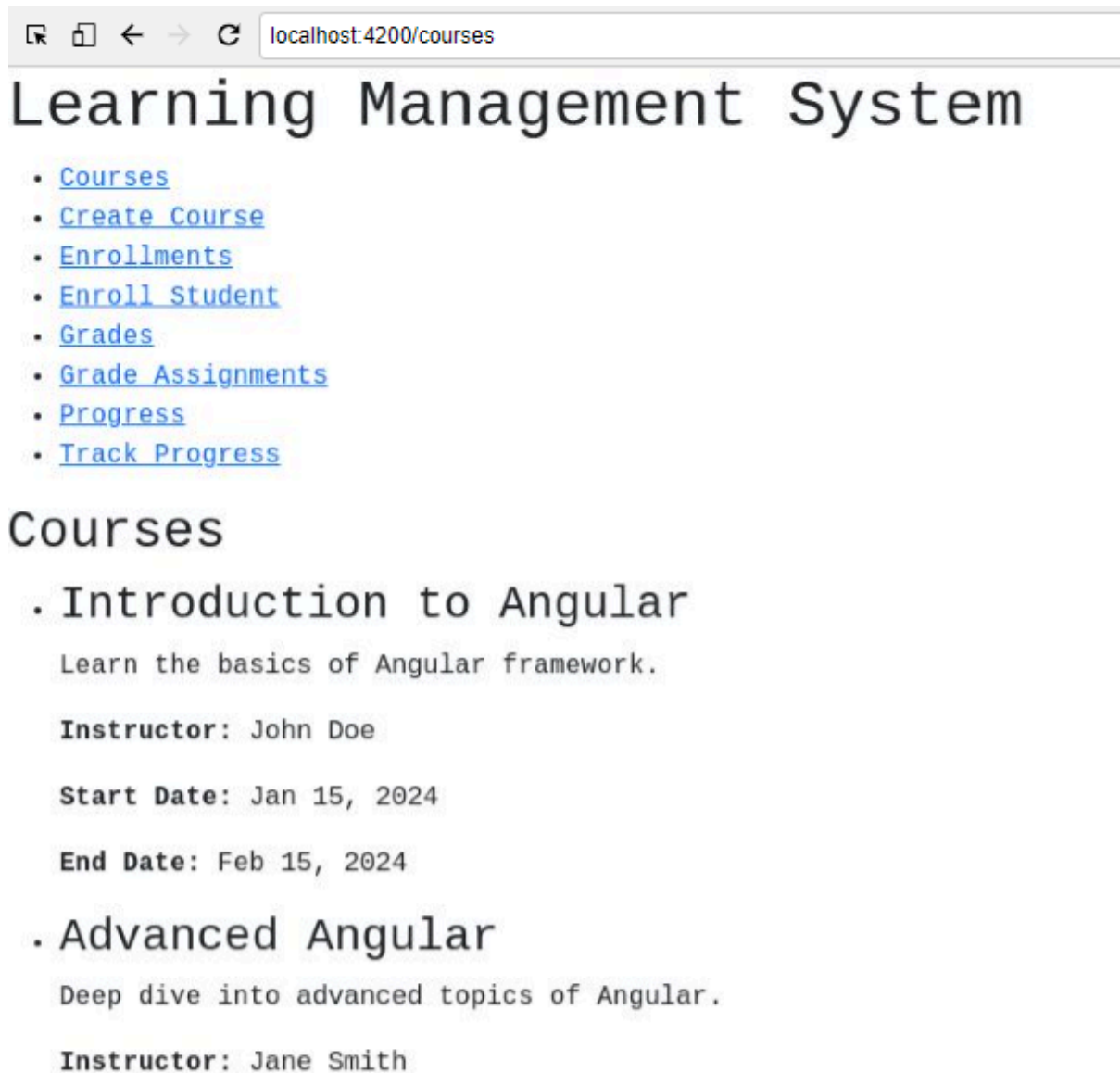
**"Learning Management System"** is a Single Page Application (SPA) designed to enhance the educational experience for instructors and students. This system allows instructors to create new courses, view a list of available courses, and enroll students in various courses. It also enables instructors to manage and grade assignments, view an overview of all grades, and track each student's progress within their courses. Additionally, students can view their progress and grades, ensuring a comprehensive and interactive learning experience for all users.

### 3 PROPOSED LEARNING MANAGEMENT SYSTEM WIREFRAME

---

UI needs improvisation and modification as per given use case and to make test cases passed.

#### 3.1 WELCOME PAGE



## . Advanced Angular

Deep dive into advanced topics of Angular.

**Instructor:** Jane Smith

**Start Date:** Mar 1, 2024

**End Date:** Apr 1, 2024

## . Intro

intro

**Instructor:** intro

**Start Date:** Jul 15, 2024

**End Date:** Dec 15, 2024

## . Core Java

Basics of Java

**Instructor:** Alex

**Start Date:** Aug 10, 2024

**End Date:** Nov 10, 2024

Create New Course

localhost:4200/course/1

# Learning Management System

- [Courses](#)
- [Create Course](#)
- [Enrollments](#)
- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

## Introduction to Angular

**Description:** Learn the basics of Angular framework.

**Instructor:** John Doe

**Start Date:** Jan 15, 2024

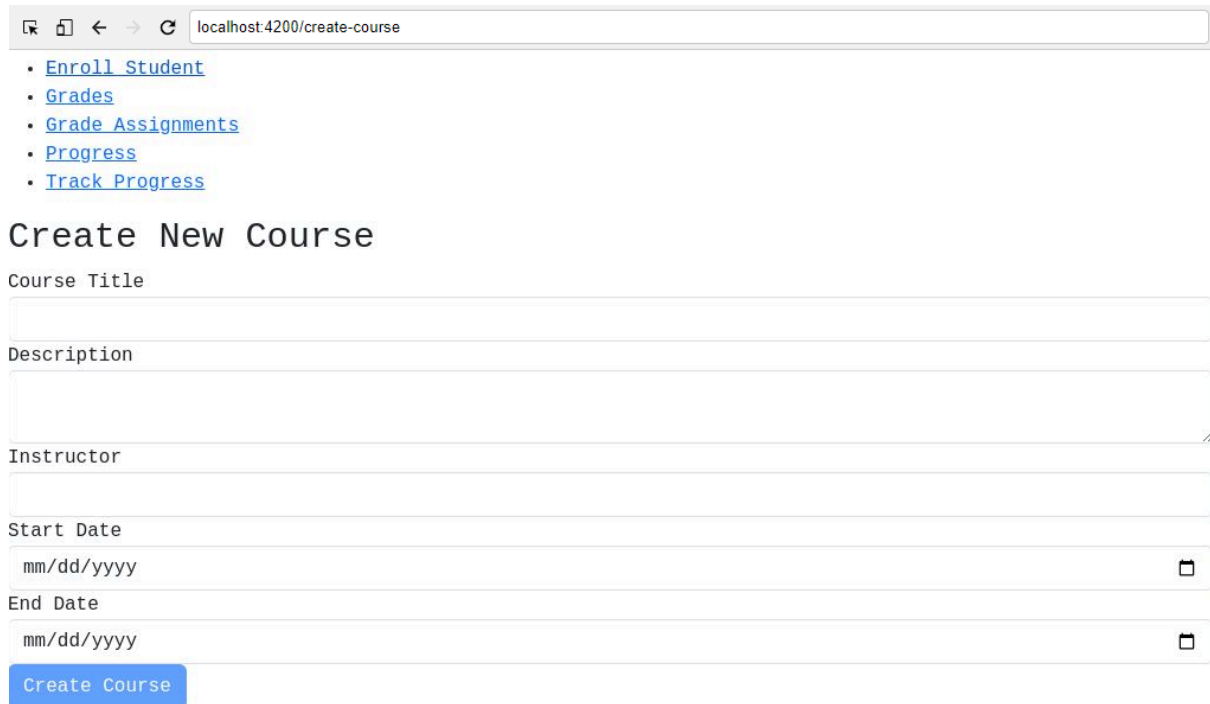
**End Date:** Feb 15, 2024

Back to Courses

Already added some courses

## 3.2 SCREENSHOTS

### \*\*\*Create New Course\*\*\*



localhost:4200/create-course

- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

## Create New Course

Course Title

Description

Instructor

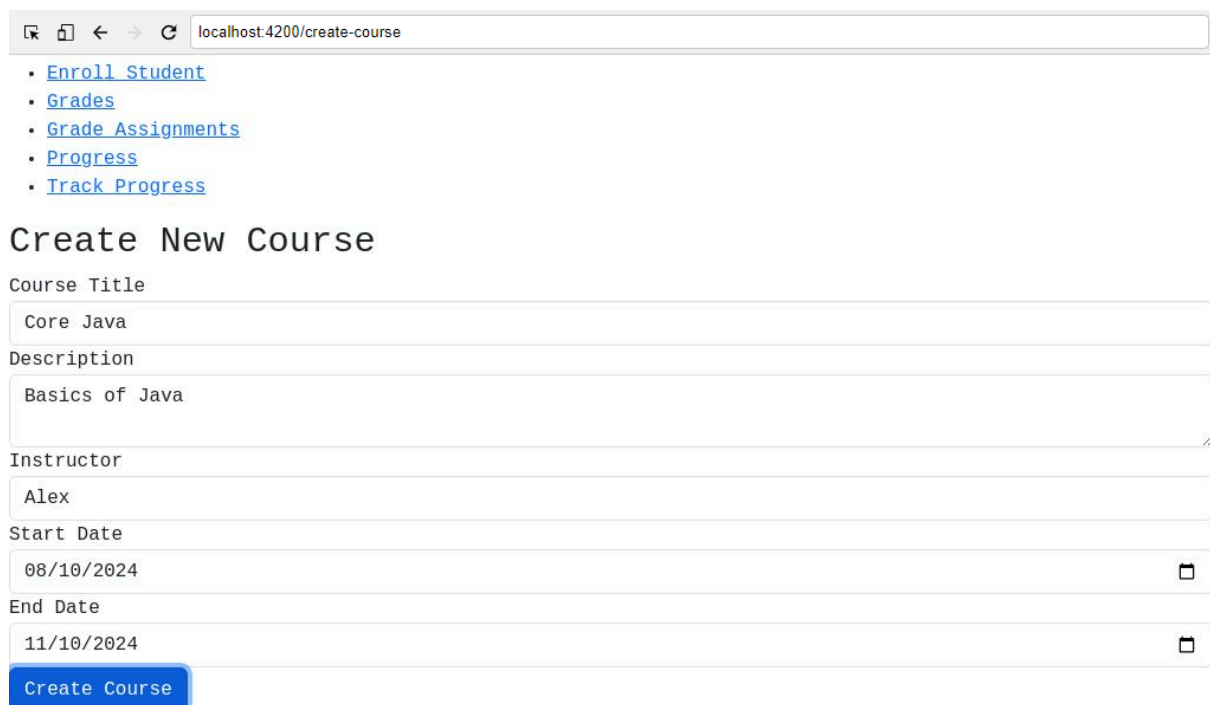
Start Date

mm/dd/yyyy

End Date

mm/dd/yyyy

Create Course



localhost:4200/create-course

- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

## Create New Course

Course Title

Core Java

Description

Basics of Java

Instructor

Alex

Start Date


08/10/2024

End Date

11/10/2024

Create Course

\*\*\*Enroll Student\*\*\*

localhost:4200/enroll-student

# Learning Management System

- [Courses](#)
- [Create Course](#)
- [Enrollments](#)
- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

## Enroll Student

Student Name

Course

Enroll



# Learning Management System

- [Courses](#)
- [Create Course](#)
- [Enrollments](#)
- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

## Enroll Student

Student Name

Mercy

Course

Core Java

Enroll

### \*\*\* Enrollments\*\*\*

localhost:4200/enrollments

- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

## Enrollments

### . Alice Johnson

**Course:** Introduction to Angular

**Enrollment Date:** Jan 10, 2024

Delete

### . Bob Brown

**Course:** Advanced Angular

**Enrollment Date:** Feb 28, 2024

Delete


### . Mercy

**Course:** Unknown Course

**Enrollment Date:** Aug 13, 2024

Delete

### \*\*\* Grade Assignments\*\*\*

localhost:4200/grade-assignments

- [Courses](#)
- [Create Course](#)
- [Enrollments](#)
- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

## Grade Assignments

Student Name

Course

Assignment

Score

Feedback

Submit Grade

←

→

↻

localhost:4200/grade-assignments

- [Courses](#)
- [Create Course](#)
- [Enrollments](#)
- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

## Grade Assignments

Student Name

Mercy

Course

Core Java

Assignment

Assignment - 1

Score


72

Feedback

Need to concentrate on OOP stuffs.

Submit Grade

### \*\*\*Grades\*\*\*

 localhost:4200/grades


## Learning Management System

- [Courses](#)
- [Create Course](#)
- [Enrollments](#)
- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

### Grading Overview

Student Name	Course	Assignment	Score	Feedback	Actions
Alice Johnson	Introduction to Angular	Quiz 1	85	Good job!	<button>Delete</button>
Bob Brown	Advanced Angular	Assignment 1	75	Needs improvement on certain concepts.	<button>Delete</button>
Bob Brown	Unknown Course	In	70	asdf asdf	<button>Delete</button>
Mercy	Unknown Course	Assignment - 1	72	Need to concentrate on OOP stuffs.	<button>Delete</button>

### \*\*\* Delete Grade\*\*\*

 localhost:4200/grades

## Learning Management System

- [Courses](#)
- [Create Course](#)
- [Enrollments](#)
- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

### Grading Overview

Student Name	Course	Assignment	Score	Feedback	Actions
Alice Johnson	Introduction to Angular	Quiz 1	85	Good job!	<button>Delete</button>
Bob Brown	Advanced Angular	Assignment 1	75	Needs improvement on certain concepts.	<button>Delete</button>
Mercy	Unknown Course	Assignment - 1	72	Need to concentrate on OOP stuffs.	<button>Delete</button>

### \*\*\*Track Progress\*\*\*

[Courses](#)  
[Create Course](#)  
[Enrollments](#)  
[Enroll Student](#)  
[Grades](#)  
[Grade Assignments](#)  
[Progress](#)  
[Track Progress](#)

## Progress Tracker

Student Name

Course

Completed Modules

Total Modules

Completion Percentage

[Submit Progress](#)

localhost:4200/track-progress

Learning Management System

Courses

Create Course

Enrollments

Enroll Student

Grades

Grade Assignments

Progress

Track Progress

Progress Tracker

Student Name

Mercy

Course

Core Java

Completed Modules

1

Total Modules


10

Completion Percentage

10

Submit Progress

### \*\*\*Progress\*\*\*


localhost:4200/progress

## Learning Management System

- [Courses](#)
- [Create Course](#)
- [Enrollments](#)
- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

### Student Progress

Student Name	Course	Completed Modules	Total Modules	Completion Percentage
Alice Johnson	Introduction to Angular	3	5	60%
Bob Brown	Advanced Angular	1	5	20%
Mercy	Unknown Course	1	10	10%

localhost:4200/progress

## Learning Management System

- [Courses](#)
- [Create Course](#)
- [Enrollments](#)
- [Enroll Student](#)
- [Grades](#)
- [Grade Assignments](#)
- [Progress](#)
- [Track Progress](#)

### Student Progress

Student Name	Course	Completed Modules	Total Modules	Completion Percentage
Alice Johnson	Introduction to Angular	3	5	60%
Bob Brown	Advanced Angular	1	5	20%



## 4 BUSINESS-REQUIREMENT:

---

As an application developer, develop the LMS (Single Page App) with below guidelines:

User Story #	User Story Name	User Story
US_01	Welcome Page	<p>As a user I should be able to visit the welcome page as the default page.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"><li>1. The Welcome Page should display the title “<b>Learning Management System</b>” as heading in h1.</li><li>2. There should be <b>8 navigation routes/links</b> visible at the top of the Welcome Page:<ul style="list-style-type: none"><li>● <b>Courses:</b> When clicking this link, it should navigate to the ‘courses’ page where it displays all the list of available courses.</li><li>● <b>Create Course:</b> When clicking this link, it should navigate to the ‘create-course’ page where a new course can be created.</li><li>● <b>Enrollments:</b> When clicking this link, it should navigate to the ‘enrollments’ page where the user can view all enrollments and manage them.</li><li>● <b>Enroll Student:</b> When clicking this link, it should navigate to the ‘enroll-student’ page where a student can be enrolled in a course.</li><li>● <b>Grades:</b> When clicking this link, it should navigate to the ‘grades’ page where the user can overview all student’s grades and manage them.</li><li>● <b>Grade Assignments:</b> When clicking this link, it should navigate to the ‘grade-assignments’ page where assignments can be graded with feedback.</li><li>● <b>Progress:</b> When clicking this link, it should navigate to the ‘progress’ page where the user can see all the student’s progress.</li><li>● <b>Track Progress:</b> When clicking this link, it should navigate to a track-progress page where the users can track a student's progress.</li></ul></li></ol>

		<p>The above mentioned <b>title</b> and <b>8 navigation routes/links</b> should be present and functional across all the respective pages of the Learning Management System, allowing easy access to any section from anywhere within the app.</p> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p>
	Courses Page	<p>Acceptance criteria:</p> <ol style="list-style-type: none"> <li>1. The Welcome Page should also display a <b>Courses</b> section under the heading "<b>Courses</b>".</li> <li>2. This section should list all available courses with each course displaying: <ul style="list-style-type: none"> <li>● <b>Course Title:</b> The name of the course (e.g., "Introduction to Angular").</li> <li>● <b>Description:</b> A brief description of the course.</li> <li>● <b>Instructor:</b> The name of the instructor.</li> <li>● <b>Start Date:</b> The start date of the course.</li> <li>● <b>End Date:</b> The end date of the course.</li> </ul> </li> <li>3. A <b>Create New Course</b> button should be present at the bottom of the courses list, when clicked it should navigate to the 'create-course' page where a new course can be created .</li> </ol> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p>
	Course Details Page	<p>Acceptance criteria:</p> <ol style="list-style-type: none"> <li>1. When a course title is clicked, the user should be navigated to the Course Details page which should display: <ul style="list-style-type: none"> <li>● <b>Course Title:</b> The name of the course (e.g., "Introduction to Angular").</li> <li>● <b>Description:</b> A brief description of the course.</li> <li>● <b>Instructor:</b> The name of the instructor.</li> <li>● <b>Start Date:</b> The start date of the course.</li> <li>● <b>End Date:</b> The end date of the course.</li> </ul> </li> <li>2. The Course Details page should also have a <b>Back to Courses</b> button, when clicked it should navigate back to the main courses list.</li> </ol> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p>

<p>Create Course Page</p>	<p>As a user, I should be able to create a new course by filling in the required details on the Learning Management System (LMS).</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> <li>1. The page should display the title <b>"Create New Course"</b> as heading in h2.</li> <li>2. Course Creation Form: The form should include the following fields: <ul style="list-style-type: none"> <li>● <b>Course Title:</b> A text input field where the user can enter the course name.</li> <li>● <b>Description:</b> A text area where the user can provide a brief description of the course.</li> <li>● <b>Instructor:</b> A text input field where the user can specify the instructor's name.</li> <li>● <b>Start Date:</b> A date picker field/input field to select the start date of the course in the format mm/dd/yyyy.</li> <li>● <b>End Date:</b> A date picker field/input field to select the end date of the course in the format mm/dd/yyyy.</li> </ul> </li> <li>3. There should be a <b>Create Course</b> button at the bottom of the form to submit the course details.</li> <li>4. The <b>Create Course</b> button should be disabled by default. The button should only be enabled after all fields are validated and correctly filled in.</li> </ol> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p>
<p>Enroll student page</p>	<p>As a user, I should be able to enroll a student in a course.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> <li>1. The page should display the title <b>"Enroll Student"</b> as heading in h2.</li> <li>2. Enrollment Form: The form should include the following fields: <ul style="list-style-type: none"> <li>● <b>Student Name:</b> A text input field where the user can enter the name of the student to be enrolled.</li> <li>● <b>Course:</b> A dropdown/select menu should be available for selecting a course. The drop down should list all the available courses (e.g., "Introduction to Angular").</li> </ul> </li> <li>3. There should be an <b>Enroll</b> button at the bottom of the form to submit the enrollment details.</li> </ol>

Enrollment Page	<p>4. The <b>Enroll</b> button should be disabled by default. The <b>Enroll</b> button should only be enabled after a valid student name is entered and a course is selected from the dropdown.</p> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p> <p>As a user, I should be able to view all student enrollments and manage various courses on the Learning Management System (LMS).</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> <li>1. The page should display the title <b>“Enrollments”</b> as heading in h2.</li> <li>2. Enrollment List: The page should list all student enrollments with each enrollment displaying: <ul style="list-style-type: none"> <li>● <b>Student Name:</b> The name of the enrolled student (e.g., Alice Johnson, Bob Brown).</li> <li>● <b>Course:</b> The name of the course the student is enrolled in (e.g., Introduction to Angular, Advanced Angular).</li> <li>● <b>Enrollment Date:</b> The date when the student was enrolled in the course (e.g., Jan 10, 2024, Feb 28, 2024).</li> </ul> </li> <li>3. There should be a <b>Delete</b> button next to each enrollment entry.</li> <li>4. When the <b>Delete</b> button is clicked, the corresponding enrollment should be removed from the list.</li> </ol> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p>
Grade Assignments	<p>As a user, I should be able to grade assignments by selecting a student, course, and assignment, then providing a score and feedback.</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> <li>1. The page should display the title <b>“Grade Assignments”</b> as a heading in h2.</li> <li>2. Grading Form: The page should list all student enrollments with each enrollment displaying: <ul style="list-style-type: none"> <li>● <b>Student Name:</b> A text input field where the user can enter the name of the student whose assignment is being graded.</li> <li>● <b>Course:</b> A dropdown/select menu should be available for selecting a course from the list of available courses.</li> <li>● <b>Assignment:</b> A text input field where the user can enter the name of the assignment.</li> <li>● <b>Score:</b> A numeric input field where the user can enter the score (e.g., 0-100) for the assignment.</li> </ul> </li> </ol>

Grades	<ul style="list-style-type: none"> <li>● <b>Feedback:</b> A text area where the user can provide feedback on the student's performance.</li> </ul> <ol style="list-style-type: none"> <li>3. There should be a <b>Submit Grade</b> button at the bottom of the form to submit the grading details.</li> <li>4. The <b>Submit Grade</b> button should be disabled by default. The button should only be enabled after all required fields (Student Name, Course, Assignment, Score) are filled out and valid.</li> </ol> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p> <p>As a user, I should be able to view and manage all the grades for students in the Learning Management System (LMS).</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> <li>1. The page should display the title "<b>Grading Overview</b>" as heading in h2.</li> <li>2. Grading Table: The page should display a table listing all graded assignments with the following columns: <ul style="list-style-type: none"> <li>● <b>Student Name:</b> The name of the student (e.g., Alice Johnson, Bob Brown).</li> <li>● <b>Course:</b> The name of the course associated with the grade (e.g., Introduction to Angular, Advanced Angular).</li> <li>● <b>Assignment:</b> The name of the assignment that was graded (e.g., Quiz 1, Assignment 1).</li> <li>● <b>Score:</b> The numeric score the student received for the assignment (e.g., 85, 75).</li> <li>● <b>Feedback:</b> The feedback provided by the instructor for the assignment (e.g., Good job!, Needs improvement on certain concepts).</li> <li>● <b>Actions:</b> A column with a <b>Delete</b> button that allows the user to remove a grading entry from the system.</li> </ul> </li> <li>3. Each row in the grading table should have a <b>Delete</b> button.</li> <li>4. When the <b>Delete</b> button is clicked, the corresponding grading entry should be removed from the table.</li> </ol> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p>
Track Progress	<p>As a user, I should be able to track the progress of a student in a particular course by filling out the required details on the Learning Management System (LMS).</p> <p>Acceptance criteria:</p>

	Progress Page	<ol style="list-style-type: none"> <li>1. The page should display the title “<b>Progress Tracker</b>” as heading in h2.</li> <li>2. Progress Tracking Form: The form should include the following fields: <ul style="list-style-type: none"> <li>● <b>Student Name:</b> A text input field where the user can enter the name of the student whose progress is being tracked.</li> <li>● <b>Course:</b> A text input field or dropdown menu where the user can select or enter the course name.</li> <li>● <b>Completed Modules:</b> A numeric input field where the user can enter the number of modules the student has completed.</li> <li>● <b>Total Modules:</b> A numeric input field where the user can enter the total number of modules in the course.</li> <li>● <b>Completion Percentage:</b> A numeric input field where the user can enter the completion percentage based on the completed and total modules.</li> </ul> </li> <li>3. There should be a <b>Submit Progress</b> button at the bottom of the form to submit the student's progress details.</li> <li>4. The <b>Submit Progress</b> button should be disabled by default. The button should only be enabled after all required fields (Student Name, Course, Completed Modules, Total Modules) are filled out and valid.</li> </ol> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p> <p>As a user, I should be able to view the progress of all the students in their respective courses on the Learning Management System (LMS).</p> <p>Acceptance criteria:</p> <ol style="list-style-type: none"> <li>1. The page should display the title “<b>Student Progress</b>” as heading in h2.</li> <li>2. Progress Table: The page should display a table listing the progress of all students with the following columns: <ul style="list-style-type: none"> <li>● <b>Student Name:</b> The name of the student (e.g., Alice Johnson, Bob Brown).</li> <li>● <b>Course:</b> The name of the course in which the student is enrolled (e.g., Introduction to Angular, Advanced Angular).</li> <li>● <b>Completed Modules:</b> The number of modules the student has completed in the course (e.g., 3, 1).</li> </ul> </li> </ol>
--	---------------	--

		<ul style="list-style-type: none"> <li>• <b>Total Modules:</b> The total number of modules available in the course (e.g., 5).</li> <li>• <b>Completion Percentage:</b> The percentage of the course that the student has completed (e.g., 60%, 20%).</li> </ul> <p><b>** Kindly refer to the screenshots for any clarifications. **</b></p>
--	--	---

## 5 CONSTRAINTS

---

1. You should be able to press the “TAB” key and “SHIFT + TAB” to navigate from top field to bottom field and vice-versa.

## 6 MANDATORY ASSESSMENT GUIDELINES

---

1. All actions like build, compile, running application, running test cases will be through Command Terminal.
2. To open the command terminal the test takers, need to go to Application menu (Three horizontal lines at left top) -> Terminal ->New Terminal.
3. This editor Auto Saves the code.
4. If you want to exit(logout) and continue the coding later anytime (using Save & Exit option on Assessment Landing Page) then you need to use CTRL+Shift+B-command compulsorily on code IDE. This will push or save the updated contents in the internal git/repository. Else the code will not be available in the next login.
5. These are time bound assessments the timer would stop if you logout and while logging in back using the same credentials the timer would resume from the same time it was stopped from the previous logout.
6. This is a web-based application, to run the application on a browser, use the internal browser in the workspace. Click on the second last option on the left panel of IDE, you can find Browser Preview, where you can launch the application.

**Note: The application will not run in the local browser**

7. You can follow series of command to setup Angular environment once you are in your project-name folder:
  - a. `npm install` -> Will install all dependencies -> takes 10 to 15 min.
  - b. `npm run start` -> To compile and deploy the project in browser. You can press the <Ctrl> key while clicking on localhost:4200 to open the project in the browser -> takes 2 to 3 min.
  - c. `npm run json:server` -> to deploy fake rest api created with json-server -> takes 10 to 15 seconds
  - d. `npm run test` -> to run all test cases. **It is mandatory to run this command before submission of workspace** -> takes 5 to 6 min.
8. Once you are done with development and ready with submission, you may navigate to the previous tab and submit the workspace. It is mandatory to click on **"Submit Assessment"** after you are done with code.
9. You need to use CTRL+Shift+B - command compulsorily on code IDE, before final submission as well. This will push or save the updated contents in the internal git/repository, and will be used to evaluate the code quality.