

# Intelligent Micro Learning Platform

## Problem Statement

Craft an interactive micro learning platform that revolutionizes the learning experience. This platform should specialize in technology-based subjects, leveraging video content and advanced features such as automatic transcript generation and personalized content recommendations. It's crucial that the platform tracks user learning progress, offers assessment quizzes, and introduces a competitive edge with a ranking system based on quiz scores. Can you rise to the challenge and create an educational environment that's dynamic, responsive, and tailored to individual learning goals?

## Detailed Use cases

### User Registration and Management

1. Registration page for users to sign up with username, password, and email.
2. Login page with basic authentication to access the system.
3. Optional feature: User profiles to store and display additional personal details.

### Topic Selection

1. Users should be able to select topics they're interested in.
2. To start with, set a static list of topics in the data store which can resemble categories based on technology. For example, topics like Core JAVA, Spring Boot, Python, Micro Services, Go Lang, React can be defined.
3. Allow a web interface for users to select multiple interesting topics.

### Goal/Duration Setting

1. Users should be able to define goals or time duration for their selected topics.
2. Allow users to set goals or durations using a calendar or input form. Allow them to select multiple topics for specific goals.

### Viewing & Storing Video Content

1. Users should be able to view video content for the topics.
2. Use local file storage utilities to host the static video content based on topic.
3. Download a few conceptual videos per topic and store them.
4. Define video content Data Schema for web interactions.

## Generating & Storing Transcripts

1. System should be able to generate a transcript or summary of video content when it gets uploaded.
2. System should be able to refine transcription content for grammatical errors.
3. System should be able to store the generated transcript in the data store.

## Content Recommendation

1. System should suggest video content to users based on their goals and topics.
2. Associate user goals with video content schema.
3. Any content recommendation algorithm can be used.

## Tracking User Progress

System should track the user's progress on their goals along with the associated video content.

## Generating Quizzes

1. System should be able to generate video content transcript based multiple choice questions(dynamic) once the user finishes a specific goal.
2. System should consider all the topics associated with the goal while generating the questions.
3. System should make use of open source AI models or Generative AI APIs to search for topic related questions.
4. Innovative features would be a cherry on the cake. For example, Wrong answers should suggest the playback duration in the video where the user should focus on.

## User Ranking

1. Implement a scoring system based on quiz results.
2. Rank users based on their scores in a leaderboard.



## Review Criteria

1. Open for choice of tech stack to use.
2. Innovative use of technology and creative problem-solving will be key metrics. Solutions that demonstrate a novel approach to addressing the challenges will be favored.
3. The evaluation will focus on the following essential modules:
  - a. **Transcript generation and storage:** Transcripts must be accurate and exhibit minimal grammatical errors.
  - b. **AI-generated quizzes:** The effectiveness of the quizzes will be assessed based on their ability to capture the essence of video content accurately and pose relevant questions. Quizzes should cover all topics discussed in the video.
  - c. **Content recommendation and user ranking system:** These features are critical for the application. Algorithmic choice and accuracy would be validated.
  - d. **Leaderboard:** Intuitive leaderboard capturing user learning path would take preference.
4. **Efficient use of programming concepts:** The implementation of background tasks or asynchronous programming will be examined for correctness.
5. **UI/UX design:** The application should offer a user-friendly experience.
6. **Optional:** A concept diagram illustrating your solution's architecture or logic.

## SPECIAL PRICE:

Winners will be getting a chance to visit Crest House, Ahmedabad and also interact with the mentors over a lunch post hackNUthon!