Graduation Project Proposal

Arabic Learning Management System (LMS) mobile application

Team (2-6):

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Introduction

Our project focuses on developing an AI-based learning management system mobile application that supports learning in Arabic. The system caters to two types of end users: teachers and students. The teacher's role includes providing educational materials, such as PDFs, and utilizing the system's advanced question generation feature. This feature allows teachers to create assignments and exams with varying difficulty levels, making it easier to assess students' understanding at different levels of proficiency.

Moreover, the system enables teachers to track their students' progress and performance through comprehensive reports. These reports provide insights into the areas where students need more practice, offering personalized recommendations to guide their learning journey.

On the other hand, students benefit from the system by taking exams where questions are intelligently tagged based on the curriculum. The system also recommends resources tailored to help students improve in their areas of weakness. Additionally, students can track their assignments and monitor their own performance, allowing them to practice on weak topics and adjust their study goals as needed.

Motivation

The need for personalized and efficient educational tools has become more pressing as educational systems worldwide transition to digital platforms. However, existing learning management systems often lack the ability to cater to students' individual learning needs, particularly in multilingual environments like the Arabic-speaking world. This gap, combined with the increasing demand for tools that can automate routine tasks for educators, has driven us to develop an AI-based learning management system. Our project aims to address the growing need for personalized education in a region where Arabic is the primary language of instruction. By integrating AI into the learning process, we offer innovative features such as automatic question generation and personalized resource recommendations. These tools help educators save time on manual tasks and enable students to focus on areas where they need the most improvement.

Moreover, the ability to track performance in real-time allows both teachers and students to adjust teaching and study methods accordingly, creating a more dynamic and responsive educational environment. This project holds the potential to significantly enhance the learning experience, making it more engaging and tailored to individual needs.

Objectives

The aim of the project is to develop a mobile application that will support :

1. **Automate Question Generation:** Develop an AI-powered feature that allows teachers to automatically generate questions for quizzes, assignments, and exams, with varying levels of difficulty, based on provided materials.

2. **Support Learning in Arabic:** Design the platform to support learning in Arabic, making it accessible to a diverse audience.

3. **Recommend Resources:** Build an AI recommendation engine that suggests resources tailored to each student's areas of weakness.

4. **Tag Questions Based on Curriculum:** Ensure that generated questions are tagged and categorized according to the curriculum.

5. **Provide Insightful Reports for Teachers:** Enable teachers to receive detailed reports on students' performance, helping them adjust teaching methods and provide targeted assistance to students.

Work Plan

Phase 1: Research & Learning
- Research Papers.
- Research tools for mobile app development and AI integration.
- Define the functional and non-functional requirements for both teacher and student users.

Phase 2: Design & Specifications
- Charts & Diagrams: Create ER and sequence diagrams to represent data models and interactions.
- Use Cases: Develop detailed use cases for each feature.
- Project Architecture: Outline the overall architecture of the application.

Phase 3: Environment Setup & Data Collection
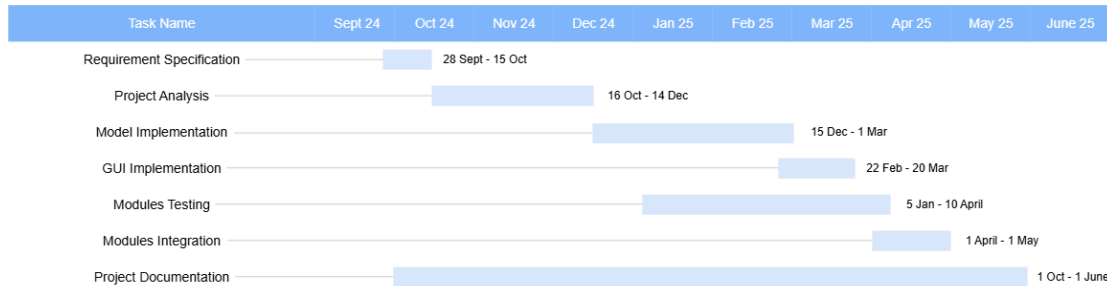- Data Gathering.
- Environment Setup.

Phase 4: Implementation
- Question Generation model.
- Performance Tracking and reporting system.
- Resource Recommendation model.

Phase 5: Testing

Phase 6: Documentation

Project Activities	Start Date	End Date
Requirement Specifications	28/9/24	15/10/24
Project Analysis		
• Studying	16/10/24	1/12/24
• Use cases	2/12/24	6/12/24
• ER Diagrams	7/12/24	10/12/24
• Sequence Diagram	11/12/24	14/12/24
Project Design		
• Project Architecture & Implementation	15/12/24	1/3/25
• User Interface Design	22/2/25	20/3/25
Project Testing		
• Modules Testing	5/1/25	10/4/25
• Modules Integration	1/4/25	1/5/25
Documentation	1/10/24	1/6/25

Task Name	Sept 24	Oct 24	Nov 24	Dec 24	Jan 25	Feb 25	Mar 25	Apr 25	May 25	June 25
Requirement Specification		28 Sept - 15 Oct								
Project Analysis			16 Oct - 14 Dec							
Model Implementation					15 Dec - 1 Mar					
GUI Implementation							22 Feb - 20 Mar			
Modules Testing							5 Jan - 10 April			
Modules Integration									1 April - 1 May	
Project Documentation										1 Oct - 1 June

References

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