**1. Problem Statement: Successfully Translating Raw Learning Materials into Assessments and Summaries**

The digital learning age has brought the creation of course material in a wide variety of formats, from audio and video files to PDFs, Word documents, and presentations. Translating this blended content into official quizzes and brief summaries is normally time-consuming, hard work, and prone to human error.

A majority of the existing tools are limited to one file type or must be pre-prepared beforehand by hand, which is inefficient and discourages frequent use. This creates a problem for students as well as teachers in accessing interactive, stimulating, and useful study material, thus slowing down the learning process within hectic academic as well as training environments.

**2. Project Goal: From Formats to Knowledge — AI for Intelligent Learning Tools**

The aim of this project is to develop an AI-driven system capable of extracting important details from various content forms and converting it into quizzes and abstracts. Through the automation of assessment and summarization, the system will help students, instructors, and self-learners save valuable time, promote active learning, and enable the easy creation of good-quality learning materials.

In the long term, the solution is designed to reduce teaching load, improve knowledge retention, and promote more individualized, adaptive learning experiences across different learning environments.

**3. Project Scope: Establishing the Boundaries for AI-Powered Content Transformation**

This project is designed to develop an AI system that can accept various types of content like MP3, MP4, PDF, MS Word files, and PowerPoint presentations, and perform real-time audio and video content transcription. The system will automatically generate quizzes and summaries from the inputs via an easy, intuitive web-based interface.

**Key Features**

* Content parsing and intelligent file format handling
* Natural Language Processing (NLP) to pull out major points and ideas
* Robot quiz creation from various question types (e.g., multiple choice, true/false, short answer)
* Fast revision-boosted summary creation

**Within Scope**

* File uploading in accepted formats
* Real-time transcriptions
* English-language content
* Arabic-language content
* Exporting quizzes in common formats
* Interactive in-platform quiz-taking

**Out of Scope**

* Third-party LMS integration (e.g., Blackboard, Moodle)
* Non-English and non-Arabic language support
* Mobile app development in this release

**Project Software and Hardware Requirements**

**Project Limitations**

**• Technical Limitations**

1. The model uses an open-source model agent as a base.
2. An internet connection is required to use Quiz AI which limits its target as only 67.9% of the total world population has internet access.

A graph of blue bars with numbers

AI-generated content may be incorrect.

1. There is no application version of Quiz AI which means it will not be as attractive to use as an app to most of the population.

A graph of green rectangular bars

AI-generated content may be incorrect.

**• Functional Limitations**

**1. Unsupported Features**

* Extracting audio from video is not implemented.

**2. Workarounds**

* Using a third-party API to achieve the operation.

**• Security Limitations**

1. Currently, no security measures have been planned for the log-in system.
2. The system doesn’t have encryption for the login database.

**• Usability & Accessibility**

1. The end-user can only submit files in the following formats: **txt, pdf, pptx, mp3**.

**Project Expected Output**

**• Functional Outputs**

1. A responsive web dashboard for real-time visualization.
2. On-website notification for when the output is being processed.
3. On-website notification for when the output is finished being processed.

**• Non-Functional Outputs**

1. A relatively fast output time based on the data inputted.
2. A 4-chapters worth of project documentation in PDF format.
3. A GitHub repository containing the source code of the project and its documentation.

**1. Project Schedule**

The project schedule outlines the key milestones, activities, and deliverables required to complete the AI-powered quiz-generation website. It ensures each stage of the development process is completed on time, with clear dependencies between tasks.

A chart with multiple colored bars

AI-generated content may be incorrect.

**2. Project / Product Schedule Risks**

**Schedule Risk**

* Risk of longer-than-expected project duration is one of the key risks.
* It might be due to challenges in AI model integration, handling different file types (PPT, PDF, video transcription), or unforeseen bugs during frontend-backend communication.

**Impact**

* Any postponement in AI model readiness or system integration could reduce the amount of test time available, resulting in reduced stability and quality of the output.

**Mitigation Strategies**

1. Begin AI research and experimentation concurrently with UI/UX design.
2. Use pre-trained NLP models to accelerate development.
3. Implement fallback mechanisms for simplified quiz generation in the event of AI delay.
4. Add buffer periods between hard milestones and conduct weekly progress reviews.

**3. Report Organization**

The remaining parts of this report are organized as follows:

* **Chapter 2** – Theoretical Background & Literature Review: Introduction to similar works and existing learning tools utilizing AI for content processing and quiz generation.
* **Chapter 3** – Requirements Analysis: Functional and non-functional system requirements.
* **Chapter 4** – Software Design: System architecture, database schema, and user interface prototypes.
* **Chapter 5** – Implementation Plan: Programming language, frameworks, and technologies used.
* **Chapter 6** – Test Plan: Black-box, white-box, and automated testing process.
* **Chapter 7** – Project Outcomes: Summary of accomplishments and suggestions for potential future work to enhance the system.

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