

**Mutah University, Karak Jordan**

**Faculty of Information Technology**

**Quiz AI**

**A project submitted**

**in partial fulfillment of the requirements for the**

**B.Sc. Degree in Information Technology**

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**Month Year**

# CERTIFICATE

It is hereby certified that the project titled ***Quiz AI***, submitted by undersigned, in partial fulfillment of the award of the degree of “Bachelor in Software Engineering” embodies original work done by them under my supervision.

All the analysis, design and system development have been accomplished by the undersigned. Moreover, this project has not been submitted to any other college or university.

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# ABSTRACT

**Problem Statement:** This software is an AI-powered educational tool designed to transform lecture audio into tailored exams, enhancing students’ comprehension and retention. Users can record lectures directly or upload existing audio files, which are then processed using advanced speech recognition and natural language processing (NLP) techniques. The system identifies key concepts, learning objectives, and contextual cues from the lecture, generating quizzes or exams with customizable difficulty levels and question types. The platform aims to bridge the gap between passive listening and active learning by converting unstructured lecture content into interactive, measurable assessments. By providing immediate feedback and promoting self-testing, it fosters deeper engagement, better knowledge retention, and improved academic performance.

**Proposed Solution:** The project involves developing a platform that converts lecture audio into automatically generated exams. Users can record lectures directly or upload audio files (MP3, MP4). The system applies speech recognition and NLP to extract key concepts and produce various question types, including multiple-choice, fill-in-the-blanks, true/false, and short answer. Users can save generated exams, track their progress, and engage in efficient revision for improved understanding of lecture material.

**Project Aim:** To enhance students’ comprehension and retention by transforming lecture audio into personalized exams, enabling active learning through immediate, targeted self-assessment and focused revision.

**Objectives:**

1. Support lecture audio recording and upload for automatic exam generation.
2. Extract key concepts from audio using speech recognition and NLP.
3. Generate diverse question types (multiple-choice, fill-in-the-blanks, true/false, short answer).
4. Allow users to save, organize, and manage generated exams in personal libraries.
5. Provide instant feedback and performance tracking to support adaptive learning.

**Expected Benefits:**

* Time-saving study sessions through automated quiz generation.
* Personalized learning by identifying weak areas and enabling repeated practice.
* Enhanced student engagement and knowledge retention through interactive assessments.

# ACKNOWLEDGEMENTS

We would like to express our sincere gratitude to our families and friends for their continuous support, encouragement, and understanding throughout the course of this project. Their patience and motivation have been invaluable.

We extend our heartfelt thanks to our instructors and doctors for their guidance and advice. In particular, we are deeply grateful to **Dr. Khalid Awad Al-Tarawneh**, who served as our supervisor and mentor during this journey. His expertise, encouragement, and dedication greatly contributed to the success of our work.

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# ABBREVIATIONS

In this section, all abbreviation and acronyms used in the text must be properly defined.

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# Introduction

Each chapter should begin with an introduction that tells what will be covered in the chapter. Add it directly below the chapter heading, and it should tell the chapter’s importance to the overall report.

## Overview

In this section, you should write about the general review or summary of this project.

## Project Motivation

In this section, you should write about the answer the following questions:

Q1: What is the reasons behind your choice to develop this project?

Q2. Why your project is important?

Q3. What is the new idea that have been proposed by this project?

## Problem Statement



write about the issues that have been addressed by this project and the conditions to be improved upon

## Project Aim and Objectives



Write about the overall purposes of this project, should be clearly and concisely defined. In this section you should answer the following questions:

Q1. What is the goal that this project wants to achieve?

Q2. How this project can achieve this goal?

## Project Scope



Explains the boundaries (specified features and functions) of this project, establishes responsibilities for each team member and sets up procedures for how completed work will be verified and approved.

## Project Software and Hardware Requirements

List the prerequisites software and hardware requirement of this project.

## Project Limitations



you should clarify the limitations or parameters of the project and clearly identify any aspects that are not to be included.

## Project Expected Output



Describe the desired results of the project.

## Project Schedule

Listing of a project's milestones, activities, and deliverables, with intended start and finish dates.

## Project, product, and schedule risks

Describe the risk that the project takes longer than scheduled.

## Report Organization

Here you are to give your reader a guided tour of the remainder of the document. Following is an example.

The rest of the report is organized as follows. Chapter 2 introduces …………. Chapter 3 lists the ………………... Chapter 4 presents …………... The design and architecture components are described in Chapter 5. Chapter 6 presents the future work and concludes the report.

# Theoritical Background and Literature Review

A literature review is a search and evaluation of the available literature in your given subject or chosen topic area. It documents the state of the art with respect to the subject or topic you are working.

main tasks:

* summarizes prior research and says how your project is linked to it.
* integrates and summarizes what is known about a subject.
* demonstrates that you have learnt from others and that your project is a starting point for new ideas.

## Introduction

## Existing Systems

## Overall Problems of Existing Systems

## Overall Solution Approach

# Requirement Clollection/ENGENERRING AND Analysis

## Stakeholders

List the individuals, groups, or organizations, who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of this project. And specify the type of each stockholder (e.g. Primary stakeholders, Secondary stakeholders, etc.).

FIGURE 1 GOES HERE (Above the caption)

Figure 1: Caption for Figure 1 via *References-> Insert Caption*

## Use Case or DFD Diagram

* + 1. Use Case Section

Normal Flow for each use case including action, precondition, post-condition and other sections as you learnt in requirements engineering course.

* + 1. Alternative flows

An alternate flow describes a scenario other than the normal flow for each use

case.

Table 1: Caption for Table 1 via *References-> Insert Caption*

TABLE 1 GOES HERE (below the caption)

## 3.3 Non-Functional User Requirements

Specify the non-functional requirements of this project that can be divided into two main categories:

1. Execution qualities, such as safety, security and usability, which are observable during operation (at run time).

2. Evolution qualities, such as testability, maintainability, extensibility and scalability, which are embodied in the static structure of the system.

## Constraints

List the conditions and restrictions of this project that must be satisfy.

# Methodology

**Overview**

In **Chapter 4 (Methodology)** of your project documentation, you need to clearly describe how your project will be developed, implemented, and evaluated. This chapter provides a structured explanation of the approach, techniques, and tools used to build your system. Follow the guidelines below when writing this section:

* 1. **Introduction**
* Provide a brief overview of the methodology used in your project.
* Explain why this methodology was chosen and how it supports your project goals.
* Mention any industry standards, frameworks, or models that influenced your approach.

**4.2 Project Development Approach**

* Identify whether your project follows a Waterfall, Agile, Spiral, or another software development model.



* Justify your choice by discussing its advantages and relevance to your project.



* If applicable, outline the phases of development (e.g., planning, design, implementation, testing, deployment).



**4.3 System Architecture**



* Provide a high-level overview of the system architecture.
* Use diagrams to illustrate system components, interactions, and data flow.
* Clearly explain each major system component and its function.

**4.4 Tools and Technologies**



* List the programming languages, frameworks, and development tools used in your project.
* Include database management systems, cloud services, version control tools, and any APIs utilized.
* Explain why these tools were selected and how they contribute to the success of the project.



**4.5 Data Collection and Analysis (If Applicable)**

* If your project involves data collection, describe the methods used (e.g., surveys, interviews, existing datasets).
* Explain how the collected data will be analyzed and used within the system.

**4.6 Testing Strategy**



* Describe the testing methodology used (e.g., unit testing, integration testing, system testing, user acceptance testing).
* Explain how errors and issues will be identified and resolved.
* Include test cases, expected outcomes, and validation techniques.

## User interface design (prototype)



Provide snapshots for the graphical user interface screens of the system (without code). You can use special software, such as **Figma.**

**(End of Project 1)**

# Implementation Plan

## Description of Implementation

This subsection of the Project Implementation Plan describes Solution in more details. Describes how the information system will be deployed, installed and transitioned into an operational system. It contains a brief description of the major tasks and components involved in the implementation, the overall resources needed to support the implementation effort (such as hardware, software. facilities, materials, and personnel), and any site-specific implementation requirements.

## Programming language and technology

This section provides a list of programing languages, technologies, software and databases required to support the implementation. Identify them by name, code, or acronym. Identify which software is commercial off-the-shelf and which is State-specific. Identify any software used to facilitate the implementation process.

## part of implementation if possible

Provide pieces of code for major tasks and components.

# Testing Plan

Describe the scope, approach, resources and schedule of intended test activities. It identifies amongst others test items, the features to be tested, the testing tasks, test coverage, degree of tester independence, the test environment, the test design techniques and entry and exit criteria to be used, and the rationale for their choice.

## Black-box

Provide the black-box techniques that are used to test this project including test cases.

## White-box

Provide the white-box techniques that are used to test this project including test cases (test case if code is available).

## Testing automation

This section should provide:

1. The automation tools that have been used to control the execution of tests and the comparison of actual outcomes with predicted outcomes.

2. Decide what test cases to automate.

# Conclusion and Results

The conclusion is a required part that closes the document with a brief summary of the study including the problems found and the proposed solution. Most importantly, it should recommend to the readers the benefits of pursuing the project based on the researcher’s analysis.

## Summary of accomplished project

## Future Work

# References

All listed alphabetically according to the first author.

1. Periodical

Hourani, M., and Wedian, F. (2000). The effect of adatoms on the corrosion rate of copper. Corrosion Science, 42, 2131-2144.

1. Books

Mitchell, T.R, and Larson, J. R., Jr. (1987). People in organizations: An introduction to organizational behavior; (3rd ed.). New York: McGraw-Hill.

The references should be cited in the text as follows:

Hourani and Wedian (2000) developed a theoretical .........

Hourani et al is used if more than two authors.