

Quiz and PYQ Management System

1. INTRODUCTION

The Quiz and PYQ Management System is an intelligent web-based application designed to automate uploading, managing, and analyzing question papers. Faculty members can upload PDFs or images of question papers, and the system automatically extracts questions using Optical Character Recognition (OCR).

In addition to OCR, the system uses Natural Language Processing (NLP) to understand and process extracted text more efficiently. NLP is used to:

Clean and normalize extracted questions

Rephrase or reorder questions (e.g., "What is your name?" → "Your name is what?")

Detect question patterns

Identify similar/repeated questions across years

Improve question classification accuracy

This makes the extraction more intelligent, accurate, and useful for automatic quiz creation.

2. OBJECTIVES

- To digitalize the management of quizzes and previous year question papers.
- To automate extraction of questions from PDFs and images using OCR.
- To use NLP for rephrasing questions, improving text clarity, and detecting similar or repeated questions.
- To categorize repeated/important questions across different years.
- To simplify quiz generation and performance analysis.
- To provide instant feedback and score analysis for students.
- To make assessment faster, smarter, and more interactive..

3. SCOPE OF THE PROJECT

The system focuses on making quiz and PYQ management smart and automated. The scope includes:

- A centralized repository of question papers and MCQs.

- Automatic extraction using OCR.
- NLP-based processing to:
 - Rephrase and reorder questions
 - Detect duplicate or similar questions
 - Improve question accuracy and grammar
- Instant quiz generation from the question bank.
- Helping students identify frequently repeated questions.
- Providing useful analytics.

4. FUNCTIONAL REQUIREMENTS

Admin Module

- Manage user accounts
- Monitor uploaded papers and extracted data
- Generate analytical reports on:
 - Quiz performance
 - Question repetition

Faculty Module

- Upload question papers in PDF or image format
- Automatically extract MCQs using OCR
- Use NLP to:
 - Clean and structure extracted text
 - Rephrase or reorder questions
- Detect similar and repeated questions

- Verify and edit extracted questions
- Create and publish quizzes

Student Module

- Attempt quizzes online and receive instant results
- View PYQs by subject, year, or repetition frequency
- Practice rephrased questions generated through NLP
- Receive immediate feedback with correct answers and scores

5. SECURITY AND AUTHENTICATION

The Quiz and PYQ Management System ensures secure access through a role-based login and authentication process.

- User Authentication: Each user (Admin, Faculty, Student) must log in with a username and password. The system verifies these credentials from the database before granting access.
- Access Control: Admins manage users, Faculty handle question uploads, and Students can attempt quizzes. Unauthorized users are restricted from other roles.
- Error Handling: If login credentials are incorrect, the system displays "Invalid Username or Password."
- Security Measures: Passwords are encrypted, sessions are automatically logged out after inactivity, and communication is protected through HTTPS.

This ensures that only verified users can access the system and all academic data remains safe.