Tribhuvan University

Faculty of Humanities and Social Science

A Project Report On

"Quiz Management System with Fisher-Yates Shuffle Algorithm"

In partial fulfillment of requirements in Bachelor in Computer Applications

Submitted by:

Lusana Shakya (6-2-410-128-2021)

Ashad, 2082 B.S.

Under the Supervision of

Mr. Ananda K.C.

Tribhuvan University

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SUPERVISORS MANAGEMENT

It is my pleasure to recommend that a project report on "Quiz Management System" has been prepared under my supervision by Lusana Shakya in partial fulfillment of the requirement of the degree of Bachelor of Computer Applications. Her report is satisfactory and is an original work done by her to process for the future evaluation.

Mr. Ananda K.C.

SUPERVISOR

Lecturer, Department of IT

Prime College

Tribhuvan University

Faculty of Humanities and Social Science

Prime College

LETTER OF APPROVAL

This is to certify that this project report, prepared by Lusana Shakya on "Quiz Management System with Fisher-Yates Shuffle Algorithm" in partial fulfillment of the requirements for the degree of Bachelor in Computer Application, has been evaluated.

In our opinion, it is satisfactory in the scope and quality as a project for the required degree.

Mr. Ananda KC **Supervisor** **Prime College** **Khusibu, Nayabazar, Kathmandu**	**Ms. Rolisha Sthapit** **Program Co-Ordinator/ Internal** **Examiner** **BCA Department** **Prime College** **Khusibu, Nayabazar, Kathmandu**
	Mr. **External Examiner**

ACKNOWLEDGEMENT

CHAPTER 1

INTRODUCTION

1.1. Introduction

In today's fast-growing digital learning and entertainment landscape, quizzes have become a popular tool for both education and engagement. As more users look for interactive ways to test their knowledge or have fun, providing personalized and dynamic quiz experiences is essential. The Quiz Management System is designed to address this need by offering a customizable and intelligent platform where users can select their quiz preferences, play randomized quizzes, and instantly view their results through a user-friendly dashboard.

The system allows users to choose their desired number of questions and select specific categories, making the experience tailored to individual interests. To ensure each quiz session is unique and fair, the platform utilizes the Fisher-Yates Shuffle algorithm, which efficiently randomizes the order of questions before presenting them to the user. This prevents repetition and ensures that no two quiz sessions are exactly the same.

Built using Node.js for the backend and ReactJS for the frontend, the application offers a smooth and responsive interface suitable for both web users. It simplifies quiz management for administrators by allowing easy categorization, and performance tracking, while offering users feedback on their quiz results through the dashboard.

The demand for personalized quiz platforms is increasing as users seek meaningful and engaging experiences. This Quiz Management System not only reduces manual effort in selecting and organizing quizzes but also supports better user engagement through customization and real-time scoring. It serves as an effective solution for educational institutions, training platforms, or general entertainment, and sets the foundation for future features like time-based quizzes, performance analytics, and leaderboards.

In essence, this system streamlines the process of quiz creation and participation, ensuring an enjoyable, efficient, and personalized quiz experience for all users.

1.2. Problem Statement

The Quiz Management System tries to solve the following problems:

- Most systems offer limited personalization, failing to cater to different user preferences like topic or question count.
- Fairness and variety in question delivery is often lacking, especially when users attempt the same quiz multiple times.
- Manual quiz creation and curation is time-consuming and inefficient, especially for large sets of quizzes and users.

1.3. Objectives

The following are the objectives of the project:

- To enable users to generate quizzes based on their selected quiz category.
- To display accurate results immediately after quiz completion.
  - To provide a dashboard that shows quiz results and maintains a history of past attempts.

1.4. Scope and Limitations

1.4.1. Scope

The following are the scopes of the project:

- The system is designed to create quizzes for users based on their choice of category.
- It uses the Fisher-Yates Shuffle algorithm to shuffle quiz questions.
- The system will be available as a simple and user-friendly application to help users .

1.4.2. Limitations

The following are the limitations of the project:

- The system is limited to presenting only multiple-choice questions (MCQs).
- It does not currently support features like timed quizzes, negative marking, or user leaderboards.
- Quiz suggestions are based on pre-entered question banks; newly added quizzes may not appear unless the data is updated.