

## AFRICAN LEADERSHIP UNIVERSITY (ALU)

**Bachelor of Software Engineering (BSE)**

**GROUP PROJECT PROPOSAL**

Online Quiz Platform

Design and Development of a Web-Based Quiz System using Node.js and MySQL

**Group Members**:

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* Shaday Sine
* Umutoni Amelie
* Nayituriki Patrick

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## **Project Proposal – *Online Quiz Platform***

### **1. Problem Description**

In the current digital era, many educational institutions and learning platforms struggle with providing real-time, interactive assessments. Traditional testing methods are often inflexible, slow in delivering feedback, and unable to scale for many users at once.

To address these issues, we aim to develop an **Online Quiz Platform** that allows users to register, log in, take quizzes of different types (e.g., multiple choice, true/false), and receive **instant feedback**. The platform will integrate a **queue system** to handle high volumes of quiz submissions efficiently.

### **2. Proposed Solution**

We propose the development of a **full-stack web application** with the following capabilities:

* Secure **user registration and login**
* **Quiz creation** by admins/instructors
* **Real-time quiz participation** with instant feedback
* **Result storage and performance tracking**
* A **queue system** for efficient processing of quiz submissions

### **3. Technologies to Be Used**

|  |  |
| --- | --- |
| **Layer** | **Technology Stack** |
| Frontend | React, React Router, Framer Motion |
| Backend | Node.js, Express.js |
| Database | MySQL |
| Authentication | JWT (JSON Web Token) |
| Queue System | Redis or custom-built queue implementation |
| DevOps | Docker |

### **4. Preliminary Project Timeline & Milestones**

|  |  |
| --- | --- |
| **Sessions** | **Milestone** |
| 1 | Requirements gathering, planning |
| 2 | Database schema & backend setup |
| 3 | User authentication implementation |
| 4 | Quiz creation & management |
| 5 | Quiz taking & feedback system |
| 6 | Queue integration |
| 7 | Testing & bug fixing |
| 8 | Deployment & documentation |

### **5. Division of Responsibilities**

|  |  |
| --- | --- |
| **Group Member** | **Responsibilities** |
| **Nayituriki Patrick** | Database design, backend API development |
| **Shaday Sine** | Frontend UI/UX design, React components implementation |
| **Nubuhoro Divine** | User authentication, user management, and API security |
| **Umutoni Amelie** | Queue system integration, deployment, and system testing |