Institute of Space Technology Islamabad

Data Structures and Algorithms

Project Proposal

- Muhammad Bin Nasir 220201012
- Aiza Shafqat 220201036
- Muzammil Ali 220201061

Automated Quiz Generator

Introduction:

We propose the development of an Automated Quiz Generator, a sophisticated tool designed to streamline the process of quiz creation, particularly in educational settings. The tool will be implemented in C++ and will leverage a provided database to generate quizzes efficiently. The key objectives of this project are to enhance educational practices, reduce manual workload for educators, and provide a versatile solution for generating quizzes dynamically.

Objectives:

1. The primary goal is to automate the quiz creation process, significantly reducing time and effort educators spend on manual quiz generation.
2. Enable educators to focus more on teaching and personalized content development rather than routine quiz creation.
3. The tool will allow the creation of quizzes with a random selection of questions from a provided database.
4. Provide flexibility to generate quizzes of varying difficulty levels, catering to the diverse needs of students.

5. Address the challenge of resource constraints in educational institutions by offering a tool that optimizes quiz creation without requiring additional manpower.
6. Contribute to a more interactive and engaging learning experience for students through the use of diverse quiz formats and dynamically generated content.

Features:

1. **Database Integration**: Connect the tool to a specified database containing a pool of questions categorized by topic, difficulty, and type.
2. **Random Question selection**: Implement a feature that selects questions randomly from the database to create quizzes with diverse content.
3. **Dynamic Question selection**: Allow educators to specify the number of quizzes needed, with the tool dynamically generating unique quizzes each time.
4. **Export to PDF**: Provide the capability to export generated quizzes as PDF files for easy distribution and printing.
5. **User-friendly Interface**: Design an intuitive interface that is user-friendly, ensuring that educators can navigate the tool with ease.

Implementation:

1. **Database Interaction Module:** Design a module to connect and interact with the database, retrieving questions based on specified criteria.
2. **Randomization Algorithm:** Implement a robust algorithm to randomly select questions from the database while ensuring fair distribution across topics and difficulty levels.

3. **PDF Export Module:** Develop a module to export generated quizzes to PDF files, incorporating formatting options for a professional look.
4. **User Interface:** Utilize C++ libraries for creating a GUI, providing a seamless experience for educators.
5. **Error Handling and Logging:** Implement robust error handling mechanisms and logging functionalities to ensure the reliability of the tool.

Conclusion:

The Automated Quiz Generator aims to revolutionize the quiz creation process in educational institutions, fostering a more efficient and engaging learning environment. By addressing the time constraints educators face, providing versatility in quiz content, and simplifying the distribution process through PDF exports, this project seeks to make a meaningful impact on educational practices.