PROJECT TITLE:

QUIZ APP

Group Members:

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1. Introduction

- **Background**: This project will focus on implementing a basic-level Graphical User Interface (GUI) to enhance user interaction in a quiz-based application. The GUI, while simple, will aim to make the system more user-friendly. The project will also highlight core Object-Oriented Programming (OOP) concepts, demonstrating their use in a real-world application.
- **Problem Statement**: The project will address the need for an interactive and structured quiz system using OOP principles. The system will involve different types of questions (e.g., MCQs and True/False), which will be implemented through inheritance from a base Question class. Polymorphism will be demonstrated using virtual functions to handle different behaviors dynamically.
- **Objectives**: The main objective of the project will be to design and implement a functional quiz application that showcases core OOP concepts such as classes, inheritance, and polymorphism. Additionally, the project will aim to incorporate basic GUI elements to improve the user experience.

2. Scope of the Project

- **Inclusions**: It allow players to choose their quiz subject and the type of questions they want to attempt (MCQs or True/False), offering flexibility and variety.
- **Exclusions**: To keep the project manageable, features such as file handling for saving or loading data will be excluded. Advanced functionalities like online multiplayer mode, score history, or timed quizzes will also not be included.

3. Project Description

- **Overview**: The proposed system will be a console-based quiz application with basic GUI-like output to guide user interaction. The system will allow player to participate, choose a subject and question type, and answer questions added manually through a function. The project will apply OOP concepts such as class hierarchies, inheritance, and polymorphism.
- **Technical Requirements**: visual studio and visual studio code.

- **Project Phases**: project will progress through the following phases:
    - **Idea Generation:** Brainstorming and selection of the quiz app concept.
    - **Planning:** Designing the overall structure and determining the main classes and features.
    - **Design:** Building the class hierarchy, including the base Question class and its derived classes.
    - **Implementation:** Dividing work among team members and gradually integrating all parts into a complete application.

4. Methodology

- **Approach**: The group will begin by discussing and finalizing the project idea. Tasks will be assigned based on individual strengths and preferences. Members will work independently on their parts while staying in constant communication. Progress will be reviewed regularly, and the group leader will be consulted at each step to ensure quality and consistency.
- **Team Responsibilities**: Each group member will take responsibility for a specific portion of the project:
    - One member will handle GUI development and player interaction.
    - Another member will work on the question system, including the MCQ and True/False functionalities using inheritance.
    - A third member will manage the main program logic and integration of all components.

5. Expected Outcomes

- **Deliverables**: A fully functional quiz application. A written report (this proposal)
- **Relevance**: This project will serve as a practical application of Object-Oriented Programming (OOP) concepts. It will demonstrate:
    - **Class creation and usage** to model quiz questions and players
    - **Inheritance**, with MCQ and True/False question types derived from a base Question class.
    - **Polymorphism**: Through virtual functions that allow different question types to behave differently while sharing a common interface
    - **Encapsulation**: By grouping related data and methods within classes.

Through this, the project will reinforce key OOP principles in a functional, interactive, and engaging context.

6. Resources Needed

- **Software**: Microsoft visual studio, C++ compiler, visual studio.
- **Other Resources**: Online tutorials for GUI development in C++, instructor's guidance for design and OOP implementation.