Project Proposal: BioQuest

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A. Project Title

BioQuest: An Interactive Biology 1 Quizzer

B. Problem Statement

To create an easily navigable program that helps students review and master Biology 1 concepts through interactive quizzes for better comprehension, improved test scores, and better exam preparation, aimed towards the current grade 8 students (s.y 2025-2026) and the next batch of grade 8 students (s.y 2026-2027).

C. Project Objectives

The project aims to:

1. Provide an interactive and engaging quiz program based on the Biology 1 curriculum of grade 8.

2. Help students review lessons by offering multiple quiz types across different quarter topics.

3. Motivate students to improve through a gamified system with achievements to reward their progress.

4. Support progressive learning by unlocking higher difficulty levels as students advance and increase their level of mastery in the subject.

5. Encourage independent and fun study habits outside of the classroom (Basically an alternative for mobile/PC games).
6. Create friendly peer competition among the grade 8 students, encouraging them to use the program daily and progressively.

D. Planned Features

1. **Main Interface** – Clean, easy-to-navigate interface with options for menu, achievements, and credits.

2. **Quarter-Based Topics** – Users can choose from 1st–4th quarter lessons.

3. **Quiz Types** – Identification, Modified True/False, True/False, and Multiple Choice.

4. **Difficulty Levels** – Users can choose the difficulty level of their chosen topic, ranging from easy, medium, hard, and difficult.

5. **Achievements System** – Tracks milestones (e.g., finishing a quarter, scoring 100%, answering streaks, mastering a topic).

6. **Progressive Unlocking** – Players unlock more difficult challenges by completing easier ones.

7. **Game Familiarity** – Players can have a more immersive experience with the program feeling like a tutoring session. The program will use the user's nickname, pronouns, and have different "tutors" to choose from wherein each tutor has a different style of speech. This also includes occasional conversations between the "tutors" depending on who the user chose.

8. **Quiz Logging** – The program records the quizzes the player has already taken and records their scores and time taken.

9. **Credits Section** – Acknowledges contributors/developers.

E. Planned Inputs and Outputs

- **Inputs:**
  - The user inputs their nickname and pronouns.
  - The user chooses which tutor they want. (Regina, Rodrick, Julien)

  - The user chooses a quarter topic (1st–4th).

  - The user chooses quiz type (Identification, Modified True/False, True/False, Multiple Choice).

  - The user chooses difficulty (Easy, Medium, Hard, Difficult).

- **Outputs:**

  - The system generates quiz questions in a randomized order based on the chosen quarter, type, and difficulty.
  - The program has different dialogue for each tutor. The "tutor" is the program giving instructions. (e.g., Regina: "So, what do you want to do today nerd?

(Display quiz options)")

- ○ Displays whether the user's answers are correct or incorrect.

- ○ Shows scores and feedback at the end of the quiz.

- ○ Unlocks achievements and harder difficulty levels based on performance.

- ○ Displays earned achievements in a separate section
- ○ Provides a log of their progress with included time taken and quiz scores.

F. Logic Plan

1. Load the question bank and user profile.

2. Show the main menu with choices.

- Start Quiz
- Achievements
- Progress
- Exit

3. If user chooses "Start Quiz":

- Ask the user to input their nickname, pronouns, and choose their tutor.
- Ask the user to pick a quarter, topic, difficulty, and number of questions.
- Select questions from the bank based on the user's choice.
- For each question:

a. Show the question and possible answers.

b. Let the user answer.

c. Check if the answer is correct.

d. Give feedback (correct/incorrect).

e. Record the result.

- After all questions:

a. Show score and results.

b. Suggest topics to review.

c. Save results to progress history.

4. If user chooses "Achievements":

- Show past quiz scores and improvement over time.

5. If the user chooses "Progress":

Display the quizzes they finished in a table, including their scores and time taken.

6. If user chooses "Credits":

- Show the names of the developers and their contributions

END