NEA Working Document

Analysis

The Product

- The product of my NEA project will be a dedicated website for computer science questions. This platform will enable teachers to assign questions to students, contribute their own questions to a central repository, and evaluate each student's progress effectively.
- From the student’s viewpoint, they will be able to log in using Google authentication. Once logged in, students can view their assigned tasks, access assignments, and respond to questions. The system may potentially automatically mark their answers, though this feature will only apply to questions with fixed, objective answers (i.e., not open-ended or interpretative writing).

The Research

- I have explored several educational platforms, including Duolingo and Isaac Physics/Computing, from a student’s perspective. This exploration has provided me with valuable insights into user interfaces and how to make the learning experience engaging and user-friendly.
- The questions integrated into the platform will be sourced from the computer science department at my school, ensuring relevance and alignment with the curriculum.

The Client

- I have identified the computer science department as my primary client for testing this NEA project. Throughout the development process, I will be collaborating with Mr. Campbell, my teacher, and seeking feedback from other faculty members within the department to enhance the product.

The Objectives

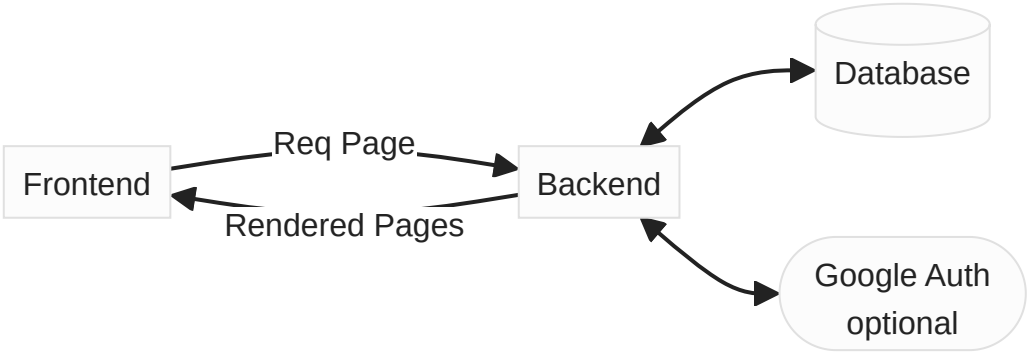
- **Must-Haves**
    1. Establish a reliable client-server connection.
    2. Create a comprehensive collection of questions.
    3. Ensure accessible question retrieval via the website.
- **Should-Haves**

1. Implement individual student authentication.
2. Enable teachers to receive submitted answers from students.
3. Facilitate storage of answers for future review and track overall course progress.
4. Allow teachers to modify existing questions and add new ones to the system.

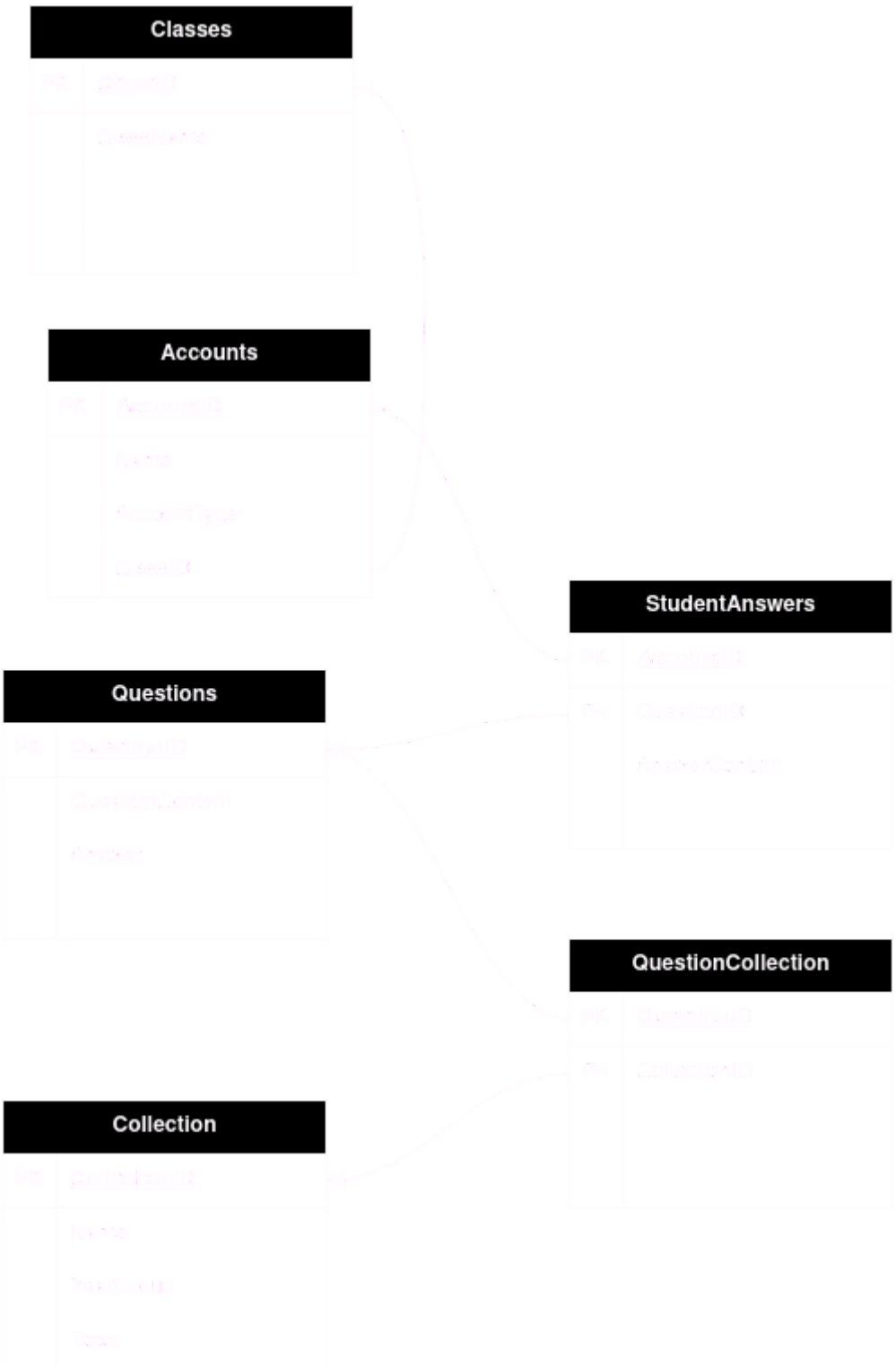
- **Could-Haves**
  1. Introduce randomised question variables to enhance variety and unpredictability.
  2. Utilise student-specific school Google accounts for authentication.
  3. Provide real-time feedback to students within the platform.

Model Designs

Basic System Graph



ERD Design (Subject to change based on questions supplied)


Classes
PK ClassID
ClassName
Accounts
PK AccountID
Name
AccountType
ClassID
StudentAnswers
PK AccountID
PK QuestionID
AnswerContent
Questions
PK QuestionID
QuestionContent
Answer
QuestionCollection
PK QuestionID
PK CollectionID
Collection
PK CollectionID
Name
YearGroup
Topic