VIP ITS Spring '23

Quest Game Frontend Project Proposal

Group Membership

Member		
Jun Yi Chuah	Skills	Python, Java, C++, Javascript, CSS
	Credit	2
	Responsibility	Game frontend
Reese Wang	Skills	Python, Java, React, HTML, CSS
	Credit	1
	Responsibility	Game frontend

Project Goals

Our goal for this semester is to gamify the quiz app as an alternate mode for students to face challenges within time constraints. Our objective is to create a webpage that allows students to practice topics of their choosing. By intelligently choosing a progression of problems based on their related concepts and difficulty, we aim to guide students from foundations to mastery. To take it a step further, our second goal is to provide AI-generated hints during the quiz game to help the students clarify any doubts or unknowns.

Project Timeline

Week 1-3: Team formation, proposing project ideas, and planning the project.

Week 4: Research into current existing Repos and datasets

Week 5-7: Look up game development cycles and what are the required tools/languages/framework for web-based games.

Week 8 - 11: Implementation of the GUI, HUD, navigation, and etc.

Week 12 - 13: Integrate the backend into frontend and check for bugs

Week 14: Hopefully a functional demo to receive feedback for further improvements

Week 15: Testing, adjusting, and optimizing accordingly.

Week 16-17: Final Presentation.

To ensure the progression is on track, we will be contacting the other sub-team for their progress as well to better understand the situation.

Project Description

We are making an interactive game that students can play to study Signal Processing, to improve recall and improve the student's mood while studying. This game would allow students to travel to different locations on the map that corresponds to a given topic. Within each topic, students would have a series of questions they can answer to accumulate points based on difficulty. We will also try to integrate ChatGPT to give hints if the student needs help.

Jun's Contributions: I will be working on developing the frontend of the game. I will be starting off by creating drafts for the frontend before writing code for it. Afterward, I will also be working closely with the backend team to figure out what kind of interactions they are hoping to see/include.

Reese's Contributions: I will work on the front end of the game. I will create a website wireframe, design the game's appearance and game graphics, and ensure that data from the backend is correctly shown to the student.

Potential Problems and Pitfalls

- Creating a game from scratch could be a huge issue as everyone does not have experience in making any sort of game.
- There is not a lot of time to create a minimum viable product
- Creating a visually appealing game might be impossible given our time constraints and limited experience
- Visualizing certain questions might be tricky due to complex equations and long explanations

Implementation and Collaboration

Primarily we will be using JavaScript to develop our game. We will be collaboratively working through this project using GitHub.
We will design a basic game UI so that the game character progresses through the map if they answer correctly, and don't progress if they answer incorrectly. We will render the signal processing questions from the MySQL database, the amount of time the user has to answer the question, and a button for users to click when they want a hint. We also hope to include some performance metric tools to evaluate the difficulty of the questions and whether it is appropriate to use such questions early in the game to test the students.
From a collaboration standpoint, we will aim to have weekly meetings with each other either virtually or in person. We will stay in contact with our team through Microsoft Teams. Additionally, with GitHub, we can work on this project together by making a new Repository.