**Mystery Trivia**

Group Members: Mohammed Chokr, Mohammed Rubel, Austin Jeffery, Jason Marrone

Project Overview

Mystery Trivia is a maze game project that will challenge players to answer trivia questions at a series of gates which will block off the player, in order for the player to continue they must answer the question right. The game is designed to be both fun and challenging, with a variety of questions based on the category the player chooses such as Math, History, and English. Once the player reaches higher levels, the game will become more challenging. The game begins with players on the starting point and in order to move through the maze, questions must be answered correctly, if they answer incorrectly they must try again. The less tries it takes to answer the question correctly the more points the player gets towards their hints. If the player gets stuck on a question they are able to use their points that they earned to receive hints. When the player uses a hint one question will be crossed out of the choices in order to help them figure out the answer. There will be chests that the player can get more points from if they answer an extra question. Once the player completes the maze, they will go to the next level where the questions will increase in difficulty.

Project Purpose, Scope, Objective

The purpose of this game is to provide players with a fun and engaging way to test and expand their knowledge, while challenging players to navigate through the maze at the same time. The game is designed to help the younger generation ages 8-12 enjoy learning by providing a satisfying sense when they progress through different levels and questions.

The scope of the project includes the development of a two-dimensional maze game on a webpage. The game will feature new generated maps with varying difficulty levels that the users will control an object to navigate through the maze while answering questions. Users will be able to interact with the object throughout the maze using their keyboard. Users will be able to click on the screen to choose their answers. The game will have a variety of questions based on the users’ chosen category such as Math, History, English. Users will be able to use points to help make progress throughout levels. There will be additional bonus chests that will help players gain points which will allow one of the options that is not the answer to be crossed out. There will be a login implemented to keep track of user data using a PlayFab database which will also keep track of the players points. The game will not have an online multiplayer feature where players can compete with each other. There will be no score board to keep track of who answered the questions faster or who has the highest score.

The objective of the project is to create a new two-dimensional maze game which can help children ages 8-12 learn more about Math, History, and English. There will be a back-end interface capable of user interaction where users can login with a username and password and interact with the game. While playing the game, the users’ will go through many questions to help gain knowledge.

Team Organization

**Member Roles**

Team Lead - Austin Jeffery

Presentation Lead - Mohammed Rubel

Front-end Lead - Jason Marrone

Back-end Lead - Mohammed Chokr

Documentation Lead - Mohammed Rubel

Team Lead

The Team Lead will be the main connection between the client and the rest of the team. Furthermore, the Team Lead will be responsible for maintaining the connection between the professor. Additionally, the Team Lead will mediate all team conflicts that may arise. These include a lack of communication, a lack of work ethic, or a lack of respect from a team member. Lastly, the final decision maker for all decisions and conflicts will be in the hands of the Team Lead.

Presentation Lead

The Presentation Lead will be the person who is the best communicator. This is because he will be the one mainly speaking for the presentations. Consequently, this means that a great deal of the presentations’ slides will be created and designed by him. Furthermore, all final changes to the presentation will have to be approved by the Presentation Lead

Documentation Lead

The Documentation Lead will be in charge of the documentation, which includes submitted assignments and projects. Furthermore, all documents will be maintained, revised, and edited meticulously before the final submission. Finally, the Documentation Lead will monitor all progress in the documentation and will give progress reports for all team members.

Front-end Lead

The Front-end Lead will be in charge of the user interface of the website. This means all user interface framework and user experience design will be designed by him. This person will oversee the main design of the website and will go over all future alterations of the website.

Back-end Lead

The Back-end Lead will be responsible for the storage and maintenance of the database. This means all data storage and data interactions will be designed by him. Furthermore, the Back-end Lead will be the final decision maker in pertinence with anything with storage.

Problem Resolution Policy

The resolution policy will consist of a three strike rule. In case a team member misses one meeting, the team members will meet with the individual as a group and discuss the issue. If the team member persists in miscommunication, the Team Lead will contact the teaching assistant and get them involved in the situation. If the team member is still not following through with communication and is missing meetings, we will have a meeting with the Professor and the TA. This will ensure that everyone is kept on track for the situation. If there are any issues where a team member gets aggressive or non-cooperative, the Team Lead will immediately report the situation to the professor.

* First Strike
  + Have a meeting to discuss the issue as a group
* Second Strike
  + Contact the teaching assistant to help get them involved
* Third Strike
  + Schedule a meeting with the Professor and the teaching assistant

If the client has an issue with a feature of an aspect of the game, the Team Lead will ensure that all problems will be addressed. The Team Lead will address the issue to his team, and they will immediately brainstorm potential solutions to address the issue as soon as possible. By tackling client issues quickly and efficiently. The way this will be done is by gathering the information and prioritizing which requirements are the most important and need to be done first. The Team Lead will split the work evenly to ensure this is done in a timely manner.

Project Plan

The team will have a weekly meeting with the group members every Monday at 9:00 p.m. The team will also meet with the assigned teaching assistant with the first meeting on Thursday, January 26th, at 4:00 p.m. The team will also collaborate daily should there be any conflicts that arise. Meeting times may change depending on the team member’s schedule, and will give at least three days' notice to the teaching assistant to change the meeting. During the team meetings, they will discuss what has been completed, what needs help completing, and what they will work on in the next week. The team will attempt to have every deliverable finished two days ahead of said due date. The meetings will take place online over Zoom. This will be our weekly meetings:

* Meeting with Teaching Assistant(Due Weekly Starting Thursday 1/26)
  + Discuss current project task
  + Discuss next week's features
* Group Meeting (Due Weekly Starting Monday 1/30)
  + Establish status of current tasks
  + Generate tasks for next week

The team will also develop a model to help guide them along the project path. Every weekly meeting the group will collaborate and discuss which features are the most important and how they will tackle the upcoming tasks. The Team Lead will then hand out tasks assigned for each member. Having these weekly meetings will help them focus on the project schedule to make sure things are going as smoothly as possible. The project schedule may change over time due to learning more about the project as they go along. The following is the current project schedule:

* Prototype 1 (Due Saturday 2/4)
  + Interconnected front-end and back-end working accordingly
  + Graphical interface on webpage
  + Database connected
* Requirements (Due Saturday 2/11)
  + Software Requirements
  + Functional and non-functional requirements
* Prototype 2 (Due Saturday 3/4)
  + 60% of features are accomplished
  + Database can store and retrieve information
  + Fully working controls for the game
* Prototype 3 (Due Saturday 3/25)
  + Application is 95% functional
  + All features fully tested
* Final (Due Saturday 4/14)
  + Application is fully functional
  + All features implemented
  + Graphically appealing

Configuration Management Plan

The project will be stored within a GitHub repository to manage all the source files. The team will also use WhatsApp and Slack to communicate and deliver messages or tasks for completion throughout the week. Tasks will be assigned through team meetings by the Team Lead. Slack will be used to keep track of the current position of the project and tasks.

The team will use a mixture of methods for merging code based on per feature and per person. The team must also have reviewers for when submitting code to help with code quality. When submitting a branch into the main branch it will be reviewed by the assigned reviewer. Mohammed Chokr will review Jason Marrone, Jason Marrone will review Austin Jeffery, Austin Jeffery will review Mohammed Rubel, and Mohammed Rubel will review Mohammed Chokr. In the case that the assigned reviewer is not able to review the submitters code, we will have the previous reviewer review their code. For example, if Jason Marrone is not able to review Austin Jeffery, Mohammed Chokr will be the reviewer.

Technologies

* Front-end
  + HTML5
  + CSS 3
  + JavaScript ES 13

For the front-end technologies the team selected webpage essentials in order to keep the application lightweight and responsive. Together, these three languages will help develop and create rich and interactive websites that can be accessed by anyone using a web browser. These three are open source technologies which makes it easier to learn and use.

* Back-end
  + Unity 2021.3.17f1

The project’s back-end technologies were selected in order to reduce time in development and increase productivity. Unity helps make apps easier to develop with C#. This will help free up time to put more focus on creating and testing the app.

* Database
  + PlayFab 221207

The team selected PlayFab for our database due to its open source nature allowing for extensive documentation and previous experience with the technology.