

# **Final Project**

Game Application

Group 19

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**Topic:**

Creating a game with 3 level and a persistent leaderboard

**Description:**

We are designing an ios application that is a game. The game is designed to help young students practice their math skills. This game is designed for students in kindergarten and grade one to practice math problems in a series of 3 levels. The first level will ask the user to identify odd and even numbers, level 2 will be an addition equation and level 3 will be a subtraction equation that needs to be solved.

**Functionalities:**

There will be various functions that will be implemented into the application. For instance, our application will feature a random number generator. The application will generate a random number where the user then has to make an educated decision to identify the correct answer. There will be 3 levels to this game. After each level of the game is completed the score will be updated. 1 correct answer = 10 points. After the third level is complete, users will be asked to input their name or gaming title. As a result their name will be stored into the leadership board displaying their names and the top 7 players. If the user enters a wrong answer in any of the levels the game will end and the user will be asked to input their name to be considered in the leadership board. The data will be stored into local storage. The data will be stored in local storage so that the game application can be available offline where students can continue perfecting their math skills within the classroom and compete against each other to obtain the highest score. Also it allows for a persistent score board where users can track the highest scoring student in the classroom and track their progress over multiple sessions.

**Mockups:**

\*\* Displayed on next page

## Mockups - Figma

### Splash Page



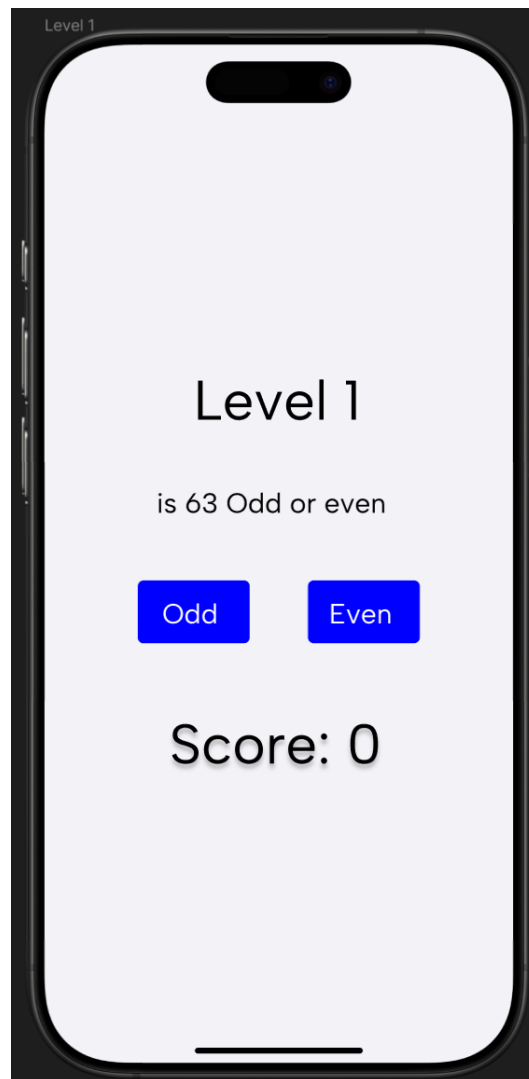
### Description:

The Splash Page is the introductory screen that welcomes users to the Math Mania game.

### Highlights:

- Project Name: Math Mania
- How to play: A brief instructional message explaining the gameplay.
- Includes Group members' names.

## Level 1



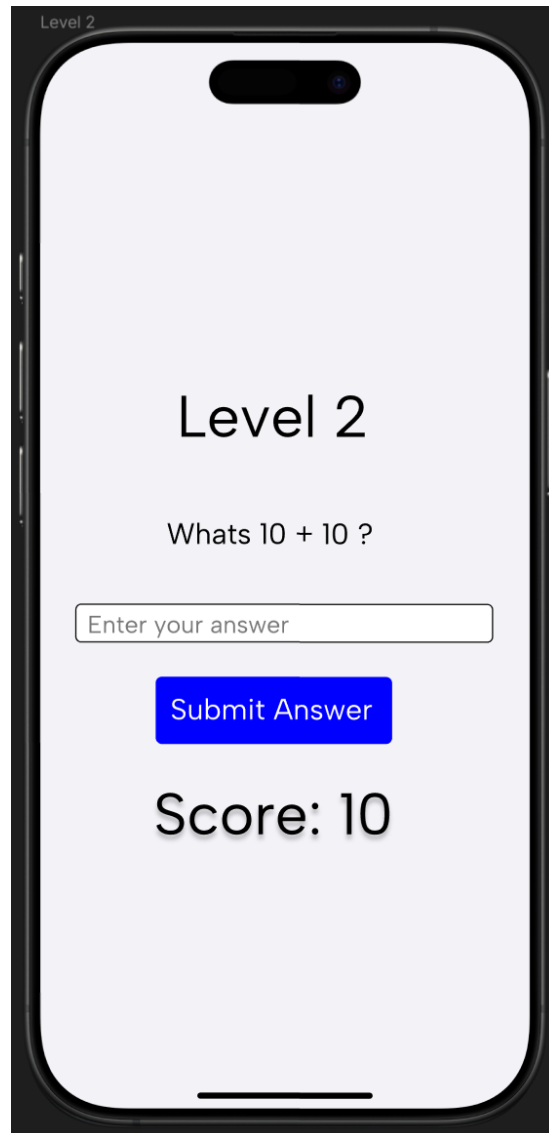
### Description:

Next will be Math Mania Level 1 Screen. The Level 1 Screen introduces users to the first challenge in Math Mania. It asks the player to determine if the displayed number is odd or even.

### Highlights:

- Question: Displays a random generated number asking if the number shown is odd or even.
- Answer Options: Buttons for “Odd” and “Even” to allow quick selection.
- Score Display: Shows the current score, motivating players to progress through the game.

## Level 2



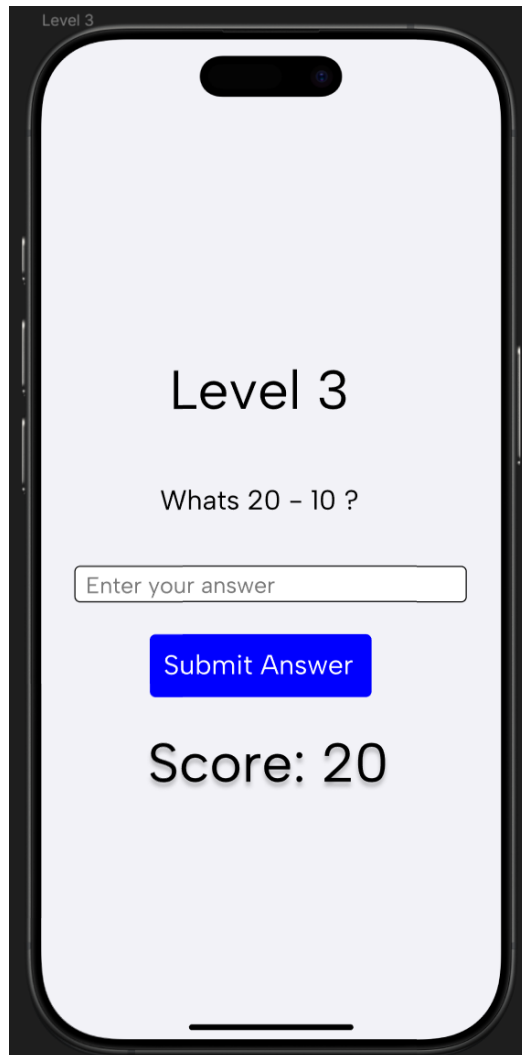
### Description:

Next is Level 2 screen that builds on the gameplay introduced in Level 1 by presenting a math addition problem. Player must solve the problem correctly to advance to the next level.

### Highlights:

- Question: Level 2 asks the player a math addition question.
- Answer Input: Text box for users to enter their answer.
- Submit Button: Button to submit the answer and proceed.
- Score Display: Displays the updated score from Level 1 and the current level.

## Level 3



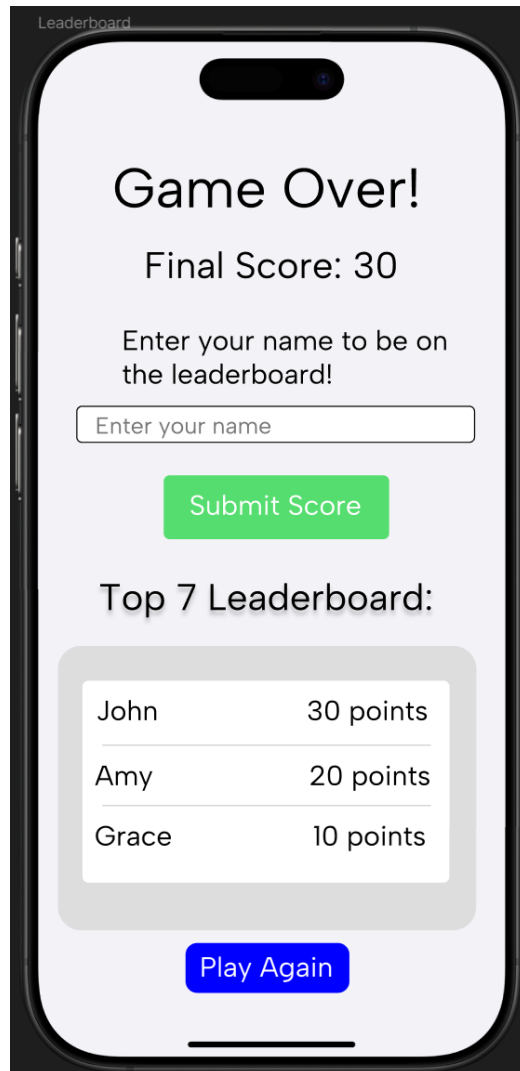
### Description:

Level 3 screen presents the final challenge in Math Mania. It asks the player a subtraction question, marking the final level of the player's math adventure.

### Highlights:

- Question: Level 3 asks the player a subtraction question.
- Answer Input: Text box for users to enter their answer.
- Submit Button: Button to submit the answer and complete the level.
- Final Score Display: Shows the updated final score.

### Game Over - Leaderboard:



### Description:

Game Over Leaderboard Screen concludes the Math Mania experience displaying the final score and inviting players to enter their name for the leaderboard. It provides a sense of accomplishment and encourages replayability.

### Highlights:

- Game Over Message: Indicating the game has ended
- Final Score: Displays the player's final score.
- Name Input: Text box for users to enter their name to be featured on the leaderboard.
- Submit Score Button: Button to submit final score to leaderboard.
- Leaderboard: Lists the top 7 players with their scores.
- Play Again Button: Button to restart the game and encourage continuous play.