IT121 PROTOTYPE GAME (FINAL PROJECT)
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User Manual

Math-Fall-Blast!

Game Concept

"**Math-Fall-Blast!**" is an interactive and educational game that challenges players to solve math problems while catching the correct answers falling from the top of the screen. It was inspired to the old fruit catching games and mixed it with mathematics to enhance arithmetic skills and reflexes, players must use quick thinking to catch the correct answers while avoiding incorrect ones. The game becomes progressively more challenging as the speed of the falling numbers increases and time limits push players to improve their performance.

Game Elements

Player (Paddle)

- **Appearance:** A blue rectangular paddle at the bottom of the screen.
- **Role:** Move left and right to catch the correct answers to the math problems displayed on the screen.

Falling Numbers

- **Appearance:** Green rectangles with numbers inside them.

- **Role:** These represent potential answers to the math problem. Some are correct, while others are incorrect.

Math Problem Display

- **Location:** Top-left corner of the screen.

- **Role:** Displays the current math problem that players must solve by catching the correct number.

Timer

- **Location:** Below the math problem display.

- **Role:** Counts down the time remaining for the player to solve problems. Players gain additional time by catching correct answers.

Score and High Score

- **Location:** Left side of the screen.

- **Role:** Tracks the player's current score and displays the highest score achieved in previous sessions.

Background and Sound Effects

- **Background:** A visually appealing game background enhances the gameplay experience.

- **Sound Effects:** A sound plays when the player catches a correct answer, providing auditory feedback for success.

Instructions

!!IMPORTANT NOTE!!

Since the game is still in the prototype stage, there are some issues that need to be addressed. Specifically, there is a problem with division when the divisor is greater than the dividend, the answer incorrectly returns zero instead of providing a remainder and when the problem is like "2 ÷ 5" the answer is 2 instead of having a decimal point. But to add an extra challenge to the game,

we have implemented a logic for subtraction. In this case, if the subtrahend is greater than the minuend, players may encounter negative numbers, which adds an interesting twist to the gameplay.

Starting the Game

1. Launch the game by running the program.

2. The title screen appears with the game title and instructions to press ENTER to start.

3. Once started, the timer begins, and the game transitions into gameplay mode.

Gameplay

1. Use the LEFT ARROW and RIGHT ARROW keys to move the paddle.

2. Solve the math problem displayed at the top-left corner of the screen.

3. Catch the correct falling number that matches the answer to the math problem by positioning the paddle beneath it.

4. Avoid catching incorrect numbers, as doing so will end the game.

5. The game ends if the timer reaches zero or if an incorrect answer is caught.

Restarting the Game

1. After the game over screen appears, press SPACE to restart the game.

Point System

1. **Score:**

   o   Gain 1 point for each correct answer caught.

   o   The score resets to 0 if the game is restarted.

2. **High Score:**

o   Tracks the highest score achieved across all sessions.

o   Updated whenever the current session's score exceeds the previous high score.

3. **Timer Bonus:**

o   Catching a correct answer adds 2 seconds to the timer.

4. **Falling Speed:**

o   The speed of falling numbers increases slightly with each correct answer, providing an escalating challenge.

Here's the screenshots of our game: