Random Number Generator Application Documentation

Mathematical Model

The Random Number Generator (RNG) application utilizes a simple mathematical model to generate random numbers within a specified range. The model leverages Unity's Random.Range method.

Random Number Generation

The application generates random numbers using the following formula:

randomNumber = Random.Range(0, 101) * multiplier;

- `Random.Range(0, 101)`: Generates an integer between 0 (inclusive) and 101 (exclusive), effectively producing numbers from 0 to 100.
- `multiplier`: This is a user-selected value (1x, 2x, 3x, or 4x) that scales the generated random number.

Multiplier Function

The multiplier adjusts the range of the random number output:

- **1x Multiplier**: Produces numbers from 0 to 100.
- **2x Multiplier**: Produces numbers from 0 to 200.
- **3x Multiplier**: Produces numbers from 0 to 300.
- **4x Multiplier**: Produces numbers from 0 to 400.

Application Features

- **Start and Stop**: Users can start and stop the random number generation using dedicated buttons.
- **Multiplier Selection**: Users can select a multiplier (1x, 2x, 3x, or 4x) to scale the random number range.
- **Real-Time Display**: The generated random number is displayed in real-time on the UI.

Sound Effects

Sound effects were downloaded using free sounds trials.

Application UI

The inspiration for the artwork included a combination of the '5 Dragons Machine' and 'Cyberpunk'. All of the artwork was created using ChatGPT, which generated original images based on my desired output.

Instructions

How to Run the Application

1. **Open the Project in Unity**:
   - Ensure you have Unity installed. This project uses Unity version 2022.3.33f1.
   - Open the project folder in Unity.
2. **Set Up the Scene**:
   - Load the `RandomNumberGeneratorScene` from the `Scenes` folder.
3. **Play the Scene**:
   - Press the `Play` button in the Unity Editor to run the application.

How to Use the Application

1. **Start Generating Numbers**:
   - Click the `Start` button to begin generating random numbers.
2. **Stop Generating Numbers**:
   - Click the `Stop` button to stop generating random numbers.
3. **Select Multiplier**:
   - Click on the `1x`, `2x`, `3x`, or `4x` buttons to set the desired multiplier for the random number generation.
   - The selected multiplier will scale the random number range accordingly.

User Interface Overview

- **Start Button**: Begins the random number generation.
- **Stop Button**: Stops the random number generation.
- **1x, 2x, 3x, 4x Buttons**: Selects the multiplier to scale the random numbers.
- **Random Number Display**: Shows the generated random number in real-time.