PROJECT REPORT

EGG CATCHER GAME

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The Egg Catcher Game is a simple interactive game developed using the Tkinter library in Python. The objective of the game is to catch falling eggs with a movable catcher, accumulating points for each successfully caught egg. The game incorporates dynamic difficulty levels, score tracking, and a lives system to create an engaging and challenging experience.

GAME FEATURES

1. The player can move the catcher left and right using the left and right arrow keys.
2. Eggs are randomly generated at the top of the screen and fall at varying speeds.
3. Points are awarded for each caught egg, and the score is displayed on the screen.
4. The player starts with three lives, losing one for each egg that reaches the bottom.
5. The game dynamically adjusts the speed of falling eggs and the interval between egg generations based on the player's performance.

CODE STRUCTURE

1. **Canvas Setup**: The Tkinter canvas is utilized to create the game window, with the initial setup of the background, catcher, and score/lives displays.
2. **Egg Handling**: Functions are implemented to create eggs, move them downward, and check for collisions with the catcher.
3. **Eggs and Lives**: The game tracks the player's score and remaining lives, updating the display accordingly.
4. **Game Controls**: Player input is handled through keyboard events, allowing the catcher to be moved left and right.
5. **Main Loop**: The main game loop is initiated using root.mainloop().

FUNCTIONALITY

1. **Egg Creation**: The **create\_egg** function generates eggs at random positions and schedules the creation of new eggs at intervals.
2. **Egg Movement**: The **move\_eggs** function animates the downward movement of eggs and handles removal when they reach the bottom.
3. **Scoring Mechanism**: Points are awarded for each caught egg, and the score is updated with increasing difficulty levels.
4. **Lives System**: The player loses a life when an egg is missed, and the game ends when all lives are exhausted.
5. **Dynamic Difficulty**: The game progressively becomes more challenging by increasing egg speed and decreasing the generation interval.

FUTURE ENHANCEMENTS

1. **Graphics and Animations**: Improve the visual appeal with enhanced graphics and animations for a more immersive experience.
2. **Levels and Challenges**: Implement multiple levels with increasing complexity and introduce special challenges.
3. **Sound Effects**: Incorporate sound effects to enhance the gaming experience.
4. **High Score Board:**Add a high score board to track and display the highest achieved scores.

CONCLUSIONS

The Egg Catcher Game provides an entertaining and interactive experience for players of all ages. The game's simple yet engaging mechanics make it a suitable project for learning and exploring game development concepts in Python. Further enhancements can be made to add more features, making the game even more enjoyable.

ACKNOWLEDGEMENT

Special thanks to the Tkinter library and the Python community for providing the tools and resources necessary for the development of this game.