ANIMAL RESCUE QUEST

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COP 290

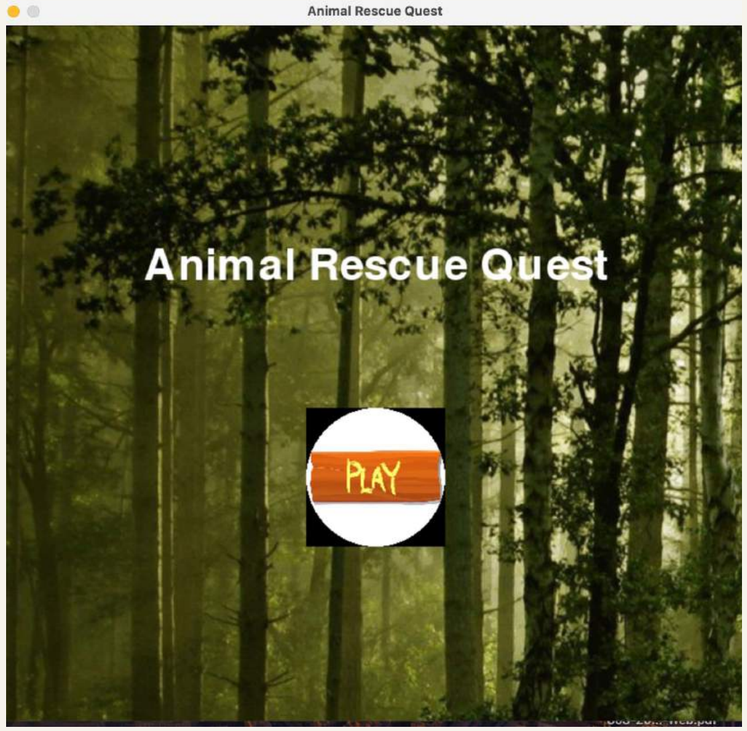
OBJECTIVE

- The game aims to spread awareness about animal conservation by simulating scenarios where players must navigate mazes to rescue endangered animals.
- Each maze level represents a unique habitat, highlighting diverse ecosystems and the challenges animals face in their natural environments.
- By saving animals in the game, players learn about the importance of preserving wildlife and protecting species diversity.
- Through engaging gameplay, users are encouraged to consider real-world conservation efforts and the impact of human actions on animal populations.
- The game's narrative emphasizes the inter-connectedness of ecosystems and the vital role animals play in maintaining ecological balance.

- Challenges within the game mirror real-life threats to wildlife, such as habitat destruction, poaching, and climate change.
- Through interactive experiences, the game aims to inspire empathy and motivate players to take action to protect animals..
- Ultimately, the game empowers players to become advocates for wildlife conservation and champions for a sustainable future where humans coexist harmoniously with animals.

Play Window

Players enter the game through a captivating play window, setting the stage for an adventurous journey, with a perfect background sound to make the room for the animal rescue campaign in the players thought process, also the caption blinks to attract attention.



USER INTERFACE

1. Choose Your Animal: Players can select their favourite animal or bird companion to embark on the rescue mission.

2. Watch a Film: Interactive buttons allow players to view educational films highlighting the threats of poaching and illegal wildlife trade, providing essential context to the game's mission.

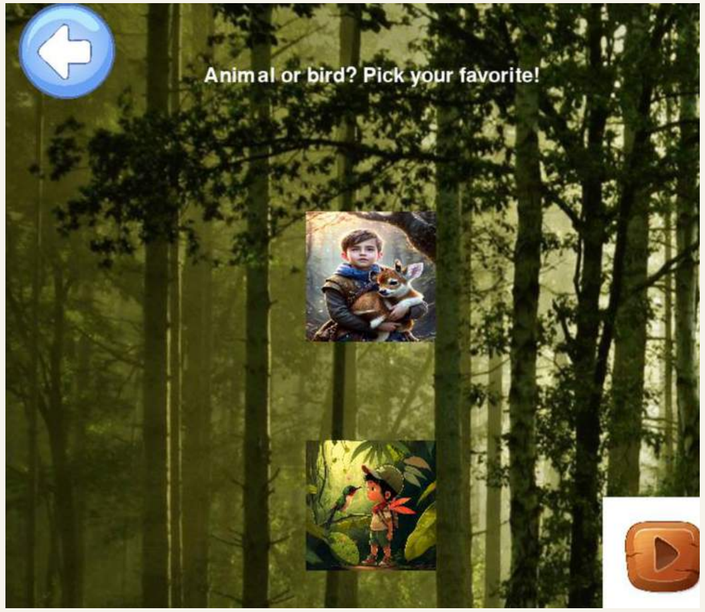
3. Hunter Encounter: Engage in a thrilling encounter as hunters descend, requiring swift action to save the chosen animal from harm.

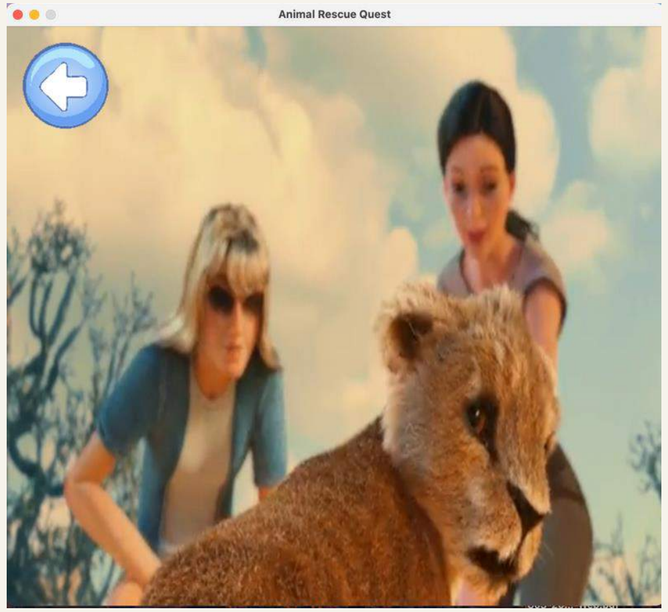
4. Jungle Expedition: Navigate through a dense jungle maze to guide the wounded animal to safety, avoiding threats from hunters and other predatory creatures.

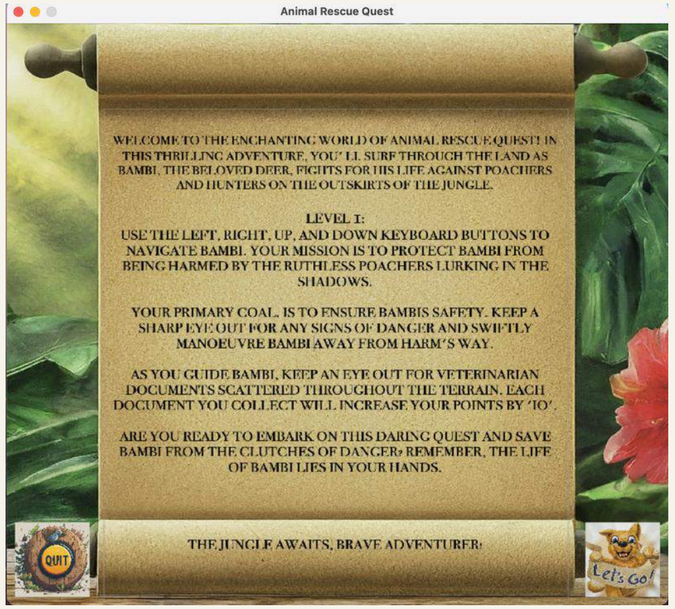
5. City Challenge: Enter a bustling city landscape where players must navigate the animal through hazards to reach the veterinary doctor in time, showcasing the urgent need for wildlife protection.

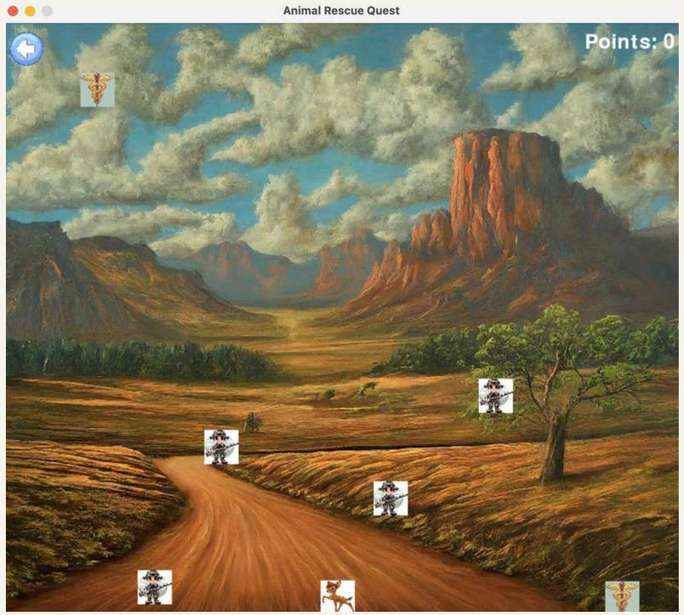
6. Functionality: implementation of back, quit, replay , back, next, etc. buttons to increase the interest of the player.

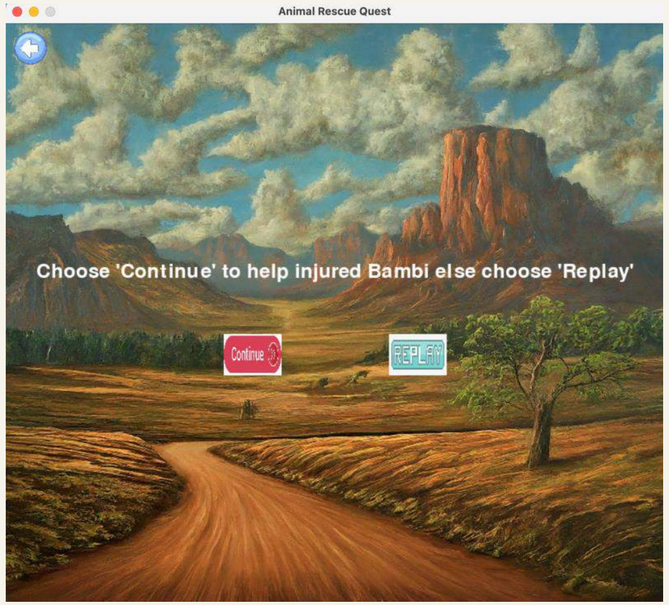
7. Backgound music: to create a suitable game ambience

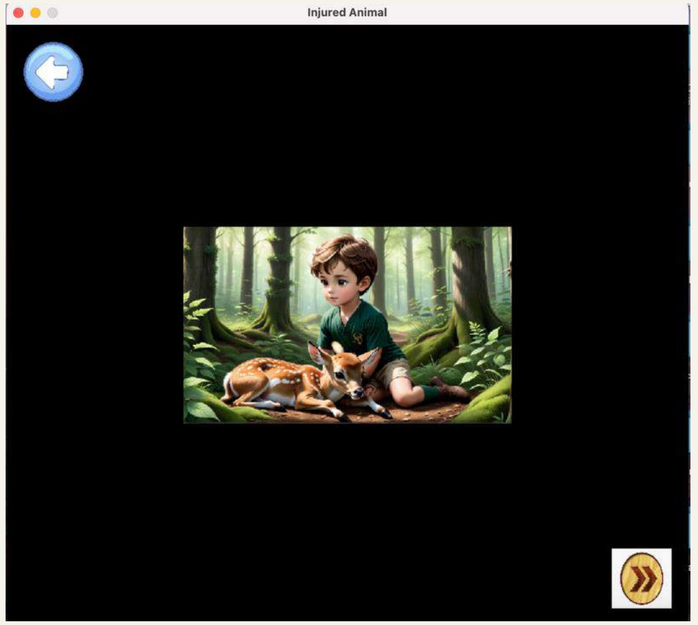

Animal or bird? Pick your favorite!

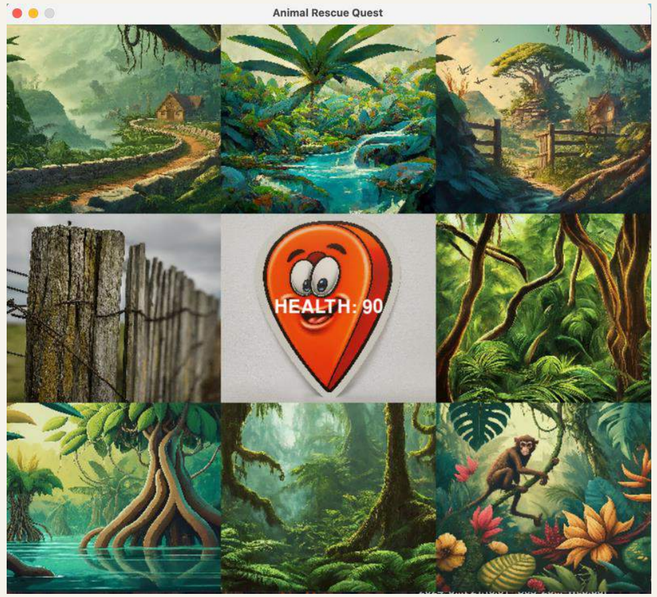

Animal Rescue Quest

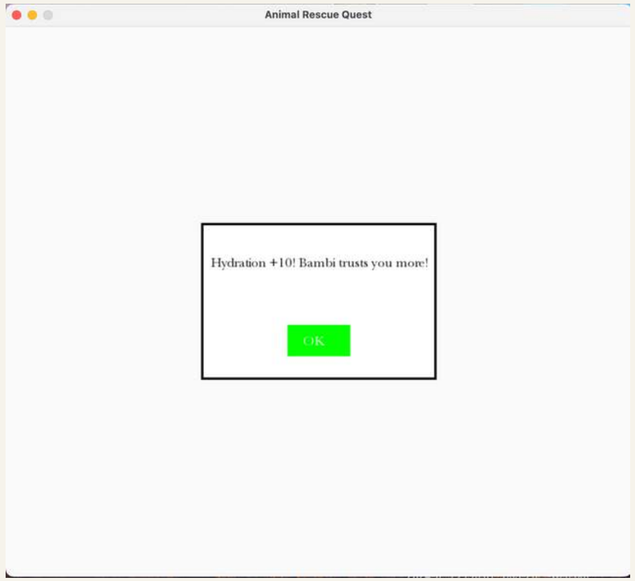

Animal Rescue Quest
WELCOME TO THE ENCHANTING WORLD OF ANIMAL RESCUE QUEST! IN THIS THRILLING ADVENTURE, YOU' LL SURF THROUGH THE LAND AS BAMBI, THE BELOVED DEER, FIGHTS FOR HIS LIFE AGAINST POACHERS AND HUNTERS ON THE OUTSKIRTS OF THE JUNGLE.
LEVEL 1:
USE THE LEFT, RIGHT, UP, AND DOWN KEYBOARD BUTTONS TO NAVIGATE BAMBI. YOUR MISSION IS TO PROTECT BAMBI FROM BEING HARMED BY THE RUTHLESS POACHERS LURKING IN THE SHADOWS.
YOUR PRIMARY GOAL, IS TO ENSURE BAMBIS SAFETY. KEEP A SHARP EYE OUT FOR ANY SIGNS OF DANGER AND SWIFTLY MANOEUVRE BAMBI AWAY FROM HARM'S WAY.
AS YOU GUIDE BAMBI, KEEP AN EYE OUT FOR VETERINARIAN DOCUMENTS SCATTERED THROUGHOUT THE TERRAIN. EACH DOCUMENT YOU COLLECT WILL INCREASE YOUR POINTS BY '10'.
ARE YOU READY TO EMBARK ON THIS DARING QUEST AND SAVE BAMBI FROM THE CLUTCHES OF DANGER? REMEMBER, THE LIFE OF BAMBI LIES IN YOUR HANDS.
THE JUNGLE AWAITS, BRAVE ADVENTURER!
QUIT
Let's Go!

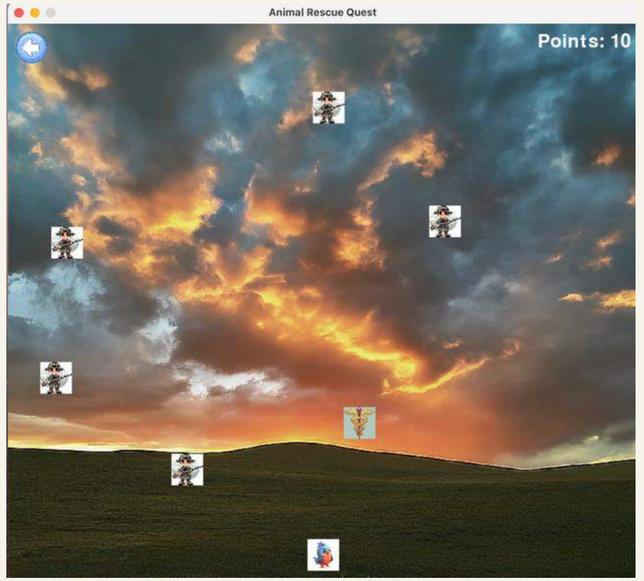

Animal Rescue Quest
Points: 0

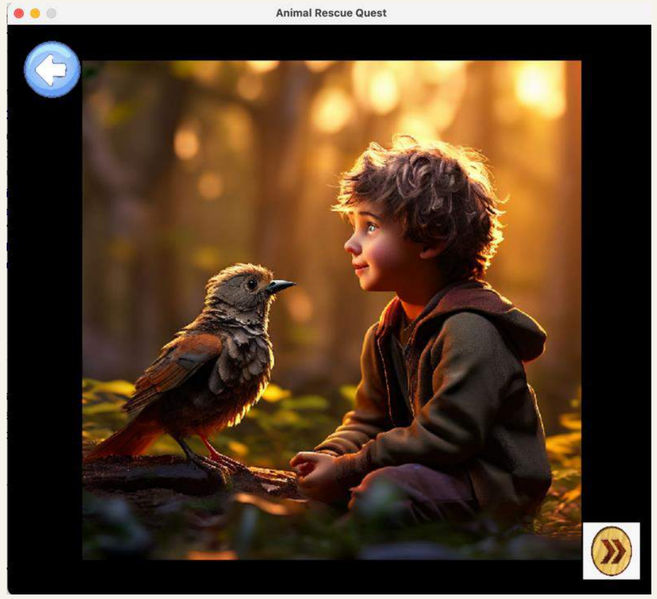

Animal Rescue Quest
Choose 'Continue' to help injured Bambi else choose 'Replay'
Continue
REPLAY


Injured Animal

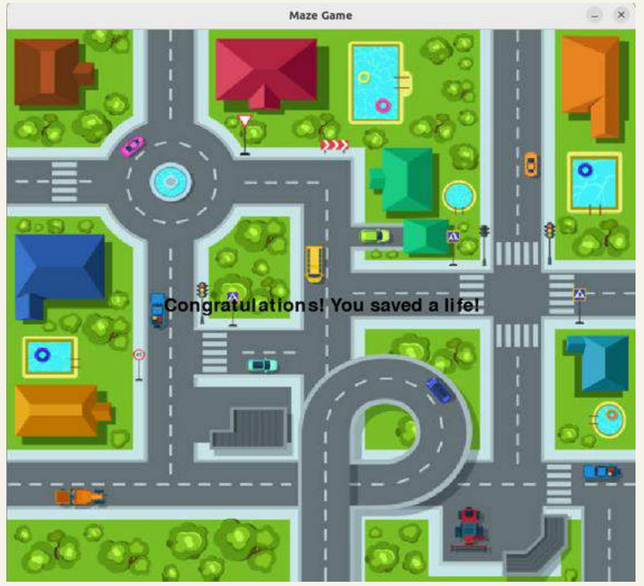

Animal Rescue Quest
HEALTH: 90


Animal Rescue Quest
Hydration +10! Bambi trusts you more!
OK


Animal Rescue Quest
Points: 10


Animal Rescue Quest


Maze Game
Health: 100


Maze Game
Congratulations! You saved a life!

Design Choices

Pygame:

- Pygame is utilized for creating the game interface, handling display, events (such as mouse clicks), and basic game loop management.
- It provides functionalities for loading and displaying images, rendering text, and playing sounds.

moviepy.editor:

- The moviepy.editor library is used to manipulate video files within the game interface.
- It allows loading, resizing, and playing video clips (VideoFileClip).

pygame.mixer:

- The pygame.mixer module is used for audio playback, specifically to play background music (background_music.mp3).
- It manages the volume level and allows looping of the music indefinitely (pygame.mixer.music.play(-1)).

Subprocess Module:

- The subprocess module is used to launch external processes (such as running another Python script) from within the game interface.
- It is employed to execute additional functionalities like displaying an injured animal (main4.py or main5.py) or playing a video (play_video()).

Key Features

Interactive Buttons:

- Images are used as buttons (play_button_image, animal_button_image, bird_button_image, back_button_image, watch_video_button_image) to facilitate user interaction.
- Button clicks are detected using Pygame's event system (pygame.MOUSEBUTTONDOWN).

Multimedia Integration:

- The game interface integrates multimedia elements, such as images, text, background music, and video playback. moviepy.editor is leveraged to load and display video content (watch_2.mp4).

Dynamic Content Rendering:

- Text is dynamically rendered using Pygame's font rendering capabilities (pygame.font.SysFont() and font.render()).
- Images are scaled and positioned on the screen to create an engaging and interactive user interface.

Hunter Interaction Game

Game Elements:

- Player (Player class) that can move left and right using keyboard inputs (pygame.K_LEFT and pygame.K_RIGHT).
- Falling obstacles (hunters) represented by the Obstacle class.

Collision Detection:

- Uses pygame.sprite.spritecollide() to detect collisions between the player and obstacles/bonuses.
- Resets points and triggers game over state if the player collides with obstacles.
- Increases points upon collecting bonuses.

Game Over State:

- Displays a game over screen when the player collides with obstacles.
- Provides options to continue or replay the game using interactive buttons (continue_button and replay_button).

User Interface:

- Utilizes graphics rendering (screen.blit()) to display game elements on the screen.
- Shows points at the top-right corner using rendered text (font.render()).
- Handles mouse clicks to interact with game buttons (back_button, continue_button, replay_button).

Jungle Tour Game

The goal is to reach an injured animal at a magical tree. Key features include:

- Grid-based display of images based on game state.
- Event handling for mouse clicks to trigger game state changes.
- UI elements like message boxes for player interaction.
- Management of animal's hydration and nutrition throughout the game.

The game progresses based on which image tile the player clicks, altering the game_state and advancing the storyline. The primary objective is to navigate through different scenes safely to reach the animal at the magical tree, with dangers of poachers and predators.

Map for tile game with Donut

Map for tile game with Bamby

The key features of the maze game

Maze Generation with Kruskal's Algorithm:

The generate_maze() function uses Kruskal's algorithm to create a random maze by removing walls between cells.

It initializes a Disjoint Set (Union-Find) data structure to manage the connectivity of cells and randomly shuffles walls to simulate the maze construction. The maze generated each time is completely different.

Player Movement:

The player can move using the arrow keys (UP, DOWN, LEFT, RIGHT).

Display:

The maze is displayed using a grid layout, where each cell can represent a wall, path, player, or destination.

Walls are drawn in black, paths with transparency to make the background image hazy, the player as a person image, and the destination as a hospital image.

Limitations and Enhancements:

The maze size and complexity can be adjusted by modifying NUM_ROWS and NUM_COLS.

Additional features such as enemy movement, multiple levels, or obstacles can be incorporated to enhance gameplay.

Everytime the player plays the game, he encounters a new maze as the maze generation is random

Metrics To Evaluate Assignment:

- Character Selection:
- Players start by choosing their favorite character: either an animal, Bambi deer, or Donut bird.
- Each character selection comes with a thematic introduction video that promotes kindness and love for animals.

- Navigation and Controls:
- Includes 'Next' and 'Back' buttons for navigating between different windows or stages within the game.
- Level I gameplay uses left and right arrow keys to avoid poachers and collect veterinary documents, earning the player I0 points per document.

- Scoring and Outcomes:
- Losing in the game results in the character being injured by poachers, transitioning the player to the next challenge.
- Successful actions lead to scoring and progression through the game's levels.

- Level I:**
- Focuses on saving the chosen animal from poachers.

- Level 2:
- A tile-based navigation game where the player starts at the central tile surrounded by tiles in eight directions (N, NE, E, SE, S, SW, W, NW).
- The objective is to reach the "Kalpavriksh" tree by making strategic moves across the tiles.
- Features include hydration and nutrition stations that increase the animal's health by 10 points, along with dangers such as cliffs, wild animals, and poachers that pose risks to the animal.

- Interface and Feedback:
- Display messages when reaching significant game milestones or upon collecting bonuses.
- Replay and Quit buttons are provided for the player to choose their next action after losing.

- Level 3:
- The player aids "Oreo," an injured puppy, by navigating through a maze to reach a veterinary hospital.
- Culminates in a congratulatory message that celebrates the player's compassion and success in the animal rescue quest.

- End-Game Mechanics:
- The game provides a message unfolding further story details and instructions for the next level, enhancing the narrative experience.
- Includes key commands for replay ('R') and quitting the game ('Q').

Thank You