**problem formulation:**

1. **Initial state:** a blank screen with no obstacles, and a pixelated Tyrannosaurus rex shown on the page.
2. **Successor function:** Given the current game state and the action taken by the AI model (e.g., jump, duck, or do nothing), update the game state to the next time step. The environment consists of a continuous stream of obstacles that move from right to left on the screen, and the AI model must make decisions based on the current game state to avoid collisions with the obstacles. The successor function should update the position of the T-Rex, the position and speed of the obstacles, and any other relevant game parameters based on the action taken by the AI model.
3. **Goal test:** the goal is to survive as long as possible by avoiding obstacles. The goal test would check whether the dinosaur has collided with an obstacle , indicating that the game is over. The AI model must also maximize its score, which is determined by the amount of time the T-Rex has survived. The game can be considered won if the T-Rex survives for a predetermined length of time, or if the AI model achieves a certain score threshold.
4. **Path cost:** the amount of time the T-Rex has survived, with a higher cost for states where the T-Rex has collided with an obstacle. The path cost should be minimized, as the goal is to maximize the amount of time the T-Rex survives.