

Project 1 Design Document

6/25/19

I will be designing a catching game, in which a user controlled dog at the bottom of a grid attempts to catch as many falling dog treats as it can while avoiding the simultaneously falling dog catchers. My goal will be to implement this into a python game library to include graphics but in the case that this becomes too cumbersome, I will implement the game on a text-based grid instead of graphically.

Classes

Game board:

Purpose:

- This will be the game grid that contains all objects in the game. It will track the contents and position of all objects on the game board. It will also display the contents to the user continuously throughout gameplay.

Expected Methods/Functions:

- `__init__` method to specify game board dimensions and contents
- `time_step` method to progress the game forward
- `__repr__` method to display contents of board

Dog

Purpose:

- User will control instance of this class to navigate it around the game board. Will have a score associated with it and position on the game board.

Expected Methods/Functions:

- Move method to allow users to move around the board
- Score method to track how many treats caught

Dog treats

Purpose:

- These will fall from the top of the game board and add to users score if they are at the same position at the same time as the user.

Expected Methods/Functions:

- Fall method to descend down game grid

Dog catchers

Purpose:

- These will fall from the top of the game board and end the game if they are at the same position at the same time as the user.

Expected Methods/Functions:

- Fall method to descend down game grid

Interaction

The user will interact with the dog by controlling its movements left and right on the game grid.

The game will also have an intro screen for the user to interact with.

Additional Features

The goal is for this game to allow the user to interact with change objects in the game environment.

I would like to give the game its own time progression engine so that objects change in the environment without any user input.