

Name: _____

Breath-first Search Algorithm

1. In class, you implemented the breadth-first search algorithm. You will now make several modifications to this project to aid in your understanding of the algorithm.

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(a) Add a third avatar to the system, called `dog`. The `dog` should start at location (350.0, 350.0) and have a speed of 30.0. Using the `seek` logic already in the game loop, add additional code so that the `dog` follows the `girl` (rather than the `boy`). The `dog` should be 10x10 pixels, with a fill color of (255, 215, 0).

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(b) Add logic to the game loop so that the user can press the “s” key (`K_s`) to toggle that tile on which they are standing. For example, the the tile that they are standing on is `'#'`, then the `level` dictionary at that location will need to be changed to `'.'`. This is a handy feature to see whether or not the AI can dynamically adjust their route.

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(c) Add a fourth avatar to the system, called `cat`. The `cat` should have a speed of 20.0, and follow the `dog`. The fill color of the `cat` should be (128, 128, 128).

Question	Points	Score
1	60	
Total:	60	