

Advanced Application Development

Homework 5

Finish the games in your Game Suite

1. **Drunken Bug Game in 3-D**

Change the “moving environment” to a cube by altering only the Environment class. (The code to do the test runs should be mostly unchanged.) The new Environment should be a three-dimensional “cube” or “parking garage” through which the bug will randomly (drunkenly) walk. Since it’s not the purpose of this assignment to make you figure out an optimal path through a three-dimensional space, have the movement in any of the (maximum 26) possible directions be completely random, regardless of how much the bug has had to drink. Control the movement within the environment. There can be no sober walk in this case.

Other requirements:

- Make the size of the board configurable by the user.
- Use 8 x 8 x 8 as the size for your tests.
- Run the bug through the board 2112 times for each simulation and compute the average number of moves it takes for the drunken bug to touch every location on the entire board.
- Log all activity to a file or database.

To impress me: Finish off your drunken bug “masterpiece” by graphically animating its movement through the cube environment.

2. **Multi-Player Multi-Deck Blackjack Game**

Enhance your Blackjack game from Hw4 to use multiple decks. Let the user specify the number of decks to use, up to eight (8).

Deliverables

E-mail me the all the code, project files, *and the executable* for each project. Print out and turn in the non-generated source code. Use a cover sheet and staples to complete the package you hand in.