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(23.8 hours late time left)

Sokoban Project

Sokoban is a classic game similar to a maze. It was derived from Japanese warehouse operations where workers would move a load to a specific spot with many obstacles and restrictions in their path.

In this game,

(Fig.1)

```
# '#' is a wall
        # " " is a free space
        # "$" is a box
        # ". " is the goal
        # "x " is the boxes placed on a goal
        # ? is for sokoban
```

Four files have been provided:

- Search.py
    - o Contains all of the search algorithms that I believe would be suffice for this game
        - ▪ A* star and Breadth First Search

- Result.py
    - o Considered the main page for this project. Contains several things like:
        - ▪ Heuristics – Manhattan Distance
        - ▪ All of the possible cases that could happen in Sokoban and instructions on how to resolve i.e.:
            - • What happens when it is near a wall or touching the wall

- Sokoban.py
    - o Includes all of the basic diagrams of the Sokoban board game, where symbols are used to dictate the objects (Fig.1)
    - o Includes the directions, by utilizing a string, hash and repr function to confirm movements
- Cases.py
    - o Includes some of the different levels created by myself for testing purposes

How to activate this file:

- Run the "result.py" file as this contains the main function

Problems encountered:

- I have set the program to test 10 cases at once but after the 5th problem, the time to solve it takes a lot more time than expected.

Improvements:

- Add more than 2 search algorithms could have made the program run more smoothly and efficiently
- Add couple more heuristic