Vacuum Cleaner AI

Objective

Given M x N grid(floor) create an agent that moves around the grid until the entire grid is clean

- Move the agent anyway you see fit until the floor is clean, **Zig-Zag** in my implementation
- Agent can start at any tile on the floor, given as input to the program

Notation

The floor is represented by a M x N grid where **1** represents a *dirty* tile
and **0** represents a *clean* tile

```
floor = [[1, 0, 0, 0],
         [0, 1, 0, 1],
         [1, 0, 1, 1]]
```

Algorithm

1. To clean a room def clean(grid):

i. Declare a grid of size m x n

ii. Here 0 represents the clean state of room and 1 represents the dirty state of room

iii. Traverse through the grid depending on the value i.e., clean (0) or dirty (1), if the state is 1 then change state to 0 else no action and continue to check for states of other rooms.

iv. Depending on the room location the agent moves left, right, up, and down.

2. To print the states of room in each move def printMatrix(grid, row, col):

i. Printing the grid every time we move another room to check the state of room.

ii. Once the states of all rooms are 0 it shows that all rooms are cleaned.