

WEEK 2

## VACUUM CLEANER AGENT

### Algorithm

Initialize the agents starting  $(x, y)$

Loop until all cells are clean:

a) Perceive the current cell

b) If the cell is dirty:

• clean the current cell

c) Else:

i) check surrounding cells (up, down, left, right) to see if any are dirty

ii) Move to the next dirty cell using strategy such as BFS, DFS or Random movements

d) if no dirty cells are perceived. Stop  
(all cells are clean)

End loop.



## 8 PUZZLE PROBLEM

### Week-3 BFS (BREADTH FIRST SEARCH)

#### Algorithm

let fringe be a list of containing the initial state  
loop

if fringe is empty return failure  
node  $\leftarrow$  remove - first (fringe)

if node is a goal  
then return the path from initial state  
to node

else

generate all successor node and add  
generated node to the back of fringe

end loop

### → DEPTH FIRST SEARCH (DFS)

#### algorithm

let fringe be a list containing the initial state

loop

if fringe is empty return failure  
node  $\leftarrow$  remove - first (fringe)

if node is a goal  
then return the path from initial  
state to node

else

generate all successor nodes and add  
generated node to the front of fringe

end loop

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18-10