# CSE 12 — Basic Data Structures and Object-Oriented Design Lecture 8

Greg Miranda & Paul Cao, Winter 2021

### Announcements

- Quiz 8 due Monday @ 8am
- Survey 3 due tonight @ 11:59pm
- PA3 due Wednesday @ 11:59pm
- Exam 1 next Friday
  - Released @ 8am on Friday
  - Closes @ 10am on Saturday
  - More details to be released on Piazza soon

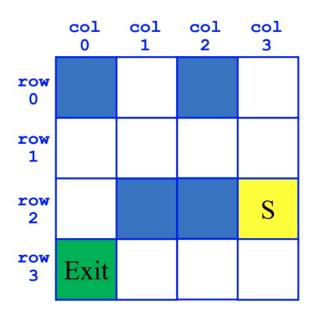


# **Topics**

- Questions on Lecture 8?
- BFS/DFS

# Questions on Lecture 8?

## Breadth-First Search (BFS)

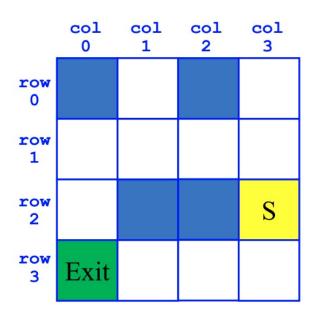


### SearchForTheExit

Initialize a **Queue** to hold Squares as we search Mark starting square as visited **Enqueue** starting square on **Queue**While **Queue** is not empty **Dequeue** square sq from **Queue**Mark sq as visited
If sq is the Exit, we're done!
For each of square's unvisited neighbors (S, W, N, E):
Set neighbor's previous to sq

Enqueue neighbor to Queue

## Depth-First Search (DFS)



### SearchForTheExit

Initialize a **Stack** to hold Squares as we search Mark starting square as visited **Push** starting square on **Stack**While **Stack** is not empty **Pop** square sq from **Stack**Mark sq as visited
If sq is the Exit, we're done!

For each of square's unvisited neighbors (S, W, N, E):
Set neighbor's previous to sq **Push** neighbor to **Stack**