

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

} → 26 hour

60 minute

↳ Lectures 1-8
PA3

Topics

- Questions on Lecture 8?
- BFS/DFS

Questions on Lecture 8?

Breadth-First Search (BFS)

	col 0	col 1	col 2	col 3
row 0				
row 1				
row 2				S
row 3	Exit			

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)

	col 0	col 1	col 2	col 3
row 0				
row 1				
row 2				S
row 3	Exit			

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**