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

Greg Miranda, Spring 2021
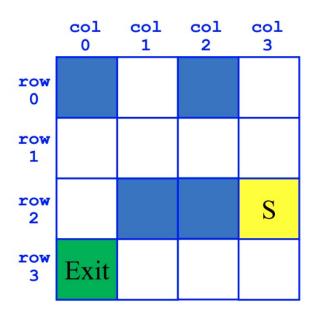
This lecture is being recorded

Announcements

- Quiz 8 due Friday @ 12pm

- PA2 due tonight @ 11:59pm

- Survey 3 due Friday @ 11:59pm

- Exam 1 - week from Friday (Week 4)
  - Released @ 2pm on Friday
  - Closes @ 6pm on Saturday
  - More details to be released on Piazza soon
    - Lectures 1 – 8
    - Up to and including PA3

Topics
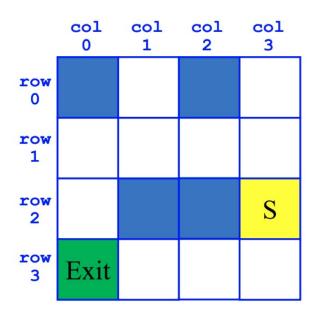
- Questions on Lecture 8?
- BFS/DFS

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**