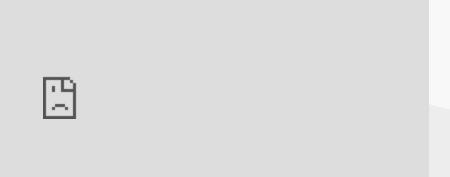
CE205 Data Structures

Week-5

Graph Data Structure and Traversals

Download PDF, DOCX, SLIDE, PPTX



Outline

- Introduction to Graphs
- Graph Representations
- Graph Traversal
- Water Jug Problem



- Vertex
- Edge



- Undirected Graph
- Directed Graph
- Mixed Graph



- End Vertices or Endpoints
- Origin
- Destination



- Adjacent
- Incident



- Outgoing Edge
- Incoming Edge



- Degree
- Indegree
- Outdegree



- Parallel edges or Multiple edges
- Self-loop
- Simple Graph
- Path



- Btech Smart Class
 - http://www.btechsmartclass.com/data_structures/introduction-to-graphs.html



Graph Representations

- 1. Adjacency Matrix
- 2. Incidence Matrix
- 3. Adjacency List
- Btech Smart Class
 - http://www.btechsmartclass.com/data_structures/graph-representations.html



Graph Traversal - DFS

- 1. Depth-First Search (DFS)
- 2. Iterative Deepening Search(IDS) or Iterative Deepening Depth First Search(IDDFS)
- Btech Smart Class
 - http://www.btechsmartclass.com/data_structures/graph-traversal-dfs.html



Graph Traversal - BFS

- Breadth-First Search (BFS)
 - Btech Smart Class
 - http://www.btechsmartclass.com/data_structures/graph-traversal-bfs.html



Graph Traversal - DLS

- Depth-limited Search
 - Educba
 - https://www.educba.com/depth-limited-search/



Graph Traversal

- Uniform Cost Search
 - Geeks for Geeks
 - https://www.geeksforgeeks.org/uniform-cost-search-dijkstra-for-large-graphs/



Graph Traversal

- Bidirectional Search
 - Geeks for Geeks
 - https://www.geeksforgeeks.org/bidirectional-search/



Graph Traversal

- Water Jug Problem
 - Geeks for Geeks
 - https://www.geeksforgeeks.org/water-jug-problem-using-bfs/
 - Tamu Edu
 - https://www.math.tamu.edu/~dallen/hollywood/diehard/diehard.htm
 - Udel Edu
 - https://www.eecis.udel.edu/~mccoy/courses/cisc4-681.10f/lec-materials/handouts/search-water-jug-handout.pdf



$$End-Of-Week-5$$

