

CE205 Data Structures Week-5

Graph Data Structure and Traversals

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1 CE205 Data Structures

2 Week-5

2.0.1 Graph Data Structure and Traversals

Download DOC¹, SLIDE², PPTX³

2.0.2 Outline

- Introduction to Graphs
- Graph Representations

¹ce205-week-5-graph-structures.md_doc.pdf

²ce205-week-5-graph-structures.md_slide.pdf

³ce205-week-5-graph-structures.md_slide.pptx

- Graph Traversal
 - Water Jug Problem
-

2.0.3 Introduction to Graphs

- Vertex
 - Edge
-

2.0.4 Introduction to Graphs

- Undirected Graph
 - Directed Graph
 - Mixed Graph
-

2.0.5 Introduction to Graphs

- End Vertices or Endpoints
 - Origin
 - Destination
-

2.0.6 Introduction to Graphs

- Adjacent
 - Incident
-

2.0.7 Introduction to Graphs

- Outgoing Edge
 - Incoming Edge
-

2.0.8 Introduction to Graphs

- Degree
 - Indegree
 - Outdegree
-

2.0.9 Introduction to Graphs

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

2.0.10 Introduction to Graphs

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

2.0.11 Graph Representations

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

2.0.12 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
-

2.0.13 Graph Traversal - BFS

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

2.0.14 Graph Traversal - DLS

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

2.0.15 Graph Traversal

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

2.0.16 Graph Traversal

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

2.0.17 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>

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