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Crux

Lecture -20

Data Structures -6

Graphs

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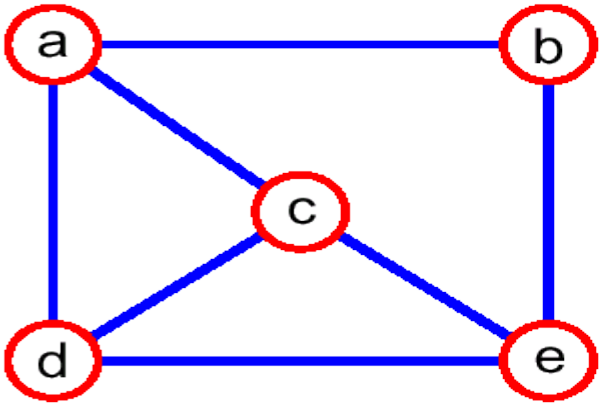
CODING BLOCKS

Graphs

Graphs



V= {a,b,c,d,e}

E=
{(a,b),(a,c),(a,d),
(b,e),(c,d),(c,e),
(d,e)}

Terminology

1. Adjacent Vertices
2. Degree
3. Path
4. Connected Graph
5. Subgraph
6. Connected Components
7. Tree
8. Forest
9. Spanning Tree

Number of edges

1. Complete Graph
2. Tree
3. Connected Graph

How to implement Graph?

1. Edge List
2. Adjacency lists
3. Adjacency matrix

Searching in a Graph

How to Search through a Graph?

1. Depth First Search
2. Breadth First Search

Problems

1. Implement isConnected for our graph
2. Return all the connected components of the graph
3. Check if a graph is Bipartite or not.
4. Check if there is cycle in a graph

Some more Graph variations

1. Directed Graphs
2. Weighted Graphs

Thank You !! ☺

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