CET2001B

S.Y. B. Tech. Academic Year 2022-23 Semester: IV

Advanced Data Structures

LABORATORY WRITE UP

Experiment Number: 05

TITLE: Graph and DFS & BFS Traversal

PROBLEM STATEMENT:
Consider a friend's network on Facebook social web site. Model it as a graph to represent each node as a user and a link to represent the friend relationship between them using adjacency list representation and perform DFS & BFS traversals.

OBJECTIVE:

1. To study data structure Graph and its representation using adjacency list
2. To study and implement recursive Depth First Traversal and use of stack data structure for recursive Depth First Traversal
3. To study and implement Breadth First Traversal
4. To study how graph can be used to model real world problems

THEORY: ***//To be Written by Students***

// Write theory by elaborating below points

Write in brief about

- Graph and its types (with diagrams)
- Representation of graph using adjacency list with one example and diagram.
- Graph Traversals DFT and BFT with example and diagrams

IMPLEMENTATION:

- **PLATFORM:**

- 64-bit Open source Linux or its derivatives.
- Open Source C++ Programming tool like g++/Eclipse Editor.

- **TEST CONDITIONS:-**

1. Input at least 5 nodes.
2. Display DFT (recursive and non recursive)and BFT

- **PSEUDO CODE:** ***//To be Written by Students***

  Write pseudo code for create, DFT (recursive and non recursive) and BFT

- **TIME COMPLEXITY:** ***//To be Written by Students***

  Find out time complexity of above operations

- **CONCLUSION:**

  Thus, we have represented graph using adjacency list and performed DFT and BFT .

- **FAQs** ***//To be Written by Students***

  1. Explain two applications of graph.
  2. Explain advantages of adjacency list over adjacency matrix.
  3. Why transversal in graph is different than traversal in tree

- **PRACTICE ASSIGNMENTS**

  1. Write a program to perform DFT and BFT where graph is represented using adjacency matrix.

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