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| PICTLOGO | PUNE INSTITUTE OF COMPUTER TECHNOLOGY  PUNE - 411043 | | |
| Department of Electronics & Telecommunication | | |
| ASSESMENT YEAR: 2024-2025 | CLASS: SE | |
| SUBJECT: DATA STRUCTURES | | |
| **EXPT No:9** | LAB Ref: SE/2024-25/ | | Starting date: |
|  | Roll No:22168 | | Submission date: |
| **Title:** | **Creation of Graph** | | |
| **Problem Statement** | **Write a program to Implement Graph using adjacency Matrix, apply following traversal. 1. Breadth First Search (BFS) 2. Depth First Search (DFS)** | | |
| Refer lab manual for below | | | |
| **Prerequisites:** |  Basic understanding of graphs (vertices, edges, cyclic graphs).   Knowledge of **queue** (for BFS) and **stack** (for DFS) data structures.   Familiarity with BFS and DFS traversal algorithms. | | |
| **Objectives:** | • Learn the concepts of nonlinear data structure in implementation of graph (Cyclic data structure).  • Apply BFS traversal to visit graph nodes using queue structure.  • Apply DFS traversal to visit graph nodes using stack structure | | |
| **CONCLUSION:** | | | |
|  | In conclusion, implementing BFS with a queue and DFS with a stack allows efficient traversal of cyclic and acyclic graphs. BFS explores nodes level by level, while DFS goes deep into branches before backtracking. These techniques highlight the importance of nonlinear data structures like graphs, which can represent complex relationships. Understanding these traversal methods is crucial for solving problems related to networks, pathfinding, and graph connectivity. | | |
| **REFERENCES: refer lab manual for the same** | | | |
|  | 1. Ellis Horowitz, Sartaj Sahani, “Fundamentals of Data Structures”, Galgotia books.  2. Richard F. Gilberg and Behrouz A. Forouzan, Data Structures A Pseudo code approach with C, cengage learning, 2nd edition.  3. Yashvant Kanetkar-Understanding Pointers in C BPB publications 3rd Edition. | | |

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| **Continuous Assessment for DS AY: 2024-25** | | | |
| **RPP (5)** | **SPO (5)** | **Total (10)** | **Signature:** |
|  |  |  | **Assessed By: Dr. V. B. Vaijapurkar** |
| **Start date** | **Submission date** | | **Date:** |
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| **\*Regularity, Punctuality, performance**  **\*Submission, Presentation, orals** | | | |