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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:10** | LAB Ref: SE/2024-25/ | | Starting date: |
|  | Roll No:221768 | | Submission date: |
| **Title:** | **Prim’s Algorithm** | | |
| **Problem Statement** | **Write a program in C to represent graph using adjacency list or matrix and generate minimum spanning tree using Prim’s algorithm.** | | |
| Refer lab manual for below | | | |
| **Prerequisites:** |  **Graph Basics**: Knowledge of vertices, edges, and cyclic vs. acyclic graphs.   **Data Structures**: Understanding of arrays or adjacency matrices for graph representation.   **Algorithms**: Familiarity with Prim's algorithm for Minimum Spanning Tree generation. | | |
| **Objectives:** | • To learn the concepts of graph (cyclic data structure).  • Generate spanning tree using Prim’s Algorithm. | | |
| **CONCLUSION:** | | | |
|  | In conclusion, learning about graphs as cyclic data structures provides essential insights into how interconnected data can be organized and analyzed. Implementing Prim's algorithm to generate a Minimum Spanning Tree helps illustrate the practical application of graph theory in optimizing connections within a network. This foundational knowledge is crucial for solving complex problems in computer science, such as network design and resource management. | | |
| **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** | | | |