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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:** | LAB Ref: SE/2024-25/ | | Starting date: |
|  | Roll No:22168 | | Submission date: |
| **Title:** | **Minimum Spanning tree algorithms** | | |
| **Problem Statement** | Perform the experiment of Minimum spanning tree algorithm using C Language through virtual platform | | |
| Refer lab manual for below | | | |
| **Prerequisites:** | 1. To know basics of minimum spanning trees. | | |
| 2. To know different algorithms for finding the minimum spanning trees – Kruskal’s algorithm, Prim’s algorithm | | |
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| **Objectives:** | 1. Know the concept of spanning trees and minimum spanning trees. | | |
| 2. Understand algorithmic approaches to finding minimum spanning trees in graphs. | | |
| 3. Understand the data structures required to efficiently implement algorithms for minimum spanning trees. | | |
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| **Theory:** | | | |
|  | Done on ruled sheets. | | |
| **Flow-chart**  **ERRORS** | **(Extra sheet may be attached)**  **(if any)**   1. **Select where to start with** 2. **wrong edge to be checked** 3. **No it should not be added go for next edge to be checked** | | |
| **REMEDY** | **(if any)**   1. **Selecting the required node.** 2. **Selecting the correct edge with the least weight.** 3. **NOT adding edges that form loops to the MST.** | | |
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| **CONCLUSION:** | | | |
|  | **Through this experiment, a thorough knowledge and basic understanding of minimum spanning tree was acquired.** | | |
| **First, the concept of minimum spanning trees was explored thoroughly followed by the different algorithms to find the minimum spanning trees i.e. Kruskal’s and Prim’s algorithm. Then, their differences, time complexity, and space complexity was compared, thereby getting to know their advantages and disadvantages.** | | |
| **Lastly, finding the minimum spanning tree using Kruskal’s and Prim’s algorithm was implemented on virtual platform.** | | |
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| **REFERENCES: refer lab manual for the same** | | | |
|  | **1. GeekforGeeks** | | |
| **2. Hacker Rank** | | |
| **3. StudytoNight** | | |
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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** | | | |