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|  |  | 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 | |
| **Programmer Name: Ansh Shah**  **Batch: H5**    Using Kruskal’s algorithm to find minimum spanning tree.  DS\_LAB\_2024-25: Program input output 1 | | | |

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| **EXPT No:** | LAB Ref: SE/2024-25/ | Starting date: |
|  | Roll No:22168 | Submission date: |
| Starting by checking edge with least weight i.e. edge 8.    Edge 8 does not form a loop, hence added to MST.  DS\_LAB\_2024-25: Program input output 2 | | | |

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| ASSESMENT YEAR: 2024-2025 | CLASS: SE |
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| **EXPT No:** | LAB Ref: SE/2024-25/ | Starting date: |
|  | Roll No:221768 | Submission date: |
| Checking next edge, i.e. edge 11.    Edge 11 does not form a loop, hence added to MST.  DS\_LAB\_2024-25: Program input output 3 | | | |

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| **EXPT No:** | LAB Ref: SE/2024-25/ | Starting date: |
|  | Roll No:22168 | Submission date: |
| Checking next edge, i.e. edge 12.    Edge 12 forms a loop, hence NOT added to MST. Checking edge 13.  DS\_LAB\_2024-25: Program input output 4 | | | |

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| Edge 13 does not form a loop, hence added to MST.    Checking next edge, i.e. edge 15.  DS\_LAB\_2024-25: Program input output 5 | | | |

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| Edge 15 does not form a loop, hence added to MST. This completes the MST.  DS\_LAB\_2024-25: Program input output 6 | | | |

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| Using Prim’s algorithm to find the minimum spanning tree.    Selecting node B, as it contains the edge having the least weight.  DS\_LAB\_2024-25: Program input output 7 | | | |

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| Out of these edges, first checking the edge with the least weight, i.e. edge 8.    Edge 8 does not form a loop, hence added to MST. (As we added a new node d, we must check edges from node d as well.)  DS\_LAB\_2024-25: Program input output 8 | | | |

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| Checking the next edge, i.e. edge 10.    Edge 10 does not form a loop, hence added to MST. (As we added a new node e, we must check the edges from node e as well.)  DS\_LAB\_2024-25: Program input output 9 | | | |

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| Checking next edge, i.e. edge 11.    Edge 11 does not form a loop, hence added to MST. (As we added a new node c, we must check the edges from node c as well.)  DS\_LAB\_2024-25: Program input output 10 | | | |

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| Checking next edge, i.e. edge 12.    Edge 12 forms a loop, hence NOT added to MST. Checking next edge, i.e. edge 13.  DS\_LAB\_2024-25: Program input output 11 | | | |

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| Edge 13 does not form a loop, hence added to MST. This completes the MST.  DS\_LAB\_2024-25: Program input output 12 | | | |