**Data Structures and Algorithms**

**Project Evaluation Sheet**

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Implementation Analysis

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Algorithm/Data Structure** | **Used? (Yes/No)** | **How and where?** | **Space Efficiency** | **Time Efficiency** |
| Arrays | YES | Used in hashing to store user id | O(1) | O(n) |
| Structures | YES | Used to store events, venue,  Area of the cities , user login info | O(1) | O(n) |
| List | NO |  |  |  |
| Stack | NO |  |  |  |
| Queue | NO |  |  |  |
| Binary Tree | NO |  |  |  |
| Binary Search Tree | NO |  |  |  |
| AVL Tree | NO |  |  |  |
| 2-3 Tree | NO |  |  |  |
| Red-Black Tree | NO |  |  |  |
| Trie | NO |  |  |  |
| Heap | NO |  |  |  |
| Lookup Table | NO |  |  |  |
| Sparse Table | NO |  |  |  |
| Fenwick Tree | NO |  |  |  |
| Segment Tree | NO |  |  |  |
| Skip List | NO |  |  |  |
| Union-Find | NO |  |  |  |
| Hashing | YES | We used to books the particular date for user of the month | O(1) | O(n) |
| DFS | YES | Used to traverse the area location from graph | O(v+e) | O(v+e) |
| BFS | NO |  |  |  |
| Bubble Sort | NO |  |  |  |
| Selection Sort | NO |  |  |  |
| Insertion Sort | NO |  |  |  |
| Quick Sort | YES | Used to sort venue halls on its cost | O(n) | O(nlogn) |
| Merge Sort | NO |  |  |  |
| Brute Force String Search | YES | Used to search the area of user in our considered domain | O(1) | O(n\*n) |
| Rabin Karp | NO |  |  |  |
| Boyer-Moore | NO |  |  |  |
| Knuth-Morris-Pratt | NO |  |  |  |
| Heap Sort | NO |  |  |  |
| Kruskal | NO |  |  |  |
| Prim | NO |  |  |  |
| Dijkstra | YES | Used to find shortest path from user area to all area | O(v) | O(v\*v) |
| Floyd | NO |  |  |  |
| Warshall | NO |  |  |  |
| Bellman-Ford | NO |  |  |  |
| Any Other | NO |  |  |  |

Other Analysis:

We have did analysis of the different venue halls present in the single venue with its credential details and the events the the venue providing

We have considered venue as UK27 and Belagavi city where we considered some 13 areas and the graph between them

In the booking details we just booking the particular date for particular user id number and displaying it to the manager

Number of Lines of Code Written: 1391

Number of Functions:25

Design Techniques and Principles used:

1) Bruth force

2) Iterative technique Back tracking

3) Divide and conquer