

ALGORITHMS ANALYSIS AND DESIGN LAB

Paper Code: ETCS-351

Paper: Algorithms Analysis and Design Lab

L	T/P	C
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List of Experiments:

1. To implement following algorithm using array as a data structure and analyse its time complexity.
 - a. Merge sort
 - b. Quick sort
 - c. Bubble sort
 - d. Bucket sort
 - e. Radix sort
 - f. Shell sort
 - g. Selection sort
 - h. Heap sort
2. To implement Linear search and Binary search and analyse its time complexity.
3. To implement Matrix Multiplication and analyse its time complexity.
4. To implement Longest Common Subsequence problem and analyse its time complexity.
5. To implement Optimal Binary Search Tree problem and analyse its time complexity.
6. To implement Huffman Coding and analyse its time complexity.
7. To implement Dijkstra's algorithm and analyse its time complexity.
8. To implement Bellman Ford algorithm and analyse its time complexity.
9. To implement naïve String Matching algorithm, Rabin Karp algorithm and Knuth Morris Pratt algorithm and analyse its time complexity.

NOTE:- At least 8 Experiments out of the list must be done in the semester.

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AMITY SCHOOL OF ENGINEERING & TECHNOLOGY
Algorithms Design and Analysis Lab (ETCS-351)

Semester – V

Credit - 1

1. Implement Linear search and Binary search and analyze its time complexity.
2. Implement Bubble sort, Insertion sort and Selection sort algorithm using array as a data structure and analyze its time complexity.
3. Implement Quick sort, Merge sort and Heap sort algorithm using array as a data structure and analyze its time complexity.
4. Implement Matrix Multiplication and analyze its time complexity.
5. Implement Matrix Chain Multiplication and analyze its time complexity.
6. Implement Longest Common Subsequence problem and analyze its time complexity.
7. Implement Optimal Binary Search Tree problem and analyze its time complexity.
8. Implement 0-1 and fractional Knapsack problem and analyze its time complexity.
9. Implement Huffman Coding and analyze its time complexity.
10. Implement Dijkstra's algorithm and analyze its time complexity.
11. Implement Bellman Ford algorithm and analyze its time complexity.
12. Implement naïve String Matching algorithm, Rabin Karp algorithm and Knuth Morris Pratt algorithm and analyze its time complexity.