**Algorithms.**

1. Sorting Algorithms:

- Bubble Sort-repeatedly compares adjacent elements and swaps them if they are in the wrong order.

- Insertion Sort-sorts array one element at a time.

- Selection Sort-it finds the minimum element from the unsorted portion and swaps it with the first unsorted element.

- Merge Sort-is a divide-and-conquer algorithm. Recursively sorts them, and then merges the sorted halves to produce the final sorted array

- Quick Sort

- Heap Sort

- Radix Sort

2. Searching Algorithms:

- Linear Search-It sequentially checks each element of the array until it finds the target element or reaches the end of the array.

- Binary Search-It repeatedly divides the array in half and compares the target element with the middle element.If the middle element is equal to the target, the search is successful. Otherwise, the search continues in the left or right half.

- Hashing Algorithms (e.g., Hash Tables)- Hashing algorithms use a hash function to map keys to array indices, allowing for fast retrieval of values.

In a hash table, the key is hashed to obtain an index in an array (called the hash table).

The value associated with the key is stored at that index.

3. Graph Algorithms:

- Breadth-First Search (BFS)

- Depth-First Search (DFS)

- Dijkstra's Algorithm

- Bellman-Ford Algorithm

- Prim's Algorithm

- Kruskal's Algorithm

4. Divide and Conquer Algorithms:

- Binary Search

- Merge Sort

- Quick Sort

5. Dynamic Programming Algorithms:

- Fibonacci Sequence

- Knapsack Problem

- Longest Common Subsequence

- Shortest Path Problems (e.g., Floyd-Warshall Algorithm)

6. Greedy Algorithms:

- Minimum Spanning Tree

- Dijkstra's Algorithm (with non-negative edge weights)

- Huffman Coding

7. Backtracking Algorithms:

- N-Queens Problem

- Sudoku Solver

- Hamiltonian Path

- Subset Sum

8. Computational Geometry Algorithms:

- Convex Hull

- Line Intersection

- Closest Pair of Points

9. String Matching Algorithms:

- Naive String Matching

- Knuth-Morris-Pratt (KMP) Algorithm

- Rabin-Karp Algorithm

10. Machine Learning Algorithms:

- Linear Regression

- Logistic Regression

- Decision Trees

- Random Forests

- Support Vector Machines (SVM)

- K-Nearest Neighbors (KNN)

- Neural Networks

- Clustering Algorithms (e.g., K-Means, Hierarchical Clustering)