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| **SN** | **Problem Description** |
| 1. | Write a program to insert an element into a linear array.  **INDEX** |
| 2. | Write a program to delete an element from a linear array. |
| 3. | Write a program to sort an array using bubble sort algorithm. |
| 4. | Write a program to sort an array using marge sort algorithm. |
| 5. | Write a program to insert a node into a linked list. |
| 6. | Write a program to delete a node form a linked list. |
| 7. | Write a program to find an element using binary search algorithm. |
| 8. | Write a program to solve the following 0/1 knapsack problem using dynamic programming approach, profits P = (11, 21, 31, 33), weight W = (2, 11, 22, 15), knapsack capacity C = 40 and no. of items n = 4. |
| 9. | Job sequencing with deadlines problem follow the following rules to obtain the feasible solution:  • Each job takes one unit of time.  • If job starts before or at its deadline, profit is obtained, otherwise no profit.  • Goal is schedule jobs to maximize the total profit.  Write a program using greedy method to solve this problem when no. of jobs n = 7, profits (𝑃1, 𝑃2, 𝑃3, … . , 𝑃7) = (3, 5, 20, 18, 1, 6, 30) and deadlines (𝑑1, 𝑑2, 𝑑3, … . , 𝑑7) = (1, 3, 4, 3, 2, 1, 2) |
| 10. | Kruskal's algorithm is a greedy algorithm in graph theory that finds a minimum spanning tree for a connected weighted graph. Implement Kruskal’s algorithm and find the minimum spanning tree for the following graph. |
| 11. | Write a program to find the shortest path from a directed weighted multistage graph using dynamic Algorithm. |
| 12. | Write a program to find the all pair shortest path from a graph using Floyd Warshall’s Algorithm. |
| 13. | The eight queen’s puzzle is the problem of placing eight chess queens on an 8 × 8 chessboard so that no two queens attack each other. Thus, a solution requires that no two queens share the same row, column, or diagonal. The eight queen’s puzzle is an example of the more general n-queens problem of placing n queens on an n × n chessboard, where solutions exist for all natural numbers n with the exception of 2 and 3. Write a program to solve the n-queens problem. |