**Aim**

To implement the **Travelling Salesman Problem (TSP)** using Python and find the minimum cost of visiting all cities exactly once and returning to the origin city.

**Algorithm**

**Brute Force Approach:**

* List all possible permutations of the cities (except the starting city).
* Calculate the total cost for each route.
* Track the minimum cost and its corresponding route.
* Suitable for small datasets due to factorial time complexity.

**Dynamic Programming (Held-Karp Algorithm):**

* Use bitmasking to represent visited cities.
* Use memoization to store intermediate results.
* Time complexity: O(n²·2ⁿ), better suited for larger inputs than brute force.

CODE

