

Write the Python to Implement Travelling Salesman Problem.

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import math
def distance(p1, p2):
    """Euclidean distance between two points."""
    return math.sqrt((p1[0] - p2[0])**2 + (p1[1] - p2[1])**2)
def tsp(cities):
    n = len(cities)
    dist_matrix = [[0.0] * n for _ in range(n)]
    for i in range(n):
        for j in range(n):
            if i != j:
                dist_matrix[i][j] = distance(cities[i], cities[j])
    tour = [0]
    unvisited = set(range(1, n))
    total_distance = 0.0
    while unvisited:
        current = tour[-1]
        nearest = min(unvisited, key=lambda city: dist_matrix[current][city])
        tour.append(nearest)
        unvisited.remove(nearest)
        total_distance += dist_matrix[current][nearest]
    tour.append(0)
    total_distance += dist_matrix[tour[-2]][0]
    return tour, total_distance
cities = [
    (0, 0),
    (1, 3),
    (4, 3),
    (6, 1)
]
path, distance = tsp(cities)
print("Tour:", path)
print("Total distance:", distance)
```

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Python 3.13.3 (tags/v3.13.3:6280bb5, Apr  8 2025, 14:47:
64 bit (AMD64)] on win32
Enter "help" below or click "Help" above for more inform
>>>
= RESTART: C:\Users\ROJAYADAV\AppData\Local\Programs\Pyt
avelling.py
Tour: [0, 1, 2, 3, 0]
Total distance: 15.073467315212788
>>>
```