101)Travelling salesman problem

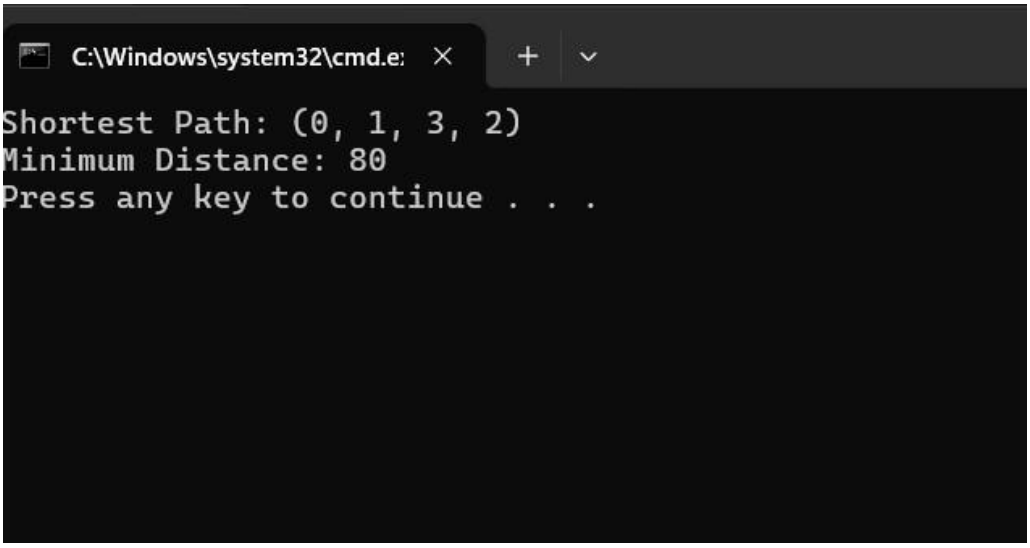
CODE:

```
import itertools
 def tsp_brute_force(distances):
cities = list(range(len(distances)))
shortest_path = None     min_distance
= float('inf')
     for path in itertools.permutations(cities):
        distance = sum(distances[path[i - 1]][path[i]] for i in range(1, len(path)))
distance += distances[path[-1]][path[0]]
         if distance < min_distance:
min_distance = distance
shortest_path = path

    return shortest_path, min_distance

distances = [     [0,
10, 15, 20],
    [10, 0, 35, 25],
    [15, 35, 0, 30],
    [20, 25, 30, 0]
]
shortest_path, min_distance =
tsp_brute_force(distances) print("Shortest Path:",
shortest_path) print("Minimum Distance:",
min_distance)
```

OUTPUT:



TIME COMPLEXITY : O(n*n!)