TITLE: Write the python to implement Travelling Salesman Problem

CODE:

```
import itertools


def calculate_distance(points):
    total_distance = 0
    for i in range(len(points) - 1):
        total_distance += distance(points[i], points[i+1])
    # Add distance from the last point back to the starting point
    total_distance += distance(points[-1], points[0])
    return total_distance


def distance(point1, point2):
    return ((point1[0] - point2[0])**2 + (point1[1] - point2[1])**2) ** 0.5


def traveling_salesman_brute_force(points):
    min_distance = float('inf')
    min_path = None
    for perm in itertools.permutations(points):
```

```
        current_distance = calculate_distance(perm)
        if current_distance < min_distance:
            min_distance = current_distance
            min_path = perm
    return min_path, min_distance

if __name__ == "__main__":
    # Example points (x, y)
    points = [(0, 0), (1, 2), (2, 3), (4, 5)]

    min_path, min_distance = traveling_salesman_brute_force(points)
    print("Minimum Distance:", min_distance)
    print("Minimum Path:", min_path)
```

OUTPUT: