

76)Closest Pair

CODE:

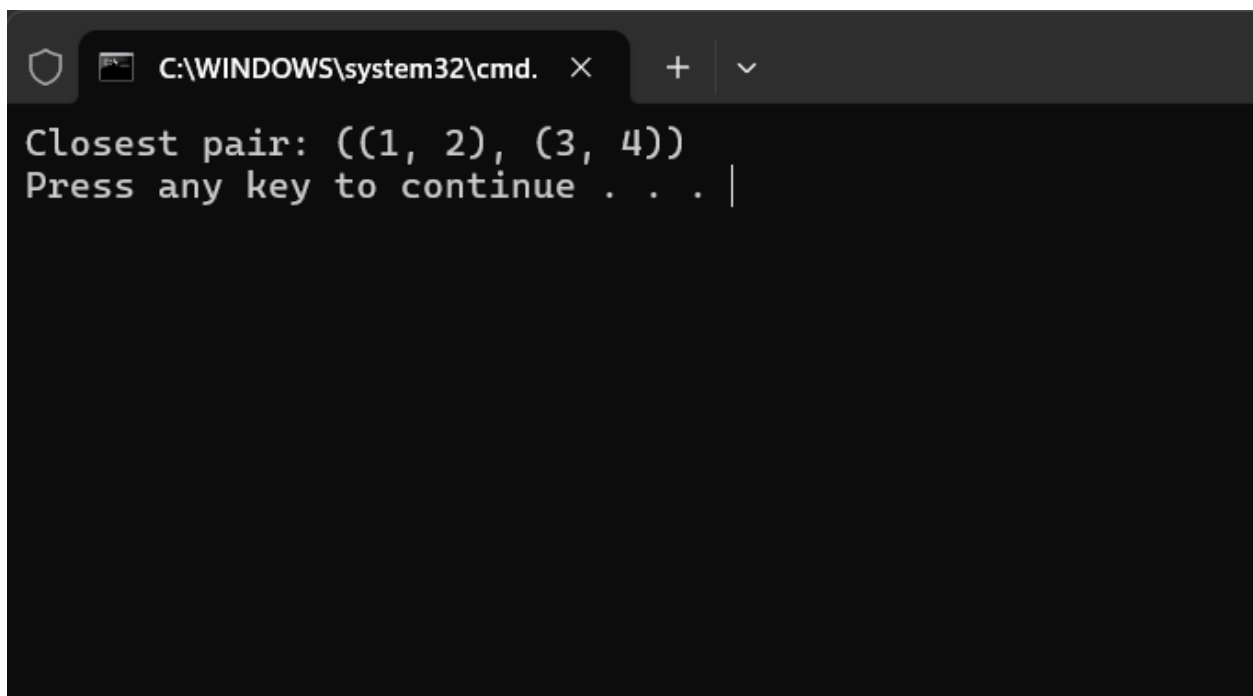
```
import math

def distance(p1, p2):
    return math.sqrt((p1[0] - p2[0])**2 + (p1[1] - p2[1])**2)

def closest_pair(points):
    min_dist = float('inf')
    closest_pair = None
    n = len(points)
    for i in range(n):
        for j in range(i + 1, n):
            dist = distance(points[i], points[j])
            if dist < min_dist:
                min_dist = dist
                closest_pair = (points[i], points[j])
    return closest_pair

points = [(1, 2), (3, 4), (5, 6), (7, 8)]
closest_pair_result = closest_pair(points)
print("Closest pair:", closest_pair_result)
```

OUTPUT:

A screenshot of a Windows command prompt window. The title bar shows the path 'C:\WINDOWS\system32\cmd.' and standard window controls. The command prompt displays the output of the program: 'Closest pair: ((1, 2), (3, 4))' followed by 'Press any key to continue . . . |'. The cursor is positioned at the end of the second line, waiting for a key press.

TIME COMPLEXITY : $O(n^2)$