from time import process\_time

n = int(input("Enter the number of points: "))

count = 0

l = []

adjacencyMatrix = [[0 for i in range(n)] for i in range(n)]

print("Enter the points in pairs!")

for i in range(n):

    t = list(map(int, input().split()))

    l.append(t)

    for j in range(i):

        adjacencyMatrix[j][i] = adjacencyMatrix[i][j] = abs(l[i][0] - l[j][0]) + abs(l[i][1] - l[j][1])

visited = [0 for i in range(n)]

visited[0] = 1

for k in range(n-1):

    minDistance = 10\*\*9

    fromEdge, toEdge = -1, -1

    for i in range(n):

        if visited[i]:

            for j in range(n):

                if not visited[j]:

                    if adjacencyMatrix[i][j]<minDistance:

                        minDistance = adjacencyMatrix[i][j]

                        fromEdge, toEdge = i, j

    visited[toEdge] = 1

    count += adjacencyMatrix[fromEdge][toEdge]

print("MCT is ", count)