Сору

Time Limit: 1sec Memory Limit:256MB

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1001. Single-link Clustering

Total: 143 Accepted: 45

Description

Given *n* nodes in a two-dimensional space, we want to use single-link custering method to find *k* clusters. This is equivalent to

Your job is to output the length of the (k-1)-th longest edges of the MST.

finding an MST (Minimum spanning tree) of these nodes and deleting k-1 longest edges.

Input

There are multiple cases. For each case, the first line includes n and k (2<=k<=n<=100). The following n lines give the coordinates of n nodes. You may use Euclidean distance to measure the distance between two nodes.

Output

Sample Input

For each case, output the length of the (k-1)-th longest edges of the MST. The precision is set to 2 digits after the decimal point.

-	-				
6 2					
1 1					
2 1					
1 2					
3 3					
4 2					
4 3					

Sample Output Copy

2.24			

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