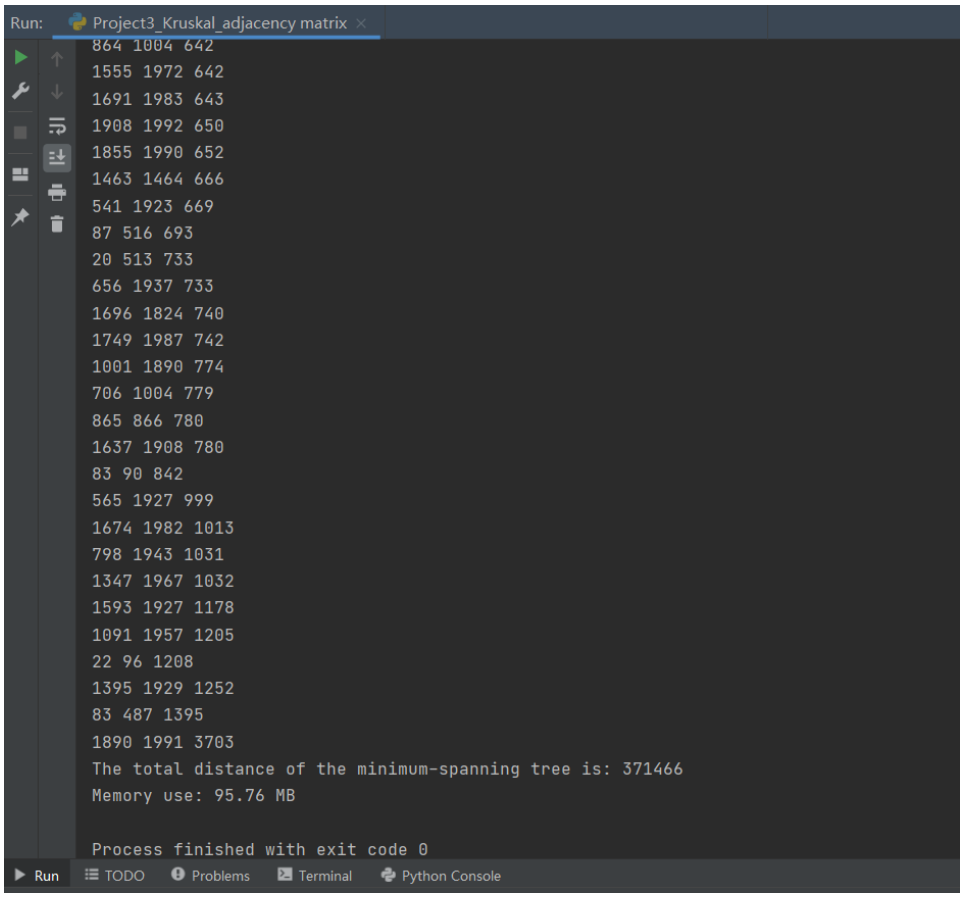
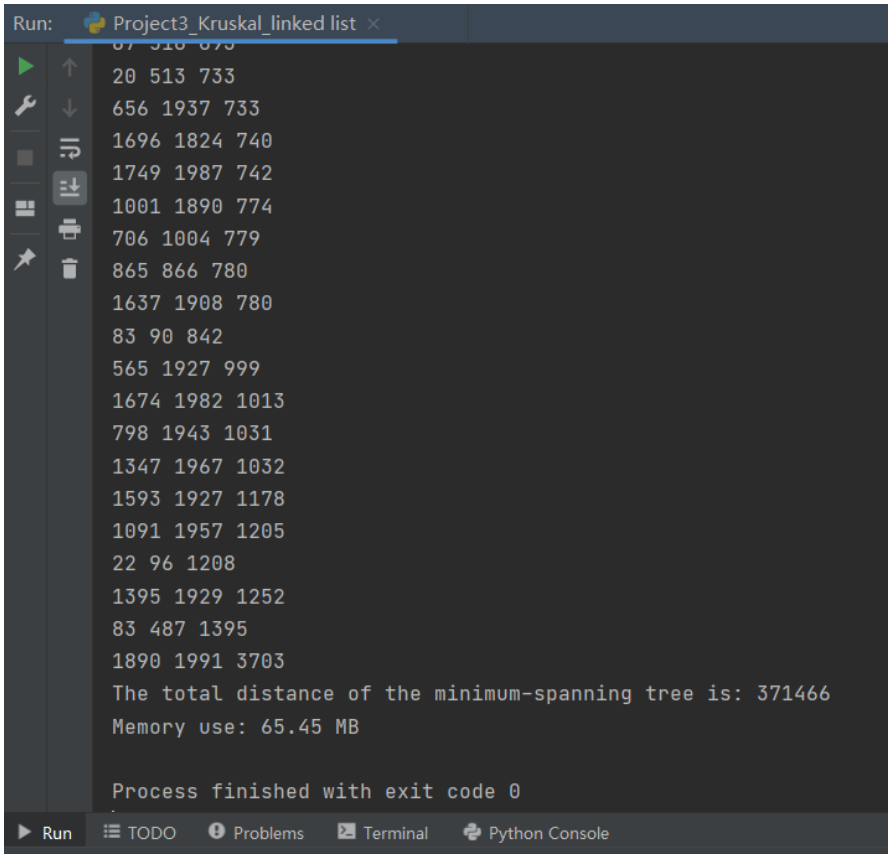
The result of minimum-spanning tree using adjacency matrix:



The result of minimum-spanning tree using linked list:



The analysis of the memory usage:

As the result shows, the memory usage of adjacency matrix is 95.76MB and the usage of linked list is 65.45MB. Because for a Graph (V, E), the space complexity using two-dimensional matrix is O(V*V), the space complexity using linked list is O(V). So we can see clearly using linked list use much less memory than using adjacency matrix, especially when the number of nodes is huge and graph is sparse. The linked list can only store existing edges, but adjacency list has to store V*V edges even if there is no edge between two nodes.