These are the changes that have been made to include optimization.
1.We have a new set called new_source_nodes which contains the part of the new nodes that will be considered source nodes for each particular process.

2. We have used global arrays called distances_global and parent_global. These arrays store the distance and parent of each node from the previous run iteration of dijkstra. For the new nodes, we calculate the shortest distance from the old nodes and store it in the global arrays.

3. We have now used the information from these global arrays to optimize the dijkstra algorithm. We run dijkstra only on the set new_source_nodes instead of all the source nodes.
Whenever the distance of the nodes from this new dijkstra exceeds the value of the distances_global, we stop adding the subsequent neighbors of this node.

Based on our run, we have seen a time difference of 3x in the optimized and non-optimised approaches.