Now we need to develop an application in specific scenarios based on Ripley' K model. Let's assume there is a user named Jack, his destinations includes multiple functional places, but with uncertainty of locations and addresses. For examples, Jack is thinking about travel through shopping center, library, fitting studio and basketball court in a whole day. But he has no idea about how to plan his routine to minimize his time cost. In another word, Jack hope can advise an optimal path for him and make sure he can consume all the places hewant to go. At the same time, these places are next to each other and as close as possible. Please design an algorithm based on Ripley' K model and match the requirements listed below:

1) For given multiple places with different functions as inputs, calculate the K value todetermine the intensity in California, US.

2) Cover the outline of California with a minimal rectangle, and split the rectangle intosub-areas, which is in shape of square. For each square, there are assigned with K values of different functions. For examples, California could be covered with a rectangle and split into30x 60 squares. There are 4 functional places need to be considered, then a 30 x 60 x 4 matrix canbe created.

3) Plan the optimal path: the user can consume more than one places in a same square areaand be able to travel to next square area nearby to consume the others. Make sure the user can consume all the

destine places and the overall distance is the shortest. Moreover, theKvalue for a specific place when travels through should larger than the random value.

4) The square split solution can be customized, but remember to meet all requirements andfind the optimal plan.

5) Develop the algorithm into a callable program, the input is the name of function, e.g. mall, schools, hospital. The output should be the path (visualized it in the map), the overall distance, K value matrix, etc.