Abstract

This paper deals with social infrastructure planning problems to determine the location of the facilities of social infrastructure network and the layout. Each user must be assigned to the closest facility to be economically viable. The objective is how to make the accessibility to facilities maximum (i.e., to minimize the distance which the users traveled to reach the facilities). In this paper, we study the problem of clustering in the presence of obstacles to locate the public service facility. In this article we present a new algorithm in data mining in the presence of obstacles. Minimum pre-specified level of demand must served by each facility. The objective is to maximize the accessibility of the facilities this means also to minimize the distance travelled by users to reach the facilities. CSPOD-DBSC algorithm (Clustering with short path Obstructed Distance - Density-Based Spatial Clustering) is developed. Obstructed short path distance calculated in this algorithm by using Density-based clustering algorithm and Dijkstra algorithm. A case study involving the location of schools in districts of Mecca in Saudi Arabia is used to illustrate the application of this algorithm.
A Novel Approach for Enhancing Clustering Technique using Knowledge-based to Plan the Social Infrastructure Services

References

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Index Terms

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Clustering algorithm; infrastructure city planning; Spatial Clustering algorithm; Urban Planning; public service facility