Abstract

Object ranking is a popular retrieval task that is concerned with the ranking of objects in context of a given user query. In relational databases, tuples are ranked using an aggregate score function on their attribute values. Spatial databases manage large collections of geographic entities, where ranking is often associated to nearest neighbor (NN) retrieval. A spatial preference query ranks objects based on the quality of features in their spatial neighborhood. For example, using a real estate agency database of flats for lease, a customer may want to rank the flats with respect to the appropriateness of their location, defined after aggregating the qualities of other features (e.g., restaurants, hospital etc.) within their spatial neighborhood. A
neighborhood concept can be specified by the user via different functions. It can be an explicit circular region within a given distance from the object (range score function) or a region obtained by assigning higher weights to the features based on their proximity to the object (influence score function). A wide range of location based applications rely upon spatial preference queries. One of the existing strategies for processing the spatial preference query is brute force, which is not quite adaptable since it is computationally inefficient and it is worthy only for small data inputs. In the proposed system, indexing techniques and query processing algorithms are presented for efficient processing of the top-k spatial preference queries.

References


Index Terms

Computer Science  Hpc Applications

Keywords

Spatial Data  Quality  Features