AN APPROACH TO STORE SPATIAL BIG-DATA USING MULTI-VALUED DATABASE

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ABSTRACT

Spatial data has come to play an increasingly prominent role. Structured and unstructured data collected from diverse sources and used as an ensemble to derive information is referred to as Big Data. The size, variety, and update rate of mobility datasets exceed the capacity of commonly used spatial computing and spatial database technologies to learn, manage, and process the data with reasonable effort. Such data is known as Spatial Big Data (SBD). SBD has transformative potential. We formally define spatial big data preference queries and nested integrated inverted indexing technique (nI^3). S2I index are an extension of the R-tree for efficient spatial search. As the data representing in the R-Tree, IR-Tree, S2I index, Integrated Inverted Index (I^3) are in relation database (1st Normal Form), where this can occupy more storage space. To give an efficient reduction of storage space, we proposed nested relational database on integrated inverted index (nI^3) to reduce the space complication and elimination of redundancy.

KEYWORDS: Spatial Big Data (SBD), Nested Integrated Inverted Index (Ni^3), S2I Index