

Abstract: Utilizing Traversal Sequence Order for Storage Layout in Walkthrough

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Abstract

3D walkthrough (henceforth referred as WT) becomes popular and apparent when the volume of query processing in some 3D scenery (e.g., the walkthrough system and the 3D museum navigation systems) is considered. In this scenario, different people with similar behaviors induce completely different space-time traversal patterns in a recoded traversal sequence. This is because they navigate different paths, and their surrounding backgrounds are different. What are common across such sequences of the same behaviors are the underlying induced walkthrough fields. We want to make use of regions of common sequential traversal patterns for acceleration and compaction purposes. In this paper we propose a new Sequence-based Pattern Similarity (SPS) approach based on a behavioral walkthrough system that exploits sequence-based semantic-oriented clustering techniques, such as association, intra-relationships, and inter-relationships, to explore additional links throughout the behavioral walkthrough system. The experimentation shows that in such cases the use of so-called I/O-efficient algorithms that minimize the number of disk accesses can lead to tremendous runtime improvements.