Developing a guiding system based on sequential pattern mining

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ABSTRACT

Guiding service plays an important role for visitors to visit museum. Without guiding service, visitors might spend much time for finding exhibits or get lost in the museums. Therefore, how to develop a guiding system to satisfy visitors' requirements becomes an important issue for museums. This research proposes a museum touring path suggestion system to derive the touring path suggestions that satisfy visitors' requirements. First, all visiting paths are classified to different sub-database according to visitors' personal profile. The I-PrefixSpan algorithm is applied to discover time-interval sequential patterns in different personal profile sub-databases. After visitors submit their personal profiles and intended visiting time on PDA, the system will search the candidate touring paths which are filtered out according to visitor's requirements. Because the number of candidate touring paths might be huge, this system will rank these paths according to the path section count, path length, and time closeness of each candidate touring path. Finally, the candidate touring paths are prioritized and the first three priority paths are sent back to visitor's PDA.

Keyword: I-PrefixSpan algorithm, Time-interval sequential patterns, Guiding system