

Temporal Based Multimedia Data Management System in a Distributed Environment

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Abstract—Multimedia Data Management is an application which focuses on the storage, access, indexing, retrieval and preserving multimedia data in a distributed environment. But it was found that a reliable method was required to discover about the validate information of multimedia data. To overcome this problem, a new concept of temporal database is been proposed which includes two time elements that is been embedded in the application. The two time elements include the transaction time and valid time which provides a schema to manage historical data based on past, present and future. These time elements have a track of changes and transactions that are been updated in the database, without the deletion of previous version of the data and thus ensuring the users, the data the up-to-date.

I. INTRODUCTION

We present this research paper concerning the development of multimedia data management application in an effective way of accessing the information. This application intends to collect, store and access, retrieve & preserve the data in a distributed environment. It traces the data based on the historical view and update several versions of the data without overwriting the previous version.

II. DETAILED PROBLEM DEFINITION

For accessing the multimedia data, multimedia database management system (MDMS) was been developed. But this method was not efficient enough to access the data based on historical view. Hence it is been enhanced to provide complex features providing indexing and classification for multimedia data retrieval using temporal databases.

III. SOLUTION METHODOLOGY

The new method proposed provides an efficient way to manage the historic data .This method consists of two elements. This includes transaction time which records the actual time; the data is entered into the database. The second element is the valid time, which specifies the validation time of the data. These temporal operators ensure the management of data becoming easier and classified. It also plays major role in monitoring the changes and the transactions of the data during the insertion and updating process.

IV. EXPERIMENTAL ANALYSIS

It is demonstrated that the proposed approach is been easy & efficient to store the time varying information ensuring the up-to-date multimedia data. It was analyzed that the existing data was been discarded during the updating process. Hence the temporal elements are been embedded into the database for accessing the data based on their transaction time and validation time.

V. MODELING PRINCIPLES

The two modes or time elements used for tracing time varying information are transaction time & valid time.

1. Transaction time:

This time element is used for recording the time during the insertion and the updation process. Hence the inserted and the updated data have their own transaction time. This presents a clear view on the historical time of the data.

2. Valid time:

This time element represents the valid period of the multimedia data stored in the database. The validation of the data changes when the data is been edited and modified. The valid time includes the two attributes valid from & valid to. The valid time is combined with a set of operators equal, before, after, meets and met-by.

Consider a multimedia database containing set of multimedia data $M = \{m_1, m_2, \dots, m_n\}$ then the complete model for temporal based multimedia database is $TEMPORAL (m_i \in M) \leq (tt \cap OP \cap vt)$ where tt is a transaction time, OP is temporal operator & vt is valid time

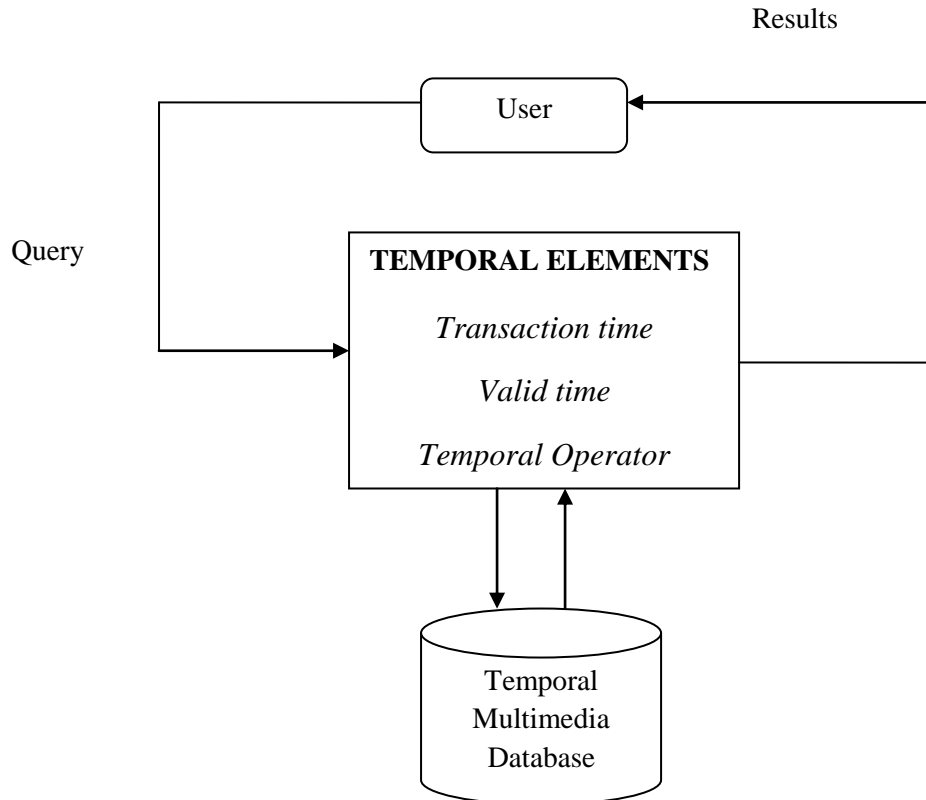


Figure 1 Conceptual of Temp Multimedia Database

VI. RESULTS AND DISCUSSION

The experimental results show that the temporal elements, the transaction time and the validation time involved in the database yields high performance in the indexing and classification of data based on current, past and present versions. These time elements thus monitor the changes that have been incorporated into the database and ensure the user with the updated information.

VII. CONCLUSION

An efficient method was required to trace the validation of the data information due to the lack of knowledge regarding the time varying information. To overcome this situation, a temporal database is been developed to discover and monitor the historical data based on past, present and future in an efficient way. This method is been evaluated to improve the multimedia data management process by storing the multimedia objects dynamically after the changes been made in the current record without deleting the previous the previous version of record.

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