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A Survey on Information Modeling and with Multimedia Mining Databases

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Abstract: *Information Models can be regarded as data models combined with process models. These models describe data as well as activities. Multimedia database capture the complex data type and all the relationships. Query Processing strategies have to be adapted to handle mining queries if there is a tight integration between the data mining and the database system. The architecture of Query Processing System consists of a query parser, a logical planner, a physical plan generator and an evaluation engine. The technological point of view, the centralization of objects and components describe the various learning scenarios within multimedia databases. Unified Modeling Language (UML) class diagram describe and supports the Information model and with collaborative learning scenarios activities. When interpreted by humans, a database may be viewed as a set of related facts – an information base. I survey this paper and I am analyzing the review of information model with Query processing and supporting MM-DBMS and with relational databases.*

Keywords: *MM-DBMS, Query Processing, UML, Transaction Management, Update Processing, PBLS, Role Components.*

1. INTRODUCTION

The recent technologies in electronic imaging, video devices, storage, networking and computer power, the amount of multimedia has grown enormously, and data mining has become a popular way of discovering new knowledge from such a large databases. Multimedia Mining Database Management System (MM-DBMS) [1] provides support for storing, manipulating, and retrieving multimedia data from a multimedia database.

Event Query Processing Architecture [2] adapt and extends above components to cater to the special semantics that events carry, and the heterogeneity of query types store has a parameterized relationship with a single parameter. One updates an image; its annotation must also be updated. Therefore, the two operations have to be carried out as part of a transaction. This is an example of transaction management for an MM-DBMS. Update processing is essentially updating the multimedia data and is often a single user update.

Information models, therefore, represent the application's active as well as passive objects. Examples of information models are the object models for design and analysis. These include models such as the Unified Modeling language (UML) and its previous versions, including object modeling technique (OMT) [3]. OMT essentially has three models: an object model to represent the passive entities, a dynamic model to essentially represent the workflow, and a procedural model to represent the methods.

The Unified Modeling Language (UML) [3], has gained increased popularity in recent years. The success of UML can to a large extent be attributed to two factors. First, UML has received extensive industry support from IT suppliers as well as users and has been effectively standardized. Secondly, UML makes use of intuitive and visual modeling constructs as the main components of the language, which facilitates its adoption among large user groups with Information System.

When interpreted by humans, a database may be viewed as a set of related facts – an information base [4]. Data structures deal with information and are best derived from an information model that clearly reveals the underlying semantics of the domain.

2. RELATED WORK

The Transaction Management [1] functionality of data manipulation as it involves querying and updating databases. This important functionality needed with query processing in MM-DBMS and with associated Multimedia objects. Much research issues are needed in this following area: Query Processing, Transaction Management/Models, Special Concurrency control and Recovery Mechanism.

Actually Update Processing [1] taking part of query processing or transaction management. In multimedia databases taking the update processing depends upon the result of satisfactory and difficulties are move to transaction processing. Several aspects of Query processing discussing the following issues are,

- Good Query Language (SQL is needed).
- Techniques, numerous algorithms have been proposed in different strategies executing particular queries.

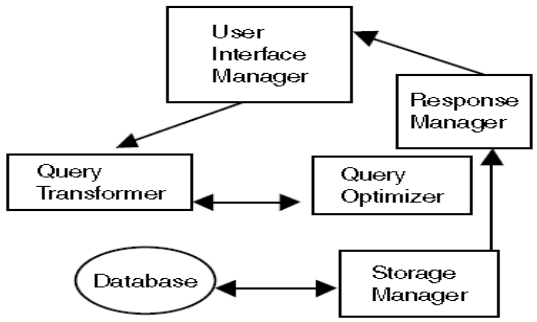

Fig1. *Query Processor.*

The User Interface Manager accepts queries, parses the queries, and then gives them to the query transformer. The query transformer and query optimizer communicate with each other to produce an execution strategy. The database is accessed through the storage manager. The Response manager gives responses to the user. All modules for query processing are needed for multimedia databases. Other work in query processing for multimedia databases include joins of multimedia data and with object relational data. Lot of related work needed to be done regarding merging, editing, displaying and joining multimedia objects.

Information models for multimedia applications are a rather new technology area. As we make more progress on multimedia database modeling as well as use multimedia data for applications such as e-commerce, we will see more and more information models for multimedia applications. Some tools can use information models to automatically generate not just databases, but also object models and user interfaces.

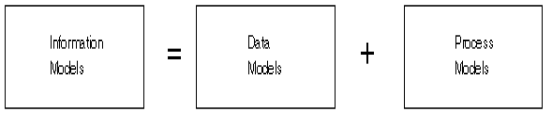

Fig2. *Information Models*

3. UML BASED MODELS

UML based models and a specific metadata structure dedicated to Information System. In this paper I survey a Net-Learning case study [3], and I describe the main characteristics of such an Information System. This case study is representative of collaborative learning notions. Information Model, or rather models, take into account the static and dynamic aspects necessary for the description of learning processes with the UML language.

Consistent with research that demonstrates the value of collaboration in learning, computer support for collaborative learning has become a greater interest, and various architectures for synchronous and asynchronous collaboration have been explored. This approach is close to the Net-Learning mode. Here are two characteristics of Net-Learning: interaction between teacher and learner, based on an educational scenario.

Information system or models will be able to trace the collaboration between the actors involved in the solving of a Problem Based Learning Situation (PBLS) [3].

It is important to note that teaching through PBLS is a didactic choice that requires a lot of abilities from the teacher. Before being able to propose a PBLS to learners, the teacher has to:

- choose the learning objectives,
- imagine a PBLS which resolution will constrain the learners to face these learning objectives,
- define the tools and resources, from which the learner will construct his solution,
- imagine the guidelines and tutoring that can be proposed during the learning activity
- define the level of cooperation that can be accepted (if different learners have to cooperate to solve the problem).

Distinguish the notion of Role-Component with that of role which is linked to a context and which we should obviously complete by the notions of time, resources (available, created, expected) and actors. Role Components are thus generic and reusable. Furthermore, compared with approach a role belongs to a scene (a context). A role communicates with the other roles within the same scene. An actor is associated to a role through which he participates in the collaboration specified in the scene. So, each role is specified for one unique scene.

In order to approach concerning roles and re-use of Role-Components, to use the case-study presented at beginning once again.

This example is drawn out of the following context: Word teaching process, Act 4 Styles, Scene 1 Learn, create, help. In order to make this scene collaborative, propose five groups of actors and three roles:

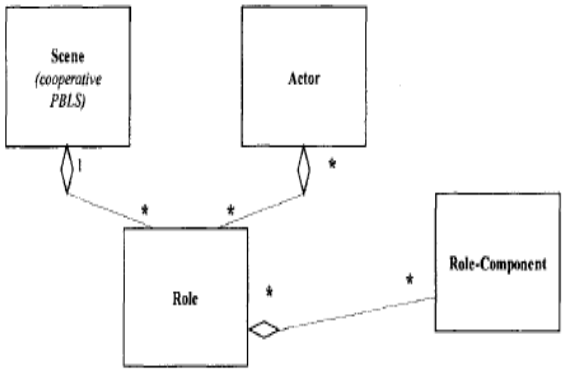

Fig3. *Modeling and implementing a role.*

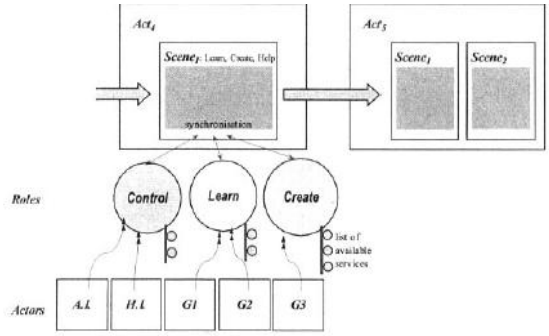

Fig4: *Three roles in the context of Scene 1 in Act 4.*

Role **"Learn style"** will be attributed to Gl and G2. This role consists in learning the design of a style-sheet and, at the same time, in asking questions to G3, when necessary.

Role **"Create style"** will be attributed to the G3. This role consists in producing a style sheet and, at the same time, in helping Gl and G2 in their tasks of learning. When G3 has turned out his style-sheet he has also to make sure that Gl and G2 understood the various notions of style. Therefore, he makes sure of the good understanding (control) and re-explains (or makes some other tools give explanations) various significant stages (apply, create, modify ...).

Role **"Control styles"** will be given to the Automatic and Human Instructors (AI and HI) with states "Listen to communication between groups", "Control productions", "Supply additional supports of help".

4. CONCLUSION

In this paper I present for the first time a comprehensive survey of discusses on various aspects of Information Modeling and with Multimedia Mining Databases. First, I provided overview MM-DBMS and with Information System / Models and especially giving literature survey of the UML and with PBLS environments. I showed the concepts of UML Role and Role Components are powerful enough to specify the relationships between the different groups of learners and between the learners and the instructors. Finally, I conclude this paper various issues and involvement of Multimedia Mining Databases and with relational data.

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