Chapter - 8

Conclusion and Future Work

IMine has become one of the active areas of research in the field of data mining. This research mainly focuses on the frequent itemset mining in IMine. It is very simple to store and access the indexes in large databases, rather than searching in the whole database. The IMine index makes the process of storage, retrieval and accessing of the information very easier. IMine offers a complete representation of the respective original database, because there is no constraint is imposed throughout the index construction phase.

As the variety of database applications grows rapidly, its impact on the performance requirements and the pattern of queries passed to the DBMS poses new research challenges. In some key database applications, such as data mining, a sequence of interdependent queries may be posed simultaneously to the DBMS. Based on the architecture of the multi layer optimization, we will develop an algorithm that restructure a sequence of queries such that it can be efficiently be processed by existing query optimizers.

The present research work proposed three efficient techniques for frequent mining in IMine. In this research, the first proposed approach uses the Prefix Hash Tree (PHT) during the extraction phase which reduces the reading cost. PHT allows the selective access to the I-Tree path and hence the reading cost is reduced. FP-Bonsai Tree is used in
the second approach to overcome the limitations of the PHT. It is observed to provide better and significant results than PHT structure.

In the third approach, Fuzzy Decision Tree is used in the IMine index structure along with the I-Tree, which is very effective. During the process of extraction, this approach takes very less time to read all the physical data blocks, since its size is reduced with the use of FDT. This approach considerably reduces the index structure and the reading cost is significantly reduced. The performances of the proposed approaches are evaluated with the parametric standards like reading cost, size of index and computational time. From the experimental results, it is observed that the proposed IMine approach which uses Fuzzy Decision Tree outperforms the other standard approaches by providing better mining results in lesser time with low reading cost, less extraction time and utilizes less main memory.

The future scope of the research is to propose the new approaches to providing better mining results in lesser time with low reading cost, less extraction time and utilizes less main memory compared with the present approaches.