Data Management

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Contents

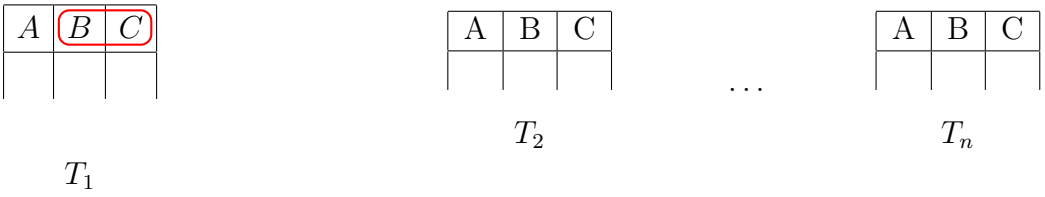
1 Introduction

The course is based on the following topics:

- **The structure of a Data Base Management System (DBMS)**: Realtional data and queries, Buffer manager;
- **Transaction management**: The concept of transaction, Concurrency management;
- **Crash management**: Classification of failures, Recovery;
- **Data Warehousing**: Data warehousing architectures and operators, Data warehousing design;
- **NoSQL databases**: Document-based databases (such as MongoDB), Graph databases OLAP vs OLTP (such as Neo4j);
- **Physical structures for data bases**: File organizations for data base management, Principles of physical database design;
- **Query processing**: Evaluation of realational algebra operatos, Fundamentals of query optimization;

1.1 The relational data model

A **database** in the Realtional Model is a **set of tables** (or **relations**). Each **table** is a **set of rows** (or **tuples**). Each one with the **same set of columns** (or **attributes**).



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