

9618 CAIE Computer Science — Databases

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1 Introduction

Database management system (DBMS): responds to queries by extracting information from the database.

1.1 Terminology

Record: Storage representation of a row of data

Tuple: Specifically in a relational database, tuple is one row of data.

Field/Attribute: Field is a column, attribute is a characteristic that describes an entry in the database.

Primary key: An attribute in the table that uniquely identifies an entry in that table.

Foreign key: An attribute in a table that is the primary key of another table.

Compound key: Like an composite key (needs 2+ fields), but it's a combination of **foreign keys** in a table that uniquely identifies a row.

2 Relational Database vs File Based Systems

File based systems store all data in one singular table. This leads to **redundancies** in data, as the same thing might appear in multiple entries of the database. Thus this means there's a waste of space, as well as wasting time to edit these duplicate data.

The solution is a relational database. Here there are MULTIPLE tables in the database, and they have relationships. These tables are linked by **primary keys** and **foreign keys**.