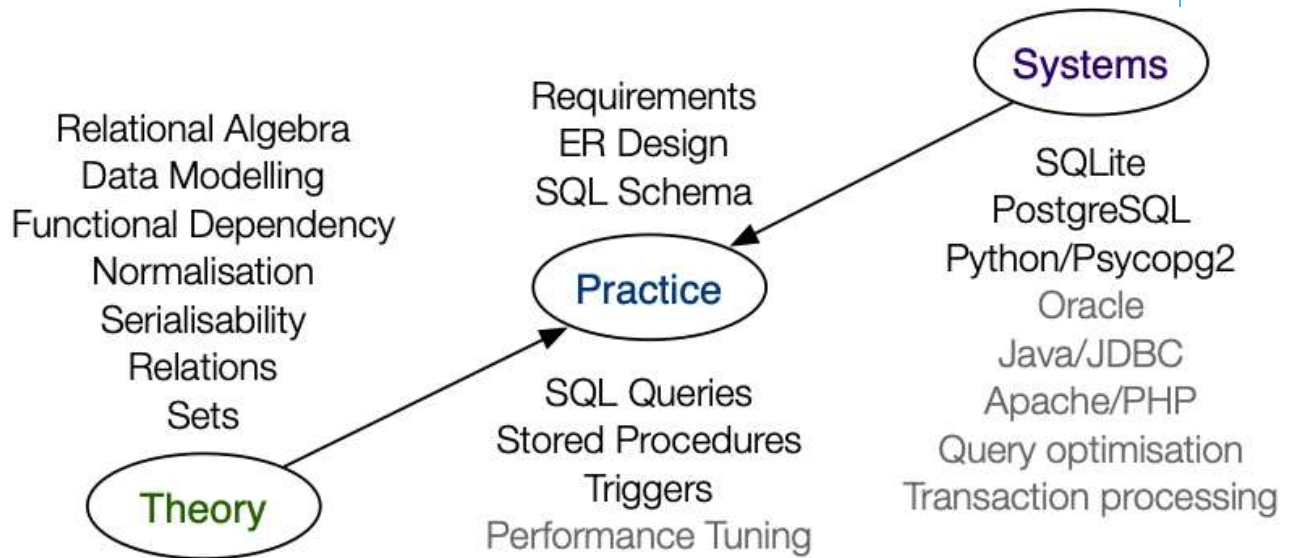


Overview - Addendum

- Overview of the Databases Field
- Database Application Development
- Database System Architecture

❖ Overview of the Databases Field



COMP3311 20T3 ♦ Overview (ii) ♦ [1/4]

❖ Database Application Development

A variation on standard software engineering **process**:

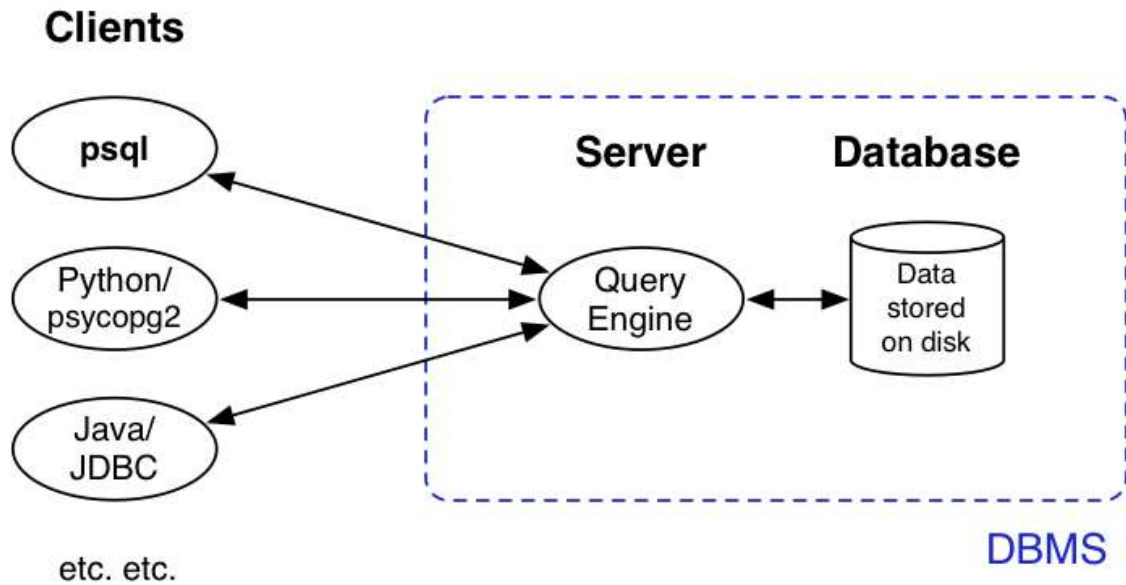
1. **analyse application requirements**
1. 2. **develop a data model** to meet these **requirements**
- 5 3. **check** data model **for redundancy** (using relational theory)
- 2 4. **implement the data model as relational schema**
5. **define operations (transactions)** on this model
- 3 6. **implement operations** via **SQL** and **procedural PLs**
- 4 7. **construct a program interface to these operations**
8. **monitor** performance and **"tune"** the **schema/operations**

At **some point**, **populate the database** (may be via interface)

During the course, we consider these in the order **2, 4, 6, 7, 3**

❖ Database System Architecture

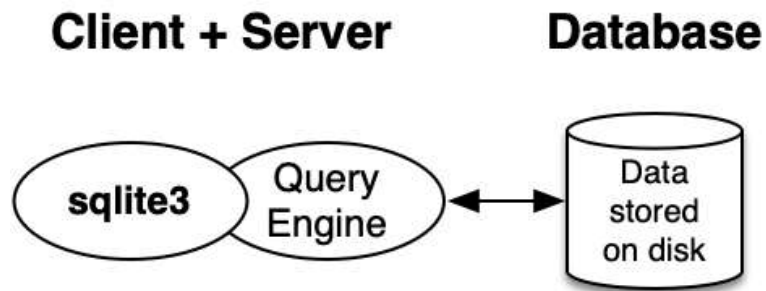
The typical environment for a modern DBMS is:



SQL queries and results travel along the client↔server links

❖ Database System Architecture (cont)

SQLite is not a client-server system:



Although it does have an API for use from programming languages.

Produced: 12 Sep 2020