

# Datenbanksysteme - Übung 1

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## Aufgabe 2

Using a DBMS as may have the following **advantages**:

**Redundancy** DBMS allow for easy data redundancy, which in our case is crucial due to the important nature of the data (votes)

**Atomicity** All Votes need to be atomic. There is no such things as "half" a vote. A DBMS can guarantee that.

**Consistency** The overall consistency of the votes can be guaranteed ( i.e. the DB is in a valid state at all time)

**Isolation** simultaneous votes have the same impact as if they were sequential

**Durability** A once given remains in the database over the duration of the election.

While those advantages may seem not very important for a small dataset, they are wildly important for a system handling millions of votes per second. A system that can guarantee basic attributes like those mentioned above takes much strain off of the developer and allows him to focus on other important tasks.

A few **disadvantages** a DBMS might have are:

**Security costs** Because of the sensitive nature of the information, additional measures need to be taken to ensure the security of the system

**Hardware and Software Costs** Although it could be argued that paper voting and analysis is more costly

**Possible DB failure** infrastructure failure could have dramatic impact, it needs to be mitigated through back-ups and physical redundancy

### Aufgabe 3

