Atomicity
Consistency
Isolation
Durability
} ensure reliable database transactions

Atomicity

- "All or nothing"

- If any part of transaction fails, everything gets rolled back

- Bank transfer between 2 users as an example, if something fails every step of the transaction is rolled back

Consistency

- Transaction must follow allow rules and constraints

- DBMS will return a consistency violation and cancel the transaction

Isolation

- How concurrent transactions affect consistency

- Isolation makes it seem like each transaction occuring is the only tx occuring

Durability

- Once committed, the transaction is permanent

- Done by write-Ahead logging (WAL)
  - ↳ persist changes to disk before confirming the commit

- In distributed databases this means replicating across other nodes