

ACID Properties

1. A: Atomicity (All or Nothing)

- Ensures that a transaction executes completely or not at all.
- If any part of a transaction fails, all changes are rolled back to maintain consistency.
- **Example:** Transferring ₹1000 from Account A to Account B
 - Debit from Account A
 - Credit to Account B
 - If either fails, no money should be deducted/added.

Example

START TRANSACTION;

**UPDATE accounts SET balance = balance - 1000
WHERE account_id = 1; -- Debit**

**UPDATE accounts SET balance = balance + 1000
WHERE account_id = 2; -- Credit**

-- Simulating failure

ROLLBACK; -- Reverts changes if any step fails