Crash Recovery
Dealing Gracefully with Failures
Transaction Processing

A transaction is an atomic unit of work in a DBMS

Example: transfer 100 Euro from bank account A to bank account B

Must satisfy the ACID properties:

- Atomic
- Consistent
- Isolated
- Durable

Transaction processing consists of two parts: Crash recovery and Concurrency control
Crash recovery

Is responsible for:

- Atomicity: transactions that are unexpectedly aborted (e.g., due to a system crash) are rolled back and optionally re-executed
- Consistency: by means of atomicity
- Durability: once a transaction is committed its data is persistent through archiving and logging

Several approaches:

- Undo logging
- Redo logging
- Undo/redo logging

See book chapter 17