



SET 1 — DBMS Basics & Keys

BASICS

Q1. Which of the following is a major advantage of DBMS over a file system?

- A. Increased redundancy
- ✓ **B. Reduced data redundancy**
- C. No security
- D. No data sharing

Q3. Which key is used to establish a relationship between two tables?

- A. Super Key
- B. Candidate Key
- ✓ **C. Foreign Key**
- D. Alternate Key

Q5. A candidate key that is not selected as the primary key is called:

- A. Foreign Key
- B. Super Key
- ✓ **C. Alternate Key**
- D. Composite Key

Q7. Which key can contain duplicate values in a table?

- A. Primary Key
- B. Candidate Key
- ✓ **C. Foreign Key**
- D. Super Key

Q2. Which key is a minimal super key?

- A. Primary Key
- B. Foreign Key
- ✓ **C. Candidate Key**
- D. Alternate Key

Q4. Which key is selected from the candidate keys to uniquely identify records?

- A. Foreign Key
- ✓ **B. Primary Key**
- C. Super Key
- D. Composite Key

Q6. A super key with no unnecessary attribute is called:

- ✓ **A. Candidate Key**
- B. Foreign Key
- C. Primary Key
- D. Alternate Key

Q8. A key consisting of more than one attribute is called:

- A. Foreign Key
- ✓ **B. Composite Key**
- C. Alternate Key
- D. Candidate Key

Q1. In an ER diagram, a rectangle represents:

- A. Attribute
- B. Relationship
- ✓ **C. Entity**
- D. Key

Q3. In an ER diagram, an oval represents:

- A. Entity
- ✓ **B. Attribute**
- C. Relationship
- D. Key

Q5. An underlined attribute in an ER diagram represents:

- A. Derived attribute
- B. Multivalued attribute
- ✓ **C. Key attribute**
- D. Composite attribute

Q7. What does cardinality describe in an ER model?

- A. Number of attributes
- B. Number of entities in a database
- ✓ **C. Relationship between entity occurrences**
- D. Number of tables

Q2. In an ER diagram, a diamond represents:

- A. Entity
- B. Attribute
- ✓ **C. Relationship**
- D. Weak Entity

Q4. Which symbol represents a weak entity?

- A. Single rectangle
- ✓ **B. Double rectangle**
- C. Diamond
- D. Double oval

Q6. A dashed oval represents:

- A. Key attribute
- ✓ **B. Derived attribute**
- C. Composite attribute
- D. Multivalued attribute

Q8. Which constraint ensures that a foreign key refers to a valid record?

- A. Domain Integrity
- B. Entity Integrity
- ✓ **C. Referential Integrity**
- D. Key Integrity

Q1. The main purpose of normalization is to:

- A. Increase redundancy
- ✓ **B. Reduce redundancy and anomalies**
- C. Increase duplicate data
- D. Remove all keys

Q3. 2NF removes:

- A. Transitive dependency
- ✓ **B. Partial dependency**
- C. Referential integrity
- D. Functional dependency

Q5. In BCNF:

- A. Every attribute must be a key
- ✓ **B. Every determinant must be a candidate key**
- C. Every attribute must be atomic
- D. Every table must have two keys

Q7. If $Student_ID \rightarrow Dept_ID$ and $Dept_ID \rightarrow Dept_Name$, then this is:

- A. Partial dependency
- ✓ **B. Transitive dependency**
- C. Full dependency
- D. Join dependency

Q2. 1NF requires:

- A. No transitive dependency
- B. No partial dependency
- ✓ **C. Atomic values**
- D. Every determinant to be a candidate key

Q4. 3NF removes:

- A. Partial dependency
- B. Atomicity
- ✓ **C. Transitive dependency**
- D. Foreign keys

Q6. If $Student_ID + Course_ID \rightarrow Marks$ and $Student_ID \rightarrow Student_Name$, then $Student_ID \rightarrow Student_Name$ is:

- A. Full dependency
- ✓ **B. Partial dependency**
- C. Transitive dependency
- D. Multivalued dependency

Q8. Which anomaly occurs when the same information has to be changed at several places?

- A. Insertion
- ✓ **B. Update**
- C. Deletion
- D. Selection

Q1. A transaction is:

- A. A database table
- ✓ **B. A logical unit of work**
- C. A database key
- D. A relationship

Q3. Which command cancels the changes made by a transaction?

- A. COMMIT
- ✓ **B. ROLLBACK**
- C. SAVE
- D. UPDATE

Q5. Which property ensures that database rules remain valid after a transaction?

- A. Atomicity
- ✓ **B. Consistency**
- C. Isolation
- D. Durability

Q7. Which property ensures committed changes survive a system crash?

- A. Atomicity
- B. Consistency
- C. Isolation
- ✓ **D. Durability**

Q2. Which command permanently saves transaction changes?

- A. ROLLBACK
- B. DELETE
- ✓ **C. COMMIT**
- D. UNDO

Q4. "All or Nothing" refers to:

- A. Consistency
- B. Isolation
- ✓ **C. Atomicity**
- D. Durability

Q6. Which property prevents concurrent transactions from interfering with each other's intermediate results?

- A. Atomicity
- B. Consistency
- ✓ **C. Isolation**
- D. Durability

Q8. The correct expansion of ACID is:

- A. Atomicity, Control, Isolation, Data
- ✓ **B. Atomicity, Consistency, Isolation, Durability**
- C. Accuracy, Consistency, Integrity, Durability
- D. Atomicity, Concurrency, Isolation, Data

Q1. Concurrency control is used to:

- A. Delete transactions
- ✓ **B. Manage simultaneous transactions safely**
- C. Create tables
- D. Remove primary keys

Q3. Which lock is mainly used when a transaction wants to modify data?

- A. Shared Lock
- ✓ **B. Exclusive Lock**
- C. Read Lock
- D. Shared Read Lock

Q5. Exclusive Lock is mainly associated with:

- A. Reading only
- ✓ **B. Writing/updating**
- C. Viewing
- D. Selecting

Q7. During the Growing Phase of 2PL:

- A. Locks are released only
- ✓ **B. Locks are acquired**
- C. Transaction is aborted
- D. Database is deleted

Q2. Which lock allows multiple transactions to read a data item?

- A. Exclusive Lock
- ✓ **B. Shared Lock**
- C. Write Lock
- D. Binary Lock

Q4. Shared Lock is mainly associated with:

- ✓ **A. Reading**
- B. Writing
- C. Deleting
- D. Committing

Q6. Two-Phase Locking (2PL) consists of:

- A. Read and Write
- B. Commit and Rollback
- ✓ **C. Growing and Shrinking**
- D. Active and Failed

Q8. During the Shrinking Phase of 2PL:

- A. New locks are acquired
- ✓ **B. Locks are released**
- C. New transaction is created
- D. Database is normalized



STET FINAL MEMORY CARD

KEYS

Super: Unique
Candidate: Minimal Super
Primary: Selected Candidate
Alternate: Candidate (not Primary)
Foreign: Reference

NORMALIZATION

1NF: Atomic values
2NF: No Partial dep.
3NF: No Transitive dep.
BCNF: Determinant = Candidate Key

ACID PROPERTIES

A: All or Nothing
C: Consistent state
I: Independent execution
D: Durable / Permanent

LOCKING & 2PL

S-Lock: Read mode
X-Lock: Write mode
2PL: Growing → Shrinking