

SQL CONSTRAINTS

SHORT NOTES

PART - 3



KEYS IN DBMS

ATUL KUMAR (LINKEDIN).
NOTES GALLERY (TELEGRAM).

A **key** is an attribute or set of attributes that uniquely identifies any record or tuple (one row) from the table.

DEMO TABLE

Emp-Id	Name	Adhar-no	Dept-Id
101	Yadnyesh	8852 4562 3221	1
102	Vedant	4384 2250 1220	2
103	Sahil	8525 2141 3663	3
104	Rohan	9632 1258 7458	3
105	Sahil	17894 5214 3698	1
106	Siddharth	1234 5678 9632	4

KEYS IN DBMS

- 1). Super key
- 2). Candidate Key
- 3). Primary Key
- 4). Alternate Key
- 5). Foreign Key
- 6). Composite Key

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1. Super Key

A Super key is a combination of all possible attributes that can uniquely identify the rows (or tuple) in the given relation.

- Super Key is a Superset of a candidate key.
- A table can have many Super keys.
- A Super key may have additional attribute that are not needed for unique identity.

Super Keys : From Employee Table (Fig 1.1).

1. { Emp-Id }
2. { Adhar-no }
3. { Dept-Id }
4. { Emp-Id, Adhar-no }
5. { Adhar-no, Dept-Id }
6. { Emp-Id, Adhar-no, Dept-Id }
7. { Emp-Id, Name }
8. { Emp-Id, Adhar-no, Name, Dept-Id } etc.

2. Candidate Key

A Candidate key is an attribute or set of an attribute which can uniquely identify a tuple.

A Candidate Key is a minimal Super key; or a Super key with no redundant attributes.

Candidate keys are not allowed to have NULL values.

Candidate keys: From (Fig 1.1).

1. {Emp_id}
2. {Adhar_no}
3. {Dept_id}

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3. Primary Key

A Primary key is one of the candidate key chosen by the database designer to uniquely identify the tuples in the relation.

- > The value of primary key can never be NULL.
- > The value of primary key must always be unique.
- > It define column is a mandatory field.
- > Primary key do not have duplicate value.
- > Primary key is not compulsory but recommended.

Primary keys: From (Fig 1.1).

1. {EMP_ID}

4. Alternate Keys

Out of all candidate keys, only one get selected as primary key, remaining keys are known as alternate keys.

In the Employee table :

- Emp-Id is best suited for primary key.
- Rest of the attributes like Adhar-no, Dept-Id are considered as a alternate keys.

Alternate Keys : From (Fig 1.1)

1. {Adhar-no}
2. {Dept-Id}

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5. Foreign Keys

A Foreign Key is :

- A Key used to link two tables together.
- An attributes (or set of attributes) in one table that refers to the primary key.

The purpose of the foreign key is

- To ensure (or maintain) referential integrity of the data.

Foreign Keys : from (Fig 1.1).

1. {Dept-Id}

6 Composite Keys

A key that has more than one attributes is known as a Composite Key. It is also known as Compound Key.

- A composite key can also be made by the combination of more than one candidate key.
- A composite key cannot be null.

Composite Keys: from (fig 1.1).

1. { Dept-Id, Emp-Id }.