SQL CONSTRAINTS
SHORT NOTES

PART - 3

DATABASE

KEYS IN DBMS

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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). <u>Super key</u>
2). <u>Candidate Key</u>
3). <u>Primary Key</u>
4). <u>Alternate key</u>
5). <u>Foreign key</u>
6). <u>Composite Key</u>.

1. <u>Super Key</u>

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.

<u>Super Keys</u> : 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}

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}

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 }.