

Sql Constraints

Short Notes

Part 3



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Keys in DBMS

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

EMPLOYEE INFORMATION TABLE

Fig 1.1



Keys in DBMS

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



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}



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 gets 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** in another table.

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 Key: From (Fig 1.1)

1. {Dept_Id, Emp_Id}



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(Part 1, Part 2 & Part 3)



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