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

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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..

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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}

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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}

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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** 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,}

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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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