

(1)

DBMS Keys

We can define Key as an attribute or a set of attributes which can uniquely identify a record or a row of data from any relation or table.

Example:-

Student

| Roll-no | Name | Branch | Email |
|---------|------|--------|-----------|
| 101 | Ajay | CS | a@xyz.com |
| 102 | Amit | EC | b@xyz.com |
| 103 | Anil | ME | c@xyz.com |
| 104 | Amit | EE | d@xyz.com |

Here both Roll-no and Email are Keys for table Student.

Note:-

- We need Key to identify any row of data in a table uniquely
- Key is useful to establish relationship among two or more tables.
- It is used to ensure data integrity.

Type of Keys:-

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

(2)

* Super Key:- Set of attributes that can uniquely identify a record in a table is known as Super Key.

Example:- Student

| Rollno. | Enrollno | Name | Branch code | Email |
|---------|----------|-------|----------------|-----------|
| 101 | 201 | Ajay | CS | a@xyz.com |
| 102 | 202 | Amit | CS | b@xyz.com |
| 103 | 203 | Akash | EC | c@xyz.com |
| 104 | 204 | Alok | ME | d@xyz.com |
| 105 | 205 | Amit | EE | e@xyz.com |

Thus Super Key Can be -

- Rollno → Rollno + Enrollno → Rollno + Enrollno + Email
- Enrollno → Rollno + Email → etc. . . .
- Email → Enrollno + Email

* Candidate Key:- Minimal set of Super Key that can uniquely identify a record is known as Candidate Key.

Ex For above table Student Candidate Key Can be :-

- Rollno
- Enrollno
- Email

(3)

* Primary Key:-

- The candidate Key chosen to uniquely identify each row of data in a table.
- No two rows can have the same primary Key value, primary Key value cannot be NULL and every row must have a primary Key.

In the above table, student we have three candidate Keys-

- Rollno
 - Enroll-no
 - Email
- } Pick any one as primary Key

Suppose we have selected Rollno as a primary Key then all other candidate Key which is not selected will become Alternate Key.

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