

KEYS IN DBMS.

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

Emp_Id	Name	Aadhar_No	Dept_Id
101	Yadvnyesh	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 5124 8698	1
106	Siddharth	1234 5678 9632	4

Fig 1.1 Employee Information Table

- 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.

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- A super key is superset of a candidate key.
- A table can have many super keys.
- A super key may have additional attributes 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 be uniquely identify a tuple.

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A candidate key is minimal super key; or a super key with no redundant attributes.

Candidate keys are not allowed to have NULL values.

- Candidate Keys: from (Fig 4.1)

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.

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- 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 values.
- primary key is not compulsory but recommended.
- Primary keys: from Fig 1.1
- ① { Emp-ID }

4. Alternate Keys :-

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

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In the Employee Table:

- Emp-ID is best suited for primary key
- rest of the attributes like Adhar-no, Dept-ID are considered as 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 Foreign key is:

- To ensure (or maintain) referential integrity of the data.
 - Foreign Keys: from Fig. 1.1
- ① {Dept-ID}

6. Composite Key:-

A key that has more than one attributes is known as a "composite key". It is also known as compound key.

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- 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 2.1)

① { Dept-ID , Emp-ID }

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