

Course Name: A Level (1st Sem)
Topic: Keys in RDBMS (Part 2)

Subject : Introduction to DBMS
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“A key is an attribute or set of attributes in a table/relation which helps to identify a row/tuple or record uniquely.”

Candidate Key:

Candidate keys are defined as minimal set of attribute(s) that can uniquely identify each record within a table.

Candidate key is a subset of Super key.

A super key with no redundant attribute(s) is Candidate key. A Candidate key can be combination of more than one attribute.

Let us suppose following relation/table:

Table1: employee_info
(emp_id, emp_name, emp_fname, emp_dob, emp_address, emp_city, emp_adhaar)

Candidate keys in above table1 are:

1. {emp_id},
2. {emp_adhaar}

Because these attribute alone can uniquely identify each record in a table and these are minimal too (no redundant attribute(s) is/are associated).

Table2: department_info
(dept_id, dept_name, dept_location, dept_budget)

Candidate keys in above table2 are:

1. {dept_id}
2. {dept_name}

Because dept_id and dept_name attribute alone can uniquely identify each record in a table and it is minimal too.

Primary Key

A primary key is a candidate key that is most appropriate to become the main key for table. It is an attribute or set of attributes that can uniquely identify each record in a table.

A database designer makes primary key from the available candidate key in the table. There may be more than one candidate key in a table but there is one and only one primary key in a table. It concludes that **if there is only one candidate key in the table, the same will be also primary key.**

Properties of Primary Key

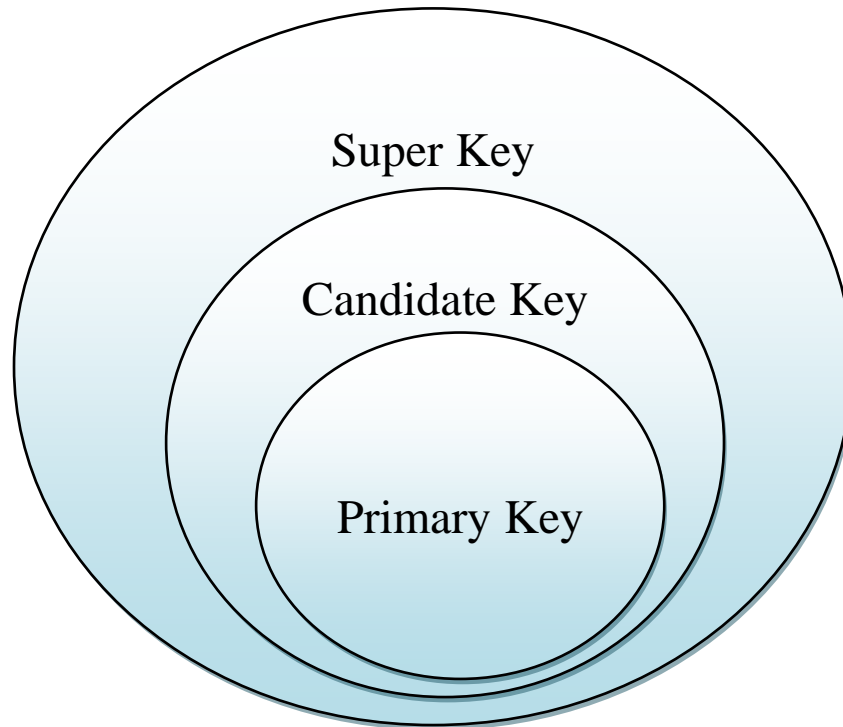
- It always contains unique value. No duplicate value is allowed in primary key field.
- It does not contain NULL value.
- The value in a primary key column can never be modified or updated if any foreign key refers to that primary key.
- If for any reason, the value of primary key is modified then the referring value of foreign key must be modified to keep the integrity of the database.

In above given table1:employee_info, **emp_id** attribute/field can be chosen as Primary Key.

In table2:department_info, **dept_id** attribute/field can be chosen as Primary Key.

One point is to remember that from Super keys we identify Candidate keys and from Candidate Keys we identify Primary key.

We can understand it from below figure:



Exercises:

1. Identify Primary Key and all possible Candidate keys in following table:

Table: student_info

stu_id	stu_rollno	stu_firstname	stu_lastname	stu_emailid
1	1001	Nick	Wright	nick@gmail.com
2	1002	Ram	Sharma	ram@gmail.com
3	1003	Ram	Kumar	ramkumar@gmail.com
4	1004	Shayam	Sharma	shyam@yahoo.com