Databases Keys in DBMS

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January 10, 2019

Key attribute

- Keys are, a key part of a relational database
- They ensure each record within a table can be uniquely identified by one or a combination of fields within the table.
- They help in identifying the relationship between tables

Types of Keys

- There are three main types of keys:
  - Candidate Keys
  - Primary Keys
  - Foreign Keys

Rollno	Name	Phone	Email	Semester	Branch
1	Rahul	9876543210	a@gmail.com	3	CSE
2	Subhash	9890001111	b@gmail.com	5	EC

- A super key is any combination of fields within a table that uniquely identifies each record within that table
- In above table how many super keys are available:
  - Roll no
  - Phone
  - Email
  - (Roll no, email), (phone, email), (rollno, phone, email)

Rollno	Name	Phone	Email	Semester	Branch
1	Rahul	9876543210	a@gmail.com	3	CSE
2	Subhash	9890001111	b@gmail.com	5	EC

- A candidate is a subset of a super key.
- A candidate key is a single field or the least combination of fields that uniquely identifies each record in the table

Rollno	Name	Phone	Email	Semester	Branch
1	Rahul	9876543210	a@gmail.com	3	CSE
2	Subhash	9890001111	b@gmail.com	5	EC

- In order to be eligible for a candidate key it must pass certain criteria.
  - It must contain unique values
  - It must not contain null values
  - It contains the minimum number of fields to ensure uniqueness
  - It must uniquely identify each record in the table

Primary Key

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- Once your candidate keys have been identified you can now select one to be your primary key
- A primary key is a candidate key that is most appropriate to be the main reference key for the table
- The primary key must contain unique values
- It must never be null
- It uniquely identify each record in the table

- A foreign key is a primary key from one table that appears as a field in another where the first table has a relationship to the second.

- Whenever many-to-many relation exist between the table, then break the relation and introduce a table