Database Keys

Date: 11th Oct,2022

Agenda:

1) Quick Recap
2) Candidate and composite keys
3) Usage of keys in real world
4) Surprise Section

Keys - Recap (I)

Definition: It is used to identify any record or row of data from the table. It is used to establish and identify relationships between the tables.

Database supports following types of keys:

1) Primary Key

2) Unique Key

3) Foreign Key

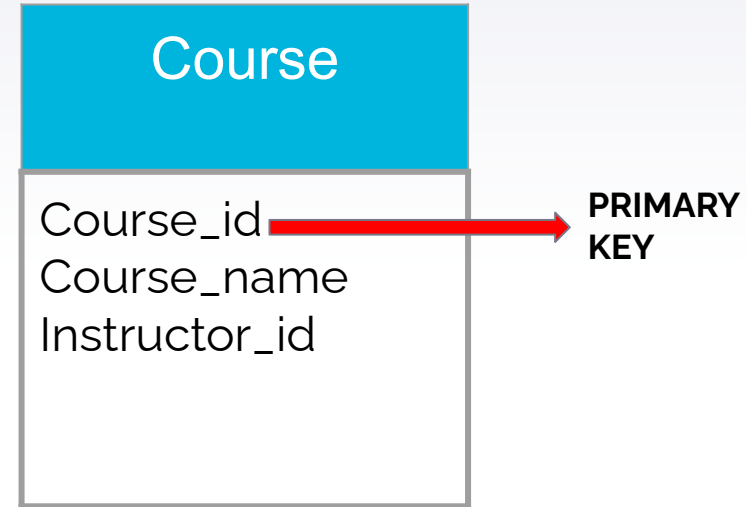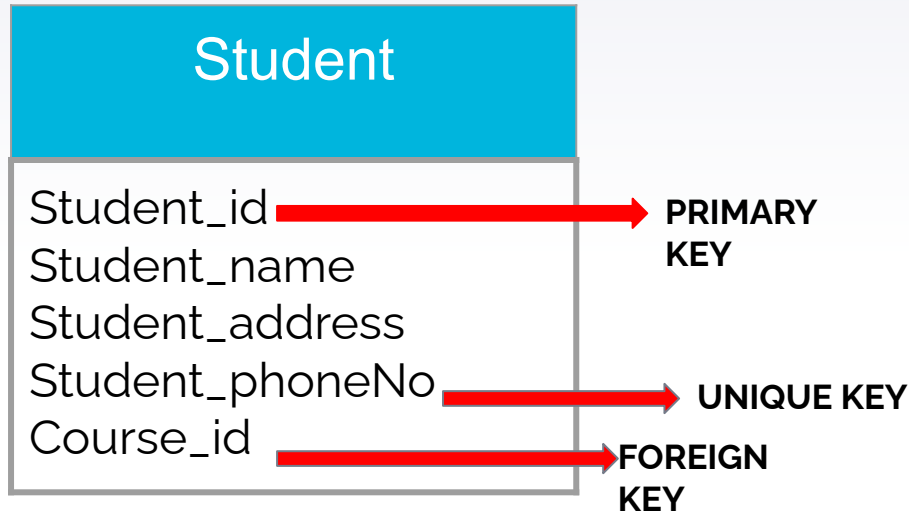4) Candidate Key

5) Composite Key

Keys - Recap(II)

Primary Key - It is the first key used to identify one and only one instance of an entity uniquely. Primary key is unique and cannot take null values

Unique Key – A unique key refer to a column or set of columns that identify every record uniquely in the table. Unique key is capable of taking null value

Foreign Key – A *foreign key (FK)* is an attribute in a table that references the primary key in another table OR it can be null. Both foreign and primary keys must be of the same data type.

Example

Student
Student_id ➡️ **PRIMARY KEY**
Student_name
Student_address
Student_phoneNo ➡️ **UNIQUE KEY**
Course_id ➡️ **FOREIGN KEY**

Course
Course_id ➡️ **PRIMARY KEY**
Course_name
Instructor_id

We can get the name of the course a particular student is taking using Course_Id which is used as a foreign key in Student table.

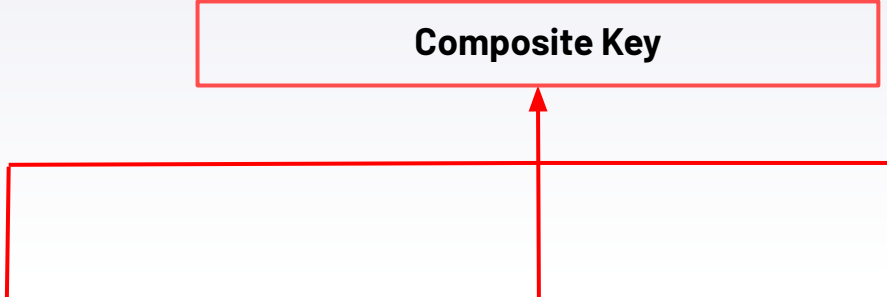# As promised in the last class, we will be going through some other kinds of keys:

Emp_SSN	Emp_Id	Emp_name	Emp_email
11051	01	John	john@email.com
19801	02	Merry	merry@email.com
19801	03	Riddle	riddle@email.com
41201	04	Cary	cary@email.com

We can choose Emp_SSN or Emp_Id as the primary key.

One last key, We promise!

```
+-------------------------------+
|         Composite Key         |
+-------------------------------+
```

Roll Number	Name	Class	Section	Email
1	Varun	MSDS610	1	varun@usfca.edu
2	Sharon	MSDS610	1	sharon@usfca.edu
1	Sanchita	MSDS601	1	sanchita@usfca.edu
3	Adam	MSDS610	2	adam@usfca.edu
4	Matt	MSDS610	4	matt@usfca.edu

Wasn't Candidate and Composite confusing?

But reality is we see these kind of situation everywhere and everyday.

So is there a way to make our life easier?

```sql
CREATE TABLE student (
    Student_ID BIGINT GENERATED ALWAYS AS IDENTITY PRIMARY KEY
    Student_Name varchar(255) NOT NULL,
    Date_Of_Birth date NOT NULL,
    Year_Of_Joining date NOT NULL,
    Email_Id varchar(255),
);
```

Surprise Section - Kahoot Quiz :)

Fastest finger first...,

Gets a chocolate :)

THANK YOU !!!

We are more than happy to try answering your questions.