SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE NAME : 19CS402 - DATABASE MANAGEMENT SYSTEMS

II YEAR / IV SEMESTER

Unit 2- Relational Model

Topic 2 : KEYS

Agenda

- Objective

- What is Key ?

- Primary Key

- Candidate Key

- Composite key or Alternate Key

- Super Key

- Foreign Key

Objective

➢ Understand different type of keys in a Table.

➢ Understand the different type of Table relationship

➢ Identify the primary key and foreign key to create a relationship.

➢ Create primary and foreign key in an actual DBMS

Key in a table

- A **key** in a table is a field or group of fields that creates identity, makes relationship with another table and/or make a table more efficient.

Primary key and Foreign key

- A **Primary key** is a key that uniquely identifies a row in each table. It is normally denoted with its first two letters, namely, **PK**.

(Or)

- There can be more than one candidate key in a relation out of which one can be chosen as primary key

Foreign key

- A **Foreign key** is a key borrowed from another related table (that's why its foreign) in order to make the relationship between two tables. It is normally denoted with its first two letters, namely, **FK**

Examples from Premier Database – Primary Key

Customer

CustomerNum	CustomerName	Street	City	State	Zip	Balance	CreditLimit	RepNum
148	Al's Appliance and Sport	2837 Greenway	Fillmore	FL	33336	$6,550.00	$7,500.00	20
282	Brookings Direct	3827 Devon	Grove	FL	33321	$431.50	$10,000.00	35
356	Ferguson's	382 Wildwood	Northfield	FL	33146	$5,785.00	$7,500.00	65
408	The Everything Shop	1828 Raven	Crystal	FL	33503	$5,285.25	$5,000.00	35
462	Bargains Galore	3829 Central	Grove	FL	33321	$3,412.00	$10,000.00	65
524	Kline's	838 Ridgeland	Fillmore	FL	33336	$12,762.00	$15,000.00	20
608	Johnson's Department Store	372 Oxford	Sheldon	FL	33553	$2,106.00	$10,000.00	65
687	Lee's Sport and Appliance	282 Evergreen	Altonville	FL	32543	$2,851.00	$5,000.00	35
725	Deerfield's Four Seasons	282 Columbia	Sheldon	FL	33553	$248.00	$7,500.00	35
842	All Season	28 Lakeview	Grove	FL	33321	$8,221.00	$7,500.00	20

Customernum uniquely identifies the *Customer* table and is the primary key of this table.

Examples from Premier Database – Foreign Key

Rep

RepNum	LastName	FirstName	Street	City	State	Zip	Commission	Rate
20	Kaiser	Valerie	624 Randall	Grove	FL	33321	$20,542.50	0.05
35	Hull	Richard	532 Jackson	Sheldon	FL	33553	$39,216.00	0.07
65	Perez	Juan	1626 Taylor	Fillmore	FL	33336	$23,487.00	0.05

Repnum is a *Foreign key* borrowed from Rep table

Customer

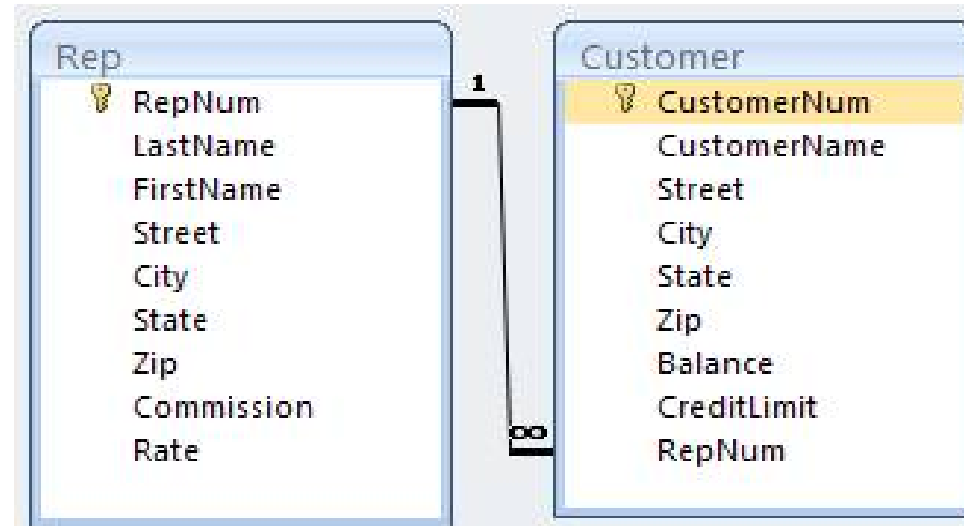| CustomerNum	CustomerName	Street	City	State	Zip	Balance	CreditLimit	RepNum
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Referential Integrity

- Example:

- The *foreign key RepNum* in Customer **must match** with the *primary key RepNum* in Rep table.

Referential Integrity

- In terms of actual Values

Customer

CustomerNum	CustomerName	Street	City	State	Zip	Balance	CreditLimit	RepNum
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Candidate key

- Candidate key: Sometimes it is possible to have a choice of fields or field combinations to use as the primary key.

- Any field that could serve as a primary key is called a candidate key .

- For example, if every employee has a unique employee number, then you could use either the employee number or the Social Security number as a primary key.

UNIT-2/ 19CS402 DBMS/ K.Karthikeyan AP/CSE ,SNSCE.

Primary Vs Foreign Key

S.No	Primary Key	Foreign Key
1	Primary key uniquely identify a record in the table.	Foreign key is a field in the table that is primary key in another table.
2	Primary Key can't accept null values.	Foreign key can accept multiple null value.
3	We can have only one Primary key in a table.	We can have more than one foreign key in a table.
4	There can be only one primary key of a relation	There can be multiple foreign keys in a relation

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THANK YOU