



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore - 641 107

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Accredited by NBA - AICTE and Accredited by NAAC - UGC with 'A' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

**COURSE NAME : 23CST207 - 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

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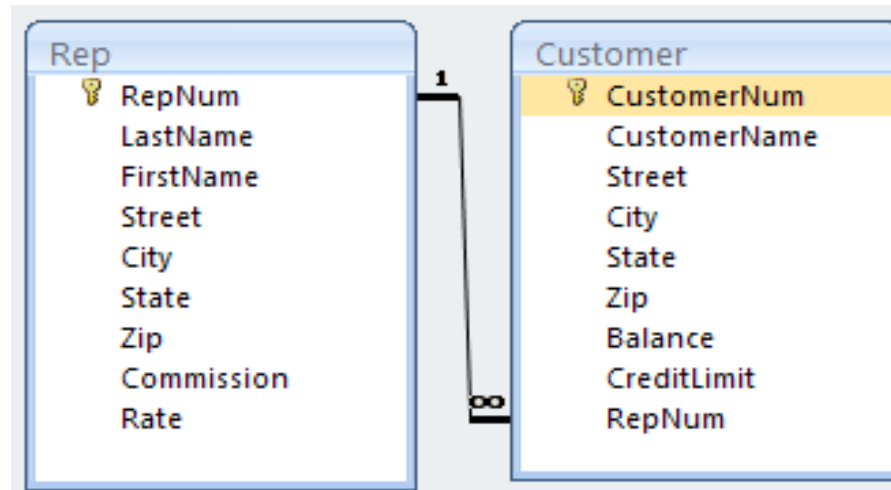




Referential Integrity



- Example:



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



Referential Integrity



- In terms of actual Values

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
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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.



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



REFERENCES



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4. Raghu Ramakrishnan, –Database Management Systems||, Fourth Edition, McGraw-Hill College Publications, 2015.

THANK YOU