DBMS

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KEYS

- ✓ Used to establish and identify relation between tables
- ✓ Each record with in a table can be uniquely identified bye combination of one more fields in a table
- ✓ Help to enforce integrity and identify relationship

Different types of keys

1. Super Key
2. Candidate Key
3. Primary Key
4. Foreign Key
5. Secondary / Alternate key
6. Simple Key
7. Compound Key
8. Composite Key

Super Key

- A Super key is any combination of fields within a table that uniquely identifies each record within that table.
- Superset of candidate key

Candidate Key

- 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.
- The least combination of fields distinguishes a candidate key from a super key. (ie.Minimal Set of Super Key)
- Every table must have at least one candidate key but at the same time can have several.

Candidate Keys

L0002345		Jim	Murray	C002
10001254		Simon	Harradine	
L0002349	A004	Amanda	Holland	C002
L0001198		Simon	McCloud	S042
L0023487		Peler	Murray	P301
L0018453		Anne	Norris	S042

In order to be eligible for a candidate key it must pass certain criteria

I. It must contain unique values
II. Must not contain null values
III. Contain minimum number of fields to ensure uniqueness
IV. Must uniquely identify each record in a table

Note: Once your candidate keys have been identified you can now select one to be your primary key

Primary Key

- A primary key is a candidate key that is most appropriate to be the main reference key for the table.

- It is the primary key of reference for the table

- It is used throughout the database to help establish relationships with other tables.

Primary Keys

L0002345	Jim	Black	C002
L0001254	James	McCloud	A004
L0002349	Jim	Holland	C002
L0001198	Simon	McCloud	5042
L0023487		Murray	P301
L0018453	Anne	Norris	5042

- Primary key must contain
  - Unique values
  - Must never be null
  - Uniquely identify each record in the table.

- Note : Primary keys are mandatory for every table each record must have a value for its primary key.
- Note: When choosing a primary key from the pool of candidate keys always choose a single simple key over a composite key.

Foreign Key

- Foreign key is a column(s) that references a column(s) of a table and it can be same table also

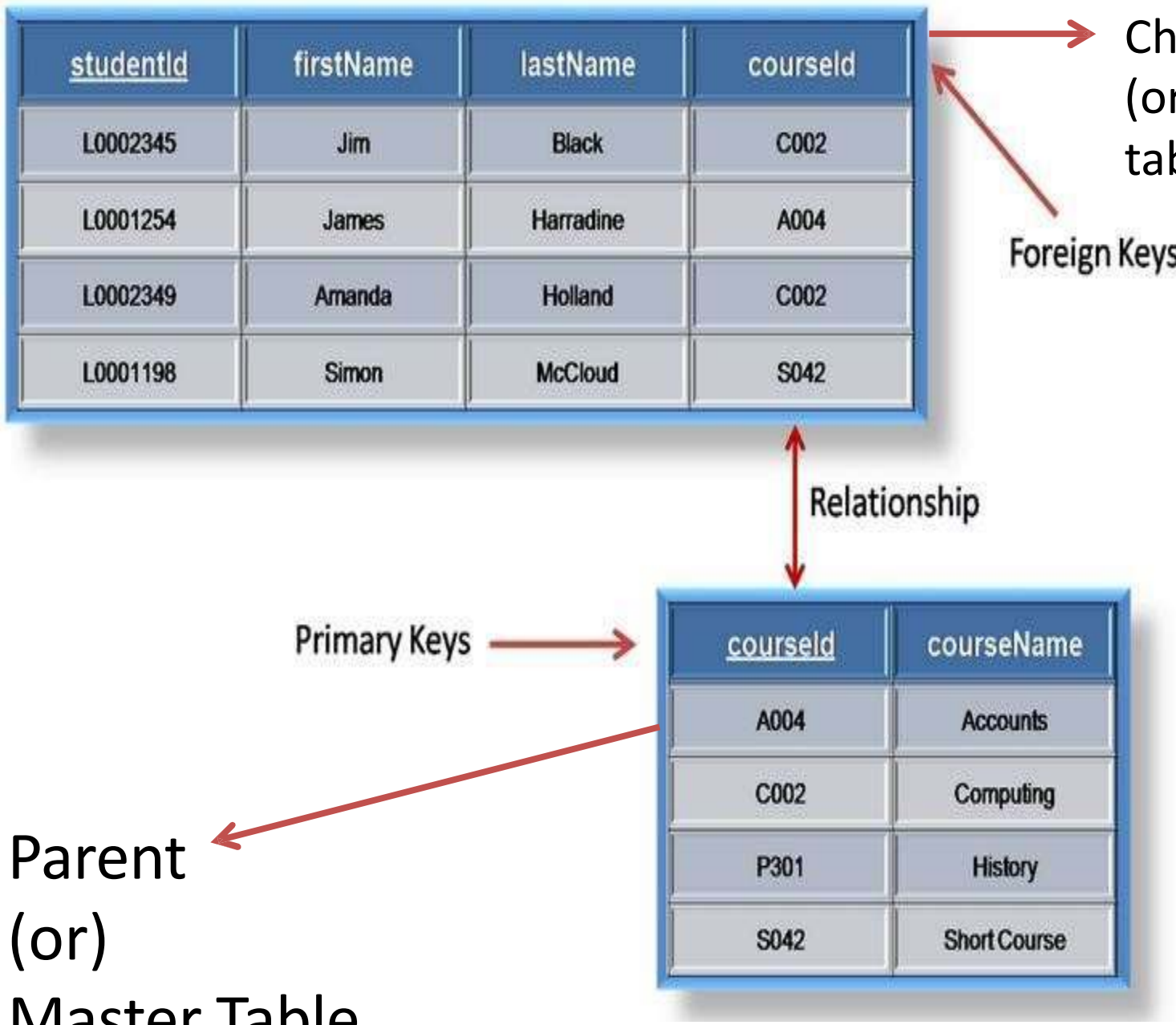
- A foreign key is generally a Unique key from one table that appears as a field in another where the first table has a relationship to the second.

- In other words, if we had a table A with a Unique key X that linked to a table B where X was a field in B, then X would be a foreign key in B.

This relationship ensures

- Records cannot be inserted into a detail table if corresponding record in the master table do not exist.

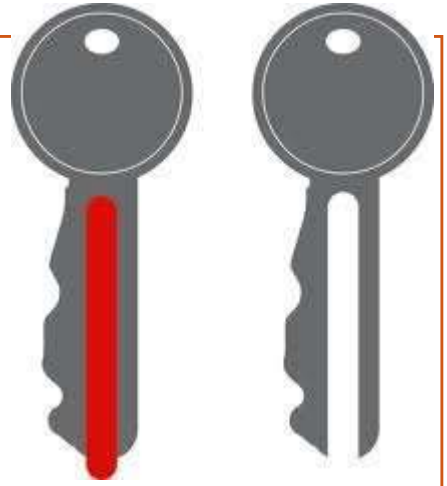
- Record of a master table cannot be deleted if corresponding records in the detail table actually exist


studentId
firstName
lastName
courseId
L0002345
Jim
Black
C002
L0001254
James
Harradine
A004
L0002349
Amanda
Holland
C002
L0001198
Simon
McCloud
S042
Child
(or) Detail
table
Foreign Keys
Relationship
Primary Keys
courseId
courseName
A004
Accounts
C002
Computing
P301
History
S042
Short Course
Parent
(or)
Master Table

NOTE THAT

- ✓Parent must be UNIQUE OR PRIMARY KEY
- ✓Child may have DUPLICATE/NULL unless it is specified
- ✓ Constraint specified on child not on parent
- ✓Parent record can delete only if no child record exist
- ✓Parent cannot modify if child record exist

Secondary / Alternate Key



- A table may have one or more choices for the primary key. Collectively these are known as candidate keys.
- One is selected as the primary key. Those not selected are known as secondary keys or alternative keys.

Simple Key

- A simple key consists of a single field to uniquely identify a record.
- In addition the field in itself cannot be broken down into other fields

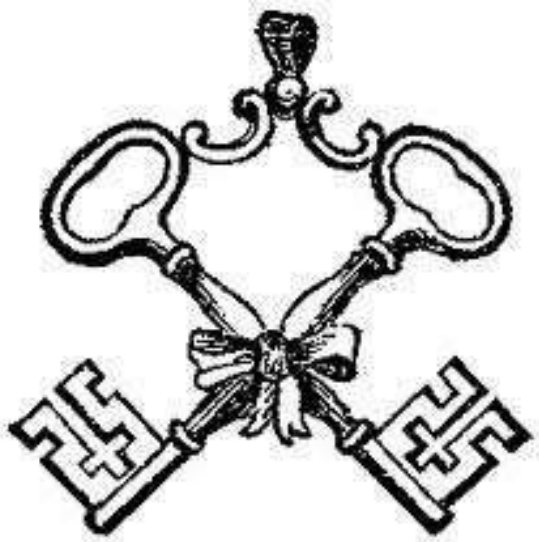
Compound Key

- A compound key consists of more than one field to uniquely identify a record.

- Each attribute that makes up the **compound key** is a simple **key** in its own right.

Composite Key

- A composite key consists of more than one field to uniquely identify a record.
- This differs from a compound key in that one or more of the attributes, which make up the key, are not simple keys in their own right




Thank
you