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Database Foundations

2-5
Unique Identifiers and Primary Keys

Roadmap

What Is a Table?

Relational Databases

Conceptual Data Modeling

Data Modeling Terminology

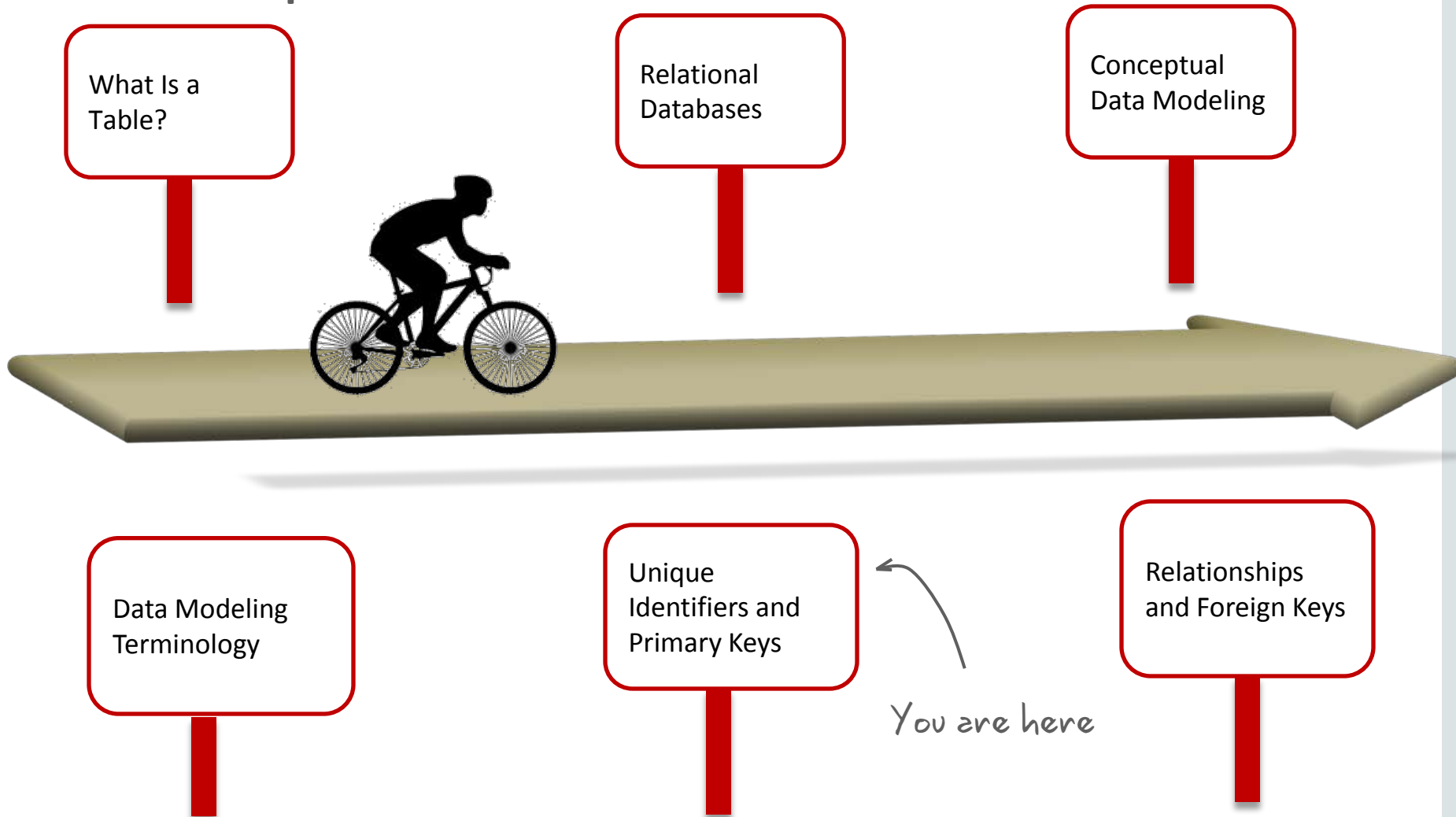Unique Identifiers and Primary Keys

You are here

Relationships and Foreign Keys

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Unique Identifiers and Primary Keys

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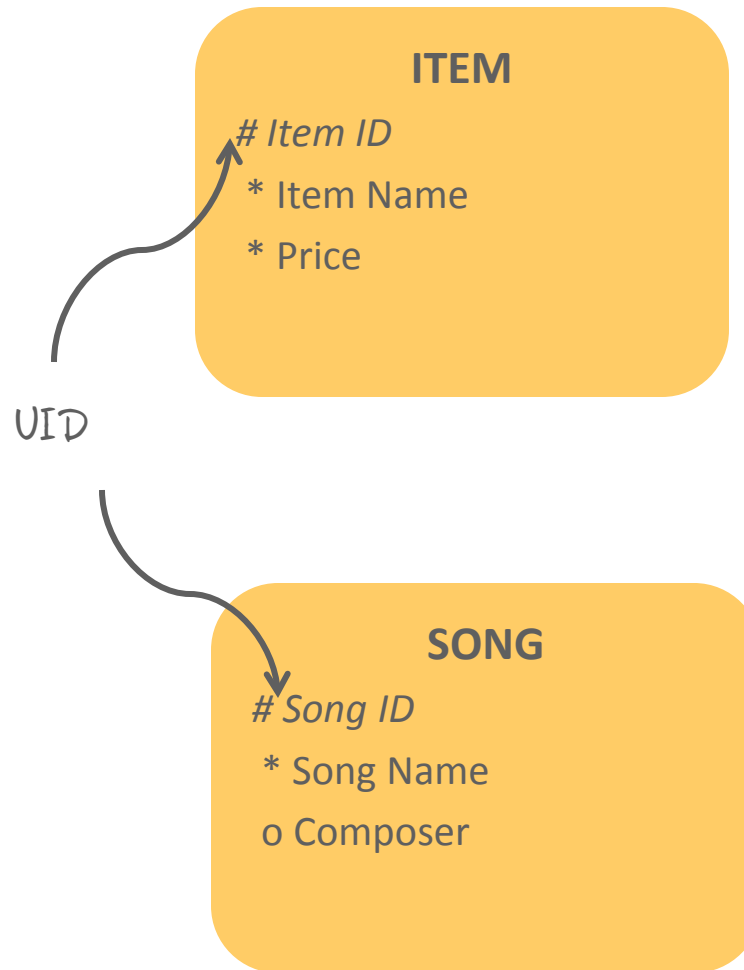# Objectives

This lesson covers the following objectives:

- Identify unique identifiers
- Identify the corresponding primary keys

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Conceptual Data Model UID

- A UID is an attribute of an entity that is unique across all instances of the entity.

- It has a non-NULL value for each instance of the entity for the lifetime of the instance.

- Its value never changes over the lifetime of the instance.

- A UID is diagrammed with a number sign (#).

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Unique Identifier: Example

ITEM

\# *Item ID*

* Item Name

* Price

UID

SONG

\# *Song ID*

* Song Name

o Composer

Primary Key

- A primary key (PK) is a column or set of columns that uniquely identifies each row in a table.

- It cannot contain null values.

- A PK is either an existing table column or a column that is specifically generated by the database according to a defined sequence.

- It must contain a unique value for each row of data.
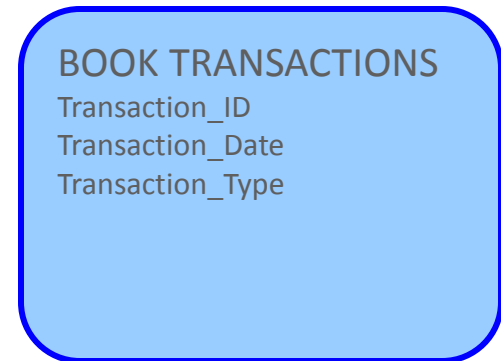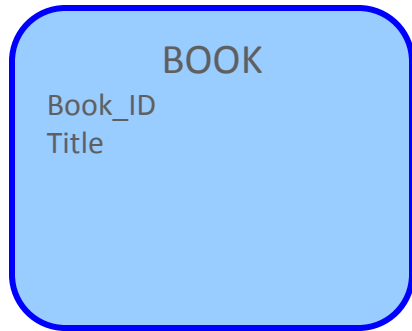
Primary Key: Example

EMPLOYEES

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	…….	DEPARTMENT_ID
100	Steven	King	….	90
101	Neena	Kochhar	….	90
201	Rick	Bel	….	90
205	Shelly	Higgins	….	10
300	Bill	Steveward	….	110

↑

Single-Column PK

Case Scenario: Identifying Unique Identifiers

BOOK

Book_ID
Title

AUTHOR

Author_ID
Author_Name

MEMBER

Member_ID
First_Name
Last_Name
Street_Address
City
State
Zip

BOOK TRANSACTIONS

Transaction_ID
Transaction_Date
Transaction_Type

PUBLISHER

Publisher_ID
Publisher_Name

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Case Scenario: Identifying Unique Identifiers

BOOK

\# Book_ID
* Title

AUTHOR

\# Author_ID
* Author_Name

MEMBER

\# Member_ID
* First_Name
o Last_Name
o Street_Address
o City
o State
o Zip

BOOK TRANSACTIONS

\# Transaction_ID
* Transaction_Date
o Transaction_Type

PUBLISHER

\# Publisher_ID
* Publisher_Name

Composite UID and Primary Key

- A composite UID is a combination of attributes.

- A composite primary key is any key that consists of two or more columns.

Example:

If a product is uniquely identified by its model number and revision code, the combination of the model number and revision code is a compound primary key.

Composite Primary Key: Example

ACCOUNTS

BANK_NO	ACCT_NO	BALANCE	DATE_OPENED
104	71432	12,000	29-OCT-90
104	34578	18,000	12-SEP-85
105	78967	20,000	
103	96545	60,000	04-AUG-91
105	72345	10,000	03-JAN-99

These fields are combined to
form a compound PK.

Summary

In this lesson, you should have learned how to:

- Identify UIDs
- Identify the corresponding primary keys