

# Defining a Database Schema

First Look

25

## Defining Tables

- agencies (agencyno, agencyname, agencystreet, agencycity, agencyzip)
  - agents (agentno, agentfirst, agentlast, agentphone, agencyno )
    - Foreign key: agencyno references agencies
  - listings (listingno, style, location, sqft, lakeft, br, baths, garage, pool, asking, agentno)
    - Foreign key: agentno references agents
- *Ebook, Section 6.2*

26

## Defining Tables: MySQL Data Types

- Character types
    - CHAR
    - VARCHAR
  - ENUM and SET types
    - ENUM
    - SET
  - Integer types
    - BIGINT (8 bytes)
    - INT (4 bytes)
    - MEDIUMINT (3 bytes)
    - SMALLINT (2 bytes)
    - TINYINT (1 byte)
  - Fixed-point type
    - DECIMAL(M,D)
  - Floating-point types
    - DOUBLE
    - FLOAT
  - Date & time types
    - DATE
    - TIME
    - TIMESTAMP
    - YEAR
- *Murach, Ch. 8*

27

## CREATE TABLE

Open **realestateforWeek6.sql** in Notepad++

28

## CREATE TABLE: Agencies and Agents

```
CREATE TABLE agencies (
  agencyno tinyint,
  agencyname varchar(50),
  agencystreet varchar(50),
  agencycity varchar(50),
  agencystate char(2),
  agencyzip varchar(10),
  PRIMARY KEY (agencyno)
);
```

```
CREATE TABLE agents (
  agentno tinyint,
  agentfirst varchar(25),
  agentlast varchar(25),
  agentphone varchar(20),
  agencyno tinyint,
  PRIMARY KEY (agentno)
);
```

29

## CREATE TABLE: Listings

```
CREATE TABLE listings (
  listingno tinyint,
  style varchar(20),
  location varchar(20),
  sqft int,
  lakeft smallint,
  br tinyint,
  baths decimal(3,1),
  garage tinyint,
  pool ENUM('y','n'),
  asking int,
  agentno tinyint,
  PRIMARY KEY (listingno)
);
```

30

## Add DROP TABLE Statements

- At the beginning of realestateforWeek6.sql
  - before the first CREATE TABLE statement, type in the following

**DROP TABLE IF EXISTS agencies;**

**DROP TABLE IF EXISTS agents;**

**DROP TABLE IF EXISTS listings;**

31

## Add Tables to Your Database

- Copy the **DROP TABLE**, **CREATE TABLE** and **INSERT** statements in **realestateforWeek6.sql** into the Advanced Query Editor in the Ebook.
- Run the query.

32

## Use DESC <tablename> to View Table Structures

Delete everything from the query editor

**DESC agencies;**

**DESC agents;**

**DESC listings;**

- Copy these three statements into the query editor
- Run all three statements at one time (This is possible because each statement ends with a semicolon.)

33

## INSERT New Records One at a Time

**INSERT INTO agents VALUES (3, 'Susan', 'Zimmerman', NULL, 4);**

**INSERT INTO agencies (agencyno, agencyname) VALUES (2, "Joe's Real Estate");**

**INSERT INTO listings (listingno, style) VALUES (4, 'Log Cabin');**

Each should produce "Duplicate entry ... for key 'PRIMARY'" errors.

34