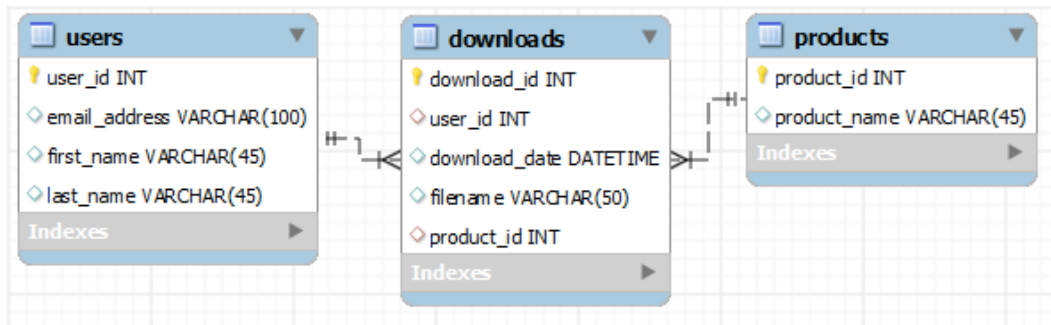


Chapter 11

How to create databases, tables, and indexes

Exercises

1. Write a script that adds an index to the `my_guitar_shop` database for the zip code field in the `Addresses` table.
2. Write a script that implements the following design in a database named `my_web_db`:



In the `Downloads` table, the `user_id` and `product_id` columns are the foreign keys.

Include a statement to drop the database if it already exists.

Include statements to create and select the database.

Include any indexes that you think are necessary.

Specify the `utf8` character set for all tables.

Specify the `InnoDB` storage engine for all tables.

3. Write a script that adds rows to the database that you created in exercise 2.

Add two rows to the `Users` and `Products` tables.

Add three rows to the `Downloads` table: one row for user 1 and product 2; one row for user 2 and product 1; and one row for user 2 and product 2. Use the `NOW` function to insert the current date and time into the `download_date` column.

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Write a SELECT statement that joins the three tables and retrieves the data from these tables like this:

	email_address	first_name	last_name	download_date	filename	product_name
▶	johnsmith@gmail.com	John	Smith	2015-04-24 16:15:38	pedals_are_falling.mp3	Local Music Vol 1
	janedoe@yahoo.com	Jane	Doe	2015-04-24 16:15:38	tum_signal.mp3	Local Music Vol 1
	janedoe@yahoo.com	Jane	Doe	2015-04-24 16:15:38	one_horse_town.mp3	Local Music Vol 2

Sort the results by the email address in descending sequence and the product name in ascending sequence.

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4. Write an ALTER TABLE statement that adds two new columns to the Products table created in exercise 2.

Add one column for product price that provides for three digits to the left of the decimal point and two to the right. This column should have a default value of 9.99.

Add one column for the date and time that the product was added to the database.

5. Write an ALTER TABLE statement that modifies the Users table created in exercise 2 so the first_name column cannot store NULL values and can store a maximum of 20 characters.

Code an UPDATE statement that attempts to insert a NULL value into this column. It should fail due to the NOT NULL constraint.

Code another UPDATE statement that attempts to insert a first name that's longer than 20 characters. It should fail due to the length of the column.