

note @216

77 views

Setting up your Local MySQL

This is not mandatory, but development can be faster if you have a mysql running locally, and change your context.xml to point to localhost instead of cs5244.cs.vt.edu.

You will need to create a user, and a database, and then create tables.

I use a create.sql script, a schema.sql for the tables and a data.sql for the data.

The create.sql looks like:

```
--  
-- EXECUTE THIS SCRIPT FROM THE COMMAND LINE  
-- USING AN ADMINISTRATIVE MYSQL USER.  
--  
-- $ mysql -u root -p < create.sql  
--  
-- Creates a database and a user with all privileges  
-- on that database for the project.  
--  
-- Included in the application here for completeness.  
--  
  
DROP SCHEMA IF EXISTS `DrABookstoreDB`;  
CREATE SCHEMA IF NOT EXISTS `DrABookstoreDB`  
    DEFAULT CHARACTER SET utf8 COLLATE utf8_unicode_ci;  
  
CREATE USER IF NOT EXISTS 'steve72'@'%' IDENTIFIED BY '1234';  
GRANT ALL PRIVILEGES ON DrABookstoreDB.* to 'steve72'@'%';  
FLUSH PRIVILEGES;
```

run code snippet

Change the names and numbers of course.

The schema.sql looks like:

```
--  
-- Drop tables in reverse order of their creation  
--  
  
DROP TABLE IF EXISTS `customer_order_line_item`;  
DROP TABLE IF EXISTS `book`;  
DROP TABLE IF EXISTS `category`;  
DROP TABLE IF EXISTS `customer_order`;  
DROP TABLE IF EXISTS `customer`;  
  
--
```

```
-- Table structure for table `customer`
--

CREATE TABLE `customer` (
  `customer_id` INT UNSIGNED AUTO_INCREMENT,
  `name` VARCHAR(45) NOT NULL,
  `address` VARCHAR(45) NOT NULL,
  `phone` VARCHAR(45) NOT NULL,
  `email` VARCHAR(45) NOT NULL,
  `cc_number` VARCHAR(19) NOT NULL,
  `cc_exp_date` DATE NOT NULL,
  PRIMARY KEY (`customer_id`)
) ENGINE = InnoDB;

--

-- Table structure for table `customer_order`
--

CREATE TABLE `customer_order` (
  `customer_order_id` INT UNSIGNED AUTO_INCREMENT,
  `amount` INT UNSIGNED NOT NULL,
  `date_created` TIMESTAMP NOT NULL DEFAULT CURRENT_TIMESTAMP,
  `confirmation_number` INT UNSIGNED NOT NULL,
  `customer_id` INT UNSIGNED,
  PRIMARY KEY (`customer_order_id`),
  FOREIGN KEY (`customer_id`) REFERENCES `customer` (`customer_id`)
) ENGINE = InnoDB;

--

-- Table structure for table `category`
--

CREATE TABLE `category` (
  `category_id` INT UNSIGNED AUTO_INCREMENT,
  `name` VARCHAR(45) NOT NULL,
  PRIMARY KEY (`category_id`)
) ENGINE = InnoDB;

--

-- Table structure for table `book`
--

CREATE TABLE `book` (
  `book_id` INT UNSIGNED AUTO_INCREMENT,
  `title` VARCHAR(60) NOT NULL,
  `author` VARCHAR(60) NOT NULL,
  `description` VARCHAR(1000) NOT NULL,
  `price` INT UNSIGNED NOT NULL,
  `rating` INT UNSIGNED NOT NULL,
  `is_public` BOOLEAN NOT NULL,
  `is_featured` BOOLEAN NOT NULL,
  `category_id` INT UNSIGNED,
```

```

PRIMARY KEY (`book_id`),
FOREIGN KEY (`category_id`) REFERENCES `category`(`category_id`)
) ENGINE = InnoDB;

--
-- Table structure for the table `customer_order_line_item`
--

CREATE TABLE `customer_order_line_item` (
  `customer_order_id` INT UNSIGNED,
  `book_id` INT UNSIGNED,
  `quantity` SMALLINT UNSIGNED DEFAULT 1,
  PRIMARY KEY (`customer_order_id`, `book_id`),
  FOREIGN KEY (`customer_order_id`) REFERENCES `customer_order`(`customer_order_id`),
  FOREIGN KEY (`book_id`) REFERENCES `book`(`book_id`)
) ENGINE = InnoDB;

```

run code snippet

The data.sql I have looks like:

```

# noinspection SqlWithoutWhereForFile

USE DrABookstoreDB;

DELETE FROM customer_order_line_item;

DELETE FROM book;
ALTER TABLE book AUTO_INCREMENT = 1001;

DELETE FROM category;
ALTER TABLE category AUTO_INCREMENT = 1001;

INSERT INTO `category` (`name`) VALUES ('Classics'),('Coding'),('Databases'),('Career');

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('The Art of Computer Programming, Vol 1', 'Donald Knuth', '', 2499, 0, TRUE, FALSE, 1001);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('The Mythical Man Month', 'Frederick P. Brooks, Jr.', '', 1398, 0, TRUE, FALSE, 1001);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('The C Programming Language', 'Brian Kernighan and Dennis M. Richie.', '', 1601, 0, TRUE, FALSE, 1001);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('Communicating Sequential Processes', 'C.A.R. Hoare', '', 13606, 0, FALSE, FALSE, 1001);

-- Coding
INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('Effective Java', 'Joshua Bloch', '', 1399, 0, FALSE, FALSE, 1002);

```

```
INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('Seven Languages in Seven Weeks', 'Bruce A. Tate', '', 1999, 0, FALSE, FALSE, 1002);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('The Pragmatic Programmer', 'Andrew Hunt and David Thomas', '', 1599, 0, TRUE, FALSE, 1002);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('Clean Code: A Handbook of Agile Software Craftsmanship', 'Robert C. Martin', '', 2806, 0, F
ALSE, FALSE, 1002);

-- Databases
INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('Fundamentals of Database Systems', 'Elmasri & Navathe', '', 9295, 0, FALSE, FALSE, 1003);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('SQL and Relational Theory', 'C.J Date', '', 2790, 0, FALSE, FALSE, 1003);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('NoSQL and SQL Data Modeling', 'Ted Hills', '', 2830, 0, FALSE, FALSE, 1003);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('Modern Database Management', 'Jeffrey Hoffer', '', 1999, 0, FALSE, FALSE, 1003);

-- Career
INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('Managing Humans', 'Michael Lopp', '', 1098, 0, TRUE, FALSE, 1004);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('Grit: The Power of Passion and Perseverance', 'Angela Duckworth', '', 1084, 0, FALSE, FALSE
, 1004);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('Being Geek: The Software Developer's Career Handbook', 'Michael Lopp', '', 1508, 0, TRUE,
FALSE, 1004);

INSERT INTO `book` (title, author, description, price, rating, is_public, is_featured, category_id)
VALUES ('The Startup of You', 'Reid Hoffman and Ben Casnocha', '', 1098, 0, TRUE, FALSE, 1004);
```

run code snippet

Notice how my data script resets the book and category auto increment counters to 1001 to start with.

I hope this helps.

Dr A

#pin

module4

module4/p4-database

followup discussions *for lingering questions and comments*☒ Resolved ☐ Unresolved**Priyabrata Nandi** 1 month ago

Thanks Dr A. Having a local MySQL database saves a lot of development time for me.

Quick note on the context.xml resource setup for local mysql url. Apparently in some scenarios the `com.mysql.cj.jdbc.Driver` defaults to "EDT" timezone where as the database by default uses "UTC". I had to add the "serverTimezone" parameter to fix this while connecting to the local MySQL. My url looks like this.

```
url="jdbc:mysql://127.0.0.1:3306/PriyoBookstoreDB?serverTimezone=UTC"
```

Hope this helps

-priyo

helpful! | 0

**Steven Atkinson** 1 month ago

Thanks priyo, in fact our server runs in EST but for some reason clients get confused.

Folks, please feel free to take priyos suggestion onboard.

Dr A

good comment | 0

☐ Resolved ☒ Unresolved**Gary Fang** 1 month ago

Hi Dr. A,

1. I am trying to set up my local MySQL database. I have the tables and data loaded, but not sure what to update in my context.xml. Could you let me know which fields I need to update?

In my local MySQL db, I am using the default root user.

2. If I change my context.xml to work for localhost, does this mean when I submit to archive, I need to change back to my Vtech credentials?

Thank you

helpful! | 0

**Steven Atkinson** 1 month ago

Yes you do need to change back but you can make them identical without a need to change easily.

So don't use the root user locally.

Up top and repeated here - Use a user you create with the same name and pin:

```
DROP SCHEMA IF EXISTS `DrABookstoreDB` ;
CREATE SCHEMA IF NOT EXISTS `DrABookstoreDB`
    DEFAULT CHARACTER SET utf8 COLLATE utf8_unicode_ci;
```

```
CREATE USER IF NOT EXISTS 'steve72'@'%' IDENTIFIED BY '1234';  
GRANT ALL PRIVILEGES ON DrABookstoreDB.* to 'steve72'@'%';  
FLUSH PRIVILEGES;
```

[run code snippet](#)

Then in your context.xml you can leave it alone and just use the same one for both local and remote.

```
<?xml version="1.0" encoding="UTF-8"?>  
<Context path="/">  
    <Resource name="jdbc/DrABookstore"  
        auth="Container"  
        type="javax.sql.DataSource"  
        maxTotal="4"  
        maxIdle="0"  
        maxWaitMillis="10000"  
        username="steve72"  
        password="1234"  
        driverClassName="com.mysql.cj.jdbc.Driver"  
        removeAbandonedOnBorrow="true"  
        removeAbandonedOnMaintenance="true"  
        removeAbandonedTimeout="60"  
        logAbandoned="true"  
        minEvictableIdleTimeMillis="300000"  
        timeBetweenEvictionRunsMillis="300000"  
        url="jdbc:mysql://localhost:3306/DrABookstoreDB?serverTimezo  
ne=PST"/>  
</Context>
```

[run code snippet](#)

good comment | 0