Android | SQLite Database Debugging From a Remote Shell

The Android SDK includes a **`sqlite3`** database tool "**adb remote shell**" that allows you to to manage SQLite databases created on actual device or emulator "AVD" from your PC . You can use the shell to browse table contents, run SQL commands, and perform other useful functions on SQLite databases.

Objectives:

- How to connect to a sqlite database existing on Android devices from your PC?
- How to interact with Android sqlite database from remote shell?

Environment & Tools:

- Android SDK should be installed.
- Command "shell" window
- Running AVD "emulator"
- Connected Android device "Samsung Galaxy SII"

Before Starting:

*In a previous post "**Android | Simple SQLite Database Tutorial**" I have created an App that creates a database named "**BookDB**" and one table "**books**".*

(1) List Connected Devices

- Open the command-line window "shell"
- You can find all running emulator and connected devices using the below command.
- **>adb devices**

```
C:\>adb devices
List of devices attached
304D19......    device  //this is my device serial #
emulator-5554   device  // this is an emulator running on my PC
```

(2) Connect to a Device

- Now you can connect to one of the devices using their serial #.
- We will connect to the emulator.
- **>adb -s** emulator-5554 **shell**

```
C:\>adb -s emulator-5554 shell
root@generic:/ #
```

(3) List All App IDs *Pakcage*

- After connecting to a device you can list available Apps IDs "packages"
- App ID is its package that is defined in the **manifest** xml file.
- Android stores Apps data under **/data/data** folder.
- **# ls** /data/data

```
root@generic:/ # ls /data/data
ls /data/data
com.example.android.apis
```

```
......
com.hmkcode.android
```

(4) List All Databases for an App

- We can use **ls** command to list all databases available for a specific App
- I will list database of my App com.hmkcode.android
- **# ls** /data/data/**com.hmkcode.android**/databases

```
root@generic:/ # ls /data/data/com.hmkcode.android/databases
ls /data/data/com.hmkcode.android/databases
BookDB
BookDB-journal
```

(5) Open a Database

- Now to connect to a database of a specific App use **sqlite3** command and the path to the database as a parameter.
- **# sqlite3** /data/data/**com.hmkcode.android/**databases/**BookDB**

```
root@generic:/ # sqlite3 /data/data/com.hmkcode.android/databases/BookDB
sqlite3 /data/data/com.hmkcode.android/database/BookDB
SQLite version 3.7.11 2012-03-20 11:35:50
Enter ".help" for instructions
Enter SQL statements terminated with a ";"
sqlite>
```

(6) List All Tables

- After a opening a database you can list all tables under that database by using **.tables** command.
- **sqlite> .tables**

```
sqlite> .tables
.tables
android_metadata  books // we have one table "books"
```

(7) SQL command

- You can execute SQL command to select, update, delete or insert records.
- e.g. to view all books data use the below SQL statement.
- **sqlite>** select * from **books**;

```
sqlite> select * from books;
```

(8) .help for All Command

- You can always refer to **.help** command to list all available commands.

```
sqlite> .help
```

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