

Mobile Application Development SQLite database

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SQLite

Relational Database Management System (DBMS)

- Tenth most widely used (DB-Engines)
- Users include
 - Adobe
 - Airbus
 - Apple
 - Bosch (car multimedia systems)

SQLite

Suitable Uses

- Mobile apps
- Embedded devices
- Internet of Things (IoT)
- Websites
- Data analysis (using sqlite3 commandline shell)
- Demos & testing in enterprise environments
- Education & training

SQLite

Create

```
public void addResidence(Residence residence)
{
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues values = new ContentValues();
    values.put(PRIMARY_KEY, residence.id.toString());
    values.put(GEOLOCATION, residence.geolocation);
    // Insert record
    db.insert(TABLE_RESIDENCES, null, values);
    db.close();
}
```



SQLite

Read

```
public Residence selectResidence(UUID resId) {
    Residence residence;
    SQLiteDatabase db = this.getReadableDatabase();
    Cursor cursor = null;
    try {
        residence = new Residence();
        ...
    } finally {
        cursor.close();
    }
    return residence;
}
```



SQLite

Delete

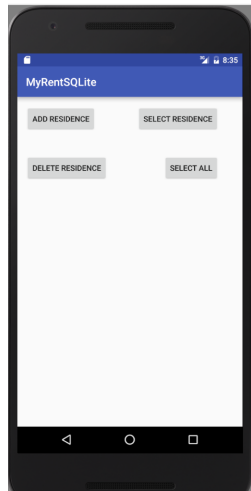
```
public void deleteResidence(Residence residence) {
    SQLiteDatabase db = this.getWritableDatabase();
    try {
        db.delete("tableResidences", "id" + "=?", new
            String[]{residence.id.toString() + ""});
    } catch (Exception e) {
        Log.d(TAG, "delete residence failure: " + e.getMessage
            ());
    }
}
```



SQLite

Read (all records)

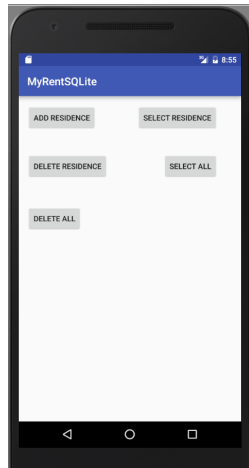
```
public List<Residence> selectAllResidences() {  
  
    List<Residence> residences  
        = new ArrayList<Residence>();  
  
    String query =  
        "SELECT * FROM " + "tableResidences";  
        ...  
        ...  
    return residences;  
}
```



SQLite

Delete (all records)

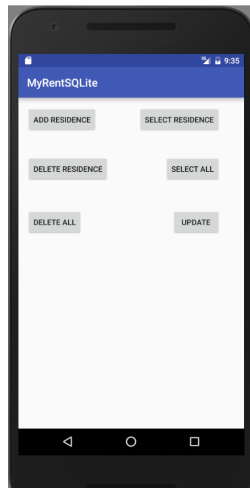
```
public void deleteAllResidences() {  
    SQLiteDatabase db = this.getWritableDatabase();  
    try {  
        db.execSQL("delete from tableResidences");  
    } catch (Exception e) {  
        Log.d(TAG, "delete residences failure: " + e.getMessage  
            ());  
    }  
}
```



SQLite

Update (single record - preserve primary key)

```
public void updateResidence(Residence residence) {
    SQLiteDatabase db = this.getWritableDatabase();
    try {
        ContentValues values = new ContentValues();
        values.put(GEOLOCATION, residence.geolocation);
        ...
        values.put(PHOTO, residence.photo);
        db.update("tableResidences", ...);
    } catch (Exception e) {
        Log.d(TAG, "update residences failure: " + e.
            getMessage());
    }
}
```



Android Debug Bridge (ADB)

Examine tables using commandline tools

ADB Shell Commands

```
// Launch the adb shell
adb shell

// Change into data folder
cd data/data/

// List the databases
ls databases

// Change into database folder
cd sqlite.myrentsqlite

// Run sqlite3 to access tables
sqlite3 residences.db
```



Referenced Material

1. SQLite Documentation

`https://www.sqlite.org/docs.html`

[Accessed 2016-10-10]



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