ANALISING iOS SQLITE DATABASE

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Abstract: *This chapter is about modifying an existing SQLite database during runtime. It is closely related to the chapter of creating Databases. What makes SQLite stand out amongst database engines in my opinion is its ability to allow an user to modify a database during runtime which can be very useful.*
Cuvinte cheie: *iOS, SQLite Database, sqlite3-Methods*

1. Introduction

SQLite is an Open Source database. SQLite supports standard relational database features like SQL syntax, transactions and prepared statements. The database requires limited memory at runtime (approx. 250 KByte) which makes it a good candidate from being embedded into other runtimes.

2. Strengths

1. It's lightweight.
2. It contains an embedded SQL engine, so almost all of your SQL knowledge can be applied.
3. It's very reliable.
4. It's fully supported by Apple, as it's used in both iOS and Mac OS.

2.1 SQLite in iOS

SQLite is embedded into every iOS device. Using an SQLite database in iOS does not require a setup procedure or administration of the database. You only have to define the SQL statements for creating and updating the database. Afterwards the database is automatically managed for you by the iOS platform. The database that can be used by apps in iOS (and also used by iOS) is called **SQLite**, and it's a*relational database*. It is contained in a C-library that is embedded to the app that is about to use it.

2.2. Creating and updating database with SQLite3DBSample

To create and upgrade a database in your IOS application you create a subclass of the SQLite3DBSample class.

sqlite3_open: This function is used to create and open a database file. It accepts two parameters, where the first one is the database file name, and the second a handler to the database. If the file does not exist, then it creates it first and then it opens it, otherwise it just opens it.

sqlite3_step: This function actually executes a SQL statement (query) prepared with the previous function. It can be called just once for executable queries (insert, update, delete), or multiple times when retrieving data. It's important to have in mind that it can't be called prior to the*sqlite3_preprare_v2* function.

sqlite3_column_count: This method's name it makes it easy to understand what is about. It returns the total number of columns (fields) a contained in a table.

sqlite3_finalize: It deletes a prepared statement from memory.

sqlite3_close: It closes an open database connection. It should be called after having finished any data exchange with the database, as it releases any reserved system resources.

2.3. Example of implementing SQLight on iOS

```
// Open the database.
BOOL openDatabaseResult = sqlite3_open([databasePath UTF8String], &sqlite3Database);
if(openDatabaseResult == SQLITE_OK)
// Declare a sqlite3_stmt object in which will be stored the query after having been compiled into a
SQLite statement.
sqlite3_stmt *compiledStatement;
// Release the compiled statement from memory.
 sqlite3_finalize(compiledStatement);
// Close the database.
sqlite3_close(sqlite3Database);
```

3. Conclusion

I've always believed that working with databases is the best possible solution when dealing with data, and having relevant tools or libraries ready for use is a must for every developer. SQLite might not be as powerful as other databases or database management systems, however is light and maybe the most suitable solution for a mobile platform.

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