**PRACTICAL # 10**

**OBJECT:**

Data Storage using SQLite

**THEORY:**

Android provides a more advanced way of storing data, with the support of lightweight database. SQLite supports this database.

Structured Query Language (SQL): is a language for searching and updating a database. A standard syntax that is used by all database software implementations, and is generally case-insensitive. A declarative language: describes what data you are seeking, not exactly how to find it.

Android uses SQLite, a light weight implementation of SQL. SQLite is a library, included in the app’s process.

**SQLite**

SQLite supports all the relational database features.

To access SQLite database, you don't need to establish any kind of connections for it like JDBC,ODBC e.t.c

The main package is android.database.sqlite that contains classes to manage the databases.

**Database – Creation**

Call method openOrCreateDatabase with your database name and mode as a parameter.

It returns an instance of SQLite database. Its syntax is:

*SQLiteDatabase mydatabase = openOrCreateDatabase("your\_database\_name",MODE\_PRIVATE, null);*

The syntax to open a database is:

*openDatabase(String path, SQLiteDatabase.CursorFactory factory, int flags, DatabaseErrorHandler errorHandler)*

This method only opens the existing database with the appropriate flag mode. The common flags modes are OPEN\_READWRITE OPEN\_READONLY

**SQLiteDatabase Class:**

The class to use SQLite.

*SQLiteDatabase db = openOrCreateDatabase( "name", null);*

*db.execSQL("SQL query");*

SQLiteDatabase Queries :

**Create Table and Insert Data**

Create table and insert data into table using execSQL method defined in SQLiteDatabase class.

*myDatabase.execSQL("CREATE TABLE IF NOT EXISTS users(Username VARCHAR, Password VARCHAR);");*

*myDatabase.execSQL("INSERT INTO users VALUES('admin','admin');");*

**Database – Fetching:**

Data is retrieved from database using an object of the Cursor class.

rawQuery method of this returns a resultSet with the cursor pointing to the table.

*Cursor resultSet = myDatabase.rawQuery("Select \* from users",null);*

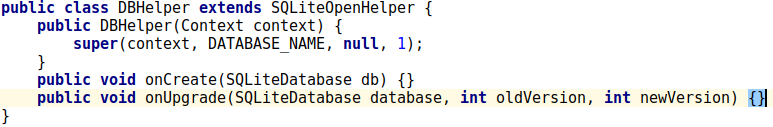
*resultSet.moveToFirst();*

*String username = resultSet.getString(0);*

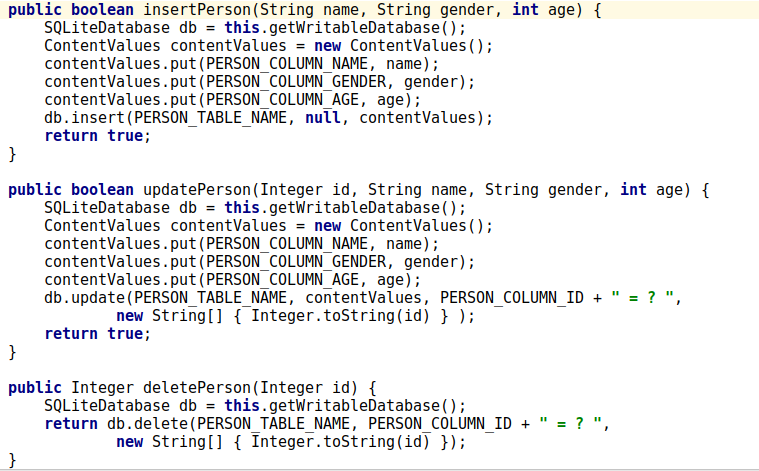
*String password = resultSet.getString(1);*

To managing the database operations, Android provides a helper class called SQLiteOpenHelper.

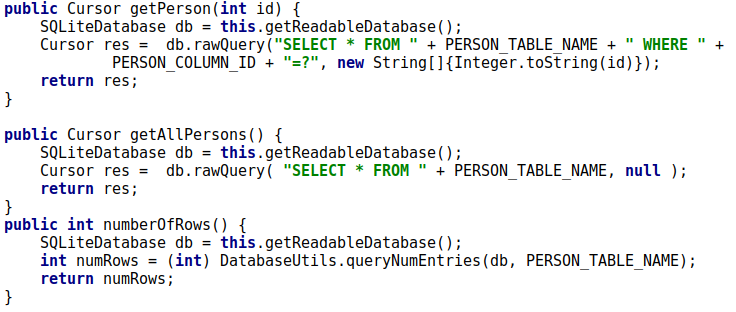
This class manages the creation and updates of the database. Its syntax is:



**Accessing and Manipulating Data:**



**Retrieving the Data:**



**ACTIVITIES**

**Activity 1**

Create a new Android project for contacts application. The app should create a Contacts database, with users table in it. All the database operations should be performed on it.

**REVIEW QUESTIONS**

1. What type of database is SQLite?
2. Which package contains classes to manages SQLite in Android?
3. Which database helper class is available to manage database operations conveniently?
4. What is the result object returned in response to a select query?