Practical No. 5

Title: Android program to perform CRUD operation using SQLite DB

Aim: Create an application to demonstrate CRUD operations using SQLite DB

Introduction

What is SQLite?

SQLite is an SQL Database. In SQL database, we store data in tables. The tables are the structure of storing data consisting of rows and columns. We are not going in depth of what is an SQL database and how to work in SQL database.

What is CRUD?
As the heading tells you here, we are going to learn the CRUD operation in SQLite Database. **But what is CRUD? CRUD** is nothing but an abbreviation for the basic operations that we perform in any database. And the operations are

- **Create**
- **Read**
- **Update**
- **Delete**

Exercise - Create android application to demonstrate CRUD operations using SQLite DB

Implementation:
Program:

MainActivity.java

```
package com.example.sqlite1;

import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
```

```
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

   private TextView t1;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
       super.onCreate(savedInstanceState);
       setContentView(R.layout.activity_main);

       t1=findViewById(R.id.textView);

       dhhandler dbh1=new dhhandler(this);
       SQLiteDatabase db1=dbh1.getReadableDatabase();

       Cursor cs1=db1.rawQuery("SELECT name,roll_no FROM STUDENTS",new
String[]{});
       if(cs1!=null)
       {
           cs1.moveToFirst();
       }
       StringBuilder sb1=new StringBuilder();

       do {
           String name=cs1.getString(0);
           String roll=cs1.getString(1);
           sb1.append("Name: "+name+" Roll no: "+roll+"\n");
       }while(cs1.moveToNext());

       cs1.close();

       t1.setText(sb1.toString());
   }
}
```

Dbhandler.java

```
package com.example.sqlite1;

import android.content.ContentValues;
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class dhhandler extends SQLiteOpenHelper {

   private static final String dbname="mydb";
   private static final int version=1;

   public dhhandler(Context context) {
       super(context,dbname,null,version);
   }


   @Override
   public void onCreate(SQLiteDatabase db) {
       String sql1="CREATE TABLE students(_id INTEGER PRIMARY KEY
AUTOINCREMENT,name text,roll_no text)";
       db.execSQL(sql1);
       add_student("Aishwarya Jadhav","19",db);
       add_student("Tushar Vedpathak","60",db);
       add_student("Suraj Koli","50",db);
       add_student("Sayali Gurav","16",db);
       add_student("Sagar Pawar","49",db);
   }

   @Override
   public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1)
{

   }
   public void add_student(String name,String roll_no,SQLiteDatabase
db)
   {
       ContentValues values=new ContentValues();
       values.put("name",name);
       values.put("roll_no",roll_no);
       db.insert("students",null,values);
```

```
        }
    }
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   tools:context=".MainActivity">

   <TextView
       android:id="@+id/textView"
       android:layout_width="wrap_content"
       android:layout_height="wrap_content"
       android:text="TextView"
       tools:layout_editor_absoluteX="174dp"
       tools:layout_editor_absoluteY="336dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Output:

Name: Aishwarya Jadhav Roll no: 19
Name: Tushar Vedpathak Roll no: 60
Name: Suraj Koli Roll no: 50
Name: Sayali Gurav Roll no: 16
Name: Sagar Pawar Roll no: 49