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.db;

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);

        dbhandler h1=new dbhandler(this);
        SQLiteDatabase database=h1.getReadableDatabase();

        Cursor cs=database.rawQuery("SELECT name, roll_no FROM
STUDENTS",new String[]{});

        if(cs != null)
        {
            cs.moveToFirst();
        }
            StringBuilder sb = new StringBuilder();

            do {
                String name = cs.getString(0);
                String roll = cs.getString(1);
                sb.append("Name:- " +name+ "roll_no:-" +roll);
            } while (cs.moveToNext());

        cs.close();


            t1.setText(sb.toString());


        }
    }
    }
```

Dbhandler.java

```
package com.example.db;
import android.content.ContentValues;
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
public class dbhandler extends SQLiteOpenHelper {

    private static final String dbname="my_db";
    private static final int version = 1;
 public dbhandler(Context context)
 {
    super(context,dbname,null,version);
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        String create = "CREATE TABLE students (_id INTEGER PRIMARY KEY
AUTOINCREMENT,name TEXT,roll_no TEXT)";
        db.execSQL(create);

        addstudent("Amey","1",db);
        addstudent("Vishal","2",db);

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

    }
 //create object of contentvalues to add
    public void addstudent(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"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Output: