**Practical: 15**

**Develop Android Application for local database connectivity and performing basic database operations (select, insert, update, delete) using SQLiteDatabase and SQLiteOpenHelper Classes.**

**Manifest File:**

<uses-permission android:name="android.permission.READ\_EXTERNAL\_STORAGE" />

**XML File:**

<LinearLayout

xmlns:android=*"http://schemas.android.com/apk/res/android"*

xmlns:tools=*"http://schemas.android.com/tools"*

android:layout\_width=*"match\_parent"*

android:layout\_height=*"match\_parent"*

android:orientation=*"vertical"*

tools:context=*".MainActivity"*>

<EditText

android:id=*"@+id/idEdtName"*

android:layout\_width=*"match\_parent"*

android:layout\_height=*"wrap\_content"*

android:layout\_margin=*"10dp"*

android:hint=*"Enter Name"* />

<EditText

android:id=*"@+id/idEdtRoll"*

android:layout\_width=*"match\_parent"*

android:layout\_height=*"wrap\_content"*

android:layout\_margin=*"10dp"*

android:hint=*"Enter RollNo"* />

<Button

android:id=*"@+id/idBtnInsert"*

android:layout\_width=*"match\_parent"*

android:layout\_height=*"wrap\_content"*

android:layout\_margin=*"10dp"*

android:text=*"Insert"*

android:textAllCaps=*"false"* />

</LinearLayout>

**DBHandler.java**

**package** com.example.pr15;

**import** android.content.ContentValues;

**import** android.content.Context;

**import** android.database.sqlite.SQLiteDatabase;

**import** android.database.sqlite.SQLiteOpenHelper;

**public** **class** DBHandler **extends** SQLiteOpenHelper {

// creating a constant variables for our database.

**private** **static** **final** String *DB\_NAME* = "studb";

// below int is our database version

**private** **static** **final** **int** *DB\_VERSION* = 1;

// below variable is for our table name.

**private** **static** **final** String *TABLE\_NAME* = "student";

**private** **static** **final** String *ID\_COL* = "id";

**private** **static** **final** String *NAME\_COL* = "name";

**private** **static** **final** String *ROLL\_COL* = "roll";

// creating a constructor for our database handler.

**public** DBHandler(Context context) {

**super**(context, *DB\_NAME*, **null**, *DB\_VERSION*);

}

// below method is for creating a database by running a sqlite query

@Override

**public** **void** onCreate(SQLiteDatabase db) {

String query = "CREATE TABLE " + *TABLE\_NAME* + " ("

+ *ID\_COL* + " INTEGER PRIMARY KEY AUTOINCREMENT, "

+ *NAME\_COL* + " TEXT,"

+ *ROLL\_COL* + " TEXT)";

db.execSQL(query);

}

// this method is use to add new course to our sqlite database.

**public** **void** addNewstud(String Name, String Roll) {

// our sqlite database and calling writable method

// as we are writing data in our database.

SQLiteDatabase db = **this**.getWritableDatabase();

// on below line we are creating a

// variable for content values.

ContentValues values = **new** ContentValues();

// on below line we are passing all values

// along with its key and value pair.

values.put(*NAME\_COL*, Name);

values.put(*ROLL\_COL*, Roll);

// after adding all values we are passing

// content values to our table.

db.insert(*TABLE\_NAME*, **null**, values);

db.close();

}

@Override

**public** **void** onUpgrade(SQLiteDatabase db, **int** oldVersion, **int** newVersion) {

// this method is called to check if the table exists already.

db.execSQL("DROP TABLE IF EXISTS " + *TABLE\_NAME*);

onCreate(db);

}

}

**MainActivity.java**

**package** com.example.pr15;

**import** android.app.Activity;

**import** android.os.Bundle;

**import** android.view.View;

**import** android.widget.Button;

**import** android.widget.EditText;

**import** android.widget.Toast;

//import androidx.appcompat.app.AppCompatActivity;

**public** **class** MainActivity **extends** Activity {

**private** EditText NameEdt, RollEdt;

**private** Button insertBtn;

**private** DBHandler dbHandler;

@Override

**protected** **void** onCreate(Bundle savedInstanceState) {

**super**.onCreate(savedInstanceState);

setContentView(R.layout.*activity\_main*);

// initializing all our variables.

NameEdt = (EditText)findViewById(R.id.*idEdtName*);

RollEdt = (EditText)findViewById(R.id.*idEdtRoll*);

insertBtn = (Button)findViewById(R.id.*idBtnInsert*);

// creating a new dbhandler class

// and passing our context to it.

dbHandler = **new** DBHandler(MainActivity.**this**);

insertBtn.setOnClickListener(**new** View.OnClickListener() {

@Override

**public** **void** onClick(View v) {

String Name = NameEdt.getText().toString();

String Roll = RollEdt.getText().toString();

// validating if the text fields are empty or not.

**if** (Name.isEmpty() && Roll.isEmpty())

{

Toast.*makeText*(MainActivity.**this**, "Please enter all the data..", Toast.*LENGTH\_SHORT*).show();

**return**;

}

// on below line we are calling a method to add new

// student to sqlite data and pass all our values to it.

dbHandler.addNewstud(Name, Roll);

Toast.*makeText*(MainActivity.**this**, "Record has been added.", Toast.*LENGTH\_SHORT*).show();

NameEdt.setText("");

RollEdt.setText("");

}

});

}

}

 