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SECTION: 5CSE-04

SQLITE

1.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:background="@drawable/bcg"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="124dp"
        android:layout_height="43dp"
        android:fontFamily="sans-serif-black"
        android:text="SQLITE"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.458"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.067" />

    <EditText
        android:id="@+id/editTextText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="enter id"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.182" />

    <EditText
        android:id="@+id/editTextText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="enter name"
        android:inputType="text"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.298" />
```

```
<EditText
    android:id="@+id/editTextText3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="enter course"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.402" />
```

```
<EditText
    android:id="@+id/editTextText4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="enter marks"
    android:inputType="text"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.516" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Insert"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.196"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.639" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Update"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.721"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.639" />
```

```
<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Delete"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.196"
```

```

        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.815" />

        <Button
            android:id="@+id/button4"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Display"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.762"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.815" />

    </androidx.constraintlayout.widget.ConstraintLayout>

```

2.Mainactivity.java:

```

package com.example.sqlite;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    EditText ed1,ed2,ed3,ed4;
    Button bt1,bt2,bt3,bt4;
    SQLite_helper myDb; //reference
    @SuppressWarnings("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        myDb=new SQLite_helper(this);//creation of obj of java cls -
>constructor invokes,db created automatically
        ed1=findViewById(R.id.editTextText);
        ed2=findViewById(R.id.editTextText2);
        ed3=findViewById(R.id.editTextText3);
        ed4=findViewById(R.id.editTextText4);
        bt1=findViewById(R.id.button);
        bt2=findViewById(R.id.button2);
        bt3=findViewById(R.id.button3);
        bt4=findViewById(R.id.button4);
        bt1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                boolean isInserted= myDb.insertData(ed2.getText().toString(),
                    ed3.getText().toString(),
                    ed4.getText().toString());
                if (isInserted==true)
                    Toast.makeText(MainActivity.this, "Data Inserted",

```

```

Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this, "Data not Inserted",
Toast.LENGTH_SHORT).show();
        }
    });
    bt2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            boolean isUpdate= myDb.updateData(ed1.getText().toString(),
            ed2.getText().toString(),
            ed3.getText().toString(),
            ed4.getText().toString());
            if (isUpdate==true)
                Toast.makeText(MainActivity.this, "Data Updated",
Toast.LENGTH_SHORT).show();
            else
                Toast.makeText(MainActivity.this, "Data not Updated",
Toast.LENGTH_SHORT).show();
        }
    });
    bt3.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Integer deletedRows= myDb.deleteData(ed1.getText().toString());
            if(deletedRows>0)
                Toast.makeText(MainActivity.this, "Data Deleted",
Toast.LENGTH_SHORT).show();
            else
                Toast.makeText(MainActivity.this, "Data not Deleted",
Toast.LENGTH_SHORT).show();
        }
    });
    bt4.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View view) {
            Cursor res=myDb.displayData();
            if (res.getCount()==0){
                showMessage("Error","No Data Found... ");
                return;
            }
            StringBuffer buffer=new StringBuffer();
            while (res.moveToNext()){ //res iterate
                buffer.append("Id :"+res.getString(0)+"\n");
                //0 is pointing to 1st col of table
                buffer.append("Name :"+res.getString(1)+"\n");
                buffer.append("Course :"+res.getString(2)+"\n");
                buffer.append("Marks :"+res.getString(3)+"\n");
            }
            showMessage("Data",buffer.toString());
        }
    });
}

private void showMessage(String title, String Message){
    AlertDialog.Builder builder=new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(Message);
    builder.show();
}

```

```
}  
}
```

3.SQLite_helper:

```
package com.example.sqlite;  
  
import androidx.appcompat.app.AlertDialog;  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.annotation.SuppressLint;  
import android.database.Cursor;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
    EditText ed1,ed2,ed3,ed4;  
    Button bt1,bt2,bt3,bt4;  
    SQLite_helper myDb; //reference  
    @SuppressLint("MissingInflatedId")  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        myDb=new SQLite_helper(this); //creation of obj of java cls -  
>constructor invokes,db created automatically  
        ed1=findViewById(R.id.editTextText);  
        ed2=findViewById(R.id.editTextText2);  
        ed3=findViewById(R.id.editTextText3);  
        ed4=findViewById(R.id.editTextText4);  
        bt1=findViewById(R.id.button);  
        bt2=findViewById(R.id.button2);  
        bt3=findViewById(R.id.button3);  
        bt4=findViewById(R.id.button4);  
        bt1.setOnClickListener(new View.OnClickListener() {  
            @Override  
            public void onClick(View view) {  
                boolean isInserted= myDb.insertData(ed2.getText().toString(),  
                    ed3.getText().toString(),  
                    ed4.getText().toString());  
                if (isInserted==true)  
                    Toast.makeText(MainActivity.this, "Data Inserted",  
Toast.LENGTH_SHORT).show();  
                else  
                    Toast.makeText(MainActivity.this, "Data not Inserted",  
Toast.LENGTH_SHORT).show();  
            }  
        });  
        bt2.setOnClickListener(new View.OnClickListener() {  
            @Override  
            public void onClick(View view) {  
                boolean isUpdate= myDb.updateData(ed1.getText().toString(),  
                    ed2.getText().toString(),  
                    ed3.getText().toString(),  
                    ed4.getText().toString());  
                if (isUpdate==true)  
                    Toast.makeText(MainActivity.this, "Data Updated",
```

```

Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this, "Data not Updated",
Toast.LENGTH_SHORT).show();
    }
});
bt3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Integer deletedRows= myDb.deleteData(ed1.getText().toString());
        if(deletedRows>0)
            Toast.makeText(MainActivity.this, "Data Deleted",
Toast.LENGTH_SHORT).show();
        else
            Toast.makeText(MainActivity.this, "Data not Deleted",
Toast.LENGTH_SHORT).show();
    }
});
bt4.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Cursor res=myDb.displayData();
        if (res.getCount()==0){
            showMessage("Error","No Data Found... ");
            return;
        }
        StringBuffer buffer=new StringBuffer();
        while (res.moveToNext()){ //res iterate
            buffer.append("Id :"+res.getString(0)+"\n");
            //0 is pointing to 1st col of table
            buffer.append("Name :"+res.getString(1)+"\n");
            buffer.append("Course :"+res.getString(2)+"\n");
            buffer.append("Marks :"+res.getString(3)+"\n");
        }
        showMessage("Data",buffer.toString());
    }
});
}
private void showMessage(String title, String Message){
    AlertDialog.Builder builder=new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(Message);
    builder.show();
}
}
}

```

4.output:

