

Department of MCA

Mobile Application Development – Integrated Laboratory Experiments(24MCA203)

Sl.no	Lab Programs
1.	Develop a mobile application to display user profile with 3 UI activities using intents.
2.	Design an application that contains Phone Contacts in vertical linear manner. Selected contact appears at the top of the list with a large, italicized font and a blue background.
3.	Create an application that uses Layout Managers and Event Listeners.
4.	Develop a mobile application to list the tourist places of Karnataka using List View.
5.	Develop a mobile application to register a form in first activity and display the registered information in second activity using intents.
6.	Develop a standard calculator application to perform basic calculations like addition, subtraction, multiplication and division.
7.	Devise an application that draws basic graphical primitives (rectangle, circle) on the screen.
8.	Build an mobile application that create, save, update and delete data in a database.

Program 1

Develop a mobile application to display user profile with 3 UI activities using intents.

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"
    android:background="#B697EE"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/bper"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Personal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.207"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.439" />

    <Button
        android:id="@+id/baca"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Academic"
        android:onClick="send"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.699"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.439"
        tools:ignore="HardcodedText,OnClick,UsingOnClickInXml" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="96dp"
        android:layout_height="148dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.104"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.073"
        app:srcCompat="@drawable/sowmya" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="155dp"
        android:layout_height="118dp"
        android:textSize="22dp"
        android:text="Name \n Sem \nDept of MCA \n NMIT"
        app:layout_constraintBottom_toBottomOf="parent"
```

```

app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.742"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.089" />

```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

main activity.java

```

package com.example.profile;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    Button bp, ba;
    Intent personal, academic;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        bp = findViewById(R.id.bper);
        ba = findViewById(R.id.baca);
        bp.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Toast.makeText(getApplicationContext(),"Hello
MCA",Toast.LENGTH_SHORT).show();
                personal = new Intent(getApplicationContext(), personal.class);
                startActivity(personal);
            }
        });

        ba.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                academic = new Intent(getApplicationContext(), academic.class);
                startActivity(academic);
            }
        });
    }
}

```

academic.java

```

package com.example.profile;
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class academic extends AppCompatActivity {

```

```

Button b;
Intent main;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_academic);
    b=(Button)findViewById(R.id.bahome);
    b.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            main = new Intent(getApplicationContext(), MainActivity.class);
            startActivity(main);
        }
    });
}
}

```

activity_academic.xml

```

<?xml version="1.0" encoding="utf-8"?>
<TableLayout 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"
    android:background="#03A9F4"
    tools:context=".academic">
    <TableRow>
        <TextView
            android:textAllCaps="true"
            android:textSize="20dp"
            android:textStyle="bold"
            android:layout_width="match_parent"
            android:layout_height="100dp"
            android:text="Academic"
        />

    </TableRow>
    <TableRow>
        <TextView
            android:textAllCaps="true"
            android:textSize="18dp"
            android:textStyle="bold"
            android:layout_width="wrap_content"
            android:layout_height="100dp"
            android:text="Qualification"
        />
        <TextView
            android:textSize="18dp"
            android:layout_width="wrap_content"
            android:layout_height="100dp"
            android:text="M.C.A"
        />
    </TableRow>
    <TableRow>
        <TextView
            android:textAllCaps="true"
            android:textSize="18dp"
            android:textStyle="bold"
            android:layout_width="wrap_content"
            android:layout_height="100dp"

```

```

        android:text="Grade"
    />
<TextView
    android:textSize="18dp"
    android:layout_width="wrap_content"
    android:layout_height="100dp"
    android:text="Distinction"
/>
</TableRow>
<TableRow>
    <TextView
        android:textAllCaps="true"
        android:textSize="18dp"
        android:textStyle="bold"
        android:layout_width="wrap_content"
        android:layout_height="100dp"
        android:text="Technical \nSkills"
    />
    <TextView
        android:textSize="18dp"
        android:layout_width="wrap_content"
        android:layout_height="100dp"
        android:text="Java,Python,C++"
    />
</TableRow>
<TableRow>

    <Button
        android:id="@+id/bahome"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Home" />

</TableRow>

</TableLayout>

```

personal.java

```

package com.example.profile;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class personal extends AppCompatActivity {
    Button b;
    Intent main;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_personal);
        b = (Button) findViewById(R.id.bphome);
        b.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                main = new Intent(getApplicationContext(), MainActivity.class);
                startActivity(main);
            }
        })
    }
}

```

```

    });
}
}

```

activity_personal.xml

```

<?xml version="1.0" encoding="utf-8"?>
<TableLayout 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"
    android:background="#F3C9D8"
    tools:context=".personal">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="50dp"
        android:layout_gravity="center"
        android:text=" Personal Details"
        android:textAllCaps="true"
        android:textAppearance="@style/TextAppearance.AppCompat.Body1"
        android:textSize="34sp" />

    <TableRow>
        <TextView
            android:layout_width="104dp"
            android:layout_height="51dp"
            android:text="Age"
            android:textAllCaps="true"
            android:textSize="18dp"
            android:textStyle="bold" />

        <TextView
            android:layout_width="165dp"
            android:layout_height="match_parent"
            android:text="30"
            android:textSize="18dp" />
    </TableRow>
    <TableRow>

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="40dp"
            android:text="Nationality"
            android:textAllCaps="true"
            android:textSize="18dp"
            android:textStyle="bold" />

        <TextView
            android:layout_width="157dp"
            android:layout_height="match_parent"
            android:text="Indian"
            android:textSize="18dp" />
    </TableRow>
    <TableRow>
        <TextView
            android:textAllCaps="true"
            android:textSize="18dp"
            android:textStyle="bold"
            android:layout_width="wrap_content"

```

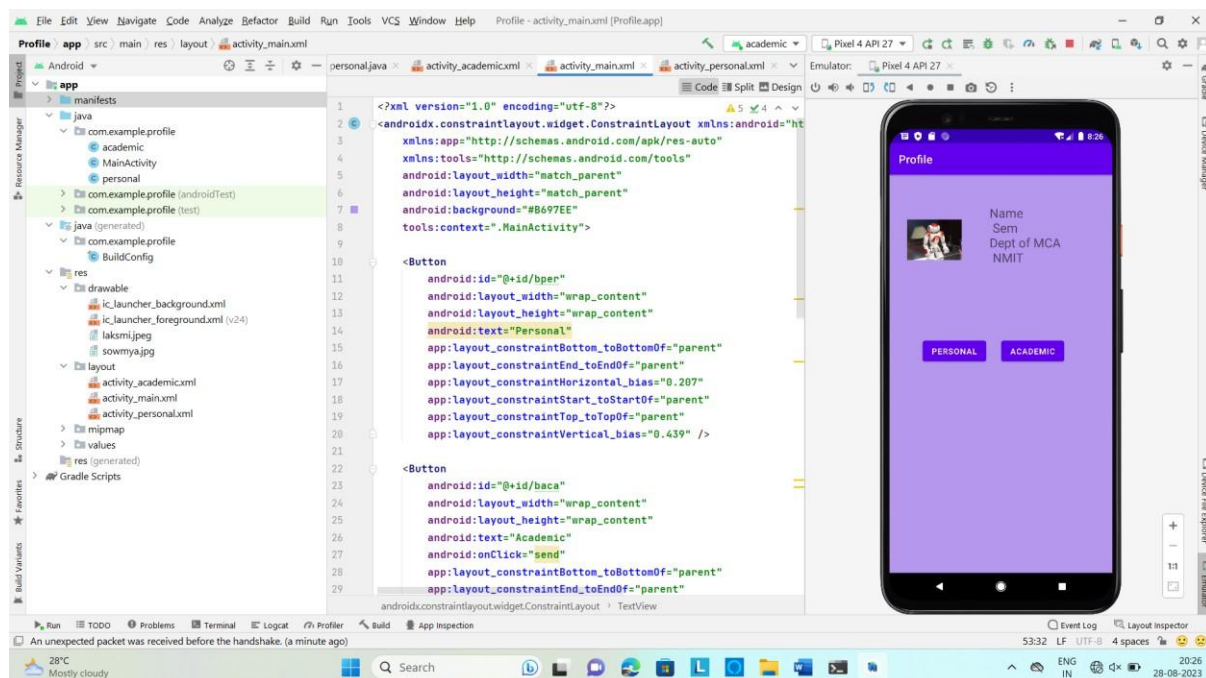
```

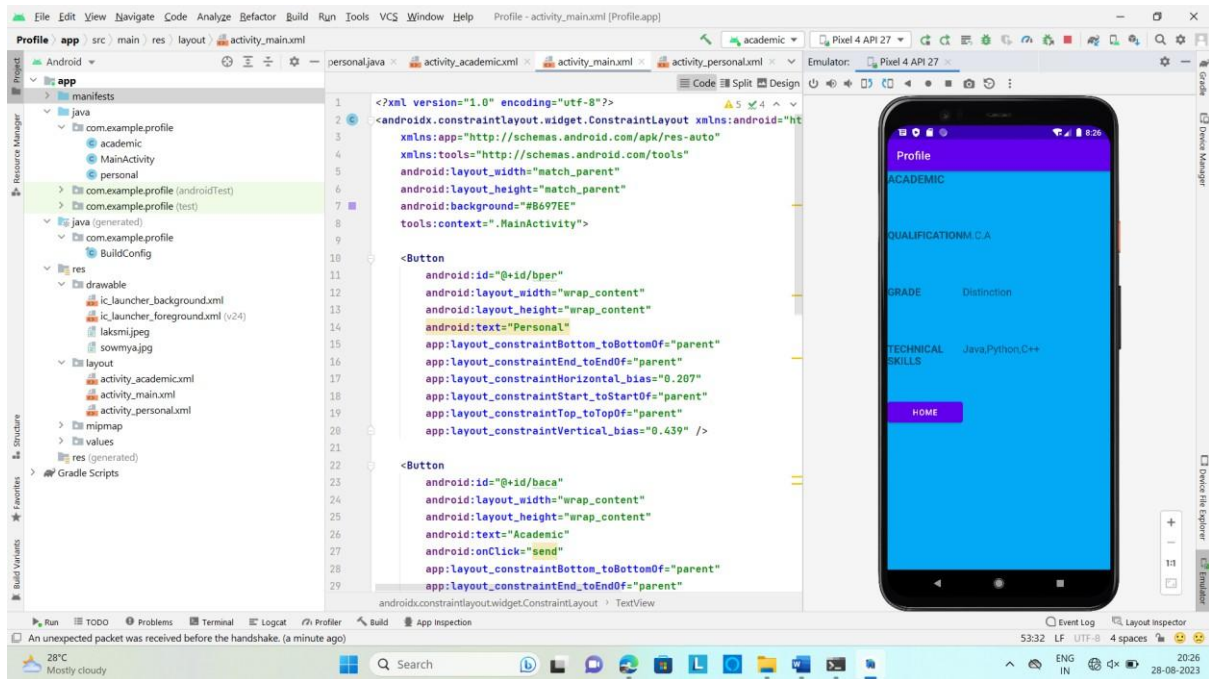
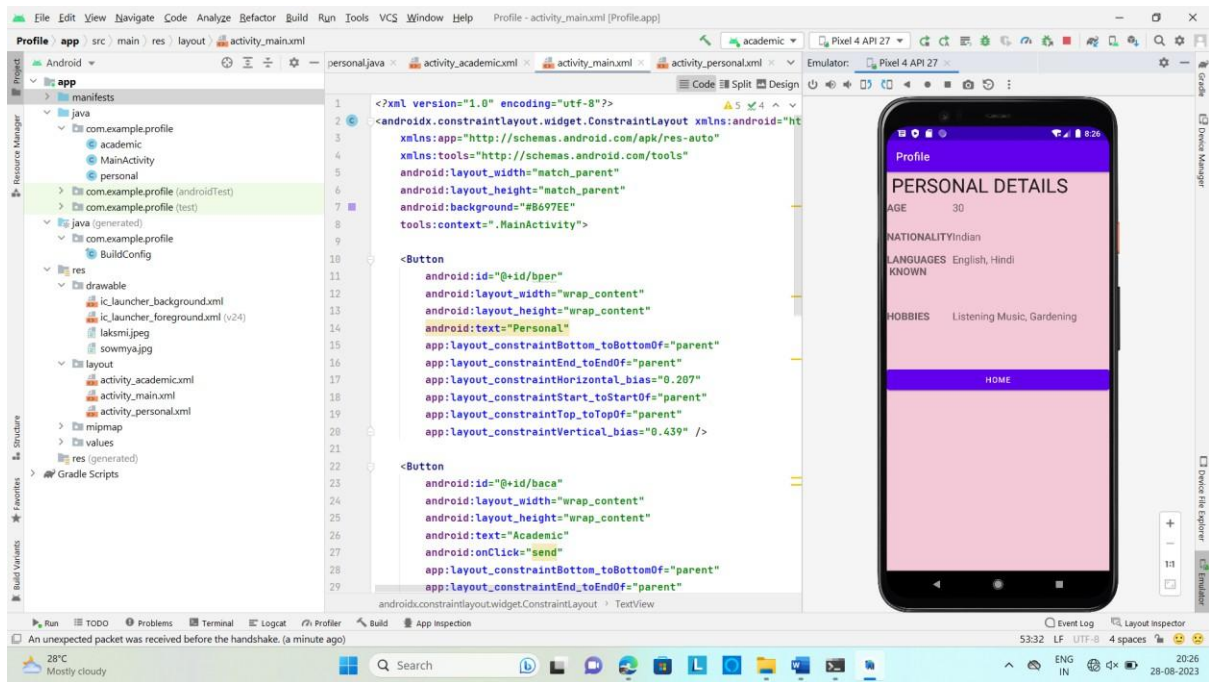
        android:layout_height="100dp"
        android:text="Languages\n Known"
    />

    <TextView
        android:layout_width="168dp"
        android:layout_height="100dp"
        android:text="English, Hindi"
        android:textSize="18dp" />
</TableRow>
<TableRow>
    <TextView
        android:textAllCaps="true"
        android:textSize="18dp"
        android:textStyle="bold"
        android:layout_width="wrap_content"
        android:layout_height="100dp"
        android:text="Hobbies"
    />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="100dp"
        android:text="Listening Music, Gardening"
        android:textSize="18dp"
    />
</TableRow>

<Button
    android:id="@+id/bphome"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:text="Home" />
</TableLayout>

```





Program 2

Design an application that contains phone contacts in vertical linear manner. Selected contacts appear at the top of the list with large italicized font and a blue background.

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.contactslist1">
    <uses-permission
android:name="android.permission.READ_CONTACTS"></uses-permission>
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

MainActivity.java

```
package com.example.contactslist1;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
import android.Manifest;
import android.content.ContentResolver;
```

```
import android.content.pm.PackageManager;
import android.database.Cursor;
import android.graphics.Color;
import android.graphics.Typeface;
import android.os.Bundle;
import android.os.Handler;
import android.provider.ContactsContract;
import android.view.View;
import android.widget.AbsListView;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TextView;
import java.util.ArrayList;
```

```
public class MainActivity extends AppCompatActivity {
    ListView listView;
    ArrayList<String> contactList;
    String name, number;
    final private int REQUEST_CODE = 1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        if (ContextCompat.checkSelfPermission(MainActivity.this,
Manifest.permission.READ_CONTACTS) !=
PackageManager.PERMISSION_GRANTED) {
            ActivityCompat.requestPermissions(MainActivity.this, new
```

```

String[] {Manifest.permission.READ_CONTACTS}, REQUEST_CODE);
    }
    listView = (ListView) findViewById(R.id.list);
    contactList = new ArrayList<String>();
    getContactsList();
    ArrayAdapter<String> arrayAdapter = new
ArrayAdapter<String>(MainActivity.this, R.layout.list, contactList);
    listView.setAdapter(arrayAdapter);
    listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {
        @Override
        public void onItemClick(AdapterView<?> adapterView, View view, int i,
long l) {

            int offset = 0;
            int duration = 500;
            final TextView tv = (TextView) view.findViewById(R.id.listText);
            listView.smoothScrollToPositionFromTop(i, offset, duration);

            Handler handler = new Handler();
            handler.postDelayed(new Runnable() {
                @Override
                public void run() {
                    tv.setTextSize(30);
                    tv.setBackgroundColor(Color.parseColor("#a4e9f9"));
                    tv.setTypeface(null, Typeface.ITALIC);
                }
            }, 500);

        }
    });
    listView.setOnScrollListener(new AbsListView.OnScrollListener() {
        @Override
        public void onScrollStateChanged(AbsListView absListView, int i) {
            TextView tv = (TextView) absListView.findViewById(R.id.listText);
            tv.setTextSize(22);
            tv.setBackgroundColor(Color.parseColor("#ffffff"));
        }
    });
}

```

```

        tv.setTypeface(null, Typeface.NORMAL);
    }

    @Override
    public void onScroll(AbsListView absListView, int i, int i1, int i2) {

    }

    });
}

public void getContactsList() {
    ContentResolver cr = getContentResolver();
    Cursor cur =
cr.query(ContactsContract.CommonDataKinds.Phone.CONTENT_URI, null, null,
null, null);
    while (cur.moveToNext()) {
        name =
cur.getString(cur.getColumnIndex(ContactsContract.CommonDataKinds.Phone.DISPLAY_NAME));
        number =
cur.getString(cur.getColumnIndex(ContactsContract.CommonDataKinds.Phone.NUMBER));
        contactList.add(name + " : " + number);
    }
    cur.close();
}
}

```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical" tools:context=".MainActivity">
```

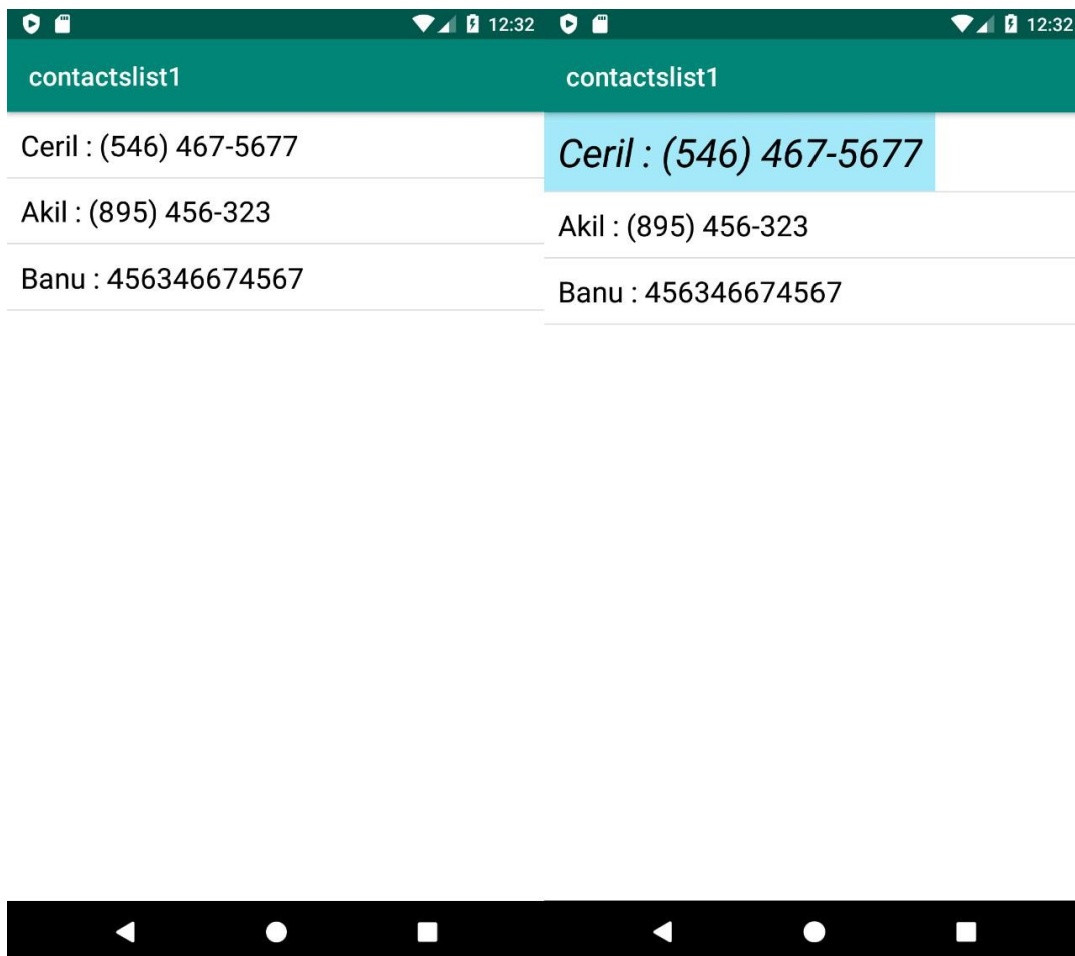
```
    <ListView
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:id="@+id/list"
        android:background="#ffffff"
        android:clickable="true">
    </ListView>
```

```
</LinearLayout>
<?xml version="1.0" encoding="utf-8"?>
<TextView android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textColor="#000000"
    android:background="#ffffff"
    android:textSize="22sp"
    android:id="@+id/listText"
    android:padding="10dp"
    xmlns:android="http://schemas.android.com/apk/res/android" />
```

list.xml

```
<?xml version="1.0" encoding="utf-8"?>
<TextView android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:textColor="#000000"
android:background="#ffffff"
android:textSize="22sp"
android:id="@+id/listText"

    android:padding="10dp"
xmlns:android="http://schemas.android.com/apk/res/android"
/>
```



Program 3

Create an application that uses Layout Managers and Event Listeners.

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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Mainactivity.java

```
package com.example.finalpgm3;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.view.GestureDetectorCompat;
import android.os.Bundle;
import android.view.GestureDetector;
import android.view.MotionEvent;
import android.widget.Toast;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {
    private GestureDetectorCompat mGestureDetector;
    private class GestureListener extends
        GestureDetector.SimpleOnGestureListener {
        @Override
        public boolean onSingleTapConfirmed(MotionEvent e) {

            Toast.makeText(MainActivity.this, "onSingleTapConfirmed", Toast.LENGTH_SHORT)
                .show();

            setContentView(R.layout.layoutone);
            return super.onSingleTapConfirmed(e);
        }
        @Override
        public boolean onDoubleTap(MotionEvent e) {

            Toast.makeText(MainActivity.this, "onDoubleTap", Toast.LENGTH_SHORT).show();
            setContentView(R.layout.layouttwo);
            return super.onDoubleTap(e);
        }
    }
}
```



```

    }
}

public boolean onTouchEvent(MotionEvent event) {
    mGestureDetector.onTouchEvent(event);
    return super.onTouchEvent(event);
}

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    mGestureDetector = new GestureDetectorCompat(this, new
GestureListener());
}
}

```

layouttwo.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:orientation="vertical" android:layout_height="wrap_content">

    <Button
        android:id="@+id/button2" android:layout_width="match_parent"
        android:layout_height="wrap_content" android:layout_weight="1"
        android:text="Button" />
    <Button android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" android:layout_weight="1"
        android:text="Button" />
</LinearLayout>

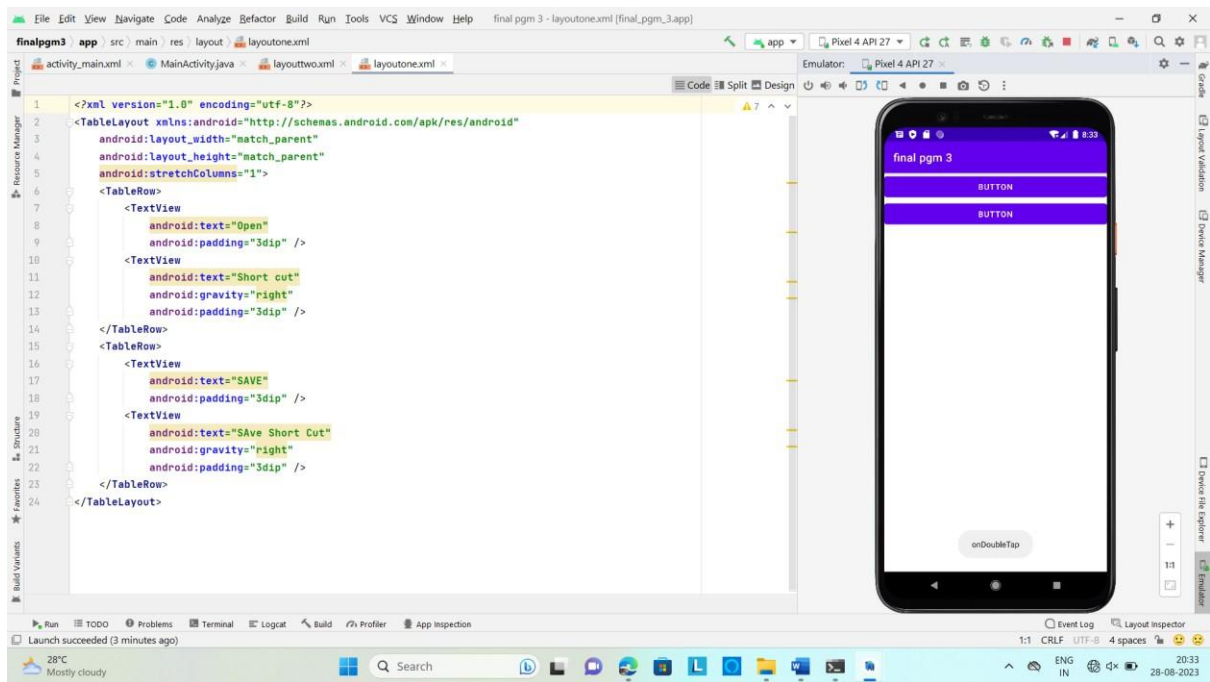
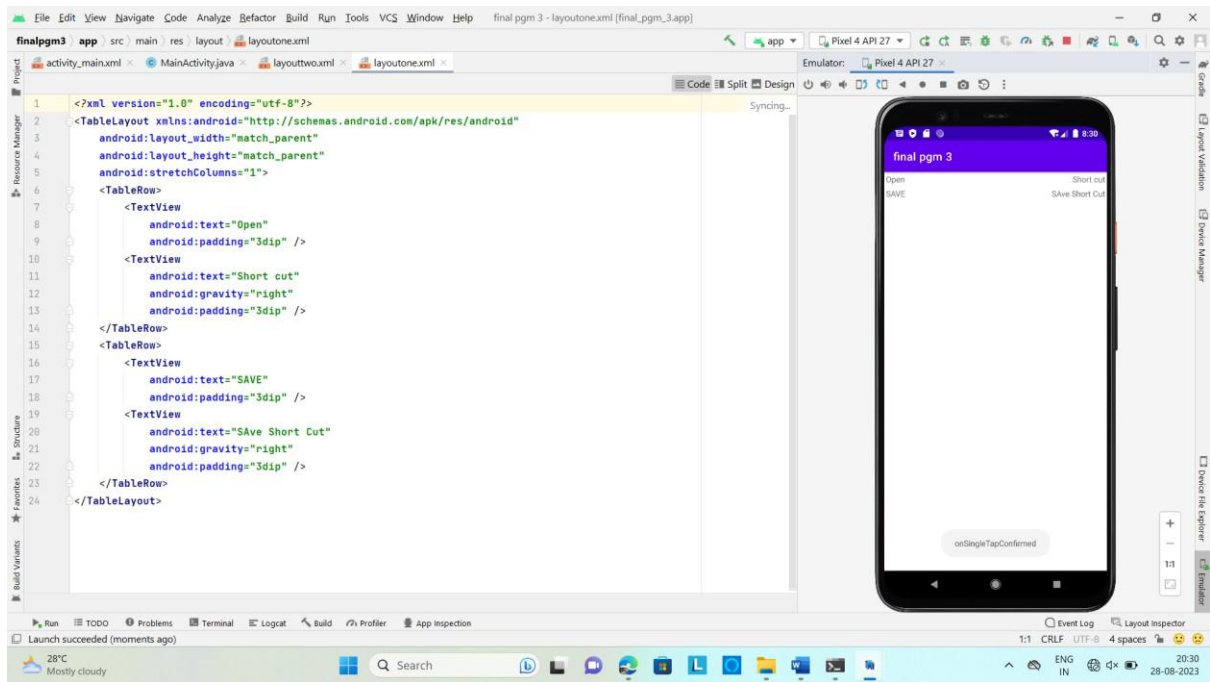
```

Layoutone.xml

```

<?xml version="1.0" encoding="utf-8"?>
<TableLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:stretchColumns="1">
    <TableRow>
        <TextView
            android:text="Open"
            android:padding="3dip" />
        <TextView
            android:text="Short cut"
            android:gravity="right"
            android:padding="3dip" />
    </TableRow>
    <TableRow>
        <TextView
            android:text="SAVE"
            android:padding="3dip" />
        <TextView
            android:text="SAve Short Cut"
            android:gravity="right"
            android:padding="3dip" />
    </TableRow>
</TableLayout>

```



Program 4

Develop a mobile application to list the tourist places of Karnataka using ListView.

Activity main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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">

    <ListView
        android:id="@+id/simpleListView"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:divider="@color/material_blue_grey_800"
        android:dividerHeight="1dp" />
</LinearLayout>
```

Main activity.java

```
package com.example.finalpgm4;

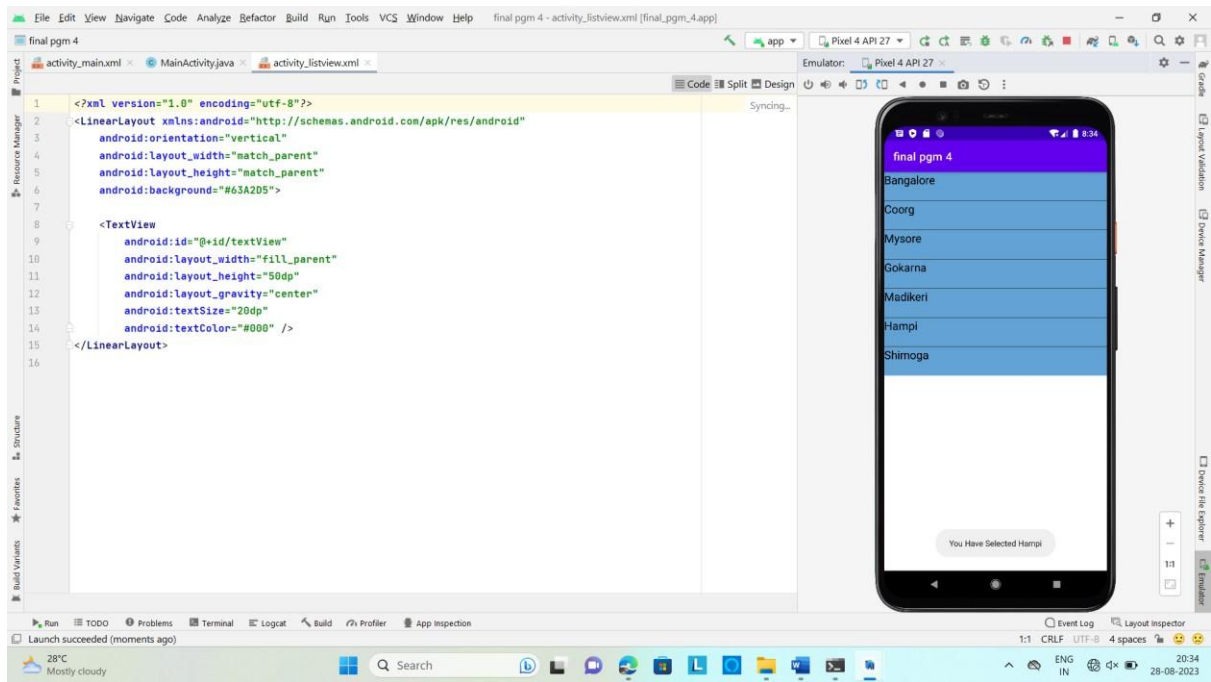
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    ListView simpleList;
    String touristplaces[] = {"Bangalore", "Coorg", "Mysore", "Gokarna",
        "Madikeri", "Hampi", "Shimoga"};
    @Override protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        simpleList = (ListView)findViewById(R.id.simpleListView);
        ArrayAdapter<String> arrayAdapter = new ArrayAdapter<String>(this,
            R.layout.activity_listview, R.id.textView, touristplaces);
        simpleList.setAdapter(arrayAdapter);
        simpleList.setOnItemClickListener(new
```

activity listview.xml

The screenshot displays the Android Studio environment. The main editor shows the XML code for the `activity_listview.xml` file. The code defines a `LinearLayout` with a vertical orientation, containing a `TextView` with the text "Bangalore". The virtual device preview on the right shows the app running on a Pixel 4 API 27. The app's interface displays a list of cities: Bangalore, Coorg, Mysore, Gokarna, Madikeri, Hampi, and Shimoga. A toast message "You Have Selected Bangalore" is visible at the bottom of the screen. The bottom status bar shows the time as 20:34 and the date as 28-08-2020.



Program 5

Develop a mobile application to register a form in first activity and display the registered information in second activity using intents.

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>

<TableLayout 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"
    android:background="#E6DDA6" tools:context=".MainActivity">

    <TableRow>

        <TextView android:text="Registration Form"
            android:layout_width="match_parent" android:textAllCaps="true"
            android:layout_height="60dp">

        </TextView>

    </TableRow>

    <TableRow>

        <TextView
            android:text="Enter Firstname" android:layout_width="wrap_content"
            android:layout_height="60dp">

        </TextView>

        <EditText android:id="@+id/fname" android:singleLine="true"
            android:layout_width="wrap_content" android:layout_height="60dp">

        </EditText>

    </TableRow>

    <TableRow>
```

```
<TextView
android:text="Enter Lastname"
android:layout_width="wrap_content"
    android:layout_height="60dp">
</TextView>

<EditText android:id="@+id/lname"
android:layout_width="wrap_content" android:layout_height="60dp">
</EditText>
</TableRow>

<TableRow>

<TextView
android:text="Enter Username"
    android:layout_width="wrap_content"
    android:layout_height="60dp">
</TextView>

<EditText android:id="@+id/uname"
android:layout_width="wrap_content"
    android:layout_height="60dp">
</EditText>
</TableRow>

<TableRow>

<TextView
android:text="Enter Password"
    android:layout_width="wrap_content"
    android:layout_height="60dp">
```



```
</TextView>
<EditText android:id="@+id/pwd"
android:layout_width="wrap_content"
android:layout_height="60dp">
</EditText>
</TableRow>
<TableRow>
<TextView
android:text="Re-Enter Password"
android:layout_width="wrap_content"
android:layout_height="60dp">
</TextView>
<EditText android:id="@+id/cpwd"
android:layout_width="wrap_content"
android:layout_height="60dp">
</EditText>
</TableRow>
<TableRow>
<TextView
android:text="Enter Emailid"
android:layout_width="wrap_content"
android:layout_height="60dp">
</TextView>
<EditText android:id="@+id/mail"
android:layout_width="wrap_content"
android:layout_height="60dp">
```

```
</EditText>
</TableRow>
<TableRow>
<Button
android:id="@+id/breg"
android:layout_width="match_parent"
android:layout_height="60dp"
android:text="Register"></Button>
</TableRow>
</TableLayout>
```

MainActivity.java

```
package com.example.registration;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {
    EditText lname,fname,uname,pwd,cpwd,mail,msg;
    Button reg;
    boolean flag;

    @Override
```

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);
    fname=(EditText)findViewById(R.id.fname);
    lname=(EditText)findViewById(R.id.lname);
    uname=(EditText)findViewById(R.id.uname);
    pwd=(EditText)findViewById(R.id.pwd);
    cpwd=(EditText)findViewById(R.id.cpwd);
    mail=(EditText)findViewById(R.id.mail);

    reg=(Button)findViewById(R.id.breg);
    reg.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            flag=true;

            if (fname.getText().toString().length() == 0) {
                fname.setError("Fname not entered by the user"); f
                name.requestFocus();
            }
            flag=false;

            if (lname.getText().toString().length() == 0) {
                lname.setError("Lname not entered by the user");
                lname.requestFocus();
            }
            flag=false;
        }
    })
}
```

```
if (uname.getText().toString().length() == 0) { uname.setError("User name not
entered by the user");
uname.requestFocus();
flag=false;
}
if (mail.getText().toString().length() == 0) {
pwd.setError("Emailid not entered");
pwd.requestFocus();
flag=false;
}
if (pwd.getText().toString().length() < 8) {
pwd.setError("password should be atleast 8 characters");
pwd.requestFocus();
flag=false;
}

if (!pwd.getText().toString().equals(cpwd.getText().toString())) {
cpwd.setError("Re-entered password do not match");
cpwd.requestFocus();
flag=false;
}
if(flag==true) {
Intent i = new Intent(getApplicationContext(),second.class);
}
}
});
```

```

Bundle b = new Bundle();
b.putString("namef", fname.getText().toString());
b.putString("namel", lname.getText().toString());
i.putExtras(b);
startActivity(i);
}
}

```

second.java

```

package com.example.registration;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class second extends AppCompatActivity { TextView t;

String fname, lname,msg;

@Override

protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_second);
t=(TextView)findViewById(R.id.msg2);

Bundle b =getIntent().getExtras(); fname=b.getString("namef");
lname=b.getString("namel"); msg="Welcome" + fname + " " + lname;

t.setText(msg);

}

}

```

Registration

REGISTRATION FORM

Enter Firstname

Lakshmi

Enter Lastname

Kesavan

Enter Username

lakshmikes

Enter Password

123456

Re-Enter Password

123456

Enter Emailid

lak.kesavan@gmail.com

REGISTER

Registration

REGISTRATION FORM

Enter Firstname

Lakshmi

Enter Lastname

Kesavan

Enter Username

lakshmikes

Enter Password

123456

Re-Enter Password

123456

Enter Emailid

lak.kesavan@gmail.com

REGISTER

REGISTRATION FORM

Enter Firstname

Lakshmi

Enter Lastname

Kesavan

Enter Username

lakshmikes

Enter Password

123456

Re-Enter Password

123456

Enter Emailid

lak.kesavan@gmail.com

REGISTER

password should be atleast 8 characters

Re-entered password do not match

q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123 , .

Program 6

Develop a Standard calculator application to perform basic calculations like addition, subtraction, multiplication and Division using 2 EditText and 1 TextView for displaying result.

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">

    <EditText
        android:id="@+id/e1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text=""
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.007" />

    <EditText
        android:id="@+id/e2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text=""
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.55"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.103" />

    <TextView
        android:id="@+id/result"
        android:layout_width="151dp"
        android:layout_height="73dp"
        android:text=""
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.2" />

    <Button
        android:id="@+id/badd"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="+"
        app:layout_constraintBottom_toBottomOf="parent"
```



```

        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.034"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.316" />
<Button
    android:id="@+id/bsub"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="-"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.402"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.316" />
<Button
    android:id="@+id/bmul"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="*"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.693"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.316" />
<Button
    android:id="@+id/bdiv"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="/"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.996"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.316" />

```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

Main activity.java

```

package com.example.finalpgm6;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

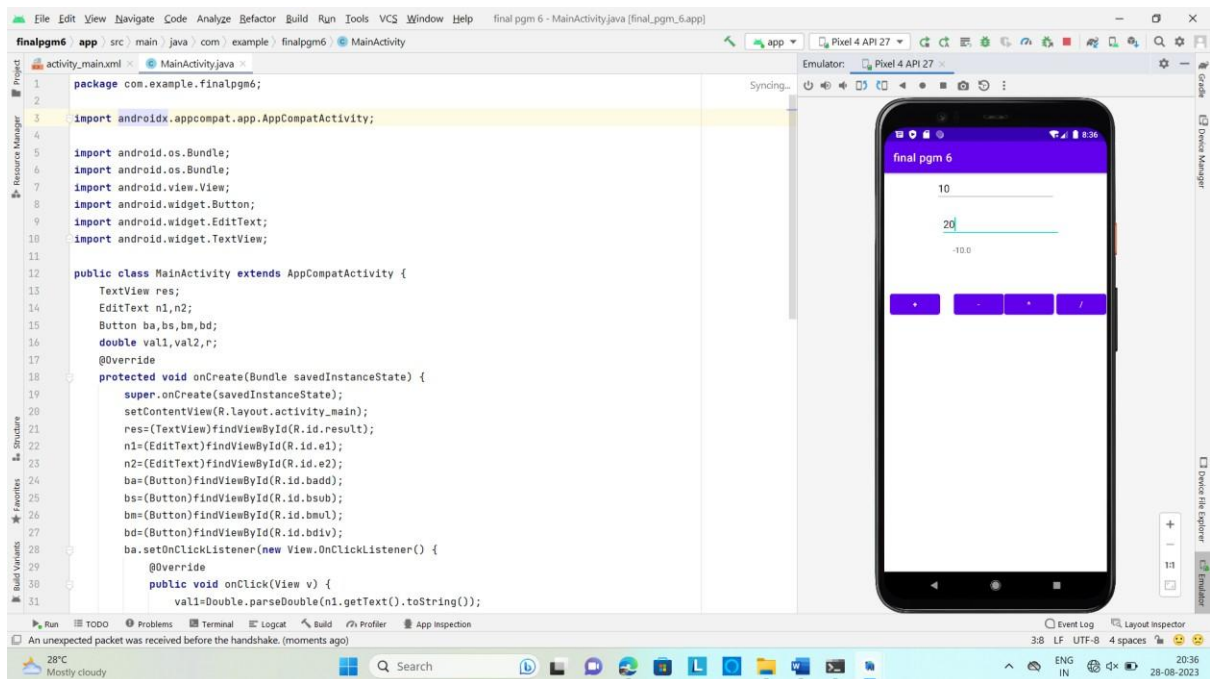
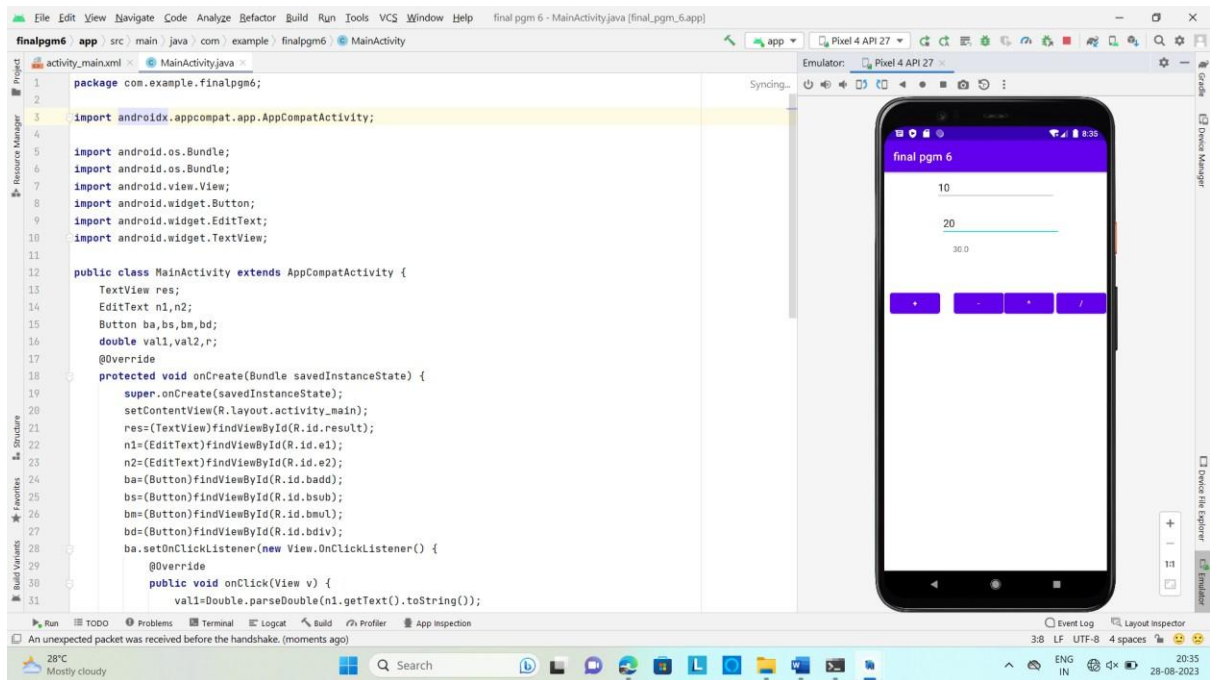
public class MainActivity extends AppCompatActivity {
    TextView res;
    EditText n1,n2;
    Button ba,bs,bm,bd;

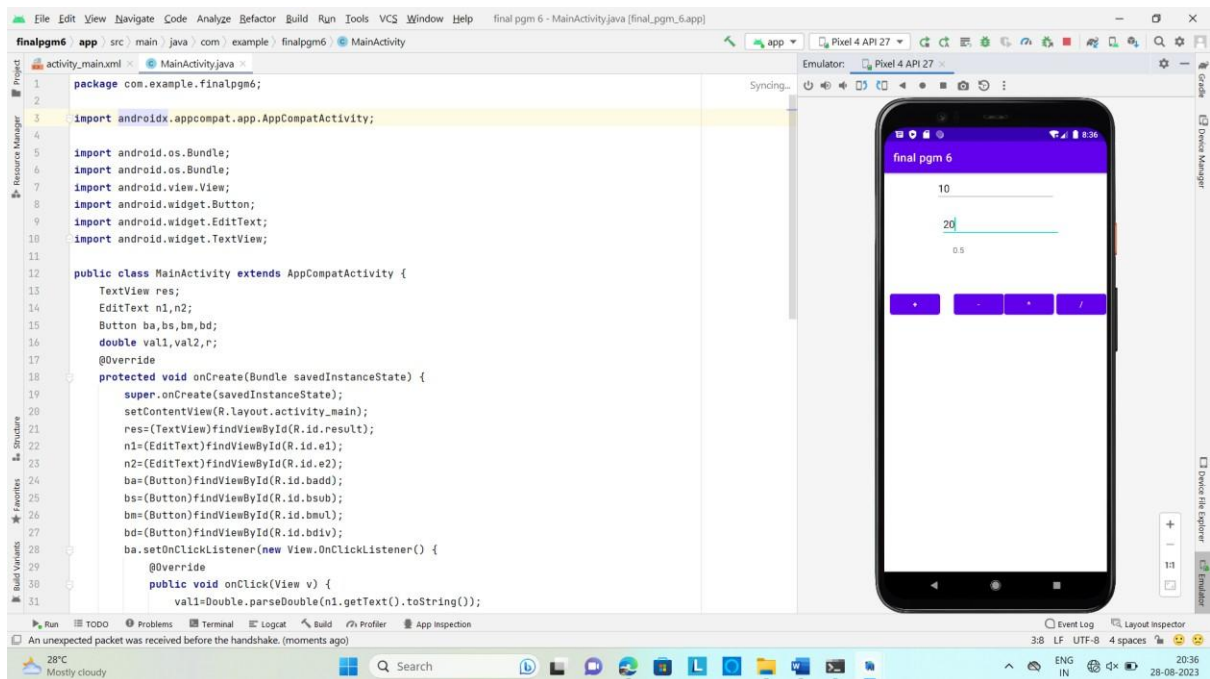
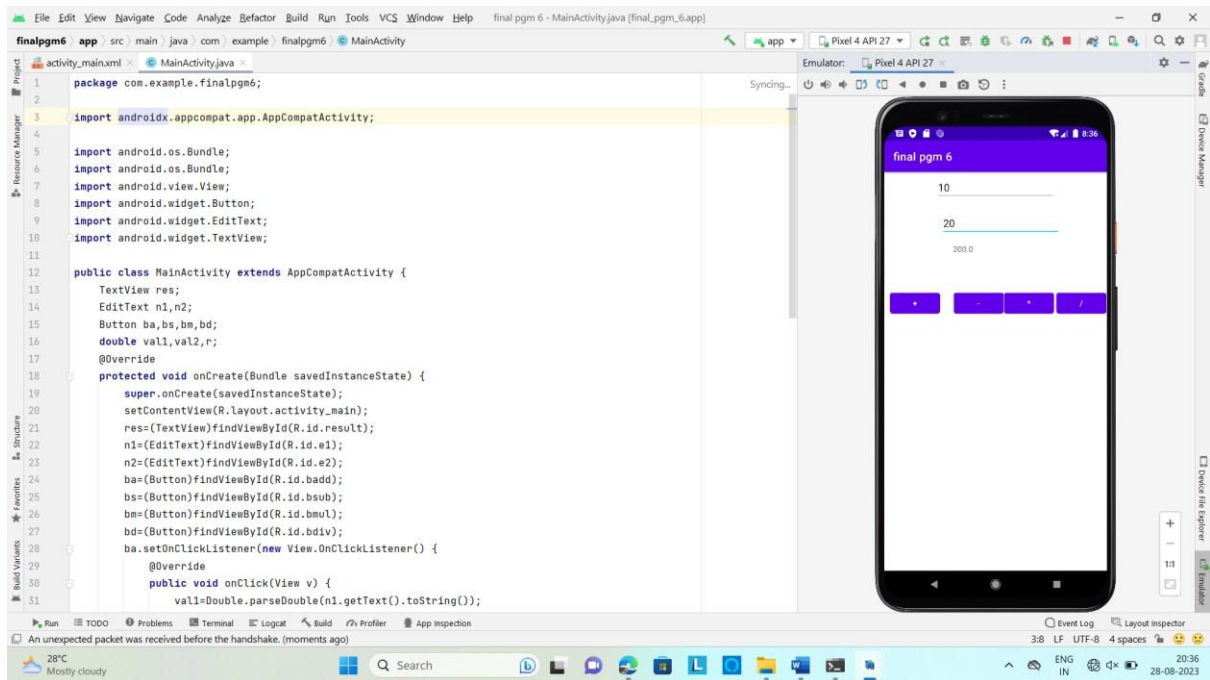
```

```

double val1, val2, r;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    res=(TextView) findViewById(R.id.result);
    n1=(EditText) findViewById(R.id.e1);
    n2=(EditText) findViewById(R.id.e2);
    ba=(Button) findViewById(R.id.badd);
    bs=(Button) findViewById(R.id.bsub);
    bm=(Button) findViewById(R.id.bmul);
    bd=(Button) findViewById(R.id.bdiv);
    ba.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            val1=Double.parseDouble(n1.getText().toString());
            val2=Double.parseDouble(n2.getText().toString());
            r=val1+val2;
            res.setText(Double.toString(r));
        }
    });
    bs.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            val1=Double.parseDouble(n1.getText().toString());
            val2=Double.parseDouble(n2.getText().toString());
            r=val1-val2;
            res.setText(Double.toString(r));
        }
    });
    bm.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            val1=Double.parseDouble(n1.getText().toString());
            val2=Double.parseDouble(n2.getText().toString());
            r=val1*val2;
            res.setText(Double.toString(r));
        }
    });
    bd.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            val1=Double.parseDouble(n1.getText().toString());
            val2=Double.parseDouble(n2.getText().toString());
            r=val1/val2;
            res.setText(Double.toString(r));
        }
    });
}
}

```





Program 7

Devise an application that draws basic graphical primitives (rectangle, circle) on the screen.

mainactivity.java

```
package com.example.finalofpgm7;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Context;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.os.Bundle;
import android.view.View;
public class MainActivity extends AppCompatActivity {
    @Override

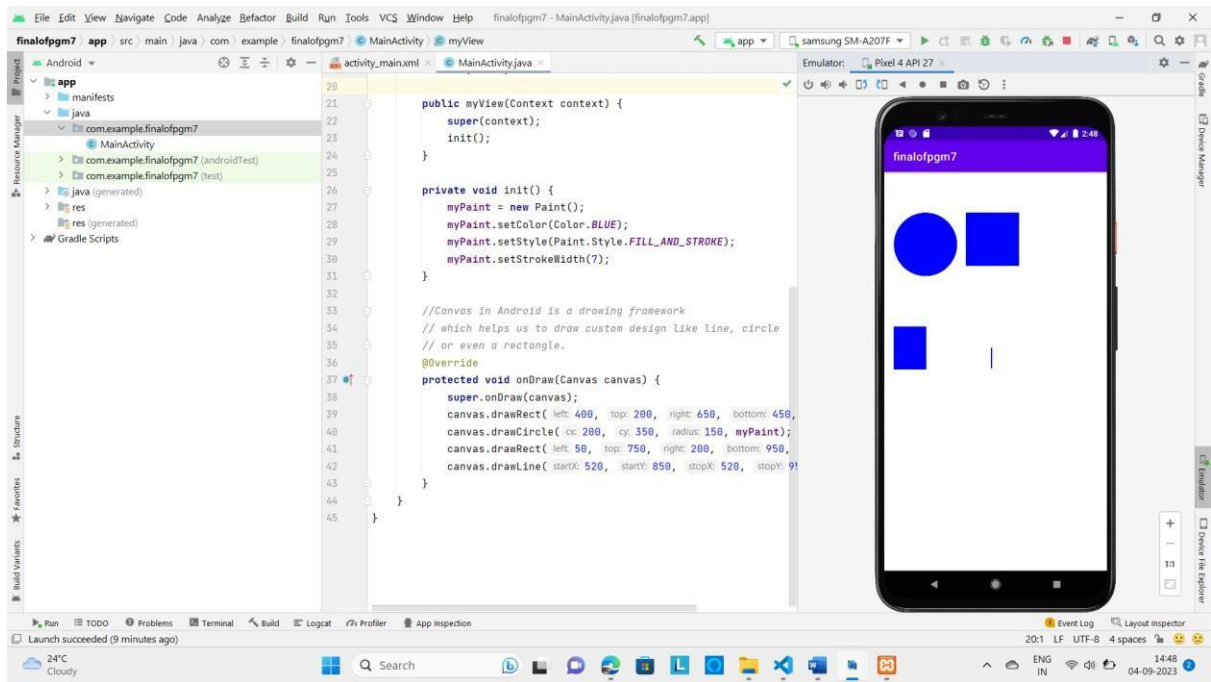
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(new myView(this));
    }

    private static class myView extends View {
        Paint myPaint;

        public myView(Context context) {
            super(context);
            init();
        }

        private void init() {
            myPaint = new Paint();
            myPaint.setColor(Color.BLUE);
            myPaint.setStyle(Paint.Style.FILL_AND_STROKE);
            myPaint.setStrokeWidth(7);
        }

        @Override
        protected void onDraw(Canvas canvas) {
            super.onDraw(canvas);
            canvas.drawRect(400, 200, 650, 450, myPaint);
            canvas.drawCircle(200, 350, 150, myPaint);
            canvas.drawRect(50, 750, 200, 950, myPaint);
            canvas.drawLine(520, 850, 520, 950, myPaint);
        }
    }
}
```



Program 8

Build a mobile application that create, save, update and delete data in a database.

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:ignore="Deprecated">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="50dp"
        android:layout_y="20dp"
        android:text="Student Details"
        android:textSize="30sp"
        tools:ignore="MissingConstraints" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="20dp"
        android:layout_y="110dp"
        android:text="Enter Rollno:"
        android:textSize="20sp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.124"
        app:layout_constraintStart_toStartOf="parent"
        tools:ignore="MissingConstraints"
        tools:layout_editor_absoluteY="168dp" />

    <EditText
        android:id="@+id/Rollno"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_x="175dp"
        android:layout_y="100dp"
        android:inputType="number"
        android:textSize="20sp" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="20dp"
        android:layout_y="160dp"
        android:text="Enter Name:"
        android:textSize="20sp" />

    <EditText
        android:id="@+id/Name"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_x="175dp"
        android:layout_y="150dp"
        android:inputType="text"
        android:textSize="20sp" />

    <TextView
```



```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_x="20dp"
        android:layout_y="210dp"
        android:text="Enter Marks:"
        android:textSize="20sp" />
<EditText
    android:id="@+id/Marks"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="200dp"
    android:inputType="number"
    android:textSize="20sp" />
<Button
    android:id="@+id/Insert"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="300dp"
    android:text="Save"
    android:textSize="30dp" />
<Button
    android:id="@+id/Delete"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="300dp"
    android:text="Delete"
    android:textSize="30dp" />

<Button
    android:id="@+id/Update"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="400dp"
    android:text="Update"
    android:textSize="30dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:layout_editor_absoluteX="150dp" />

<Button
    android:id="@+id/View"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="400dp"
    android:text="View"
    android:textSize="30dp"
    tools:layout_editor_absoluteX="100dp"
    tools:layout_editor_absoluteY="486dp" />

<Button
    android:id="@+id/ViewAll"
    android:layout_width="200dp"
    android:layout_height="wrap_content"
    android:layout_x="100dp"
    android:layout_y="500dp"
    android:text="View All"

```

```

        android:textSize="30dp"
        tools:layout_editor_absoluteX="86dp"
        tools:layout_editor_absoluteY="606dp" />

```

```
</AbsoluteLayout>
```

Mainactivity.java

```
package com.example.pgm;
```

```

import androidx.appcompat.app.AppCompatActivity;
import android.app.Activity;
import android.app.AlertDialog.Builder;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;

```

```
import android.os.Bundle;
```

```
public class MainActivity extends Activity implements OnClickListener
{
```

```

    EditText Rollno, Name, Marks;
    Button Insert, Delete, Update, View, ViewAll;
    SQLiteDatabase db;
    /** Called when the activity is first created. */

```

```
@Override
```

```
public void onCreate(Bundle savedInstanceState)
{
```

```

    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Rollno=(EditText) findViewById(R.id.Rollno);
    Name=(EditText) findViewById(R.id.Name);
    Marks=(EditText) findViewById(R.id.Marks);
    Insert=(Button) findViewById(R.id.Insert);
    Delete=(Button) findViewById(R.id.Delete);
    Update=(Button) findViewById(R.id.Update);
    View=(Button) findViewById(R.id.View);
    ViewAll=(Button) findViewById(R.id.ViewAll);
    Insert.setOnClickListener(this);
    Delete.setOnClickListener(this);
    Update.setOnClickListener(this);
    View.setOnClickListener(this);
    ViewAll.setOnClickListener(this);

```

```
// Creating database and table
```

```

    db=openOrCreateDatabase("StudentDB", Context.MODE_PRIVATE, null);
    db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno INT PRIMARY

```

```
KEY,name VARCHAR,marks VARCHAR);");
```

```
}
```

```
public void onClick(View view)
```

```
{
```

```
// Inserting a record to the Student table
```

```
if(view==Insert)
```

```
{
```

```
// Checking for empty fields
```

```
if(Rollno.getText().toString().trim().length()==0||
```

```

        Name.getText().toString().trim().length()==0||
        Marks.getText().toString().trim().length()==0
    {
        showMessage("Error", "Please enter all values");
        return;
    }
    db.execSQL("INSERT INTO student
VALUES('"+Rollno.getText()+"','"+Name.getText()+"
        "','"+Marks.getText()+"')");
    showMessage("Success", "Record added");
    clearText();
}
// Deleting a record from the Student table
if(view==Delete)
{
    // Checking for empty roll number
    if(Rollno.getText().toString().trim().length()==0)
    {
        showMessage("Error", "Please enter Rollno");
        return;
    }
    Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'",
        null);
    if(c.moveToFirst())
    {
        db.execSQL("DELETE FROM student WHERE
rollno='"+Rollno.getText()+"'");
        showMessage("Success", "Record Deleted");
    }
    else
    {
        showMessage("Error", "Invalid Rollno");
    }
    clearText();
}
// Updating a record in the Student table
if(view==Update)
{
    // Checking for empty roll number
    if(Rollno.getText().toString().trim().length()==0)
    {
        showMessage("Error", "Please enter Rollno");
        return;
    }
    Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'",
        null);
    if(c.moveToFirst()) {
        db.execSQL("UPDATE student SET name='" + Name.getText() +
        "','marks='" + Marks.getText() +
        "' WHERE rollno='"+Rollno.getText()+"'");
        showMessage("Success", "Record Modified");
    }
    else {
        showMessage("Error", "Invalid Rollno");
    }
    clearText();
}
// Display a record from the Student table
if(view==View)

```

```

    {
        // Checking for empty roll number
        if(Rollno.getText().toString().trim().length()==0)
        {
            showMessage("Error", "Please enter Rollno");
            return;
        }
        Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'",
            null);
        if(c.moveToFirst())
        {
            Name.setText(c.getString(1));
            Marks.setText(c.getString(2));
        }
        else
        {
            showMessage("Error", "Invalid Rollno");
            clearText();
        }
    }
    // Displaying all the records
    if(view==ViewAll)
    {
        Cursor c=db.rawQuery("SELECT * FROM student", null);
        if(c.getCount()==0)
        {
            showMessage("Error", "No records found");
            return;
        }
        StringBuffer buffer=new StringBuffer();
        while(c.moveToNext())
        {
            buffer.append("Rollno: "+c.getString(0)+"\n");
            buffer.append("Name: "+c.getString(1)+"\n");
            buffer.append("Marks: "+c.getString(2)+"\n\n");
        }
        showMessage("Student Details", buffer.toString());
    }
}
public void showMessage(String title,String message)
{
    Builder builder=new Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}
public void clearText()
{
    Rollno.setText("");
    Name.setText("");
    Marks.setText("");
    Rollno.requestFocus();
}
}

```

