GURU NANAK DEV ENGINEERING COLLEGE

LUDHIANA.

MOBILE APPLICATION DEVELOPMENT

LABORATORY

SUBJECT CODE: IT-14711

SUBMITTED BY:

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D4 IT (A1)

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Practical-1 Create a first app on Android

MainActivity.java:

```java
package com.example.mobile;

import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;

import android.content.Context;
import android.graphics.pdf.PdfDocument;
import android.os.Bundle;
import android.os.Environment;
import android.view.View;
import android.widget.Button;
import android.widget.LinearLayout;
import android.widget.TextView;
import android.widget.Toolbar;

import com.gkemon.XMLtoPDF.PdfGenerator;
import com.gkemon.XMLtoPDF.PdfGeneratorListener;
import com.gkemon.XMLtoPDF.model.FailureResponse;
import com.gkemon.XMLtoPDF.model.SuccessResponse;

import java.io.File;
import java.io.FileNotFoundException;

public class MainActivity extends AppCompatActivity {
    TextView t;



    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        t = findViewById(R.id.i);

}}
```
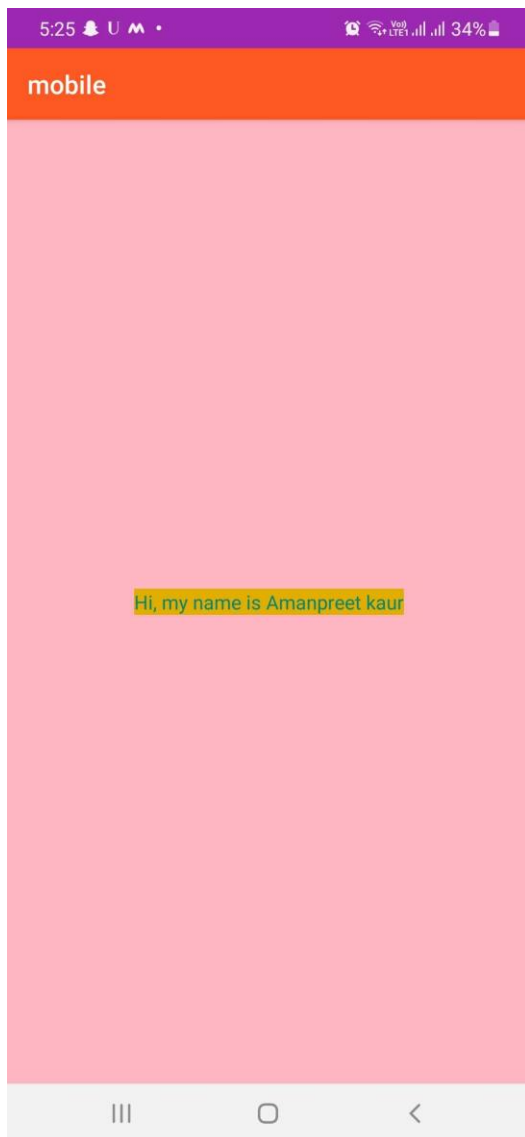
Activity_main.xml:

```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="#E8B0C2"
```

```
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="Hi, my name is Amanpreet"
    android:id="@+id/i"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    android:background="#ECE396"
    android:textColor="#008577"/>
```

OUTPUT:

Practical-2: Create icon of app, change the label Background

<u>AndroidManifest.xml:</u>

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.mobile">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/m"
        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>
```

<u>MainActivity.java:</u>

```java
package com.example.mobile;

import androidx.appcompat.app.AppCompatActivity;
import androidx.constraintlayout.widget.ConstraintLayout;

import android.content.Context;
import android.graphics.pdf.PdfDocument;
import android.os.Bundle;
import android.os.Environment;
import android.view.View;
import android.widget.Button;
import android.widget.LinearLayout;
import android.widget.TextView;
import android.widget.Toolbar;

import com.gkemon.XMLtoPDF.PdfGenerator;
import com.gkemon.XMLtoPDF.PdfGeneratorListener;
import com.gkemon.XMLtoPDF.model.FailureResponse;
import com.gkemon.XMLtoPDF.model.SuccessResponse;
```

```java
import java.io.File;
import java.io.FileNotFoundException;

public class MainActivity extends AppCompatActivity {
    TextView t;



    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        t = findViewById(R.id.i);

}}
```

Activity_main.xml:

```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="#E8B0C2"
    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="Hi, my name is Amanpreet"
        android:id="@+id/i"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        android:background="#ECE396"
        android:textColor="#008577"/>
```

Practical-3: **Create the menu, Buttons and ScrollView in an Application**

Activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout
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="@color/white"
    tools:context=".MainActivity">

    <com.google.android.material.appbar.AppBarLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:theme="@style/Theme.Task7.AppBarOverlay">

        <androidx.appcompat.widget.Toolbar
            android:id="@+id/toolbar"
            android:layout_width="match_parent"
            android:layout_height="?attr/actionBarSize"
            android:background="?attr/colorPrimary"
            app:popupTheme="@style/Theme.Task7.PopupOverlay" />

    </com.google.android.material.appbar.AppBarLayout>

    <ScrollView
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="vertical" >

            <TextView
                android:id="@+id/textView3"
                android:textSize="20dp"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:text="Types of Technology
```

Generally, we judge technology on the same scale but in reality, technology is divided into various types. This includes information technology, industrial technology, architectural technology, creative technology and many more. Let's discuss these technologies in brief.

Industrial Technology

This technology organizes engineering and manufacturing technology for the manufacturing of machines. Also, this makes the production process easier and convenient.

Creative Technology
This process includes art, advertising, and product design which are made with the help of software. Also, it comprises of 3D printers, virtual reality, computer graphics, and other wearable technologies.

Information Technology
This technology involves the use of telecommunication and computer to send, receive and store information. Internet is the best example of Information technology.

Today, everything we use in our daily life is a gift of technology and without which we cannot imagine our lives. Also, we cannot refuse the facts that it has caused severe damage to our surroundings.

FAQs on Essay on Technology
Q.1 What is Information technology?

A – It is a form of technology that uses telecommunication and computer systems for study. Also, they send, retrieve, and store data.

Q.2 Is technology harmful to humans?

 A – No, technology is not harmful to human beings until it is used properly. But, misuses of technology can be harmful and deadly.

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```
" />
    </LinearLayout>
  </ScrollView>
```


```
</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

MainActivity.java

```
package com.example.task7;

import android.os.Bundle;

import com.google.android.material.floatingactionbutton.FloatingActionButton;
import com.google.android.material.snackbar.Snackbar;

import androidx.appcompat.app.AppCompatActivity;
```

```java
import androidx.appcompat.widget.Toolbar;

import android.view.View;

import android.view.Menu;
import android.view.MenuItem;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toolbar toolbar = findViewById(R.id.toolbar);
        setSupportActionBar(toolbar);
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.menu_main, menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        // Handle action bar item clicks here. The action bar will
        // automatically handle clicks on the Home/Up button, so long
        // as you specify a parent activity in AndroidManifest.xml.
        int id = item.getItemId();

        //noinspection SimplifiableIfStatement
        if (id == R.id.signout) {
            return true;
        }
        if (id == R.id.signin) {
            return true;
        }

        return super.onOptionsItemSelected(item);
    }
}
```

content_main.xml

```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"
    android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
    app:layout_behavior="@string/appbar_scrolling_view_behavior">

    <fragment
        android:id="@+id/nav_host_fragment"
        android:name="androidx.navigation.fragment.NavHostFragment"
        android:layout_width="0dp"
        android:layout_height="0dp"
        app:defaultNavHost="true"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:navGraph="@navigation/nav_graph" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

FirstFragment.java

```java
package com.example.task7;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

import androidx.annotation.NonNull;
import androidx.fragment.app.Fragment;
import androidx.navigation.fragment.NavHostFragment;

public class FirstFragment extends Fragment {

    @Override
    public View onCreateView(
            LayoutInflater inflater, ViewGroup container,
            Bundle savedInstanceState
    ) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_first, container, false);
    }

    public void onViewCreated(@NonNull View view, Bundle savedInstanceState) {
        super.onViewCreated(view, savedInstanceState);

        view.findViewById(R.id.button_first).setOnClickListener(new View.OnClickListener()
{
            @Override
            public void onClick(View view) {
                NavHostFragment.findNavController(FirstFragment.this)
                        .navigate(R.id.action_FirstFragment_to_SecondFragment);
```
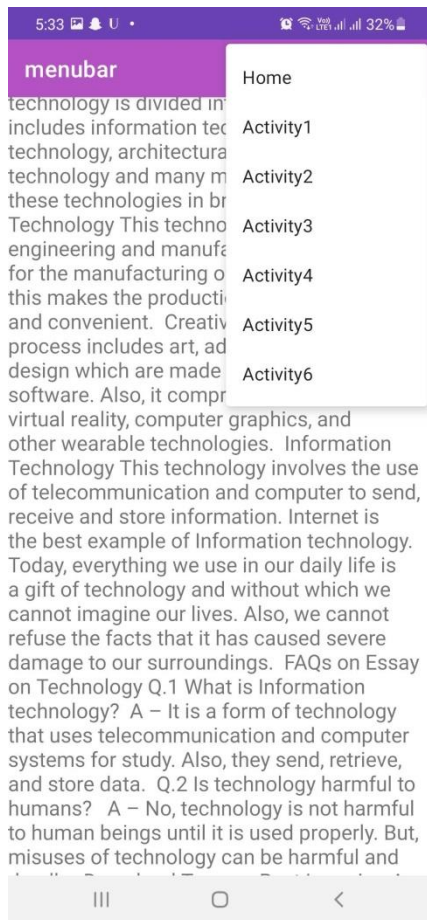
```
            }
        });
    }
}
```

<u>fragment_first.xml</u>

```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=".FirstFragment">

    <TextView
        android:id="@+id/textview_first"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/hello_first_fragment"
        app:layout_constraintBottom_toTopOf="@id/button_first"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/button_first"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/next"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@id/textview_first" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Practical-4: Create the form using all the UI i.e Check Button, Radio Button, TextView etc

activity_main.xml:

```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:orientation="horizontal"
    android:layout_gravity="center"
    tools:context=".MainActivity">


    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:paddingTop="20dp"
        tools:ignore="MissingConstraints" />

    <RadioGroup
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        tools:ignore="MissingConstraints">

        <TextView
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:paddingTop="80dp"
            android:text="GENDER:" />

        <RadioButton
            android:id="@+id/m"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:text="Male"
            tools:ignore="MissingConstraints" />

        <RadioButton
            android:id="@+id/f"
            android:layout_width="match_parent"
            android:layout_height="match_parent"

            android:text="Female"
```

```
          tools:ignore="MissingConstraints" />

</RadioGroup>
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:paddingTop="200dp">

    <TextView
        android:layout_width="99dp"
        android:layout_height="36dp"

        android:text="HOBBIES:"
        tools:ignore="MissingConstraints" />

    <CheckBox
        android:layout_width="86dp"
        android:layout_height="31dp"
        android:text="Singing"
        tools:ignore="MissingConstraints" />

    <CheckBox
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Reading"
        tools:ignore="MissingConstraints" />

    <CheckBox
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="dancing"

        tools:ignore="MissingConstraints" />

    <ImageView
        android:id="@+id/i"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:src="@drawable/ic_launcher_background" />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="45dp"
        android:layout_gravity="center"
        android:layout_marginTop="28dp"
        android:layout_marginBottom="282dp"
```

```
        android:text="Submit"
        tools:ignore="MissingConstraints" />
   </LinearLayout>
```

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

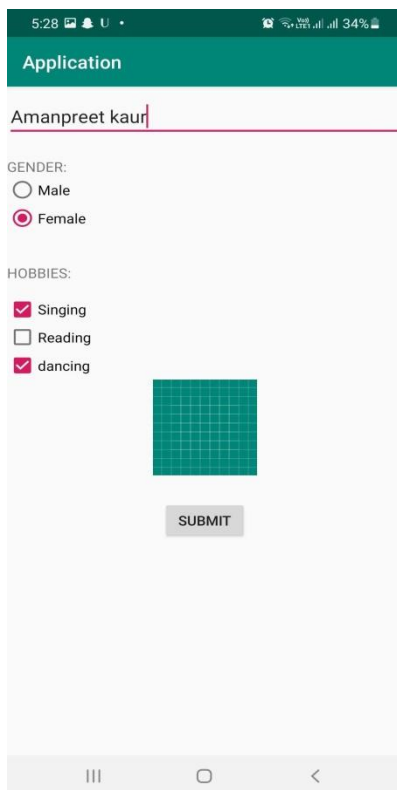<u>MainActivity.java</u>

package com.example.application;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

<u>OUTPUT:</u>

Practical-5: By using all Layouts design the form

Table Layout

```
<TableLayout
xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_marginTop="100dp"      android:paddingLeft="10dp"
android:paddingRight="10dp" >
    <TableRow android:background="#0079D6" android:padding="5dp">
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="UserId" />
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="User Name" />
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="Location" />
    </TableRow>
    <TableRow android:background="#DAE8FC" android:padding="5dp">
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="1" />
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="Suresh Dasari" />
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="Hyderabad" />
    </TableRow>
    <TableRow android:background="#DAE8FC" android:padding="5dp">
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="2" />
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="Rohini Alavala" />
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
```

```xml
android:layout_weight="1"
android:text="Guntur" />
    </TableRow>
    <TableRow android:background="#DAE8FC" android:padding="5dp">
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="3" />
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="Trishika Dasari" />
        <TextView
            android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_weight="1"
android:text="Guntur" />
    </TableRow>
</TableLayout>
```

MainActivity.java

```java
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
    }
}
```

Relative Layout

```xml
<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
android:layout_width="match_parent"
android:layout_height="match_parent"
 android:paddingLeft="10dp"
android:paddingRight="10dp">
   <Button
        android:id="@+id/btn1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentLeft="true"
android:text="Button1" />

</RelativeLayout>
```

Linear Layout

```xml
<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">

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/b1"
        android:drawableLeft="@drawable/ic_launcher_background"
        android:onClick="b3"
        android:paddingTop="20dp"
        android:text="Linear"
        tools:ignore="MissingConstraints,OnClick"
        tools:layout_editor_absoluteX="16dp"
        tools:layout_editor_absoluteY="244dp" />
</LinearLayout>
```

OUTPUT:

Practical 6: Create a Fragment

Activity_main.xml

```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">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/lin"

        android:orientation="horizontal">

        <Button
            android:id="@+id/button"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:layout_margin="5dp"

            android:text="First" />

        <Button
            android:id="@+id/button2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_margin="5dp"
            android:layout_weight="1"
            android:text="Second" />
    </LinearLayout>
</LinearLayout>
```

Fragment_first.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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:background="@color/purple_200"
    tools:context=".Fragments.FirstFragment">
```

```xml
    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="30dp"
        android:text="First fregment"
        android:paddingTop="200dp"
        android:gravity="center"
        />

</FrameLayout>
```

Fragment_second.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout 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:background="@color/new1"
    tools:context=".Fragments.SecondFragment">

    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:paddingTop="200dp"

        android:text="Second Fregment"
        android:gravity="center"
        android:textSize="30dp" />

</FrameLayout>
```

MainActivity.java

```java
package com.example.task6freg;

import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentTransaction;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.LinearLayout;

import com.example.task6freg.Fragments.FirstFragment;
import com.example.task6freg.Fragments.SecondFragment;
```

```java
public class MainActivity extends AppCompatActivity {
    Button b1, b2;
    LinearLayout l;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        b1 = findViewById(R.id.button);
        b2 = findViewById(R.id.button2);
        l = findViewById(R.id.lin);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                FirstFragment firstFragment = new FirstFragment();
                FragmentTransaction transaction =
getSupportFragmentManager().beginTransaction();
                transaction.replace(R.id.lin, firstFragment);
                transaction.commit();
            }


        });
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                SecondFragment secondFragment = new SecondFragment();
                FragmentTransaction transaction =
getSupportFragmentManager().beginTransaction();
                transaction.replace(R.id.lin, secondFragment);
                transaction.commit();
            }
    });
}}
```

FirstFragment.java

```java
package com.example.task6freg.Fragments;

import android.os.Bundle;

import androidx.fragment.app.Fragment;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

import com.example.task6freg.R;

/**
```

```java
 * A simple {@link Fragment} subclass.
 * Use the {@link FirstFragment#newInstance} factory method to
 * create an instance of this fragment.
 */
public class FirstFragment extends Fragment {

    // TODO: Rename parameter arguments, choose names that match
    // the fragment initialization parameters, e.g. ARG_ITEM_NUMBER
    private static final String ARG_PARAM1 = "param1";
    private static final String ARG_PARAM2 = "param2";

    // TODO: Rename and change types of parameters
    private String mParam1;
    private String mParam2;

    public FirstFragment() {
        // Required empty public constructor
    }

    /**
     * Use this factory method to create a new instance of
     * this fragment using the provided parameters.
     *
     * @param param1 Parameter 1.
     * @param param2 Parameter 2.
     * @return A new instance of fragment FirstFragment.
     */
    // TODO: Rename and change types and number of parameters
    public static FirstFragment newInstance(String param1, String param2) {
        FirstFragment fragment = new FirstFragment();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        if (getArguments() != null) {
            mParam1 = getArguments().getString(ARG_PARAM1);
            mParam2 = getArguments().getString(ARG_PARAM2);
        }
    }

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
```

```java
        View view =  inflater.inflate(R.layout.fragment_first, container, false);


        return view;
    }
}
```

SecondFragment.java

```java
package com.example.task6freg.Fragments;

import android.os.Bundle;

import androidx.fragment.app.Fragment;

import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

import com.example.task6freg.R;

/**
 * A simple {@link Fragment} subclass.
 * Use the {@link SecondFragment#newInstance} factory method to
 * create an instance of this fragment.
 */
public class SecondFragment extends Fragment {

    // TODO: Rename parameter arguments, choose names that match
    // the fragment initialization parameters, e.g. ARG_ITEM_NUMBER
    private static final String ARG_PARAM1 = "param1";
    private static final String ARG_PARAM2 = "param2";

    // TODO: Rename and change types of parameters
    private String mParam1;
    private String mParam2;

    public SecondFragment() {
        // Required empty public constructor
    }

    /**
     * Use this factory method to create a new instance of
     * this fragment using the provided parameters.
     *
     * @param param1 Parameter 1.
     * @param param2 Parameter 2.
     * @return A new instance of fragment SecondFragment.
     */
    // TODO: Rename and change types and number of parameters
```

```java
    public static SecondFragment newInstance(String param1, String param2) {
        SecondFragment fragment = new SecondFragment();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        if (getArguments() != null) {
            mParam1 = getArguments().getString(ARG_PARAM1);
            mParam2 = getArguments().getString(ARG_PARAM2);
        }
    }

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                    Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        View view =inflater.inflate(R.layout.fragment_second, container, false);
        return view;
    }
}
```

Practical 7: Activities and Intents

Activity_main.xml

```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/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Text"
        tools:ignore="MissingConstraints"
        tools:layout_editor_absoluteX="0dp"
        tools:layout_editor_absoluteY="172dp" />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        android:id="@+id/button"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText"
        android:text="click"
        android:onClick="newact"
        app:layout_constraintVertical_bias="0.356" />

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

Activity_sec.xml

```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=".sec">

    <TextView
```

```xml
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="30dp"
    tools:ignore="MissingConstraints"
    tools:layout_editor_absoluteX="0dp"
    tools:layout_editor_absoluteY="287dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.task7intent;

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 e;
    Button b;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e = findViewById(R.id.editText);
    }
    public void newact(View view){
        Intent intent = new Intent(this,sec.class);
        intent.putExtra("text",e.getText().toString());
        startActivity(intent);

    }
}
```

Sec.java

```java
package com.example.task7intent;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.TextView;

public class sec extends AppCompatActivity {
```
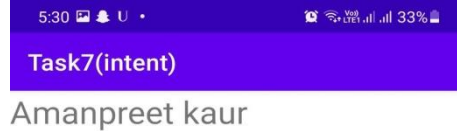
```
   TextView t;

   @Override
   protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_sec);
      t = findViewById(R.id.textView);
      Bundle b = getIntent().getExtras();
      String s = b.getString("text");
      t.setText(s);
   }
}
```

OUTPUT:

Practical 8: SQLite

Activity_sqlite.xml

```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=".SQLITE">

    <TextView
        android:id="@+id/top"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textStyle="bold"
        android:textSize="30dp"
        android:textColor="@color/purple_200"
        android:layout_marginTop="20dp"
        android:layout_gravity="center"
        android:gravity="center"
        android:text="SQLite Database" />

    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Student Name"
        style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
        app:hintTextColor="@color/purple_200"
        app:boxStrokeWidthFocused="2dp"
        app:boxStrokeColor="#1B7169"
        android:layout_marginTop="10dp">

        <com.google.android.material.textfield.TextInputEditText
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:inputType="text"/>
    </com.google.android.material.textfield.TextInputLayout>

    <com.google.android.material.textfield.TextInputLayout
        android:id="@+id/college"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"        android:hint="College Name"
        style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
        app:hintTextColor="@color/purple_200"
        app:boxStrokeWidthFocused="2dp"
        app:boxStrokeColor="#1B7169"
```

```xml
            android:layout_marginTop="10dp">

        <com.google.android.material.textfield.TextInputEditText
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:inputType="text"/>
    </com.google.android.material.textfield.TextInputLayout>

    <Button
        android:id="@+id/button"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:text="Save" />

    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Load" />

</LinearLayout>
```

SQLITE.java

```java
package com.mad.mad;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

import com.google.android.material.textfield.TextInputLayout;

public class SQLITE extends AppCompatActivity {
Button b1,b2;
TextInputLayout t1,t2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_s_q_l_i_t_e);
        b1=(Button)findViewById(R.id.button);
        b2=(Button)findViewById(R.id.button2);
        t1=(TextInputLayout)findViewById(R.id.name);
        t2=(TextInputLayout)findViewById(R.id.college);
        b1.setOnClickListener(new View.OnClickListener() {
```

```java
        @Override
        public void onClick(View v) {
            Toast.makeText(getApplicationContext(),"Student Name:
"+t1.getEditText().getText().toString().trim()+"\n College Name:
"+t2.getEditText().getText().toString().trim(),Toast.LENGTH_LONG).show();
        }
    });
    b2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {

            Toast.makeText(getApplicationContext(),"Data Saved
Successfully",Toast.LENGTH_LONG).show();
        }
    });
    }
}
```

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.mad.mad">

    <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/Theme.MAD">
        <activity android:name=".SQLITE"><intent-filter>
            <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

Practical 9: Store data using SQLite database

Activity_main.xml

```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="#FFFFFF"

    tools:context=".MainActivity">


    <TextView

        android:id="@+id/textView"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:background="#FFEB3B"

        android:text="SQLiteDatabase"

        android:textSize="30sp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.498"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.087" />
```

```xml
<EditText
    android:id="@+id/edit1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter Student Name"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.557"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.241" />

<EditText
    android:id="@+id/edit2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Enter College Name"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
```

```xml
        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.368" />


    <Button

        android:id="@+id/button"

        android:layout_width="350dp"

        android:layout_height="73dp"

        android:onClick="doSave"

        android:text="SAVE"

        app:backgroundTint="#00ACC1"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.442"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.54"

        tools:ignore="OnClick" />


    <Button

        android:id="@+id/button2"

        android:layout_width="358dp"

        android:layout_height="68dp"

        android:background="#E559EA"

        android:onClick="doLoad"

        android:text="LOAD"
```

```xml
        app:backgroundTint="#F925AB"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.49"

        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.733"

        tools:ignore="OnClick" />

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

MainActivity.java

```java
package com.example.sqlitedatabase;


import androidx.appcompat.app.AppCompatActivity;


import android.os.Bundle;

import android.view.View;

import android.widget.EditText;


public class MainActivity extends AppCompatActivity {

    EditText name,college;

    MyCoreDatabase myData;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);
```

```java
        name=(EditText)findViewById(R.id.edit1);

        college=(EditText)findViewById(R.id.edit2);


        myData=new MyCoreDatabase(this);

    }


    public void doSave(View view) {

        myData.insertData(name.getText().toString(),college.getText().toString());

    }


    public void doLoad(View view) {

        myData.getAll();

    }

}
```

MyCoreDatabase.java

```java
package com.example.sqlitedatabase;


import android.content.Context;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.database.sqlite.SQLiteOpenHelper;

import android.util.Log;

import android.widget.Toast;


public class MyCoreDatabase extends SQLiteOpenHelper {
```

```java
    static final private String DB_NAME="Education";

    static final private String DB_TABLE="students";

    static final private int DB_VER=1;

    Context ctx;

    SQLiteDatabase myDb;

    public MyCoreDatabase(Context ct){

        super(ct,DB_NAME,null,DB_VER);

        ctx =ct;

    }

    @Override

    public void onCreate(SQLiteDatabase sqLiteDatabase){

        sqLiteDatabase.execSQL("create table "+DB_TABLE+" (_id integer primary key
autoincrement,stu_name text,college_name text);");

        Log.i("Database","Table Created");

    }


    @Override

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

        sqLiteDatabase.execSQL("drop table if exists "+DB_TABLE );

          onCreate(sqLiteDatabase);


    }

    public void insertData(String s1,String s2){

        myDb=getWritableDatabase();

        myDb.execSQL("insert into "+DB_TABLE+" (stu_name,college_name)
values('"+s1+"','"+s2+"')");
```

```java
        Toast.makeText(ctx,"Data Saved Successfully",Toast.LENGTH_SHORT).show();

    }


    public void getAll(){

        myDb=getReadableDatabase();

        Cursor cr=myDb.rawQuery("Select * from "+DB_TABLE ,null);

        StringBuilder str=new StringBuilder();


        while (cr.moveToNext()){

            String s1=cr.getString(1);

            String s2=cr.getString(2);

            str.append(s1+"        "+s2+" \n");

        }

        Toast.makeText(ctx,str.toString(),Toast.LENGTH_LONG).show();

    }

}
```
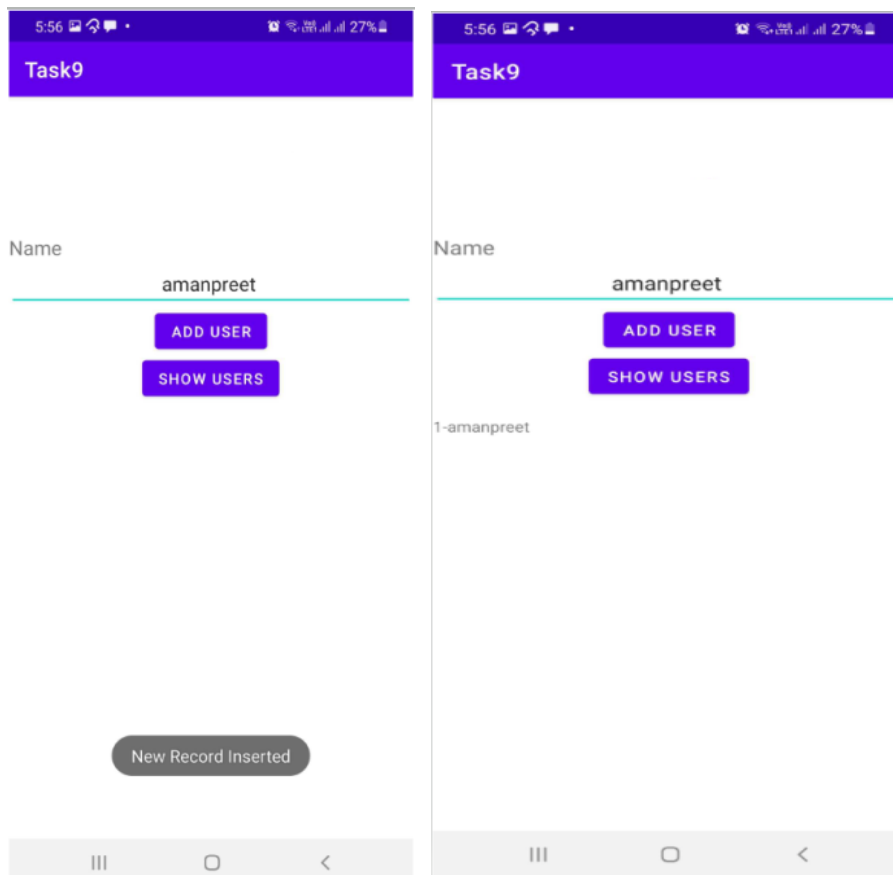
Practical 10: Content Provider and service

activity_main.xml

```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:background="#EDEF64A0"

        android:text="Services"

        android:textSize="36sp"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintHorizontal_bias="0.498"

        app:layout_constraintLeft_toLeftOf="parent"

        app:layout_constraintRight_toRightOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.139" />
```

```xml
<Button
    android:id="@+id/button"
    android:layout_width="417dp"
    android:layout_height="63dp"
    android:onClick="StartSomething"
    android:text="Start Service"
    app:backgroundTint="#039BE5"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.866"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.377"
    tools:ignore="OnClick" />

<Button
    android:id="@+id/button2"
    android:layout_width="414dp"
    android:layout_height="58dp"
    android:onClick="StopSomething"
    android:text="Stop Service"
    app:backgroundTint="#C0CA33"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="1.0"
```

```xml
        app:layout_constraintStart_toStartOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.534"

        tools:ignore="OnClick" />



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

MainActivity.java

```java
package com.example.services;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;


public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

    }


    public void StartSomething(View view) {

        Intent i1=new Intent(this,MyOwnService.class);

        startService(i1);

    }
```

```java
    public void StopSomething(View view) {

        Intent i1=new Intent(this,MyOwnService.class);

        stopService(i1);

    }

}
```

MyOwnService.java

```java
package com.example.services;

import android.app.Service;

import android.content.Intent;

import android.os.IBinder;

import android.util.Log;

import android.widget.Toast;


public class MyOwnService extends Service {

    public MyOwnService() {

    }

    @Override

    public void onCreate(){

        super.onCreate();

        Toast.makeText(this,"Service Created",Toast.LENGTH_SHORT).show();

        Log.i("MyService","Service has Created");

    }

    @Override

    public int onStartCommand(Intent intent,int flags,int startId){

        Toast.makeText(this,"Service Started",Toast.LENGTH_SHORT).show();
```

```java
        Log.i("MyService","Service has started");

        return START_STICKY;

    }

    @Override

    public void onDestroy(){

        Toast.makeText(this,"Service Stopped",Toast.LENGTH_SHORT).show();

        Log.i("MyService","Service has stopped");

        super.onDestroy();

    }

    @Override

    public IBinder onBind(Intent intent) {

        return null;

    }

}
```
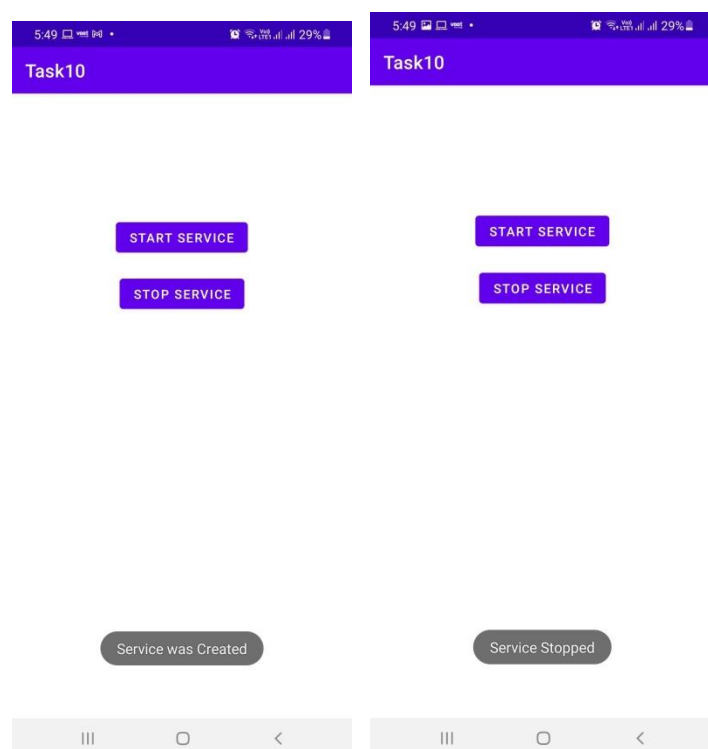
OUTPUT:

Practical 11: Android Security and Debugging

Activity_main.xml

```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">


    <EditText
        android:id="@+id/t1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter number 1"
        app:layout_constraintBottom_toTopOf="@+id/editText"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.73"
        tools:ignore="MissingConstraints"
        tools:layout_editor_absoluteX="0dp" />

    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter number 2"
        tools:ignore="MissingConstraints"
        tools:layout_editor_absoluteX="0dp"
        tools:layout_editor_absoluteY="253dp" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Add two numbers"
        android:gravity="center"
        android:layout_marginTop="30dp"
        android:layout_marginLeft="85dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText"
        app:layout_constraintVertical_bias="0.217"
        tools:ignore="MissingConstraints"
        android:onClick="add"/>
```

```xml
    <TextView
        android:id="@+id/re"
        android:layout_width="98dp"

        android:layout_height="25dp"
        android:layout_marginTop="50dp"
        android:gravity="center"
        android:layout_marginLeft="100dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/button"
        app:layout_constraintVertical_bias="0.258"

        tools:ignore="MissingConstraints" />

</LinearLayout>
```

MainActivity.java

```java
package com.example.task11;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    EditText e1,e2;
    TextView t;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1 = findViewById(R.id.t1);
        e2 = findViewById(R.id.editText);
        t = findViewById(R.id.re);


    }
    public void add(View view){
        Log.i("Mainactivity","Executed 1");
```

```
        int a1 = Integer.parseInt(e1.getText().toString());
        Log.i("Mainactivity","Executed 2");
        int a2 = Integer.parseInt(e2.getText().toString());
        Log.i("Mainactivity","Executed 3");
        int res = a1 + a2;
        Log.i("Mainactivity","Executed 4");
        t.setText(""+res);
        Log.i("Mainactivity","Executed 5");
    }
}
```

OUTPUT: