Practical No: 1.1

Create an android application to display the android life cycle

Activity_main.xml:

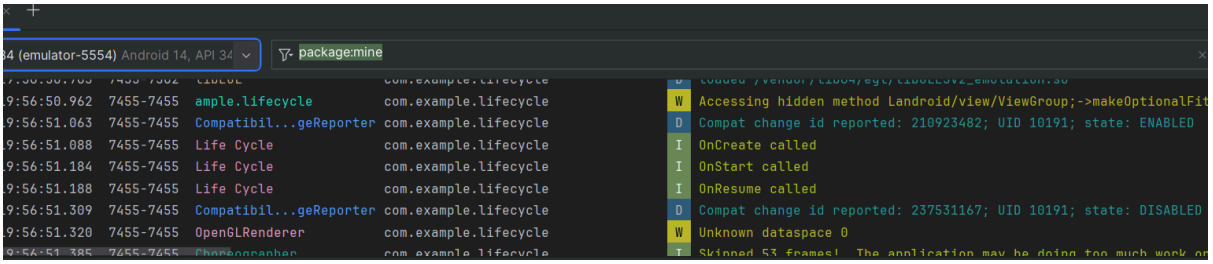
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
   xmlns:app="http://schemas.android.com/apk/res-auto"
   xmlns:tools="http://schemas.android.com/tools"
   android:id="@+id/main"
   android:layout_width="match_parent"
   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_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java:

```
package com.example.lifecycle;
import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle;
import android.util.Log;
public class MainActivity extends AppCompatActivity { @Override
protected void onCreate(Bundle savedInstanceState) {
   super.onCreate(savedInstanceState); setContentView(R.layout.activity_main); Log.i("Life
Cycle", "OnCreate called");
}
   @Override
   protected void onStart() { super.onStart();
      Log.i("Life Cycle", "OnStart called");
   }
   @Override
   protected void onResume() { super.onResume();
      Log.i("Life Cycle", "OnResume called");
   }
   @Override
   protected void onPause() { super.onPause();
      Log.i("Life Cycle", "OnPause called");
   }
```

```
    @Override
    protected void onStop() { super.onStop();
        Log.i("Life Cycle", "OnStop called");
    }
    @Override
    protected void onRestart() { super.onRestart();
        Log.i("Life Cycle", "OnRestart called");
    }
    @Override
    protected void onDestroy() { super.onDestroy();
        Log.i("Life Cycle", "OnDestroy called");
    }
}
```

Output:



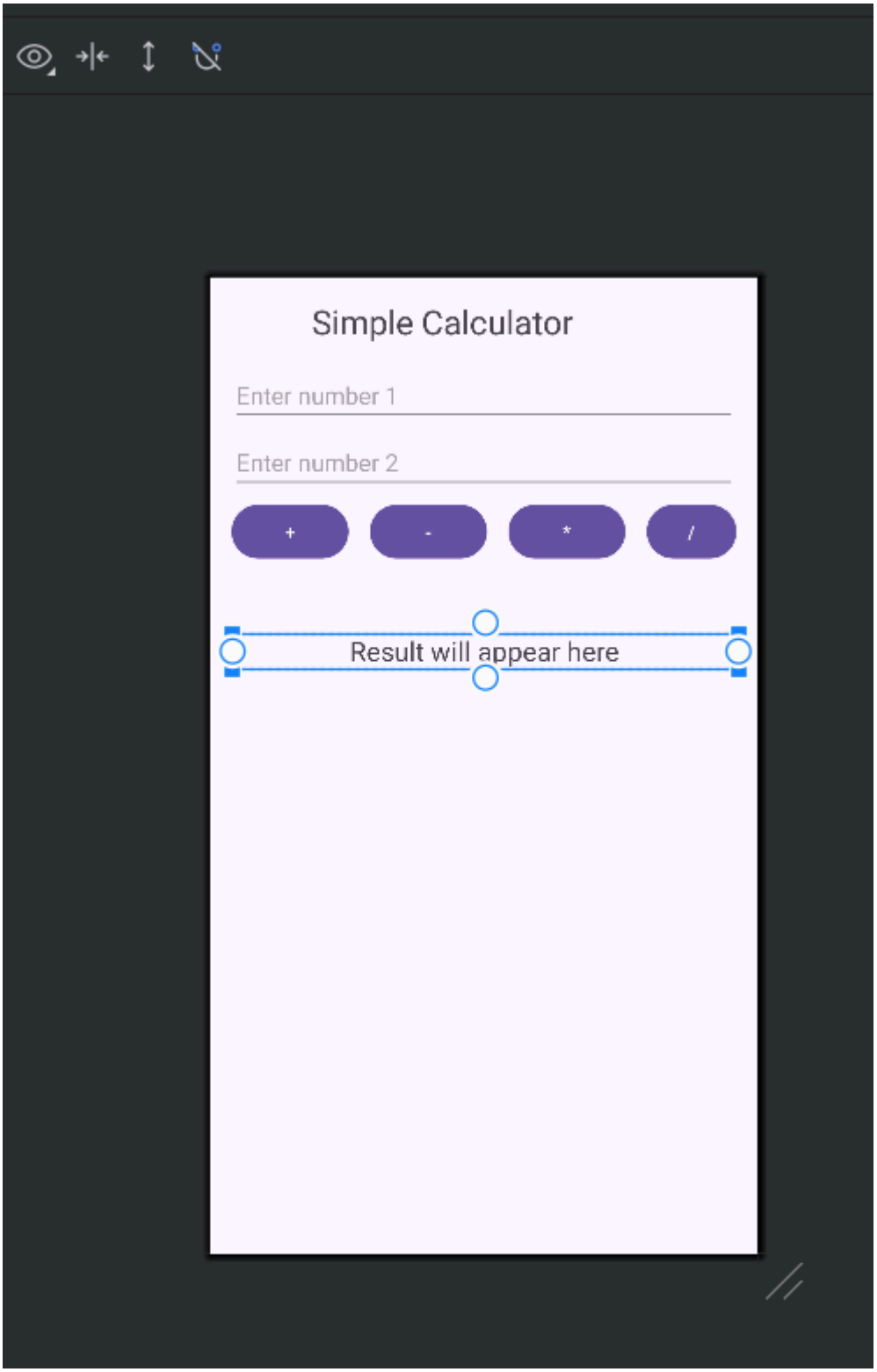
Practical No: 1.2

Create a basic calculator to perform arithmetic operations +-*/ (different layout and views)

Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:orientation="vertical"
   android:padding="16dp">
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Simple Calculator"
      android:textSize="25dp"
      android:layout_marginLeft="60dp"/>
   <EditText
      android:id="@+id/editTextNumber1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_marginTop="50dp"
      android:hint="Enter number 1"
      android:inputType="numberDecimal"/>
   <EditText
      android:id="@+id/editTextNumber2"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:hint="Enter number 2"
      android:layout_marginTop="100dp"
      android:inputType="numberDecimal"/>
   <LinearLayout
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:orientation="horizontal"
      android:layout_marginTop="150dp">
      <Button
         android:id="@+id/buttonAdd"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="+"/>
      <Button
         android:id="@+id/buttonSubtract"
         android:layout_width="wrap_content"
```

```
            android:layout_height="wrap_content"
            android:text="-"
            android:layout_marginStart="16dp"/>
        <Button
            android:id="@+id/buttonMultiply"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="*"
            android:layout_marginStart="16dp"/>
        <Button
            android:id="@+id/buttonDivide"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="/"
            android:layout_marginStart="16dp"/>
    </LinearLayout>
    <TextView
        android:id="@+id/textViewResult"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="250dp"
        android:text="Result will appear here"
        android:textSize="20sp"
        android:textAlignment="center"/>
</RelativeLayout>
```



MainActivity.java:

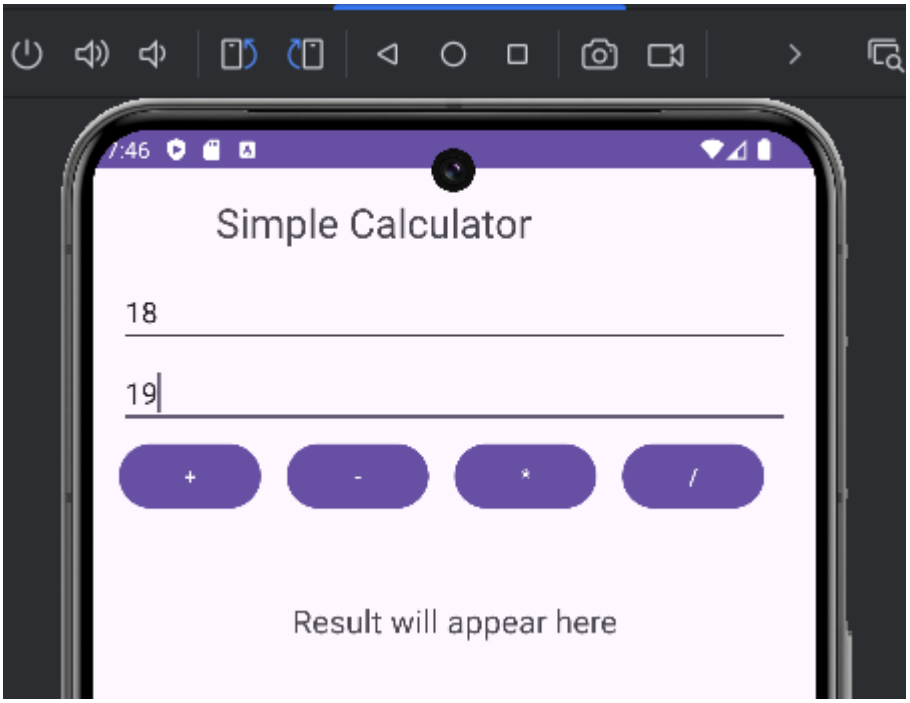
```
package com.example.simplecalculator;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
```

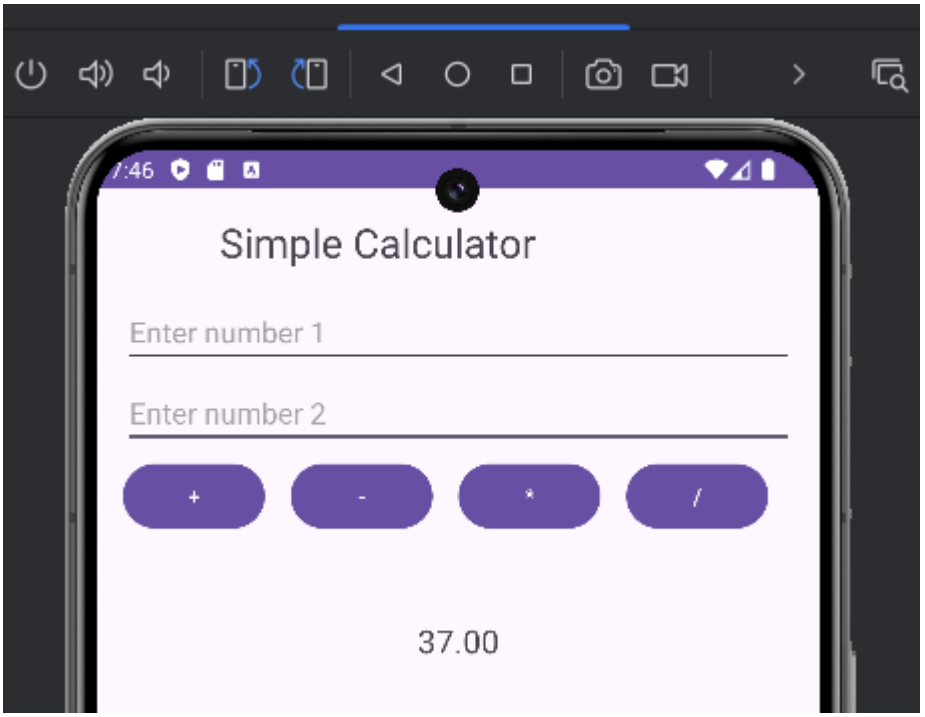
```
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    private EditText editTextNumber1, editTextNumber2;
    private TextView textViewResult;
    private Button buttonAdd, buttonSubtract, buttonMultiply, buttonDivide;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        editTextNumber1 = findViewById(R.id.editTextNumber1);
        editTextNumber2 = findViewById(R.id.editTextNumber2);
        textViewResult = findViewById(R.id.textViewResult);
        buttonAdd = findViewById(R.id.buttonAdd);
        buttonSubtract = findViewById(R.id.buttonSubtract);
        buttonMultiply = findViewById(R.id.buttonMultiply);
        buttonDivide = findViewById(R.id.buttonDivide);
        buttonAdd.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculateResult('+');
            }
        });
        buttonSubtract.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculateResult('-');
            }
        });
        buttonMultiply.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculateResult('*');
            }
        });
        buttonDivide.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                calculateResult('/');
            }
        });
    }
    private void calculateResult(char operation) {
        double number1 = Double.parseDouble(editTextNumber1.getText().toString());
```

```
        double number2 = Double.parseDouble(editTextNumber2.getText().toString());
        double result = 0;
        switch (operation) {
            case '+':
                result = number1 + number2;
                break;
            case '-':
                result = number1 - number2;
                break;
            case '*':
                result = number1 * number2;
                break;
            case '/':
                if (number2 != 0) {
                    result = number1 / number2;
                } else {
                    textViewResult.setText("Cannot divide by zero");
                    return;
                }
                break;
        }
        textViewResult.setText(String.format("%.2f", result));
        EditText editText1 = findViewById(R.id.editTextNumber1);
        EditText editText2 = findViewById(R.id.editTextNumber2);
        if (editTextNumber1 != null && editTextNumber2 != null) {
            editText1.getText().clear();
            editText2.getText().clear();
        } else {
        }
    }
}
```

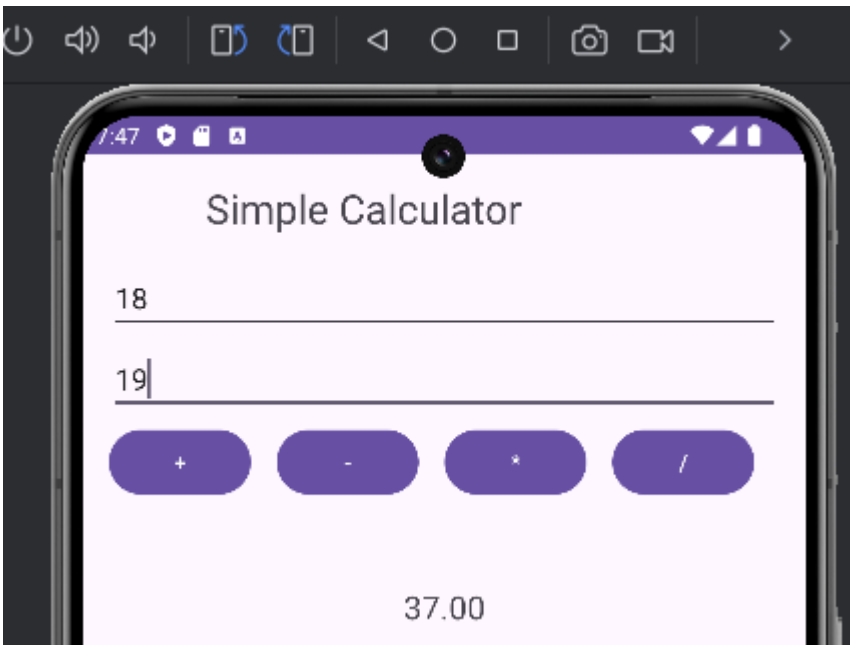
Output:

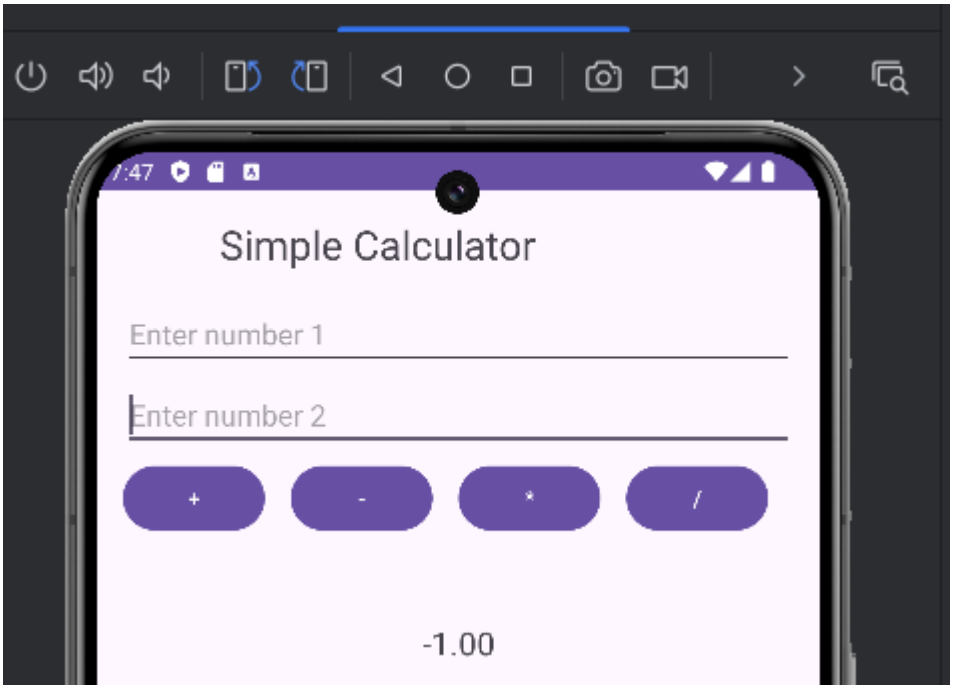
Adding:



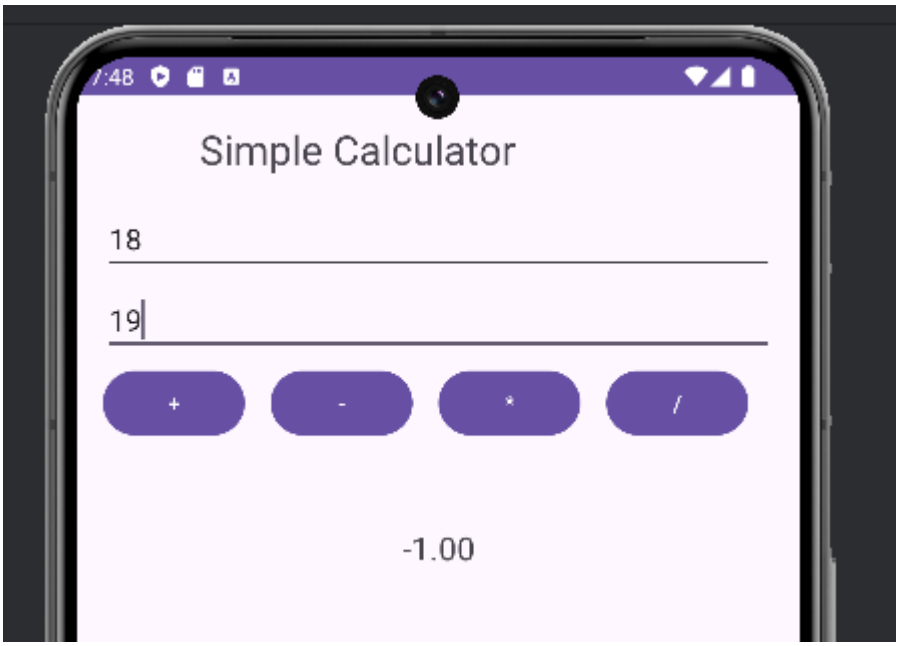


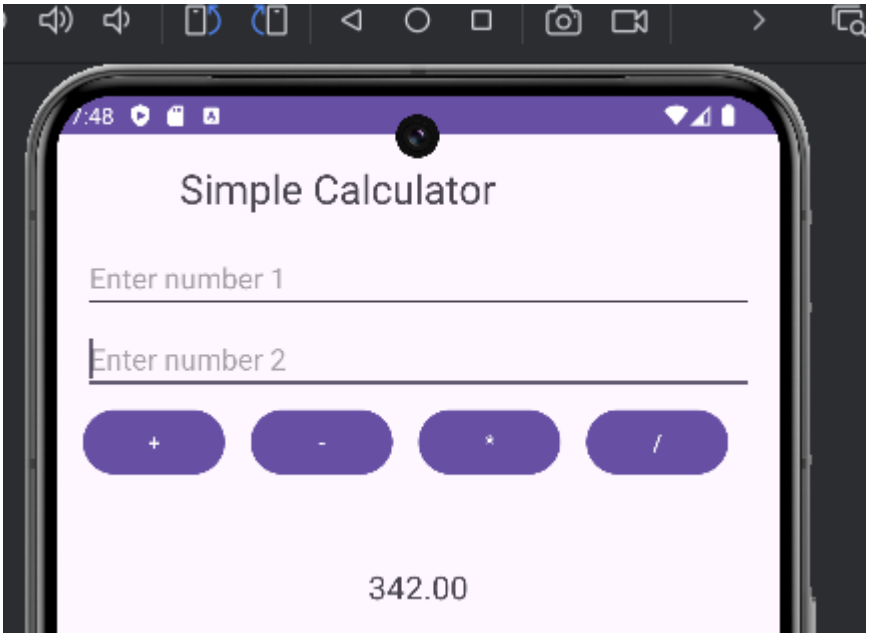
Subtract:


Simple Calculator
18
19
+
-
*
/
37.00

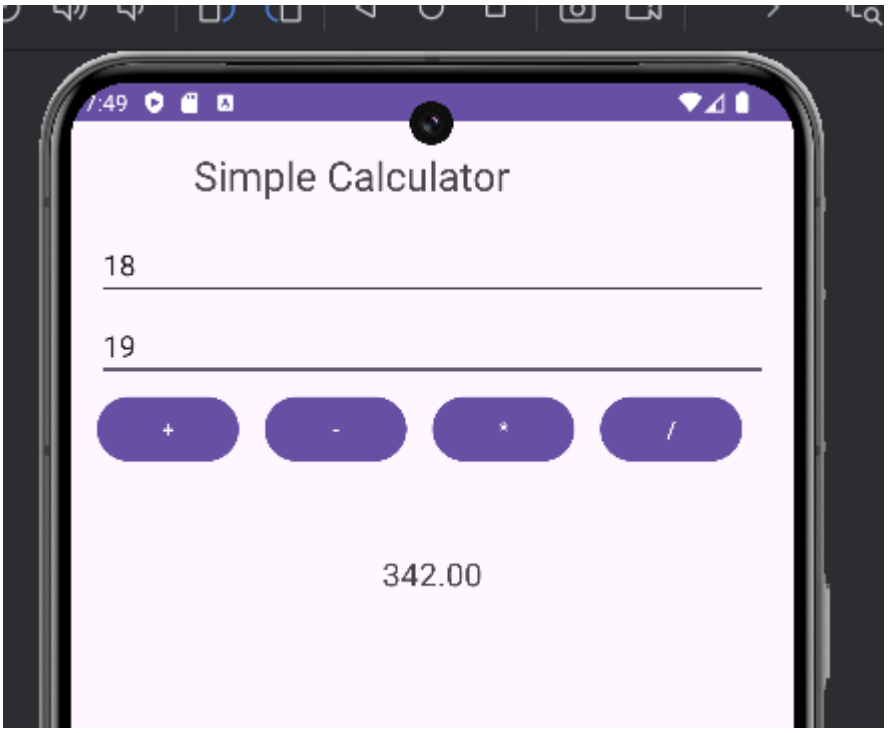

Simple Calculator
Enter number 1
Enter number 2
+
-
*
/
-1.00

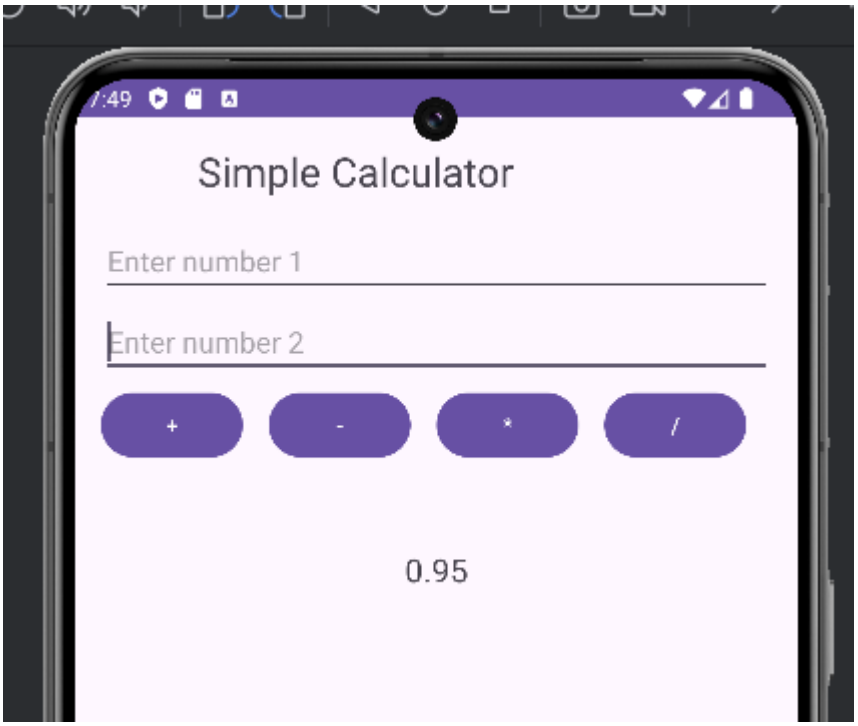
Multiply:


Simple Calculator
18
19
+
-
*
/
-1.00


Simple Calculator
Enter number 1
Enter number 2
+
-
*
/
342.00

Division:


Simple Calculator
18
19
+
-
*
/
342.00


Simple Calculator
Enter number 1
Enter number 2
+
-
*
/
0.95

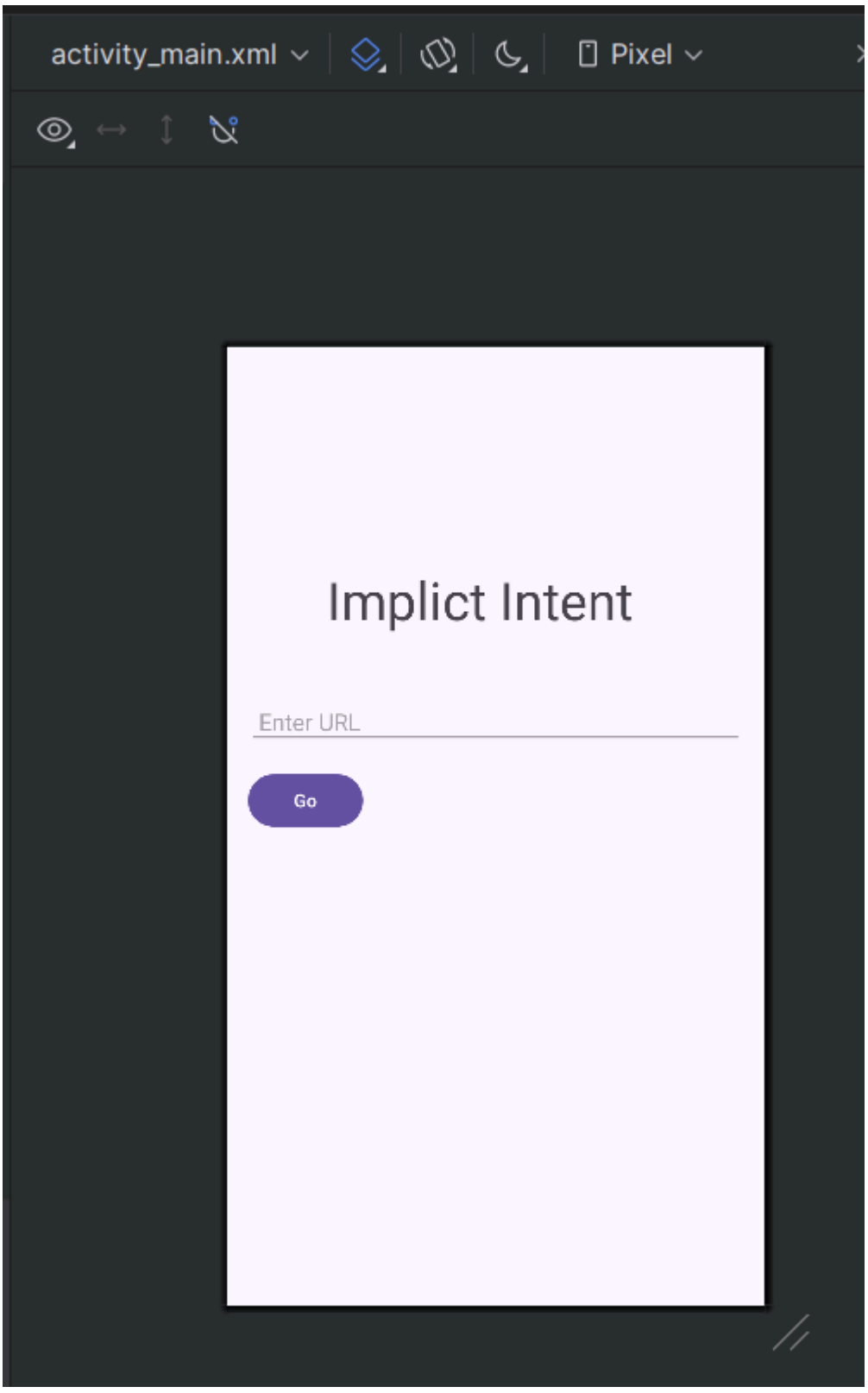
Practical No: 1.3

Demonstrate the use of Implicit and Explicit intent and pass the data between two activities using intent and bundle.

Implicit Intent:

Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:layout_width="match_parent"
   android:layout_height="match_parent"
   android:padding="16dp">
   <TextView
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Implict Intent"
      android:textSize="40dp"
      android:layout_marginTop="150dp"
      android:layout_marginLeft="60dp"/>
   <EditText
      android:id="@+id/editTextURL"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_marginTop="250dp"
      android:hint="Enter URL"
      android:inputType="textUri"
      android:padding="8dp" />
   <Button
      android:id="@+id/buttonGo"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Go"
      android:layout_below="@id/editTextURL"
      android:layout_marginTop="16dp"
      android:padding="8dp" />
</RelativeLayout>
```

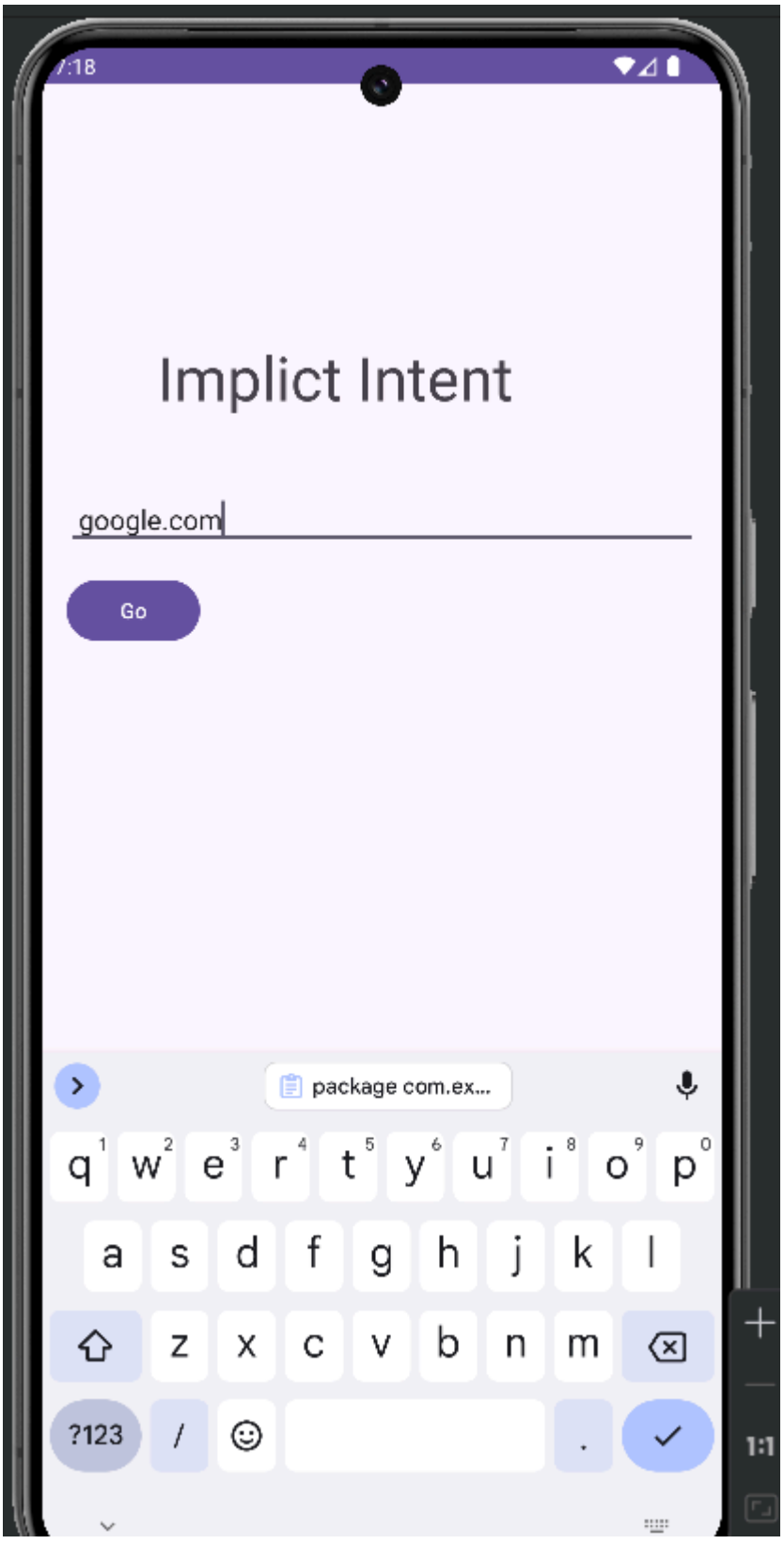


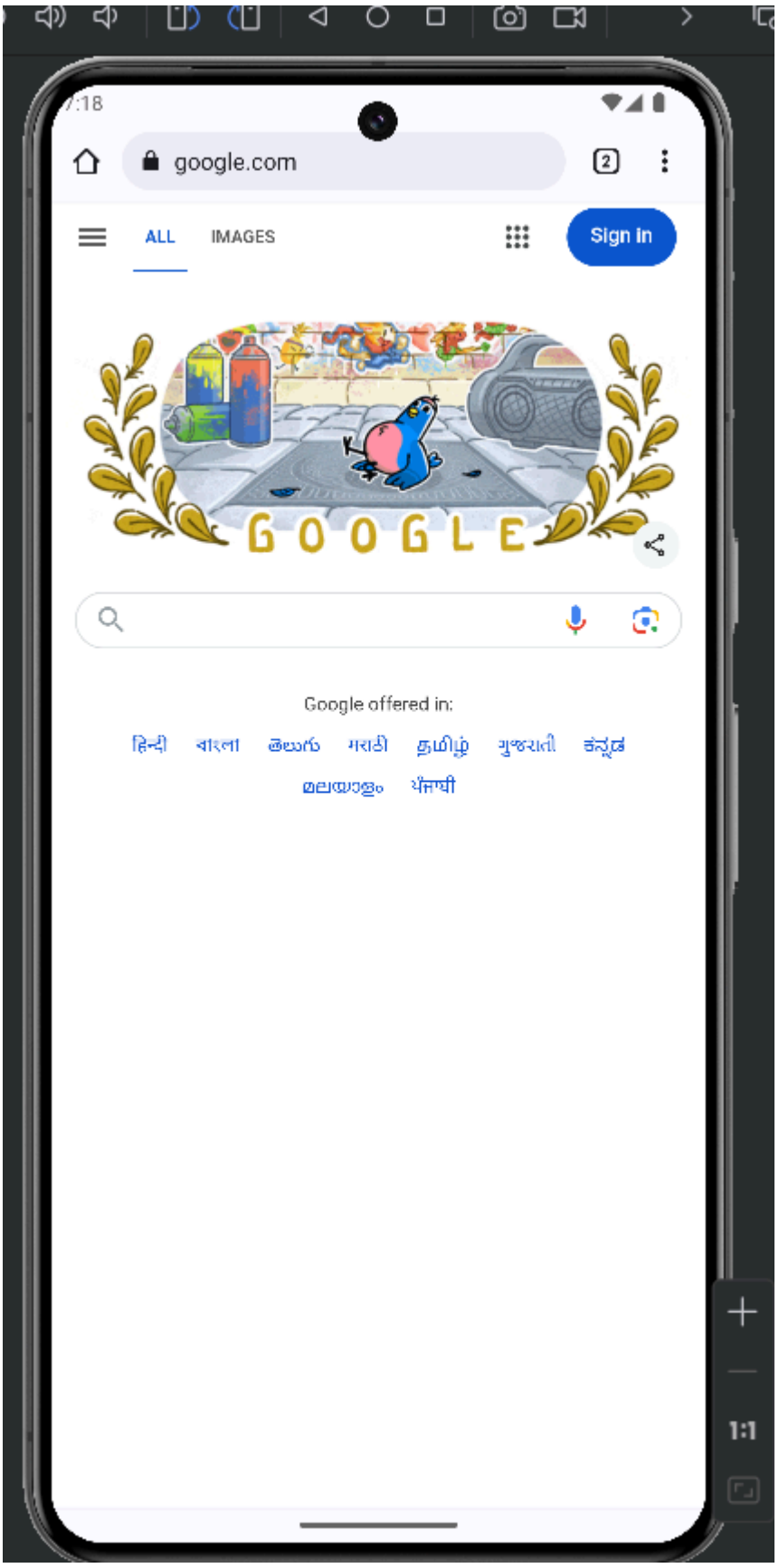
MainActivity.java:

```
package com.example.intents;
import android.content.Intent;
import android.net.Uri;
```

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    private EditText editTextURL;
    private Button buttonGo;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        editTextURL = findViewById(R.id.editTextURL);
        buttonGo = findViewById(R.id.buttonGo);
        buttonGo.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String url = editTextURL.getText().toString();
                if (!url.startsWith("http://") && !url.startsWith("https://")) {
                    url = "http://" + url;
                }
                Intent intent = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
                startActivity(intent);
            }
        });
    }
}
```

Output:

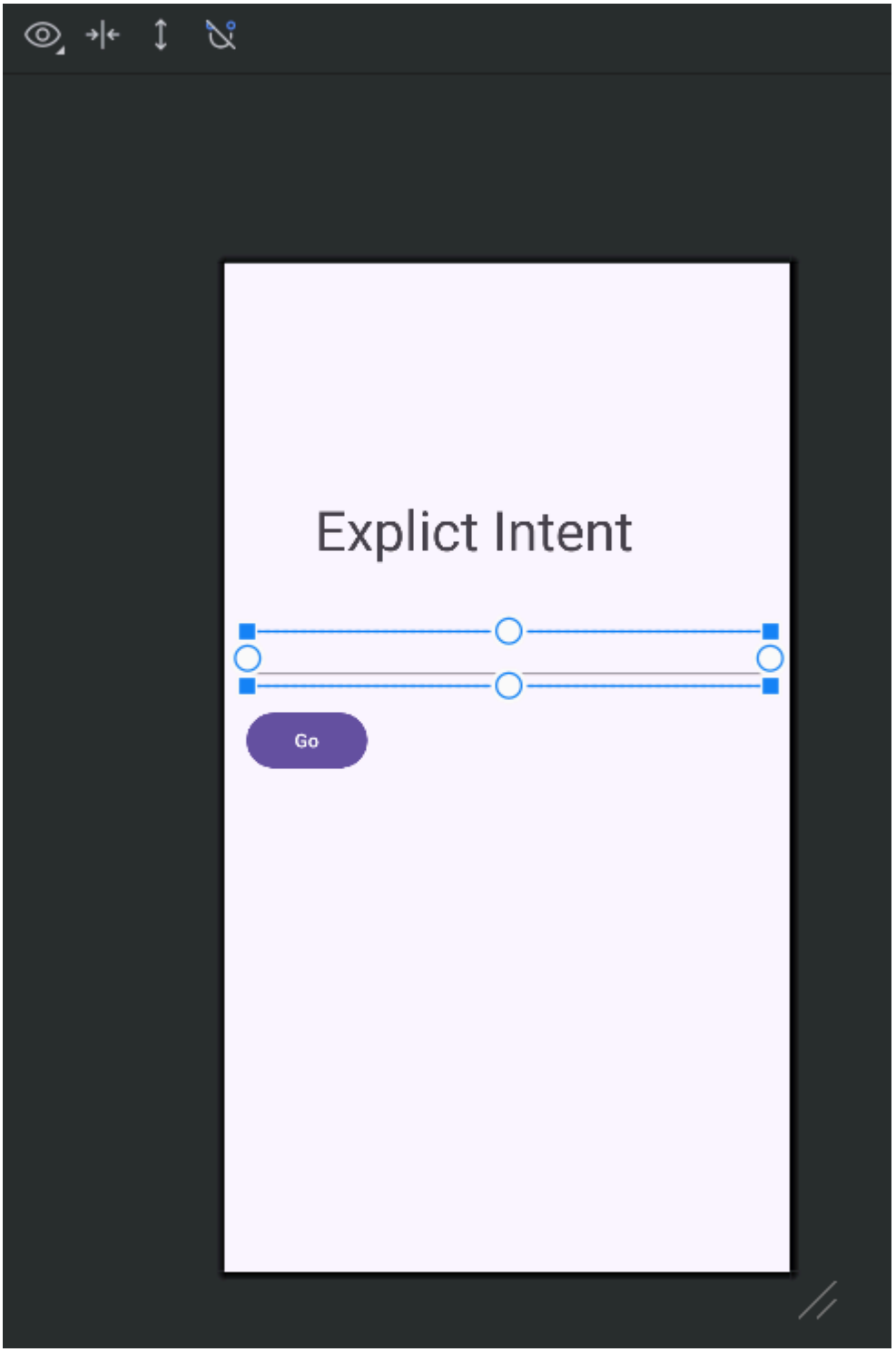



7:18
google.com
2
ALL
IMAGES
Sign in
GOOGLE
Google offered in:
हिन्दी বাংলা తెలుగు मराठी தமிழ் ગુજરાતી ಕನ್ನಡ
മലയാളം ਪੰਜਾਬੀ
1:1

Explicit Intent:

Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Explict Intent"
        android:textSize="40dp"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="150dp"/>
    <EditText
        android:id="@+id/editTextURL"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="250dp"
        android:hint=""
        android:inputType="textUri"
        android:padding="8dp" />
    <Button
        android:id="@+id/buttonGo"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Go"
        android:layout_below="@id/editTextURL"
        android:layout_marginTop="16dp"
        android:padding="8dp" />
</RelativeLayout>
```



MainActivity.java:

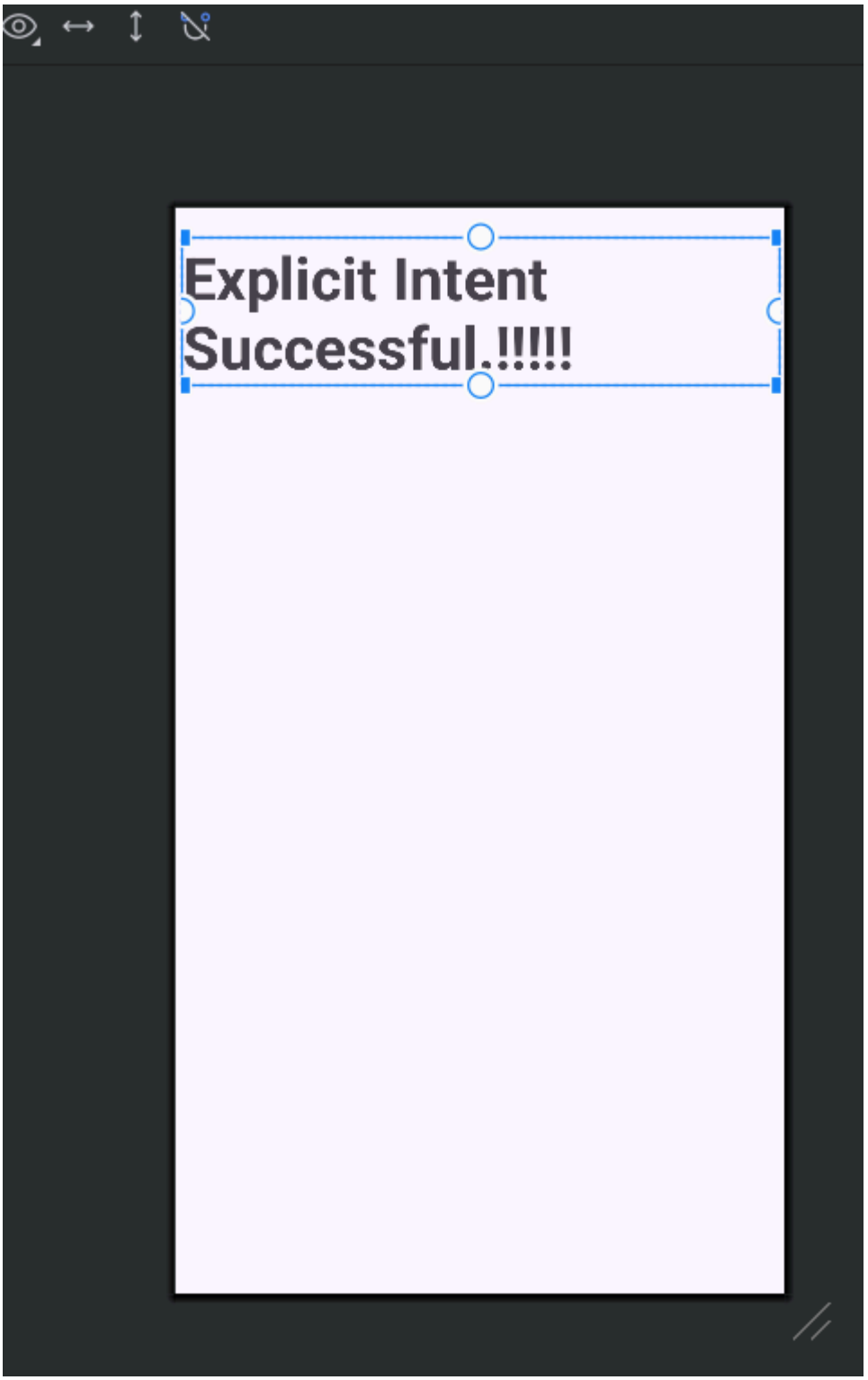
```
package com.example.intents;
import androidx.appcompat.app.AppCompatActivity;
import android.net.Uri;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
```

```
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity implements View.OnClickListener {
    Button buttonGo;
    EditText editTextURL;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        editTextURL = findViewById(R.id.editTextURL);
        buttonGo = findViewById(R.id.buttonGo);
        buttonGo.setOnClickListener(this);
    }
    @Override
    public void onClick(View v) {
        Intent intent1 = new Intent(this, WelcomeScreen.class);
        Bundle bundle1 = new Bundle();
        bundle1.putString("username", editTextURL.getText().toString());
        intent1.putExtras(bundle1);
        startActivity(intent1);
    }
}
```

Activity_welcomescreen.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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=".WelcomeScreen"
    android:orientation="vertical"
    android:layout_margin="5dp">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Explicit Intent Successful.!!!!!"
        android:textStyle="bold"
        android:textSize="40sp"
        android:layout_marginTop="15dp"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="40sp"
```

```
        android:layout_marginTop="150dp"
        android:id="@+id/usernametv"/>
</RelativeLayout>
```

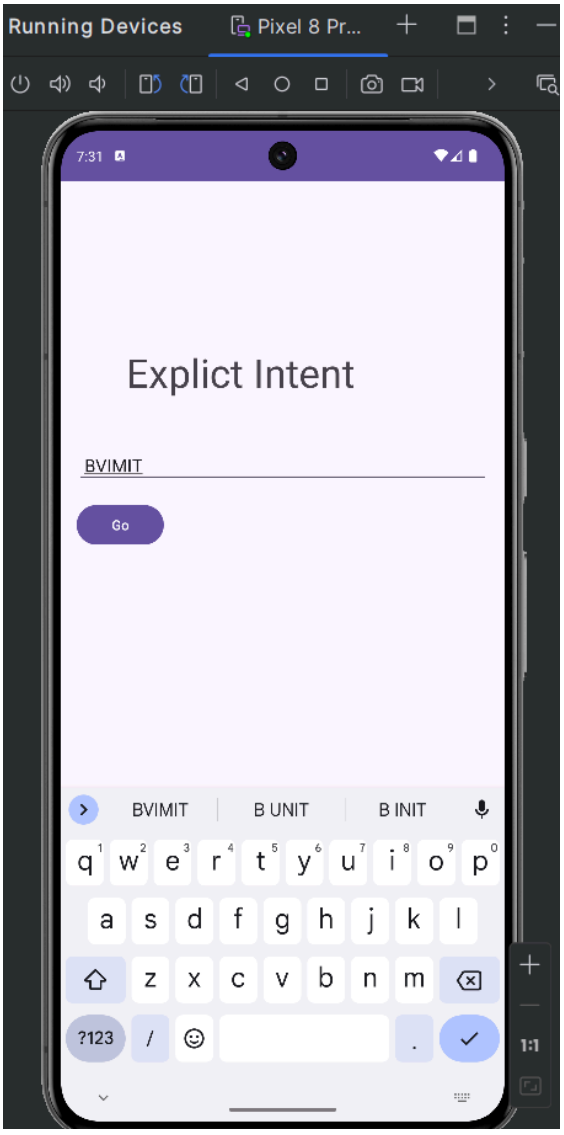


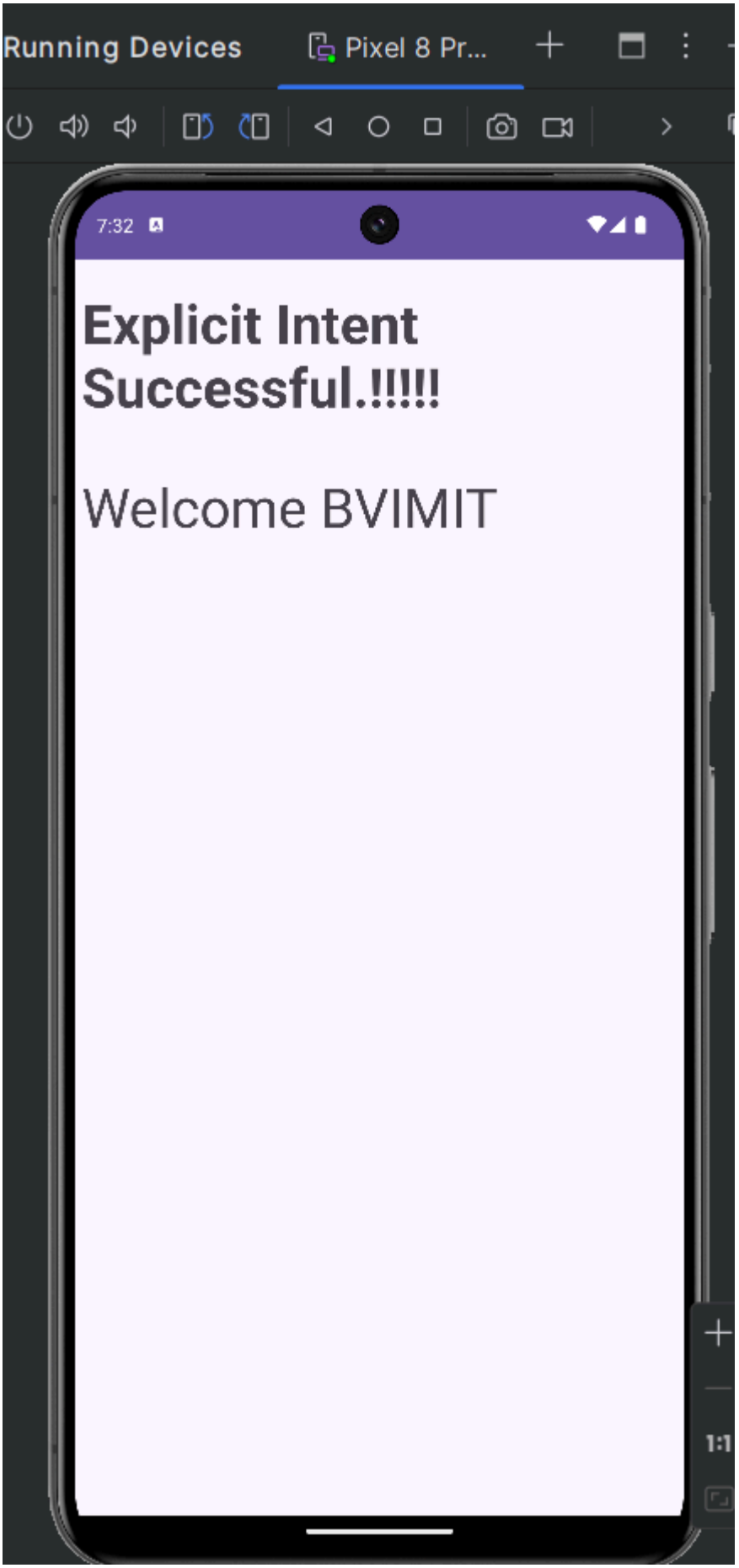
WelcomeScreen.java:

```
package com.example.intents;
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;
public class WelcomeScreen extends AppCompatActivity {
    TextView usernametv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_welcome_screen);
        usernametv = findViewById(R.id.usernametv);
        Intent intent = getIntent();
        Bundle bundle = intent.getExtras();
        usernametv.setText("Welcome "+bundle.getString("username"));
    }
}
```

Output:



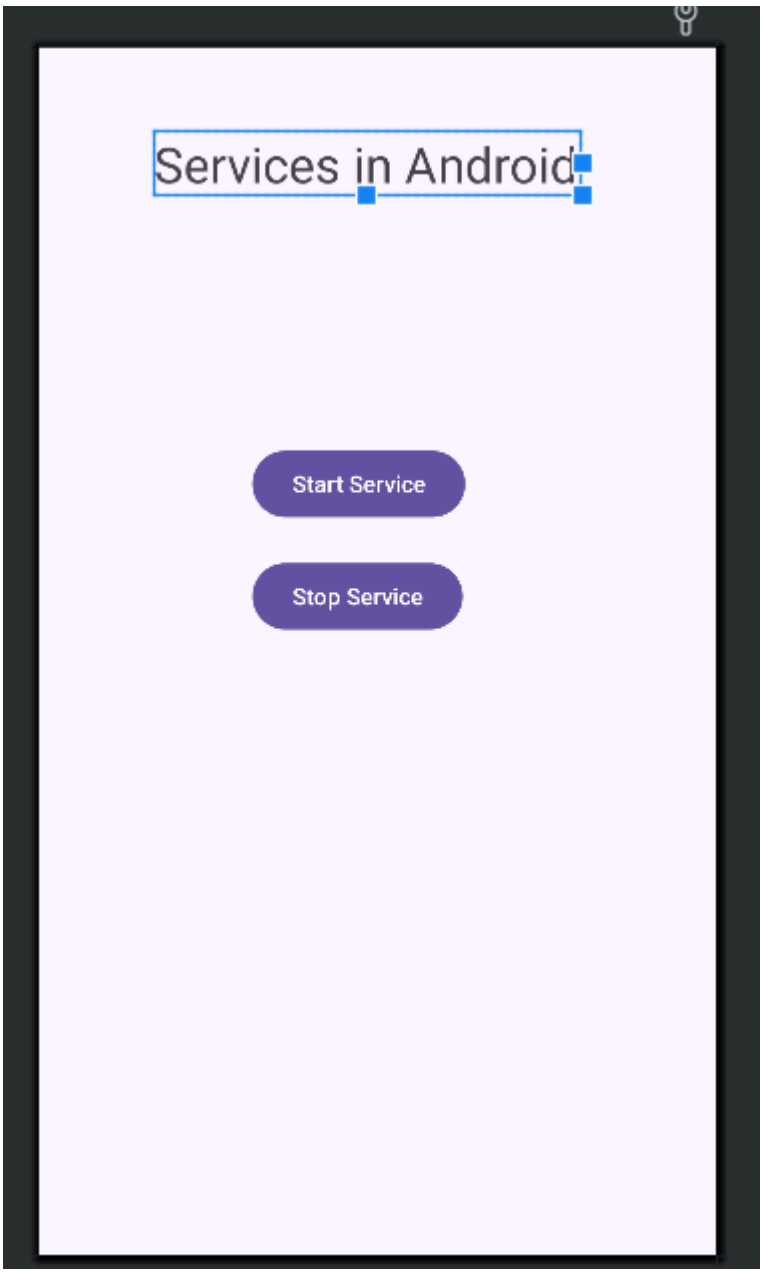

Running Devices
Pixel 8 Pr...
7:32
Explicit Intent Successful.!!!!!
Welcome BVIMIT
1:1

Practical No: 1.4

Create an android application for starting playing music in the background when the user starts a service and that music will play continuously until the service.

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">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Services in Android"
        android:textSize="30dp"
        android:layout_marginLeft="70dp"
        android:layout_marginTop="50dp"/>
    <Button
        android:id="@+id/btnStart"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="startService"
        android:layout_marginLeft="130dp"
        android:layout_marginTop="150dp"
        android:text="Start Service"/>
    <Button
        android:id="@+id/btnstop"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="stopService"
        android:layout_marginLeft="130dp"
        android:layout_marginTop="20dp"
        android:text="Stop Service"/>
</LinearLayout>
```



Mainactivity.java:

```
package com.example.musicplayer;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainActivity extends AppCompatActivity {
    @Override
```

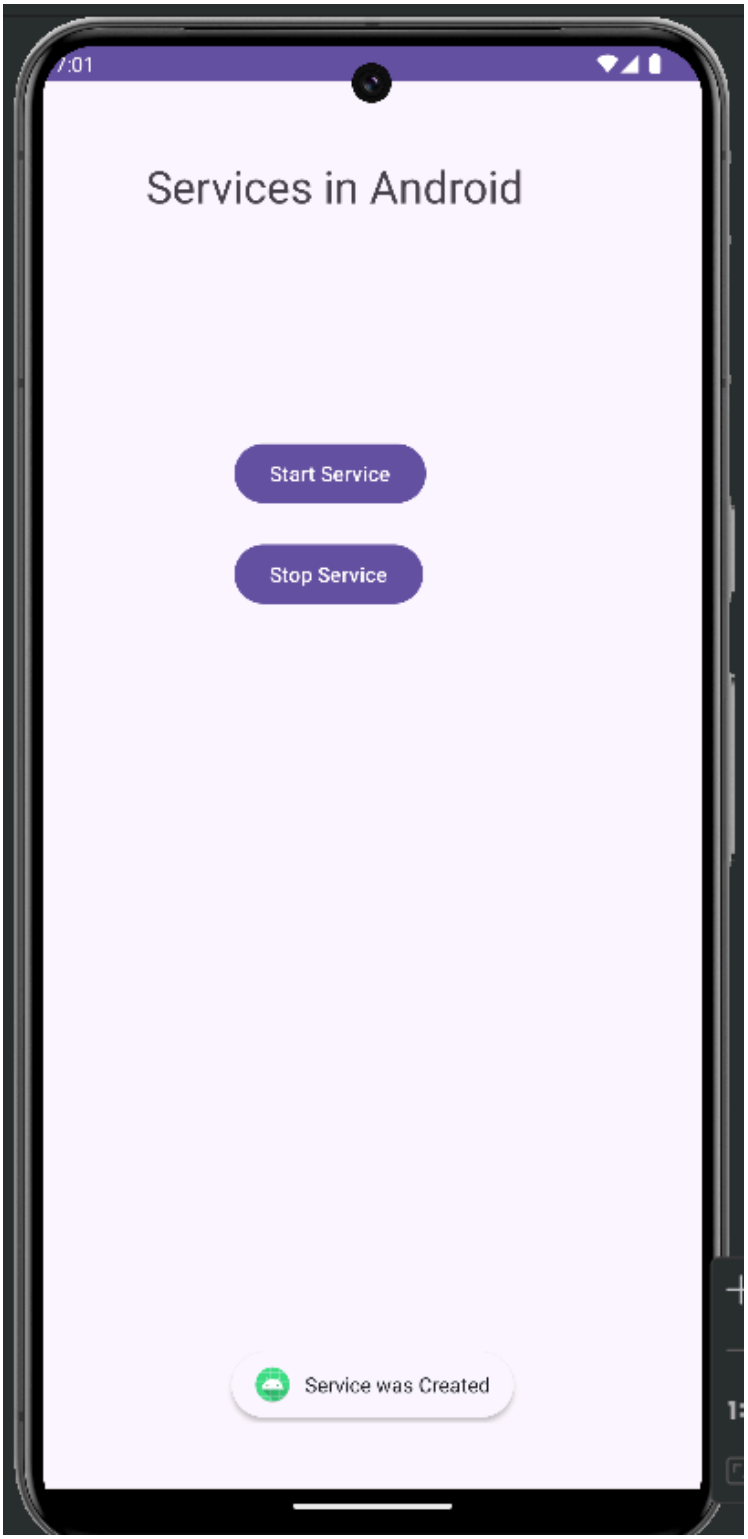
```
 protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        EdgeToEdge.enable(this);
        setContentView(R.layout.activity_main);
    }
    public void startService(View view){
        startService(new Intent(this, Myservice.class));
    }
    public void stopService(View view){
        stopService(new Intent(this, Myservice.class));
    }
}
```

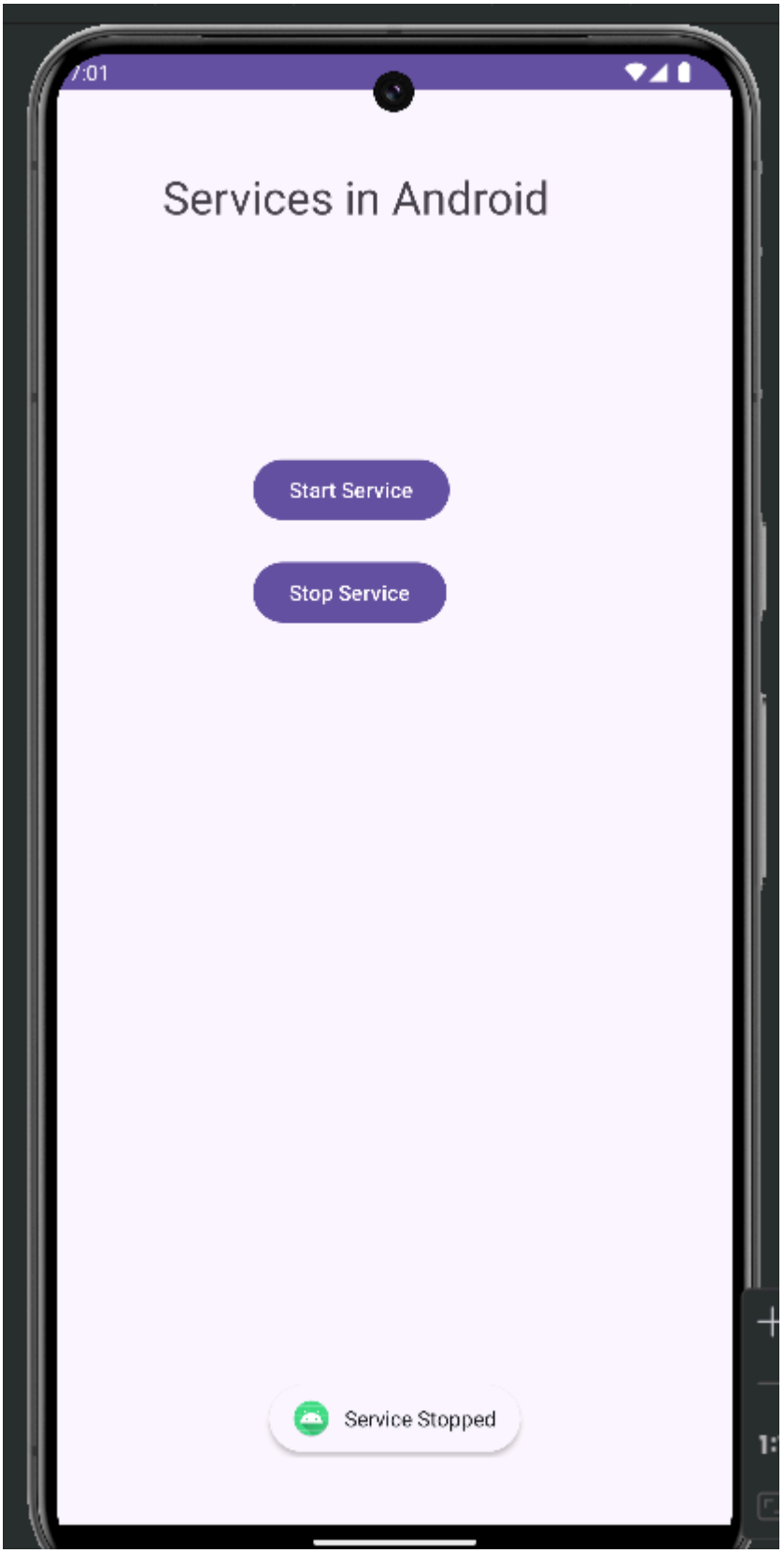
Myservice.java:

```
package com.example.musicplayer;
import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.provider.Settings;
import android.widget.Toast;
import androidx.annotation.Nullable;
public class Myservice extends Service {
    private MediaPlayer player;
    @Override
    public IBinder onBind(Intent intent) {
        return null;
    }
    @Override
    public void onCreate() {
        super.onCreate();
        Toast.makeText(this, "Service was Created", Toast.LENGTH_LONG).show();
    }
    @Override
    public int onStartCommand(Intent intent, int flags, int startId) {
        player = MediaPlayer.create(this, Settings.System.DEFAULT_RINGTONE_URI);
        player.setLooping(true);
        player.start();
        Toast.makeText(this, "Service Started", Toast.LENGTH_LONG).show();
        return START_STICKY;
    }
    @Override
    public void onDestroy() {
        super.onDestroy();
```

```
        player.stop();
        Toast.makeText(this, "Service Stopped", Toast.LENGTH_LONG).show();
    }
}
```

Output:




Services in Android
Start Service
Stop Service
Service Stopped