

MOBILE APPLICATION DEVELOPMENT LABORATORY

PRACTICAL REPORT FILE

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1 Android User Interface Design: Implement "Your Name" in Andrid Studio.

1.1 activitymain.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:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="Kishan Tiwari"
        android:textSize="40dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</LinearLayout>
```

1.2 MainActivity.xml

```
package com.t.fragment;

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);
    }
}
```

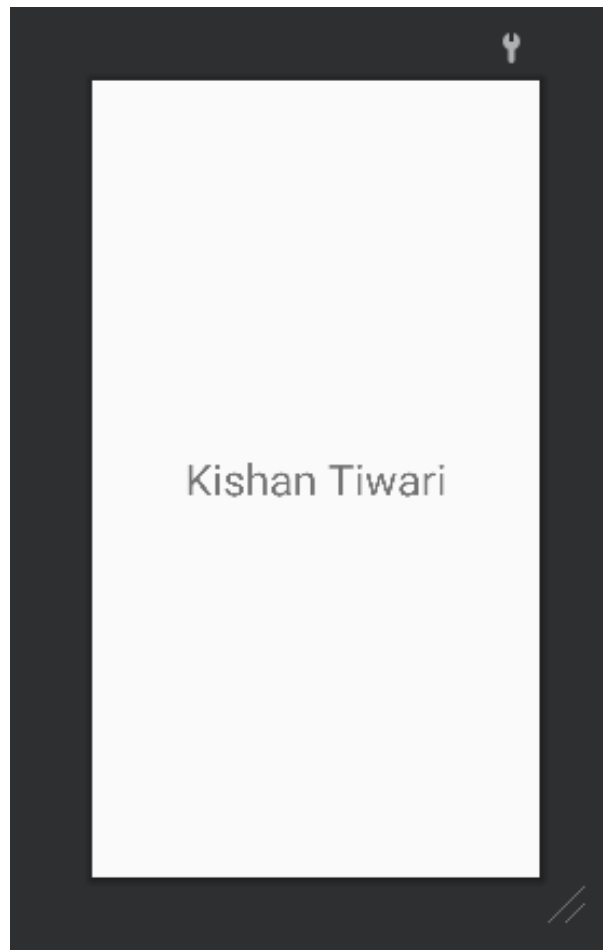


Figure 1: "Output of your Name"

2 Write any text on Button Eg. round shape button

2.1 activitymain.xml

```
<?xml version="1.0" encoding="utf-8"?>
<?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:layout_marginLeft="20dp"
    android:layout_marginTop="20dp"
    android:layout_marginRight="20dp"
    android:layout_marginBottom="20dp"
    android:background="@drawable/background"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/id1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="60dp"
        android:layout_marginTop="20dp"
        android:layout_marginRight="60dp"
        android:layout_marginBottom="20dp"
        android:background="@drawable/edit_text_border"
        android:ems="10"
        android:inputType="number"
        android:minHeight="48dp"
        android:paddingLeft="8dp"
        tools:ignore="SpeakableTextPresentCheck" />

    <EditText
        android:id="@+id/id2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="60dp"
        android:layout_marginTop="5dp"
        android:layout_marginRight="60dp"
        android:layout_marginBottom="20dp"
        android:background="@drawable/edit_text_border"
        android:ems="10"
```

```
    android:inputType="number"
    android:minHeight="48dp"
    android:paddingLeft="8dp"
    tools:ignore="SpeakableTextPresentCheck" />
```

```
<TextView
    android:id="@+id/result"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="60dp"
    android:layout_marginTop="5dp"
    android:layout_marginRight="60dp"
    android:layout_marginBottom="25dp"
    android:background="@drawable/edit_text_border"
    android:maxHeight="40dp"
    android:minHeight="40dp"
    android:paddingLeft="8dp"
    android:paddingTop="10dp"
    android:text="TextView" />
```

```
<Button
    android:id="@+id/add"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="40dp"
    android:layout_marginTop="10dp"
    android:layout_marginRight="40dp"
    android:layout_marginBottom="5dp"
    android:background="@drawable/button_border"
    android:text="Addition" />
```

```
<Button
    android:id="@+id/sub"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="40dp"
    android:layout_marginTop="10dp"
    android:layout_marginRight="40dp"
    android:layout_marginBottom="5dp"
    android:background="@drawable/button_border"
    android:text="Subtraction" />
```

```
<Button
    android:id="@+id/multi"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
```

```

        android:layout_marginLeft="40dp"
        android:layout_marginTop="10dp"
        android:layout_marginRight="40dp"
        android:layout_marginBottom="5dp"
        android:background="@drawable/button_border"
        android:text="Multiplication" />

<Button
    android:id="@+id/div"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="40dp"
    android:layout_marginTop="10dp"
    android:layout_marginRight="40dp"
    android:layout_marginBottom="5dp"
    android:background="@drawable/button_border"
    android:text="Division" />

<ImageView
    android:id="@+id/imageView"
    android:layout_width="77dp"
    android:layout_height="347dp"
    android:layout_gravity="fill_vertical"
    android:layout_marginLeft="5dp"
    android:foregroundGravity="bottom"
    app:srcCompat="@drawable/kt" />

</LinearLayout>

```

2.2 MainActivity.xml

```

package com.t.fragment;

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

public class MainActivity extends AppCompatActivity
package com.t.kcalculators;

import android.support.v7.app.AppCompatActivity;
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 {
    EditText id1,id2;
    Button add,sub,multi,div;
    TextView result;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        id1=findViewById(R.id.id1);
        id2=findViewById(R.id.id2);
        add=findViewById(R.id.add);
        sub=findViewById(R.id.sub);
        multi=findViewById(R.id.multi);
        div=findViewById(R.id.div);
        result=findViewById(R.id.result);

        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int f,s,a;
                f=Integer.parseInt(id1.getText().toString());
                s=Integer.parseInt(id2.getText().toString());
                a=f+s;
                result.setText("Result =" +a);
            }
        });

        sub.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int f,s,a;
                f=Integer.parseInt(id1.getText().toString());
                s=Integer.parseInt(id2.getText().toString());
                a=f-s;
                result.setText("Result =" +a);
            }
        });

        multi.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int f,s,a;
                f=Integer.parseInt(id1.getText().toString());

```



```

        s=Integer.parseInt(id2.getText().toString());
        a=f*s;
        result.setText("Result =" +a);
    }
});

div.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int f,s,a;
        f=Integer.parseInt(id1.getText().toString());
        s=Integer.parseInt(id2.getText().toString());
        a=f/s;
        result.setText("Result =" +a);
    }
});
}
}

```

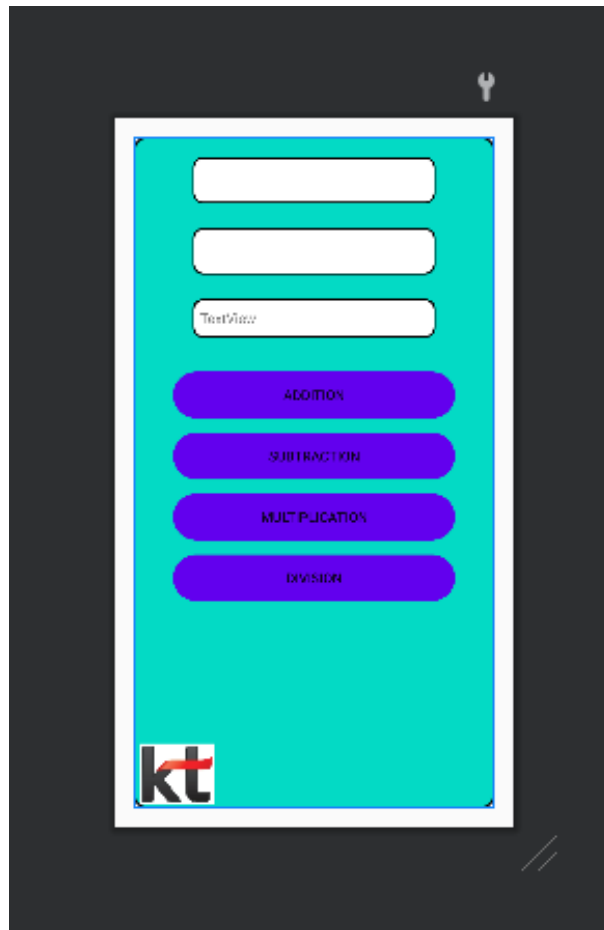


Figure 2: "Round Shape Button"

3 Change the Icon of your APK file in Android Studio.

3.1 AndroidManifest.xml

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

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Kcalculators"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

            <meta-data
                android:name="android.app.lib_name"
                android:value="" />
            </activity>
        </application>

</manifest>
```

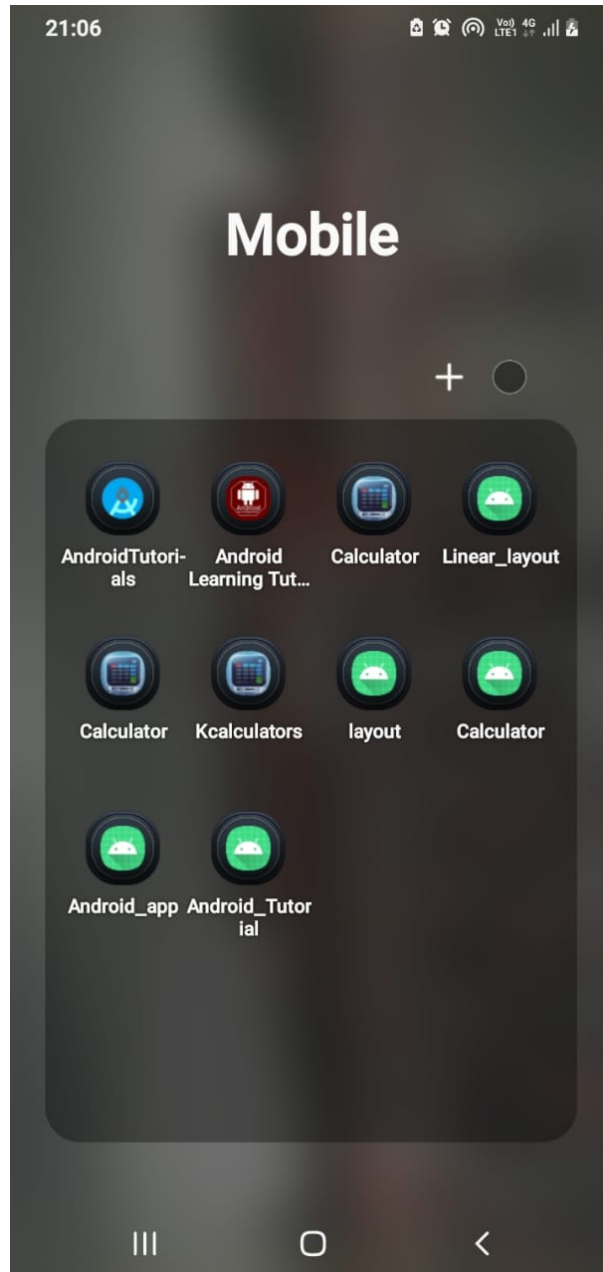


Figure 3: "Icon Of APK files"

4 Create an APK of Second Page Layout like Android Tutorial app Assignment.

4.1 ActicityMain.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:id="@+id/layout2"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="60dp"
        android:background="@color/purple_200"
        android:orientation="horizontal">

        <Button
            android:id="@+id/tutorial"
            android:layout_width="wrap_content"
            android:layout_height="60dp"
            android:layout_weight="1"
            android:background="@color/purple_200"
            android:text="TUTORIAL"
            android:textColor="@color/white" />

        <Button
            android:id="@+id/example"
            android:layout_width="wrap_content"
            android:layout_height="60dp"
            android:layout_weight="1"
            android:background="@color/purple_200"
            android:text="EXAMPLES"
            android:textColor="@color/white" />

        <Button
            android:id="@+id/quiz"
            android:layout_width="wrap_content"
            android:layout_height="60dp"
            android:layout_weight="1"
            android:background="@color/purple_200"
            android:text="QUIZ"
```

```

        android:textColor="@color/white" />

</LinearLayout>

<LinearLayout
    android:id="@+id/main_layout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="160dp"
        android:orientation="horizontal">

        <ImageView
            android:id="@+id/imageView"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_weight="1"
            android:padding="20dp"
            app:srcCompat="@drawable/androidlogo" />

        <View
            android:layout_width="3dp"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:background="@color/purple_200" />

        <ImageView
            android:id="@+id/imageView2"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_weight="1"
            android:padding="20dp"
            app:srcCompat="@drawable/project_structure" />

    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="50dp"

```

```

        android:orientation="horizontal">

        <TextView
            android:id="@+id/textView4"
            android:layout_width="150dp"
            android:layout_height="38dp"
            android:layout_weight="1"
            android:gravity="center"
            android:text="Introduction"
            android:textColor="@color/black"
            android:textSize="20dp" />

        <View
            android:layout_width="3dp"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:background="@color/purple_200" />

        <TextView
            android:id="@+id/textView5"
            android:layout_width="wrap_content"
            android:layout_height="38dp"
            android:layout_weight="1"
            android:gravity="center"
            android:text="Project structure"
            android:textColor="@color/black"
            android:textSize="20dp" />
    </LinearLayout>

    <View
        android:layout_width="wrap_content"
        android:layout_height="3dp"
        android:background="@color/purple_200" />

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="160dp"
        android:orientation="horizontal">

        <ImageView
            android:id="@+id/imageView6"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:layout_weight="1"
            android:padding="20dp"

```

```

        app:srcCompat="@drawable/layouts" />

<View
    android:layout_width="3dp"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:background="@color/purple_200" />

<ImageView
    android:id="@+id/imageView7"
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:padding="20dp"
    app:srcCompat="@drawable/widget" />

</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="50dp"
    android:orientation="horizontal">

    <TextView
        android:id="@+id/textView8"
        android:layout_width="98dp"
        android:layout_height="38dp"
        android:layout_weight="1"
        android:gravity="center"
        android:text="Layouts"
        android:textColor="@color/black"
        android:textSize="20dp" />

    <View
        android:layout_width="3dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:background="@color/purple_200" />

    <TextView
        android:id="@+id/textView9"
        android:layout_width="wrap_content"
        android:layout_height="38dp"

```



```

        android:layout_weight="1"
        android:gravity="center"
        android:text="UI Widgets"
        android:textColor="@color/black"
        android:textSize="20dp" />
</LinearLayout>

<View
    android:layout_width="wrap_content"
    android:layout_height="3dp"
    android:background="@color/purple_200" />

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="160dp"
    android:orientation="horizontal">

    <ImageView
        android:id="@+id/imageView10"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:padding="20dp"
        app:srcCompat="@drawable/activities" />

    <View
        android:layout_width="3dp"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:background="@color/purple_200" />

    <ImageView
        android:id="@+id/imageView11"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:padding="20dp"
        app:srcCompat="@drawable/services" />

</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"

```

```

        android:layout_height="50dp"
        android:orientation="horizontal">

        <TextView
            android:id="@+id/textView12"
            android:layout_width="77dp"
            android:layout_height="38dp"
            android:layout_weight="1"
            android:gravity="center"
            android:text="Activities"
            android:textColor="@color/black"
            android:textSize="20dp" />

        <View
            android:layout_width="3dp"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:background="@color/purple_200" />

        <TextView
            android:id="@+id/textView13"
            android:layout_width="wrap_content"
            android:layout_height="38dp"
            android:layout_weight="1"
            android:gravity="center"
            android:text="Services"
            android:textColor="@color/black"
            android:textSize="20dp" />
    </LinearLayout>

    <View
        android:layout_width="wrap_content"
        android:layout_height="3dp"
        android:background="@color/purple_200" />
</LinearLayout>
</LinearLayout>

```

4.2 MainActivity.xml

```

package com.t.android_tutorial;

import android.support.v4.app.Fragment;
import android.support.v4.app.FragmentTransaction;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;

```

```

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

public class MainActivity extends AppCompatActivity {
    Button btntutorial,btnexample,btnquiz;
    LinearLayout main_layout;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btntutorial=findViewById(R.id.tutorial);
        btnexample=findViewById(R.id.example);
        btnquiz=findViewById(R.id.quiz);
        main_layout=findViewById(R.id.main_layout);
    }
}

```

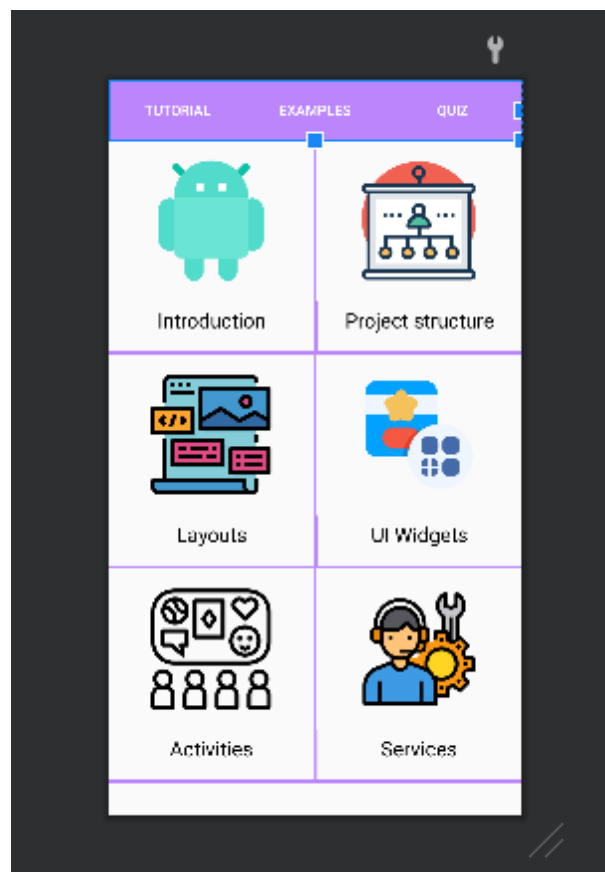


Figure 4: "Second Page Layout Of Android Tutorial"

5 Create Apk file with button and on button click i.e on click task 1 it will move to other task 2

5.1 ActicityMain.xml

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://
/schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/register"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginLeft="5dp"
    android:layout_marginTop="5dp"
    android:layout_marginRight="5dp"
    android:layout_marginBottom="5dp"
    android:background="@drawable/bg"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/signuptitle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="25dp"
        android:gravity="center"
        android:text="Sign Up"
        android:textColor="@color/white"
        android:textSize="35dp"
        android:textStyle="bold" />

    <EditText
        android:id="@+id/username"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/signuptitle"
        android:layout_marginStart="10dp"
        android:layout_marginTop="10dp"
        android:layout_marginEnd="10dp"
        android:layout_marginBottom="10dp"
        android:background="#30ffffff"
        android:drawableLeft="@drawable/ic_baseline_person_outline_24"
        android:drawablePadding="20dp"
        android:hint="Username"
        android:padding="20dp"
        android:textColor="@color/white"
        android:textColorHint="@color/white" />
```

```

<EditText
    android:id="@+id/email"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/username"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:background="#30ffffff"
    android:drawableLeft="@drawable/ic_baseline_email_24"
    android:drawablePadding="20dp"
    android:hint="Email"
    android:padding="20dp"
    android:textColor="@color/white"
    android:textColorHint="@color/white" />

<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/email"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:background="#30ffffff"
    android:drawableLeft="@drawable/ic_baseline_password_24"
    android:drawablePadding="20dp"
    android:hint="Password"
    android:inputType="textPassword"
    android:padding="20dp"
    android:textColor="@color/white"
    android:textColorHint="@color/white" />

<EditText
    android:id="@+id/rpassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/password"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"

```

```

        android:background="#30ffffff"
        android:drawableLeft="@drawable/ic_baseline_password_24"
        android:drawablePadding="20dp"
        android:hint="Confirm Password "
        android:inputType="textPassword"
        android:padding="20dp"
        android:textColor="@color/white"
        android:textColorHint="@color/white" />

<Button
    android:id="@+id/regis"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/rpassword"
    android:layout_marginLeft="80dp"
    android:layout_marginTop="40dp"
    android:layout_marginRight="60dp"
    android:gravity="center"
    android:text="Register" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/info"
    android:text="or Sign Up with"
    android:layout_centerHorizontal="true"
    android:layout_above="@id/socialicons"
    android:textColor="@color/white"
    android:textSize="15dp"
    android:textStyle="bold"/>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/socialicons"
    android:layout_alignParentBottom="true"
    android:gravity="center">

    <ImageView
        android:layout_width="48dp"
        android:layout_height="48dp"
        android:src="@drawable/google"
        android:layout_margin="20dp"/>

    <ImageView
        android:layout_width="48dp"

```

```

        android:layout_height="48dp"
        android:src="@drawable/fb"
        android:layout_margin="20dp"/>

<ImageView
    android:layout_width="48dp"
    android:layout_height="48dp"
    android:src="@drawable/twitter"
    android:layout_margin="20dp"/>

</LinearLayout>
</RelativeLayout>

```

5.2 MainActivity.xml

```

package com.t.signinform;

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

public class MainActivity extends AppCompatActivity {
    EditText username;
    EditText email;
    EditText password;
    Button regis;

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

        database g=new database(this);

        //SQLiteDatabase db=g.getReadableDatabase();

        username = findViewById(R.id.username);
        password = findViewById(R.id.password);
        email=findViewById(R.id.email);
        regis = findViewById(R.id.regis);
    }
}

```

```

regis.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        String n=username.getText().toString();
        String m=email.getText().toString();
        String p=password.getText().toString();
        if(n.equals("") || m.equals("") || p.equals(""))
        {
            Toast.makeText(MainActivity.this
            ,"Enter All The Fields",
            Toast.LENGTH_SHORT).show();
        }
        else if(n.equals("kishan") && p.equals("tiwari"))
        {
            Intent i=new Intent(MainActivity.
            this,Kcalculator.class);
            startActivity(i);
        }
        else
        {
            Boolean i=g.insert_data(n,m,p);
            if(i==true)
            {
                Toast.makeText(MainActivity.
                this,"Successful",Toast.
                LENGTH_SHORT).show();
            }
            else{
                Toast.makeText(MainActivity.
                this,"Not Successful",Toast
                .LENGTH_SHORT).show();
            }
        }
    }
});
}
}

```

5.3 activitykcalculator.xml

```

package com.t.signinform;

import androidx.appcompat.app.AppCompatActivity;

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 android.widget.TextView;
import android.widget.Toast;

public class Kcalculator extends AppCompatActivity {
    EditText id1,id2;
    Button add,sub,multi,div;
    TextView result;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_kcalculator);
        id1=findViewById(R.id.id1);
        id2=findViewById(R.id.id2);
        add=findViewById(R.id.add);
        sub=findViewById(R.id.sub);
        multi=findViewById(R.id.multi);
        div=findViewById(R.id.div);
        result=findViewById(R.id.result);

        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                String p=id1.getText().toString();
                String q=id2.getText().toString();

                if(p.equals("24") && q.equals("@"))
                {
                    Intent intent =new Intent();
                    intent.setAction(Intent.ACTION_VIEW);
                    intent.setData(Uri.parse("https://www.google.com/"));
                    startActivity(intent);
                }
                else
                {
                    int f,s,a;
                    f=Integer.parseInt(id1.getText().toString());
                    s=Integer.parseInt(id2.getText().toString());

```

```

        a=f+s;
        result.setText("Result =" +a);
    }

    }

});

sub.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int f,s,a;
        f=Integer.parseInt(id1.getText().toString());
        s=Integer.parseInt(id2.getText().toString());
        a=f-s;
        result.setText("Result =" +a);
    }
});

multi.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int f,s,a;
        f=Integer.parseInt(id1.getText().toString());
        s=Integer.parseInt(id2.getText().toString());
        a=f*s;
        result.setText("Result =" +a);
    }
});

div.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int f,s,a;
        f=Integer.parseInt(id1.getText().toString());
        s=Integer.parseInt(id2.getText().toString());
        a=f/s;
        result.setText("Result =" +a);
    }
});
}

}

package com.t.signinform;

import androidx.appcompat.app.AppCompatActivity;

```

```

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 android.widget.TextView;
import android.widget.Toast;

public class Kcalculator extends AppCompatActivity {
    EditText id1,id2;
    Button add,sub,multi,div;
    TextView result;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_kcalculator);
        id1=findViewById(R.id.id1);
        id2=findViewById(R.id.id2);
        add=findViewById(R.id.add);
        sub=findViewById(R.id.sub);
        multi=findViewById(R.id.multi);
        div=findViewById(R.id.div);
        result=findViewById(R.id.result);

        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                String p=id1.getText().toString();
                String q=id2.getText().toString();

                if(p.equals("24") && q.equals("@"))
                {
                    Intent intent =new Intent();
                    intent.setAction(Intent.ACTION_VIEW);
                    intent.setData(Uri.parse("
                    https://www.google.com/"));
                    startActivity(intent);
                }
                else
                {
                    int f,s,a;
                    f=Integer.parseInt(id1.getText().toString());

```

```

        s=Integer.parseInt(id2.getText().toString());
        a=f+s;
        result.setText("Result =" +a);
    }
}
});

sub.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int f,s,a;
        f=Integer.parseInt(id1.getText().toString());
        s=Integer.parseInt(id2.getText().toString());
        a=f-s;
        result.setText("Result =" +a);
    }
});

multi.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int f,s,a;
        f=Integer.parseInt(id1.getText().toString());
        s=Integer.parseInt(id2.getText().toString());
        a=f*s;
        result.setText("Result =" +a);
    }
});

div.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int f,s,a;
        f=Integer.parseInt(id1.getText().toString());
        s=Integer.parseInt(id2.getText().toString());
        a=f/s;
        result.setText("Result =" +a);
    }
});
}
}

```

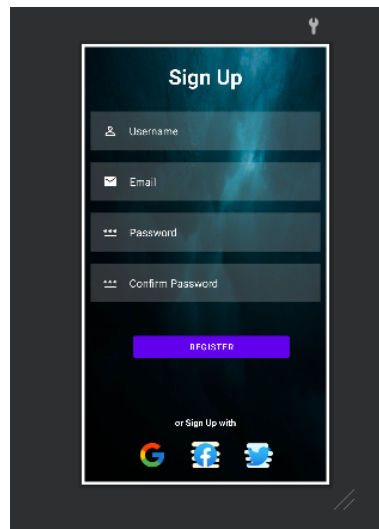


Figure 5: "After saving data Page will move to Calculator"

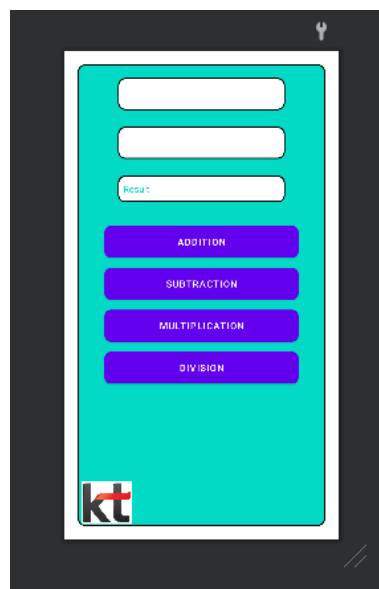


Figure 6: "Calculator"

6 Create an APK file with page of fragment in an application.

6.1 activitymain.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:background="@android:color/holo_blue_dark"
    android:orientation="vertical"
    tools:context=".MainActivity">

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

        <Button
            android:id="@+id/red"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:layout_weight="1"
            android:background="@android:color/holo_purple"
            android:text="Red" />

        <Button
            android:id="@+id/yellow"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:layout_weight="1"
            android:background="@android:color/holo_purple"
            android:text="Yellow" />
    </LinearLayout>

    <LinearLayout
        android:id="@+id/layout"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="horizontal"></LinearLayout>
</LinearLayout>
```

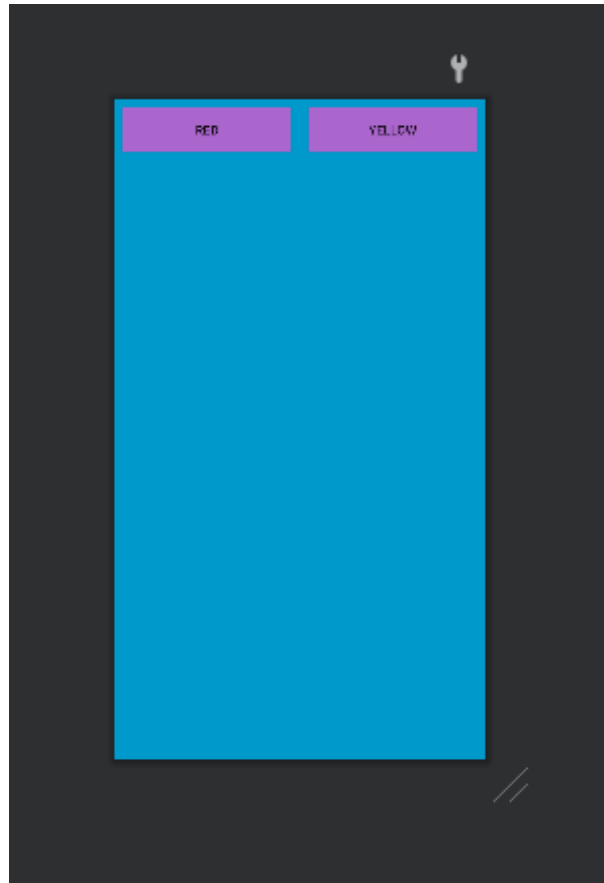


Figure 7: "E.g Fragment Apk"

6.2 MainActivity.xml

```
package com.t.fragment;

import android.support.v4.app.Fragment;
import android.support.v4.app.FragmentTransaction;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.LinearLayout;

public class MainActivity extends AppCompatActivity {
    Button btnred,btnyellow;
    LinearLayout layout1;

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

```

        setContentView(R.layout.activity_main);

        btnred=findViewById(R.id.red);
        btnyellow=findViewById(R.id.yellow);
        layout1=findViewById(R.id.layout);

        btnred.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Red_fragment firstfragment=new Red_fragment();
                FragmentTransaction transaction
                =getSupportFragmentManager()
                .beginTransaction();
                transaction.replace(R.
                id.layout,firstfragment);
                transaction.commit();
            }
        });

        btnyellow.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Yellow_fragment Secondfragment=
                new Yellow_fragment();
                FragmentTransaction transaction
                =getSupportFragmentManager().
                beginTransaction();
                transaction.
                replace(R.id.layout,Secondfragment);
                transaction.commit();
            }
        });

    }
}

```

6.3 redfragment.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"

```



```

tools:context=".Red_fragment">

<TextView
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@android:color/holo_red_light"
    android:gravity="center"
    android:text="Red Fragment"
    android:textSize="50dp" />
</FrameLayout>

```



Figure 8: "Red Fragment"

6.4 redfragment.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"
        tools:context=".Yellow_fragment">

<!-- TODO: Update blank fragment layout -->
<TextView
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="@android:color/holo_orange_light"
    android:gravity="center"
    android:text="Yellow Fragment"
    android:textSize="50dp" />

</FrameLayout>

```



Figure 9: "Yellow Fragment"

6.5 redfragment.java

```
package com.t.fragment;
```

```

import android.os.Bundle;
import android.support.v4.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class Red_fragment extends Fragment {

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

```

6.6 yellowfragment.java

```

package com.t.fragment;

import android.os.Bundle;
import android.support.v4.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class Yellow_fragment extends Fragment {

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

```

7 Create a form of Sign-In and feed data using SQLite Content Provider Database

7.1 MainActivity.java

```
package com.t.signinform;

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

public class MainActivity extends AppCompatActivity {
    EditText username;
    EditText email;
    EditText password;
    Button regis;

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

        database g=new database(this);

        //SQLiteDatabase db=g.getReadableDatabase();

        username = findViewById(R.id.username);
        password = findViewById(R.id.password);
        email=findViewById(R.id.email);
        regis = findViewById(R.id.regis);

        regis.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String n=username.getText().toString();
                String m=email.getText().toString();
                String p=password.getText().toString();
                if(n.equals("") || m.equals("") || p.equals(""))
                {
                    Toast.makeText(MainActivity.this,"Enter All The Fiel
```

```

    }
    else if(n.equals("kishan") && p.equals("tiwari")){
        Intent i=new Intent(MainActivity.this,
            Kcalculator.class);
        startActivity(i);
    }
    else
    {
        Boolean i=g.insert_data(n,m,p);
        if(i==true)
        {
            Toast.makeText(MainActivity.this,
                "Successful",Toast.
                LENGTH_SHORT).show();
        }
        else{
            Toast.makeText(MainActivity
                .this,"Not Successful",Toast.
                LENGTH_SHORT).show();
        }
    }
}

});
}
}

```

7.2 database.java

```

package com.t.signinform;

import android.content.ContentValues;
import android.content.Context;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class database extends SQLiteOpenHelper {
    private static final String dbname="signup.db";
    public database(Context context){
        super(context, dbname, null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase sqLiteDatabase) {

```

```

        String q="create table users (_id
        integer primary key AUTOINCREMENT ,username
        text,email text, password text );
        SQLiteDatabase.execSQL(q);
    }

    @Override
    public void onUpgrade(SQLiteDatabase
    sqLiteDatabase, int i, int il) {
        sqLiteDatabase.execSQL("drop table if exists users");
        onCreate(sqLiteDatabase);
    }

    public boolean insert_data(String
    username, String email, String password){
        SQLiteDatabase db=this.getWritableDatabase();
        ContentValues c=new ContentValues();
        c.put("username",username);
        c.put("email",email);
        c.put("password",password);
        long r=db.insert("users",null,c);
        if (r==-1) {
            return false;
        }
        else {
            return true;
        }
    }
}

```

7.3 activityMain.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas
.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/register"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginLeft="5dp"
    android:layout_marginTop="5dp"
    android:layout_marginRight="5dp"
    android:layout_marginBottom="5dp"
    android:background="@drawable/bg"
    tools:context=".MainActivity">

```

```

<TextView
    android:id="@+id/signuptitle"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="25dp"
    android:gravity="center"
    android:text="Sign Up"
    android:textColor="@color/white"
    android:textSize="35dp"
    android:textStyle="bold" />

<EditText
    android:id="@+id/username"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/signuptitle"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:background="#30ffffff"
    android:drawableLeft="@drawable/
ic_baseline_person_outline_24"
    android:drawablePadding="20dp"
    android:hint="Username"
    android:padding="20dp"
    android:textColor="@color/white"
    android:textColorHint="@color/white" />

<EditText
    android:id="@+id/email"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/username"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:background="#30ffffff"
    android:drawableLeft="@drawable/
ic_baseline_email_24"
    android:drawablePadding="20dp"
    android:hint="Email"
    android:padding="20dp"
    android:textColor="@color/white"

```

```
android:textColorHint="@color/white" />
```

```
<EditText
    android:id="@+id/password"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/email"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:background="#30ffffff"
    android:drawableLeft="@drawable/
ic_baseline_password_24"
    android:drawablePadding="20dp"
    android:hint="Password"
    android:inputType="textPassword"
    android:padding="20dp"
    android:textColor="@color/white"
    android:textColorHint="@color/white" />
```

```
<EditText
    android:id="@+id/rpassword"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/password"
    android:layout_marginStart="10dp"
    android:layout_marginTop="10dp"
    android:layout_marginEnd="10dp"
    android:layout_marginBottom="10dp"
    android:background="#30ffffff"
    android:drawableLeft="@drawable/
ic_baseline_password_24"
    android:drawablePadding="20dp"
    android:hint="Confirm Password "
    android:inputType="textPassword"
    android:padding="20dp"
    android:textColor="@color/white"
    android:textColorHint="@color/white" />
```

```
<Button
    android:id="@+id/regis"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/rpassword"
```



```

        android:layout_marginLeft="80dp"
        android:layout_marginTop="40dp"
        android:layout_marginRight="60dp"
        android:gravity="center"
        android:text="Register" />

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:id="@+id/info"
    android:text="or Sign Up with"
    android:layout_centerHorizontal="true"
    android:layout_above="@id/socialicons"
    android:textColor="@color/white"
    android:textSize="15dp"
    android:textStyle="bold"/>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/socialicons"
    android:layout_alignParentBottom="true"
    android:gravity="center">

    <ImageView
        android:layout_width="48dp"
        android:layout_height="48dp"
        android:src="@drawable/google"
        android:layout_margin="20dp"/>

    <ImageView
        android:layout_width="48dp"
        android:layout_height="48dp"
        android:src="@drawable/fb"
        android:layout_margin="20dp"/>

    <ImageView
        android:layout_width="48dp"
        android:layout_height="48dp"
        android:src="@drawable/twitter"
        android:layout_margin="20dp"/>

</LinearLayout>
</RelativeLayout>

```

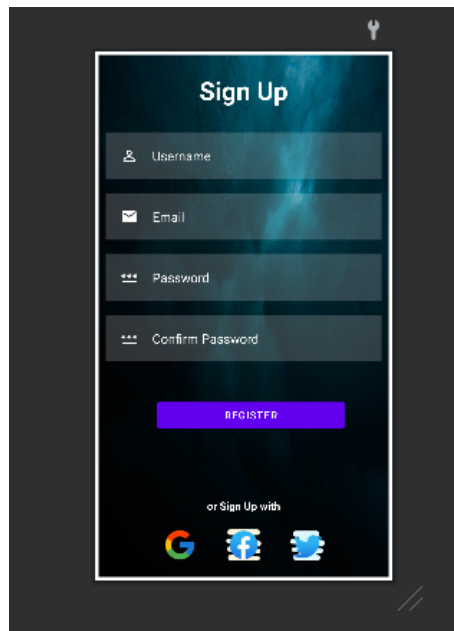


Figure 10: "Sign-In form"

7.4 activitykcalculator.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:layout_marginLeft="20dp"
    android:layout_marginTop="20dp"
    android:layout_marginRight="20dp"
    android:layout_marginBottom="20dp"
    android:background="@drawable/background"
    android:orientation="vertical"
    tools:context=".Kcalculator">

    <EditText
        android:id="@+id/id1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginLeft="60dp"
        android:layout_marginTop="20dp"
        android:layout_marginRight="60dp"
        android:layout_marginBottom="20dp"
        android:background="@drawable/edit_text_border">
```

```

        android:ems="10"
        android:inputType="text"
        android:minHeight="48dp"
        android:paddingLeft="8dp"
        android:textColor="@color/black"
        tools:ignore="SpeakableTextPresentCheck" />

<EditText
    android:id="@+id/id2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="60dp"
    android:layout_marginTop="5dp"
    android:layout_marginRight="60dp"
    android:layout_marginBottom="20dp"
    android:background="@drawable/edit_text_border"
    android:ems="10"
    android:inputType="text"
    android:minHeight="48dp"
    android:paddingLeft="8dp"
    android:textColor="@color/black"
    tools:ignore="SpeakableTextPresentCheck" />

<TextView
    android:id="@+id/result"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="60dp"
    android:layout_marginTop="5dp"
    android:layout_marginRight="60dp"
    android:layout_marginBottom="25dp"
    android:background="@drawable/edit_text_border"
    android:hint="Result"
    android:maxHeight="40dp"
    android:minHeight="40dp"
    android:paddingLeft="8dp"
    android:paddingTop="10dp"
    android:textColor="@color/black"
    android:textColorHint="@color/teal_200" />

<Button
    android:id="@+id/add"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginLeft="40dp"
    android:layout_marginTop="10dp"

```

```
android:layout_marginRight="40dp"  
android:layout_marginBottom="5dp"  
android:background="@drawable/button_border"  
android:text="Addition" />
```

```
<Button  
    android:id="@+id/sub"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginLeft="40dp"  
    android:layout_marginTop="10dp"  
    android:layout_marginRight="40dp"  
    android:layout_marginBottom="5dp"  
    android:background="@drawable/button_border"  
    android:text="Subtraction" />
```

```
<Button  
    android:id="@+id/multi"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginLeft="40dp"  
    android:layout_marginTop="10dp"  
    android:layout_marginRight="40dp"  
    android:layout_marginBottom="5dp"  
    android:background="@drawable/button_border"  
    android:text="Multiplication" />
```

```
<Button  
    android:id="@+id/div"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:layout_marginLeft="40dp"  
    android:layout_marginTop="10dp"  
    android:layout_marginRight="40dp"  
    android:layout_marginBottom="5dp"  
    android:background="@drawable/button_border"  
    android:text="Division" />
```

```
<ImageView  
    android:id="@+id/imageView"  
    android:layout_width="77dp"  
    android:layout_height="347dp"  
    android:layout_gravity="fill_vertical"  
    android:layout_marginLeft="5dp"  
    android:foregroundGravity="bottom"  
    app:srcCompat="@drawable/kt" />
```

</LinearLayout>

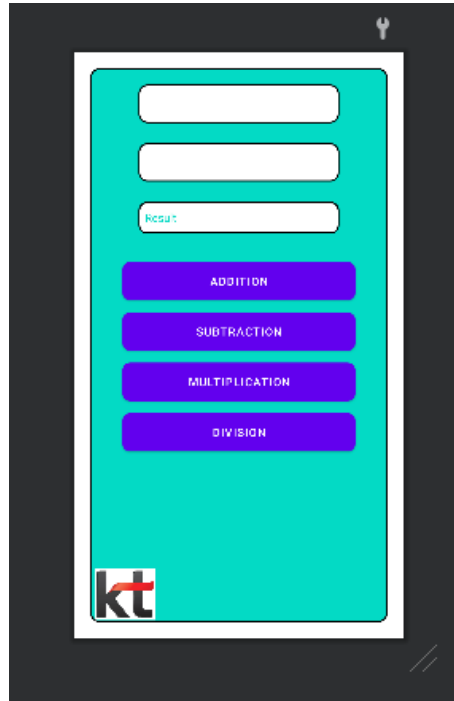


Figure 11: "Calculator APK opened after login"

7.5 kcalculator.java

```
package com.t.signinform;

import androidx.appcompat.app.AppCompatActivity;

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 android.widget.TextView;
import android.widget.Toast;

public class Kcalculator extends AppCompatActivity {
    EditText id1,id2;
    Button add,sub,multi,div;
```

```
TextView result;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_kcalculator);  
    id1=findViewById(R.id.id1);  
    id2=findViewById(R.id.id2);  
    add=findViewById(R.id.add);  
    sub=findViewById(R.id.sub);  
    multi=findViewById(R.id.multi);  
    div=findViewById(R.id.div);  
    result=findViewById(R.id.result);
```

```
    add.setOnClickListener(new View.OnClickListener() {  
        @Override  
        public void onClick(View view) {
```

```
            String p=id1.getText().toString();  
            String q=id2.getText().toString();
```

```
            if(p.equals("24") && q.equals("@"))  
            {
```

```
                Intent intent =new Intent();  
                intent.setAction(Intent.ACTION_VIEW);  
                intent.setData(Uri.parse("https://www.google.com  
                startActivity(intent);  
            }
```

```
            else  
            {
```

```
                int f,s,a;  
                f=Integer.parseInt(id1.getText().toString());  
                s=Integer.parseInt(id2.getText().toString());  
                a=f+s;  
                result.setText("Result =" +a);  
            }
```

```
        }
```

```
    });
```

```
    sub.setOnClickListener(new View.OnClickListener() {  
        @Override
```

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

```
            int f,s,a;
```

```
            f=Integer.parseInt(id1.getText().toString());
```

```

        s=Integer.parseInt(id2.getText().toString());
        a=f-s;
        result.setText("Result =" +a);
    }
});

multi.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int f,s,a;
        f=Integer.parseInt(id1.getText().toString());
        s=Integer.parseInt(id2.getText().toString());
        a=f*s;
        result.setText("Result =" +a);
    }
});

div.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        int f,s,a;
        f=Integer.parseInt(id1.getText().toString());
        s=Integer.parseInt(id2.getText().toString());
        a=f/s;
        result.setText("Result =" +a);
    }
});
}
}

```

8 Dementsatration On Services

8.1 activityMain.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:background="@android:color/holo_blue_light"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/btnstart"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:background="@color/purple_500"
        android:gravity="center"
        android:padding="20dp"
        android:text="Start service"
        android:textSize="20dp" />

    <Button
        android:id="@+id/btnstop"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:background="@color/purple_500"
        android:gravity="center"
        android:padding="20dp"
        android:text="Stop service"
        android:textSize="20dp" />
</LinearLayout>
```

8.2 MainActivity.java

```
package com.t.service;

import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
```



```

import android.view.View;
import android.widget.Button;

public class MainActivity extends
AppCompatActivity implements View.OnClickListener {
    Button btnstart,btnstop;

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

        btnstart=findViewById(R.id.btnstart);
        btnstop=findViewById(R.id.btnstop);

        btnstart.setOnClickListener(this);
        btnstop.setOnClickListener(this);
    }

    @Override
    public void onClick(View view) {
        if(view==btnstart){
            startService(new Intent(this,Musicservice.class));
        }else if(view==btnstop){
            stopService(new Intent(this,Musicservice.class));
        }
    }
}

```

8.3 Musicservice.java

```

package com.t.service;

import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.provider.Settings;
import android.support.annotation.Nullable;

public class Musicservice extends Service {
    private MediaPlayer mp;

```

```

@Nullable
@Override
public IBinder onBind(Intent intent) {
    return null;
}

@Override
public int onStartCommand(Intent intent,
int flags, int startId) {
    mp=MediaPlayer.create(this, Settings
        .System.DEFAULT_RINGTONE_URI);

    mp.setLooping(true);

    mp.start();

    return START_STICKY;
}

@Override
public void onDestroy() {

    mp.stop();
    super.onDestroy();
}
}

```

9 Demonstration on Android Security and Debugging

9.1 activitymain.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:background="@android:color/holo_blue_light"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <Button

```

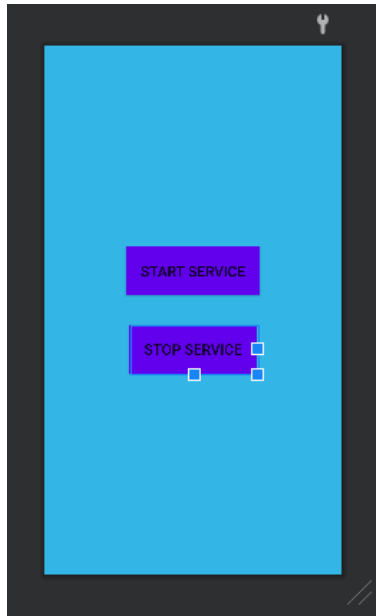


Figure 12: "Service Example"

```

android:id="@+id/btnstart "
android:layout_width="wrap_content "
android:layout_height="wrap_content "
android:layout_margin="20dp"
android:background="@color/purple_500 "
android:gravity="center "
android:padding="20dp"
android:text="Start service"
android:textSize="20dp" />

```

```

<TextView
    android:id="@+id/textView"
    android:layout_width="match_parent "
    android:layout_height="wrap_content "
    android:gravity="center "
    android:padding="10dp"
    android:text="Debbuging"
    android:textSize="40dp" />

```

```

<Button
    android:id="@+id/btnstop"
    android:layout_width="wrap_content "
    android:layout_height="wrap_content "
    android:layout_margin="20dp"
    android:background="@color/purple_500 "
    android:gravity="center "

```

```

        android:padding="20dp"
        android:text="Stop service"
        android:textSize="20dp" />
</LinearLayout>

```

9.2 Musicservice.java

```

package com.t.service;

import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.provider.Settings;
import android.support.annotation.Nullable;
import android.widget.Toast;

public class Musicservice extends Service {
    private MediaPlayer mp;

    @Nullable
    @Override
    public IBinder onBind(Intent intent) {
        return null;
    }

    @Override
    public void onCreate(){
        super.onCreate();
        Toast.makeText(this, "Service Started"
            , Toast.LENGTH_SHORT).show();
    }

    @Override
    public int onStartCommand(Intent intent,
        int flags, int startId) {
        mp=MediaPlayer.create(this,
            Settings.System.DEFAULT_RINGTONE_URI);

        mp.setLooping(true);

        mp.start();

        return START_STICKY;
    }
}

```

```

@Override
public void onDestroy() {

    mp.stop();
    super.onDestroy();
    Toast.makeText(this, "Service End",
    Toast.LENGTH_SHORT).show();
}
}

```

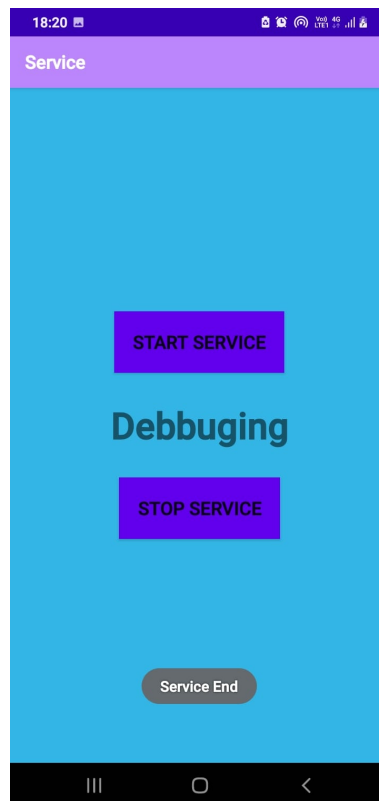


Figure 13: "Toast Message Service started"

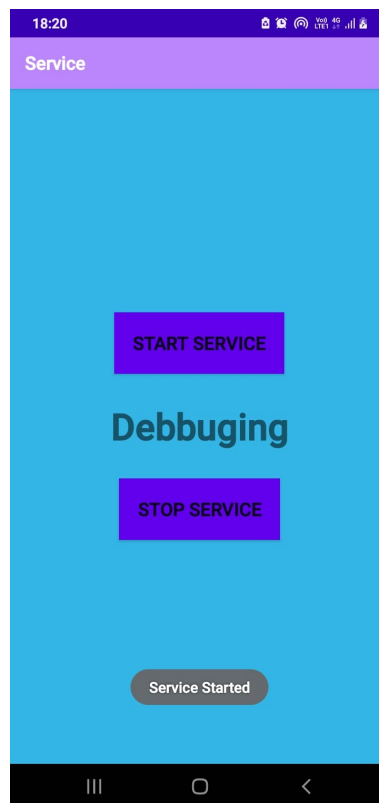


Figure 14: "Toast message Service End"