Practical Name :- Use fragments to develop UI. Demonstrate use of fragments.

❖ **CODE :-**

Acitivity_main.xml :-

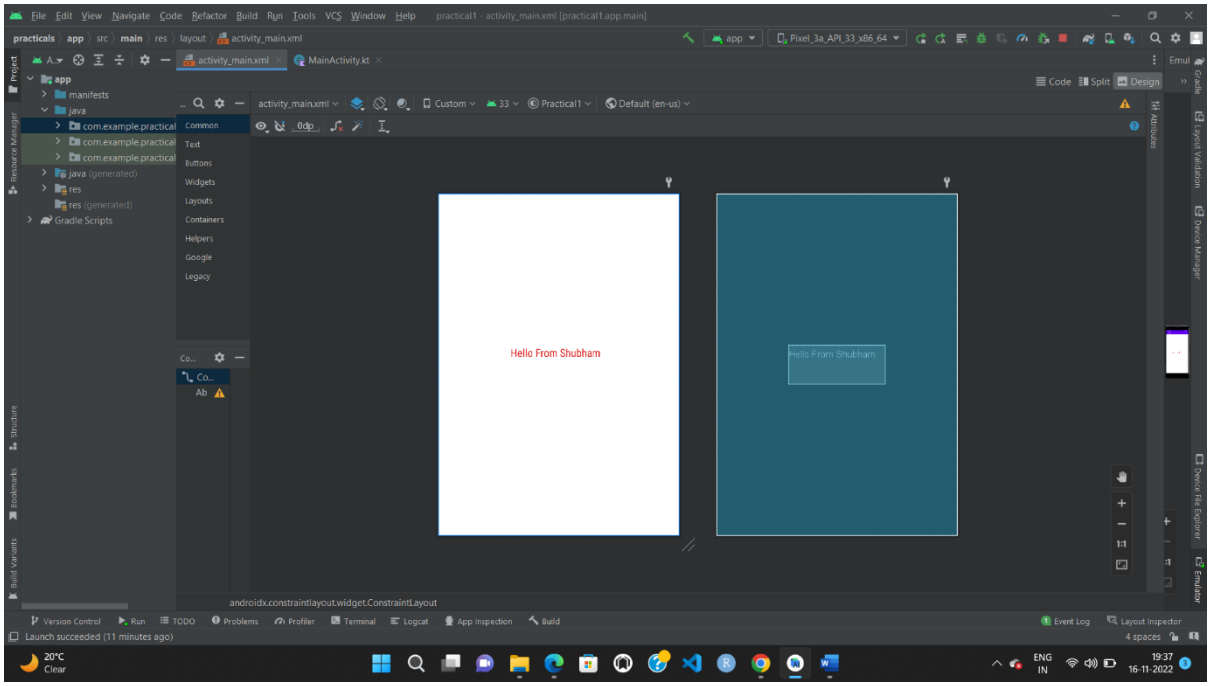
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout width="match parent"
    android:layout height="match parent"
    android:background="#168BC34A"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <!-- Heading of the activity -->
    <TextView
        android:id="@+id/textView"
        android:layout width="match parent"
        android:layout height="wrap content"
        android:layout marginTop="20dp"
        android:layout marginBottom="20dp"
        android:fontFamily="@font/roboto"
        android:text="@string/heading"
        android:textAlignment="center"
        android:textColor="@android:color/holo green light"
        android:textSize="24sp"
        android:textStyle="bold" />

    <!-- Button to display first fragment -->
    <Button
        android:id="@+id/button1"
        android:layout width="fill parent"
        android:layout height="wrap content"
        android:layout marginStart="20dp"
        android:layout marginEnd="20dp"
        android:background="#4CAF50"
        android:fontFamily="@font/roboto"
        android:onClick="selectFragment"
        android:text="@string/fragment1_button"
        android:textColor="@android:color/background light"
        android:textSize="18sp"
        android:textStyle="bold" />

    <!-- Button to display second fragment -->
    <Button
        android:id="@+id/button2"
        android:layout width="fill parent"
        android:layout height="wrap content"
        android:layout marginStart="20dp"
        android:layout marginTop="20dp"
```

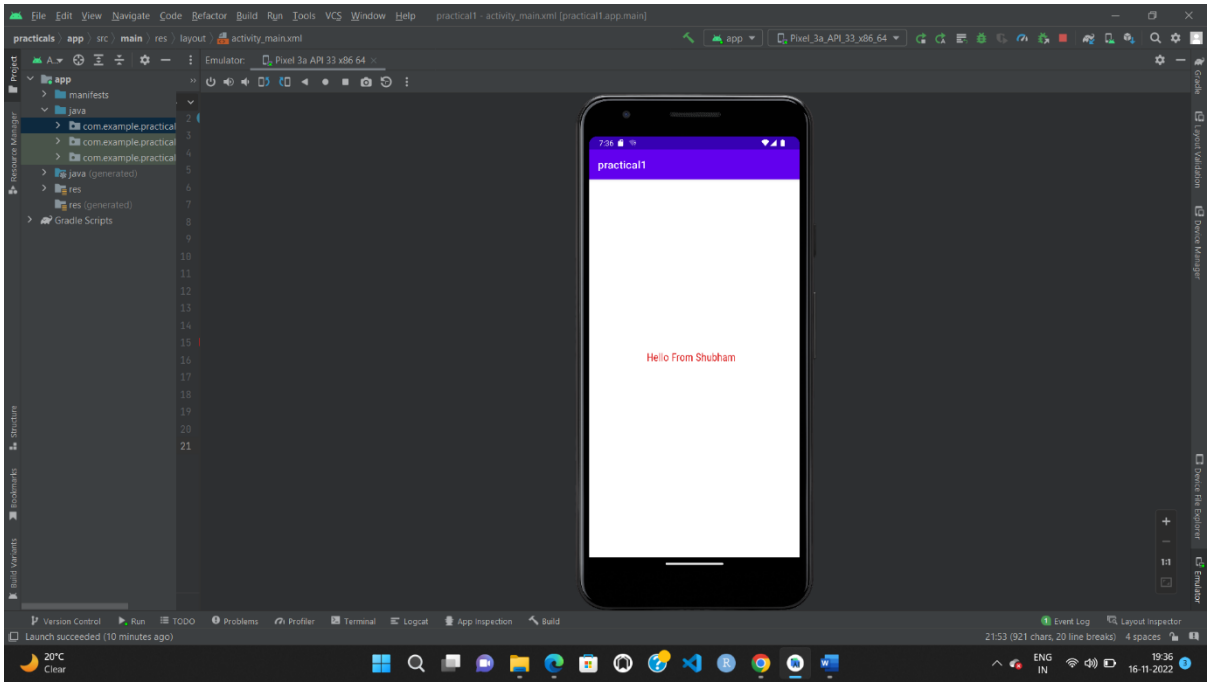
```
        android:layout marginEnd="20dp"
        android:layout marginBottom="20dp"
        android:background="#4CAF50"
        android:fontFamily="@font/roboto"
        android:onClick="selectFragment"
        android:text="@string/fragment2 button"
        android:textColor="@android:color/background light"
        android:textSize="18sp"
        android:textStyle="bold" />

    <!-- Adding Fragment element in the activity -->
    <fragment
        android:id="@+id/fragment section"
        android:name="com.example.fragment.fragment1"
        android:layout width="match parent"
        android:layout height="match parent"
        android:layout_marginStart="10dp"
        android:layout_marginEnd="10dp"
        android:layout marginBottom="10dp"
        tools:layout="@layout/fragment1" />

</LinearLayout>
```

fragment1.xml :-

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout width="match parent"
    android:layout height="match parent"
    android:background="#5C52CC57"
    android:orientation="vertical">

    <!-- Text to be displayed inside the Fragment -->
    <TextView
        android:id="@+id/textView1"
        android:layout width="match parent"
        android:layout height="match parent"
        android:layout weight="1"
        android:gravity="center"
        android:text="@string/fragment1 text1"
        android:textAlignment="center"
        android:textColor="@android:color/background light"
        android:textSize="24sp"
        android:textStyle="bold" />

</LinearLayout>
```

- **OUTPUT :-**





Practical Name :- Write a program to populate resources (res>>value folder). Show resource on changing selection of the resources.

❖ ***CODE :-***

1) Acitivity_main.xml :-

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <ImageButton
        android:id="@+id/imageButton"
        android:layout_width="202dp"
        android:layout_height="100dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.387"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.245"
        app:srcCompat="@color/s1BgColor" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="109dp"
        android:layout_height="76dp"
        android:text="@string/s1String"
        android:textColor="@color/s1TextColor"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

2)string.xml :-

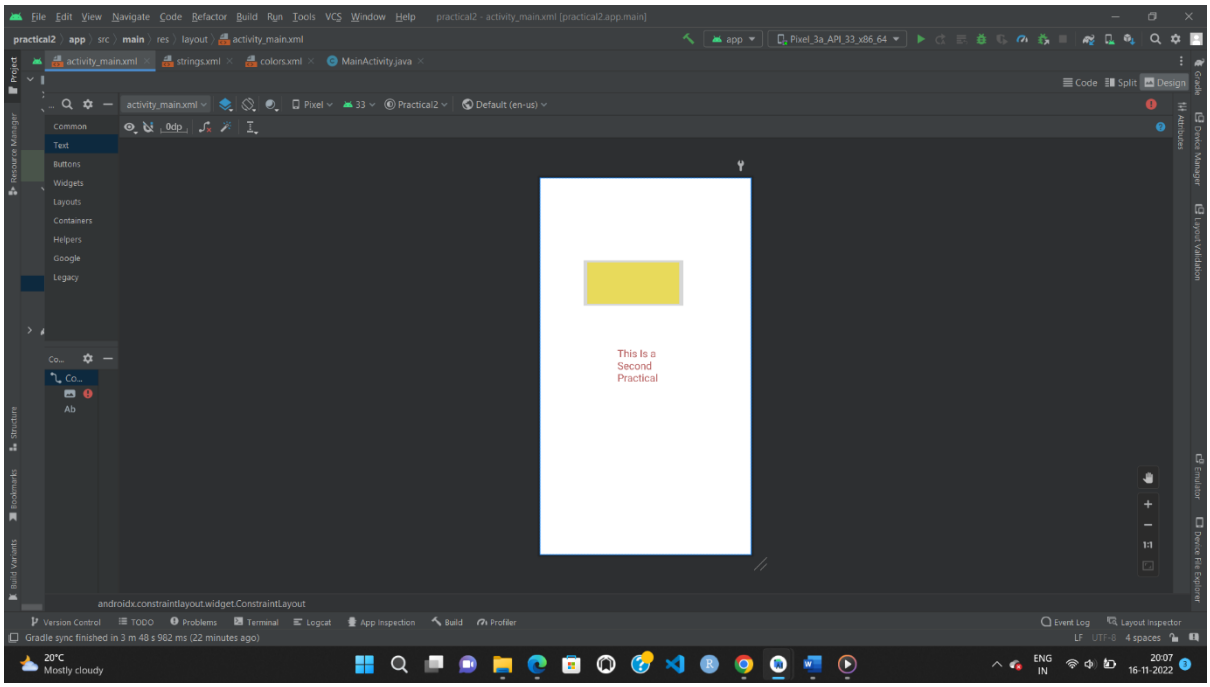
```
<resources>

    <string name="app_name">practical2</string>

    <string name="s1String">This Is a Second Practical </string>

</resources>
```

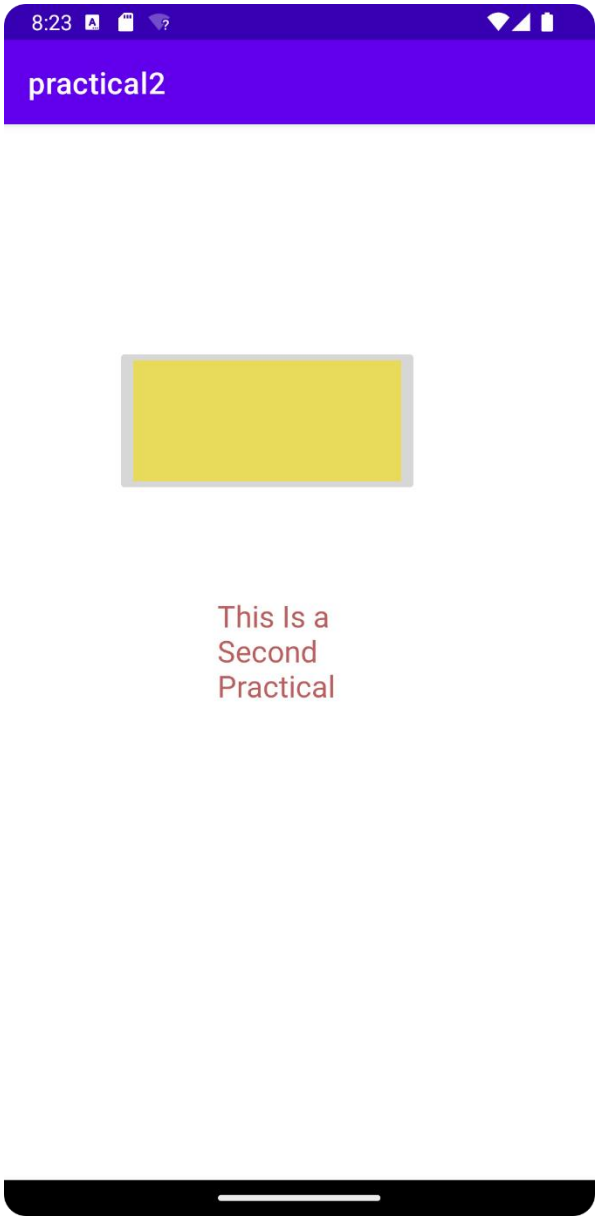
3)colors.xml :-

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

<resources>

    <color name="purple_200">#FFBB86FC</color>

    <color name="purple_500">#FF6200EE</color>

    <color name="purple_700">#FF3700B3</color>

    <color name="teal_200">#FF03DAC5</color>

    <color name="teal_700">#FF018786</color>

    <color name="black">#FF000000</color>
```

```
    <color name="white">#FFFFFFFF</color>
    <color name="s1TextColor">#B85F5F</color>
    <color name="s1BgColor">#E8DA5B</color>
</resources>
```

❖ ***OUTPUT :-***





Practical Name :- Write a program to create UI with one screen having radio button of the types of cars. On selecting any car name, next screen should show car details.

❖ **CODE :-**

Acitivity_main1.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">


    <TextView
        android:id="@+id/textView2"
        android:layout width="230dp"
        android:layout height="92dp"
        android:text="SELECT CAR"
        android:textSize="34sp"
        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="0.105" />

    <RadioGroup
        android:id="@+id/group"
        android:layout_width="231dp"
        android:layout height="195dp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent">

        <RadioButton
            android:id="@+id/radioButton3"
            android:layout width="wrap content"
            android:layout height="wrap content"
            android:text="Maruti 800"
            android:textSize="20sp" />

        <RadioButton
            android:id="@+id/radioButton4"
            android:layout_width="wrap_content"
            android:layout height="wrap content"
            android:text="Renault duster"
            android:textSize="20sp" />
```

```
        <RadioButton
            android:id="@+id/radioButton5"
            android:layout width="wrap content"
            android:layout height="wrap content"
            android:text="Scorpio"
            android:textSize="20sp" />
    </RadioGroup>

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

Acitivity_main2.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">



    <TextView
        android:id="@+id/textView"
        android:layout_width="124dp"
        android:layout_height="72dp"
        android:layout_alignParentBottom="true"
        android:layout alignParentEnd="true"
        android:layout alignParentStart="true"
        android:layout alignParentTop="true"
        android:text="Activity 2"
        android:textSize="20sp"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent" />



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

Acitivity_main3.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">

    <TextView
        android:id="@+id/textView3"
        android:layout width="115dp"
        android:layout_height="91dp"
```

```
        android:text="TextView"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Acitivity_main4.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">

    <TextView
        android:id="@+id/textView4"
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:text="TextView"
        app:layout constraintBottom toBottomOf="parent"
        app:layout constraintEnd toEndOf="parent"
        app:layout constraintStart toStartOf="parent"
        app:layout constraintTop toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

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.Carexample"
        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>
```

```
        </activity>
            <activity
                android:name=".MainActivity2">
              </activity>
            <activity
                android:name=".MainActivity3">
            </activity>
            <activity
                android:name=".MainActivity4">
            </activity>

            <meta-data
                android:name="android.app.lib name"
                android:value="" />

    </application>

</manifest>
```

MainAcitivity.java :-

```
package com.example.carexample;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.RadioGroup;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private RadioGroup radioGroup ;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main1);
        radioGroup =(RadioGroup)  findViewById(R.id .group );
        radioGroup .setOnCheckedChangeListener(new
RadioGroup.OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(RadioGroup radioGroup, int i) {
                switch (i ) {
                    case R.id.radioButton3:
                        Intent intent = new Intent(getBaseContext() ,MainActivity2
.class );
                        startActivity(intent);
                        break;
                    case R.id.radioButton4:
                        Intent intent1 = new Intent(getBaseContext() ,MainActivity3
.class );
```

```
                        startActivity(intent1);
                        break;
                    case R.id.radioButton5:
                        Intent intent2 = new Intent(getBaseContext() ,MainActivity4
.class );
                        startActivity(intent2);
                        break;
                    default :
                        Toast.makeText(MainActivity.this, "Another Case",
Toast.LENGTH_SHORT).show();
                }
            }
        }) ;

    }
}
```

MainAcitivity2.java :-

```
package com.example.carexample;

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

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity2 extends AppCompatActivity {
     TextView  textView ;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);



        textView =(TextView) findViewById(R.id.textView );
        textView .setText("Car was launched on 14 December 1983 and " +
                          "manufactured by Maruti Suzuki in India");

        //Toast.makeText(this, "Activity 2", Toast.LENGTH_SHORT).show();
    }
}
```

MainAcitivity3.java :-

```
package com.example.carexample;
```

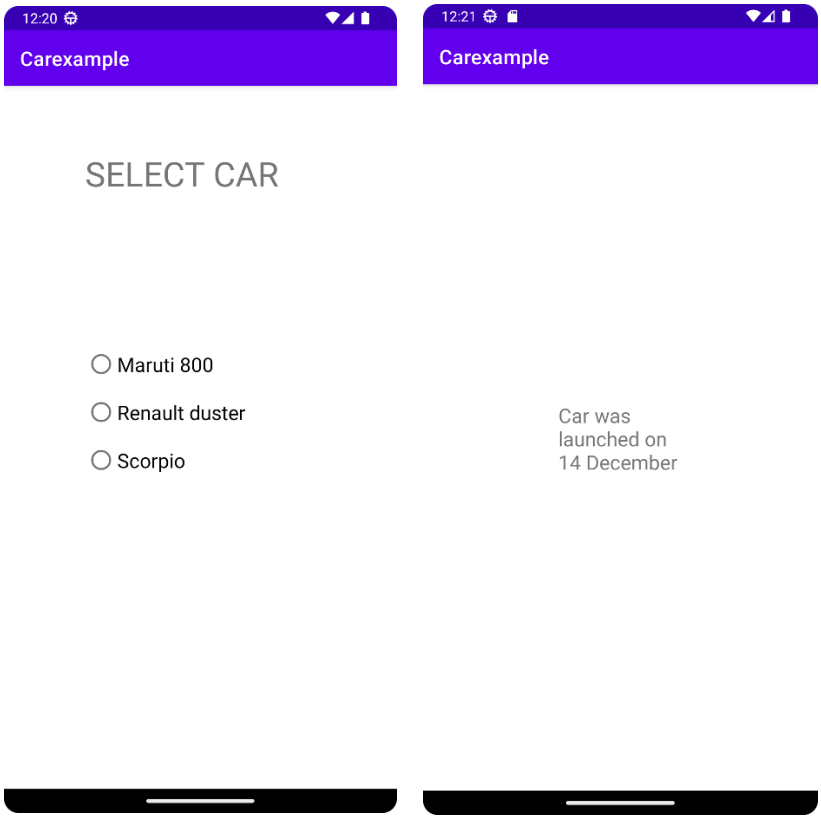
```
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;


import androidx.appcompat.app.AppCompatActivity;

public class MainActivity3 extends AppCompatActivity {
     TextView  textView3 ;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main3);



        textView3 =(TextView) findViewById(R.id.textView3);
        textView3 .setText("Car was launched in year 2012 and " +
                           "Renault India Private Limted " +
                           "is a wholly owned subsidiary " +
                            "of Renault S.A., France");

        Toast.makeText(this, "Activity 3", Toast.LENGTH SHORT).show();
    }
}
```

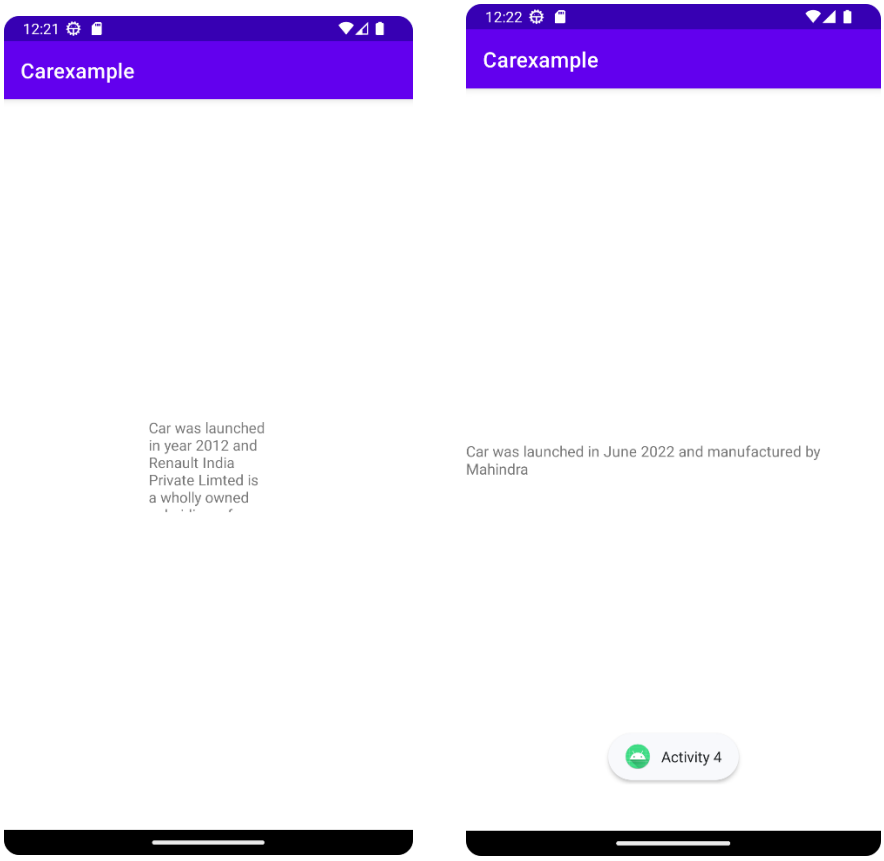
MainAcitivity4.java :-

```
package com.example.carexample;

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


import androidx.appcompat.app.AppCompatActivity;

public class MainActivity4 extends AppCompatActivity {
    TextView  textView4 ;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main4);
```

```
        textView4 =(TextView) findViewById(R.id.textView4 );
        textView4 .setText("Car was launched in June 2022 and manufactured by
Mahindra");

        Toast.makeText(this, "Activity 4", Toast.LENGTH_SHORT).show();
    }
}
```

❖ **OUTPUT :-**





Practical Name :- Write a program for android application to demonstrate android life cycle stages.

❖ **CODE :-**

activity_main.xml :-

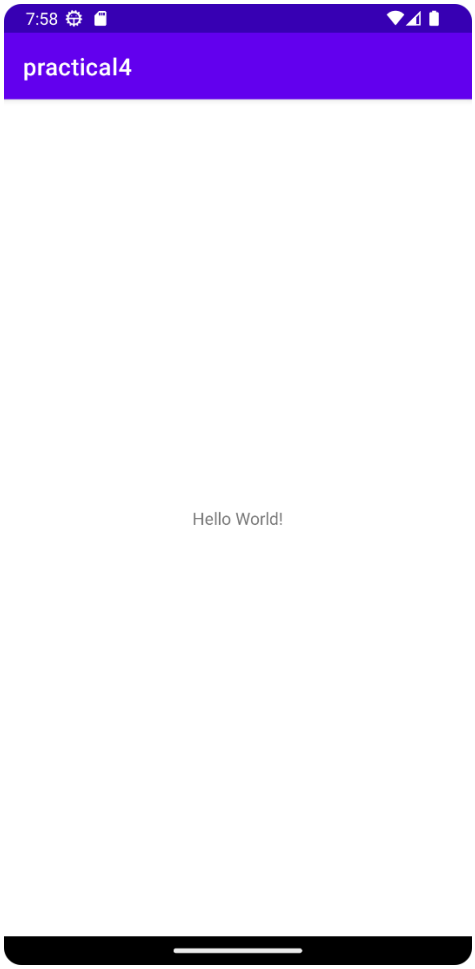
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

Main_Activity.java :-

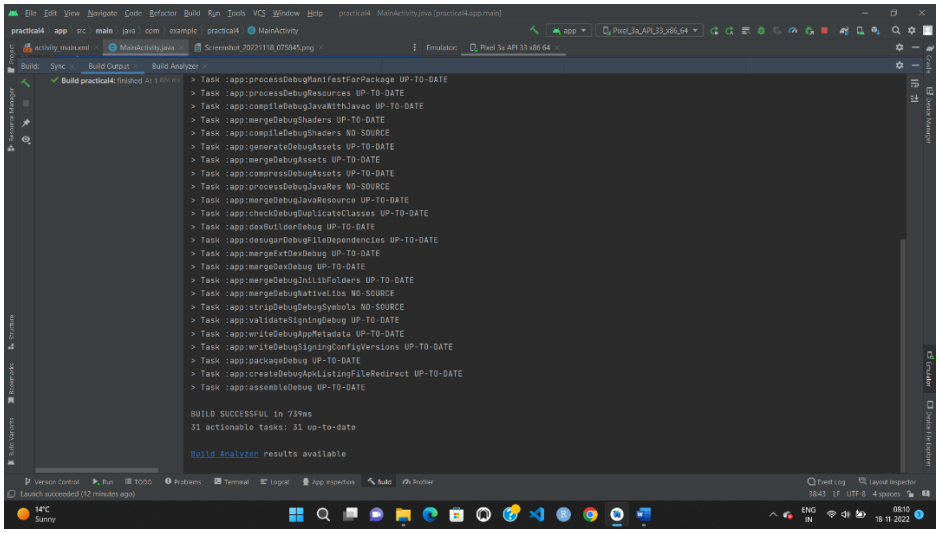
```
package com.example.practical4;


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.d("lifecycle","onCreate invoked");

    }


    @Override

    protected void onStart() {

        super.onStart();

        Log.d("lifecycle","onStart invoked");

    }


    @Override

    protected void onResume() {

        super.onResume();

        Log.d("lifecycle","onResume invoked");

    }

+

    @Override

    protected void onPause() {

        super.onPause();

        Log.d("lifecycle","onPause invoked");

    }
```

```
    @Override
    protected void onStop() {
        super.onStop();
        Log.d("lifecycle","onStop invoked");
    }

    @Override
    protected void onRestart() {
        super.onRestart();
        Log.d("lifecycle","onRestart invoked");
    }

    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.d("lifecycle","onDestroy invoked");
    }

}
```

- **OUTPUT :-**



❖ **Build Output :-**



Practical Name :- Create the application that will change color of screen based on selected option from the menu.

❖ ***CODE :-***

acitivity_main.xml :-

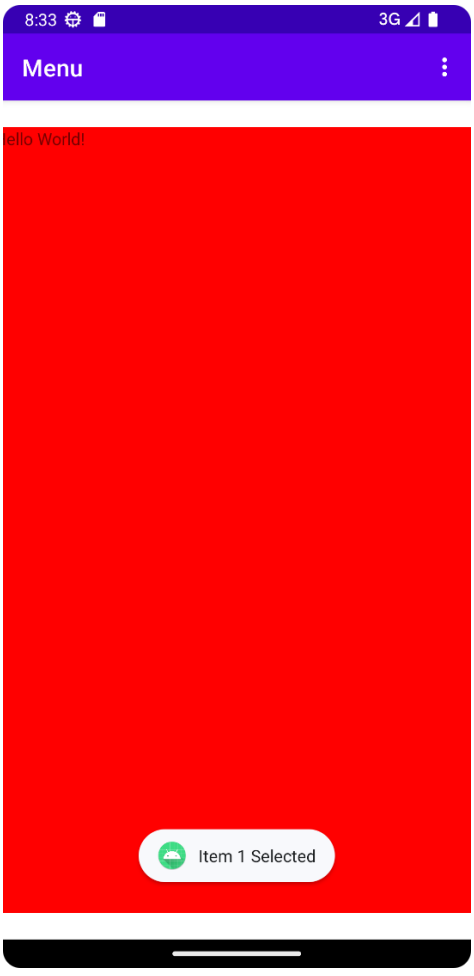
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">


    <LinearLayout
        android:id="@+id/linear"
        android:layout_width="408dp"
        android:layout_height="659dp"
        android:orientation="horizontal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Hello World!" />
    </LinearLayout>

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

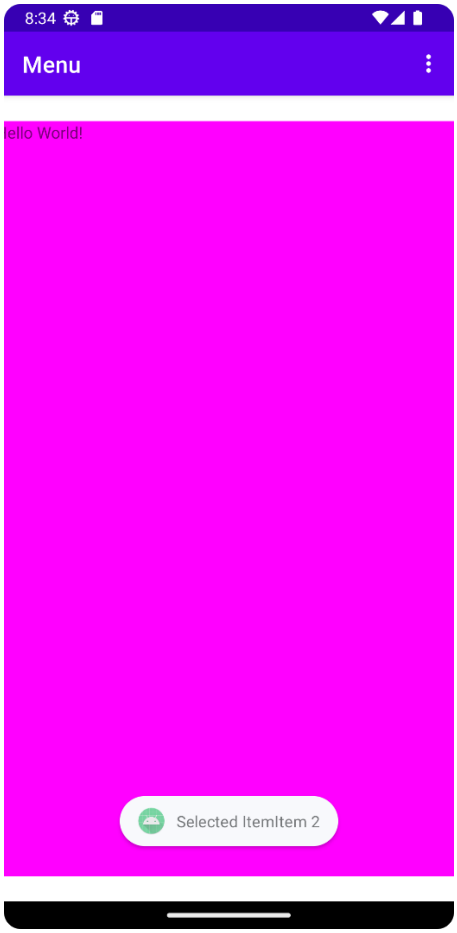
example_menu.xml :-

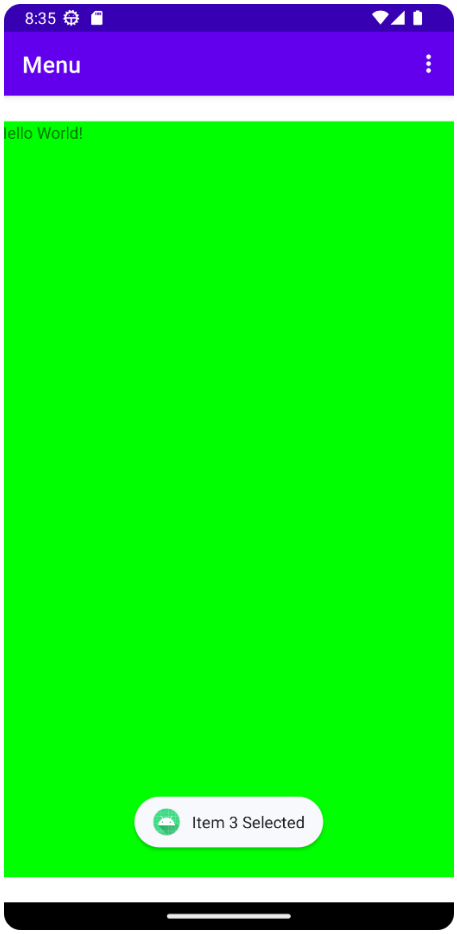
```
<?xml version="1.0" encoding="utf-8"?>
```

```xml
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item  android:id="@+id/item1"
        android:title="Item 1"/>
    <item  android:id="@+id/item2"
        android:title="Item 2"/>
    <item  android:id="@+id/item3"
        android:title="Item 3"/>
</menu>
```

❖ **OUTPUT :-**







Practical Name :- Write an android application that takes input from user and shows messages on screen.

❖ ***CODE :-***

acitivity_main.xml :-

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/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"
        app:layout_constraintVertical_bias="0.424" />

    <EditText
```

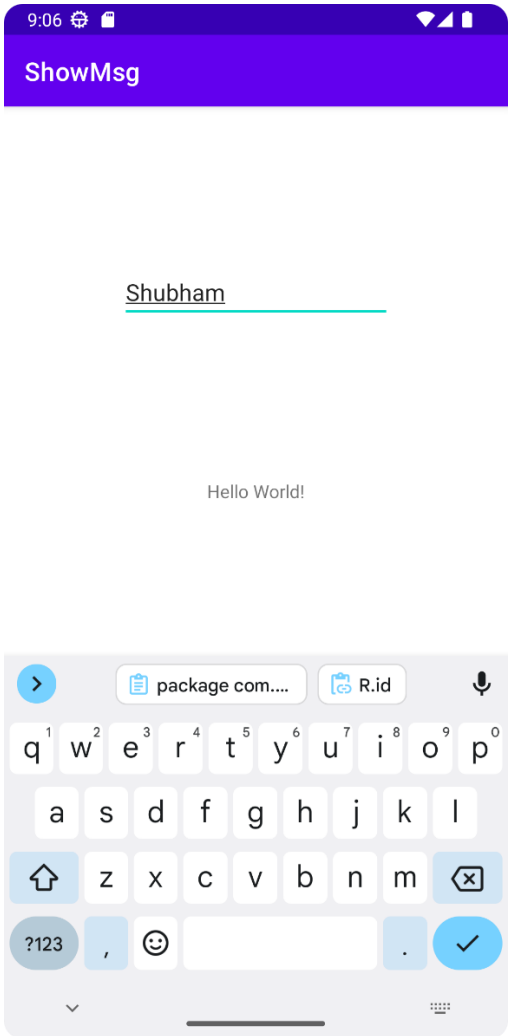
```
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:hint="Enter Text"
        app:layout_constraintBottom_toTopOf="@+id/textView"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView" />

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

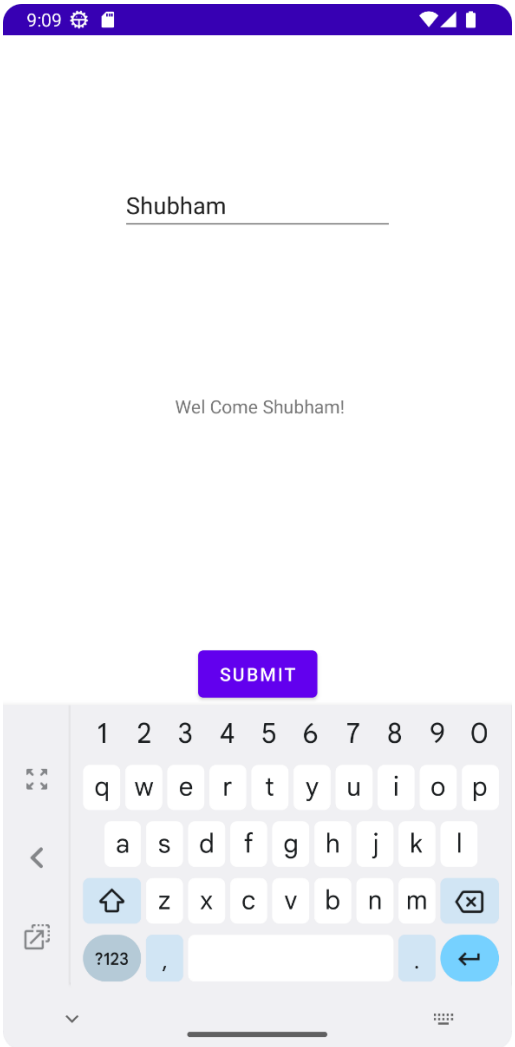
Main_Acitivity.java :-

```
package com.example.showmsg;


import androidx.appcompat.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 {

    Button mbutton;

    EditText medit;

    TextView mtext;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        mbutton =(Button)  findViewById(R.id .button );
```

```
        mbutton .setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                medit =(EditText)  findViewById(R.id .editText );
                mtext =(TextView)  findViewById(R.id .textView );
                mtext.setText(" Wel Come "+medit.getText() .toString() +"!");
            }
        }) ;
    }
}
```

OUTPUT :-





Practical Name :- Create foreground application that will display toast (Message) on specific interval time.

❖ **CODE :-**

Acitivity_main.xml :-

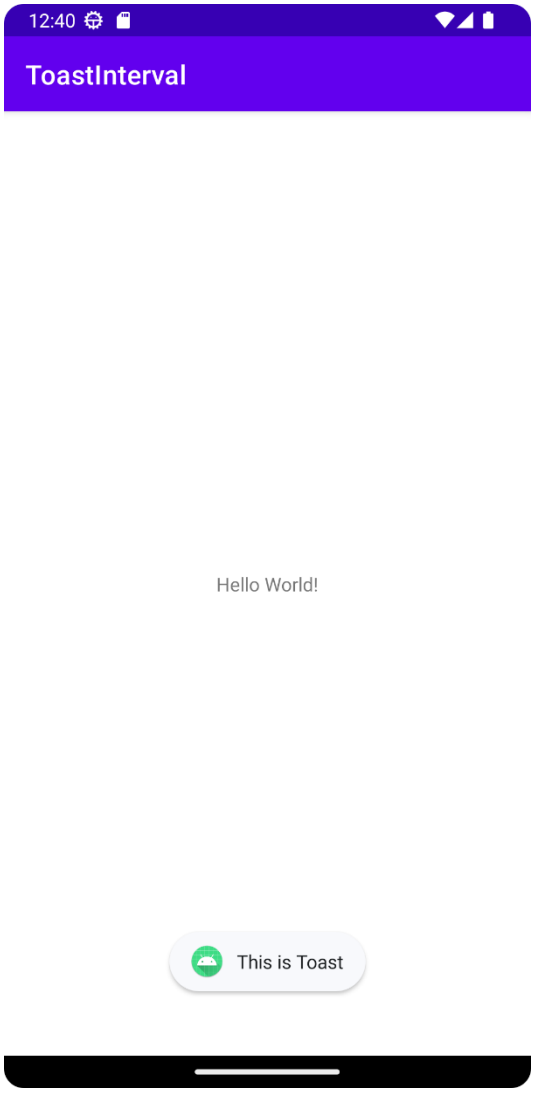
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

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

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

MainAcitivity.java :-

```
package com.example.toastinterval;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    private Toast toast;

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

        toast = Toast.makeText(this, "This is Toast", Toast.LENGTH SHORT);

        Thread t = new Thread(new Runnable() {
            @Override
            public void run() {
                for (int i = 0; i < 1000; i++) {
                    try {
                        Thread.sleep(1000);
                        toast.show();
                        Thread.sleep(1000);
                    } catch (InterruptedException e) {
                        e.printStackTrace();
```

```
                    }
                }
            }
        });
        t.start();
    }
}
```

❖ **OUTPUT :-**



Practical Name :- Demonstrate use of intents for any 3 native intents.

❖ **CODE :-**

activity_main.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=".MainActivity">

    <TextView
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:textAppearance="?android:attr/textAppearanceMedium"
        android:text="If you click on Explicit example we will navigate to second
activity within App and if you click on Implicit example AbhiAndroid Homepage will
open in Browser"
        android:id="@+id/textView2"
        android:clickable="false"
        android:layout_alignParentTop="true"
        android:layout_alignParentStart="true"
        android:layout marginTop="42dp"
        android:background="#3e7d02"
        android:textColor="#ffffff" />

    <Button
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:text="Explicit Intent Example"
        android:id="@+id/explicit Intent"
        android:layout alignParentTop="true"
        android:layout centerHorizontal="true"
        android:layout_marginTop="147dp" />

    <Button
        android:layout_width="wrap_content"
        android:layout height="wrap content"
        android:text="Implicit Intent Example"
        android:id="@+id/implicit Intent"
        android:layout centerVertical="true"
        android:layout centerHorizontal="true" />

</RelativeLayout>
```

activity_Second.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">

    <TextView
        android:layout_width="wrap_content"
```

```
        android:layout height="wrap content"
        android:textAppearance="?android:attr/textAppearanceLarge"
        android:text="This is Second Activity"
        android:id="@+id/textView"
        android:layout centerVertical="true"
        android:layout centerHorizontal="true" />

</RelativeLayout >
```

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.INTENTEXAMPLE"
        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>
        </activity>
        <activity android:name=".screen2"></activity>

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

</manifest>
```

MainActivity.java :-

```
package com.example.intentexample;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.net.Uri;
```

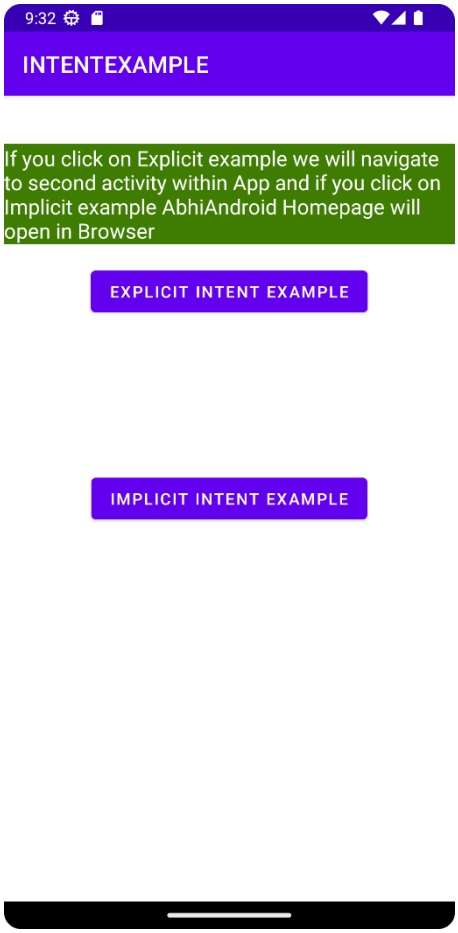
```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {


    Button explicit btn, implicit btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);


        explicit btn = (Button)findViewById(R.id.explicit Intent);
        implicit btn = (Button) findViewById(R.id.implicit Intent);

        //implement Onclick event for Explicit Intent

        explicit btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                Intent intent = new  Intent(getBaseContext(),screen2 .class );
                startActivity(intent);


            }
        });

        //implement onClick event for Implicit Intent

        implicit_btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                Intent intent = new Intent(Intent.ACTION VIEW );
intent.setData(Uri.parse("https://en.wikipedia.org/wiki/Android Studio"));
                startActivity(intent);
            }
        });


    }
}
```

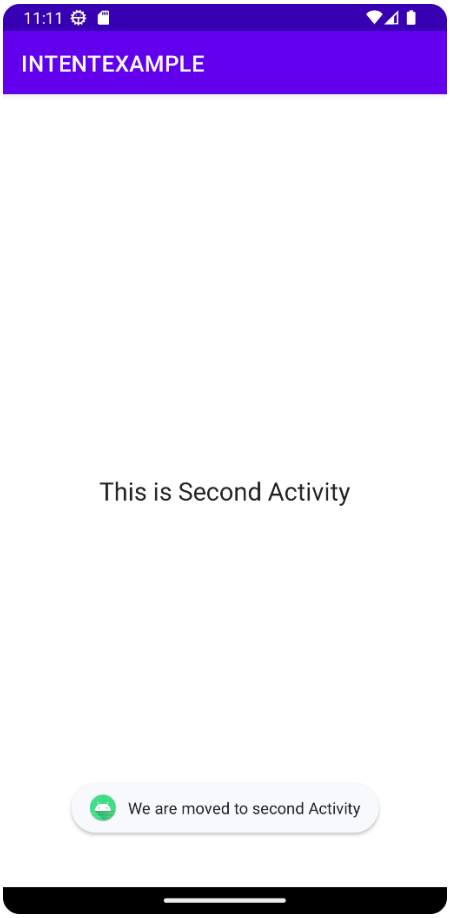
Screen2.java :-

```
package com.example.intentexample;
import android.os.Bundle;
```

```
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class screen2 extends AppCompatActivity {

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

        Toast.makeText(getApplicationContext(), "We are moved to second
Activity",Toast.LENGTH LONG).show();
    }
}
```

❖ **OUTPUT :-**


9:32
INTENTEXAMPLE
If you click on Explicit example we will navigate to second activity within App and if you click on Implicit example AbhiAndroid Homepage will open in Browser
EXPLICIT INTENT EXAMPLE
IMPLICIT INTENT EXAMPLE


11:11
INTENTEXAMPLE
This is Second Activity
We are moved to second Activity

Practical Name :- Create the android application that will read phonebook contact using content providers and display in list on selecting specific contact makes a call to selected contact.

❖ **CODE :-**

Acitivity_main.xml :-

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

    <Button
        android:id="@+id/contact pick"
        android:layout width="192dp"
        android:layout height="wrap content"
        android:text="@string/contact pick text" />
    <Button
        android:id="@+id/contact name"
        android:layout width="205dp"
        android:layout height="wrap content"
        android:text="@string/contact name text" />
    </LinearLayout>
```

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">
    <uses-permission android:name = "android.permission.READ CONTACTS" />
    <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.Phonecall"
        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>
```

MainAcitivity.java :-

```
package com.example.phonecall;

import androidx.appcompat.app.AppCompatActivity;
import android.Manifest;
import android.app.Activity;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.database.Cursor;
import android.net.Uri;
import android.os.Bundle;
import android.provider.ContactsContract;
import android.view.View;
import android.widget.Button;

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

```
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;

public class MainActivity extends AppCompatActivity
{
    private static final int REQUEST READ CONTACTS PERMISSION = 0;
    private static final int REQUEST CONTACT = 1;
    private Button mContactPick;
    private Button mContactName;

    @Override
    public void onRequestPermissionsResult(int requestCode, @NonNull String[]
permissions,
                                           @NonNull int[] grantResults)
    {
        super.onRequestPermissionsResult(requestCode, permissions, grantResults);

        if (requestCode == REQUEST READ CONTACTS PERMISSION && grantResults.length
> 0)
        {
            updateButton(grantResults[0] == PackageManager.PERMISSION GRANTED);
        }
    }

    @Override
    public void onActivityResult(int requestCode, int resultCode, Intent data)
    {
        super.onActivityResult(requestCode, resultCode, data);
        if (resultCode != Activity.RESULT OK) return;
        if (requestCode == REQUEST CONTACT && data != null)
        {
            Uri contactUri = data.getData();
            String[] queryFields = new
String[]{ContactsContract.Contacts.DISPLAY NAME};
            Cursor cursor = this.getContentResolver()
                    .query(contactUri, queryFields, null, null, null);
            try
            {
                if (cursor.getCount() == 0) return;
                cursor.moveToFirst();

                String name = cursor.getString(0);
                mContactName.setText(name);

            }
            finally
            {
                cursor.close();
            }
        }
```

```
    }

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.aa );
    final Intent pickContact = new Intent(Intent.ACTION_PICK,
ContactsContract.Contacts.CONTENT_URI);

        mContactPick = findViewById(R.id.contact_pick);
        mContactName = findViewById(R.id.contact_name);
        mContactPick.setOnClickListener(new View.OnClickListener()
        {
            @Override
            public void onClick(View view)
            {
                startActivityForResult(pickContact, REQUEST_CONTACT);
            }
        });

        requestContactsPermission();
        updateButton(hasContactsPermission());
    }

    public void updateButton(boolean enable)
    {
        mContactPick.setEnabled(enable);
        mContactName.setEnabled(enable);
    }

    private boolean hasContactsPermission()
    {
        return ContextCompat.checkSelfPermission(this,
Manifest.permission.READ_CONTACTS) ==
                PackageManager.PERMISSION_GRANTED;
    }
    private void requestContactsPermission()
    {
        if (!hasContactsPermission())
        {
            ActivityCompat.requestPermissions(this,
                    new String[]{Manifest.permission.READ_CONTACTS},
REQUEST_READ_CONTACTS_PERMISSION);
        }
    }
}
```

ExampleUnitTest.java :-

```
package com.example.phonecall;
```

```
import org.junit.Test;

import static org.junit.Assert.*;

public class ExampleUnitTest {
    @Test
    public void addition isCorrect() {
        assertEquals(4, 2 + 2);
    }
}
```

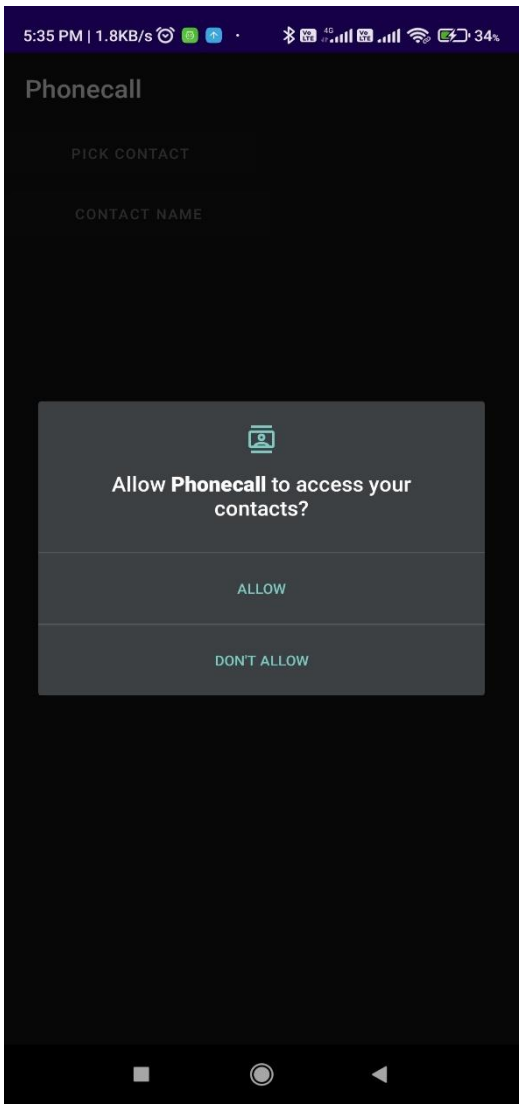
ExampleInstrumentedTest.java :-

```
package com.example.phonecall;

import android.content.Context;
import androidx.test.platform.app.InstrumentationRegistry;
import androidx.test.ext.junit.runners.AndroidJUnit4;
import org.junit.Test;
import org.junit.runner.RunWith;
import static org.junit.Assert.*;

@RunWith(AndroidJUnit4.class)
public class ExampleInstrumentedTest {
    @Test
    public void useAppContext() {

        Context appContext =
InstrumentationRegistry.getInstrumentation().getTargetContext();
        assertEquals("com.example.phonecall", appContext.getPackageName());
    }
}
```

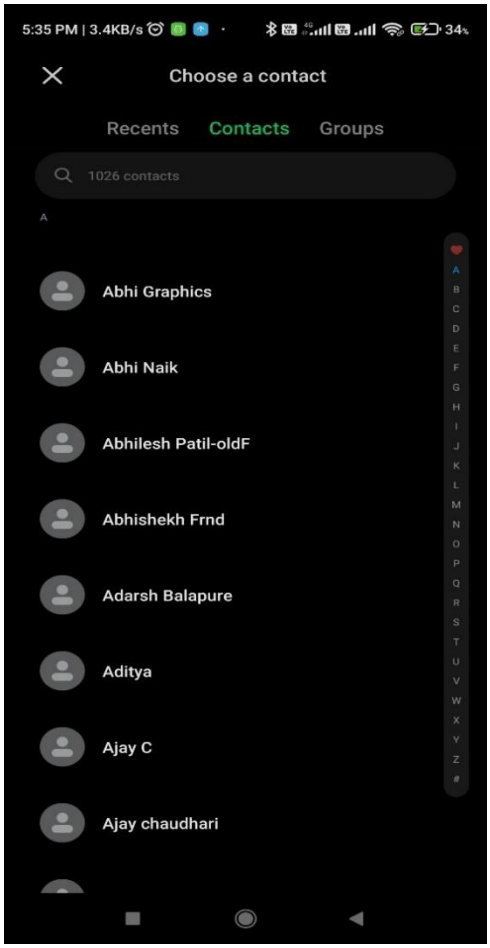
BuildConfig.java :-

```
package com.example.phonecall;

public final class BuildConfig {
  public static final boolean DEBUG = Boolean.parseBoolean("true");
  public static final String APPLICATION ID = "com.example.phonecall";
  public static final String BUILD TYPE = "debug";
  public static final int VERSION CODE = 1;
  public static final String VERSION NAME = "1.0";
}
```

❖ **OUTPUT :-**


5:35 PM | 1.8KB/s
Phonecall
PICK CONTACT
CONTACT NAME
Allow Phonecall to access your contacts?
ALLOW
DON'T ALLOW


5:35 PM | 7.5KB/s
Phonecall
PICK CONTACT
CONTACT NAME



Practical Name :- . Develop android application to take a picture using native application.

- **CODE :-**

Acitivity_main.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=".MainActivity">

    <Button
        android:id="@+id/button1"
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:layout alignParentBottom="true"
        android:layout centerHorizontal="true"
```

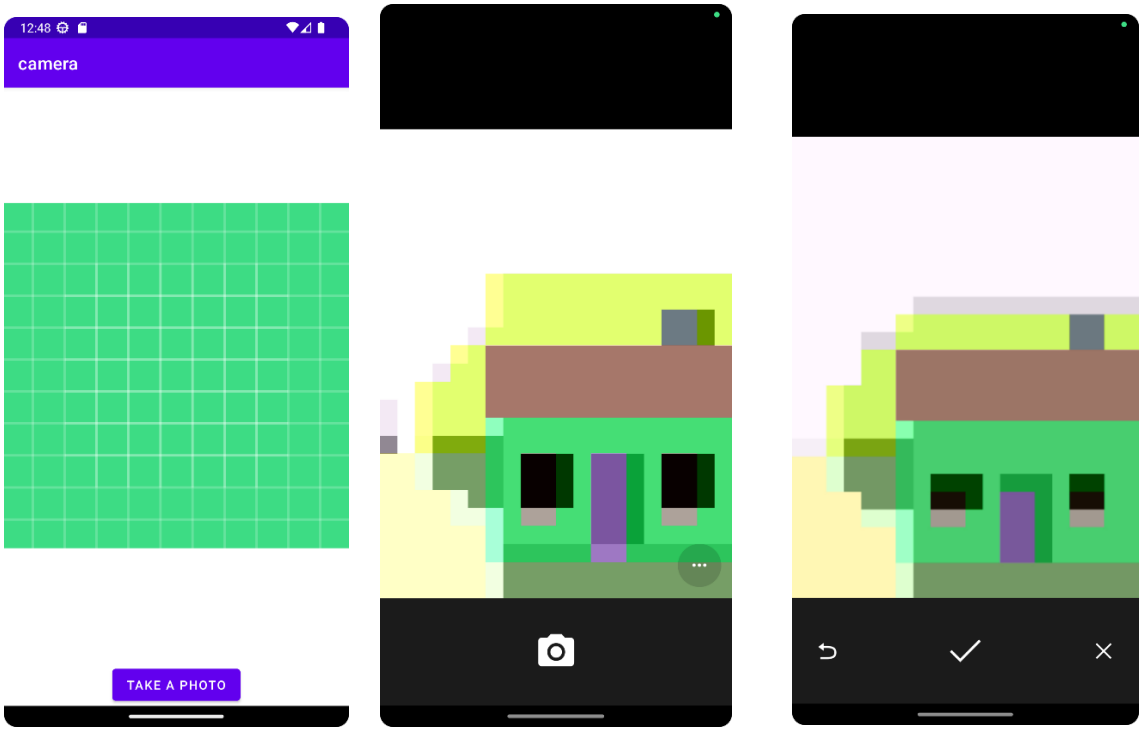
```
        android:text="Take a Photo"
        android:onClick="onActivityResult" >
    </Button>

    <ImageView
        android:id="@+id/imageView1"
        android:layout width="fill parent"
        android:layout height="fill parent"
        android:layout above="@+id/button1"
        android:layout alignParentTop="true"
        android:src="@drawable/ic launcher background" >
    </ImageView>

</RelativeLayout>
```

MainAcitivity.java :-

```
package com.example.camera;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.content.Intent;
import android.graphics.Bitmap;

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

public class MainActivity extends AppCompatActivity {
    private static final int CAMERA REQUEST = 1888;
    ImageView imageView;
    public void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);

        imageView = (ImageView) this.findViewById(R.id.imageView1);
        Button photoButton = (Button) this.findViewById(R.id.button1);

        photoButton.setOnClickListener(new View.OnClickListener() {

            @Override
            public void onClick(View v) {
                Intent cameraIntent = new
Intent(android.provider.MediaStore.ACTION IMAGE CAPTURE);
                startActivityForResult(cameraIntent, CAMERA REQUEST);
```

```
            }
        });
    }

    protected void onActivityResult(int requestCode, int resultCode, Intent data) {
        super.onActivityResult(requestCode, resultCode, data);
        if (requestCode == CAMERA_REQUEST) {
            Bitmap photo = (Bitmap) data.getExtras().get("data");
            imageView.setImageBitmap(photo);
        }
    }

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

}
```

❖ **OUTPUT :-**



Practical Name :- Demonstrate use of intents for any 3 native intents.

❖ **CODE :-**

activity_main.xml :-

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    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="#168BC34A"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <!-- Heading of the activity -->
    <TextView
        android:id="@+id/textView"
        android:layout width="match parent"
        android:layout height="wrap content"
        android:layout marginTop="20dp"
        android:layout marginBottom="20dp"
        android:fontFamily="@font/roboto"
        android:text="@string/heading"
        android:textAlignment="center"
        android:textColor="@android:color/holo_green_light"
        android:textSize="24sp"
        android:textStyle="bold" />

    <!-- Button to display first fragment -->
    <Button
        android:id="@+id/button1"
        android:layout width="fill parent"
        android:layout height="wrap content"
        android:layout marginStart="20dp"
        android:layout marginEnd="20dp"
        android:background="#4CAF50"
        android:fontFamily="@font/roboto"
        android:onClick="selectFragment"
        android:text="@string/fragment1_button"
        android:textColor="@android:color/background light"
        android:textSize="18sp"
        android:textStyle="bold" />

    <!-- Button to display second fragment -->
    <Button
        android:id="@+id/button2"
        android:layout width="fill parent"
        android:layout height="wrap content"
        android:layout marginStart="20dp"
        android:layout marginTop="20dp"
        android:layout marginEnd="20dp"
```

```
        android:layout marginBottom="20dp"
        android:background="#4CAF50"
        android:fontFamily="@font/roboto"
        android:onClick="selectFragment"
        android:text="@string/fragment2 button"
        android:textColor="@android:color/background light"
        android:textSize="18sp"
        android:textStyle="bold" />

    <!-- Adding Fragment element in the activity -->
    <fragment
        android:id="@+id/fragment section"
        android:name="com.example.fragment.fragment1"
        android:layout width="match parent"
        android:layout height="match parent"
        android:layout marginStart="10dp"
        android:layout_marginEnd="10dp"
        android:layout_marginBottom="10dp"
        tools:layout="@layout/fragment1" />

</LinearLayout>
```

fragement1.xml :-

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout width="match parent"
    android:layout height="match parent"
    android:background="#5C52CC57"
    android:orientation="vertical">

    <!-- Text to be displayed inside the Fragment -->
    <TextView
        android:id="@+id/textView1"
        android:layout width="match parent"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:gravity="center"
        android:text="@string/fragment1_text1"
        android:textAlignment="center"
        android:textColor="@android:color/background light"
        android:textSize="24sp"
        android:textStyle="bold" />

</LinearLayout>
```

fragement2.xml :-

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

```
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout width="match parent"
    android:layout height="match parent"
    android:background="#5C3473A6"
    android:orientation="vertical">

    <!-- Text to be displayed inside the Fragment -->
    <TextView
        android:id="@+id/textView2"
        android:layout width="match parent"
        android:layout height="match parent"
        android:fontFamily="@font/roboto"
        android:gravity="center"
        android:text="@string/fragment2 text1"
        android:textAlignment="center"
        android:textColor="@android:color/background_light"
        android:textSize="24sp"
        android:textStyle="bold" />

</LinearLayout>
```

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.Fragment"
        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>
```

MainActivity.java :-

```
package com.example.fragment;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.app.Fragment;
import android.app.FragmentManager;
import android.app.FragmentTransaction;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

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

    // method for displaying the appropriate
    // fragment according to the clicked button
    public void selectFragment(View view) {
        // creating object for Fragment
        Fragment fr;
        // displaying first fragment
        // if button1 is clicked
        if(view == findViewById(R.id.button1)) {
            fr = new fragment1() ;
        }

        // displaying second fragment
        // if button2 is clicked
        else {
            fr = new fragment2() ;
        }

        FragmentManager fm = getFragmentManager();
        // fragment transaction to add or replace
        // fragments while activity is running
        FragmentTransaction fragmentTransaction = fm.beginTransaction();
        fragmentTransaction.replace(R.id.fragment section, fr);
        // making a commit after the transaction
        // to assure that the change is effective
        fragmentTransaction.commit();
    }
```

```
}
```

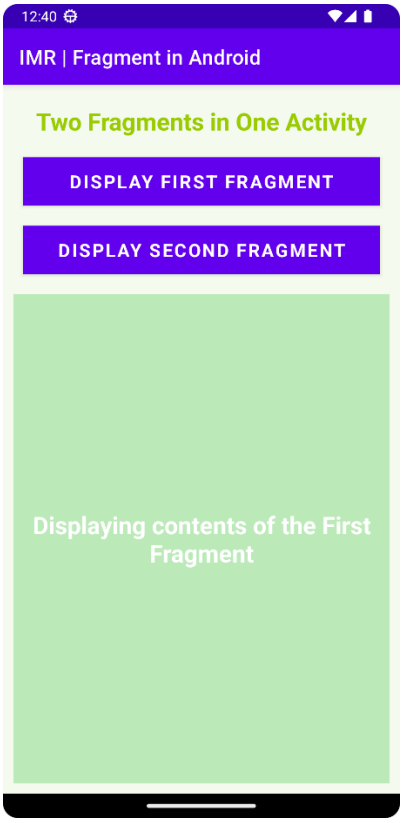
fragment1.java :-

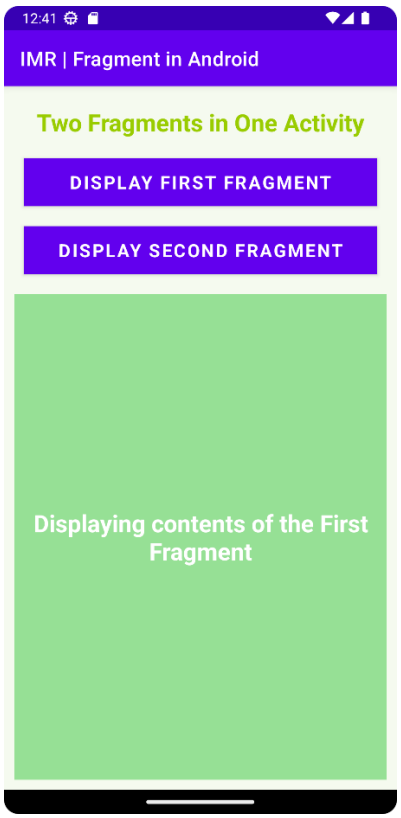
```
package com.example.fragment;

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

public class fragment1 extends Fragment  {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle
savedInstanceState) {

        // inflating the layout of the fragment
        // and returning the view component
        return inflater.inflate(R.layout.fragment1 , container, false);
    }
}
```

fragment2.java :-

```
package com.example.fragment;

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

public class fragment2 extends Fragment{
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle
savedInstanceState) {

        // inflating the layout of the fragment
        // and returning the view component
        return inflater.inflate(R.layout.fragment2 , container, false);
    }
}
```

- **OUTPUT :-**





Practical Name : Create an Android application for sending SMS.

****

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
   android:orientation="vertical" android:layout_width="match_parent"
   android:layout_height="match_parent">
   <TextView
      android:id="@+id/fstTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="100dp"
      android:layout_marginTop="150dp"
      android:text="Mobile No" />
   <EditText
      android:id="@+id/mblTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_marginLeft="100dp"
      android:ems="10"/>

   <TextView
      android:id="@+id/secTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Message"
      android:layout_marginLeft="100dp" />
   <EditText
      android:id="@+id/msgTxt"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
```

```
    android:layout_marginLeft="100dp"
    android:ems="10" />

  <Button
    android:id="@+id/btnSend"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="100dp"
    android:text="Send SMS"
    android:onClick="sendsms" />
</LinearLayout>
```

MainActivity.java

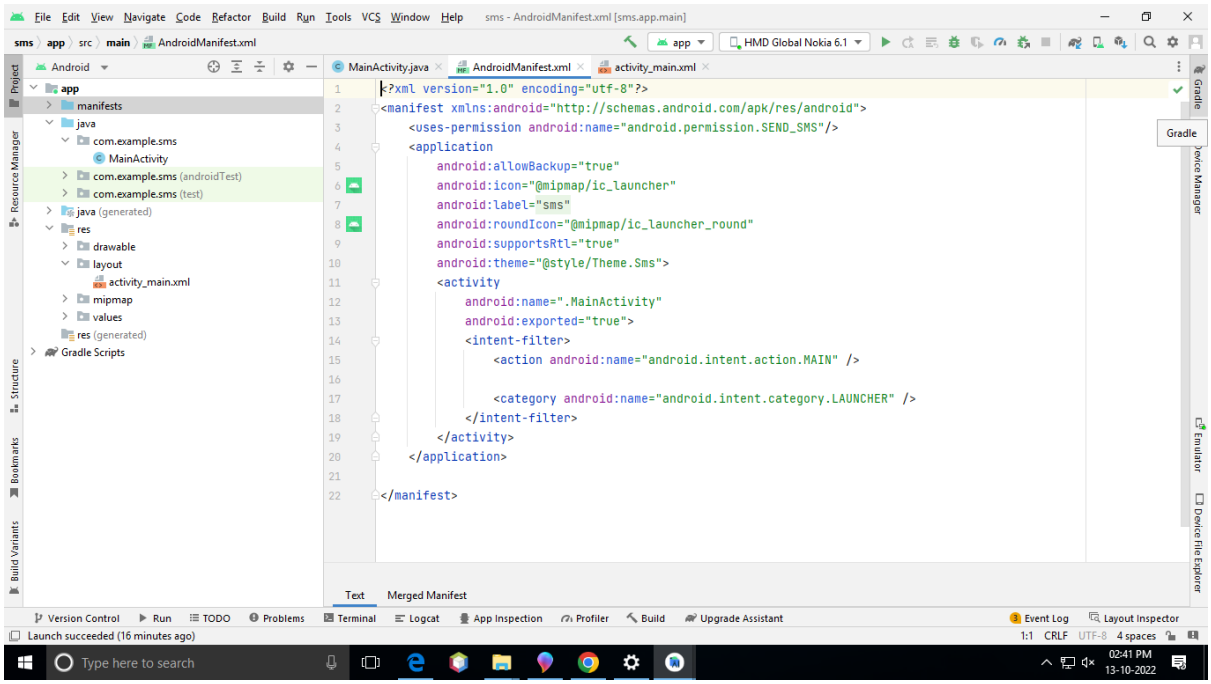
```
package com.example.sms;

import androidx.appcompat.app.AppCompatActivity;

import android.Manifest;
import android.content.pm.PackageManager;
import android.os.Build;
import android.os.Bundle;
import android.telephony.SmsManager;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
  EditText phonenumber, message;
  Button send;

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

    send = findViewById(R.id.btnSend);
    phonenumber = findViewById(R.id.mblTxt);
    message = findViewById(R.id.msgTxt);
    send.setOnClickListener(new View.OnClickListener() {

      public void onClick(View v) {

        if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
          if (checkSelfPermission(Manifest.permission.SEND_SMS) == PackageManager.PERMISSION_GRANTED) {
            sendsms();
          } else {
```

```
                requestPermissions(new String[]{Manifest.permission.SEND_SMS},1);

            }

        }
    }

});
}

private void sendsms() {
    String number = phonenumber.getText().toString().trim();
    String msg = message.getText().toString().trim();
    try {
        SmsManager smsManager = SmsManager.getDefault();
        smsManager.sendTextMessage(number, null, msg, null, null);
        Toast.makeText(getApplicationContext(), "Message Sent", Toast.LENGTH_LONG).show();
    } catch (Exception e) {
        e.printStackTrace();
        Toast.makeText(getApplicationContext(), "Some fiedls is Empty", Toast.LENGTH_LONG).show();
    }


}
}
```

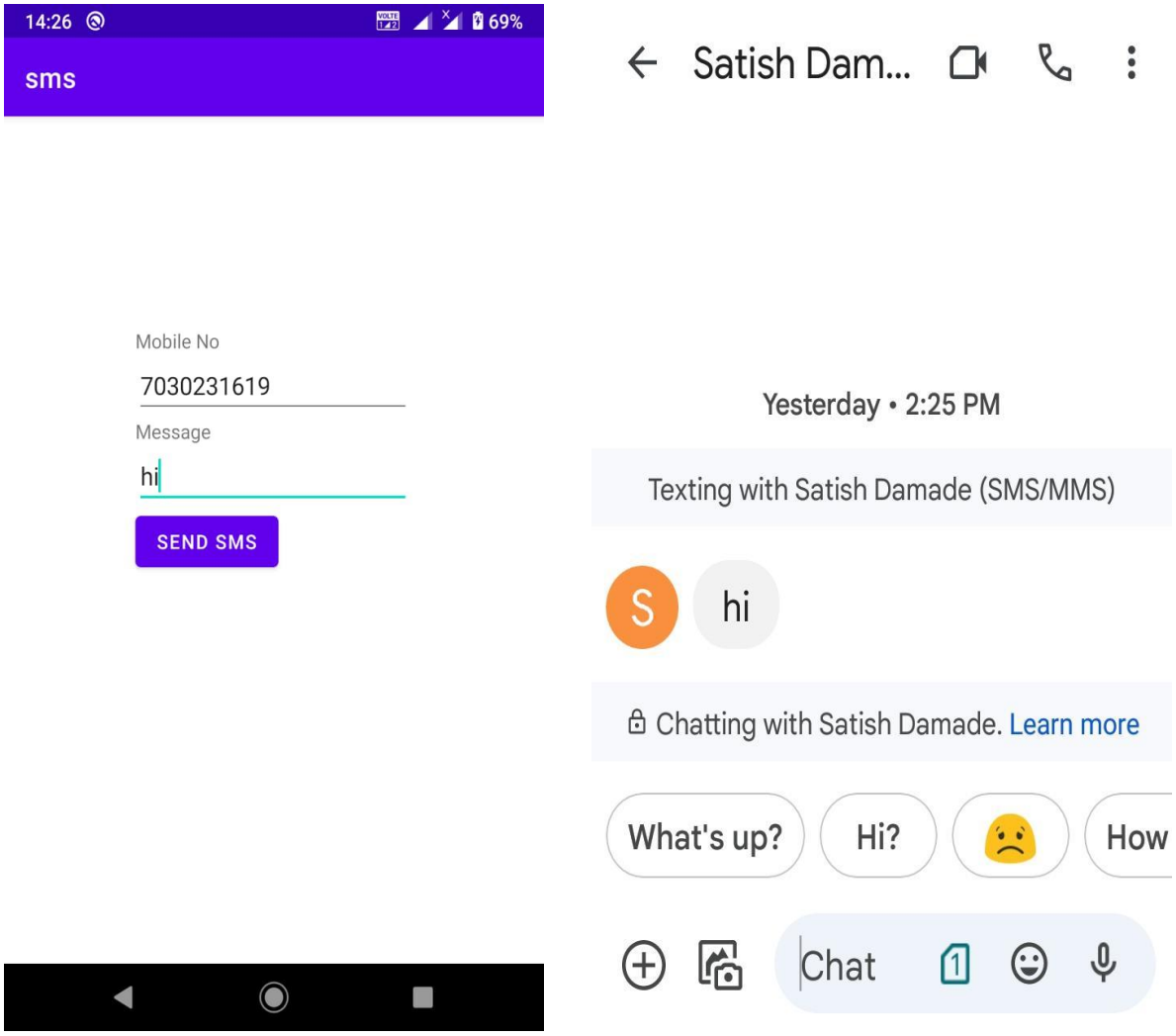
AndroidMainfest.xml

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

```
    </activity>
  </application>

</manifest>
```



Output :



Practical Name : **Write a android background service that will open activity on specific time.(Alarm)**
****

activity_main.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=".MainActivity">
```

```
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Start"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="103dp" />

    <EditText
        android:id="@+id/time"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="22dp"
        android:ems="10" />

</RelativeLayout>
```

MainActivity.java

```
package com.example.alarm;

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

public class MainActivity extends AppCompatActivity {
```

```
    Button start;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        start= findViewById(R.id.button);

        start.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                startAlert();
            }
        });
    }

    public void startAlert(){
        EditText text = findViewById(R.id.time);
        int i = Integer.parseInt(text.getText().toString());
        Intent intent = new Intent(this, MyBroadcastReceiver.class);
        PendingIntent pendingIntent = PendingIntent.getBroadcast(
                this.getApplicationContext(), 234324243, intent, 0);
        AlarmManager alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);
        alarmManager.set(AlarmManager.RTC_WAKEUP, System.currentTimeMillis()
                + (i * 1000), pendingIntent);
        Toast.makeText(this, "Alarm set in " + i + "
seconds",Toast.LENGTH_LONG).show();
    }
}
```

MyBrodcastReciver.java

```
package com.example.alarm;

import android.content.BroadcastReceiver;
import android.content.Context;
```

```
import android.content.Intent;
import android.media.MediaPlayer;
import android.widget.Toast;

public class MyBroadcastReceiver extends BroadcastReceiver {
    MediaPlayer mp;
    @Override
    public void onReceive(Context context, Intent intent) {
        mp=MediaPlayer.create(context, R.raw.alarm );
        mp.start();
        Toast.makeText(context, "Alarm....", Toast.LENGTH_LONG).show();
    }
}
```

AndroidMainfest.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.Alarm"
        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>
        <receiver android:name="MyBroadcastReceiver" >
        </receiver>
    </application>

</manifest>
```

Output :

Practical Name :- Demonstrate use of shared preferences.

❖ **CODE :-**

Acitivity_main.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=".MainActivity">

    <TextView
        android:id="@+id/textview"
        android:layout_width="wrap_content"
```

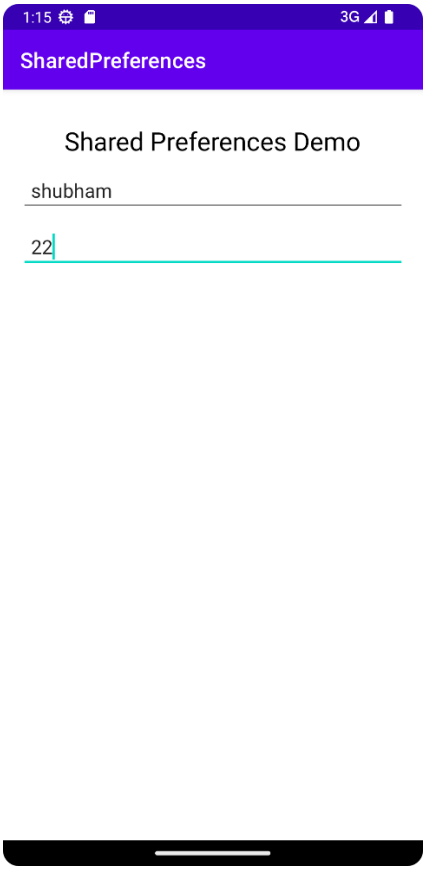
```
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="32dp"
        android:text="Shared Preferences Demo"
        android:textColor="@android:color/black"
        android:textSize="24sp" />

    <!--EditText to take the data from the user
        and save the data in SharedPreferences-->
    <EditText
        android:id="@+id/edit1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textview"
        android:layout_marginStart="16dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="16dp"
        android:hint="Enter your Name"
        android:padding="10dp" />

    <!--EditText to take the data from the user and
         save the data in SharedPreferences-->
    <EditText
        android:id="@+id/edit2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@+id/edit1"
        android:layout_marginStart="16dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="16dp"
        android:hint="Enter your Age"
        android:padding="10dp"
        android:inputType="number" />
</RelativeLayout>
```

MainAcitivity.java :-

```
package com.example.sharedpreferences;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.content.SharedPreferences;
import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

    private EditText name, age;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name = findViewById(R.id.edit1);
        age = findViewById(R.id.edit2);
    }

    // Fetch the stored data in onResume()
    // Because this is what will be called
    // when the app opens again
    @Override
    protected void onResume() {
        super.onResume();

        // Fetching the stored data
        // from the SharedPreference
        SharedPreferences sh = getSharedPreferences("MySharedPref", MODE_PRIVATE);

        String s1 = sh.getString("name", "");
```

```
        int a = sh.getInt("age", 0);


        // Setting the fetched data
        // in the EditTexts
        name.setText(s1);
        age.setText(String.valueOf(a));
    }


    // Store the data in the SharedPreference
    // in the onPause() method
    // When the user closes the application
    // onPause() will be called
    // and data will be stored
    @Override
    protected void onPause() {
        super.onPause();


        // Creating a shared pref object
        // with a file name "MySharedPref"
        // in private mode
        SharedPreferences sharedPreferences = getSharedPreferences("MySharedPref",
MODE_PRIVATE);
        SharedPreferences.Editor myEdit = sharedPreferences.edit();


        // write all the data entered by the user in SharedPreference and apply
        myEdit.putString("name", name.getText().toString());
        myEdit.putInt("age", Integer.parseInt(age.getText().toString()));
        myEdit.apply();
    }
}
```

❖ **OUTPUT :-**



Practical Name :- Write code that will call maps using android application.

❖ **CODE :-**

Acitivity_main.xml :-

```
<?xml version="1.0" encoding="utf-8"?>
<fragment xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:map="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/map"
    android:name="com.google.android.gms.maps.SupportMapFragment"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MapsActivity" />
```

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.MAPEXAMPLE"
        tools:targetApi="31">
        <activity android:name=".MapsActivity"
            android:exported="true"
            android:label="@string/title_activity_maps">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <meta-data
            android:name="com.google.android.geo.API_KEY"
            android:value="AIzaSyCyqTIZt9IAXD5-H98hEQbbx1QooCTrBDg" />
    </application>

</manifest>
```

MapActivity.java :-

```
package com.example.mapexample;
```

```
import androidx.fragment.app.FragmentActivity;

import android.os.Bundle;

import com.google.android.gms.maps.CameraUpdateFactory;

import com.google.android.gms.maps.GoogleMap;

import com.google.android.gms.maps.OnMapReadyCallback;

import com.google.android.gms.maps.SupportMapFragment;

import com.google.android.gms.maps.model.LatLng;

import com.google.android.gms.maps.model.MarkerOptions;

import com.example.mapexample.databinding.ActivityMapsBinding;


public class MapsActivity extends FragmentActivity implements OnMapReadyCallback {


    private GoogleMap mMap;

    private ActivityMapsBinding binding;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);


        binding = ActivityMapsBinding.inflate(getLayoutInflater());

        setContentView(binding.getRoot());


       SupportMapFragment mapFragment = (SupportMapFragment)
getSupportFragmentManager()

                .findFragmentById(R.id.map);

        mapFragment.getMapAsync(this);

    }


    @Override

    public void onMapReady(GoogleMap googleMap) {

        mMap = googleMap;


        LatLng India = new LatLng(20, 76);

        mMap.addMarker(new MarkerOptions().position(India).title("Marker in
India"));
```

```
        mMap.moveCamera(CameraUpdateFactory.newLatLng(India));
    }
}
```

ExampleUnitTest.java :-

```
package com.example.mapexample;

import org.junit.Test;
import static org.junit.Assert.*;

public class ExampleUnitTest {
    @Test
    public void addition_isCorrect() {
        assertEquals(4, 2 + 2);
    }
}
```

ExampleInstrumentedTest.java :-

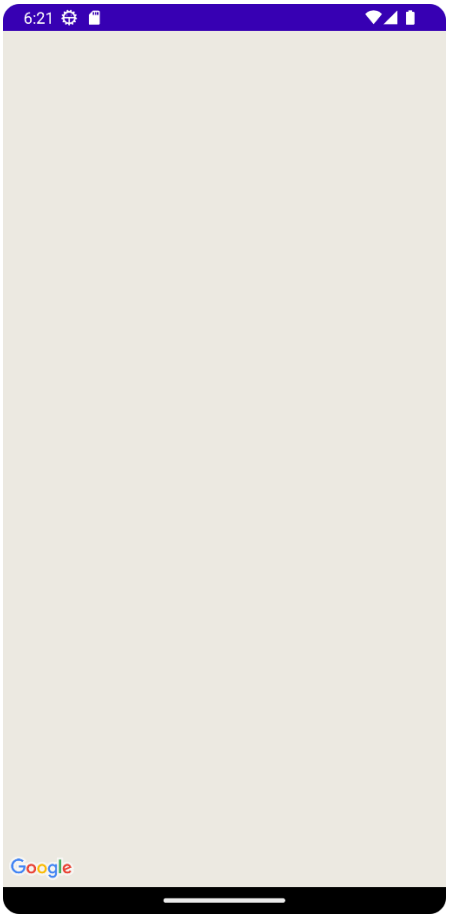
```
package com.example.mapexample;

import android.content.Context;
import androidx.test.platform.app.InstrumentationRegistry;
import androidx.test.ext.junit.runners.AndroidJUnit4;
import org.junit.Test;
import org.junit.runner.RunWith;
import static org.junit.Assert.*;

@RunWith(AndroidJUnit4.class)
public class ExampleInstrumentedTest {
    @Test
    public void useAppContext() {
        .
        Context appContext =
InstrumentationRegistry.getInstrumentation().getTargetContext();
```

```
        assertEquals("com.example.mapexample", appContext.getPackageName());
    }
}
```

BuildConfig.java :-

```
package com.example.mapexample;


import android.content.Context;
import androidx.test.platform.app.InstrumentationRegistry;
import androidx.test.ext.junit.runners.AndroidJUnit4;
import org.junit.Test;
import org.junit.runner.RunWith;
import static org.junit.Assert.*;


@RunWith(AndroidJUnit4.class)
public class ExampleInstrumentedTest {
    @Test
    public void useAppContext() {
        Context appContext =
InstrumentationRegistry.getInstrumentation().getTargetContext();
        assertEquals("com.example.mapexample", appContext.getPackageName());
    }
}
```

- **OUTPUT :-**



Practical Name :- Develop application for database manipulation.

❖ **CODE :-**

Acitivity_main.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=".MainActivity">

    <TextView
        android:id="@+id/texttitle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```
    android:text="Please enter the details below"
    android:textSize="24dp"
    android:layout_marginTop="20dp"/>
<EditText
    android:id="@+id/name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Name"
    android:textSize="24dp"
    android:layout_below="@+id/texttitle"
    android:inputType="textPersonName"/>
<EditText
    android:id="@+id/contact"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Contact"
    android:textSize="24dp"
    android:layout_below="@+id/name"
    android:inputType="number"/>
<EditText
    android:id="@+id/dob"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Date of Birth"
    android:textSize="24dp"
    android:layout_below="@+id/contact"
    android:inputType="number"/>
<Button
    android:id="@+id/btnInsert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24dp"
    android:text="Insert New Data"
    android:layout_marginTop="30dp"
```

```
        android:layout_below="@id/dob"/>
    <Button
        android:id="@+id/btnUpdate"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"
        android:text="Update Data"
        android:layout_below="@id/btnInsert"/>
    <Button
        android:id="@+id/btnDelete"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"
        android:text="Delete Existing Data"
        android:layout_below="@id/btnUpdate"/>
    <Button
        android:id="@+id/btnView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="24dp"
        android:text="View Data"
        android:layout_below="@id/btnDelete"/>
</RelativeLayout>
```

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.Sqlliteexample"
        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>
```

MainActivity.java :-

```
package com.example.sqlliteexample;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
```

```
    EditText name, contact, dob;
    Button insert, update, delete, view;
    DBHelper DB;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name = findViewById(R.id.name);
        contact = findViewById(R.id.contact);
        dob = findViewById(R.id.dob);
        insert = findViewById(R.id.btnInsert);
        update = findViewById(R.id.btnUpdate);
        delete = findViewById(R.id.btnDelete);
        view = findViewById(R.id.btnView);
        DB = new DBHelper(this);
        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String nameTXT = name.getText().toString();
                String contactTXT = contact.getText().toString();
                String dobTXT = dob.getText().toString();

                Boolean checkinsertdata = DB.insertuserdata(nameTXT, contactTXT,
dobTXT);
                if(checkinsertdata==true)
                    Toast.makeText(MainActivity.this, "New Entry Inserted",
Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(MainActivity.this, "New Entry Not Inserted",
Toast.LENGTH_SHORT).show();
            }        });
        update.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
```

```
                String nameTXT = name.getText().toString();

                String contactTXT = contact.getText().toString();

                String dobTXT = dob.getText().toString();


                Boolean checkupdatedata = DB.updateuserdata(nameTXT, contactTXT,
dobTXT);

                if(checkupdatedata==true)

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

                else

                    Toast.makeText(MainActivity.this, "New Entry Not Updated",
Toast.LENGTH_SHORT).show();

            }        });

        delete.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View view) {

                String nameTXT = name.getText().toString();

                Boolean checkudeletedata = DB.deletedata(nameTXT);

                if(checkudeletedata==true)

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

                else

                    Toast.makeText(MainActivity.this, "Entry Not Deleted",
Toast.LENGTH_SHORT).show();

            }        });


        view.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View view) {

                Cursor res = DB.getdata();

                if(res.getCount()==0){

                    Toast.makeText(MainActivity.this, "No Entry Exists",
Toast.LENGTH_SHORT).show();

                    return;

                }

                StringBuffer buffer = new StringBuffer();

                while(res.moveToNext()){
```

```
                    buffer.append("Name :"+res.getString(0)+"\n");
                    buffer.append("Contact :"+res.getString(1)+"\n");
                    buffer.append("Date of Birth :"+res.getString(2)+"\n\n");
                }

                AlertDialog.Builder builder = new
AlertDialog.Builder(MainActivity.this);
                builder.setCancelable(true);
                builder.setTitle("User Entries");
                builder.setMessage(buffer.toString());
                builder.show();
            }        });
    }}
```

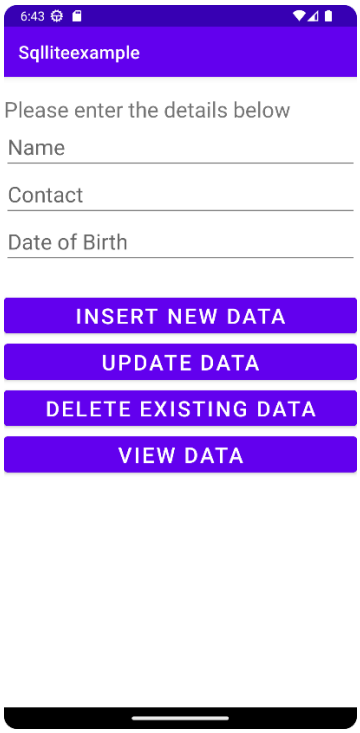
DBHelper.java :-

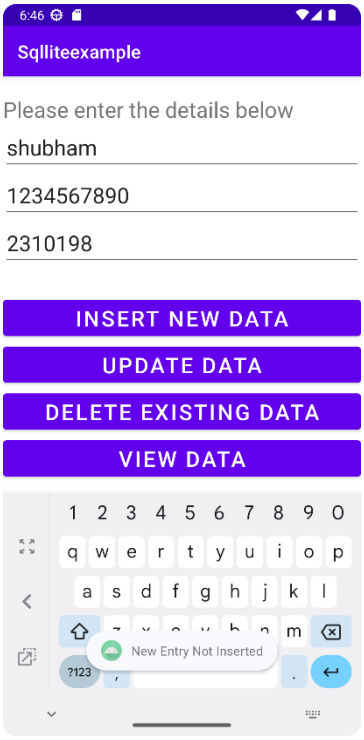
```
package com.example.sqlliteexample;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;
import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {
    public DBHelper(Context context) {
        super(context, "Userdata.db", null, 1);
    }
    @Override
    public void onCreate(SQLiteDatabase DB) {
        DB.execSQL("create Table Userdetails(name TEXT primary key, contact TEXT,
dob TEXT)");
    }
    @Override
    public void onUpgrade(SQLiteDatabase DB, int i, int ii) {
```

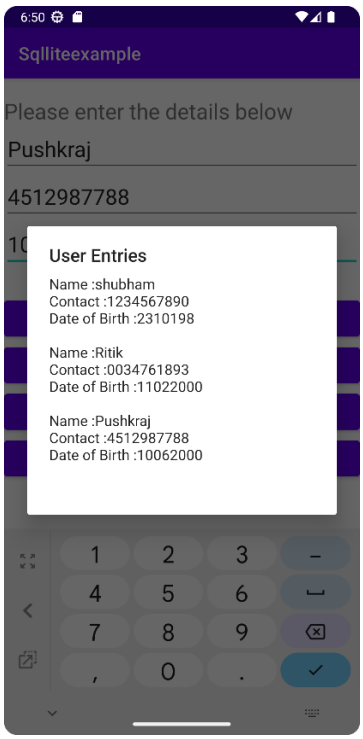
```
        DB.execSQL("drop Table if exists Userdetails");
    }
    public Boolean insertuserdata(String name, String contact, String dob)
    {
        SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("name", name);
        contentValues.put("contact", contact);
        contentValues.put("dob", dob);
        long result=DB.insert("Userdetails", null, contentValues);
        if(result==-1){
            return false;
        }else{
            return true;
        }
    }
    public Boolean updateuserdata(String name, String contact, String dob)
    {
        SQLiteDatabase DB = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("contact", contact);
        contentValues.put("dob", dob);
        Cursor cursor = DB.rawQuery("Select * from Userdetails where name = ?", new
String[]{name});
        if (cursor.getCount() > 0) {
            long result = DB.update("Userdetails", contentValues, "name=?", new
String[]{name});
            if (result == -1) {
                return false;
            } else {
                return true;
            }
        } else {
            return false;
        }
```

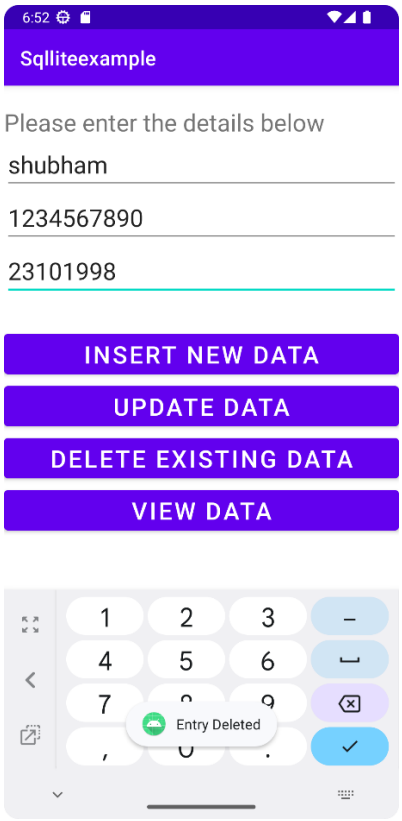
```
    }

    public Boolean deletedata (String name)

    {

        SQLiteDatabase DB = this.getWritableDatabase();

        Cursor cursor = DB.rawQuery("Select * from Userdetails where name = ?", new
String[]{name});

        if (cursor.getCount() > 0) {

            long result = DB.delete("Userdetails", "name=?", new String[]{name});

            if (result == -1) {

                return false;

            } else {

                return true;

            }

        } else {

            return false;

        }

    }


    public Cursor getdata ()

    {

        SQLiteDatabase DB = this.getWritableDatabase();

        Cursor cursor = DB.rawQuery("Select * from Userdetails", null);

        return cursor;

    }

}
```

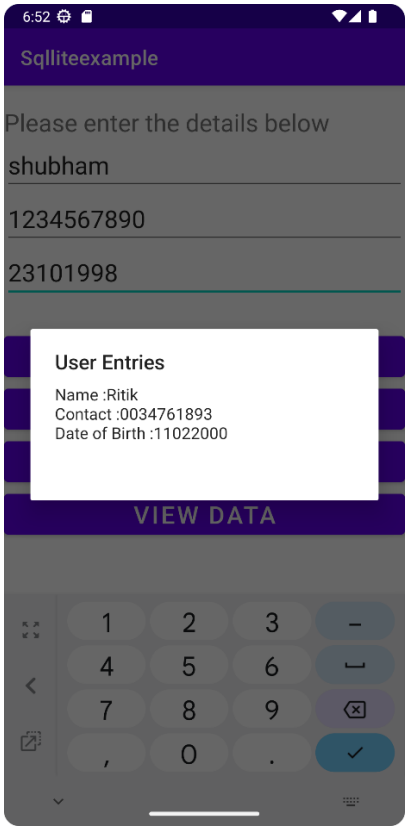
❖ **OUTPUT :-**


6:43
Sqlliteexample
Please enter the details below
Name
Contact
Date of Birth
INSERT NEW DATA
UPDATE DATA
DELETE EXISTING DATA
VIEW DATA


6:46
Sqlliteexample
Please enter the details below
shubham
1234567890
2310198
INSERT NEW DATA
UPDATE DATA
DELETE EXISTING DATA
VIEW DATA
New Entry Not Inserted


6:50
Sqlliteexample
Please enter the details below
Pushkraj
4512987788
User Entries
Name :shubham
Contact :1234567890
Date of Birth :2310198
Name :Ritik
Contact :0034761893
Date of Birth :11022000
Name :Pushkraj
Contact :4512987788
Date of Birth :10062000


6:52
Sqlliteexample
Please enter the details below
shubham
1234567890
23101998
INSERT NEW DATA
UPDATE DATA
DELETE EXISTING DATA
VIEW DATA
Entry Deleted


6:52
Sqlliteexample
Please enter the details below
shubham
1234567890
23101998
User Entries
Name :Ritik
Contact :0034761893
Date of Birth :11022000
VIEW DATA