PROGRAM NO.: 1
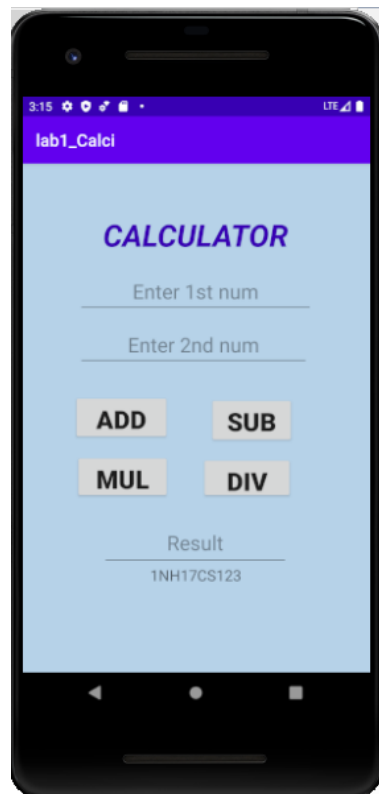
QUESTION: Develop an android application to perform operations of a simple calculator using buttons.

OUTPUT SCREENSHOTS:

XML CODE:

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#B6D2E8"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="267dp"
        android:layout_height="50dp"
```

```xml
        android:text="CALCULATOR"
        android:textAlignment="center"
        android:textColor="@color/colorPrimaryDark"
        android:textSize="36sp"
        android:textStyle="bold|italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.109" />

    <EditText
        android:id="@+id/num1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter 1st num"
        android:inputType="textPersonName"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.228" />

    <EditText
        android:id="@+id/num2"
        android:layout_width="273dp"
        android:layout_height="50dp"
        android:ems="10"
        android:hint="Enter 2nd num"
        android:inputType="textPersonName"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.48"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.347" />

    <Button
        android:id="@+id/add_bt"
        android:layout_width="114dp"
        android:layout_height="56dp"
        android:text="ADD"
        android:textAlignment="center"
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.204"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.499"
        tools:ignore="InvalidId" />
```

```xml
<Button
    android:id="@+id/sub_bt"
    android:layout_width="100dp"
    android:layout_height="57dp"
    android:text="SUB"
    android:textSize="30sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.712"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.505" />

<Button
    android:id="@+id/mul_bt"
    android:layout_width="112dp"
    android:layout_height="55dp"
    android:text="MUL"
    android:textAlignment="center"
    android:textSize="30sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.21"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.627" />

<Button
    android:id="@+id/div_bt"
    android:layout_width="108dp"
    android:layout_height="52dp"
    android:text="DIV"
    android:textAlignment="center"
    android:textSize="30sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.7"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.629" />

<EditText
    android:id="@+id/res"
    android:layout_width="220dp"
    android:layout_height="57dp"
    android:ems="10"
    android:hint="Result"
    android:inputType="number"
    android:textAlignment="center"
    android:textSize="24sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.497"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
```

```
                app:layout_constraintVertical_bias="0.771" />

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

JAVA CODE:

```java
package com.example.lab1_calci;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
    EditText num1,num2,res;
    Button add_bt,sub_bt,mul_bt,div_bt;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        num1 = (EditText) findViewById(R.id.num1);
        num2 = (EditText) findViewById(R.id.num2);
        res = (EditText) findViewById(R.id.res);
        add_bt = (Button) findViewById(R.id.add_bt);
        sub_bt = (Button) findViewById(R.id.sub_bt);
        mul_bt = (Button) findViewById(R.id.mul_bt);
        div_bt = (Button) findViewById(R.id.div_bt);

        add_bt.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String v1 = num1.getText().toString();
                String v2 = num2.getText().toString();
                int a = Integer.parseInt(v1);
                int b = Integer.parseInt(v2);
                int c = a+b;
                res.setText(c);
            }
        });

        sub_bt.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String v1 = num1.getText().toString();
                String v2 = num2.getText().toString();
                int a = Integer.parseInt(v1);
                int b = Integer.parseInt(v2);
                int c = a-b;
                res.setText(c);
            }
```

```java
        });

        mul_bt.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String v1 = num1.getText().toString();
                String v2 = num2.getText().toString();
                int a = Integer.parseInt(v1);
                int b = Integer.parseInt(v2);
                int c = a-b;
                res.setText(c);
            }
        });

        div_bt.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String v1 = num1.getText().toString();
                String v2 = num2.getText().toString();
                int a = Integer.parseInt(v1);
                int b = Integer.parseInt(v2);
                int c = a-b;
                res.setText(c);
            }
        });
    }
}
```

PROGRAM NO.: 2

QUESTION: Design and implement a single screen app that displays information about a small business.eg. Restaurant, Book shop etc. Your design must include:

• Business name

• Photo of business

• Contact information

OUTPUT SCREENSHOTS:

XML CODE:

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
```

```xml
    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="#E3B9EA"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="231dp"
        android:layout_height="49dp"
        android:text="PIZZA HUT"
        android:textAlignment="center"
        android:textColor="@android:color/holo_red_dark"
        android:textSize="36sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.074" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="330dp"
        android:layout_height="198dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.493"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.228"
        app:srcCompat="@drawable/pizzahut" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="381dp"
        android:layout_height="141dp"
        android:text="Pizza Hut is an American restaurant chain and
international franchise which was founded in 1958 in Wichita, Kansas by
Dan and Frank Carney. The company is known for its Italian American
cuisine menu, including pizza and pasta, as well as side dishes and
desserts."
        android:textAlignment="center"
        android:textColor="@android:color/holo_red_light"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.533"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.622" />

    <TextView
        android:id="@+id/textView3"
        android:layout_width="217dp"
        android:layout_height="102dp"
        android:text="Soul Space Arena, 4th Flr, Mall · In Soul Space
Arena Mall Open · Closes 10PM · 1800 202 2022"
        android:textAlignment="center"
        android:textColor="@color/colorPrimaryDark"
```

```xml
                android:textSize="18sp"
                app:layout_constraintBottom_toBottomOf="parent"
                app:layout_constraintEnd_toEndOf="parent"
                app:layout_constraintHorizontal_bias="0.788"
                app:layout_constraintStart_toStartOf="parent"
                app:layout_constraintTop_toTopOf="parent"
                app:layout_constraintVertical_bias="0.852" />

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

JAVA CODE:

```java
package com.example.lab2_res;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

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

PROGRAM NO.: 3

QUESTION: Design and develop a Mobile App for smart phones The Easy Unit Converter using Android.

OUTPUT SCREENSHOTS:

XML CODE:

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/screen1"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#F9FAF6"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView2"
        android:layout_width="357dp"
        android:layout_height="55dp"
        android:text="@string/unit_converter"
        android:textAlignment="center"
```

```xml
        android:textAllCaps="false"
        android:textColor="@color/colorPrimaryDark"
        android:textSize="36sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.468"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.127" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="128dp"
        android:layout_height="21dp"
        android:text="@string/_1nh17cs123"
        android:textAlignment="center"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.104"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.043" />

    <EditText
        android:id="@+id/val"
        android:layout_width="241dp"
        android:layout_height="51dp"
        android:ems="10"
        android:hint="Enter number"
        android:inputType="textPersonName"
        android:textAlignment="center"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.427"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.278" />

    <EditText
        android:id="@+id/res"
        android:layout_width="242dp"
        android:layout_height="53dp"
        android:ems="10"
        android:hint="@string/result"
        android:inputType="textPersonName"
        android:textAlignment="center"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.426"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.389" />

    <RadioGroup
        android:id="@+id/radgrp"
        android:layout_width="275dp"
        android:layout_height="184dp"
        app:layout_constraintBottom_toBottomOf="parent"
```

```xml
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.402"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.639">

        <RadioButton
            android:id="@+id/rb1"
            android:layout_width="match_parent"
            android:layout_height="48dp"
            android:text="@string/cm_to_m"
            android:textAlignment="textStart"
            android:textSize="18sp" />

        <RadioButton
            android:id="@+id/rb2"
            android:layout_width="match_parent"
            android:layout_height="44dp"
            android:text="@string/m_to_cm"
            android:textAlignment="textStart"
            android:textSize="18sp" />

        <RadioButton
            android:id="@+id/rb3"
            android:layout_width="match_parent"
            android:layout_height="47dp"
            android:text="@string/feet_to_inch"
            android:textAlignment="textStart"
            android:textSize="18sp"
            tools:ignore="DuplicateIds" />

        <RadioButton
            android:id="@+id/rb4"
            android:layout_width="match_parent"
            android:layout_height="44dp"
            android:text="@string/inch_to_feet"
            android:textSize="18sp" />
    </RadioGroup>

    <Button
        android:id="@+id/conv_bt"
        android:layout_width="181dp"
        android:layout_height="58dp"
        android:text="@string/convert"
        android:textAlignment="center"
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.435"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.86" />

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

JAVA CODE:

```java
package com.example.lab3_unitcon;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

    EditText val,res;
    Button conv_bt;
    RadioButton rb1,rb2,rb3,rb4;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        val = (EditText)findViewById(R.id.val);
        res = (EditText)findViewById(R.id.res);
        conv_bt = (Button)findViewById(R.id.conv_bt);
        rb1 = (RadioButton)findViewById(R.id.rb1);
        rb2 = (RadioButton)findViewById(R.id.rb2);
        rb3 = (RadioButton)findViewById(R.id.rb3);
        rb4 = (RadioButton)findViewById(R.id.rb4);

        conv_bt.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String a = val.getText().toString();
                float n = Float.parseFloat(a);
                float c;
                if(rb1.isChecked()) {
                    c=n/100;
                    res.setText("Result ="+c);
                }
                else if(rb2.isChecked()) {
                    c=n*100;
                    res.setText("Result ="+c);
                }
                else if(rb3.isChecked()) {
                    c=n*12;
                    res.setText("Result ="+c);
                }
                else if(rb4.isChecked()) {
                    c=n/12;
                    res.setText("Result ="+c);
                }
            }
        });
```

```
        }
    }
```

PROGRAM NO.: 4

QUESTION: Design and develop a Mobile App for smart phones Currency Converter.

OUTPUT SCREENSHOTS:

XML CODE:

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

    <Spinner
        android:id="@+id/sp1"
        android:layout_width="311dp"
        android:layout_height="61dp"
        android:entries="@array/sp_list"
        android:textAlignment="center"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.473" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="373dp"
        android:layout_height="61dp"
        android:text="CURRENCY CONVERTER"
        android:textAlignment="center"
        android:textSize="30sp"
```

```xml
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.114" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="183dp"
        android:layout_height="43dp"
        android:text="Select Option:"
        android:textAlignment="viewStart"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.188"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.377" />

    <Button
        android:id="@+id/bt_conv"
        android:layout_width="151dp"
        android:layout_height="57dp"
        android:text="CONVERT"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.47"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.578" />

    <TextView
        android:id="@+id/res_tv"
        android:layout_width="310dp"
        android:layout_height="91dp"
        android:text="Result"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.747" />

    <TextView
        android:id="@+id/textView4"
        android:layout_width="185dp"
        android:layout_height="41dp"
        android:text="1NH17CS123"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.674"
        app:layout_constraintStart_toStartOf="parent"
```

```xml
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.908" />

    <EditText
        android:id="@+id/val"
        android:layout_width="277dp"
        android:layout_height="51dp"
        android:ems="10"
        android:hint="Enter amount:"
        android:inputType="textPersonName"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.245" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

JAVA CODE:

```java
package com.example.currencyconverter;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
Spinner sp1;
TextView res_tv;
Button bt_conv;
EditText val;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        sp1 = (Spinner)findViewById(R.id.sp1);
        bt_conv = (Button)findViewById(R.id.bt_conv);
        res_tv = (TextView)findViewById(R.id.res_tv);
        val = (EditText) findViewById(R.id.val);

        bt_conv.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                int pos = sp1.getSelectedItemPosition();
                String a = val.getText().toString();
                float n = Float.parseFloat(a);
                float res;
```

```java
            if(pos == 1)
            {
                res = n*73;
                res_tv.setText("Result ="+res);
            }
            else if(pos == 2)
            {
                res = n/73;
                res_tv.setText("Result ="+res);
            }
            else if(pos == 3)
            {
                res = n*95;
                res_tv.setText("Result ="+res);
            }
            else if(pos == 4)
            {
                res = n/95;
                res_tv.setText("Result ="+res);
            }
            else
            {
                Toast.makeText(getApplicationContext(),"Please select
                option",Toast.LENGTH_LONG).show();
            }


        }
    });

    }
}
```

- strings.xml
```xml
<resources>
    <string name="app_name">Currency Converter</string>
    <string-array name = "sp_list">
        <item> Select</item>
        <item> USD to INR</item>
        <item> INR to USD</item>
        <item> GBP to INR</item>
        <item> INR to GBP</item>
    </string-array>
</resources>
```
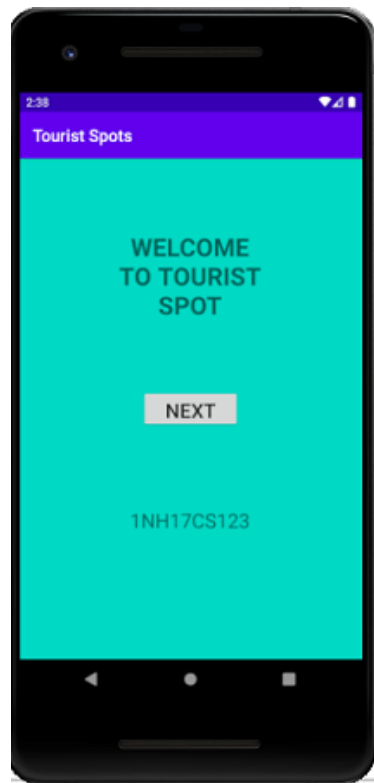
PROGRAM NO.: 5

QUESTION: Design an app for Tourist spot: With three activities, Welcome page, Display attractions of tourist spot and Webpage of the tourist spot

OUTPUT SCREENSHOTS:

XML CODE:

➤ Main activity XML

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="197dp"
        android:layout_height="119dp"
        android:text="WELCOME TO TOURIST SPOT"
        android:textAlignment="center"
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.178" />

    <Button
        android:id="@+id/nxt_btn"
        android:layout_width="118dp"
        android:layout_height="48dp"
        android:text="Next"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="162dp"
        android:layout_height="28dp"
        android:text="1NH17CS123"
        android:textAlignment="center"
        android:textSize="24sp"
        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="0.73" />

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

➤ Home XML

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

    <TextView
        android:id="@+id/textView3"
        android:layout_width="326dp"
        android:layout_height="73dp"
        android:text="Natural Tourist Spots in India"
        android:textAlignment="center"
        android:textColor="@color/colorPrimaryDark"
        android:textSize="24sp"
        android:textStyle="italic"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.496"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.087" />

    <ImageView
        android:id="@+id/andaman_img"
        android:layout_width="259dp"
        android:layout_height="140dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.565"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.236"
        app:srcCompat="@drawable/andaman" />

    <ImageView
        android:id="@+id/img_jog"
        android:layout_width="257dp"
        android:layout_height="158dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.558"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.532"
        app:srcCompat="@drawable/jog" />

    <ImageView
        android:id="@+id/img_dal"
        android:layout_width="261dp"
        android:layout_height="162dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```xml
        app:layout_constraintHorizontal_bias="0.573"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.878"
        app:srcCompat="@drawable/dal" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

JAVA CODE:

- Main Java

```java
package com.example.touristspots;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
    Button nxt_btn;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        nxt_btn = (Button)findViewById(R.id.nxt_btn);
        nxt_btn.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View view) {
                Intent i = new Intent(getApplicationContext(), Home.class);
                startActivity(i);
            }
        });
    }
}
```

- Home java

```java
package com.example.touristspots;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
```

```java
import android.widget.Toast;

public class Home extends AppCompatActivity {
    ImageView img_andaman,img_jog,img_dal;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_home);
        img_andaman = (ImageView)findViewById(R.id.andaman_img);
        img_jog = (ImageView)findViewById(R.id.img_jog);
        img_dal = (ImageView)findViewById(R.id.img_dal);

        img_andaman.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View view) {
                Toast.makeText(getApplicationContext(),"Andaman
islands",Toast.LENGTH_SHORT).show();
                String
url="https://en.wikipedia.org/wiki/Andaman_and_Nicobar_Islands";
                Intent i1 = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
                startActivity(i1);
            }
        });

        img_jog.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View view) {
                Toast.makeText(getApplicationContext(),"Jog falls
",Toast.LENGTH_SHORT).show();
                String url="https://en.wikipedia.org/wiki/Jog_Falls";
                Intent i2 = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
                startActivity(i2);
            }
        });

        img_dal.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View view) {
                Toast.makeText(getApplicationContext(),"Dal Lake
",Toast.LENGTH_SHORT).show();
                String url="https://en.wikipedia.org/wiki/Dal_Lake";
                Intent i3 = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
                startActivity(i3);
            }
        });
    }
}
```

MANIFEST FILE:

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

```xml
    package="com.example.touristspots">
    <uses-permission android:name="android.permission.INTERNET"/>
<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/AppTheme">
    <activity android:name=".Home"></activity>
    <activity android:name=".MainActivity">
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />

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

</manifest>
```
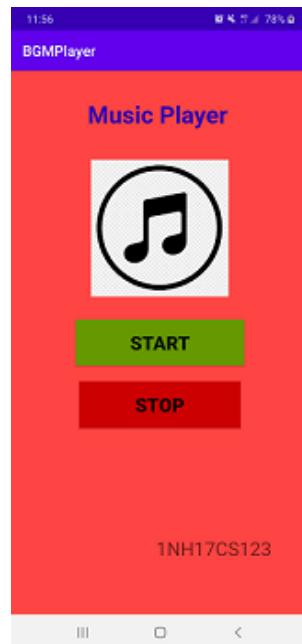
PROGRAM NO.: 6

QUESTION: Design an android app play music in background

OUTPUT SCREENSHOTS:

XML CODE:

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

    <TextView
        android:layout_width="324dp"
        android:layout_height="50dp"
        android:text="Music Player"
        android:textAlignment="center"
        android:textColor="@color/colorPrimaryDark"
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.462"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.054" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="168dp"
        android:layout_height="37dp"
        android:text="1NH17CS123"
        android:textAlignment="center"
        android:textSize="24sp"
```

```xml
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.806"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.899" />

    <Button
        android:id="@+id/bt_start"
        android:layout_width="233dp"
        android:layout_height="64dp"
        android:background="@android:color/holo_green_dark"
        android:text="START"
        android:textSize="24sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/bt_stop"
        android:layout_width="223dp"
        android:layout_height="65dp"
        android:background="@android:color/holo_red_dark"
        android:text="STOP"
        android:textAlignment="center"
        android:textSize="24sp"
        android:textStyle="bold"
        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="0.625" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="195dp"
        android:layout_height="190dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.219"
        app:srcCompat="@drawable/i1" />

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

JAVA CODE:

➢ Main Activity Code

```java
package com.example.bgmplayer;
```

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

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

public class MainActivity extends AppCompatActivity implements
View.OnClickListener {
    private Button bt_start,bt_stop;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        bt_start = (Button)findViewById(R.id.bt_start);
        bt_stop = (Button)findViewById(R.id.bt_stop);
        bt_start.setOnClickListener((View.OnClickListener) this);
        bt_stop.setOnClickListener((View.OnClickListener) this);
    }

    @Override
    public void onClick(View view) {
        if (view == bt_start) {
            //starting service
            startService(new Intent(this, MediaService.class));
        }
        else if (view == bt_stop) {
            // stopping service
            stopService(new Intent(this, MediaService.class));
        }
    }
}
```

➢ Media Service.java

```java
package com.example.bgmplayer;

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

import androidx.annotation.Nullable;

public class MediaService extends Service {
    private MediaPlayer player;
    @Nullable
    @Override
    public IBinder onBind(Intent intent) {
        return null;
    }
    public int onStartCommand(Intent intent, int flags, int startId)
    {
        //player = MediaPlayer.create(this,
Settings.System.DEFAULT_RINGTONE_URI);
        player = MediaPlayer.create(this,R.raw.song);
        player.setLooping(true);
        //staring the player
         player.start();
```

```java
        //start sticky means service will be explicity started and
stopped
            return START_STICKY;
        }
        @Override
        public void onDestroy() {
          super.onDestroy();
          //stopping the player when service is destroyed player.stop();
            player.stop();
        }
}
```

MANIFEST FILE:

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

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```
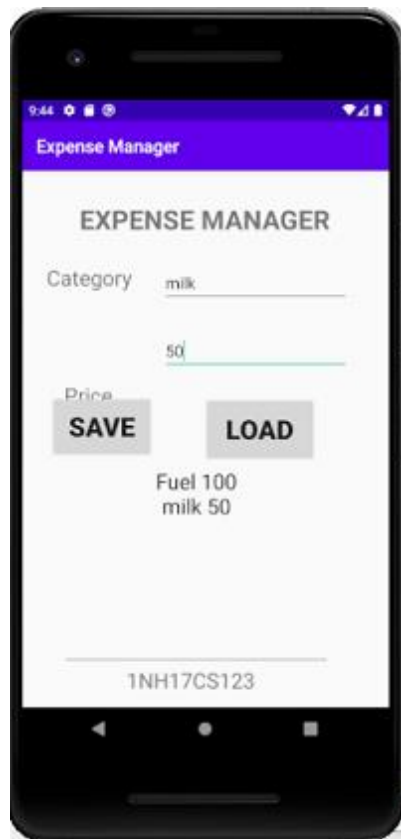
PROGRAM NO.: 7

QUESTION: Design and develop a Mobile App for smart phones The Expense Manager using Android. The application should store all the expenses in a file

OUTPUT SCREENSHOTS:

XML CODE:

```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/textView3"
        android:layout_width="322dp"
        android:layout_height="61dp"
        android:text="EXPENSE MANAGER"
        android:textAlignment="center"
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.496"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.063" />

    <TextView
        android:id="@+id/textView"
```

```xml
        android:layout_width="126dp"
        android:layout_height="52dp"
        android:text="Category"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.045"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.189" />

    <EditText
        android:id="@+id/cat_et"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.781"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.186" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="128dp"
        android:layout_height="31dp"
        android:layout_marginTop="236dp"
        android:text="Price"
        android:textAlignment="center"
        android:textAllCaps="false"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.038"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.0" />

    <EditText
        android:id="@+id/price_et"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.781"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.323" />

    <Button
        android:id="@+id/btn_save"
        android:layout_width="116dp"
        android:layout_height="72dp"
        android:text="SAVE"
```

```xml
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.108"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.473" />

    <Button
        android:id="@+id/btn_load"
        android:layout_width="127dp"
        android:layout_height="75dp"
        android:text="LOAD"
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.716"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.479" />

    <EditText
        android:id="@+id/res_et"
        android:layout_width="301dp"
        android:layout_height="235dp"
        android:ems="10"
        android:gravity="start|top"
        android:inputType="textMultiLine"
        android:text="Result:"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.409"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.877" />

    <TextView
        android:id="@+id/textView4"
        android:layout_width="210dp"
        android:layout_height="34dp"
        android:text="1NH17CS123"
        android:textAlignment="center"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.419"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.977" />

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

JAVA CODE:

```java
package com.example.expensemanager;

import androidx.appcompat.app.AppCompatActivity;

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

import java.io.BufferedReader;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStreamReader;

public class MainActivity extends AppCompatActivity {
EditText cat_et, price_et, res_et;
Button btn_save, btn_load;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        cat_et = (EditText)findViewById(R.id.cat_et);
        price_et = (EditText)findViewById(R.id.price_et);
        res_et = (EditText)findViewById(R.id.res_et);
        btn_save = (Button)findViewById(R.id.btn_save);
        btn_load = (Button)findViewById(R.id.btn_load);

        btn_save.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String s1 = cat_et.getText().toString();
                String s2 = s1 + " " +
price_et.getText().toString()+"\n";

                try {
                    FileOutputStream fos =
openFileOutput("file1.txt",MODE_APPEND);
                    fos.write(s2.getBytes());
                } catch (FileNotFoundException e) {
                    e.printStackTrace();
                } catch (IOException e) {
                    e.printStackTrace();
                }
            }
        });

        btn_load.setOnClickListener(new View.OnClickListener(){
            @Override
            public void onClick(View view) {
                try{
                    FileInputStream fis = openFileInput("file1.txt");
                    InputStreamReader isr = new InputStreamReader(fis);
                    BufferedReader br = new BufferedReader(isr);
                    StringBuilder sb = new StringBuilder();
                    String text;
                    while((text=br.readLine())!=null)
                    {
```

```java
                    sb.append(text);
                    sb.append("\n");
                }
                res_et.setText(sb.toString());
            } catch (FileNotFoundException e) {
                e.printStackTrace();
            } catch (IOException e) {
                e.printStackTrace();
            }
        }
    });
    }
}
```
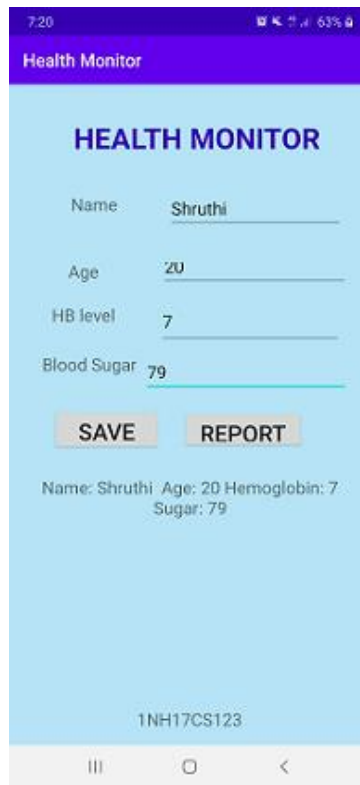
PROGRAM NO.: 8

QUESTION: Design and develop Health Monitoring App using Android. The app will store the blood pressure, blood group and glucose level of patient in SQLite database

OUTPUT SCREENSHOTS:

XML CODE:

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#998BD3F3"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="180dp"
        android:layout_height="26dp"
        android:text="1NH17CS123"
        android:textAlignment="center"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.977" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="308dp"
        android:layout_height="51dp"
```

```xml
        android:text="HEALTH MONITOR"
        android:textAlignment="center"
        android:textColor="@color/colorPrimaryDark"
        android:textSize="30sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.579"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.055" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="124dp"
        android:layout_height="22dp"
        android:text="Name"
        android:textAlignment="center"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.121"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.169" />

    <TextView
        android:id="@+id/textView3"
        android:layout_width="99dp"
        android:layout_height="32dp"
        android:text="Age"
        android:textAlignment="center"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.112"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.277" />

    <TextView
        android:id="@+id/textView4"
        android:layout_width="99dp"
        android:layout_height="30dp"
        android:text="HB level"
        android:textAlignment="center"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.112"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.345" />

    <TextView
        android:id="@+id/textView5"
        android:layout_width="114dp"
        android:layout_height="33dp"
        android:text="Blood Sugar"
```

```xml
        android:textAlignment="center"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.117"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.425" />

    <EditText
        android:id="@+id/et_name"
        android:layout_width="199dp"
        android:layout_height="42dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.85"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.174" />

    <EditText
        android:id="@+id/et_age"
        android:layout_width="212dp"
        android:layout_height="39dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.869"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.27" />

    <EditText
        android:id="@+id/et_hb"
        android:layout_width="207dp"
        android:layout_height="54dp"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.835"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.349" />

    <EditText
        android:id="@+id/et_sugar"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.855"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
```

```xml
            app:layout_constraintVertical_bias="0.432" />

        <Button
            android:id="@+id/bt_save"
            android:layout_width="122dp"
            android:layout_height="50dp"
            android:onClick="inserti"
            android:text="SAVE"
            android:textSize="24sp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.173"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.524" />

        <Button
            android:id="@+id/bt_report"
            android:layout_width="138dp"
            android:layout_height="46dp"
            android:onClick="report"
            android:text="REPORT"
            android:textSize="24sp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.72"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.524" />

        <TextView
            android:id="@+id/tv_op"
            android:layout_width="355dp"
            android:layout_height="205dp"
            android:text="Result:"
            android:textAlignment="center"
            android:textSize="18sp"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.813" />

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

JAVA CODE:

```java
    package com.example.healthmonitor;

    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.TextView;
```

```java
public class MainActivity extends AppCompatActivity {
    DatabaseHelper db;
    EditText et_name;
    EditText et_age;
    EditText et_hb;
    EditText et_sugar;
    Button bt_save;
    Button bt_report;
    TextView tv_op;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        db = new DatabaseHelper(this);
        et_name = (EditText)findViewById(R.id.et_name);
        et_age = (EditText)findViewById(R.id.et_age);
        et_hb = (EditText)findViewById(R.id.et_hb);
        et_sugar = (EditText)findViewById(R.id.et_sugar);
        bt_save = (Button)findViewById(R.id.bt_save);
        bt_report = (Button)findViewById(R.id.bt_report);
        tv_op = (TextView)findViewById(R.id.tv_op);
    }
    public void inserti (View view) {
        boolean status = db.insert(
                et_name.getText().toString(),
                Integer.parseInt(et_age.getText().toString()),
                Integer.parseInt(et_hb.getText().toString()),
                Integer.parseInt(et_sugar.getText().toString()));
    }
    public void report(View view) {
        Cursor c = db.select();
        if (c.getCount() ==0)
            return;
        StringBuffer buf = new StringBuffer();
        while (c.moveToNext()) {
            buf.append ("Name: "+c.getString(1));
            buf.append (" Age: "+c.getString(2));
            buf.append (" Hemoglobin: "+c.getString(3));
            buf.append (" Sugar: "+c.getString(4));
            buf.append("\n");
        }
        tv_op.setText(buf);
    }
    public void cleartext (View view) {
        et_name.setText("");
        et_age.setText("");
        et_hb.setText("");
        et_sugar.setText("");
    }
}
```

DATA BASE:

```java
package com.example.healthmonitor;

import android.content.ContentValues;
import android.content.Context;
```

```java
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DatabaseHelper extends SQLiteOpenHelper {
    DatabaseHelper (Context context) {
        super(context, "Health.db", null, 1);
    }
    public void onCreate (SQLiteDatabase sqLiteDatabase) {
        sqLiteDatabase.execSQL("CREATE TABLE LAB ( PATID integer PRIMARY
KEY AUTOINCREMENT, PANAME TEXT, AGE INTEGER, HM INTEGER, SUGAR INTEGER
);");
    }

    @Override
    public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1)
{
        sqLiteDatabase.execSQL("DROP TABLE IF EXISTS LAB ");
        onCreate(sqLiteDatabase);
    }
    public boolean insert (String name, int age, int hb, int sug) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues cv = new ContentValues();
        cv.put("PANAME", name);
        cv.put("AGE", age);
        cv.put("HM", hb);
        cv.put("SUGAR", sug);
        long status = db.insert("LAB",null,cv);
        if (status == -1)
            return false;
        else
            return true;
    }
    public Cursor select() {
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor cr = db.rawQuery("SELECT * FROM LAB", null);
        return cr;
    }
}
```

PROGRAM NO.: 9

QUESTION: Develop an android app to display Map of your college locality

OUTPUT SCREENSHOTS:

XML CODE:

➢ Google_maps_api_xml Code

```xml
<resources>
    <!--
    TODO: Before you run your application, you need a Google Maps API key.

    To get one, follow this link, follow the directions and press "Create" at
    the end:

    https://console.developers.google.com/flows/enableapi?apiid=maps_android_backe
    nd&keyType=CLIENT_SIDE_ANDROID&r=38:EB:EF:79:F0:DD:EB:0B:DE:92:74:C4:2A:84:5A:
    62:C4:98:73:75%3Bcom.example.collegemap

    You can also add your credentials to an existing key, using these values:

    Package name:
    com.example.collegemap

    SHA-1 certificate fingerprint:
    38:EB:EF:79:F0:DD:EB:0B:DE:92:74:C4:2A:84:5A:62:C4:98:73:75

    Alternatively, follow the directions here:
    https://developers.google.com/maps/documentation/android/start#get-key
```

```xml
<string name="google_maps_key" templateMergeStrategy="preserve"
translatable="false">AIzaSyDXl2Oxv6Il3ojORV-NuvgzErgByyx_ahQ</string>
</resources>
```

JAVA CODE:

```java
package com.example.collegemap;

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;

public class MapsActivity extends FragmentActivity implements
OnMapReadyCallback {

    private GoogleMap mMap;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_maps);
        // Obtain the SupportMapFragment and get notified when the map
is ready to be used.
        SupportMapFragment mapFragment = (SupportMapFragment)
getSupportFragmentManager()
                .findFragmentById(R.id.map);
        mapFragment.getMapAsync(this);
    }

    /**
     * Manipulates the map once available.
     * This callback is triggered when the map is ready to be used.
     * This is where we can add markers or lines, add listeners or move
the camera. In this case,
     * we just add a marker near Sydney, Australia.
     * If Google Play services is not installed on the device, the user
will be prompted to install
     * it inside the SupportMapFragment. This method will only be
triggered once the user has
     * installed Google Play services and returned to the app.
     */
    @Override
    public void onMapReady(GoogleMap googleMap) {
        mMap = googleMap;

        // Add a marker in Sydney and move the camera
        LatLng sydney = new LatLng(12.93, 77.69);
```

```java
        mMap.addMarker(new MarkerOptions().position(sydney).title("New
Horizon College of Engineering"));
        mMap.moveCamera(CameraUpdateFactory.newLatLng(sydney));
    }
}
```

MANIFEST FILE:

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

    <!--
         The ACCESS_COARSE/FINE_LOCATION permissions are not required to
use
         Google Maps Android API v2, but you must specify either coarse
or fine
         location permissions for the "MyLocation" functionality.
    -->
    <uses-permission
android:name="android.permission.ACCESS_FINE_LOCATION" />
    <uses-permission
android:name="android.permission.ACCESS_COARSE_LOCATION"/>
    <uses-permission android:name="android.permission.INTERNET"/>
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">

        <!--
             The API key for Google Maps-based APIs is defined as a
string resource.
             (See the file "res/values/google_maps_api.xml").
             Note that the API key is linked to the encryption key used
to sign the APK.
             You need a different API key for each encryption key,
including the release key that is used to
             sign the APK for publishing.
             You can define the keys for the debug and release targets
in src/debug/ and src/release/.
        -->
        <meta-data
            android:name="com.google.android.geo.API_KEY"
            android:value="@string/google_maps_key" />

        <activity
            android:name=".MapsActivity"
            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>
```
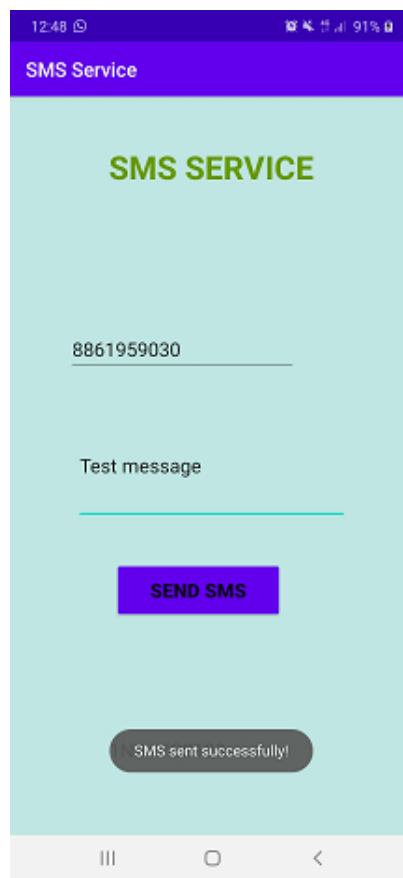
```
        </application>

    </manifest>
```

PROGRAM NO.: 10

QUESTION: Develop an android app to alert SMS to one given phone number.

OUTPUT SCREENSHOTS:

XML CODE:

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#BFE6E3"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="163dp"
        android:layout_height="25dp"
        android:text="1NH17CS123"
        android:textAlignment="center"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.319"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.897" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="224dp"
        android:layout_height="50dp"
        android:text="SMS SERVICE"
        android:textAlignment="center"
        android:textColor="@android:color/holo_green_dark"
        android:textSize="30sp"
        android:textStyle="bold"
        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="0.071" />

    <EditText
        android:id="@+id/et_mess"
        android:layout_width="277dp"
        android:layout_height="114dp"
        android:ems="10"
        android:hint="Type message"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/et_mob"
        android:layout_width="wrap_content"
```

```xml
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Mobile Number"
        android:inputType="phone"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.333"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.332" />

    <Button
        android:id="@+id/bt_send"
        android:layout_width="172dp"
        android:layout_height="60dp"
        android:backgroundTint="@color/colorPrimary"
        android:text="Send SMS"
        android:textSize="18sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.445"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.683" />

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

JAVA CODE:

```java
package com.example.smsservice;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;

import android.Manifest;
import android.app.PendingIntent;
import android.content.pm.PackageManager;
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 et_mob,et_mess;
    Button bt_send;
    PendingIntent sentPI, deliveredPI;

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

```java
        et_mob = (EditText)findViewById(R.id.et_mob);
        et_mess = (EditText)findViewById(R.id.et_mess);
        bt_send = (Button)findViewById(R.id.bt_send);

        bt_send.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String message = et_mess.getText().toString();
                String telNr = et_mob.getText().toString();
                if(telNr.length()==10)
                {
                    if (ContextCompat.checkSelfPermission(MainActivity.this,
Manifest.permission.SEND_SMS) != PackageManager.PERMISSION_GRANTED)
                    {
                        ActivityCompat.requestPermissions(MainActivity.this,
new String[]{Manifest.permission.SEND_SMS}, 1);
                        Toast.makeText(getApplicationContext(), "SMS not
sent!", Toast.LENGTH_SHORT).show();
                    }
                    else
                        {
                            SmsManager sms = SmsManager.getDefault();
sms.sendTextMessage(telNr, null, message, sentPI, deliveredPI);
                            Toast.makeText(getApplicationContext(), "SMS sent
successfully!", Toast.LENGTH_SHORT).show();
                        }
                } else
                    { Toast.makeText(getApplicationContext(), "SMS not sent
!", Toast.LENGTH_SHORT).show();
                        Toast.makeText(getApplicationContext(), "Enter 10 digit
number !", Toast.LENGTH_SHORT).show();
                    }
            }
        });
    }
}
```

MANIFEST FILE:

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.smsservice">
        <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/AppTheme">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

```
            </intent-filter>
        </activity>
    </application>

</manifest>
```