



BMS COLLEGE OF ENGINEERING, BANGALORE-19

(Autonomous College under VTU)

MOBILE APPLICATION DEVELOPMENT (15CS6DCMAD)

LAB REPORT

BY

N.JAYANTH 1BM17CS050

1. Develop a mobile application that uses GUI components to manipulate Font and Colors.

Activity_main.xml:

```
<?xmlversion="1.0"encoding="utf-8"?>
<LinearLayoutxmlns: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/textView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="30dp"
    android:gravity="center"
    android:text="Hello World!"
    android:textSize="25sp"
    android:textStyle="bold"/>
```

```
<Button
    android:id="@+id/button1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:gravity="center"
    android:text="Change font size"
```

```

        android:textSize="25sp"/>
    <Button
        android:id="@+id/button2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20dp"
        android:gravity="center"
        android:text="Change color"
        android:textSize="25sp"/>
</LinearLayout>

```

MainActivity.java:

```
package com.example.exno1;
```

```

import android.graphics.Color;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

```

```

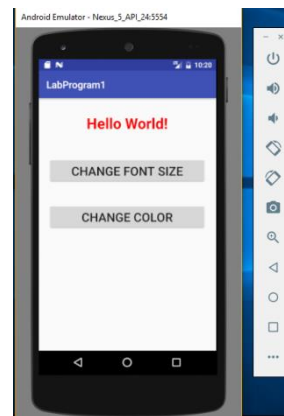
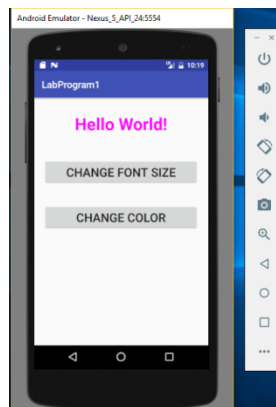
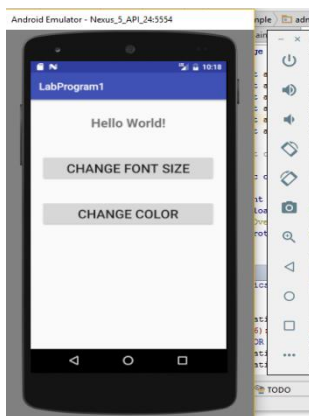
public class MainActivity extends AppCompatActivity
{
    int ch=1;
    float font=30;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        final TextView t= (TextView) findViewById(R.id.textView);
        Button b1= (Button) findViewById(R.id.button1);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                t.setTextSize(font);
                font = font + 5;
                if(font == 50)
                    font = 30;
            }
        });
        Button b2= (Button) findViewById(R.id.button2);
        b2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                switch(ch) {

```

```

        case1:
t.setTextColor(Color.RED);
break;
        case2:
t.setTextColor(Color.GREEN);
break;
        case3:
t.setTextColor(Color.BLUE);
break;
        case4:
t.setTextColor(Color.CYAN);
break;
        case5:
t.setTextColor(Color.YELLOW);
break;
        case6:
t.setTextColor(Color.MAGENTA);
break;
    }
ch++;
if(ch == 7)
ch = 1;
    }
});
    }
}

```



2. Develop a mobile application that uses Layout Managers and event listeners.

Activity_main.xml:

```

<?xmlversion="1.0"encoding="utf-8"?>
<RelativeLayoutxmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"

```

```
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity">
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="100dp">
    <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="30dp"
        android:text="Details Form"
        android:textSize="25sp"
        android:gravity="center"/>
</LinearLayout>
```

```
<GridLayout
    android:id="@+id/gridLayout"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_marginTop="100dp"
    android:layout_marginBottom="200dp"
    android:columnCount="2"
    android:rowCount="3">
    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="0"
        android:layout_column="0"
        android:text="Name"
        android:textSize="20sp"
        android:gravity="center"/>
```

```
<EditText
    android:id="@+id/editText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:layout_row="0"
    android:layout_column="1"
    android:ems="10"/>
```

```
<TextView
```

```
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="1"
        android:layout_column="0"
        android:text="Reg.No"
        android:textSize="20sp"
        android:gravity="center"/>
```

```
<EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="1"
        android:layout_column="1"
        android:inputType="number"
        android:ems="10"/>
```

```
<TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="2"
        android:layout_column="0"
        android:text="Dept"
        android:textSize="20sp"
        android:gravity="center"/>
```

```
<Spinner
        android:id="@+id/spinner"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:layout_row="2"
        android:layout_column="1"
        android:spinnerMode="dropdown"/>
```

```
</GridLayout>
```

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

```
android:layout_alignParentBottom="true"
android:layout_centerInParent="true"
android:layout_marginBottom="150dp"
android:text="Submit"/>
```

```
</RelativeLayout>
```

Activity_second.xml:

```
<?xmlversion="1.0"encoding="utf-8"?>
<LinearLayoutxmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.example.devang.exno2.SecondActivity"
    android:orientation="vertical"
    android:gravity="center">
```

```
<TextView
    android:id="@+id/textView1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:text="New Text"
    android:textSize="30sp"/>
```

```
<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:text="New Text"
    android:textSize="30sp"/>
```

```
<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="20dp"
    android:text="New Text"
    android:textSize="30sp"/>
```

```
</LinearLayout>
```

MainActivity.java:

```
Package com.example.exno2;
```

```
import android.content.Intent;
```

```

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Spinner;

public class MainActivity extends AppCompatActivity {

    //Defining the Views
    EditText e1,e2;
    Button bt;
    Spinner s;

    //Data for populating in Spinner
    String [] dept_array={"CSE","ECE","IT","Mech","Civil"};

    String name,reg,dept;

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

        //Referring the Views
        e1= (EditText) findViewById(R.id.editText);
        e2= (EditText) findViewById(R.id.editText2);

        bt= (Button) findViewById(R.id.button);

        s= (Spinner) findViewById(R.id.spinner);

        //Creating Adapter for Spinner for adapting the data from array to Spinner
        ArrayAdapter adapter=
        new ArrayAdapter<String>(MainActivity.this,android.R.layout.simple_spinner_item,dept_array);
        s.setAdapter(adapter);

        //Creating Listener for Button
        bt.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                //Getting the Values from Views(Edittext & Spinner)
                name=e1.getText().toString();
                reg=e2.getText().toString();
            }
        });
    }
}

```

```

dept=s.getSelectedItem().toString();

        //Intent For Navigating to Second Activity
        Intent i = new Intent(MainActivity.this,SecondActivity.class);

        //For Passing the Values to Second Activity
        i.putExtra("name_key", name);
        i.putExtra("reg_key",reg);
        i.putExtra("dept_key", dept);

        startActivity(i);

    }
    });
}
}

```

SecondActivity.java:

Packagecom.example.exno2;

```

importandroid.content.Intent;
importandroid.support.v7.app.AppCompatActivity;
importandroid.os.Bundle;
importandroid.widget.TextView;

publicclassSecondActivity extendsAppCompatActivity {

    TextView t1,t2,t3;

    String name,reg,dept;

    @Override
    ProtectedvoidonCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);

        t1= (TextView) findViewById(R.id.textView1);
        t2= (TextView) findViewById(R.id.textView2);
        t3= (TextView) findViewById(R.id.textView3);

        //Getting the Intent
        Intent i = getIntent();

        //Getting the Values from First Activity using the Intent received
        name=i.getStringExtra("name_key");
        reg=i.getStringExtra("reg_key");
        dept=i.getStringExtra("dept_key");
    }
}

```

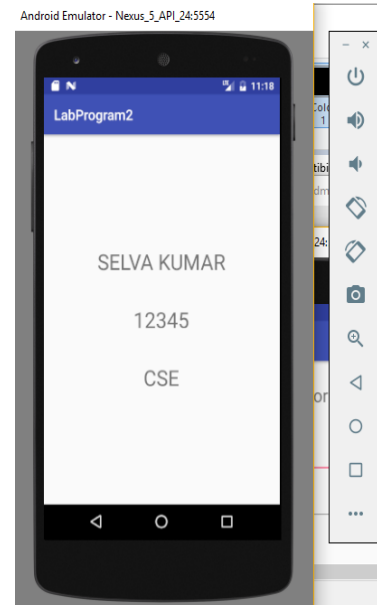
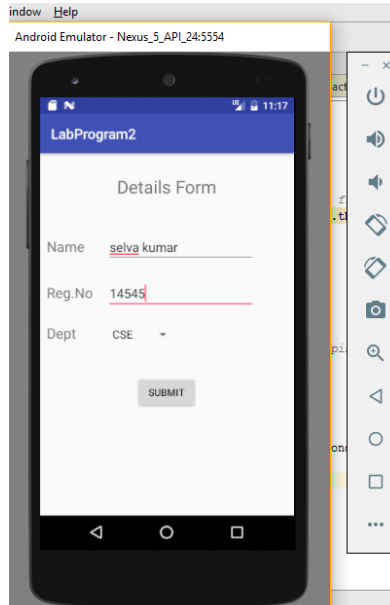
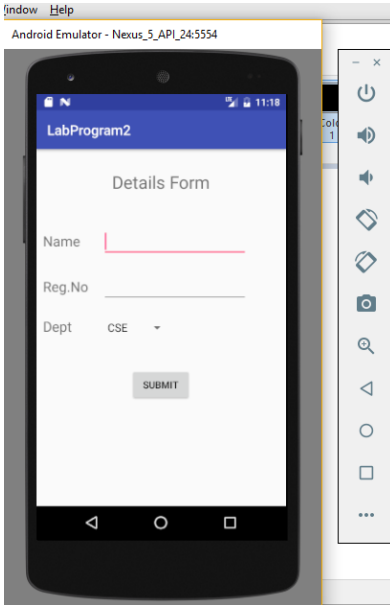


```

        //Setting the Values to Intent
t1.setText(name);
t2.setText(reg);
t3.setText(dept);

    }
}

```



3. Develop a native calculator using mobile application.

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"
    android:layout_margin="20dp">

    <LinearLayout
        android:id="@+id/linearLayout1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="20dp">

```

```
<EditText
    android:id="@+id/editText1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:inputType="numberDecimal"
    android:textSize="20sp"/>
```

```
<EditText
    android:id="@+id/editText2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:inputType="numberDecimal"
    android:textSize="20sp"/>
```

```
</LinearLayout>
```

```
<LinearLayout
    android:id="@+id/linearLayout2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="20dp">
```

```
<Button
    android:id="@+id/Add"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="+"
    android:textSize="30sp"/>
```

```
<Button
    android:id="@+id/Sub"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="-"
    android:textSize="30sp"/>
```

```
<Button
    android:id="@+id/Mul"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
```

```
android:text="*"
android:textSize="30sp"/>
```

```
<Button
    android:id="@+id/Div"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="/"
    android:textSize="30sp"/>
```

```
</LinearLayout>
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="50dp"
    android:text="Answer is"
    android:textSize="30sp"
    android:gravity="center"/>
```

```
</LinearLayout>
```

MainActivity.java:

```
Package com.example.devang.exno3;
```

```
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.text.TextUtils;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
```

```
public class MainActivity extends AppCompatActivity implements OnClickListener
{
    //Defining the Views
    EditText Num1;
    EditText Num2;
    Button Add;
    Button Sub;
    Button Mul;
    Button Div;
    TextView Result;
```

```

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

        //Referring the Views
        Num1 = (EditText) findViewById(R.id.editText1);
        Num2 = (EditText) findViewById(R.id.editText2);
        Add = (Button) findViewById(R.id.Add);
        Sub = (Button) findViewById(R.id.Sub);
        Mul = (Button) findViewById(R.id.Mul);
        Div = (Button) findViewById(R.id.Div);
        Result = (TextView) findViewById(R.id.textView);

        // set a listener
        Add.setOnClickListener(this);
        Sub.setOnClickListener(this);
        Mul.setOnClickListener(this);
        Div.setOnClickListener(this);
    }

    @Override
    public void onClick (View v)
    {

        floatnum1 = 0;
        floatnum2 = 0;
        floatresult = 0;
        String oper = "";

        // check if the fields are empty
        if(TextUtils.isEmpty(Num1.getText().toString()) ||
        TextUtils.isEmpty(Num2.getText().toString()))
        return;

        // read EditText and fill variables with numbers
        num1 = Float.parseFloat(Num1.getText().toString());
        num2 = Float.parseFloat(Num2.getText().toString());

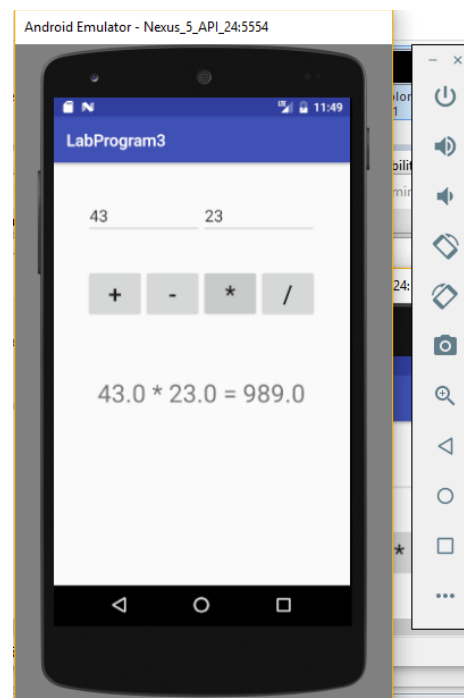
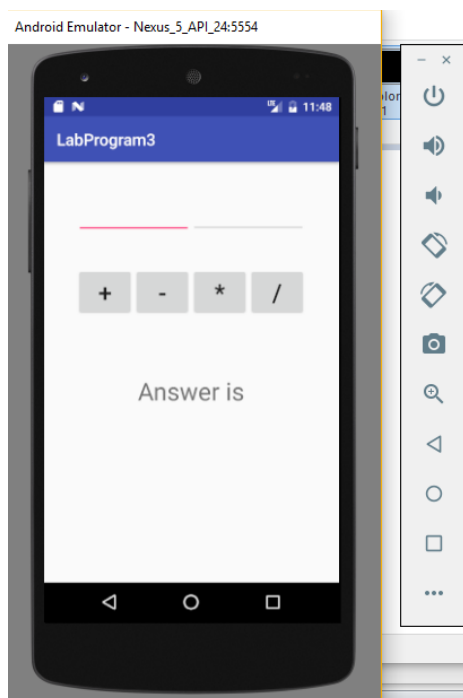
        // defines the button that has been clicked and performs the corresponding operation
        // write operation into oper, we will use it later for output
        switch(v.getId())
        {
            CaseR.id.Add:
                oper = "+";

```

```

result = num1 + num2;
break;
case R.id.Sub:
oper = "-";
result = num1 - num2;
break;
case R.id.Mul:
oper = "*";
result = num1 * num2;
break;
case R.id.Div:
oper = "/";
result = num1 / num2;
break;
default:
break;
}
// form the output line
Result.setText(num1 + " " + oper + " " + num2 + " = " + result);
}
}

```



4. Write a mobile application that draws basic graphical primitives on the screen.

Activity_main.xml:

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

    <ImageView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/imageView"/>
</RelativeLayout>
```

MainActivity.java:

```
package com.example.exno4;

import android.app.Activity;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.drawable.BitmapDrawable;
import android.os.Bundle;
import android.widget.ImageView;

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

        //Creating a Bitmap
        Bitmap bg = Bitmap.createBitmap(720, 1280, Bitmap.Config.ARGB_8888);

        //Setting the Bitmap as background for the ImageView
        ImageView i = (ImageView) findViewById(R.id.imageView);
        i.setBackgroundDrawable(new BitmapDrawable(bg));
    }
}
```

```

//Creating the Canvas Object
Canvas canvas = new Canvas(bg);

//Creating the Paint Object and set its color & TextSize
Paint paint = new Paint();
paint.setColor(Color.BLUE);
paint.setTextSize(50);

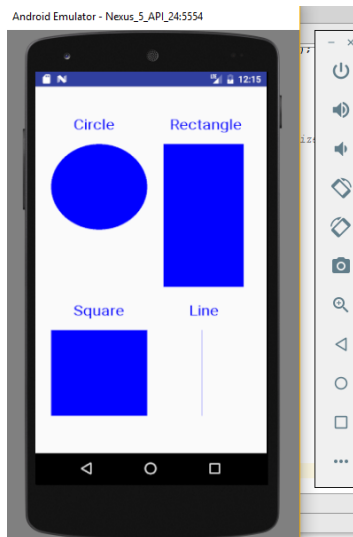
//To draw a Rectangle
canvas.drawText("Rectangle", 420, 150, paint);
canvas.drawRect(400, 200, 650, 700, paint);

//To draw a Circle
canvas.drawText("Circle", 120, 150, paint);
canvas.drawCircle(200, 350, 150, paint);

//To draw a Square
canvas.drawText("Square", 120, 800, paint);
canvas.drawRect(50, 850, 350, 1150, paint);

//To draw a Line
canvas.drawText("Line", 480, 800, paint);
canvas.drawLine(520, 850, 520, 1150, paint);
}
}

```



5. Develop a mobile application that makes use of database to insert and display the student data.

&

6. Develop a mobile application that makes use of database to update, delete and display all the student data.

Activity_main.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<AbsoluteLayout 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:layout_x="50dp"
        android:layout_y="20dp"
        android:text="Student Details"
        android:textSize="30sp"/>
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="110dp"
    android:text="Enter Rollno:"
    android:textSize="20sp"/>
```

```
<EditText
    android:id="@+id/Rollno"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="100dp"
    android:inputType="number"
    android:textSize="20sp"/>
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="160dp"
    android:text="Enter Name:"
    android:textSize="20sp"/>
```



```
<EditText
    android:id="@+id/Name"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="150dp"
    android:inputType="text"
    android:textSize="20sp"/>
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_x="20dp"
    android:layout_y="210dp"
    android:text="Enter Marks:"
    android:textSize="20sp"/>
```

```
<EditText
    android:id="@+id/Marks"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="175dp"
    android:layout_y="200dp"
    android:inputType="number"
    android:textSize="20sp"/>
```

```
<Button
    android:id="@+id/Insert"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="25dp"
    android:layout_y="300dp"
    android:text="Insert"
    android:textSize="30dp"/>
```

```
<Button
    android:id="@+id/Delete"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="300dp"
    android:text="Delete"
    android:textSize="30dp"/>
```

```
<Button
```

```
        android:id="@+id/Update"
        android:layout_width="150dp"
        android:layout_height="wrap_content"
        android:layout_x="25dp"
        android:layout_y="400dp"
        android:text="Update"
        android:textSize="30dp"/>
```

```
<Button
    android:id="@+id/View"
    android:layout_width="150dp"
    android:layout_height="wrap_content"
    android:layout_x="200dp"
    android:layout_y="400dp"
    android:text="View"
    android:textSize="30dp"/>
```

```
<Button
    android:id="@+id/ViewAll"
    android:layout_width="200dp"
    android:layout_height="wrap_content"
    android:layout_x="100dp"
    android:layout_y="500dp"
    android:text="View All"
    android:textSize="30dp"/>
```

```
</AbsoluteLayout>
```

MainActivity.java:

```
package com.example.exno5;
```

```
import android.app.Activity;
import android.app.AlertDialog.Builder;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
```

```
public class MainActivity extends Activity implements OnClickListener
{
    EditText Rollno,Name,Marks;
    Button Insert,Delete,Update,View,ViewAll;
    SQLiteDatabase db;
```

```

    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Rollno=(EditText)findViewById(R.id.Rollno);
        Name=(EditText)findViewById(R.id.Name);
        Marks=(EditText)findViewById(R.id.Marks);
        Insert=(Button)findViewById(R.id.Insert);
        Delete=(Button)findViewById(R.id.Delete);
        Update=(Button)findViewById(R.id.Update);
        View=(Button)findViewById(R.id.View);
        ViewAll=(Button)findViewById(R.id.ViewAll);

        Insert.setOnClickListener(this);
        Delete.setOnClickListener(this);
        Update.setOnClickListener(this);
        View.setOnClickListener(this);
        ViewAll.setOnClickListener(this);

        // Creating database and table
        db=open Or CreateDatabase("StudentDB", Context.MODE_PRIVATE, null);
        db.execSQL("CREATE TABLE IF NOT EXISTS student(rollno VARCHAR,name
        VARCHAR,marks VARCHAR);");
    }
    public void onClick(View view)
    {
        // Inserting a record to the Student table
        if(view==Insert)
        {
            // Checking for empty fields
            if(Rollno.getText().toString().trim().length()==0||
            Name.getText().toString().trim().length()==0||
            Marks.getText().toString().trim().length()==0)
            {
                showMessage("Error", "Please enter all values");
                return;
            }
            db.execSQL("INSERT INTO student VALUES('"+Rollno.getText()+"','"+Name.getText()+"',
            '"+Marks.getText()+"');");
            showMessage("Success", "Record added");
            clearText();
        }
        // Deleting a record from the Student table

```

```

if(view==Delete)
{
    // Checking for empty roll number
    if(Rollno.getText().toString().trim().length()==0)
    {
        showMessage("Error", "Please enter Rollno");
        return;
    }
    Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
    if(c.moveToFirst())
    {
        db.execSQL("DELETE FROM student WHERE rollno='"+Rollno.getText()+"'");
        showMessage("Success", "Record Deleted");
    }
    else
    {
        showMessage("Error", "Invalid Rollno");
    }
    clearText();
}
// Updating a record in the Student table
if(view==Update)
{
    // Checking for empty roll number
    if(Rollno.getText().toString().trim().length()==0)
    {
        showMessage("Error", "Please enter Rollno");
        return;
    }
    Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
    if(c.moveToFirst()) {
        db.execSQL("UPDATE student SET name='"+ Name.getText() + "',marks='"+ Marks.getText()
+
        "" WHERE rollno='"+Rollno.getText()+"'");
        showMessage("Success", "Record Modified");
    }
    else{
        showMessage("Error", "Invalid Rollno");
    }
    clearText();
}
// Display a record from the Student table
if(view==View)
{

```

```

        // Checking for empty roll number
        if(Rollno.getText().toString().trim().length()==0)
        {
            showMessage("Error", "Please enter Rollno");
            return;
        }
        Cursor c=db.rawQuery("SELECT * FROM student WHERE
rollno='"+Rollno.getText()+"'", null);
        if(c.moveToFirst())
        {
            Name.setText(c.getString(1));
            Marks.setText(c.getString(2));
        }
        else
        {
            showMessage("Error", "Invalid Rollno");
            clearText();
        }
    }
    // Displaying all the records
    if(view==ViewAll)
    {
        Cursor c=db.rawQuery("SELECT * FROM student", null);
        if(c.getCount()==0)
        {
            showMessage("Error", "No records found");
            return;
        }
        StringBuffer buffer=new StringBuffer();
        while(c.moveToNext())
        {
            buffer.append("Rollno: "+c.getString(0)+"\n");
            buffer.append("Name: "+c.getString(1)+"\n");
            buffer.append("Marks: "+c.getString(2)+"\n\n");
        }
        showMessage("Student Details", buffer.toString());
    }
}

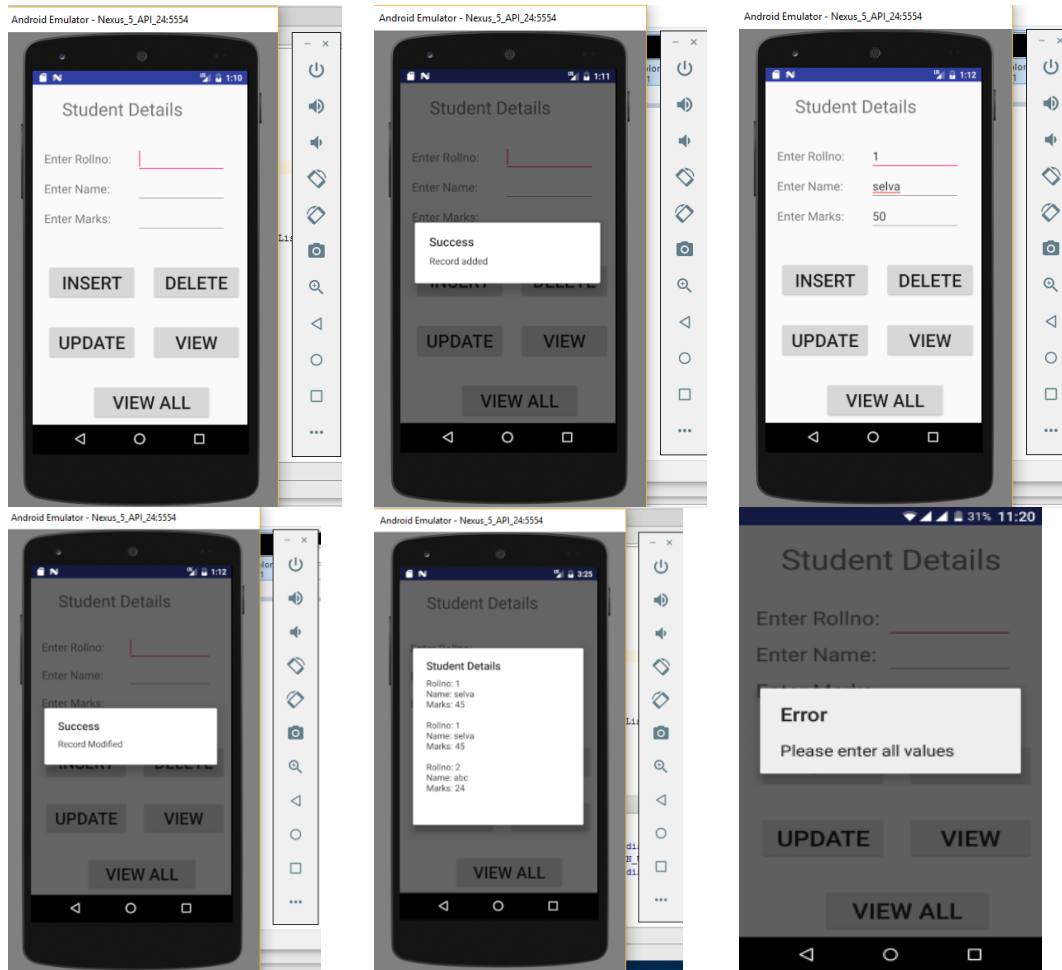
public void showMessage(String title,String message)
{
    Builder builder=new Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}

```

```

public void clearText()
{
    Rollno.setText("");
    Name.setText("");
    Marks.setText("");
    Rollno.requestFocus();
}
}

```



7. Develop a mobile application that uses GPS location information.

Activity_main.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    android:layout_width="match_parent"

```

```

android:layout_height="match_parent"
android:paddingBottom="@dimen/activity_vertical_margin"
android:paddingLeft="@dimen/activity_horizontal_margin"
android:paddingRight="@dimen/activity_horizontal_margin"
android:paddingTop="@dimen/activity_vertical_margin"
tools:context="com.example.admin.labprogram7.MainActivity">

```

```

<Button
android:text="Show Location"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignParentTop="true"
android:layout_centerHorizontal="true"
android:layout_marginTop="15dp"
android:id="@+id/button" />
</RelativeLayout>

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.admin.labprogram7">

<application
android:allowBackup="true"
android:icon="@mipmap/ic_launcher"
android:label="@string/app_name"
android:supportRtl="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>
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
<uses-permission android:name="android.permission.INTERNET" />
</manifest>

```

MainActivity.java:

```
package com.example.admin.labprogram7;
```

```
import android.support.v7.app.AppCompatActivity;
```

```
import android.app.Activity;  
import android.view.View;  
import android.widget.Button;  
import android.widget.Toast;
```

```
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import gps.location.GPSTrace;  
public class MainActivity extends AppCompatActivity {  
    Button btnShowLocation;
```

```
    GPSTrace gps;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

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

```
        btnShowLocation = (Button)findViewById(R.id.Show_Location);
```

```
        btnShowLocation.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

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

```
                gps = new GPSTrace(MainActivity.this);
```

```
                if (gps.getLocation() != null) {
```

```
                    double latitude = gps.getLatitude();
```

```
                    double longitude = gps.getLongitude();
```

```
                    Toast.makeText(getApplicationContext(), "Your Location is \nLat:" + latitude + "\nLong:" +  
longitude, Toast.LENGTH_LONG).show();
```

```
                } else {
```

```
                    //gps.showSettingAlert();
```

```
                }
```

```
            }
```

```
        });
```

```
    }
```

```
}
```

GPSTrace.java code:

```
package gps.location;
```



```

import android.app.AlertDialog;
import android.app.Service;
import android.content.Context;
import android.content.DialogInterface;
import android.content.Intent;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import android.os.IBinder;
import android.provider.Settings;

public class GPSTrace extends Service implements LocationListener {

    private final Context mContext;

    // flag for GPS status
    boolean isGPSEnabled = false;

    // flag for network status
    boolean isNetworkEnabled = false;

    boolean canGetLocation = false;

    Location location; // location
    double latitude; // latitude
    double longitude; // longitude

    // The minimum distance to change Updates in meters
    private static final long MIN_DISTANCE_CHANGE_FOR_UPDATES = 10; // 10 meters

    // The minimum time between updates in milliseconds
    private static final long MIN_TIME_BW_UPDATES = 1000 * 60 * 1; // 1 minute

    // Declaring a Location Manager
    protected LocationManager locationManager;

    public GPSTrace(Context context) {
        this.mContext = context;
        getLocation();
    }

    public Location getLocation() {
        try {
            locationManager = (LocationManager) mContext
                .getSystemService(LOCATION_SERVICE);

```

```

// getting GPS status
isGPSEnabled = locationManager
.isProviderEnabled(LocationManager.GPS_PROVIDER);

// getting network status
isNetworkEnabled = locationManager
.isProviderEnabled(LocationManager.NETWORK_PROVIDER);

if (!isGPSEnabled && !isNetworkEnabled) {
// no network provider is enabled
} else {
this.canGetLocation = true;
// First get location from Network Provider
if (isNetworkEnabled) {
locationManager.requestLocationUpdates(
    LocationManager.NETWORK_PROVIDER,
    MIN_TIME_BW_UPDATES,
    MIN_DISTANCE_CHANGE_FOR_UPDATES, this);
//Log.d("Network", "Network");
if (locationManager != null) {
location = locationManager
.getLastKnownLocation(LocationManager.NETWORK_PROVIDER);
if (location != null) {
latitude = location.getLatitude();
longitude = location.getLongitude();
        }
    }
}

// if GPS Enabled get lat/long using GPS Services
if (isGPSEnabled) {
if (location == null) {
locationManager.requestLocationUpdates(
    LocationManager.GPS_PROVIDER,
    MIN_TIME_BW_UPDATES,
    MIN_DISTANCE_CHANGE_FOR_UPDATES, this);
// Log.d("GPS Enabled", "GPS Enabled");
if (locationManager != null) {
location = locationManager
.getLastKnownLocation(LocationManager.GPS_PROVIDER);
if (location != null) {
latitude = location.getLatitude();
longitude = location.getLongitude();
        }
    }
}
}
}

```

```

        }
    }

    } catch (Exception e) {
        e.printStackTrace();
    }

return location;
}
@Override
public void onLocationChanged(Location location) {
}

@Override
public void onProviderDisabled(String provider) {
}

@Override
public void onProviderEnabled(String provider) {
}

@Override
public void onStatusChanged(String provider, int status, Bundle extras) {
}

@Override
public IBinder onBind(Intent arg0) {
return null;
}
/**
 * Function to get latitude
 * */
public double getLatitude(){
if(location != null){
latitude = location.getLatitude();
}

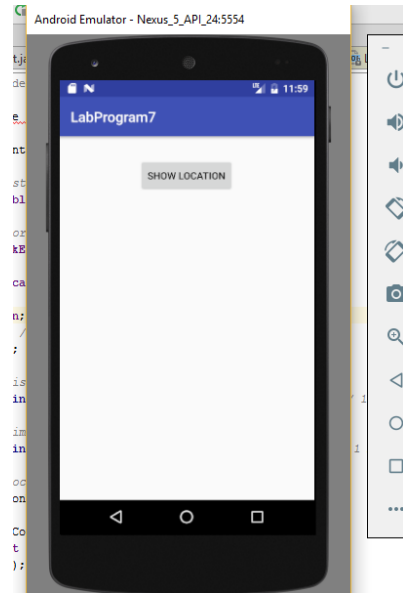
// return latitude
return latitude;
}

/**
 * Function to get longitude
 * */
public double getLongitude(){
if(location != null){

```

```
longitude = location.getLongitude();
}
```

```
// return longitude
return longitude;
}
}
```



8. Implement a mobile application that writes data to the SD card.

Activity_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:layout_margin="20dp"
    android:orientation="vertical">

    <EditText
        android:id="@+id/editText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:singleLine="true"
```

```
android:textSize="30dp"/>
```

```
<Button
    android:id="@+id/button"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Write Data"
    android:textSize="30dp"/>
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Read data"
    android:textSize="30dp"/>
```

```
<Button
    android:id="@+id/button3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="10dp"
    android:text="Clear"
    android:textSize="30dp"/>
```

```
</LinearLayout>
```

AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.exno9">
```

```
<uses-permission
    android:name="android.permission.WRITE_EXTERNAL_STORAGE"></uses-permission>
```

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

```

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

```

MainActivity.java:

```
packagecom.example.exno9;
```

```

importandroid.os.Bundle;
importandroid.support.v7.app.AppCompatActivity;
importandroid.view.View;
importandroid.widget.Button;
importandroid.widget.EditText;
importandroid.widget.Toast;

```

```

importjava.io.BufferedReader;
importjava.io.File;
importjava.io.FileInputStream;
importjava.io.FileOutputStream;
importjava.io.InputStreamReader;

```

```

publicclassMainActivity extendsAppCompatActivity
{
    EditText e1;
    Button write,read,clear;
    @Override
    protectedvoidonCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

```

```

        e1= (EditText) findViewById(R.id.editText);
        write= (Button) findViewById(R.id.button);
        read= (Button) findViewById(R.id.button2);
        clear= (Button) findViewById(R.id.button3);

```

```

        write.setOnClickListener(newView.OnClickListener()
        {
            @Override
            publicvoidonClick(View v)
            {
                String message=e1.getText().toString();
            try
            {
                File f=newFile("/sdcard/myfile.txt");

```

```

f.createNewFile();
    FileOutputStream fout=newFileOutputStream(f);
fout.write(message.getBytes());
fout.close();
Toast.makeText(getBaseContext(),"Data Written in
SDCARD",Toast.LENGTH_LONG).show();
    }
catch(Exception e)
    {
Toast.makeText(getBaseContext(),e.getMessage(),Toast.LENGTH_LONG).show();
    }
    }
});

```

```

read.setOnClickListener(new View.OnClickListener()
    {
        @Override
public void onClick(View v)
    {
        String message;
        String buf = "";
try
    {
        File f = newFile("/sdcard/myfile.txt");
        FileInputStream fin = new FileInputStream(f);
        BufferedReader br = new BufferedReader(new InputStreamReader(fin));
while((message = br.readLine()) != null)
    {
buf += message;
    }
e1.setText(buf);
br.close();
fin.close();
Toast.makeText(getBaseContext(),"Data Recived from
SDCARD",Toast.LENGTH_LONG).show();
    }
catch(Exception e)
    {
Toast.makeText(getBaseContext(), e.getMessage(), Toast.LENGTH_LONG).show();
    }
    }
});

```

```

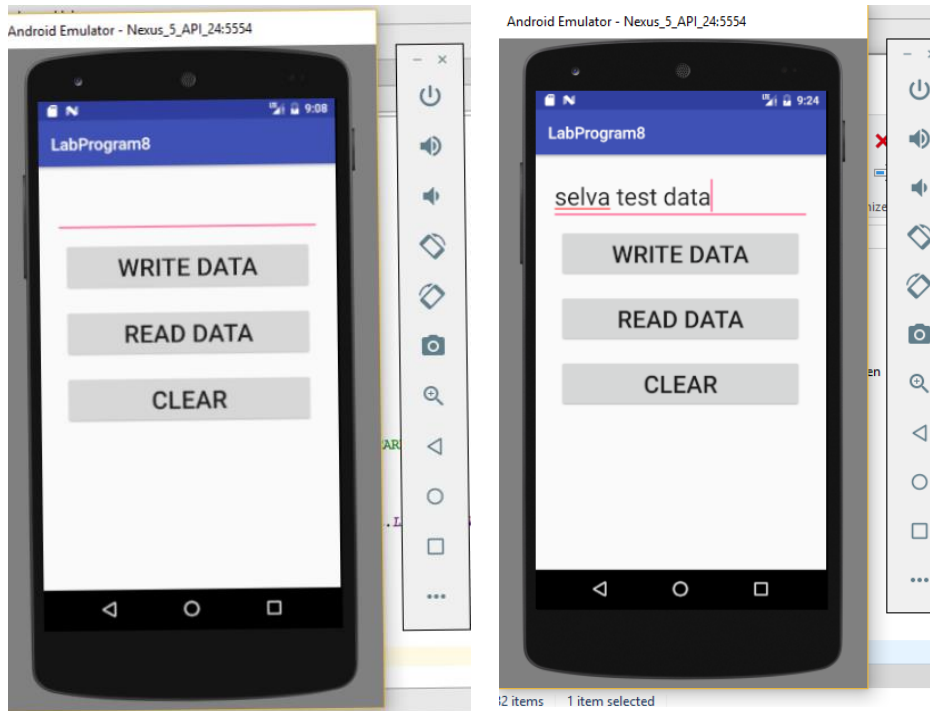
clear.setOnClickListener(new View.OnClickListener()
    {
        @Override

```

```

public void onClick(View v)
{
    e1.setText("");
}
});
}
}

```



9. Implement a mobile application that creates an alert upon receiving a message.

Activity_main.xml:

```

<?xmlversion="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:layout_margin="10dp"
    android:orientation="vertical">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Message"
        android:textSize="30sp"/>

```



```
<EditText
    android:id="@+id/editText"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:singleLine="true"
    android:textSize="30sp"/>
```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_margin="30dp"
    android:layout_gravity="center"
    android:text="Notify"
    android:textSize="30sp"/>
```

```
</LinearLayout>
```

MainActivity.java:

```
Package com.example.exno10;
```

```
Import android.app.Notification;
Import android.app.NotificationManager;
Import android.app.PendingIntent;
Import android.content.Intent;
Import android.os.Bundle;
Import android.support.v7.app.AppCompatActivity;
Import android.view.View;
Import android.widget.Button;
Import android.widget.EditText;
```

```
Public class MainActivity extends AppCompatActivity
```

```
{
    Button notify;
    EditText e;
    @Override
    Protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

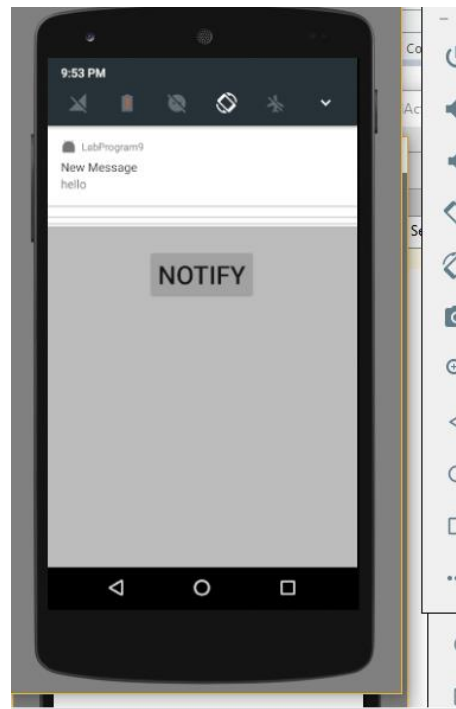
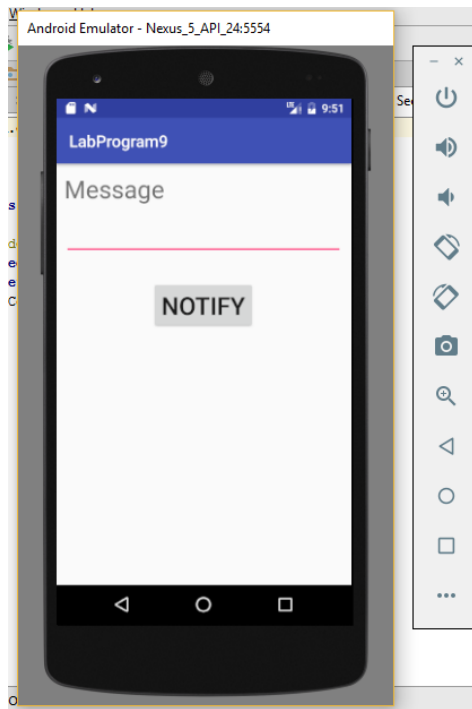
        notify = (Button) findViewById(R.id.button);
        e = (EditText) findViewById(R.id.editText);

        notify.setOnClickListener(new View.OnClickListener()
        {
```

```

@Override
public void onClick(View v)
{
    Intent intent = new Intent(MainActivity.this, SecondActivity.class);
    PendingIntent pending = PendingIntent.getActivity(MainActivity.this, 0, intent, 0);
    Notification noti = new Notification.Builder(MainActivity.this).setContentTitle("New
Message").setContentText(e.getText().toString()).setSmallIcon(R.mipmap.ic_launcher).setCont
entIntent(pending).build();
    NotificationManager manager = (NotificationManager)
getSystemService(NOTIFICATION_SERVICE);
    noti.flags |= Notification.FLAG_AUTO_CANCEL;
    manager.notify(0, noti);
}
});
}
}
}

```



10. Write a mobile application that creates alarm clock.

Activity_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">

    <TimePicker
        android:id="@+id/timePicker"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"/>

    <ToggleButton
        android:id="@+id/toggleButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:layout_margin="20dp"
        android:checked="false"
        android:onClick="OnToggleClicked"/>

</LinearLayout>
```

AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.exno11">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportRtl="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>
```

```

</intent-filter>
</activity>
<receiverandroid:name=".AlarmReceiver">
</receiver>
</application>

</manifest>

```

MainActivity.java:

Package com.example.exno11

```

import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.View;
import android.widget.TimePicker;
import android.widget.Toast;
import android.widget.ToggleButton;
import java.util.Calendar;

public class MainActivity extends AppCompatActivity
{
    TimePicker alarmTimePicker;
    PendingIntent pendingIntent;
    AlarmManager alarmManager;

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        alarmTimePicker = (TimePicker) findViewById(R.id.timePicker);
        alarmManager = (AlarmManager) getSystemService(ALARM_SERVICE);
    }
    public void OnToggleClicked(View view)
    {
        long time;
        if (((ToggleButton) view).isChecked())
        {
            Toast.makeText(MainActivity.this, "ALARM ON", Toast.LENGTH_SHORT).show();
            Calendar calendar = Calendar.getInstance();

```

```

calendar.set(Calendar.HOUR_OF_DAY, alarmTimePicker.getCurrentHour());
calendar.set(Calendar.MINUTE, alarmTimePicker.getCurrentMinute());
    Intent intent = new Intent(this, AlarmReceiver.class);
pendingIntent = PendingIntent.getBroadcast(this, 0, intent, 0);

time=(calendar.getTimeInMillis()-(calendar.getTimeInMillis()%60000));
if(System.currentTimeMillis()>time)
    {
    if(calendar.AM_PM == 0)
    time = time + (1000*60*60*12);
    else
    time = time + (1000*60*60*24);
    }
alarmManager.setRepeating(AlarmManager.RTC_WAKEUP, time, 10000, pendingIntent);
    }
else
    {
    alarmManager.cancel(pendingIntent);
    Toast.makeText(MainActivity.this, "ALARM OFF", Toast.LENGTH_SHORT).show();
    }
    }
}

```

AlarmReceiver.java:

```

package com.example.exno11;

```

```

import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.media.Ringtone;
import android.media.RingtoneManager;
import android.net.Uri;
import android.widget.Toast;

```

```

public class AlarmReceiver extends BroadcastReceiver
{
    @Override
    public void onReceive(Context context, Intent intent)
    {
    Toast.makeText(context, "Alarm! Wake up! Wake up!", Toast.LENGTH_LONG).show();
        Uri alarmUri = RingtoneManager.getDefaultUri(RingtoneManager.TYPE_ALARM);
    if(alarmUri == null)
        {
        alarmUri = RingtoneManager.getDefaultUri(RingtoneManager.TYPE_NOTIFICATION);
        }
        Ringtone ringtone = RingtoneManager.getRingtone(context, alarmUri);
    ringtone.play();
    }
}

```

