



R N S Institute of Technology

(AICTE Approved, VTU Affiliated, NAAC Accredited with 'A' Grade)

Dr. Vishnuvardhan Road, R.R Nagar Post, Channasandra, Begaluru-560098

ESTD: 2001

An Institute with a Difference

Lab manual

Mobile Application laboratory (18MCA57)

College

VISION

"Building RNSIT into a world-class institution"

MISSION

" To impart high quality education in Engineering and Technology and Management with a difference, enabling students to excel in their career "

Department

VISION

“Synergizing Computer Applications for real world”

MISSION

Produce technologists of highest caliber to engage in design research and development, so as to enable the nation to be self-reliant

Give conceptual orientation in basic computer applications and mathematics, motivate the students for lifelong learning

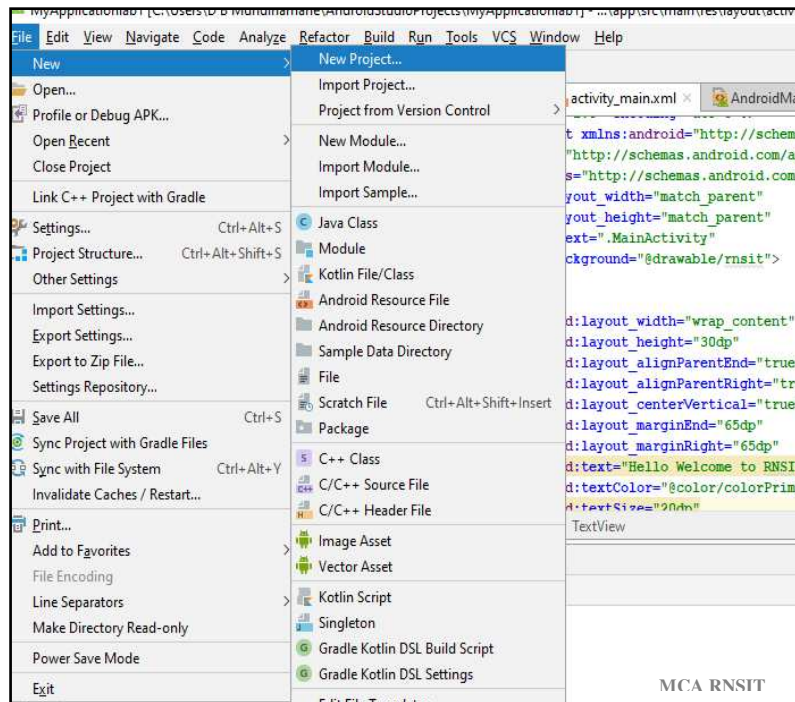
Integrate project environment experiences at every level of the post graduate curriculum to give a firm practical foundation.

Prepared by

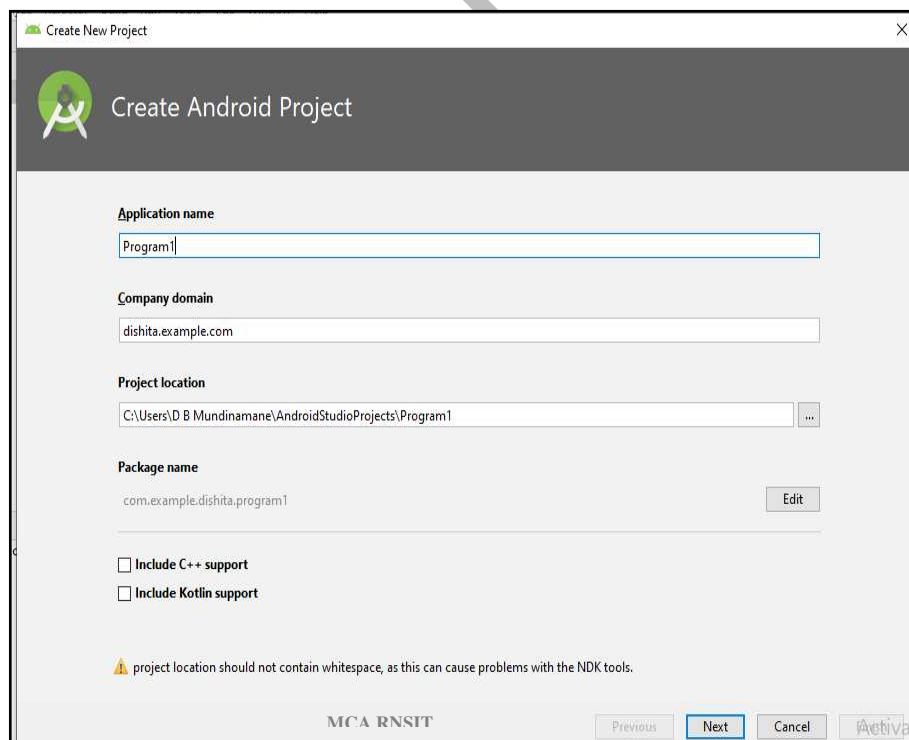
Shwetha G N, Asst Prof
Department of MCA

Steps to create Android application in Android Studio 3.2

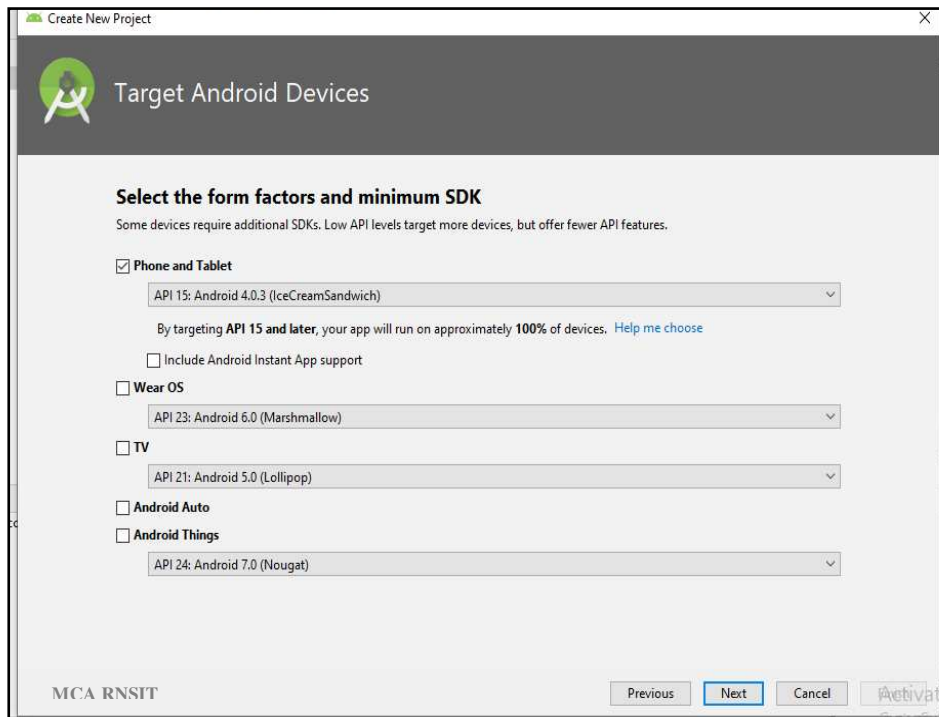
Step 1: Click on Android studio IDE Goto File → New → New Project



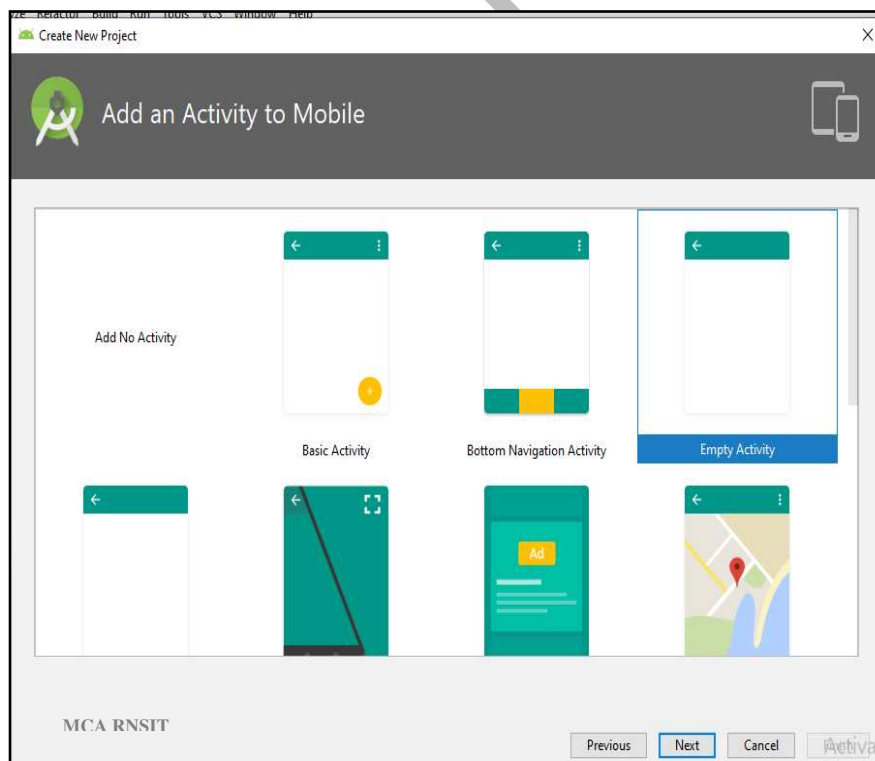
Step 2: Enter application name->program1



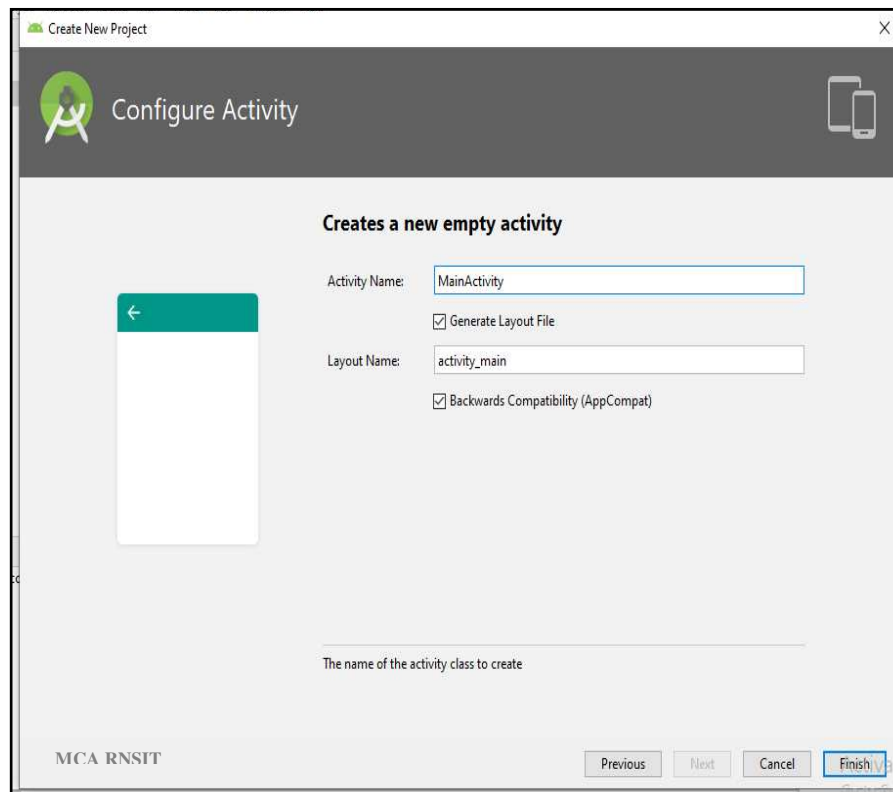
Step 3: Select the API 15(Icecream sandwich)



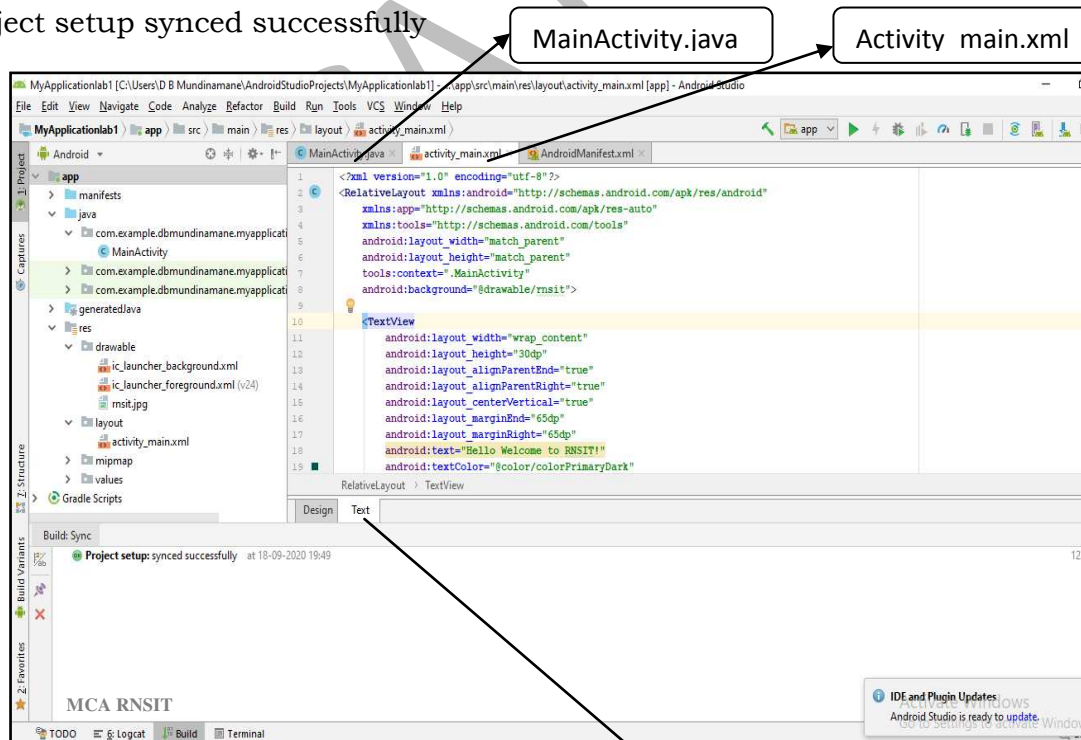
Step 4: Select the empty activity



Step 5: finish the project



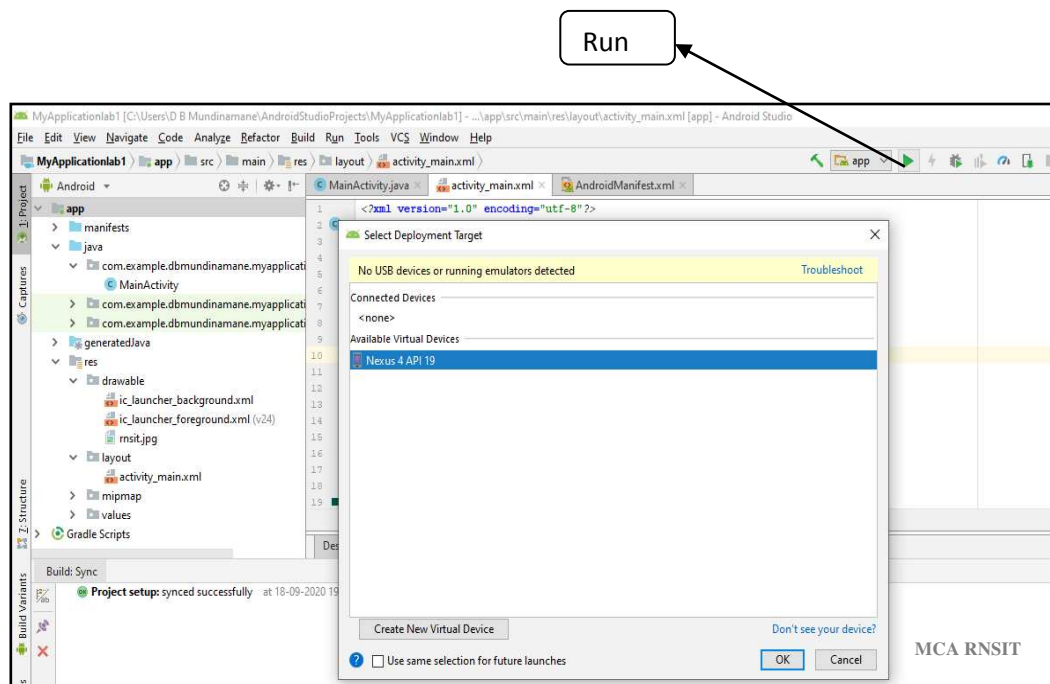
Once project created successfully display the message as build completely and project setup synced successfully



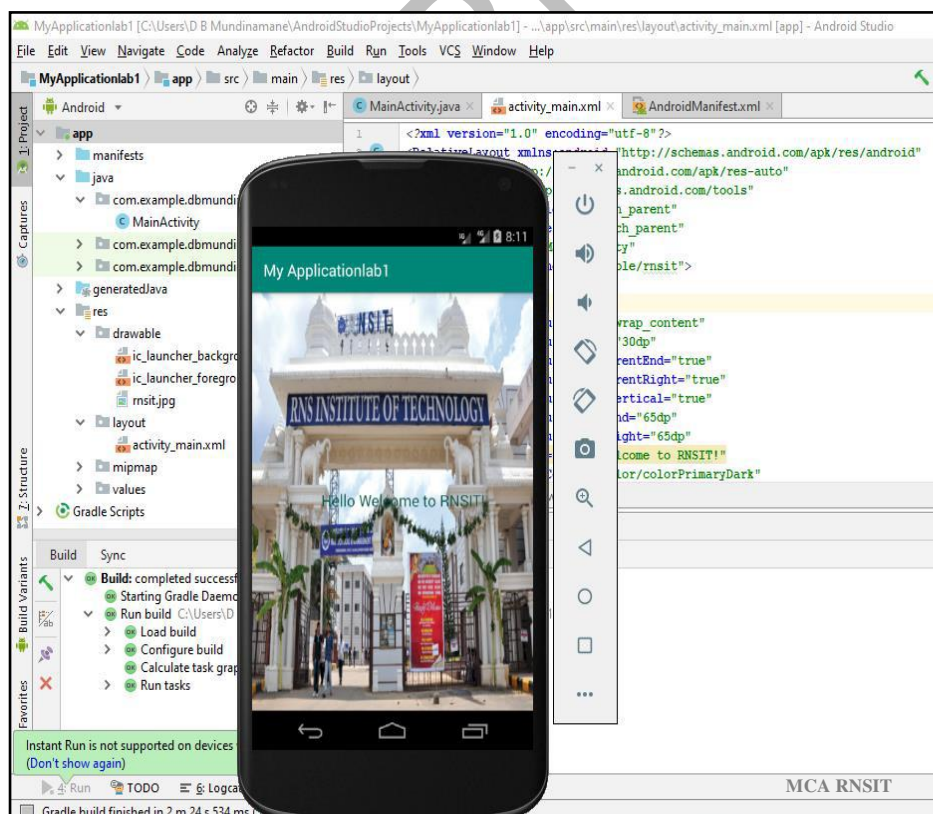
Note: Write the java code in **MainActivity.java** file
Write xml code in **activity-main.xml** file in text part

MOBILE APPLICATIONS LABORATORY (18MCA57)

Step 6: Run the project in emulator(AVD)(select any emulator like pixel, Nexus etc)



This is the emulator



Program 1: Develop a mobile application to display a background image of your college and print "Hello MCA" in green color.**MainActivity.java**

```

package com.example.dbmundinamane.myapplicationlab1;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}

```

activity_main.xml

```

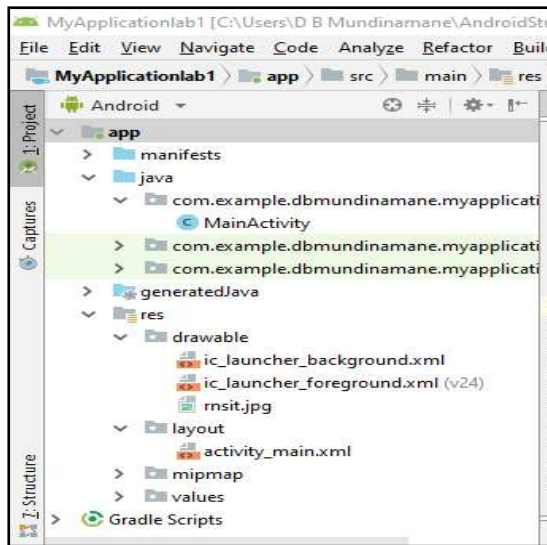
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:background="@drawable/rnsit">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="30dp"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_centerVertical="true"
        android:layout_marginEnd="65dp"
        android:layout_marginRight="65dp"
        android:text="Hello Welcome to RNSIT!"
        android:textColor="@color/colorPrimaryDark"
        android:textSize="20dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</RelativeLayout>

```


Note: Copy and paste the image in res folder→drawable→rnsit.jpg(selecty drawable v-24 list)



Output:



Program 2: Develop a standard calculator application to perform basic calculations like addition, subtraction, multiplication and division using 2 EditText and TextView for displaying result.

MainActivity.java

```
package com.example.dishita.program2;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;

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

    public void add(View v)
    {
        int num1, num2, sum;
        EditText t1 = (EditText) findViewById(R.id.editText);
        EditText t2 = (EditText) findViewById(R.id.editText2);
        TextView t3 = (TextView) findViewById(R.id.result);
        num1 = Integer.parseInt(t1.getText().toString());
        num2 = Integer.parseInt(t2.getText().toString());
        sum = num1 + num2;
        t3.setText("Result:\n"+Integer.toString(sum));
    }

    public void sub(View v)
    {
        int num1, num2, sum;
        EditText t1 = (EditText) findViewById(R.id.editText);
        EditText t2 = (EditText) findViewById(R.id.editText2);
        TextView t3 = (TextView) findViewById(R.id.result);
        num1 = Integer.parseInt(t1.getText().toString());
        num2 = Integer.parseInt(t2.getText().toString());
        sum = num1 - num2;
        t3.setText("Result:\n"+Integer.toString(sum));
    }

    public void mul(View v)
    {
```



```

        int num1, num2, sum;
        EditText t1 = (EditText) findViewById(R.id.editText);
        EditText t2 = (EditText) findViewById(R.id.editText2);
        TextView t3 = (TextView) findViewById(R.id.result);
        num1 = Integer.parseInt(t1.getText().toString());
        num2 = Integer.parseInt(t2.getText().toString());
        sum = num1 * num2;
        t3.setText("Result: \n"+Integer.toString(sum));
    }
    public void div(View v)
    {
        int num1, num2, sum;
        EditText t1 = (EditText) findViewById(R.id.editText);
        EditText t2 = (EditText) findViewById(R.id.editText2);
        TextView t3 = (TextView) findViewById(R.id.result);
        num1 = Integer.parseInt(t1.getText().toString());
        num2 = Integer.parseInt(t2.getText().toString());
        sum = num1 / num2;
        t3.setText("Result: \n"+Integer.toString(sum));
    }
}

```

activity_main.xml

```

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

    <EditText
        android:id="@+id/editText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginStart="26dp"
        android:layout_marginLeft="26dp"
        android:layout_marginTop="66dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/editText"
        android:layout_alignParentTop="true"
        android:layout_marginTop="158dp"

```

```

        android:ems="10"
        android:inputType="textPersonName"
        android:text="" />

```

```

<TextView
    android:id="@+id/result"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/editText"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginEnd="53dp"
    android:layout_marginRight="53dp"
    android:text="Result" />

```

```

<Button
    android:text="ADD"
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentBottom="true"
    android:layout_marginStart="76dp"
    android:layout_marginLeft="76dp"
    android:layout_marginBottom="217dp"
    android:onClick="add"/>

```

```

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBottom="@+id/button"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_marginEnd="74dp"
    android:layout_marginRight="74dp"
    android:text="SUB"
    android:onClick="sub"/>

```

```

<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button"
    android:layout_alignParentBottom="true"
    android:layout_marginBottom="129dp"
    android:text="MUL"
    android:onClick="mul"/>

```

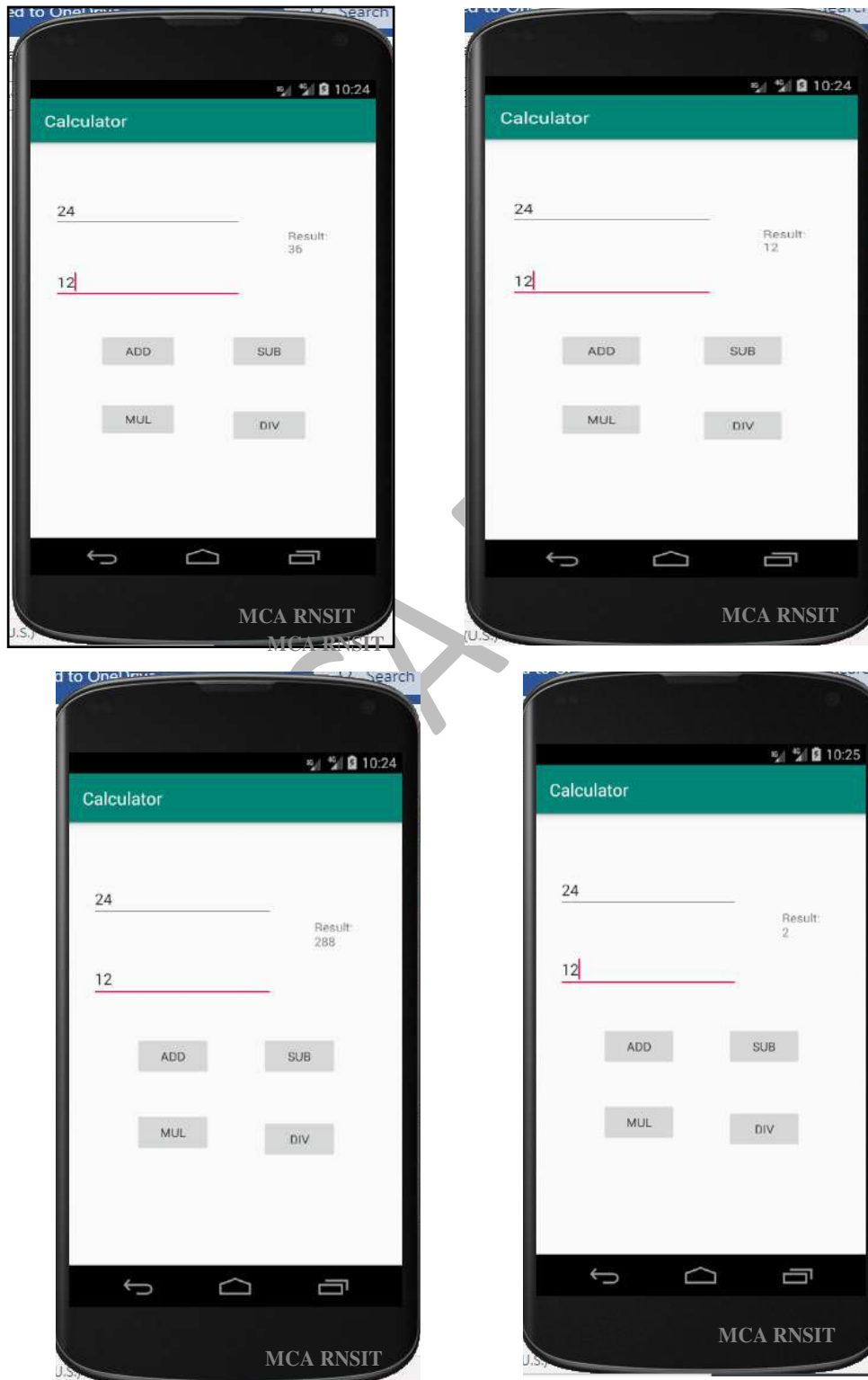
```

<Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"

```

```
android:layout_height="wrap_content"  
android:layout_alignLeft="@+id/button2"  
android:layout_alignParentBottom="true"  
android:layout_marginBottom="121dp"  
android:text="DIV"  
android:onClick="div"/>  
</RelativeLayout>
```

Output



Program 3: Develop a mobile application to display user profile with 3 UI activities using intents.**MainActivity .java**

```
package com.example.dishita.labnew3;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;

public class MainActivity extends AppCompatActivity
implements View.OnClickListener
{
    Button button;
    EditText name;
    EditText usn;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        findAllViewsId();
        button.setOnClickListener(this);
    }
    private void findAllViewsId()
    {
        button = (Button)findViewById(R.id.submit);
        name = (EditText) findViewById(R.id.name);
        usn = (EditText) findViewById(R.id.usn);
    }

    public void onClick(View v)
    {
        Intent intent = new Intent(getApplicationContext(),Main2Activity.class);
        //Create a bundle object
        Bundle b = new Bundle();
        //Inserts a String value into the mapping of this Bundle
        b.putString("name", name.getText().toString());
        b.putString("usn", usn.getText().toString());
        //Add the bundle to the intent.
        intent.putExtras(b);
```

```

        //start the DisplayActivity
        startActivity(intent);
    }
}

```

Main2Activity.java

```

package com.example.dishita.labnew3;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class Main2Activity extends AppCompatActivity
{
    TextView name;
    TextView usn;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        Bundle b = getIntent().getExtras();
        name = (TextView) findViewById(R.id.nameValue);
        usn = (TextView) findViewById(R.id.usnValue);
        name.setText(b.getCharSequence("name"));
        usn.setText(b.getCharSequence("usn"));
    }
}

```

activity_main1.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:layout_width="fill_parent"
    android:layout_height="fill_parent" >

    <TextView
        android:id="@+id/nameText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentTop="true"
        android:layout_marginLeft="18dp"
        android:layout_marginTop="24dp"
        android:text="NAME" />

    <EditText
        android:id="@+id/name"

```

```

    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentRight="true"
    android:layout_alignTop="@+id/nameText"
    android:ems="10" android:inputType="text" />

```

```
<TextView
```

```

    android:id="@+id/usnText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/nameText"
    android:layout_alignLeft="@+id/nameText"
    android:layout_marginLeft="4dp"
    android:layout_marginTop="70dp"
    android:text="USN"
    tools:ignore="UnknownId" />

```

```
<EditText
```

```

    android:id="@+id/usn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignTop="@+id/usnText"
    android:layout_alignParentRight="true"
    android:layout_marginTop="2dp"
    android:layout_marginRight="0dp"
    android:ems="10"
    android:inputType="text" />

```

```
<Button
```

```

    android:id="@+id/submit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/usnText"
    android:layout_alignEnd="@+id/usnText"
    android:layout_alignRight="@+id/usnText"
    android:layout_marginTop="30dp"
    android:layout_marginEnd="-36dp"
    android:layout_marginRight="-8dp"
    android:text="submit" />

```

```
</RelativeLayout>
```

activity_main2. xml

```

<?xml version="1.0" encoding="utf-8"?>
<GridLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:columnCount="3" android:background="@color/colorAccent" >

```

```
<TextView
    android:id="@+id/nameText"
    android:layout_column="1"
    android:layout_gravity="left"
    android:layout_row="1"
    android:text="NAME" />

<TextView
    android:id="@+id/nameValue"
    android:layout_column="2"
    android:layout_gravity="left"
    android:layout_row="1"
    android:text=""
    android:textAppearance="?android:attr/textAppearanceMedium" />

<TextView
    android:id="@+id/usnText"
    android:layout_column="1"
    android:layout_gravity="left"
    android:layout_row="3"
    android:text="USN" />

<TextView
    android:id="@+id/usnValue"
    android:layout_column="2"
    android:layout_gravity="left"
    android:layout_row="3"
    android:text=""
    android:textAppearance="?android:attr/textAppearanceMedium" />

<Space
    android:layout_width="21dp"
    android:layout_height="1dp"
    android:layout_column="0"
    android:layout_gravity="fill_horizontal"
    android:layout_row="0" />

<Space
    android:layout_width="1dp"
    android:layout_height="21dp"
    android:layout_column="0"
    android:layout_gravity="fill_horizontal"
    android:layout_row="0" />

<Space
    android:layout_width="64dp"
    android:layout_height="1dp"
```



```

android:layout_column="1"
android:layout_gravity="fill_horizontal"
android:layout_row="0" />

```

<Space

```

android:layout_width="1dp"
android:layout_height="10dp"
android:layout_column="0"
android:layout_gravity="fill_horizontal"
android:layout_row="2" />

```

<Space

```

android:layout_width="1dp"
android:layout_height="10dp"
android:layout_column="0"
android:layout_gravity="fill_horizontal"
android:layout_row="4" />

```

</GridLayout>

Strings.xml [res→Values→strings.xml]

<resources>

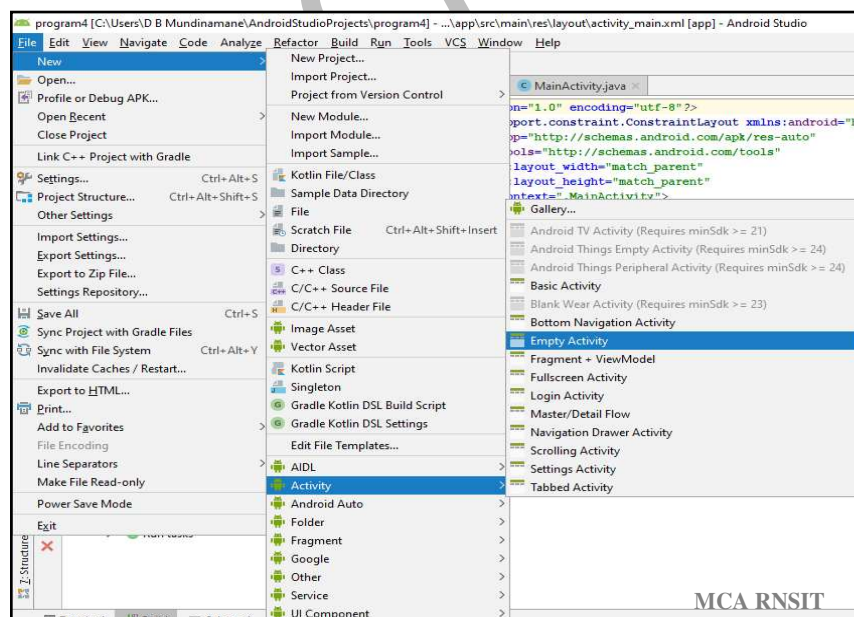
```

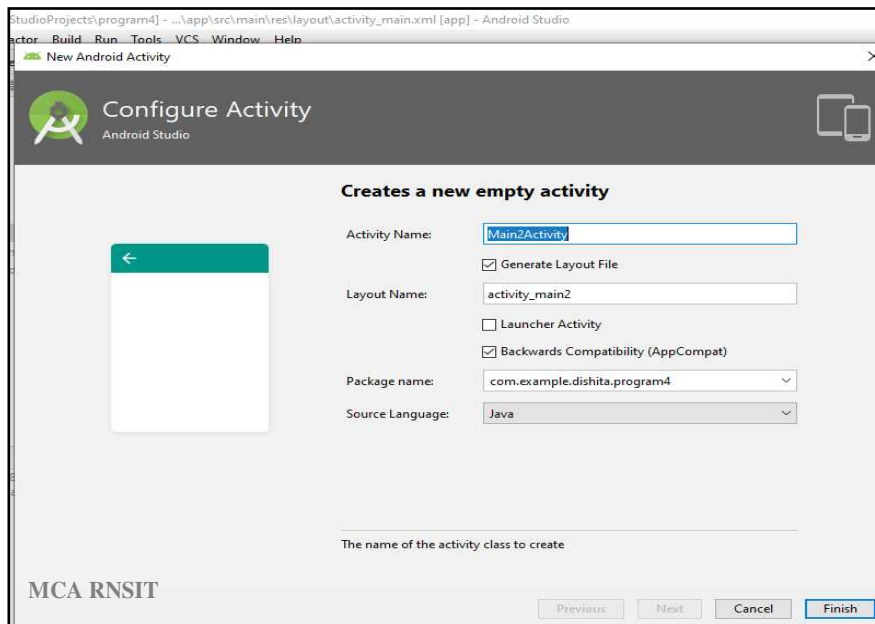
<string name="name">Name</string>
<string name="usn">USN</string>
<string name="submit">Submit</string>

```

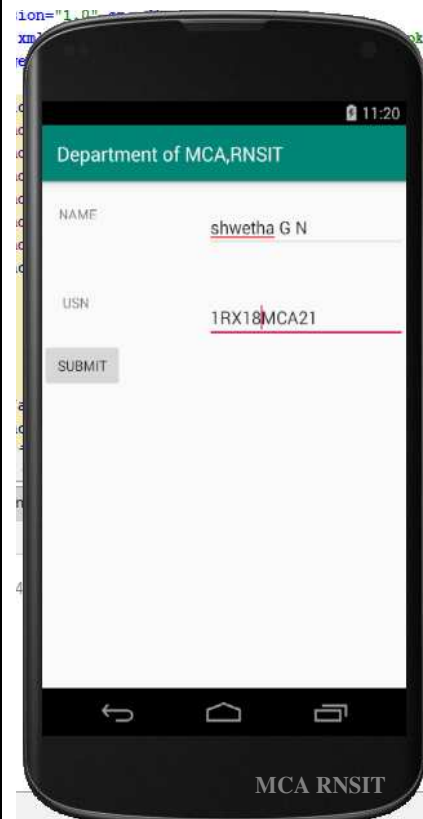
</resources>

Note: Steps to create second activity in gradle[Main2Activity.java]





Output



Program 4: Develop a mobile application to register a form in first activity and display the registered information in second activity using intents.
MainActivity.java

```

package com.example.dishita.program4;
import android.content.Intent;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;

public class MainActivity extends AppCompatActivity
implements View.OnClickListener
{
    Button button;
    RadioGroup genderRadioGroup;
    EditText name;
    EditText age;

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        findViewById();
        button.setOnClickListener(this);
    }
    private void findViewById()
    {
        button = (Button)findViewById(R.id.submit);
        name = (EditText) findViewById(R.id.name);
        age = (EditText) findViewById(R.id.age);
        genderRadioGroup = (RadioGroup) findViewById(R.id.gender);
    }

    public void onClick(View v)
    {
        Intent intent = new Intent(getApplicationContext(),Main2Activity.class);
        //Create a bundle object
        Bundle b = new Bundle();

        //Inserts a String value into the mapping of this Bundle
        b.putString("name", name.getText().toString());
        b.putString("age", age.getText().toString());
    }
}

```

```

        int id = genderRadioGroup.getCheckedRadioButtonId();
        RadioButton radioButton = (RadioButton) findViewById(id);
        b.putString("gender", radioButton.getText().toString());
        //Add the bundle to the intent.
        intent.putExtras(b);
        //start the DisplayActivity
        startActivity(intent);
    }
}

```

Main2Activity.java

```

package com.example.dishita.program4;

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

public class Main2Activity extends AppCompatActivity
{
    TextView name;
    TextView age;
    TextView gender;

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        Bundle b = getIntent().getExtras();
        name = (TextView) findViewById(R.id.nameValue);
        age = (TextView) findViewById(R.id.ageValue);
        gender = (TextView) findViewById(R.id.genderValue);

        name.setText(b.getCharSequence("name"));
        age.setText(b.getCharSequence("age"));
        gender.setText(b.getCharSequence("gender"));
    }
}

```

activity_main.xml

```

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

```

```
<TextView
    android:id="@+id/nameText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_marginLeft="18dp"
    android:layout_marginTop="24dp"
    android:text="name" />

<EditText
    android:id="@+id/name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentRight="true"
    android:layout_alignTop="@+id/nameText"
    android:ems="10" android:inputType="text" />

<TextView
    android:id="@+id/ageText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/nameText"
    android:layout_alignLeft="@+id/nameText"
    android:layout_marginLeft="4dp"
    android:layout_marginTop="70dp"
    android:text="age"
    tools:ignore="UnknownId" />

<EditText
    android:id="@+id/age"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignTop="@+id/ageText"
    android:layout_alignParentRight="true"
    android:layout_marginTop="2dp"
    android:layout_marginRight="0dp"
    android:ems="10"
    android:inputType="text" />

<TextView
    android:id="@+id/genderText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/age"
    android:layout_alignLeft="@+id/gridLayout1"
```

```

android:layout_marginLeft="8dp"
android:layout_marginTop="29dp"
android:text="Gender" />

<GridLayout
    android:id="@+id/gridLayout1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/age"
    android:layout_alignLeft="@+id/ageText"
    android:layout_marginLeft="7dp"
    android:layout_marginTop="61dp">

    <RadioGroup
        android:id="@+id/gender"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <RadioButton
            android:id="@+id/femaleRadio"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:checked="true"
            android:text="female" />

        <RadioButton
            android:id="@+id/maleRadio"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:checked="true"
            android:text="male" />

    </RadioGroup>
</GridLayout>

<Button
    android:id="@+id/submit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/gridLayout1"
    android:layout_alignEnd="@+id/gridLayout1"
    android:layout_alignRight="@+id/gridLayout1"
    android:layout_marginTop="30dp"
    android:layout_marginEnd="-8dp"
    android:layout_marginRight="-8dp"
    android:text="submit" />

```

```
</RelativeLayout>
```

activity_main2.xml

```
<?xml version="1.0" encoding="utf-8"?>
<GridLayout 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=".Main2Activity">

    <TextView
        android:id="@+id/nameText"
        android:layout_column="1"
        android:layout_gravity="left"
        android:layout_row="1"
        android:text="name" />

    <TextView
        android:id="@+id/nameValue"
        android:layout_column="2"
        android:layout_gravity="left"
        android:layout_row="1"
        android:text=""
        android:textAppearance="?android:attr/textAppearanceMedium" />

    <TextView
        android:id="@+id/ageText"
        android:layout_column="1"
        android:layout_gravity="left"
        android:layout_row="3"
        android:text="age" />

    <TextView
        android:id="@+id/ageValue"
        android:layout_column="2"
        android:layout_gravity="left"
        android:layout_row="3"
        android:text=""
        android:textAppearance="?android:attr/textAppearanceMedium" />

    <TextView
        android:id="@+id/genderText"
        android:layout_column="1"
        android:layout_gravity="left"
        android:layout_row="5"
```



```
        android:text="gender" />

<TextView
    android:id="@+id/genderValue"
    android:layout_column="2"
    android:layout_gravity="left"
    android:layout_row="5"
    android:text=""
    android:textAppearance="?android:attr/textAppearanceMedium" />

<Space
    android:layout_width="21dp"
    android:layout_height="1dp"
    android:layout_column="0"
    android:layout_gravity="fill_horizontal"
    android:layout_row="0" />

<Space
    android:layout_width="1dp"
    android:layout_height="21dp"
    android:layout_column="0"
    android:layout_gravity="fill_horizontal"
    android:layout_row="0" />

<Space
    android:layout_width="64dp"
    android:layout_height="1dp"
    android:layout_column="1"
    android:layout_gravity="fill_horizontal"
    android:layout_row="0" />

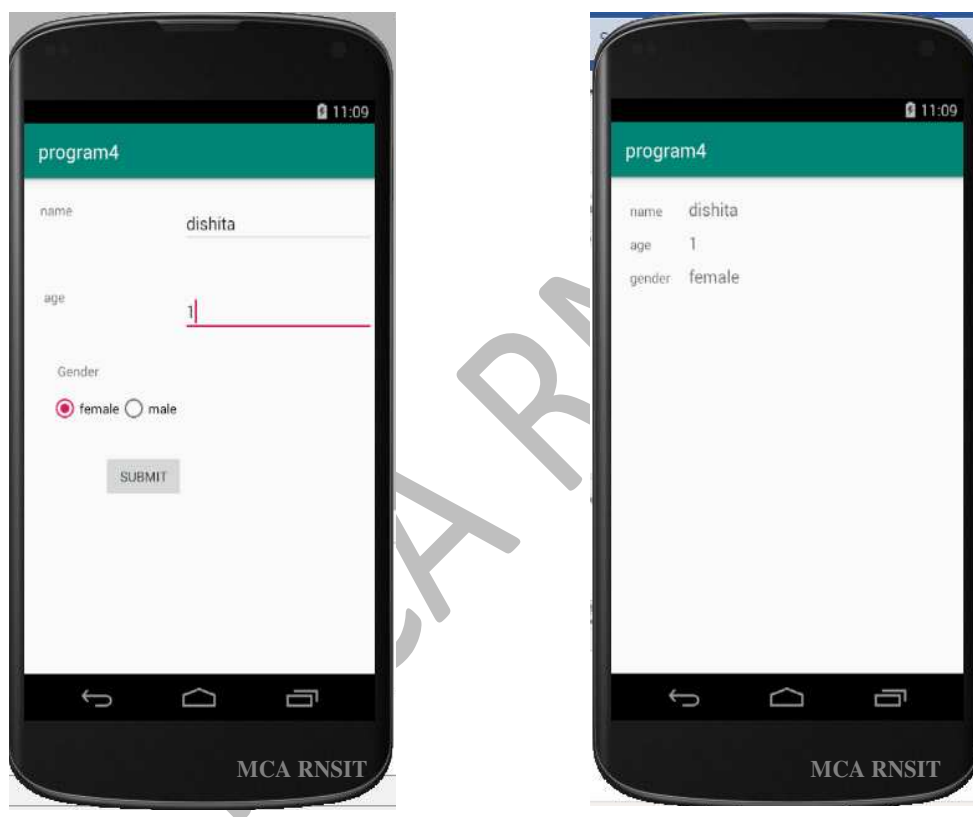
<Space
    android:layout_width="1dp"
    android:layout_height="10dp"
    android:layout_column="0"
    android:layout_gravity="fill_horizontal"
    android:layout_row="2" />

<Space
    android:layout_width="1dp"
    android:layout_height="10dp"
    android:layout_column="0"
    android:layout_gravity="fill_horizontal"
    android:layout_row="4" />
</GridLayout>
```

string.xml

```
<resources>
    <string name="name">Name</string>
    <string name="age">Age</string>
    <string name="female">Female</string>
    <string name="male">Male</string>
    <string name="gender">Gender</string>
    <string name="submit">Submit</string>
</resources>
```

Output



Program 5: Develop a mobile application to list the tourist places of Karnataka Using Listview.**MainActivity.java**

```

package com.example.dbmundinamane.myapplication3;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;

public class MainActivity extends AppCompatActivity
{
    String[] touristplaces = {"Mysore","Chikkamangluru","Coorg","B R hills",
        "Jog Falls","Badami","Dandeli","Karwar"};
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        ArrayAdapter adapter = new ArrayAdapter<String>
        (this,R.layout.activity_listview,touristplaces);
        ListView listView = (ListView) findViewById(R.id.tourist_list);
        listView.setAdapter(adapter);
    }
}

```

activity_main.xml

```

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

    <ListView
        android:id="@+id/tourist_list"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" >
    </ListView>

</LinearLayout>

```

activity_listview.xml

```

<?xml version="1.0" encoding="utf-8"?>
<TextView xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/label"

```

```
android:layout_width="fill_parent"  
android:layout_height="fill_parent"  
android:padding="10dip"  
android:textSize="16dip"  
android:textStyle="bold" >  
</TextView>
```

Output



Program 6: Design an application that contains Phone Contacts in vertical linear manner. Selected contact appears at the top of the list with a large Italicized font and a blue background.

MainActivity.java

```
package com.rnsit.administrator.labprogram_six;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.app.Activity;
import android.graphics.Typeface;
import android.os.Bundle;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity
{
    ListView listView;
    TextView txtSelect;
    String[] listitem;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        listitem=getResources().getStringArray(R.array.li_contact);
        listView=(ListView) findViewById(R.id.listView1);
        txtSelect=(TextView) findViewById(R.id.textView1);
        final ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
        android.R.layout.simple_list_item_1,android.R.id.text1,listitem);
        listView.setAdapter(adapter);
        listView.setOnItemClickListener(new
        AdapterView.OnItemClickListener()
        {
            @Override
            public void onItemClick(AdapterView<?> adapterView, View
            view, int position, long l) {
                String value=adapter.getItem(position);
                txtSelect.setText(value);
                txtSelect.setTypeface(null, Typeface.ITALIC);
            }
        }
    }
}
```

```

    } });
}
}

```

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" >
<TextView
    android:id="@+id/textView1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:background="@android:color/holo_blue_bright"
    android:gravity="center"
    android:textSize="25dp" />
<ListView
    android:id="@+id/listView1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content" >
</ListView>
</LinearLayout>

```

listcontact.xml

```

<?xml version="1.0" encoding="utf-8"?>
<TextView xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/textView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Medium Text"
    android:textStyle="bold"
    android:textAppearance="?android:attr/textAppearanceMedium"
    android:layout_marginLeft="10dp"
    android:layout_marginTop="5dp"
    android:padding="2dp"
    android:textColor="#4d4d4d"
    android:textSize="25dp" />

```

Strings.xml [Available in res→value→strings.xml folder]

```

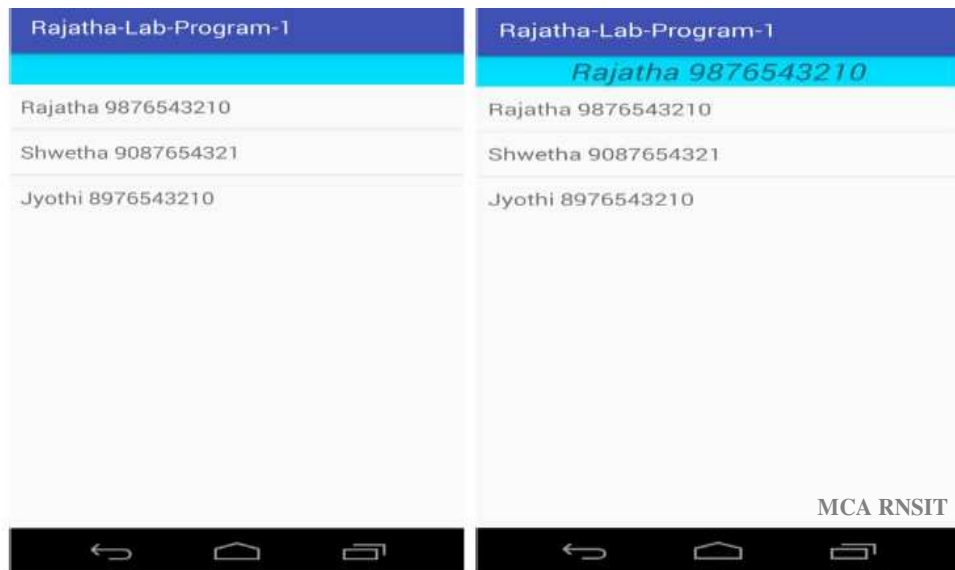
<?xml version="1.0" encoding="utf-8"?>
<resources>
<string name="app_name">labprogram6</string>
<string name="action_settings">Settings</string>
<string-array name="li_contact">
<item>Rajatha 1234567890</item>
<item>Shwetha 9087654321</item>
<item>Jyothi 1234554321</item>

```

</string-array>

</resources>

Output



Program 7: Create an application that uses Layout managers and Event Listeners**MainActivity.Java**

```

package com.example.administrator.pg7;
import android.support.v7.app.AppCompatActivity;
import android.graphics.Typeface;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.Spinner;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity
{
    Button btnConvert;
    TextView txtView;
    String[] dept;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btnConvert=(Button) findViewById(R.id.btnConvert);
        dept=getResources().getStringArray(R.array.depts);
        Spinner s1=(Spinner) findViewById(R.id.spDept);
        ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
        android.R.layout.simple_spinner_dropdown_item,dept);
        s1.setAdapter(adapter);
        s1.setOnItemClickListener(new OnItemClickListener()
        {
            @Override
            public void onItemClick(AdapterView<?> arg0, View arg1,int arg2, long
            arg3)
            {
                int index =arg0.getSelectedItemPosition();
                if(index>0)
                {
                    Toast.makeText(getBaseContext(), "you have selected "+dept[index],

```

```

        Toast.LENGTH_SHORT).show();
    }
}
@Override
public void onNothingSelected(AdapterView<?> arg0)
{
    // TODO Auto-generated method stub
}
});

btnConvert.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        txtView=(TextView)findViewById(R.id.edTxt);
        txtView.setTypeface(null, Typeface.BOLD_ITALIC);
    }
});
}}

```

activity_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.example.administrator.pg2.MainActivity">
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_centerHorizontal="true"
        android:orientation="vertical" >
        <TextView
            android:id="@+id/textView1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Lab Program Two"
            android:textAppearance="?android:attr/textAppearanceLarge" />
        <TextView
            android:id="@+id/textView2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="" />
        <TextView
            android:id="@+id/edTxt"

```

```

        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="RNSIT"
        android:textAppearance="?android:attr/textAppearanceLarge" />
<Button
    android:id="@+id/btnConvert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Convert to Italic" />
<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textAppearance="?android:attr/textAppearanceLarge" />
<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Select Your Dept"
    android:textAppearance="?android:attr/textAppearanceLarge" />
<Spinner
    android:id="@+id/spDept"
    android:layout_width="match_parent"
    android:layout_height="wrap_content" />
</LinearLayout>
</RelativeLayout>

```

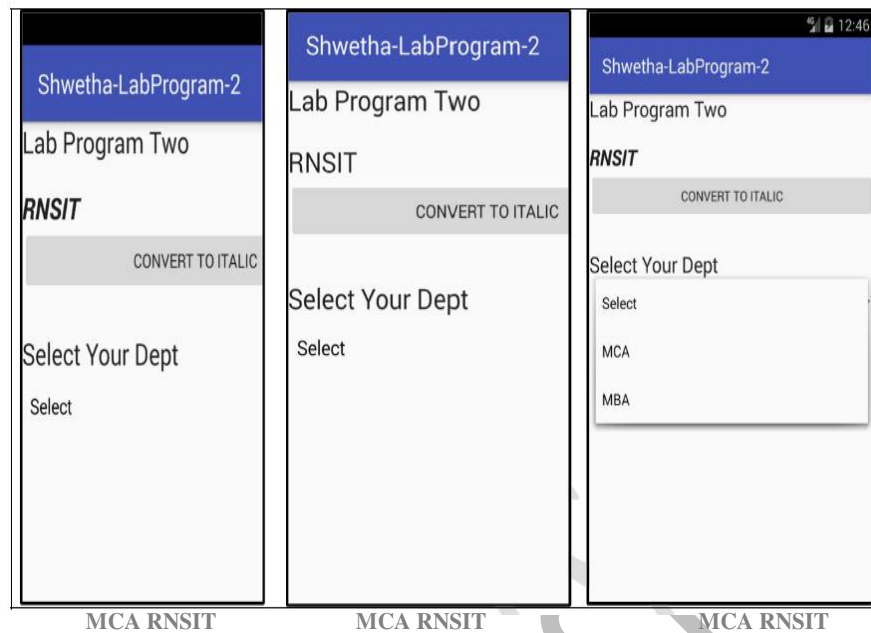
Strings.xml[Available in res→value→strings.xml folder]

```

<?xml version="1.0" encoding="utf-8"?>
<resources>
<string name="app_name">program7</string>
<string name="hello_world">Hello world!</string>
<string name="action_settings">Settings</string>
<string-array name="depts">
<item>Select</item>
<item>MCA</item>
<item>MBA</item>
</string-array>
</resources>

```

Output



Program 8: Devise an application that draws basic graphical primitives (rectangle,circle)on the screen.**MainActivity.java**

```

package com.example.srivatsa.malab4;
import android.graphics.Bitmap;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.graphics.drawable.BitmapDrawable;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity
{
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Bitmap bg= Bitmap.createBitmap(720,1280,Bitmap.Config.ARGB_8888);
        ImageView I= (ImageView)findViewById(R.id.imageView_graphics);
        I.setBackgroundDrawable(new BitmapDrawable(bg));
        Canvas canvas = new Canvas(bg);
        Paint paint = new Paint();
        paint.setColor(Color.BLUE);
        paint.setTextSize(50);
        canvas.drawText("Rectangle", 420, 150, paint);
        canvas.drawRect(400, 200, 650, 700, paint);
        paint.setColor(Color.RED);
        canvas.drawText("Circle", 120, 150, paint);
        canvas.drawCircle(200, 350, 150, paint);
        paint.setColor(Color.GREEN);
        canvas.drawText("Square", 120, 800, paint);
        canvas.drawRect(50, 850, 350, 1150, paint);
        paint.setColor(Color.BLACK);
        canvas.drawText("Line", 480, 800, paint);
        canvas.drawLine(520, 850, 520, 1150, paint);
    }
}

```

activity_main.xml

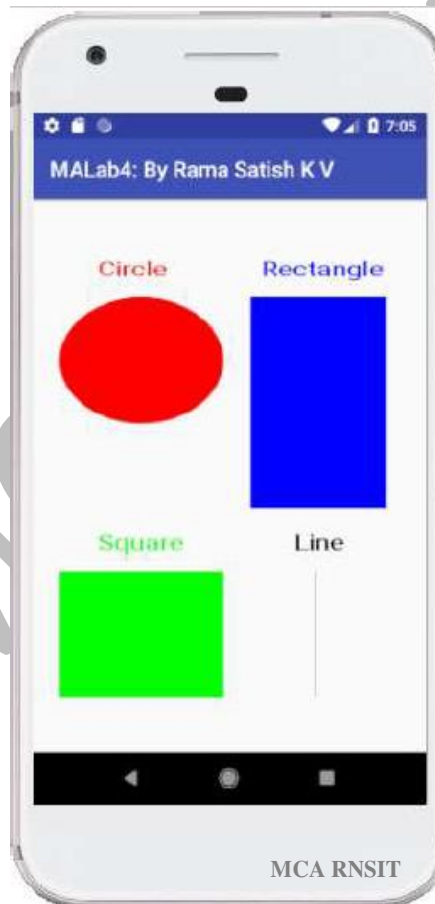
```

<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.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">
<ImageView
    android:id="@+id/imageView_graphics"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_alignParentLeft="true"
    android:layout_alignParentStart="true"
    android:layout_alignParentTop="true"
    android:layout_marginTop="13dp" />
</android.support.constraint.ConstraintLayout>
```

Output



Program 9: Build a mobile application that create ,save,update and delete data in a database**MainActivity.java**

```

package com.example.administrator.pg9;
import android.support.v7.app.AppCompatActivity;
import android.app.AlertDialog;
import android.database.Cursor;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity
{
    DBHelper mydb;
    EditText editName, editSurname,editTextId;
    Button btnAddData;
    Button btnviewAll;
    Button btnDelete;
    Button btnviewUpdate;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        mydb= new DBHelper(this);
        editName=(EditText)findViewById(R.id.editText_name);
        editSurname = (EditText)findViewById(R.id.editText_surname);
        editTextId = (EditText)findViewById(R.id.editText_id);
        btnAddData = (Button)findViewById(R.id.button_add);
        btnviewAll = (Button)findViewById(R.id.button_viewAll);
        btnviewUpdate= (Button)findViewById(R.id.button_update);
        btnDelete= (Button)findViewById(R.id.button_delete);
        AddData();
        viewAll();
        UpdateData();
        DeleteData();
    }
    public void AddData()
    {
        btnAddData.setOnClickListener(
            new View.OnClickListener()

```



```

{
@Override
public void onClick(View v)
{
boolean isInserted =mydb.insertData
(editTextId.getText().toString(),editName.getText().toString(),
editSurname.getText().toString());
System.out.println(isInserted);
if(isInserted == true)
Toast.makeText(MainActivity.this,"Data
Inserted",Toast.LENGTH_LONG).show();
else
Toast.makeText(MainActivity.this,"Data not
Inserted",Toast.LENGTH_LONG).show();
} });
}
public void DeleteData()
{
btnDelete.setOnClickListener(new View.OnClickListener()
{
@Override
public void onClick(View v)
{
Integer deletedRows = mydb.deleteData(editTextId.getText().toString());
if(deletedRows > 0)
Toast.makeText(MainActivity.this,"Data Deleted",
Toast.LENGTH_LONG).show();
else
Toast.makeText(MainActivity.this,"Data not Deleted",
Toast.LENGTH_LONG).show();
} });
}
public void UpdateData()
{
btnviewUpdate.setOnClickListener( new View.OnClickListener()
{
@Override
public void onClick(View v)
{
boolean isUpdate =
mydb.updateData(editTextId.getText().toString(),
editName.getText().toString(),
editSurname.getText().toString());
if(isUpdate == true)

```

```

Toast.makeText(MainActivity.this,"Data
Update",Toast.LENGTH_LONG).show();
else
Toast.makeText(MainActivity.this,"Data not
Updated",Toast.LENGTH_LONG).show();
}});
}
public void viewAll()
{
btnviewAll.setOnClickListener(new View.OnClickListener()
{
@Override
public void onClick(View v)
{
Cursor res = mydb.getAllData();
if(res.getCount() == 0)
{
// show message
showMessage("Error","Nothing found");
return;
}
StringBuffer buffer = new StringBuffer();
while (res.moveToNext())
{
buffer.append("Id :"+ res.getString(0)+"\n");
buffer.append("Name :"+res.getString(1)+"\n");
buffer.append("Surname :"+res.getString(2)+"\n");
// buffer.append("Marks :"+ res.getString(3)+"\n\n");
}
// Show all data
showMessage("Data",buffer.toString());
}});
}
public void showMessage(String title,String Message)
{
AlertDialog.Builder builder = new AlertDialog.Builder(this);
builder.setCancelable(true);
builder.setTitle(title);
builder.setMessage(Message);
builder.show();
}}

```

DBHelper.java

```

package com.example.administrator.pg7;
import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteDatabase.CursorFactory;
import android.database.sqlite.SQLiteOpenHelper;
public class DBHelper extends SQLiteOpenHelper{
public static final String DATABASE_NAME="Student.db";
public static final String TABLE_NAME1="student_table";
public static final String COL_1="ID";
public static final String COL_2="NAME";
public static final String COL_3="SURNAME";
//public static final String COL_4="MARKS";
public DBHelper(Context context)
{
super(context, DATABASE_NAME, null, 1);
}
@Override
public void onCreate(SQLiteDatabase db)
{
String query="CREATE TABLE " + TABLE_NAME1 + "(ID INTEGER
PRIMARY KEY AUTOINCREMENT, NAME TEXT, SURNAME TEXT)";
// db.execSQL("create table"+ TABLE_NAME + "(ID INTEGER PRIMARY
KEY AUTOINCREMENT,NAME TEXT, SURNAME TEXT MARKS
INTEGER)");
db.execSQL(query);
}
@Override
public void onUpgrade(SQLiteDatabase db, int oldversion, int newversion)
{
db.execSQL("DROP TABLE IF EXISTS"+TABLE_NAME1);
onCreate(db);
}
public boolean insertData(String id, String name,String surname)
{
SQLiteDatabase db = this.getWritableDatabase();
ContentValues contentValues = new ContentValues();
contentValues.put(COL_1,id);
contentValues.put(COL_2,name);
contentValues.put(COL_3,surname);
long result = db.insert(TABLE_NAME1,null ,contentValues);
if(result == -1)

```

```

        return false;
    else
        return true;
    }
    public Cursor getAllData()
    {
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor res = db.rawQuery("select * from "+TABLE_NAME1 ,null);
        return res;
    }
    public boolean updateData(String id,String name,String surname)
    {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put(COL_1,id);
        contentValues.put(COL_2,name);
        contentValues.put(COL_3,surname);
        //contentValues.put(COL_4,marks);
        db.update(TABLE_NAME1, contentValues, "ID = ?",new String[] { id
        });
        return true;
    }
    public Integer deleteData (String id)
    {
        SQLiteDatabase db = this.getWritableDatabase();
        return db.delete(TABLE_NAME1, "ID = ?",new String[] {id});
    }
}

```

activity_main.xml

```

<RelativeLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="com.example.administrator.nandan.MainActivity" >
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:text="Name:"
        android:textAppearance="?android:attr/textAppearanceLarge" />

```

```

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentStart="true"
    android:layout_below="@+id/editText_name"
    android:text="Surname:"
    android:textAppearance="?android:attr/textAppearanceLarge" />
<EditText
    android:id="@+id/editText_name"
    android:layout_width="283dp"
    android:layout_height="wrap_content"
    android:layout_alignTop="@+id/textView"
    android:layout_marginLeft="43dp"
    android:layout_marginStart="43dp"
    android:layout_toEndOf="@+id/textView"
    android:layout_toRightOf="@+id/textView" />
<EditText
    android:id="@+id/editText_surname"
    android:layout_width="259dp"
    android:layout_height="wrap_content"
    android:layout_alignTop="@+id/textView2"
    android:layout_marginLeft="38dp"
    android:layout_marginStart="38dp"
    android:layout_toEndOf="@+id/textView2"
    android:layout_toRightOf="@+id/textView2" />
<Button
    android:id="@+id/button_add"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentStart="true"
    android:layout_below="@+id/editText_surname"
    android:layout_marginTop="76dp"
    android:text="Add Data" />
<Button
    android:id="@+id/button_viewAll"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_above="@+id/button_update"
    android:layout_centerHorizontal="true"
    android:text="View All" />
<Button
    android:id="@+id/button_update"

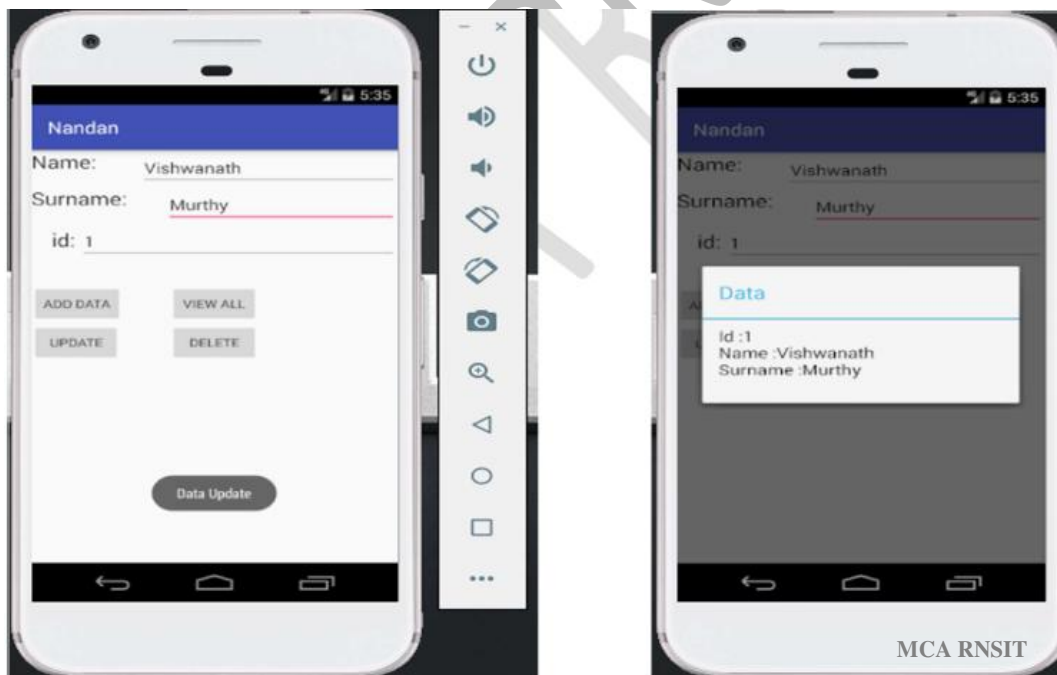
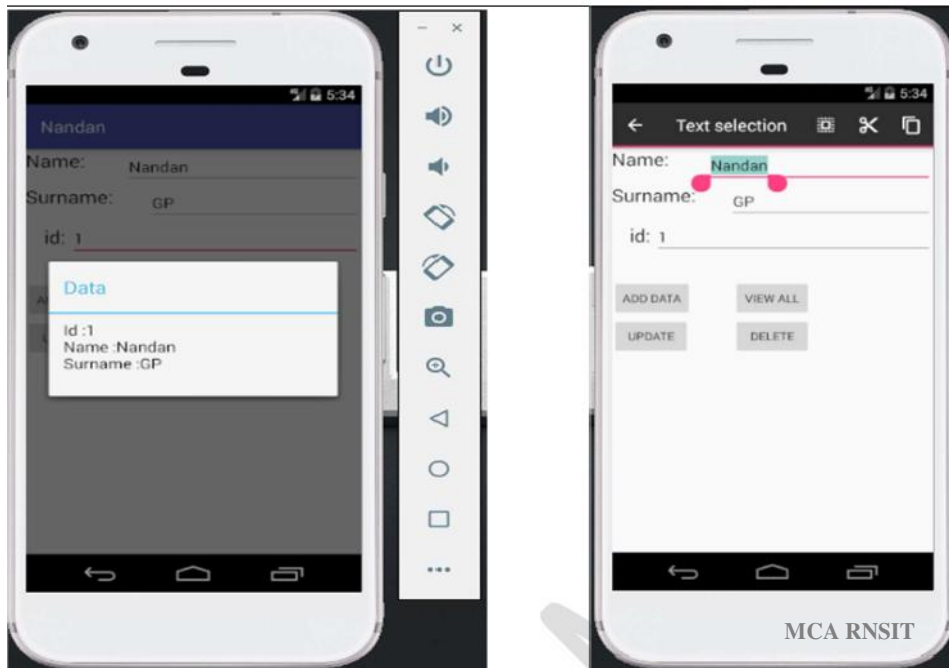
```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentLeft="true"
        android:layout_alignParentStart="true"
        android:layout_below="@+id/button_add"
        android:text="Update" />
<Button
    android:id="@+id/button_delete"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button_viewAll"
    android:layout_alignStart="@+id/button_viewAll"
    android:layout_below="@+id/button_viewAll"
    android:layout_centerVertical="true"
    android:text="Delete" />
<TextView
    android:id="@+id/textView_id"
    android:layout_width="37dp"
    android:layout_height="wrap_content"
    android:layout_alignBaseline="@+id/editText_id"
    android:layout_alignParentStart="true"
    android:layout_marginStart="20dp"
    android:text="id:"
    android:textAppearance="?android:attr/textAppearanceLarge" />
<EditText
    android:id="@+id/editText_id"
    android:layout_width="312dp"
    android:layout_height="wrap_content"
    android:layout_alignParentEnd="true"
    android:layout_below="@+id/editText_surname" />
</RelativeLayout>

```

Output



Program 10: Devise an application that implements MultiThreading**MainActivity.java**

```

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    private TextView tvOutput;
    private static final int t1 = 1;
    private static final int t2 = 2;
    private static final int t3 = 3;

    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        tvOutput = (TextView) findViewById(R.id.textView1);
    }

    public void fetchData(View v)
    {
        tvOutput.setText("Main thread");
        thread1.start();
        thread2.start();
        thread3.start();
    }

    Thread thread1 = new Thread(new Runnable()
    {
        public void run()
        {
            for (int i = 0; i < 2; i++) {
                try {
                    Thread.sleep(1000);
                } catch (InterruptedException e) {
                    e.printStackTrace();
                }
            }
            handler.sendMessage(t1);
        }
    });

    Thread thread2 = new Thread(new Runnable()

```



```

    {
    public void run() {
    for (int i = 0; i < 2; i++) {
    try {
        Thread.sleep(1000);
    } catch (InterruptedException e) {
        e.printStackTrace();
    }
    handler.sendMessage(t2);
    }
    }
    });

    Thread thread3 = new Thread(new Runnable()

    {
    public void run() {
    for (int i = 0; i < 2; i++) {
    try {
        Thread.sleep(1000);
    } catch (InterruptedException e) {
        e.printStackTrace();
    }
    handler.sendMessage(t3);
    }
    }
    });
    Handler handler = new Handler() {
    public void handleMessage(android.os.Message msg) {
    if(msg.what == t1) {
    tvOutput.append("\nIn thread 1");
    }
    if(msg.what == t2) {
    tvOutput.append("\nIn thread 2");
    }
    if(msg.what == t3) {
    tvOutput.append("\nIn thread 3");
    }
    }
    }
    }

```

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/info"
    android:layout_width="match_parent"

```

```
android:layout_height="match_parent"
android:orientation="vertical">
```

<Button

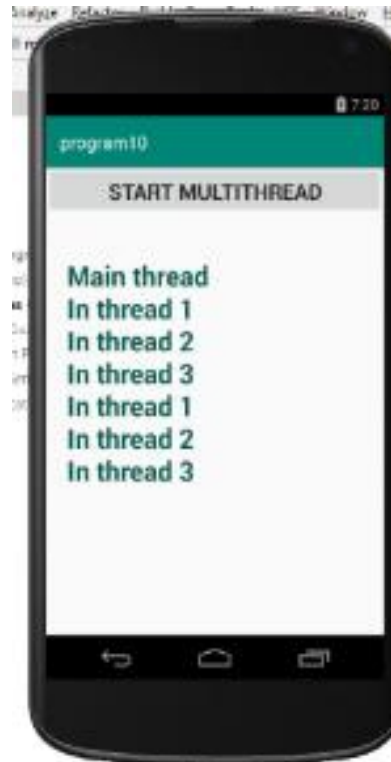
```
    android:id="@+id/button1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:onClick="fetchData"
    android:text="Start MULTITHREAD"
    android:textSize="24sp"
    android:textStyle="normal | bold"
    tools:typeface="sans"/>
```

<TextView

```
    android:id="@+id/textView1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentStart="true"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_marginStart="24dp"
    android:layout_marginLeft="24dp"
    android:layout_marginTop="18dp"
    android:text="Main thread"
    android:textColor="@color/colorPrimaryDark"
    android:textColorLink="@color/colorPrimaryDark"
    android:textSize="30sp"
    android:textStyle="bold"/>
```

</RelativeLayout>

Output:



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Program 11: Develop a mobile application that uses GPS location information**MainActivity.java**

```

package com.example.administrator.newlabfinallocation;
import android.annotation.SuppressLint;
import android.content.Context;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity implements LocationListener
{
    protected LocationManager locationManager;
    TextView txtLat;
    @SuppressWarnings("MissingPermission")
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        txtLat = (TextView) findViewById(R.id.textview1);

        locationManager=(LocationManager) getSystemService(Context.LOCATION_SERVICE);
        locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER, 0, 0,
        this);
    }

    @Override
    public void onLocationChanged(Location location) {
        txtLat.setText("Latitude:" + location.getLatitude() + ", Longitude:" +
        location.getLongitude());
    }

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

    @Override

```

```

public void onProviderEnabled(String provider) {

}

@Override
public void onProviderDisabled(String provider) {

}
}

```

activity_main.xml

```

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

    <TextView
        android:id="@+id/textview2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Display latitude and longitude" />
    <TextView
        android:id="@+id/textview1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_centerVertical="true" />

</RelativeLayout>

```

AndroidManifest.xml

```

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

    <uses-sdk
        android:minSdkVersion="8"
        android:targetSdkVersion="17" />
    <uses-permission android:name=
        "android.permission.ACCESS_FINE_LOCATION" />
    <uses-permission android:name="android.permission.CHANGE_WIFI_STATE" />

    <uses-permission android:name=

```

```
"android.permission.ACCESS_COARSE_LOCATION" />
<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    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>
```

Output:



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Program 12: Creates an application that writes data to the SD card

MainActivity.java

```
package com.example.administrator.program8;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileReader;
import java.io.FileWriter;
import java.io.IOException;
import android.app.Activity;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.Menu;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity
{
    EditText etPath;
    EditText etContent;
    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        String path = getPreferences(MODE_PRIVATE).getString("fpath",
        "/sdcard/wpta_file1");
        etPath = (EditText) findViewById(R.id.et_path);
        etPath.setText(path);
        etContent = (EditText) findViewById(R.id.et_content);
        OnClickListener saveClickListener = new OnClickListener(){
            @Override
            public void onClick(View v)
            {
                File file = new File(etPath.getText().toString());
                FileWriter writer=null;
                try
                {
                    writer = new FileWriter(file);
                    System.out.println(writer);
                    writer.write(etContent.getText().toString());
                    writer.close();
                    SharedPreferences.Editor editor = getPreferences(MODE_PRIVATE).edit();
                    editor.putString ("fpath", file.getPath());
                    editor.commit();
                }
            }
        };
        Button btnSave = (Button) findViewById(R.id.btn_save);
        btnSave.setOnClickListener(saveClickListener);
    }
}
```

```

Toast.makeText(getApplicationContext(), "Successfully
saved", Toast.LENGTH_SHORT).show();
} catch (IOException e)
{
e.printStackTrace();
}
}
});

OnClickListener readClickListener = new OnClickListener()
{
@Override
public void onClick(View v)
{
File file = new File(etPath.getText().toString());
String strLine="";
StringBuilder text = new StringBuilder();
try
{
FileReader fReader = new FileReader(file);
BufferedReader bReader = new BufferedReader(fReader);
while( (strLine=bReader.readLine()) != null)
{
text.append(strLine+"\n");
}
Toast.makeText(getApplicationContext(), "Successfully loaded",
Toast.LENGTH_SHORT).show();
} catch (IOException e) {
e.printStackTrace(); }
etContent.setText(text);
}
};

Button btnSave = (Button) findViewById(R.id.btn_save);
btnSave.setOnClickListener(saveClickListener);
Button btnRead = (Button) findViewById(R.id.btn_read);
btnRead.setOnClickListener(readClickListener);
}
@Override
public boolean onCreateOptionsMenu(Menu menu)
{
getMenuInflater().inflate(R.menu.activity_main, menu);
return true;
}
}

```

activity_main.xml

```

<RelativeLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"

```



```

        android:layout_width="match_parent"
        android:layout_height="match_parent" >
<EditText
    android:id="@+id/et_path"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:inputType="text" />
<EditText
    android:id="@+id/et_content"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:inputType="textMultiLine"
    android:layout_below="@id/et_path"
    android:minLines="4"
    android:maxLines="4" />
<RelativeLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/et_content">
<Button
    android:id="@+id/btn_read"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="25dp"
    android:text="@string/str_btn_read" />
<Button
    android:id="@+id/btn_save"
    android:layout_toRightOf="@id/btn_read"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textSize="25dp"
    android:text="@string/str_btn_save" />
</RelativeLayout>
</RelativeLayout>

```

AndroidManifest.Xml

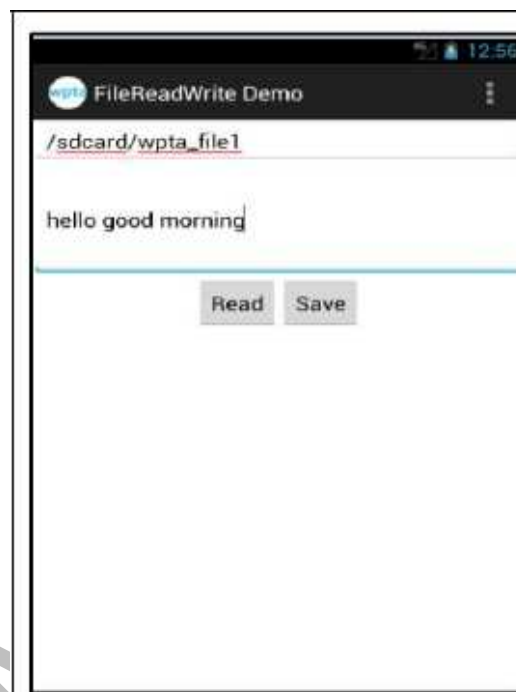
```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.administrator.program8">
    <uses-permission
        android:name="android.permission.WRITE_EXTERNAL_STORAGE" />
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="Rajatha-Lab-Program-8"
        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>
```

Output



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Program 13: implement an application that creates an alert upon receiving a message**MainActivity.java**

```

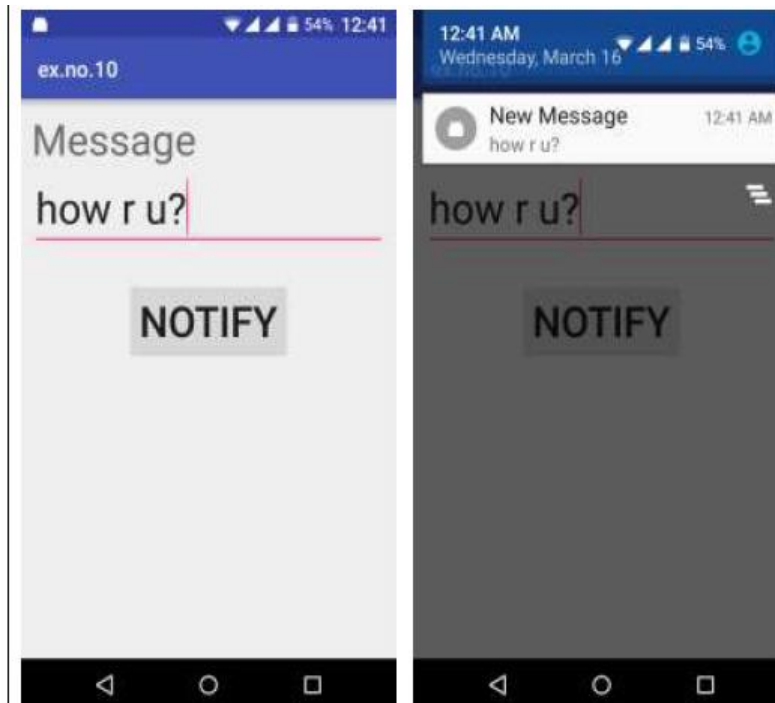
package com.example.administrator.expg09;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.app.Notification;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.os.Bundle;
import android.support.v7.app.AppCompatActivity;
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 view)
            {
                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).
                setContentIntent(pending).build();
                NotificationManager manager=(NotificationManager)
                getSystemService(NOTIFICATION_SERVICE);
                noti.flags |=Notification.FLAG_AUTO_CANCEL;
                manager.notify(0,noti);
            }
        });
    }
}

```

activity_main.xml

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

Output:



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Program 14: Devise a mobile application that creates alarm clock**MainActivity.java**

```

package com.example.administrator.alarm;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.app.AlarmManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.view.View;
import android.widget.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();
    }
}
}

```

activity_main.xml

```

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

```

AlarmReceiver.java

```

package com.example.administrator.alarm;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
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();
    }
}

```

AndroidManifest.xml

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.administrator.alarm">
<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>
<receiver android:name=".AlarmReceiver">
</receiver>
</application>
</manifest>

```


Output

