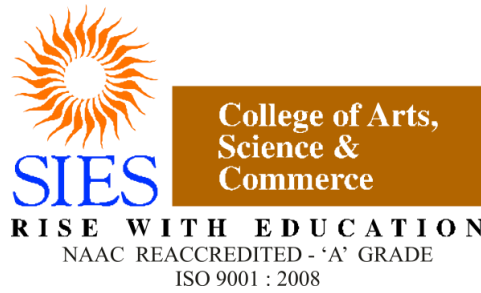# ANDROID DEVELOPER

FUNDAMENTAL

PRACTICAL JOURNAL

BY PRAKASH VIJAYAN MALWAD
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CERTIFICATE

This is to certify that Mr. / ~~Miss~~. MALWAD PRAKASH VIJAYAN Roll No. SCS2324028 Has successfully completed the necessary course of experiments in the subject of **Android Developer Fundamentals** during the academic year **2023 – 2024** complying with the requirements of **University of Mumbai**, for the course of **S.Y. BSc. Computer Science [Semester-4]**

Prof. In-Charge
Prof. Maya Nair
(Android Developer Fundamentals)

Examination Date:
Examiner's Signature & Date:

Head of the Department
Prof. Manoj Singh

College Seal

And

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Practical 1

Write an Android application with an TextView and Button. Onclick of the button the content of the TextView should toggle.

Code:
MainActivity.java

```java
package com.mld.pract1;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
TextView t1;
Button b1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        t1=findViewById(R.id.text1);
        b1=findViewById(R.id.button);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String s1=t1.getText().toString();
                if(s1.equals("Hello World")){
                    t1.setText("Namaste");

                }
                else{
                    t1.setText("Hello World");
                }
            }
        });
    }
}
```

activity_main.xml

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

    <Button
        android:id="@+id/btn1"
        android:layout_width="130dp"
        android:layout_height="57dp"
        android:layout_marginBottom="288dp"
```

```
      android:text="@string/btText1"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent" />

  <ImageView
      android:id="@+id/img1"
      android:layout_width="313dp"
      android:layout_height="212dp"
      android:layout_marginBottom="68dp"
      app:layout_constraintBottom_toTopOf="@+id/btn1"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintStart_toStartOf="parent"
      app:layout_constraintTop_toTopOf="parent"
      app:srcCompat="@drawable/nun" />


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

Output Screenshot:
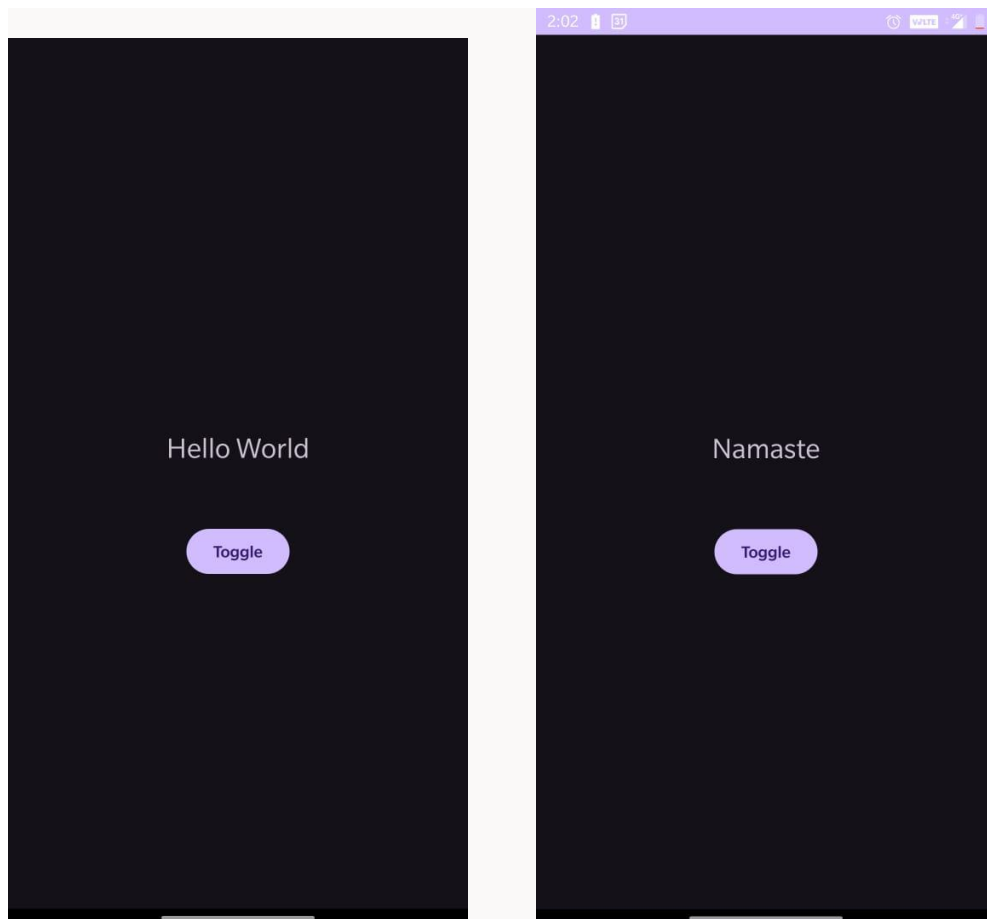
Practical 2

Write an android application to toggle image in imageview such that on click of button will visible and again click the invisible.

Code:
activity_main.xml

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

    <Button
        android:id="@+id/btn1"
        android:layout_width="130dp"
        android:layout_height="57dp"
        android:layout_marginBottom="288dp"
        android:text="@string/btText1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

    <ImageView
        android:id="@+id/img1"
        android:layout_width="313dp"
        android:layout_height="212dp"
        android:layout_marginBottom="68dp"
        app:layout_constraintBottom_toTopOf="@+id/btn1"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.867"
        app:srcCompat="@drawable/nun" />

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

MainActivity.java

```java
package com.mld.imgtoggle;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.Toast;


public class MainActivity extends AppCompatActivity {

    Button btn;
```

```
    ImageView iv;

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

        btn=findViewById(R.id.btn1);
        iv=findViewById(R.id.img1);

        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if(iv.getVisibility()==View.VISIBLE)
                {
                    iv.setVisibility(View.INVISIBLE);
                    btn.setText(R.string.btText2);
                    Toast.makeText(MainActivity.this,"Image is
Invisible",Toast.LENGTH_SHORT).show();
                }
                else
                {
                    iv.setVisibility(View.VISIBLE);
                    btn.setText(R.string.btText1);
                    Toast.makeText(MainActivity.this,"Image is
visible",Toast.LENGTH_LONG).show();
                }
            }
        });


    }
}
```

Output Screenshot:
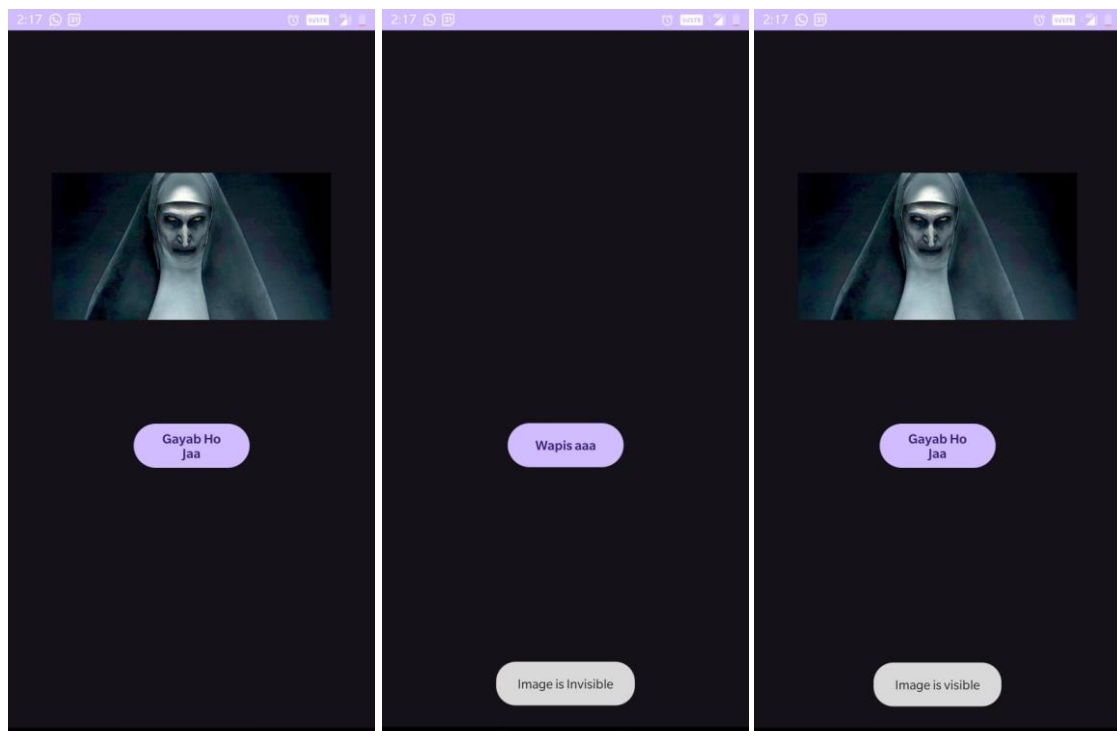
Practical 3

Write an Android application to accept two numbers from users and perform an arithmetic operation(Addition, subtraction, Multiplication and Division)as per user's choice using radio button. The result should be displayed in toast.

Code:
activity_main.xml

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

    <EditText
        android:id="@+id/editText1"
        android:layout_width="270dp"
        android:layout_height="50dp"
        android:ems="10"
        android:hint="Enter First Number "
        android:inputType="text"
        android:textColorHint="#4CAF50"
        app:layout_constraintBottom_toTopOf="@+id/editText2"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.517"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.936" />

    <EditText
        android:id="@+id/editText2"
        android:layout_width="270dp"
        android:layout_height="49dp"
        android:layout_marginBottom="84dp"
        android:ems="10"
        android:hint="Enter Second Number"
        android:inputType="text"
        android:textColorHint="#4CAF50"
        app:layout_constraintBottom_toTopOf="@+id/radioGroup"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

    <RadioGroup
        android:id="@+id/radioGroup"
        android:layout_width="275dp"
        android:layout_height="249dp"
        android:layout_marginBottom="220dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.536"
        app:layout_constraintStart_toStartOf="parent">

        <RadioGroup
            android:layout_width="match_parent"
```

```xml
                android:layout_height="wrap_content">

                <RadioButton
                    android:id="@+id/Addbt"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:text="Add" />

                <RadioButton
                    android:id="@+id/subbt"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:text="Subtract" />

                <RadioButton
                    android:id="@+id/mulbt"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:text="Multiply" />

                <RadioButton
                    android:id="@+id/divbt"
                    android:layout_width="match_parent"
                    android:layout_height="wrap_content"
                    android:text="Divide" />
        </RadioGroup>
    </RadioGroup>
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.mld.calculator;

import androidx.appcompat.app.AppCompatActivity;

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

import java.util.InputMismatchException;

public class MainActivity extends AppCompatActivity {
    EditText Fnum,Snum;
    RadioButton add,sub,mul,div;
    double res;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Fnum=findViewById(R.id.editText1);
        Snum=findViewById(R.id.editText2);
        add=findViewById(R.id.Addbt);
        sub=findViewById(R.id.subbt);
        mul=findViewById(R.id.mulbt);
        div=findViewById(R.id.divbt);

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

```java
                 public void onClick(View view) {
                     try {
                         res = Double.parseDouble(Fnum.getText().toString())
+ Double.parseDouble(Snum.getText().toString());
                         Toast.makeText(MainActivity.this, "Sum is " + res,
Toast.LENGTH_LONG).show();
                     }

                     catch (NumberFormatException ae){
                         Toast.makeText(MainActivity.this,"Baklool Number
daal",Toast.LENGTH_LONG).show();
                     }
                 }
             });
             sub.setOnClickListener(new View.OnClickListener() {
                 @Override
                 public void onClick(View view) {
                     try{
                         res = Double.parseDouble(Fnum.getText().toString()) -
Double.parseDouble(Snum.getText().toString());
                         Toast.makeText(MainActivity.this, "Subtraction is " +
res, Toast.LENGTH_LONG).show();
                     }
                         catch (NumberFormatException ae){
                         Toast.makeText(MainActivity.this,"Baklool Number
daal",Toast.LENGTH_LONG).show();
                     }}
             });
             mul.setOnClickListener(new View.OnClickListener() {
                 @Override
                 public void onClick(View view) {
                     try{
                         res = Double.parseDouble(Fnum.getText().toString()) *
Double.parseDouble(Snum.getText().toString());
                         Toast.makeText(MainActivity.this, "Multiplication is "
+ res, Toast.LENGTH_LONG).show();
                     }catch (NumberFormatException ae){
                         Toast.makeText(MainActivity.this,"Baklool Number
daal",Toast.LENGTH_LONG).show();
                     }
                 }
             });
             div.setOnClickListener(new View.OnClickListener() {
                 @Override
                 public void onClick(View view) {
                     try {
                         double res =
Double.parseDouble(Fnum.getText().toString()) /
Double.parseDouble(Snum.getText().toString());
                         Toast.makeText(MainActivity.this, "Division is " +
res, Toast.LENGTH_LONG).show();
                     }
                         catch (NumberFormatException ae){
                         Toast.makeText(MainActivity.this,"Baklool Number
daal",Toast.LENGTH_LONG).show();
                     }
                 }
             });
         }

     }
```
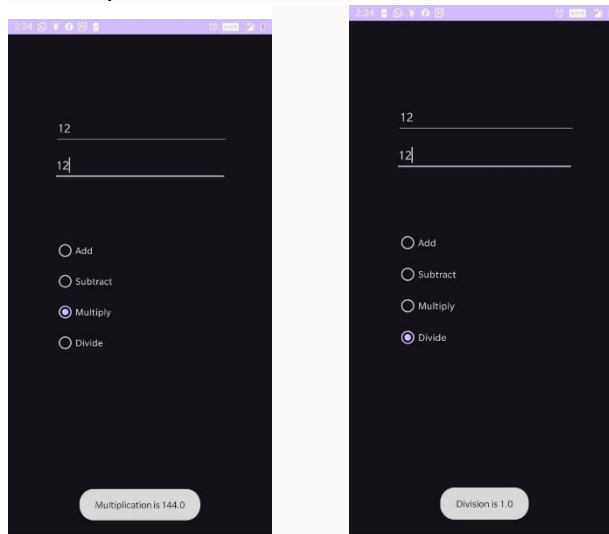
Output Screenshot:
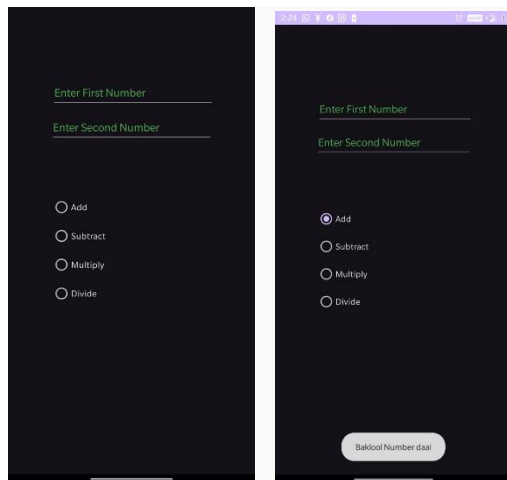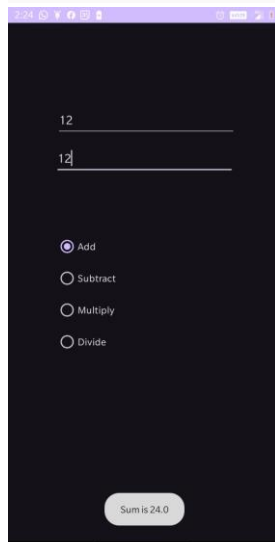
Addition: Subtraction:
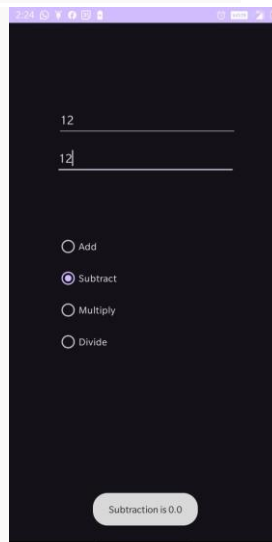
Multiplication: Division:

Practical 4

Write an Android application with two activities namely MainActivity and SecondActivity. The username and password from MainActivity to be passed to SecondActivity and its validated and appropriate message is displayed.

Code:
activity_main.xml

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

    <EditText
        android:id="@+id/editTextTextPassword"
        android:layout_width="273dp"
        android:layout_height="94dp"
        android:layout_marginBottom="72dp"
        android:ems="10"
        android:hint="Password"
        android:inputType="textPassword"
        app:layout_constraintBottom_toTopOf="@+id/button"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

    <EditText
        android:id="@+id/editTextText"
        android:layout_width="264dp"
        android:layout_height="90dp"
        android:layout_marginTop="100dp"
        android:ems="10"
        android:hint="Username"
        android:inputType="text"
        app:layout_constraintBottom_toTopOf="@+id/editTextTextPassword"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.489"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="1.0" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="292dp"
        android:background="@color/design_default_color_secondary"
        android:text="Login"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.mld.eleger;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
EditText usn;
EditText psd;
Button btn;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        usn=findViewById(R.id.editTextText);
        psd=findViewById(R.id.editTextTextPassword);
        btn=findViewById(R.id.button);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent =new
Intent(MainActivity.this,SecondActivity.class);
                String usertext =usn.getText().toString();
                String password =psd.getText().toString();
                Bundle s=new Bundle();
                s.putString("user",usertext);
                s.putString("pass",password);
                intent.putExtras(s);
                startActivity(intent);
            }
        });
    }
}
```

activity_second.xml

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

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
```

```
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.61"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:srcCompat="@drawable/success" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

SecondActivity.java

```java
package com.mld.eleger;

import android.content.Intent;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.ImageView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class SecondActivity extends AppCompatActivity {
    ImageView iv;

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

        iv = findViewById(R.id.imageView2);

        Intent intent = getIntent();
        Bundle extras = intent.getExtras();

        if (extras != null) {
            String user = extras.getString("user", "");
            String password = extras.getString("pass", "");
            if (TextUtils.isEmpty(user) || TextUtils.isEmpty(password)) {
                Toast.makeText(this, "Username or password is blank",
Toast.LENGTH_SHORT).show();
                iv.setVisibility(View.INVISIBLE);
                return;
            }
            if (user.equals(getString(R.string.username)) &&
password.equals(getString(R.string.password))){
                iv.setImageResource(R.drawable.success);
                Toast.makeText(this, "Login Successful",
Toast.LENGTH_SHORT).show();
            } else{
                iv.setImageResource(R.drawable.denial);
                Toast.makeText(this, "Login Denied",
Toast.LENGTH_SHORT).show();
            }
        } else {
            Toast.makeText(this, "Kuch Gadbad hua bro ignore kar",
Toast.LENGTH_SHORT).show();
        }
    }
}
```
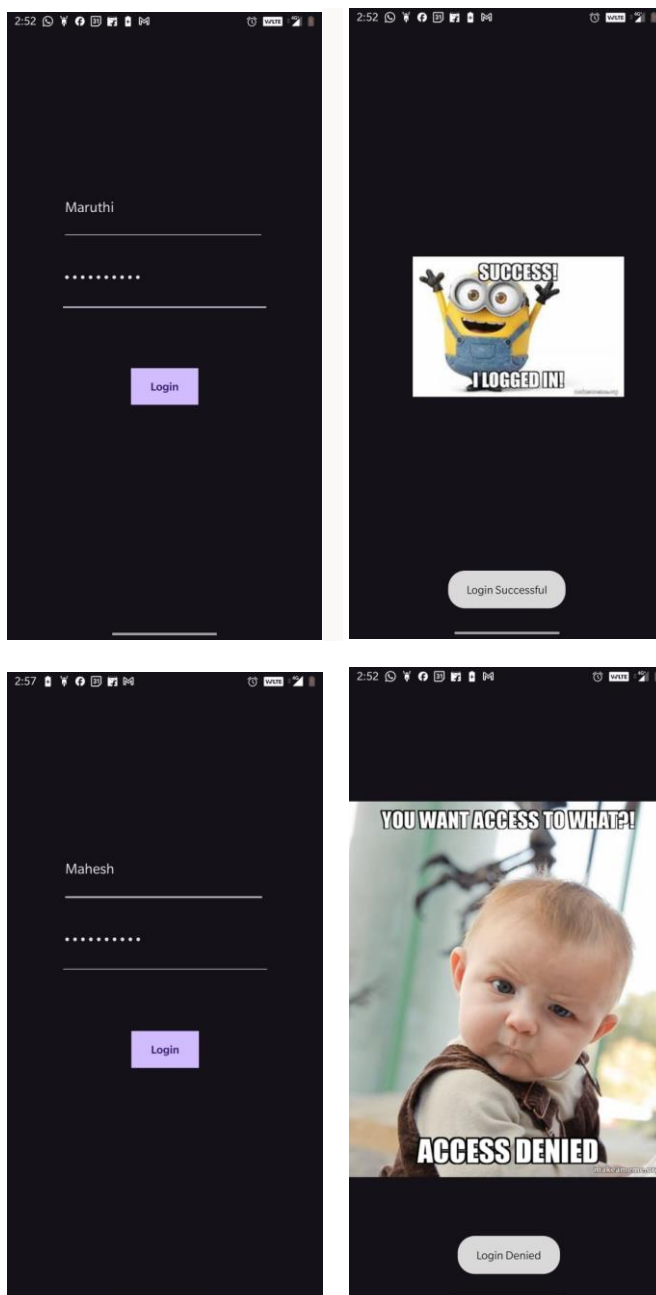
String.xml

```xml
<resources>
    <string name="app_name">Eleger</string>
    <string name="title_activity_second">SecondActivity</string>
    <string name="username">Maruthi</string>
    <string name="password">Suzuki@123</string>


</resources>
```

Output Screenshot:

Practical 5

Write an android application to demonstrate Activity Lifecycle.

Code:
activity_main.xml

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

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

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

MainActivity.java

```java
package com.mld.lifecycle;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toast.makeText(this, "Activity is Created",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onStart() {
        super.onStart();
        Toast.makeText(this, "Activity Started",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onResume() {
        super.onResume();
        Toast.makeText(this, "Activity is Resumed",
```

```
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onPause() {
        super.onPause();
        Toast.makeText(this, "Activity is Paused",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onStop() {
        super.onStop();
        Toast.makeText(this, "Activity is stopped",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onRestart() {
        super.onRestart();
        Toast.makeText(this, "Activity is restarted",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onDestroy() {
        super.onDestroy();
        Toast.makeText(this, "Activity is Destroyed",
Toast.LENGTH_SHORT).show();
    }
}
```
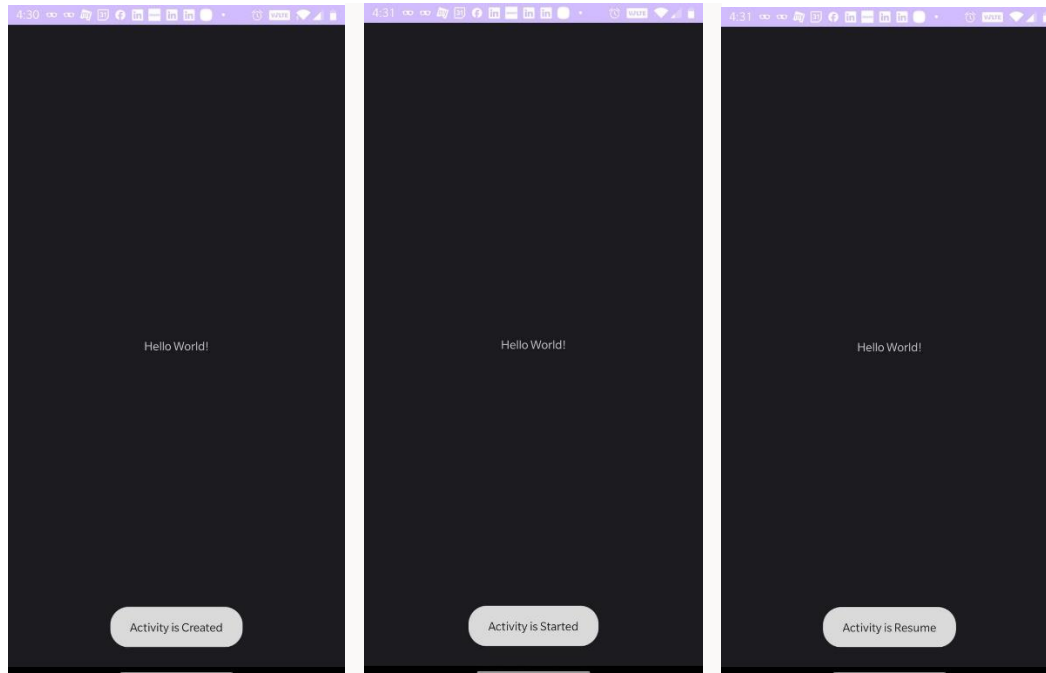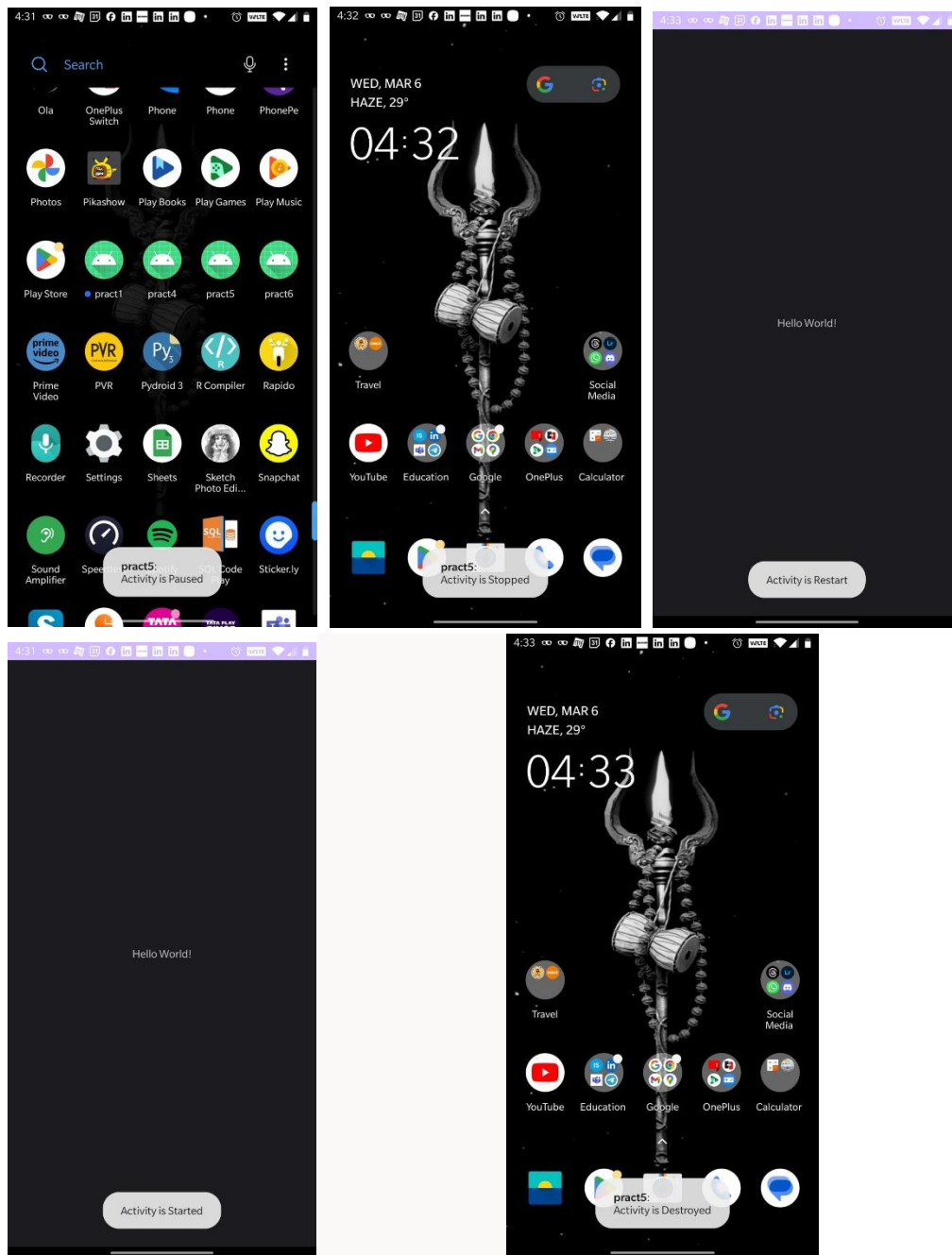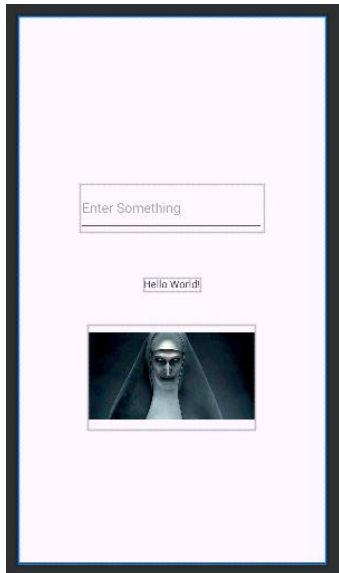
Output Screenshot:

Practical 6

Write an android application to demonstrate the use of Options Menu, Floating Context Menu and Contextual Action Bar Menu.

Code:

activity_main.xml


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

    <TextView
        android:id="@+id/text1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="60dp"
        android:text="Hello World!"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextText" />

    <EditText
        android:id="@+id/editTextText"
        android:layout_width="247dp"
        android:layout_height="64dp"
        android:layout_marginTop="224dp"
        android:ems="10"
        android:hint="Enter Something"
        android:inputType="text"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
```

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

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="224dp"
        android:layout_height="139dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/text1"
        app:layout_constraintVertical_bias="0.198"
        app:srcCompat="@drawable/nun" />

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

optionmenu xml


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

    <item
        android:id="@+id/cartid"
        android:icon="@drawable/ic_cart"
        android:title="Cart"
        app:showAsAction="always" />
    <item
        android:id="@+id/searchid"
        android:icon="@drawable/ic_search"
        android:title="Search"
        app:showAsAction="always" />
    <item
        android:id="@+id/settingid"
        android:title="Setting" />
</menu>
```
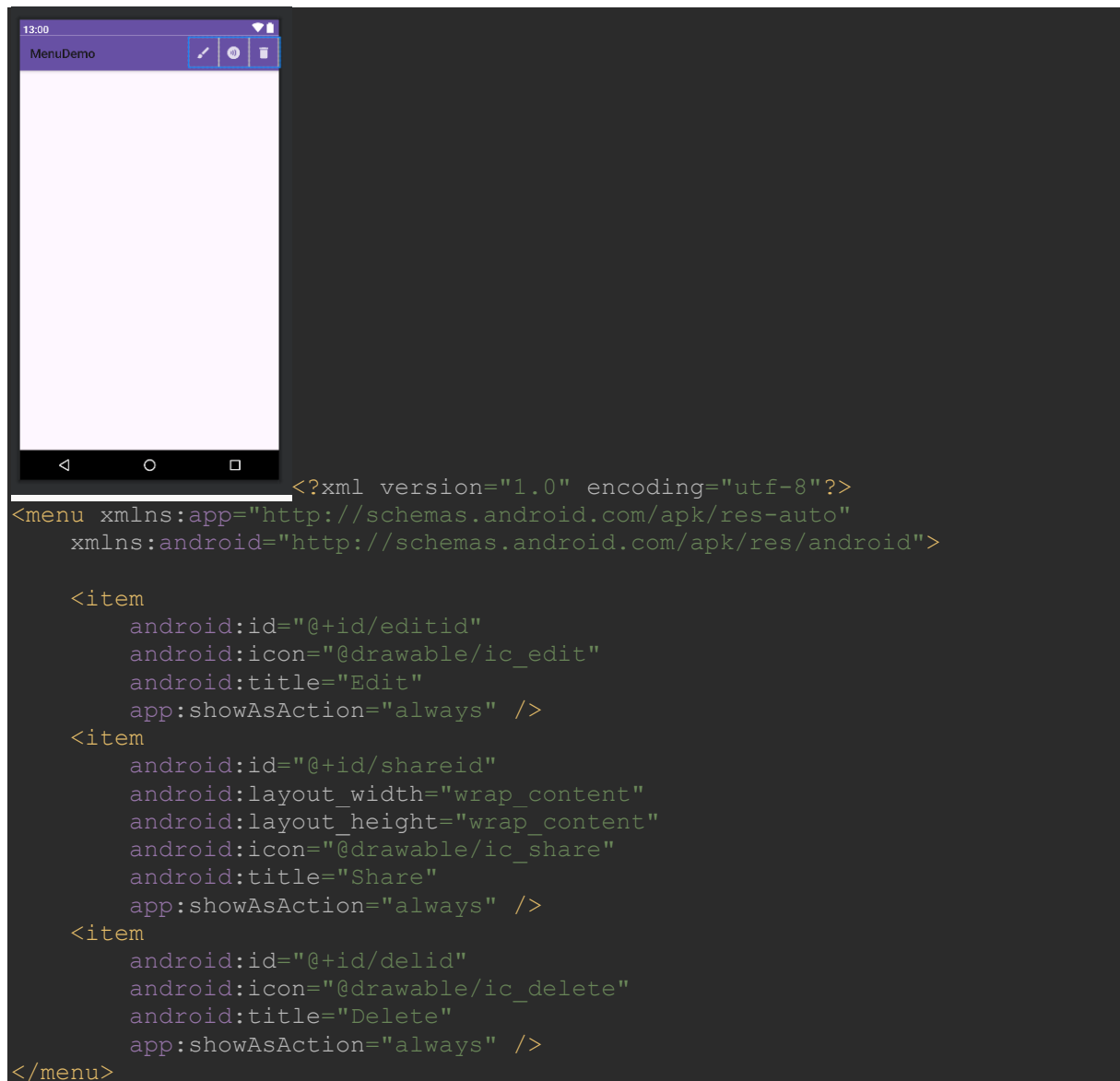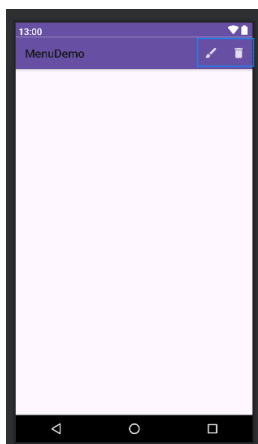
Contextmenu xml

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

    <item
        android:id="@+id/editid"
        android:icon="@drawable/ic_edit"
        android:title="Edit"
        app:showAsAction="always" />
    <item
        android:id="@+id/shareid"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:icon="@drawable/ic_share"
        android:title="Share"
        app:showAsAction="always" />
    <item
        android:id="@+id/delid"
        android:icon="@drawable/ic_delete"
        android:title="Delete"
        app:showAsAction="always" />
</menu>
```

Actionbar menu xml

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

    <item
        android:id="@+id/mi1id"
        android:icon="@drawable/ic_edit"
        android:title="Edit"
        app:showAsAction="always" />
    <item
        android:id="@+id/mi2id"
        android:icon="@drawable/ic_delete"
        android:title="Delete"
        app:showAsAction="always" />
</menu>
```

MainActivity.java

```java
package com.mld.menudemo;

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

import android.annotation.SuppressLint;
import android.os.Bundle;
import android.view.ActionMode;
import android.view.ContextMenu;
import android.view.Menu;
import android.view.MenuItem;
import android.view.View;
import android.widget.EditText;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    TextView t1;
    EditText ed;
    ImageView img;
    private ActionMode actionmode;
    @SuppressLint("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        t1=findViewById(R.id.text1);
        registerForContextMenu(t1);
        img=findViewById(R.id.imageView);
        ed=findViewById(R.id.editTextText);
        ed.setOnLongClickListener(new View.OnLongClickListener() {
            @Override
            public boolean onLongClick(View view) {
                if (actionmode!=null)
                    return false;
                else{

actionmode=MainActivity.this.startActionMode(actionModeCallback);
                    return true;
```

```
                    }
                }
        });
        img.setOnLongClickListener(new View.OnLongClickListener() {
            @Override
            public boolean onLongClick(View view) {
                if (actionmode!=null)
                    return false;
                else{

actionmode=MainActivity.this.startActionMode(actionModeCallback);
                    return true;
                }
            }
        });
    }
    public ActionMode.Callback actionModeCallback=new ActionMode.Callback()
{
        @Override
        public boolean onCreateActionMode(ActionMode actionMode, Menu menu)
{
            getMenuInflater().inflate(R.menu.actionbar,menu);
            return true;
        }

        @Override
        public boolean onPrepareActionMode(ActionMode actionMode, Menu
menu) {
            return false;
        }

        @Override
        public boolean onActionItemClicked(ActionMode actionMode, MenuItem
menuItem) {
            if(menuItem.getItemId()==R.id.mi1id){
                Toast.makeText(MainActivity.this, "edit selected",
Toast.LENGTH_SHORT).show();
                return true;
            }
            else if (menuItem.getItemId()==R.id.mi2id) {
                Toast.makeText(MainActivity.this, "delete selected",
Toast.LENGTH_SHORT).show();
                return true;

            }
            else
                return false;
        }

        @Override
        public void onDestroyActionMode(ActionMode actionMode) {
            actionmode=null;

        }
    };

    @Override
    public void onCreateContextMenu(ContextMenu menu, View v,
ContextMenu.ContextMenuInfo menuInfo) {
        super.onCreateContextMenu(menu, v, menuInfo);
        getMenuInflater().inflate(R.menu.contextmenu,menu);
```

```java
        }

    @Override
    public boolean onContextItemSelected(@NonNull MenuItem item) {
        if(item.getItemId()==R.id.editid){
            Toast.makeText(this, "edit is selected",
Toast.LENGTH_LONG).show();
            return true;
        }
        else if(item.getItemId()==R.id.shareid){
            Toast.makeText(this, "share is selected",
Toast.LENGTH_LONG).show();
            return true;
        }
        else if(item.getItemId()==R.id.delid){
            Toast.makeText(this, "delete is selected",
Toast.LENGTH_LONG).show();
            return true;
        }
        else {
            return super.onContextItemSelected(item);
        }

    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        getMenuInflater().inflate(R.menu.optiionmenu,menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        if(item.getItemId()==R.id.cartid){
            Toast.makeText(this, "cart is selected",
Toast.LENGTH_LONG).show();
            return true;
        }
        else if(item.getItemId()==R.id.searchid){
            Toast.makeText(this, "search is selected",
Toast.LENGTH_LONG).show();
            return true;
        }
        else if(item.getItemId()==R.id.settingid){
            Toast.makeText(this, "setting is selected",
Toast.LENGTH_LONG).show();
            return true;
        }
        else{
            return super.onOptionsItemSelected(item);
        }


    }

}
```

Output Screenshot:
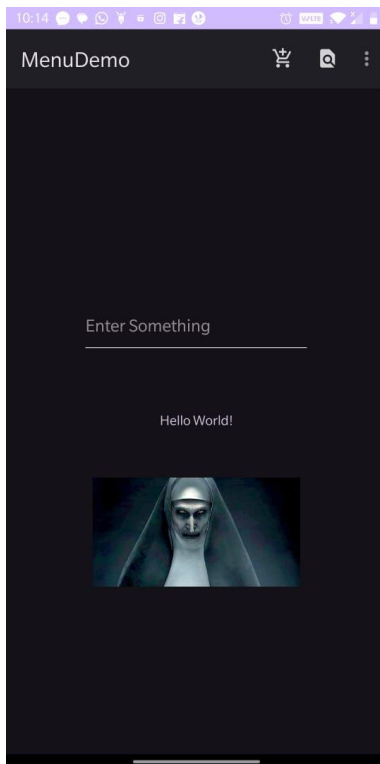
Long press on textview   long press on image & edittext
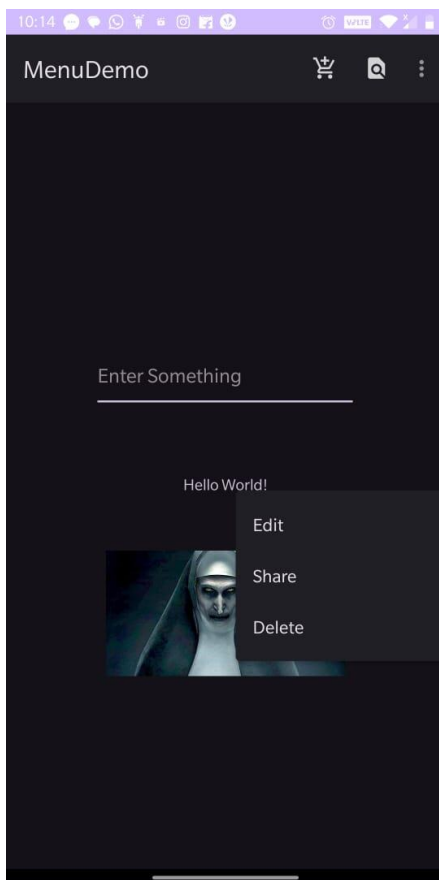
Practical 7

Write an android application to implement implicit intent to show a web url, dialer and capture image with device camera.

`Code:`

`activity_main.xml`

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

    <Button
        android:id="@+id/btn2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="140dp"
        android:text="open dialer"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Choose Wisely"
        app:layout_constraintBottom_toTopOf="@+id/img"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.756" />

    <ImageView
        android:id="@+id/img"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="144dp"
        android:contentDescription="TODO"
        app:layout_constraintBottom_toTopOf="@+id/btn2"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.497"
        app:layout_constraintStart_toStartOf="parent"
        tools:srcCompat="@drawable/img" />

    <Button
        android:id="@+id/btn1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="20dp"
        android:layout_marginTop="76dp"
        android:text="Open Website"
        app:layout_constraintBottom_toBottomOf="parent"
```

```xml
        app:layout_constraintEnd_toStartOf="@+id/btn3"
        app:layout_constraintHorizontal_bias="0.02"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/img"
        app:layout_constraintVertical_bias="0.009" />

    <Button
        android:id="@+id/btn3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="76dp"
        android:layout_marginEnd="20dp"
        android:text="Open  Camera"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/img"
        app:layout_constraintVertical_bias="0.007" />

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

MainActivity.java

```java
package com.mld.pract6;

import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.graphics.Bitmap;
import android.net.Uri;
import android.os.Bundle;
import android.provider.MediaStore;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {
    Button url,dial,cam;
    ImageView image;


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

        url=findViewById(R.id.btn1);
        dial=findViewById(R.id.btn2);
        cam=findViewById(R.id.btn3);

        image=findViewById(R.id.img);

        url.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent1 =new Intent(Intent.ACTION_VIEW,
Uri.parse("https://siesascs.edu.in/"));

                startActivity(intent1);
            }
```

```
        });

        dial.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent2=new
Intent(Intent.ACTION_DIAL,Uri.parse("tel:+911234567899"));
                startActivity(intent2);
            }
        });

        cam.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent3=new Intent(MediaStore.ACTION_IMAGE_CAPTURE);
                startActivityForResult(intent3, 11);
            }
        });


    }

    @Override
    protected void onActivityResult(int requestCode, int resultCode,
@Nullable Intent data) {
        super.onActivityResult(requestCode, resultCode, data);
        Bitmap bmp=(Bitmap) data.getExtras().get("data");
        image.setImageBitmap(bmp);
    }
}
```
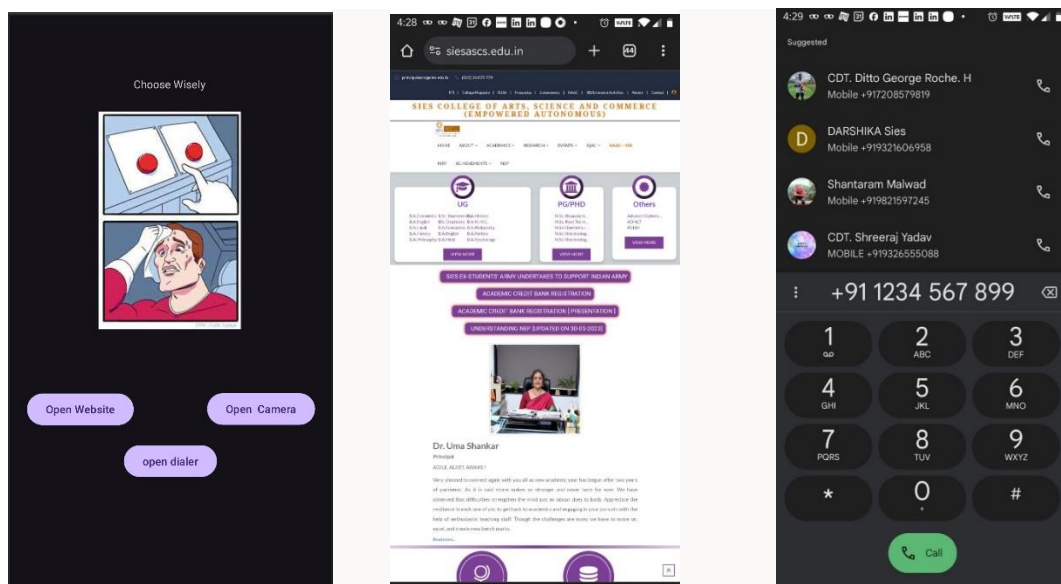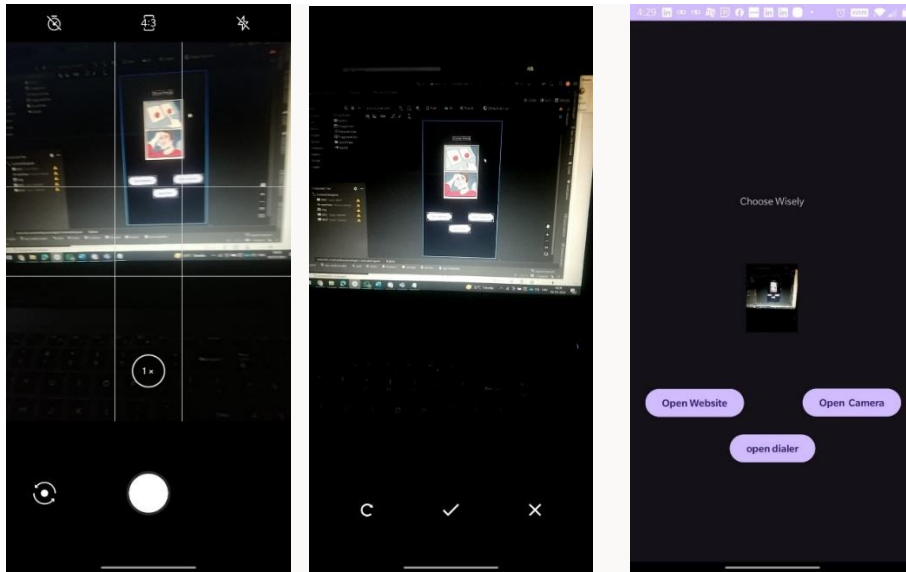
Output Screenshot:

Onclick of open website   On Click of diale

On Click of Camera

Practical 8

Write an Android Application to demonstrate

- **Broadcasting in android.**

`Code:`

`activity_main.xml`

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello User !!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.529" />

    <Button
        android:id="@+id/btnid"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Send Broadcast"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toBottomOf="@+id/textView"
        app:layout_constraintVertical_bias="0.09" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.mld.broadcastdemo;

import androidx.appcompat.app.AppCompatActivity;
import androidx.localbroadcastmanager.content.LocalBroadcastManager;

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

import com.mld.broadcastdemo.MyReceiver;

public class MainActivity extends AppCompatActivity {
    Button btn;
    private static final String
ACTION_CUSTOM_BROADCAST="ACTION_CUSTOM_BROADCAST";
    private MyReceiver myReceiver=new MyReceiver();
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        //Adding IntentFilter
        IntentFilter filter=new IntentFilter();
        filter.addAction(Intent.ACTION_AIRPLANE_MODE_CHANGED);
        filter.addAction(Intent.ACTION_POWER_CONNECTED);
        filter.addAction(Intent.ACTION_POWER_DISCONNECTED);
        filter.addAction(Intent.ACTION_BATTERY_LOW);

        //Registering receivers object and passing the filtered Broadcasts
which application can receive (For System BroadCast)
        this.registerReceiver(myReceiver,filter);

        //Registering for Local broadcast

LocalBroadcastManager.getInstance(this).registerReceiver(myReceiver,new
IntentFilter(ACTION_CUSTOM_BROADCAST));

        //initializing Button
        btn=findViewById(R.id.btnid);
        //Sending BroadCast on Click of Button
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent cusintent=new Intent(ACTION_CUSTOM_BROADCAST);

LocalBroadcastManager.getInstance(MainActivity.this).sendBroadcast(cusinten
t);
            }
        });
    }


}
```

MyReceiver.java

```java
package com.mld.broadcastdemo;

import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.widget.Toast;

public class MyReceiver extends BroadcastReceiver {
    private static final String
ACTION_CUSTOM_BROADCAST="ACTION_CUSTOM_BROADCAST";
    @Override
    public void onReceive(Context context, Intent intent) {
        String intentAction=intent.getAction();
        if(intentAction!=null){
            String msg="Unknown intent";
            switch (intentAction){
                case Intent.ACTION_BATTERY_LOW:
                    msg="Battery is Low";
                    break;
                case Intent.ACTION_POWER_CONNECTED:
                    msg="Power is Connected";
                    break;
                case Intent.ACTION_POWER_DISCONNECTED:
                    msg="Power Is Disconnected";
                    break;
                case ACTION_CUSTOM_BROADCAST:
                    msg="Custom BroadCast Recieved";
                    break;
                case Intent.ACTION_AIRPLANE_MODE_CHANGED:
                    msg="AirPlane Mode Changed";
                    break;
            }
            Toast.makeText(context, msg, Toast.LENGTH_SHORT).show();
        }
    }
}
```

Output Screenshot:

c
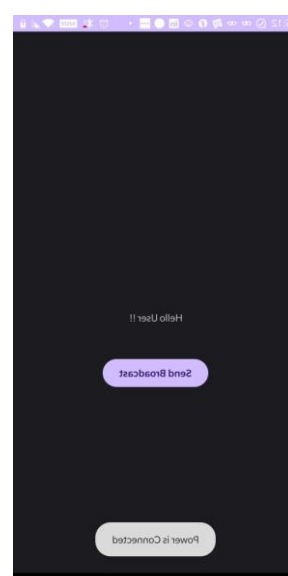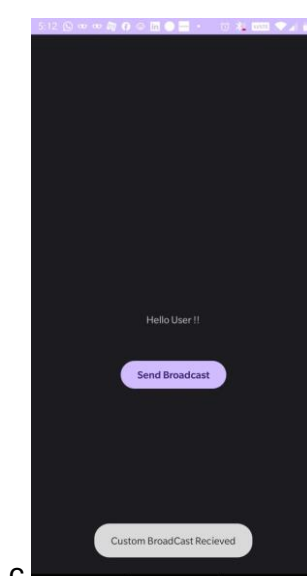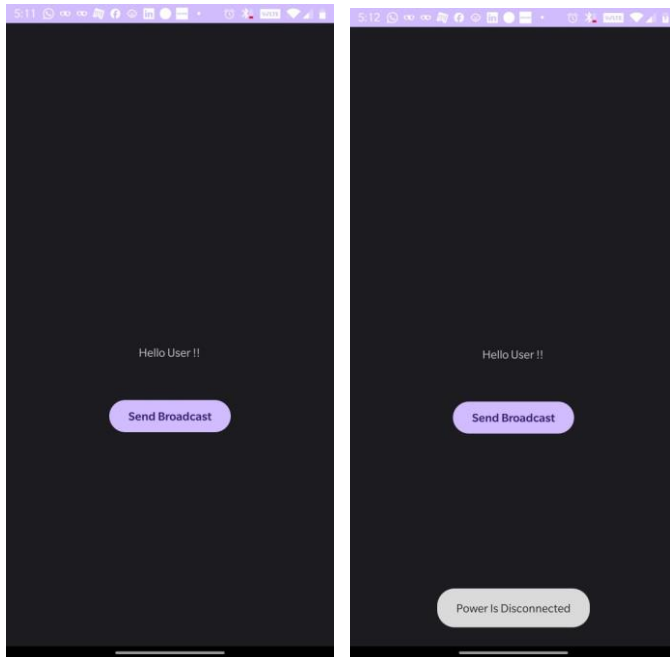
Practical 9

Write an Android Application to demonstrate

- **Notifications in android.**

`Code:`

`activity_main.xml`

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

    <Button
        android:id="@+id/button"
        android:layout_width="141dp"
        android:layout_height="43dp"
        android:layout_marginStart="157dp"
        android:layout_marginTop="317dp"
        android:layout_marginEnd="164dp"
        android:layout_marginBottom="366dp"
        android:text="Notify"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

MainActivity.java

```java
package com.mld.notificationdemo;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.NotificationCompat;

import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.app.PendingIntent;
import android.content.Intent;
import android.media.RingtoneManager;
import android.os.Build;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {
    Button b1;
    NotificationManager nMr;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        nMr=(NotificationManager) getSystemService(NOTIFICATION_SERVICE);
        if(Build.VERSION.SDK_INT>=Build.VERSION_CODES.O){
            NotificationChannel n_channel=new
NotificationChannel("NOTIFYBYCLICK","HaHa",NotificationManager.IMPORTANCE_H
IGH);
            n_channel.enableVibration(true);
            n_channel.enableLights(true);
            n_channel.setDescription("Notification from Notify app");
            nMr.createNotificationChannel(n_channel);
        }
        b1=findViewById(R.id.button);
        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent=new
Intent(MainActivity.this,SecondActivity.class);
                PendingIntent pendent=
PendingIntent.getActivity(MainActivity.this,1,intent,PendingIntent.FLAG_IMM
UTABLE);
                NotificationCompat.Builder nBuilder=new
NotificationCompat.Builder(MainActivity.this,"NOTIFYBYCLICK");
                nBuilder.setContentTitle("Aur ??")
                        .setContentText("Aaa gaya College ?")
                        .setSmallIcon(R.drawable.ic_stat_name)
                        .setContentIntent(pendent)

.setSound(RingtoneManager.getDefaultUri(RingtoneManager.TYPE_NOTIFICATION))
                        .setAutoCancel(true);
                nMr.notify(1,nBuilder.build());


            }
        });
    }
}
```

activity_second.xml

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

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

SecondActivity.java

```java
package com.mld.notificationdemo;

import androidx.appcompat.app.AppCompatActivity;

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

public class SecondActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        Toast.makeText(this,"Haa Notification
gaya",Toast.LENGTH_SHORT).show();
    }

}
```

AndroidManifest.xml

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

    <uses-permission android:name="android.permission.POST_NOTIFICATIONS"
/>
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.NotificationDemo"
        tools:targetApi="31">
        <activity
            android:name=".SecondActivity"
            android:exported="false" />
        <activity
            android:name=".MainActivity"
            android:exported="true">
```

```
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

Output Screenshot: