

MOBILE APPLICATION LAB

COURSE OUTCOME 1

AGNA C ANTONY

20MCA303

PROGRAM -1

AIM: 1. Design a Login Form with username and password using LinearLayout and toast valid credentials

PROGRAM CODE:

XML FILE

```
<?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"

    android:orientation="vertical"

    tools:context=".MainActivity">

    <EditText

        android:id="@+id/name"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:ems="10"

        android:inputType="textPersonName"

        android:text="Name" />

    <EditText

        android:id="@+id/password"
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter Password"
        android:inputType="textPassword" />
```

```
<Button
```

```
    android:id="@+id/login"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:onClick="fn"
    android:text="LOGIN" />
```

```
</LinearLayout>
```

JAVA CODE

```
package com.example.admin.loginform;

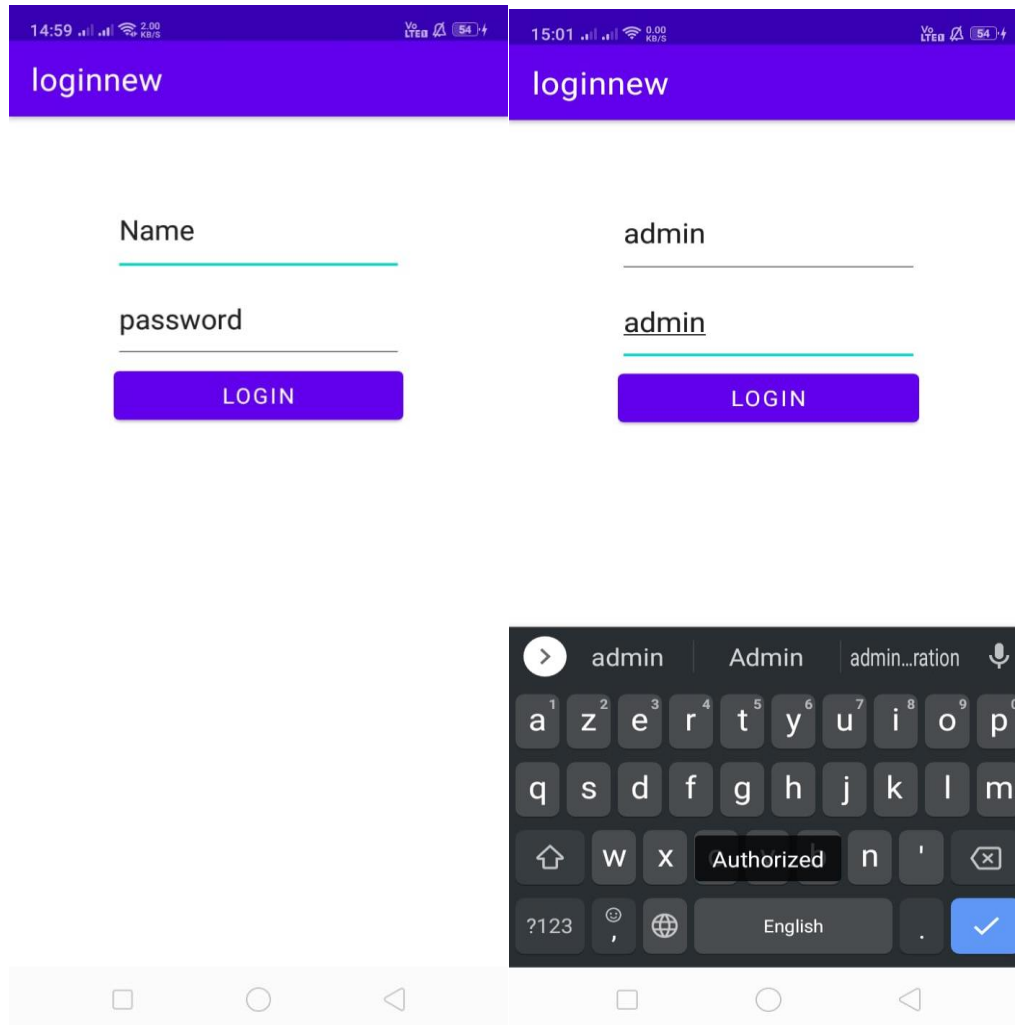
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity
```

```
{  
  
    EditText e1,e2;  
  
    Button b1;  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState)  
    {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
        e1=(EditText) findViewById(R.id.name);  
        e2=(EditText)findViewById(R.id.password);  
        b1=(Button)findViewById(R.id.login);  
    }  
  
    public void fn(View view) {  
        String n = e1.getText().toString();  
        String w = e2.getText().toString();  
        if((n.equals("admin"))&&(w.equals("admin")))  
        {  
            Toast.makeText(this, "Authorized", Toast.LENGTH_SHORT).show();  
        }  
        else{  
            Toast.makeText(this, "Not authorized", Toast.LENGTH_SHORT).show();  
        }  
    }  
}
```

```
}  
  
}
```

OUTPUT:



RESULT:

PROGRAM EXECUTED SUCCESSFULLY AND VERIFIED

PROGRAM:2

AIM: Write a program that demonstrates Activity Lifecycle.

PROGRAM:

XML

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:app="http://schemas.android.com/apk/res-auto"

    xmlns:tools="http://schemas.android.com/tools"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".MainActivity">

    <TextView

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Hello World!"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintLeft_toLeftOf="parent"

        app:layout_constraintRight_toRightOf="parent"

        app:layout_constraintTop_toTopOf="parent" />

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

JAVA CODE

```
package com.example.admin.My application;
```

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

import android.os.Bundle;

import android.util.Log;

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        Log.d("Activity Lifecycle", "onCreate");

    }

    @Override

    protected void onStart()

    {

        super.onStart();

        Log.d("Activity Lifecyle", "Onstart");

    }

    @Override

    protected void onResume()

    {

        super.onResume();

        Log.d("Activity Lifecycle", "Onresume");

    }

    @Override

    protected void onPause()

    {
```

```
super.onPause();

Log.d("Activity Lifecycle","Onpause");

}

@Override

protected void onStop()

{

super.onStop();

Log.d("Activity Lifecycle","Onstop");

}

@Override

protected void onDestroy()

{

super.onDestroy();

Log.d("Activity Lifecycle","Ondestroy");

}

@Override

protected void onRestart()

{

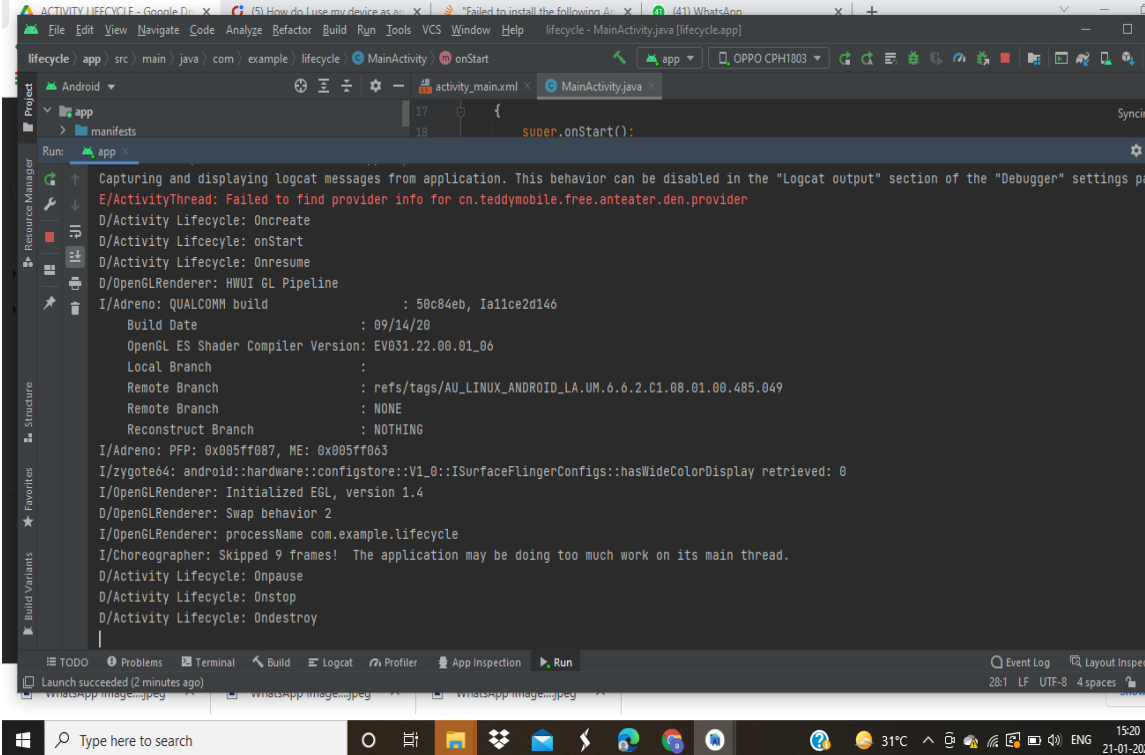
super.onRestart();

Log.d("Activity Lifecycle","Onrestart: invoked");

}

}
```


OUTPUT:



```
Run: app
Capturing and displaying logcat messages from application. This behavior can be disabled in the "Logcat output" section of the "Debugger" settings p
E/ActivityThread: Failed to find provider info for cn.teddymobile.free.anteater.den.provider
D/Activity Lifecycle: Oncreate
D/Activity Lifecycle: onStart
D/Activity Lifecycle: onResume
D/OpenGLRenderer: HWUI GL Pipeline
I/Adreno: QUALCOMM build : 50c84eb, Ia11ce2d146
Build Date : 09/14/20
OpenGL ES Shader Compiler Version: EV031.22.00.01_06
Local Branch :
Remote Branch : refs/tags/AU_LINUX_ANDROID_LA.UM.6.6.2.C1.08.01.00.485.049
Remote Branch : NONE
Reconstruct Branch : NOTHING
I/Adreno: PFP: 0x005ff087, ME: 0x005ff063
I/zygote64: android:hardware::configstore::V1.0::ISurfaceFlingerConfigs::hasWideColorDisplay retrieved: 0
I/OpenGLRenderer: Initialized EGL, version 1.4
D/OpenGLRenderer: Swap behavior 2
I/OpenGLRenderer: processName com.example.lifecycle
I/Choreographer: Skipped 9 frames! The application may be doing too much work on its main thread.
D/Activity Lifecycle: onPause
D/Activity Lifecycle: onStop
D/Activity Lifecycle: onDestroy
```

RESULT:

PROGRAM EXECUTED SUCCESSFULLY AND VERIFIED

PROGRAM:3

AIM: Implementing basic arithmetic operations of a simple calculator

PROGRAM CODE:

XML

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

```
<EditText
    android:id="@+id/number1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="number1"
    android:inputType="textPersonName"
    android:minHeight="48dp"
    android:textColor="#FF5722"
    android:textColorHint="#3F51B5"
    android:textColorLink="#E91E63"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.502"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.173" />
```

```
<EditText
    android:id="@+id/number2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="number2"
    android:inputType="textPersonName"
    android:minHeight="48dp"
    android:textColor="#FF5722"
    android:textColorHint="#3F51B5"
    android:textColorLink="#E91E63"
```

```
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.279" />
```

<Button

```
android:id="@+id/add"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:onClick="add"
android:text="add"
android:textColor="#3F51B5"
app:backgroundTint="#8BC34A"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.383"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.527" />
```

<Button

```
android:id="@+id/sub"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:onClick="subtract"
android:text="sub"
android:textColor="#3F51B5"
app:backgroundTint="#8BC34A"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.792"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.527" />
```

<Button

```
android:id="@+id/mul"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:onClick="multiply"
android:text="mul"
android:textColor="#3F51B5"
app:backgroundTint="#8BC34A"
app:layout_constraintBottom_toBottomOf="parent"
```

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.383"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.636" />
```

<Button

```
android:id="@+id/div"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:onClick="divide"
android:text="div"
android:textColor="#3F51B5"
app:backgroundTint="#8BC34A"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.842"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.636" />
```

<EditText

```
android:id="@+id/output"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:minHeight="48dp"
android:text="Result"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.376" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

JAVA CODE

```
package com.example.calculatornew;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends AppCompatActivity
{
    EditText e1,e2,e3;
    Button b1,b2,b3,b4;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        e1=(EditText)findViewById(R.id.number1);
        e2=(EditText)findViewById(R.id.number2);
        e3=(EditText)findViewById(R.id.output);
        b1=(Button)findViewById(R.id.add);
        b2=(Button)findViewById(R.id.sub);
        b3=(Button)findViewById(R.id.div);
        b4=(Button)findViewById(R.id.mul);

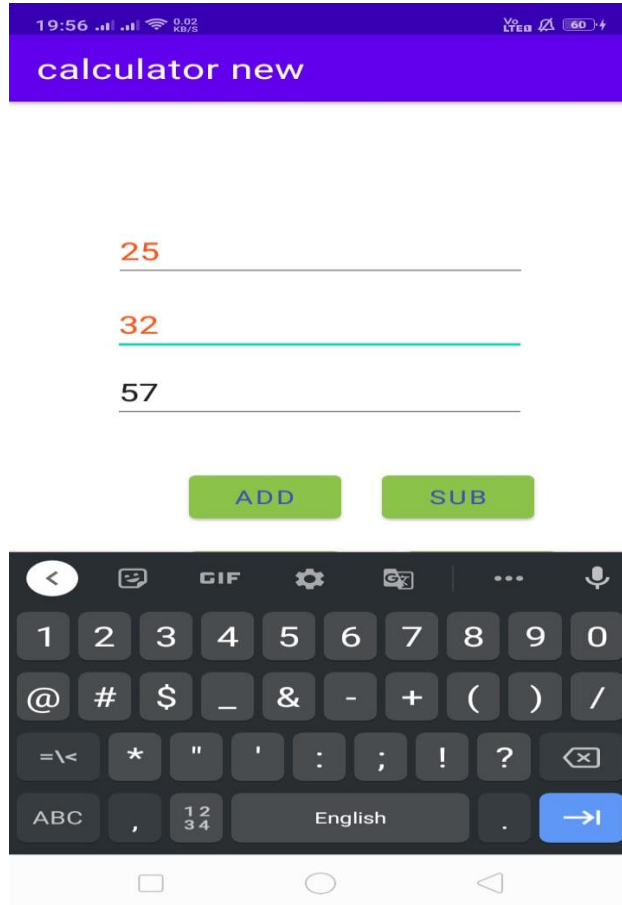
    }
    public void add(View view)
    {
        int n1=Integer.parseInt(e1.getText().toString());
        int n2=Integer.parseInt(e2.getText().toString());
        String n3=String.valueOf(n1+n2);
        e3.setText(n3);

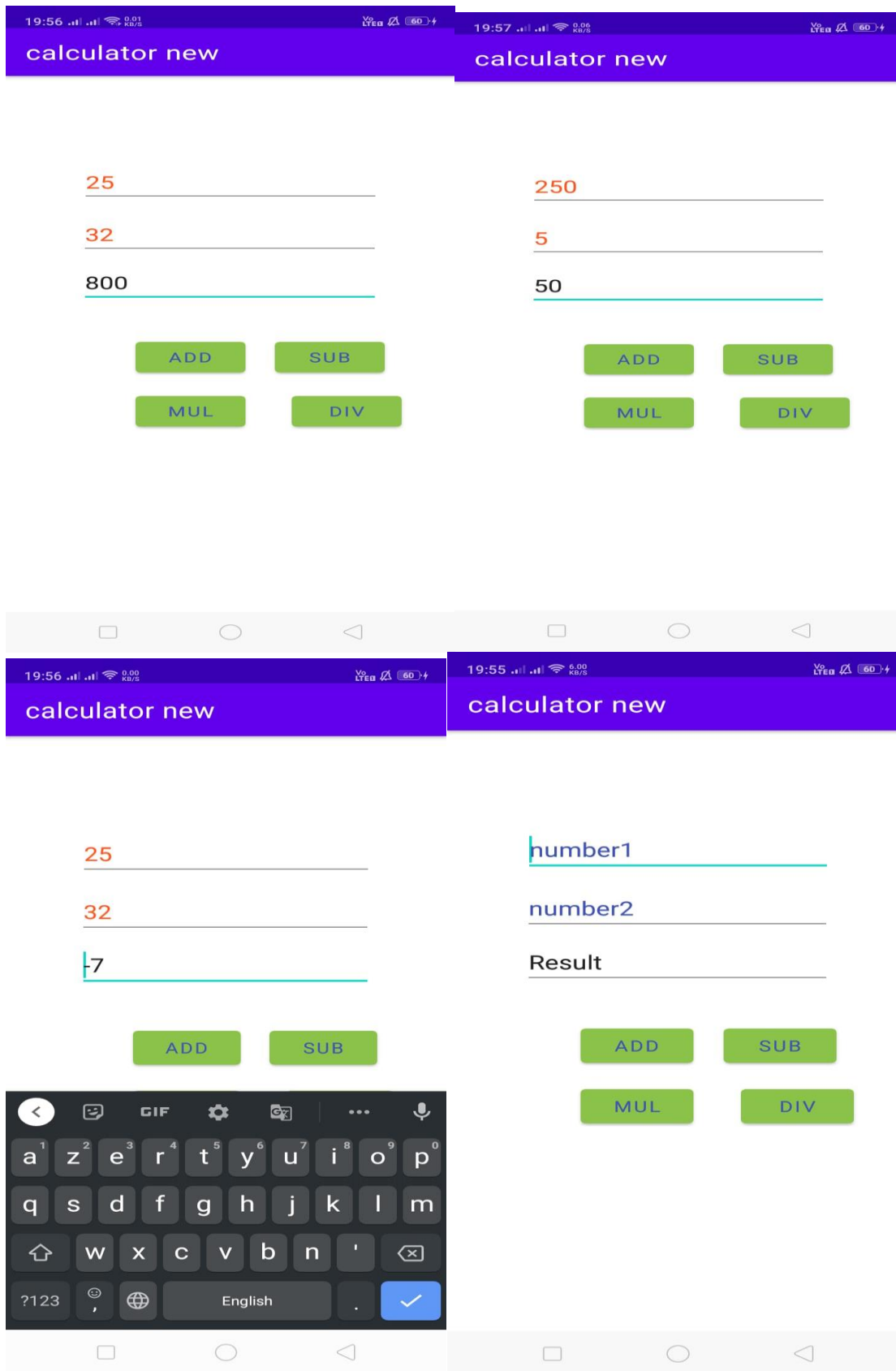
    }

    public void subtract(View view)
    {
        int n1=Integer.parseInt(e1.getText().toString());
        int n2=Integer.parseInt(e2.getText().toString());
        String n3=String.valueOf(n1-n2);
        e3.setText(n3);
    }
    public void divide(View view)
    {
        int n1=Integer.parseInt(e1.getText().toString());
        int n2=Integer.parseInt(e2.getText().toString());
        String n3=String.valueOf(n1/n2);
        e3.setText(n3);
    }
    public void multiply(View view)
    {
        int n1=Integer.parseInt(e1.getText().toString());
```

```
int n2=Integer.parseInt(e2.getText().toString());  
String n3=String.valueOf(n1*n2);  
e3.setText(n3);  
}  
}
```

OUTPUT:





RESULT:PROGRAM EXECUTED SUCCESSFULLY AND VERIFIED

PROGRAM:4

AIM: Implement validations on various UI controls

PROGRAM CODE:

XML

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

<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"

    xmlns:app="http://schemas.android.com/apk/res-auto"

    xmlns:tools="http://schemas.android.com/tools"

    android:layout_width="match_parent"

    android:layout_height="match_parent"

    tools:context=".MainActivity">

    <LinearLayout

        android:layout_width="359dp"

        android:layout_height="700dp"

        android:backgroundTint="#259C91"

        android:orientation="vertical"

        android:textAlignment="center"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintTop_toTopOf="parent">

        <EditText

            android:id="@+id/name"
```



```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Name" />
```

```
<EditText
```

```
    android:id="@+id/address"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:minHeight="48dp"
    android:text="Address" />
```

```
<EditText
```

```
    android:id="@+id/email"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:minHeight="48dp"
    android:text="Email" />
```

```
<EditText
```

```
android:id="@+id/phone"

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:ems="10"

android:inputType="textPersonName"

android:minHeight="48dp"

android:text="phone number" />
```

<EditText

```
android:id="@+id/password"

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:ems="10"

android:inputType="textPersonName"

android:minHeight="48dp"

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

<TextView

```
android:id="@+id/t4"

android:layout_width="133dp"

android:layout_height="41dp"

android:background="#637678"

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

<RadioButton

```
        android:id="@+id/male"

        android:layout_width="127dp"

        android:layout_height="wrap_content"

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

```
<RadioButton
```

```
        android:id="@+id/female"

        android:layout_width="127dp"

        android:layout_height="wrap_content"

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

```
<Button
```

```
        android:id="@+id/validate"

        android:layout_width="match_parent"

        android:layout_height="wrap_content"

        android:backgroundTint="#E91E63"

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

```
</LinearLayout>
```

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

JAVA CODE

```
package com.example.validation1;

import android.os.Bundle;

import android.provider.MediaStore;
```

```
import android.view.View;

import android.view.View.OnClickListener;

import android.widget.Button;

import android.widget.EditText;

import android.widget.RadioButton;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity {

    EditText e1,e2,e3,e4,e5;

    Button b3;

    RadioButton b1,b2;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        e1=(EditText)findViewById(R.id.name);

        e2=(EditText)findViewById(R.id.address);

        e3=(EditText)findViewById(R.id.email);

        e4=(EditText)findViewById(R.id.password);

        e5=(EditText)findViewById(R.id.phone);

        b3=(Button)findViewById(R.id.validate);

        b1=(RadioButton)findViewById(R.id.male);

        b2=(RadioButton)findViewById(R.id.female);
```

```
b3.setOnClickListener(new View.OnClickListener(){

    @Override

    public void onClick(View v)

    {

        validate();

    }

});

}

public void validate() {

    String name = e1.getText().toString();

    String email = e3.getText().toString().trim();

    String address = e2.getText().toString();

    String password = e5.getText().toString();

    String namePattern = "[0-9!@#$%^&*]";

    String emailPattern = "[a-zA-Z0-9._-]+@[a-z]+\\.[a-z]+";

    String phone = e4.getText().toString();

    int valid = 1;

    if (name.length() == 0) {

        e1.getText().clear();

        e1.requestFocus();

        e1.setError("No valid name written");
```

```
        Toast.makeText(getApplicationContext(), "Enter valid name",
Toast.LENGTH_SHORT).show();

        valid++;

    }

    if (name.matches(namePattern)) {

        e1.getText().clear();

        e1.requestFocus();

        e1.setError("Name contains illegal characters");

        Toast.makeText(getApplicationContext(), "Enter valid name",
Toast.LENGTH_SHORT).show();

        valid++;

    }

    if (address.length() == 0) {

        e2.getText().clear();

        e2.requestFocus();

        e2.setError("No valid address written");

        Toast.makeText(getApplicationContext(), "Enter valid address",
Toast.LENGTH_SHORT).show();

        valid++;

    }

    if (email.length() == 0) {

        e3.getText().clear();

        e3.requestFocus();

        e3.setError("No valid email written");

        Toast.makeText(getApplicationContext(), "Enter valid email",
Toast.LENGTH_SHORT).show();

        valid++;

    }

}
```

```
    }

    if (!email.matches(emailPattern)) {

        e3.getText().clear();

        e3.requestFocus();

        e3.setError("Invalid email pattern");

        Toast.makeText(getApplicationContext(), "Enter valid email ",
Toast.LENGTH_SHORT).show();

        valid++;

    }

    if (password.length() == 0) {

        e4.requestFocus();

        e4.setError("Enter valid password");

        valid++;

    }

    if (password.length() < 5) {

        e4.requestFocus();

        e4.setError("Enter an 8 digit password");

        valid++;

    }

    if (!password.equals("admin")) {

        Toast.makeText(getApplicationContext(), "Incorrect password",
Toast.LENGTH_SHORT).show();

    }

}
```

```
        if (b1.isChecked()) {

            Toast.makeText(getApplicationContext(), "Welcome Mr." + name,
Toast.LENGTH_SHORT).show();

        }

        if (b2.isChecked()) {

            Toast.makeText(getApplicationContext(), "Welcome Ms." + name,
Toast.LENGTH_SHORT).show();

        }

    }

    if (phone.length() == 0) {

        e5.requestFocus();

        e5.setError("Enter valid password");

        valid++;

    }

    if(valid==1)

    {

        Toast.makeText(getApplicationContext(), "VALIDATED",
Toast.LENGTH_SHORT).show();

    }

}

}
```


OUTPUT:

The image displays two screenshots of a mobile application interface for user validation. The top screenshot shows the initial state where the phone number '80788759' is entered, which is less than 10 digits, resulting in a red error message: 'Phone number should be of atleast 10 digits'. The bottom screenshot shows the form after successful validation, with the 'VALIDATE' button highlighted in red and a confirmation message 'We VALIDATED gna' displayed.

Form Fields and Values:

- Name: Agna
- Address: Thrissur, Kerala
- Email: agnacantony123@gmail.com
- phone number: 8078875924
- Password: admin
- Gender: Female

Validation Message: Phone number should be of atleast 10 digits

Confirmation Message: We VALIDATED gna

RESULT:

PROGRAM EXECUTED SUCCESSFULLY AND VERIFIED

