

MOBILE APPLICATION
LAB RECORD

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COURSE OUTCOME 1

PROGRAM -1

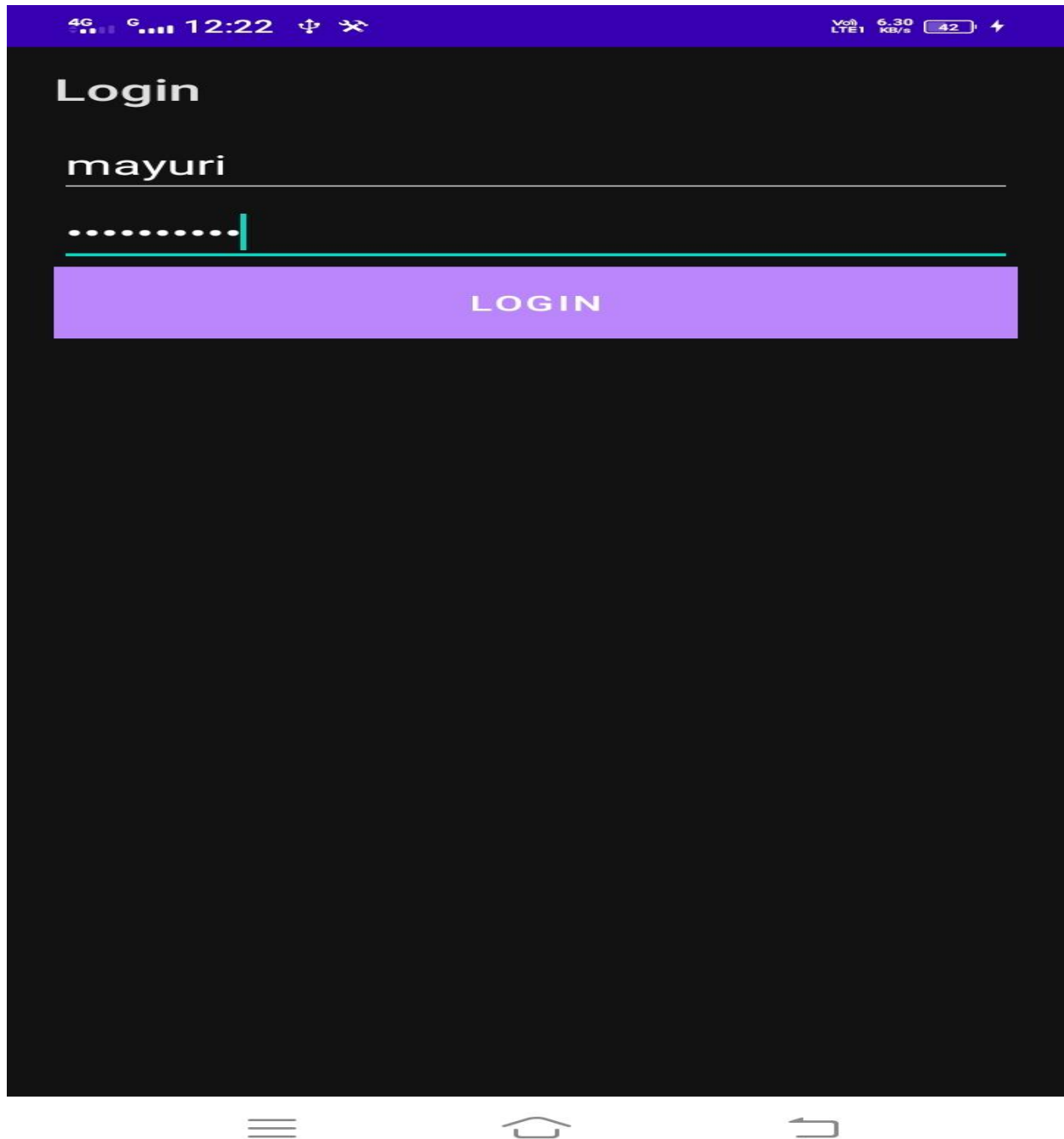
AIM: 1. Design a Login Form with username and password using LinearLayout and toast valid credentials

PROGRAM CODE:

<u>Mainactivity.xml</u>	<pre><?xml version="1.0" encoding="utf-8"?> <android.widget.LinearLayout 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.login.MainActivity"> <LinearLayout android:layout_width="match_parent" android:layout_height="wrap_content" android:orientation="vertical" android:layout_marginLeft="16dp" android:layout_marginRight="16dp" android:layout_centerInParent="true"> <EditText android:layout_width="match_parent" android:layout_height="wrap_content" android:hint="UserName" android:id="@+id/username"/> <EditText android:layout_width="match_parent" android:layout_height="wrap_content" android:hint="password" android:id="@+id/password" android:inputType="textPassword" /> <Button android:layout_width="match_parent" android:layout_height="wrap_content" android:text="Login" android:background="#3f76ff" android:textColor="#fff" android:id="@+id/login"/></pre>
--------------------------------	--

	<pre> </LinearLayout> </android.widget.LinearLayout> </pre>
<u>Mainactivity.java</u>	<pre> package com.example.login; import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle; import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.Toast; import java.util.Objects; public class MainActivity extends AppCompatActivity { EditText username,password; Button login; @Override protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity_main); username=findViewById(R.id.username); password=findViewById(R.id.password); login=findViewById(R.id.login); login.setOnClickListener(new View.OnClickListener() { public void onClick(View view) { if(Objects.equals(username.getText().toString(), "admin")&&Objects.equals(password.getText().toString(),"admin")) { Toast.makeText(MainActivity.this,"You have Authenticated Successfully",Toast.LENGTH_LONG).show(); }else { Toast.makeText(MainActivity.this,"Authentication Failed",Toast.LENGTH_LONG).show(); } } }); } } </pre>

OUTPUT:



RESULT:Program is executed successfully and output is obtained

PROGRAM -2

AIM: Write a program that demonstrates Activity Lifecycle.

PROGRAM CODE:

<u>XML</u>	<pre><?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="104dp" android:layout_height="45dp" android:text="TextView" 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="0.236" /> <EditText android:id="@+id/editText" android:layout_width="wrap_content" android:layout_height="wrap_content" android:ems="10" android:inputType="textEmailAddress" app:layout_constraintBottom_toBottomOf="parent" app:layout_constraintEnd_toEndOf="parent" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent" /> </androidx.constraintlayout.widget.ConstraintLayout></pre>
<u>JAVA</u>	<pre>package com.example.activitylifecycle; import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle; import android.os.Bundle; import android.util.Log; public class MainActivity extends AppCompatActivity {</pre>

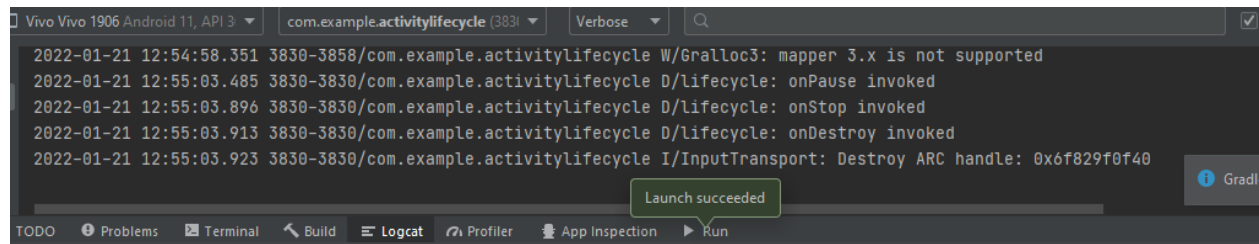
```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    Log.d("lifecycle", "onCreate invoked");
}
@Override

protected void onStart(){
    super.onStart();
    Log.d("lifecycle", "onStart invoked");

} @Override
protected void onResume(){
    super.onResume();
    Log.d("lifecycle", "onResume invoked");
}

protected void onPause() {
    super.onPause();
    Log.d("lifecycle", "onPause invoked");
}
@Override
protected void onStop() {
    super.onStop();
    Log.d("lifecycle", "onStop invoked");
}
@Override
protected void onRestart() {
    super.onRestart();
    Log.d("lifecycle", "onRestart invoked");
}
@Override
protected void onDestroy() {
    super.onDestroy();
    Log.d("lifecycle", "onDestroy invoked");
}
}
```

OUTPUT:



```
2022-01-21 12:54:58.351 3830-3858/com.example.activitylifecycle W/Gralloc3: mapper 3.x is not supported
2022-01-21 12:55:03.485 3830-3830/com.example.activitylifecycle D/lifecycle: onPause invoked
2022-01-21 12:55:03.896 3830-3830/com.example.activitylifecycle D/lifecycle: onStop invoked
2022-01-21 12:55:03.913 3830-3830/com.example.activitylifecycle D/lifecycle: onDestroy invoked
2022-01-21 12:55:03.923 3830-3830/com.example.activitylifecycle I/InputTransport: Destroy ARC handle: 0x6f829f0f40
```

Launch succeeded

Gradi

TODO Problems Terminal Build Logcat Profiler App Inspection Run

RESULT:Program is executed successfully and output is obtained

PROGRAM -3

AIM: Implementing basic arithmetic operations of a simple calculator

PROGRAM CODE:

XML	<pre><?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/fn" android:layout_width="wrap_content" android:layout_height="wrap_content" android:layout_marginStart="99dp" android:layout_marginTop="68dp" android:layout_marginEnd="102dp" android:layout_marginBottom="32dp" android:ems="10" android:hint="First number" android:inputType="textPersonName" app:layout_constraintBottom_toTopOf="@+id/sn" app:layout_constraintEnd_toEndOf="parent" app:layout_constraintHorizontal_bias="1.0" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toTopOf="parent" app:layout_constraintVertical_bias="0.0" /> <Button android:id="@+id/mul" android:layout_width="wrap_content" android:layout_height="wrap_content" android:layout_marginStart="36dp" android:layout_marginTop="44dp" android:onClick="mul" android:text="*" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toBottomOf="@+id/add" /> <Button</pre>
------------	---


```
android:id="@+id/div"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="130dp"
android:layout_marginTop="48dp"
android:layout_marginEnd="62dp"
android:onClick="div"
android:text="/"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.285"
app:layout_constraintStart_toEndOf="@+id/mul"
app:layout_constraintTop_toBottomOf="@+id/sub" />
```

<Button

```
android:id="@+id/sub"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="129dp"
android:layout_marginTop="106dp"
android:layout_marginEnd="65dp"
android:onClick="sub"
android:text="-"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toEndOf="@+id/add"
app:layout_constraintTop_toBottomOf="@+id/res" />
```

<Button

```
android:id="@+id/add"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="36dp"
android:layout_marginTop="108dp"
android:onClick="sum"
android:text="+"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/res" />
```

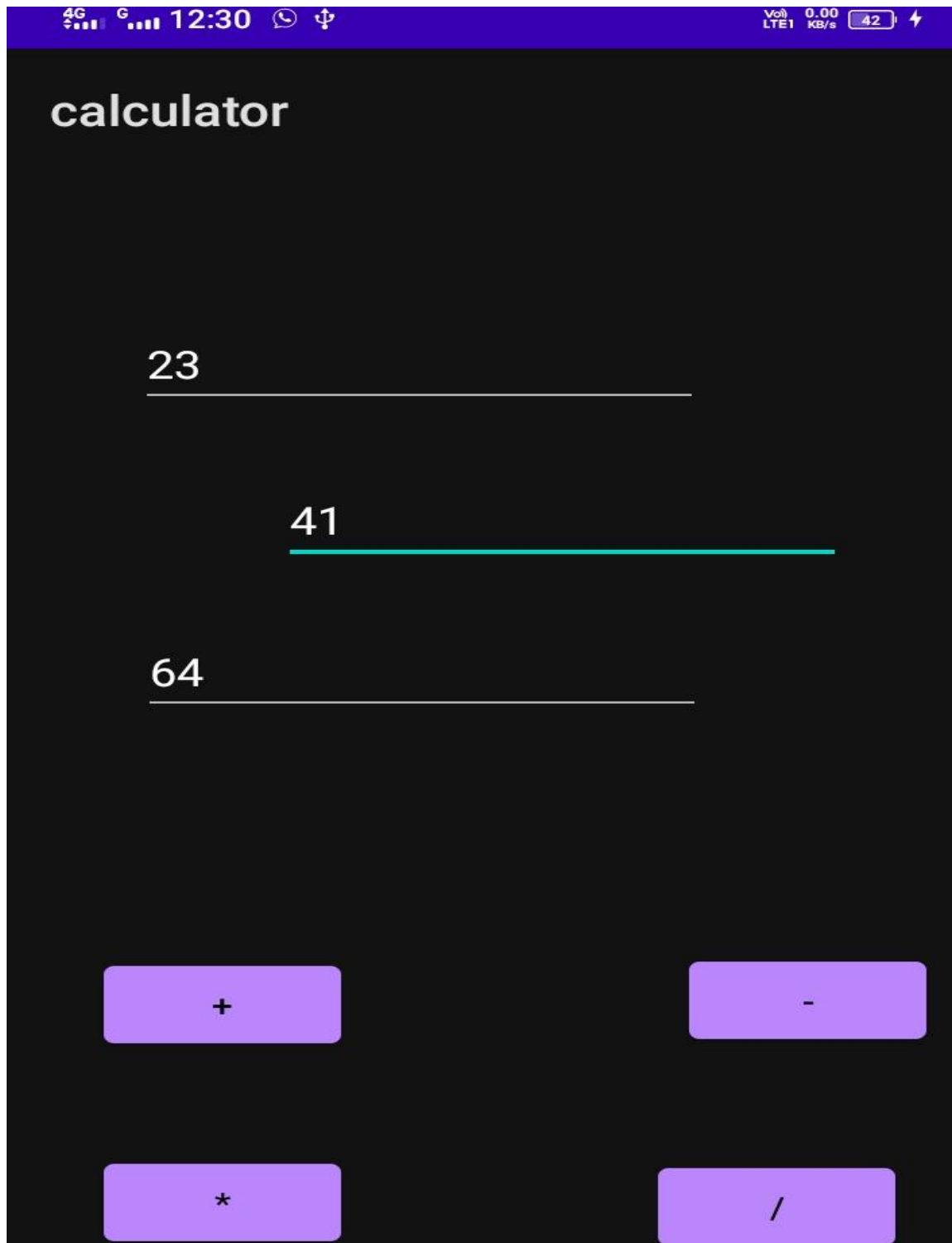
<EditText

```
android:id="@+id/sn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="101dp"
android:layout_marginTop="27dp"
android:layout_marginEnd="100dp"
android:ems="10"
android:hint="Second number"
android:inputType="textPersonName"
```

	<pre> app:layout_constraintEnd_toEndOf="parent" app:layout_constraintHorizontal_bias="0.0" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toBottomOf="@+id/fn" /> <EditText android:id="@+id/res" android:layout_width="wrap_content" android:layout_height="wrap_content" android:layout_marginStart="100dp" android:layout_marginTop="25dp" android:layout_marginEnd="101dp" android:ems="10" android:hint="Result" android:inputType="textPersonName" app:layout_constraintEnd_toEndOf="parent" app:layout_constraintHorizontal_bias="1.0" app:layout_constraintStart_toStartOf="parent" app:layout_constraintTop_toBottomOf="@+id/sn" /> </androidx.constraintlayout.widget.ConstraintLayout> </pre>
JAVA	<pre> package com.example.calculator; import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle; import android.view.View; import android.widget.EditText; public class MainActivity extends AppCompatActivity { EditText num1,num2,result; int n1,n2; String s1,s2,s3; @Override protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity_main); } public void getNum() { num1 = (EditText) findViewById(R.id.fn); num2 = (EditText) findViewById(R.id.sn); result = (EditText) findViewById(R.id.res); s1 = num1.getText().toString(); s2 = num2.getText().toString(); } public void sum(View v) </pre>

```
{
    getNum();
    n1 = Integer.parseInt(s1);
    n2 = Integer.parseInt(s2);
    s3 = String.valueOf(n1+n2);
    result.setText(s3);
}
public void sub(View v)
{
    getNum();
    n1 = Integer.parseInt(s1);
    n2 = Integer.parseInt(s2);
    s3 = String.valueOf(n1-n2);
    result.setText(s3);
}
public void mul(View v)
{
    getNum();
    n1 = Integer.parseInt(s1);
    n2 = Integer.parseInt(s2);
    s3 = String.valueOf(n1*n2);
    result.setText(s3);
}
public void div(View v)
{
    getNum();
    n1 = Integer.parseInt(s1);
    n2 = Integer.parseInt(s2);
    s3 = String.valueOf(n1/n2);
    result.setText(s3);
}
};
```

OUTPUT:



RESULT:Program is executed successfully and output is obtained

PROGRAM -4

AIM: Implement validations on various UI controls

PROGRAM CODE:

xml	<pre><?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:background="#FFFFFF" android:orientation="vertical" tools:context=".MainActivity"> <EditText android:id="@+id/name" android:layout_width="match_parent" android:layout_height="wrap_content" android:backgroundTint="#00BCD4" android:ems="10" android:hint="Name" android:inputType="textPersonName" /> <EditText android:id="@+id/address" android:layout_width="match_parent" android:layout_height="wrap_content" android:backgroundTint="#00BCD4" android:ems="10" android:hint="Address" android:inputType="textPersonName" android:minHeight="48dp" /> <EditText android:id="@+id/email" android:layout_width="match_parent" android:layout_height="wrap_content" android:backgroundTint="#00BCD4" android:ems="10" android:hint="Email"</pre>
-----	--

```
android:inputType="textEmailAddress" />
```

```
<EditText  
    android:id="@+id/password"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:backgroundTint="#00BCD4"  
    android:ems="10"  
    android:hint="Password"  
    android:inputType="textPassword" />
```

```
<EditText  
    android:id="@+id/phno"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:backgroundTint="#00BCD4"  
    android:ems="10"  
    android:hint="Phone"  
    android:inputType="phone" />
```

```
<TextView  
    android:id="@+id/textView"  
    android:layout_width="match_parent"  
    android:layout_height="35dp"  
    android:backgroundTint="#00BCD4"  
    android:text="Gender"
```

```
    android:textAppearance="@style/TextAppearance.AppCompat.Body2"  
    android:textSize="16sp" />
```

```
<RadioGroup  
    android:id="@+id/gender"  
    android:layout_width="match_parent"  
    android:layout_height="99dp">
```

```
<RadioButton  
    android:id="@+id/male"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:backgroundTint="#00BCD4"  
    android:text="Male" />
```

```
<RadioButton  
    android:id="@+id/female"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"
```

	<pre> android:backgroundTint="#00BCD4" android:text="Female" /> <Button android:id="@+id/validate" android:layout_width="match_parent" android:layout_height="wrap_content" android:text="SUBMIT" /> </RadioGroup> <Button android:id="@+id/validate1" android:layout_width="match_parent" android:layout_height="wrap_content" android:backgroundTint="#009688" android:text="SUBMIT" android:textSize="20sp" /> </LinearLayout> </pre>
java	<pre> package com.example.reg_validation; import androidx.appcompat.app.AppCompatActivity; import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.EditText; import android.widget.RadioButton; import android.widget.RadioGroup; import android.widget.Toast; public class MainActivity extends AppCompatActivity { EditText e1,e2,e3,e4,e5; Button b1; RadioButton r1,r2; RadioGroup r; @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.phno); } } </pre>

```

b1=(Button)findViewById(R.id.validate1);
r=(RadioGroup)findViewById(R.id.gender);
r1=(RadioButton)findViewById(R.id.male);
r2=(RadioButton)findViewById(R.id.female);
b1.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=e4.getText().toString();
    String namePattern="[0-9!@#$$%^&*]";
    String emailPattern="[a-zA-Z0-9._-]+@[a-z]+\.[a-z]+";
    String pno=e5.getText().toString();
    int valid=1;

    if(name.length()==0)
    {
        e1.getText().clear();
        e1.requestFocus();
        e1.setError("Enter name ");
        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("Enter address");
        Toast.makeText(getApplicationContext(), "Enter valid address",
Toast.LENGTH_SHORT).show();
        valid++;
    }
    if(email.length()==0)
    {
        e3.getText().clear();
        e3.requestFocus();
        e3.setError("Enter email address");
        Toast.makeText(getApplicationContext(), "Enter valid email",
Toast.LENGTH_SHORT).show();
        valid++;
    }
    if(!email.matches(emailPattern))
    {
        e3.getText().clear();
        e3.requestFocus();
        e3.setError("Invalid email address");
        Toast.makeText(getApplicationContext(), "Enter valid email ",
Toast.LENGTH_SHORT).show();
        valid++;
    }
    if(password.length()==0)
    {
        e4.requestFocus();
        e4.setError("Enter password");
        valid++;
    }
    if(password.length()<5)
    {
        e4.requestFocus();
        e4.setError("Enter an 8 digit password");
        valid++;
    }
    if(!password.equals("Ananya123"))
    {
        Toast.makeText(getApplicationContext(), "Incorrect password",
Toast.LENGTH_SHORT).show();
    }
    if (r.getCheckedRadioButtonId() == -1)
    {
        Toast.makeText(getApplicationContext(), "Please select any
gender", Toast.LENGTH_SHORT).show();
    }

```

```
        valid++;
    }
    else
    {
        if(r1.isChecked())
        {
            Toast.makeText(getApplicationContext(), "Welcome
Mr."+name, Toast.LENGTH_SHORT).show();
        }
        if(r2.isChecked())
        {
            Toast.makeText(getApplicationContext(), "Welcome
Ms."+name, Toast.LENGTH_SHORT).show();
        }
    }
    if(pno.length()<10)
    {
        e5.setError("Phone number should be of atleast 10 digits");
        valid++;
    }
    if(valid==1)
    {
        Toast.makeText(getApplicationContext(), "VALIDATION
SUCESSFULL", Toast.LENGTH_SHORT).show();
    }
}
}
```

OUTPUT:


4G 4G 10:29 0.10 KB/s 54%

reg-validation

MAYURI M

Saraswathi vilasam

mayurim1999@gmail.com

Password 

Phone

Enter an 8 digit password

Gender

☐ Male

☒ Female

SUBMIT

RESULT:Program is executed successfully and output is obtained