CO1 PROGRAM

Program No:1

Aim: Design a Login Form with username and password using

LinearLayout and toast valid credentials.

Program

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">

    <LinearLayout
        android:layout_width="401dp"
        android:layout_height="220dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        tools:ignore="MissingConstraints">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="76dp"
            android:orientation="horizontal">

            <TextView
                android:id="@+id/textView"
                android:layout_width="119dp"
                android:layout_height="61dp"
                android:layout_weight="1"
                android:text="Username"
                android:textSize="24sp" />

            <EditText
                android:id="@+id/usr"
                android:layout_width="243dp"
                android:layout_height="74dp"
                android:layout_weight="1"
                android:ems="10"
                android:hint="abcd@gmail.com"
                android:inputType="textPersonName" />
```

```xml
        </LinearLayout>

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="76dp"
            android:orientation="horizontal">

            <TextView
                android:id="@+id/textView3"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="Password"
                android:textSize="24sp" />

            <EditText
                android:id="@+id/pss"
                android:layout_width="wrap_content"
                android:layout_height="match_parent"
                android:layout_weight="1"
                android:ems="10"
                android:hint="************"
                android:inputType="textPassword" />

        </LinearLayout>

        <Button
            android:id="@+id/lg"
            android:layout_width="198dp"
            android:layout_height="58dp"
            android:layout_gravity="center"
            android:foregroundGravity="center"
            android:gravity="center"
            android:onClick="check"
            android:text="Login" />

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

JAVA:

```java
package com.example.login;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
    EditText user,pass;
    @Override
```
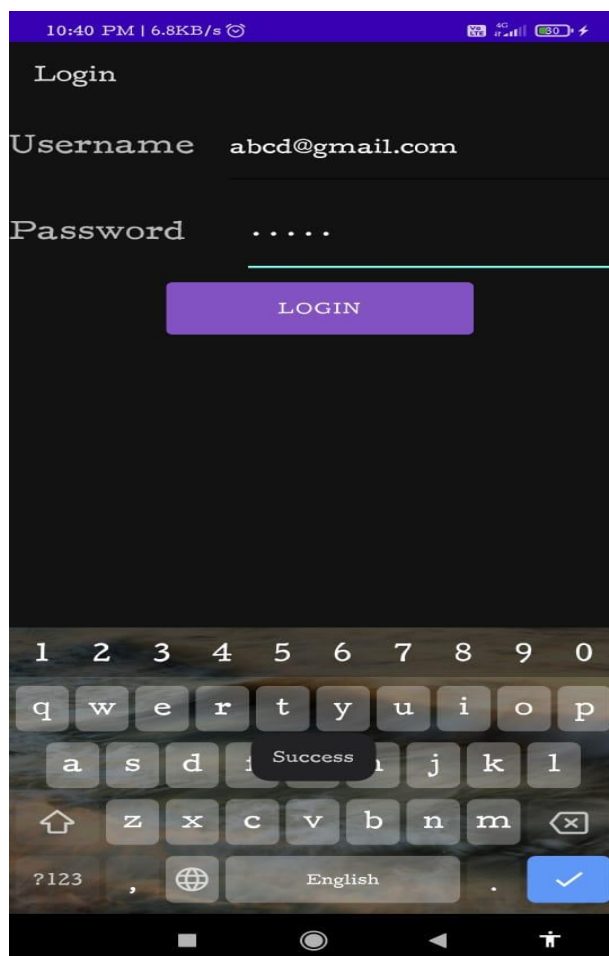
```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        user=findViewById(R.id.usr);
        pass=findViewById(R.id.pss);

    }

    public void check(View view) {
        if(user.getText().toString().equals("abcd@gmail.com") &&
pass.getText().toString().equals("admin"))
        {

Toast.makeText(getApplicationContext(),"Success",Toast.LENGTH_SHORT).show()
;
        }
        else
        {

Toast.makeText(getApplicationContext(),"Invalid!",Toast.LENGTH_SHORT).show(
);
        }
    }
}
```

OUTPUT:

Program No:2

Aim: Write a program that demonstrates Activity Lifecycle.

Program

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>
```

JAVA:

```java
package com.example.activitylife;
import android.os.Bundle;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Toast.makeText(this,"onCreate",Toast.LENGTH_LONG).show();

    }
    @Override
    protected void onStart()
    {
        super.onStart();
```

```java
            Toast.makeText(this,"onStart",Toast.LENGTH_LONG).show();
        }
        @Override
        protected void onResume()
        {
            super.onResume();
            Toast.makeText(this,"onResume",Toast.LENGTH_LONG).show();
        }
        @Override
        protected void onPause()
        {
            super.onPause();
            Toast.makeText(this,"onPause",Toast.LENGTH_LONG).show();
        }
        @Override
        protected void onDestroy()
        {
            super.onDestroy();
            Toast.makeText(this,"onDestroy",Toast.LENGTH_LONG).show();
        }

}
```

OUTPUT:

Program No:3

Aim: Implementing basic arithmetic operations of a simple

calculator.

PROGRAM

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:rotationX="3"
    tools:context=".MainActivity">

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

    <LinearLayout
        android:layout_width="413dp"
        android:layout_height="728dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="61dp"
            android:orientation="horizontal">

            <TextView
                android:id="@+id/textView"
                android:layout_width="wrap_content"
                android:layout_height="74dp"
                android:layout_weight="1"
                android:text="Enter number1" />

            <EditText
                android:id="@+id/n1"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:ems="10"
                android:inputType="textPersonName"
                android:text="" />
        </LinearLayout>
```

```xml
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="59dp"
    android:orientation="horizontal">

    <TextView
        android:id="@+id/textView3"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:text="Enter number2" />

    <EditText
        android:id="@+id/n2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="" />
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="98dp"
    android:orientation="horizontal">

    <TextView
        android:id="@+id/textView4"
        android:layout_width="1dp"
        android:layout_height="73dp"
        android:layout_weight="1"
        android:text="Result" />

    <EditText
        android:id="@+id/r1"
        android:layout_width="wrap_content"
        android:layout_height="match_parent"
        android:layout_weight="1"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="" />
</LinearLayout>

<TableRow
    android:layout_width="match_parent"
    android:layout_height="60dp" >

    <Button
        android:id="@+id/s1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="sum"
        android:text="Add" />

    <Button
        android:id="@+id/sb1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="sub"
```

```xml
                android:text="Sub" />

            <Button
                android:id="@+id/m1"
                android:layout_width="108dp"
                android:layout_height="wrap_content"
                android:onClick="div"
                android:text="Div" />

            <Button
                android:id="@+id/m2"
                android:layout_width="122dp"
                android:layout_height="wrap_content"
                android:onClick="mul"
                android:text="Mul" />
        </TableRow>

    </LinearLayout>

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

JAVA:

```java
package com.example.add;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

    EditText np1,np2,re;
    Button bt1,bt2,bt3,bt4;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        np1=findViewById(R.id.n1);
        np2=findViewById(R.id.n2);
        re=findViewById(R.id.r1);
        bt1=findViewById(R.id.s1);
        bt2=findViewById(R.id.sb1);
        bt3=findViewById(R.id.m1);
        bt4=findViewById(R.id.m2);

    }


    public void sum(View view) {
        int n1=Integer.parseInt(np1.getText().toString());
        int n2=Integer.parseInt(np2.getText().toString());
        int s=n1+n2;
        re.setText(s+"");
    }
```
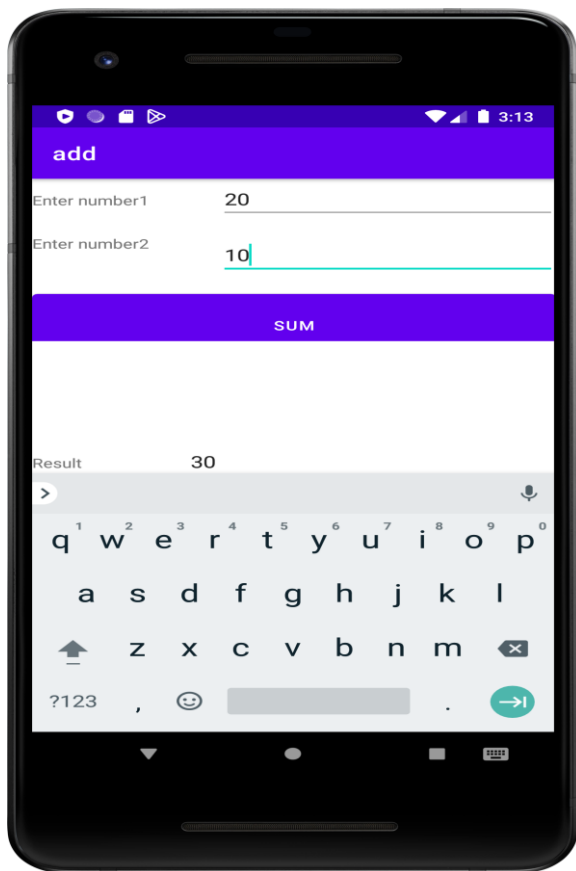
```java
    public void sub(View view) {
        int n1=Integer.parseInt(np1.getText().toString());
        int n2=Integer.parseInt(np2.getText().toString());
        int s=n1-n2;
        re.setText(s+"");
    }

    public void div(View view) {
        int n1=Integer.parseInt(np1.getText().toString());
        int n2=Integer.parseInt(np2.getText().toString());
        float s=n1/n2;
        re.setText(s+"");
    }

    public void mul(View view) {
        int n1=Integer.parseInt(np1.getText().toString());
        int n2=Integer.parseInt(np2.getText().toString());
        int s=n1*n2;
        re.setText(s+"");
    }
}
```

OUTPUT:

Program No:4

Aim: Implement validations on various UI controls.

PROGRAM

XML:

```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"
    android:orientation="vertical"
    tools:context=".MainActivity">


    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="60dp"
        android:layout_marginTop="10dp"

        android:orientation="horizontal">

        <EditText
            android:id="@+id/first"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:inputType="textPersonName"
            android:hint="First name" />

        <EditText
            android:id="@+id/last"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:inputType="textPersonName"
            android:hint="Last name" />

    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical">

        <EditText
            android:id="@+id/email"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:ems="10"
            android:hint="Email"
            android:inputType="textEmailAddress" />
```

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

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="15dp"
        android:orientation="horizontal">

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

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

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

            <RadioButton
                android:id="@+id/other"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="Other" />
        </RadioGroup>

    </LinearLayout>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="15dp"
        android:orientation="horizontal">


        <EditText
            android:id="@+id/date"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:hint="date"
            android:ems="10"
            android:inputType="date" />

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

```xml
                android:layout_height="wrap_content"
                android:layout_weight="1"
                android:text="select" />
        </LinearLayout>

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="25dp"
            android:orientation="vertical">

            <CheckBox
                android:id="@+id/checkbox"
                android:layout_width="match_parent"
                android:layout_height="wrap_content"
                android:text="I agree to the terms and conditions" />
        </LinearLayout>


        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="vertical">

            <Button
                android:id="@+id/regbutton"
                android:layout_width="150dp"
                android:layout_gravity="center"
                android:layout_height="wrap_content"
                android:onClick="register"
                android:text="register" />
        </LinearLayout>

    </LinearLayout>

</LinearLayout>
```

JAVA:

```java
package com.example.validation;

import androidx.appcompat.app.AppCompatActivity;

import android.app.DatePickerDialog;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.DatePicker;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;

import java.util.Calendar;
```

```java
public class MainActivity extends AppCompatActivity {
    EditText first,last,dob,pass,email,datetext;
    RadioButton male,female,other;
    CheckBox c;
    RadioGroup g;
    Boolean val;
    public DatePickerDialog datepicker;
    Button pickdate;
    int day,month,year;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        first=findViewById(R.id.first);
        last=findViewById(R.id.last);
        email=findViewById(R.id.email);
        dob=findViewById(R.id.date);
        pass=findViewById(R.id.password);
        male=findViewById(R.id.male);
        female=findViewById(R.id.female);
        other=findViewById(R.id.other);
        g=findViewById(R.id.group);
        c=findViewById(R.id.checkbox);
        datetext=findViewById(R.id.date);
        pickdate=findViewById(R.id.datebutton);
        pickdate.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Calendar calendar=Calendar.getInstance();
                day=calendar.get(Calendar.DAY_OF_MONTH);
                month=calendar.get(calendar.MONTH);
                year=calendar.get(Calendar.YEAR);
                datepicker=new DatePickerDialog(MainActivity.this, new
DatePickerDialog.OnDateSetListener() {
                    @Override
                    public void onDateSet(DatePicker datePicker, int day,
int month, int year) {
                        datetext.setText(day+"/"+(month+1)+"/"+year);
                    }
                },year,month,day);
                datepicker.show();
            }
        });
    }
    public void register(View view) {
        val=validate();
        if(val)
        {
            Toast.makeText(this, "Registered Successfull",
Toast.LENGTH_SHORT).show();
        }
    }

    private boolean validate() {

        if(email.length() == 0) {
            email.setError("required");
        }
        else
        {
```

```java
        String s_email=email.getText().toString();
        String checkmail="[a-zA-Z0-9._-]+@[a-z].+[a-z]+";
        if(!s_email.matches(checkmail)) {
            email.setError("Invalid email");
            return false;
        }
    }

    if(pass.length()==0)
    {
        pass.setError("Required");
    }
    else if(pass.length()<8) {
        pass.setError("password must be minimum 8 characters");
    }

    if(last.length()==0)
    {
        last.setError("Required");
        return false;
    }

    if(first.length()==0)
    {
        first.setError("Required");
        return false;
    }

    if(dob.length()==0)
    {
        dob.setError("Required");
        return false;
    }
    if(g.getCheckedRadioButtonId()==-1)
    {
        other.setError("Select gender");
        other.requestFocus();
        return false;
    }
    if(!c.isChecked())
    {
        c.setError("Please agree");
        c.requestFocus();
        return false;
    }

    return true;

    }

}
```
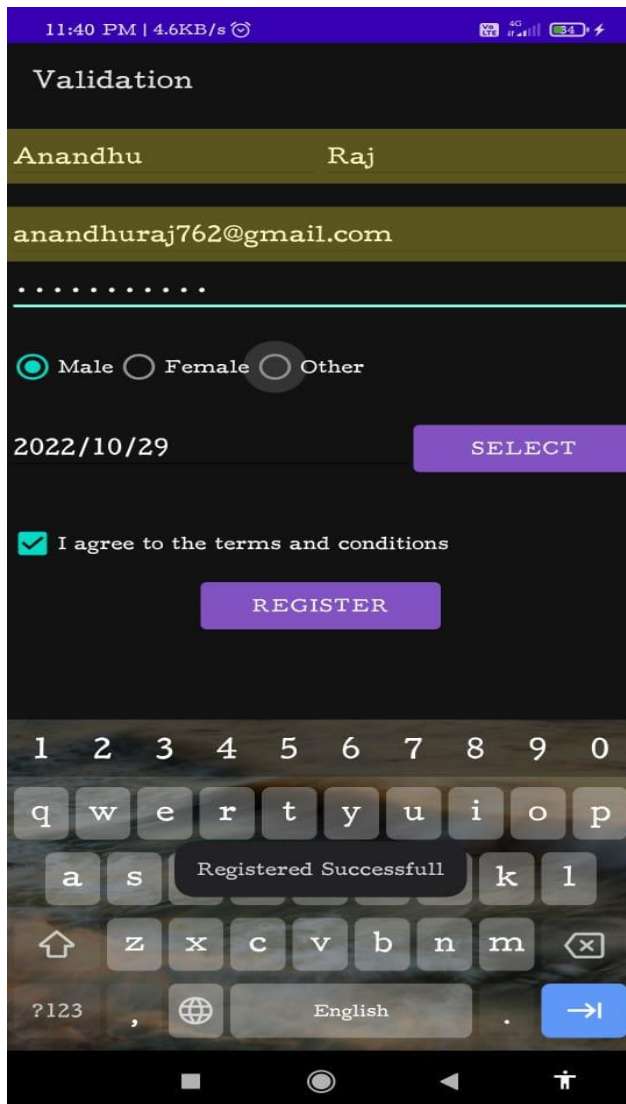
OUTPUT: