

Slip 1 = Q.1) Write an application to create a splash screen // create secondActivity

MainActivity

```
package com.example.splash_progress;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.content.Intent;
```

```
import android.os.Bundle;
```

```
import android.os.Handler;
```

```
import android.view.WindowManager;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
        getWindow().setFlags(WindowManager.LayoutParams.FLAG_FULLSCREEN, WindowManager.LayoutParams.FLAG_FULLSCREEN);
```

```
        setContentView(R.layout.activity_main);
```

```
        new Handler().postDelayed(new Runnable() {
```

```
            @Override
```

```
            public void run() {
```

```
                Intent i = new Intent(MainActivity.this, SecondActivity.class);
```

```
                startActivity(i);
```

```
                finish();
```

```
            }
```

```

    },4000);

}

}

```

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">

```

```

<ImageView
    android:id="@+id/imageView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.313"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.043"
    app:srcCompat="@drawable/namaste" />

```

```

<ProgressBar
    android:id="@+id/progressBar"
    style="?android:attr/progressBarStyle"
    android:layout_width="189dp"

```

```
        android:layout_height="178dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.802" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Slip 1 = Q.2) Create table Student (roll_no, name, address, percentage). Create Application for performing the following operation on the table. (Using SQLite database). i] Insert record of 5 new student details. ii] Show all the student details.

MainActivity

```
package com.example.prac2_registrationform;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
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 {

    DatabaseHelper db;

    EditText ed1,ed2,ed3,ed4;

    Button reg,vi;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        db = new DatabaseHelper(this);

        ed1 = findViewById(R.id.editTextTextPersonName);
        ed2 = findViewById(R.id.editTextTextPassword);
        ed3 = findViewById(R.id.editTextTextPersonName3);
        ed4 = findViewById(R.id.editTextTextEmailAddress);

        reg = findViewById(R.id.button);
        vi = findViewById(R.id.button2);

        Register();

        ViewAll();
    }

    private void Register() {

        reg.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                boolean reg =
db.insertdata(ed1.getText().toString(),ed2.getText().toString(),ed3.getText().toString(),ed4.getText().
toString());

```

```

        if(reg == true)
        {
            Toast.makeText(MainActivity.this,"Registration
Successful!!",Toast.LENGTH_LONG).show();
        }
        else
        {
            Toast.makeText(MainActivity.this,"Registration Failed  !!",Toast.LENGTH_LONG).show();

        }

    }

});
}

private void ViewAll() {
    vi.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Cursor res = db.getAllData();
            if(res.getCount()==0)
            {
                showMessage ("Error","Nothing Found");
                return ;
            }

            StringBuffer buffer = new StringBuffer();
            while(res.moveToNext())
            {
                buffer.append("Name = "+res.getString(0)+"\n");
                buffer.append("Age = "+res.getString(1)+"\n");
                buffer.append("PhoneNO = "+res.getString(2)+"\n");
                buffer.append("Email; = "+res.getString(3)+"\n");
            }
        }
    });
}

```

```

        }
        showMessage("Data"+"",buffer.toString());
    }
});
}

private void showMessage(String title, String message) {
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}
}

```

DataBase Helper

```

package com.example.prac2_registrationform;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DatabaseHelper extends SQLiteOpenHelper

```

```

{

    public static final String DATABASE_NAME = "User.db";

    public static final String TABLE_NAME = "usr";

    public static final String COL_1 = "Name";

    public static final String COL_2 = "Age";

    public static final String COL_3 = "PhoneNo";

    public static final String COL_4 = "Email";


    public DatabaseHelper(@Nullable Context context) {

        super(context, DATABASE_NAME, null, 1);

    }


    @Override

    public void onCreate(SQLiteDatabase db) {

        db.execSQL(" create table "+TABLE_NAME+"(NAME TEXT , AGE TEXT , PHONENO INTEGER , EMAIL TEXT)");

    }


    @Override

    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {

        db.execSQL("DROP TABLE IF EXISTS "+TABLE_NAME);

    }


    public boolean insertdata(String name, String age, String phoneno, String Email) {

        SQLiteDatabase db = this.getWritableDatabase();

        ContentValues cv = new ContentValues();

        cv.put(COL_1, name);

        cv.put(COL_2, age);

        cv.put(COL_3, phoneno);

        cv.put(COL_4, Email);

    }

}

```

```

        long res = db.insert(TABLE_NAME, null, cv);

        if (res == -1) {
            return false;
        } else {
            return true;
        }
    }

    public Cursor getAllData()
    {
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor res =db.rawQuery("select * from "+TABLE_NAME,null);
        return res;

    }

}

```

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/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.313"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.157"
    tools:ignore="MissingConstraints" />
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="187dp"
    android:layout_height="55dp"
    android:text="Enter Name : "
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.281"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.078"
    tools:ignore="MissingConstraints" />
```

```
<TextView
    android:id="@+id/textView2"
    android:layout_width="187dp"
```

```
android:layout_height="55dp"
android:text="Enter Age :."
android:textSize="20sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.281"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.257"
tools:ignore="MissingConstraints" />
```

<EditText

```
android:id="@+id/editTextTextPassword"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPassword"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.313"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.333"
tools:ignore="MissingConstraints" />
```

<TextView

```
android:id="@+id/textView3"
android:layout_width="187dp"
android:layout_height="55dp"
android:text="Enter PhoneNo :."
android:textSize="20sp"
```

```
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.281"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.436"
tools:ignore="MissingConstraints" />
```

<EditText

```
android:id="@+id/editTextTextPersonName3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.313"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.51"
tools:ignore="MissingConstraints" />
```

<TextView

```
android:id="@+id/textView4"
android:layout_width="187dp"
android:layout_height="55dp"
android:text="Enter Email : "
android:textSize="20sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.281"
```

```
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.622"
tools:ignore="MissingConstraints" />
```

```
<EditText
```

```
    android:id="@+id/editTextEmailAddress"
    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_constraintHorizontal_bias="0.313"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.693" />
```

```
<Button
```

```
    android:id="@+id/button"
    android:layout_width="135dp"
    android:layout_height="54dp"
    android:text="Register"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.137"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.85" />
```

```
<Button
```

```
        android:id="@+id/button2"
        android:layout_width="135dp"
        android:layout_height="54dp"
        android:text="View"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.768"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.85" />

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

Slip 2 = Q.1) Create an application that allows the user to enter a number in the textbox. Check whether the number in the textbox is perfect number or not. Print the message using Toast control.

MainActivity

```
package com.example.slip2_2;
```

```
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;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    EditText ed1;
```

```
    Button b1;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
        ed1 = findViewById(R.id.editTextTextPersonName);
```

```
        b1 = findViewById(R.id.button);
```

```
        b1.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

```
                int n = Integer.parseInt(ed1.getText().toString());
```

```
                int i,sum=0;
```

```
                for(i=1;i<=n/2;i++)
```

```
                {
```

```
                    if(n%i==0)
```

```
                    {
```

```
                        sum=sum+i;
```

```
                    }
```

```
                }
```

```
                if(sum==n)
```

```
                {
```

```
                    Toast.makeText(getApplicationContext(),"Perfect",Toast.LENGTH_LONG).show();
```

```

    }
    else
    {
        Toast.makeText(getApplicationContext(),"Not Perfect",Toast.LENGTH_LONG).show();

    }
}
});

}
}

```

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/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Enter a number"
        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="0.166" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    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="0.314" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Slip 2 = Q.2) Java Android Program to perform all arithmetic Operations using Calculator.

MainActivity

```

package com.example.slip2b;

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 editText;
```

```
    Button
```

```
    buttonPlus,buttonMinus,buttonMultiply,buttonDivide,button1,button2,button3,button4,button5,button6,button7,button8,button9,buttonDecimal,button0,buttonClear,buttonEqual;
```

```
    float mValueOne, mValueTwo;
```

```
    boolean Addition, Subtract, Multiplication,Division;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

```
    editText = findViewById(R.id.editText);
```

```
    buttonPlus = findViewById(R.id.button);
```

```
    buttonMinus = findViewById(R.id.button2);
```

```
    buttonMultiply = findViewById(R.id.button3);
```

```
    buttonDivide = findViewById(R.id.button4);
```

```
    button1 = findViewById(R.id.button5);
```

```
    button2 = findViewById(R.id.button6);
```

```
    button3 = findViewById(R.id.button7);
```

```
    button4 = findViewById(R.id.button8);
```

```
    button5 = findViewById(R.id.button9);
```

```
    button6 = findViewById(R.id.button10);
```

```
    button7 = findViewById(R.id.button11);
```

```
    button8 = findViewById(R.id.button12);
```

```
    button9 = findViewById(R.id.button13);
```

```
    buttonDecimal = findViewById(R.id.button14);
```

```
    button0 = findViewById(R.id.button15);
```

```
    buttonClear = findViewById(R.id.button16);
```

```
    buttonEqual = findViewById(R.id.button17);
```

```

buttonPlus.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        if (editText == null) {
            editText.setText("");
        } else {
            mValueOne = Float.parseFloat(editText.getText() + "");
            Addition = true;
            editText.setText(null);
        }
    }
});

buttonMinus.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        mValueOne = Float.parseFloat(editText.getText() + "");
        Subtract = true;
        editText.setText(null);

    }
});

buttonMultiply.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        mValueOne = Float.parseFloat(editText.getText() + "");
        Multiplication = true;
        editText.setText(null);
    }
});

buttonDivide.setOnClickListener(new View.OnClickListener() {

```

```

@Override

public void onClick(View v) {

    mValueOne = Float.parseFloat(editText.getText() + "");

    Division = true;

    editText.setText(null);

}

});

button1.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        editText.setText(editText.getText() + "1");

    }

});

button2.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        editText.setText(editText.getText() + "2");

    }

});

button3.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        editText.setText(editText.getText() + "3");

    }

});

button4.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        editText.setText(editText.getText() + "4");

```

```

    }
});
button5.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "5");
    }
});
button6.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "6");
    }
});
button7.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "7");
    }
});

button8.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "8");
    }
});

button9.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {

```

```

        editText.setText(editText.getText() + "9");
    }
});

buttonDecimal.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + ".");
    }
});

button0.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText(editText.getText() + "0");
    }
});

buttonClear.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editText.setText("");
    }
});

buttonEqual.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        mValueTwo = Float.parseFloat(editText.getText() + "");
        if (Addition == true) {
            editText.setText(mValueOne + mValueTwo + "");
        }
    }
});

```

```

        Addition = false;
    }
    if (Subtract == true) {
        editText.setText(mValueOne - mValueTwo + "");
        Subtract = false;

    }
    if (Multiplication == true) {
        editText.setText(mValueOne * mValueTwo + "");
        Multiplication = false;
    }
    if (Division == true) {
        editText.setText(mValueOne / mValueTwo + "");
        Division = false;
    }
}
});
}

```

```

}

```

XML

<Button

```

    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="+"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"

```

```
app:layout_constraintHorizontal_bias="0.899"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.626" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="-"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.899"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.531" />
```

```
<Button
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="*"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.899"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.724" />
```

```
<Button
    android:id="@+id/button4"
```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="/"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.899"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.836" />
```

```
<Button
    android:id="@+id/button5"
    android:layout_width="52dp"
    android:layout_height="44dp"
    android:text="1"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.145"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.531" />
```

```
<Button
    android:id="@+id/button6"
    android:layout_width="52dp"
    android:layout_height="41dp"
    android:text="2"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```



```
app:layout_constraintHorizontal_bias="0.35"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.532" />
```

```
<Button
    android:id="@+id/button7"
    android:layout_width="43dp"
    android:layout_height="40dp"
    android:text="3"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.562"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.531" />
```

```
<Button
    android:id="@+id/button8"
    android:layout_width="48dp"
    android:layout_height="40dp"
    android:text="4"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.154"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.628" />
```

```
<Button
    android:id="@+id/button9"
```

```
android:layout_width="50dp"
android:layout_height="42dp"
android:text="5"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.354"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.629" />
```

<Button

```
android:id="@+id/button10"
android:layout_width="47dp"
android:layout_height="40dp"
android:text="6"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.568"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.633" />
```

<Button

```
android:id="@+id/button11"
android:layout_width="51dp"
android:layout_height="41dp"
android:text="7"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.163"
app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.723" />
```

<Button

```
    android:id="@+id/button12"
    android:layout_width="52dp"
    android:layout_height="44dp"
    android:text="8"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.356"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.726" />
```

<Button

```
    android:id="@+id/button13"
    android:layout_width="49dp"
    android:layout_height="42dp"
    android:text="9"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.577"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.727" />
```

<Button

```
    android:id="@+id/button14"
    android:layout_width="52dp"
    android:layout_height="40dp"
```

```
android:text="."
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.161"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.826" />
```

<Button

```
android:id="@+id/button15"
android:layout_width="51dp"
android:layout_height="41dp"
android:text="0"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.358"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.831" />
```

<Button

```
android:id="@+id/button16"
android:layout_width="47dp"
android:layout_height="37dp"
android:text="C"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.574"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.827" />
```

```
<Button
    android:id="@+id/button17"
    android:layout_width="247dp"
    android:layout_height="54dp"
    android:text=""
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.939" />
```

```
<EditText
    android:id="@+id/editText"
    android:layout_width="315dp"
    android:layout_height="53dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Calculator"
    tools:layout_editor_absoluteX="41dp"
    tools:layout_editor_absoluteY="61dp" />
```

Slip 3 = Q.1) Create an application that allows the user to enter a number in the textbox. Check whether the number in the textbox is Armstrong or not. Print the message accordingly in the label control

MainActivity

```

package com.example.slip3_1;

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;

public class MainActivity extends AppCompatActivity {

    EditText ed1;
    Button b1;

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

        ed1 = findViewById(R.id.editTextTextPersonName);
        b1 = findViewById(R.id.button);

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                int n = Integer.parseInt(ed1.getText().toString());
                int i,sum=0;
                int on = n;
                while(n!=0)
                {

```

```

        int r = n%10;

        sum = sum+(r*r*r);

        n = n/10;
    }

    if(sum==on)
    {
        Toast.makeText(getApplicationContext(),"Armstrong",Toast.LENGTH_LONG).show();
    }
    else
    {
        Toast.makeText(getApplicationContext(),"Not Armstrong",Toast.LENGTH_LONG).show();

    }
}

});

}

}

```

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/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Enter a number"
        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="0.166" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    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="0.314" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Slipn 3 = Q.2) Create an Android application which examine a phone number entered by a user with the given format. • Area code should be one of the following: 040, 041, 050, 0400, 044 • There should 6 - 8 numbers in telephone number (+ area code).

MainActivity

```
package com.example.slip3_2;
```

```
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 java.util.regex.Matcher;
```

```
import java.util.regex.Pattern;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    EditText ed1;
```

```
    Button b1;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
        ed1 = findViewById(R.id.editTextTextPersonName);
```

```
        b1 = findViewById(R.id.button);
```

```
        b1.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

```

String num = (ed1.getText().toString());

String regex = "^(040|041|050|0400|044)\\d{3,8}$";

Pattern pattern = Pattern.compile(regex);

Matcher matcher = pattern.matcher(num);

if(matcher.matches())
{
    Toast.makeText(getApplicationContext(),"Valid",Toast.LENGTH_LONG).show();
}
else
{
    Toast.makeText(getApplicationContext(),"Not Valid",Toast.LENGTH_LONG).show();
}

}

});

}

}

```

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/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Enter a number"
        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="0.166" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    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="0.314" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Slip 5 = Q.1) Java Android Program to Demonstrate Alert Dialog Box

MainActivity

```
package com.example.slip5_1;
```

```
import androidx.appcompat.app.AlertDialog;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    Button b1;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
        b1 = findViewById(R.id.button);
```

```
        b1.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

```
                showMessage("ALERT", "HII");
```

```
            }
```

```
        });
```

```
    }
```

```

public void showMessage(String title,String Message)
{
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setMessage(Message);
    builder.setTitle(title);
    builder.show();
}
}

```

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="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button"
        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="0.499" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Slip 5 = Q.2) Create an Android application which will ask the user to input his / her name. A message should display the two items concatenated in a label. Change the format of the label using radio buttons and check boxes for selection. The user can make the label text bold, underlined or italic as well as change its color. Also include buttons to display the message in the label, clear the text boxes as well as label. Finally exit.

MainActivity

```
package com.example.slip5_2;

import android.graphics.Color;
import android.graphics.Typeface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends AppCompatActivity {

    EditText editTextName, editTextMessage;

    Button buttonDisplay, buttonClear;

    CheckBox checkBoxBold, checkBoxItalic, checkBoxUnderline;

    RadioGroup radioGroup;

    RadioButton radioButtonRed, radioButtonBlue, radioButtonGreen;

    TextView textViewMessage;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        editTextName = findViewById(R.id.editTextTextPersonName);
        editTextMessage = findViewById(R.id.editTextTextPersonName2);

        buttonDisplay = findViewById(R.id.button);
        buttonClear = findViewById(R.id.button2);

        checkBoxBold = findViewById(R.id.checkBox);
        checkBoxItalic = findViewById(R.id.checkBox2);
        checkBoxUnderline = findViewById(R.id.checkBox3);

        radioGroup = findViewById(R.id.radioGroup);
        radioButtonRed = findViewById(R.id.radioButton2);
        radioButtonBlue = findViewById(R.id.radioButton3);
        radioButtonGreen = findViewById(R.id.radioButton);

        textViewMessage = findViewById(R.id.textView);
```

```
buttonDisplay.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        String name = editTextName.getText().toString();  
        String msg = editTextMessage.getText().toString();  
        String message = name + ": " + msg;  
  
        int style = 0;  
        if (checkBoxBold.isChecked()) {  
            style |= Typeface.BOLD;  
        }  
        if (checkBoxUnderline.isChecked()) {  
            //style |= Typeface.UNDERLINE;  
        }  
        if (checkBoxItalic.isChecked()) {  
            style |= Typeface.ITALIC;  
        }  
  
        textViewMessage.setText(message);  
        textViewMessage.setTypeface(null, style);  
  
        int color = Color.BLACK;  
        int selectedColorId = radioGroup.getCheckedRadioButtonId();  
        switch (selectedColorId) {  
            case R.id.radioButton2:  
                color = Color.RED;  
                break;  
            case R.id.radioButton3:  
                color = Color.GREEN;  
                break;  
            case R.id.radioButton:  

```



```

        color = Color.BLUE;

        break;
    }

    textViewMessage.setTextColor(color);
}

});

buttonClear.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        editTextName.setText("");

        editTextMessage.setText("");

        textViewMessage.setText("");

    }

});

}

}

```

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/editTextTextPersonName"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.079"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.08" />
```

<EditText

```
android:id="@+id/editTextTextPersonName2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.079"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.173" />
```

<Button

```
android:id="@+id/button"
android:layout_width="169dp"
android:layout_height="54dp"
android:text="Display"
app:layout_constraintBottom_toBottomOf="parent"
```

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.078"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.28" />
```

<RadioGroup

```
    android:id="@+id/radioGroup"
    android:layout_width="168dp"
    android:layout_height="142dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.065"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.439">
```

<RadioButton

```
    android:id="@+id/radioButton2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Red" />
```

<RadioButton

```
    android:id="@+id/radioButton3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Blue" />
```

<RadioButton

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

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Green" />
</RadioGroup>

<Button
    android:id="@+id/button2"
    android:layout_width="169dp"
    android:layout_height="54dp"
    android:text="Concatenate"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.884"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.28" />
```

```
<CheckBox
    android:id="@+id/checkBox"
    android:layout_width="103dp"
    android:layout_height="45dp"
    android:text="Bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.085"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.629" />
```

```
<CheckBox
    android:id="@+id/checkBox2"
```

```
android:layout_width="103dp"
android:layout_height="45dp"
android:text="Italics"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.461"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.631" />
```

<CheckBox

```
android:id="@+id/checkBox3"
android:layout_width="103dp"
android:layout_height="45dp"
android:text="Underline"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.883"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.629" />
```

<TextView

```
android:id="@+id/textView"
android:layout_width="290dp"
android:layout_height="81dp"
android:textSize="40sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.495"
app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.827" />
```

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

Slip 6 = Q.1) Java Android Program to demonstrate login form with validation.

MainActivity

```
package com.example.practical1_loginform;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import android.widget.EditText;
```

```
import android.widget.TextView;
```

```
import android.widget.Toast;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    EditText ed1,ed2;
```

```
    TextView tv1,tv2;
```

```
    Button b1;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```

ed1 = findViewById(R.id.editTextTextPersonName);

ed2 = findViewById(R.id.editTextTextPassword);


tv1 = findViewById(R.id.textView);
tv2 = findViewById(R.id.textView2);


b1 = findViewById(R.id.button);


b1.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        String a = "abc@";

        String b = "xyz";

        String EmailRegex = "[_A-Za-z0-9-\\]+(\\.\\[_A-Za-z0-9-\\]+)*@" + "[A-Za-z0-9-\\]+(\\.\\[_A-Za-z0-9-\\]+)*\\.\\[_A-Za-z]{2,}\\$";

        String passwordRegex = "^(?=.*[a-z])(?=.*[A-Z])(?=.*\\d)(?=.*[@$!%*?&])[A-Za-z\\d@$!%*?&]{8,}\\$";

        String unnm = ed1.getText().toString();

        String pwd = ed2.getText().toString();


        //if( unnm.equals(usernameRegex) && pwd.equals(passwordRegex))

        if(unnm.equals(a) && pwd.equals(b) )

        {

            Toast.makeText(getApplicationContext(),"Login Successful!!!",Toast.LENGTH_LONG).show();

        }

        else

        {

            Toast.makeText(getApplicationContext(),"Login Failed!!!",Toast.LENGTH_LONG).show();

        }

    }

}

```

```
    });  
}  
}
```

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/editTextTextPersonName"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:ems="10"  
    android:inputType="textPersonName"  
    android:text=""  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.388"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toTopOf="parent"  
    app:layout_constraintVertical_bias="0.139" />
```

```
<EditText  
    android:id="@+id/editTextTextPassword"  
    android:layout_width="wrap_content"
```



```
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPassword"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.333" />
```

<Button

```
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Button"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.432"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.499" />
```

<TextView

```
android:id="@+id/textView"
android:layout_width="199dp"
android:layout_height="53dp"
android:text="Enter Email :"
android:textSize="25sp"
app:fontFamily="sans-serif-black"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
```

```

app:layout_constraintHorizontal_bias="0.366"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.063" />

```

```

<TextView
    android:id="@+id/textView2"
    android:layout_width="199dp"
    android:layout_height="53dp"
    android:text="Enter Password : "
    android:textSize="25sp"
    app:fontFamily="sans-serif-black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.367"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.259"
    tools:ignore="MissingConstraints" />

```

```

</androidx.constraintlayout.widget.ConstraintLayout>

```

Slip 7 = Q.1] Java Android Program to Demonstrate ProgressBar //Create SecondActivity

```

MainActivityx`

```

```

package com.example.splash_progress;

```

```

import androidx.appcompat.app.AppCompatActivity;

```

```

import android.content.Intent;

```

```

import android.os.Bundle;

import android.os.Handler;

import android.view.WindowManager;

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

getWindow().setFlags(WindowManager.LayoutParams.FLAG_FULLSCREEN,WindowManager.LayoutP
arams.FLAG_FULLSCREEN);

        setContentView(R.layout.activity_main);

        new Handler().postDelayed(new Runnable() {

            @Override

            public void run() {

                Intent i = new Intent(MainActivity.this,SecondActivity.class);

                startActivity(i);

                finish();

            }

        },4000);

    }

}

```

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">
```

```
<ImageView
    android:id="@+id/imageView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.313"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.043"
    app:srcCompat="@drawable/namaste" />
```

```
<ProgressBar
    android:id="@+id/progressBar"
    style="?android:attr/progressBarStyle"
    android:layout_width="189dp"
    android:layout_height="178dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.802" />
```

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

Slip 7 = Q.2] Create table Employee (E_id, name, address, ph_no). Create Application for performing the following operation on the table. (Using SQLite database). i] Insert record of 5 new Employees. ii] Show all the details of Employee

// Do the same below code for Employee Table

MainActivity

```
package com.example.slip1_1;
```

```
import androidx.appcompat.app.AlertDialog;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.database.Cursor;
```

```
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 {
```

```
    DatabaseHelper db;
```

```
    EditText ed1,ed2,ed3,ed4;
```

```
    Button b1,b2;
```

```
    @Override
```

```

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);


    ed1 = findViewById(R.id.editTextTextPersonName);
    ed2 = findViewById(R.id.editTextTextPersonName2);
    ed3 = findViewById(R.id.editTextTextPersonName3);
    ed4 = findViewById(R.id.editTextTextPersonName4);


    b1 = findViewById(R.id.button);
    b2 = findViewById(R.id.button2);


    db = new DatabaseHelper(this);


    Adddata();
    ViewAll();
}


private void Adddata()
{
    b1.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            boolean r =
db.insertdata(ed1.getText().toString(),ed2.getText().toString(),ed3.getText().toString(),ed4.getText().
toString());


            if(r==true)
            {

                Toast.makeText(getApplicationContext(),"Data Inserted",Toast.LENGTH_LONG).show();

            }

            else

```

```

        {
            Toast.makeText(getApplicationContext(),"Data Inserted
Failed",Toast.LENGTH_LONG).show();

        }
    }

});

```

```

}

private void ViewAll()
{
    b2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Cursor res = db.viewdata();
            if(res.getCount()==0)
            {
                showMessage("Nothing Found","error");
            }

            StringBuffer buffer = new StringBuffer();

            while(res.moveToNext())
            {
                buffer.append("Name =" +res.getString(0)+"\n");
                buffer.append("RollNo =" +res.getString(1)+"\n");
                buffer.append("Address =" +res.getString(2)+"\n");
                buffer.append("Percentage =" +res.getString(3)+"\n");

            }
        }
    }
}

```

```

        showMessage("Data"+"",buffer.toString());
    }

});
}
private void showMessage(String title, String message)
{
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();

}

}

```

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/editTextTextPersonName"

```



```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Name"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.058" />
```

<EditText

```
android:id="@+id/editTextTextPersonName2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Roll no"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.15" />
```

<EditText

```
android:id="@+id/editTextTextPersonName3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
```

```
android:inputType="textPersonName"
android:text="Address"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.237" />
```

<EditText

```
android:id="@+id/editTextTextPersonName4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Percentage"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.333" />
```

<Button

```
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Insert"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.246"
```

```
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.461" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="View"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.712"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.461" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

DataBaseHelper

```
package com.example.slip1_1;
```

```
import android.content.ContentValues;
```

```
import android.content.Context;
```

```
import android.database.Cursor;
```

```
import android.database.sqlite.SQLiteDatabase;
```

```
import android.database.sqlite.SQLiteOpenHelper;
```

```
import androidx.annotation.Nullable;
```

```
public class DatabaseHelper extends SQLiteOpenHelper {
```

```
    public static final String DATABASE_NAME = "stud.db";
```

```

public static final String TABLE_NAME = "Student";
public static final String COL_1 = "Name";
public static final String COL_2 = "Rollno";
public static final String COL_3 = "Address";
public static final String COL_4 = "Percentage";
public DatabaseHelper(@Nullable Context context) {
    super(context, DATABASE_NAME, null, 1);
}

@Override
public void onCreate(SQLiteDatabase db) {
    db.execSQL("create table "+TABLE_NAME+"(NAME TEXT , ROLLNO INTEGER , ADDRESS TEXT ,
PERCENTAGE DOUBLE)");
}

@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
    db.execSQL("Drop table if exists "+TABLE_NAME,null);
}

public boolean insertdata(String name, String rollno, String address, String percentage)
{
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues cv = new ContentValues();
    cv.put(COL_1,name);
    cv.put(COL_2,rollno);
    cv.put(COL_3,address);

```

```

        cv.put(COL_4,percentage);

        long res = db.insert(TABLE_NAME,null,cv);

        if(res==-1)
        {
            return false;
        }
        else
        {
            return true;
        }

    }

    public Cursor viewdata()
    {
        SQLiteDatabase db = this.getWritableDatabase();

        Cursor res = db.rawQuery("select * from "+TABLE_NAME,null);

        return res;
    }
}

```

Slip 8 = Q.1] Create a Application which shows Life Cycle of Activity

MainActivity

```
package com.example.myapplication;
```

```
import android.os.Bundle;

import android.util.Log;

import android.widget.Toast;


import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity {


    private static final String TAG = "LifecycleActivity";


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d(TAG, "onCreate called");
        showToast("onCreate");
    }


    @Override
    protected void onStart() {
        super.onStart();
        Log.d(TAG, "onStart called");
        showToast("onStart");
    }


    @Override
    protected void onResume() {
        super.onResume();
        Log.d(TAG, "onResume called");
        showToast("onResume");
    }
}
```

```
}
```

```
@Override
```

```
protected void onPause() {  
    super.onPause();  
    Log.d(TAG, "onPause called");  
    showToast("onPause");  
}
```

```
@Override
```

```
protected void onStop() {  
    super.onStop();  
    Log.d(TAG, "onStop called");  
    showToast("onStop");  
}
```

```
@Override
```

```
protected void onDestroy() {  
    super.onDestroy();  
    Log.d(TAG, "onDestroy called");  
    showToast("onDestroy");  
}
```

```
@Override
```

```
protected void onRestart() {  
    super.onRestart();  
    Log.d(TAG, "onRestart called");  
    showToast("onRestart");  
}
```

```
private void showToast(String message) {
```

```
        Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
    }
}
```

XML

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Lifecycle Activity"
        android:textSize="24sp"
        android:textStyle="bold"
        android:layout_centerInParent="true"/>

</RelativeLayout>
```

Slip 8 = Q.2] Create table Customer (id, name, address, ph_no). Create Application for performing the following operation on the table. (Using SQLite database). i] Insert

new customer details (At least 5 records). ii] Show all the customer details

// Do the same below code for Customer Table

MainActivity

```
package com.example.slip1_1;
```

```
import androidx.appcompat.app.AlertDialog;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.database.Cursor;
```

```
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 {
```

```
    DatabaseHelper db;
```

```
    EditText ed1,ed2,ed3,ed4;
```

```
    Button b1,b2;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

```
    ed1 = findViewById(R.id.editTextTextPersonName);
```

```

ed2 = findViewById(R.id.editTextTextPersonName2);
ed3 = findViewById(R.id.editTextTextPersonName3);
ed4 = findViewById(R.id.editTextTextPersonName4);


b1 = findViewById(R.id.button);
b2 = findViewById(R.id.button2);


db = new DatabaseHelper(this);


Adddata();
ViewAll();
}


private void Adddata()
{
    b1.setOnClickListener(new View.OnClickListener() {

        @Override

        public void onClick(View v) {

            boolean r =
db.insertdata(ed1.getText().toString(),ed2.getText().toString(),ed3.getText().toString(),ed4.getText().
toString());


            if(r==true)
            {

                Toast.makeText(getApplicationContext(),"Data Inserted",Toast.LENGTH_LONG).show();
            }

            else

            {

                Toast.makeText(getApplicationContext(),"Data Inserted
Failed",Toast.LENGTH_LONG).show();

            }

        }

    });
}

```

```

    }

    });

}

private void ViewAll()
{
    b2.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Cursor res = db.viewdata();
            if(res.getCount()==0)
            {
                showMessage("Nothing Found", "error");
            }

            StringBuffer buffer = new StringBuffer();

            while(res.moveToNext())
            {
                buffer.append("Name =" + res.getString(0) + "\n");
                buffer.append("RollNo =" + res.getString(1) + "\n");
                buffer.append("Address =" + res.getString(2) + "\n");
                buffer.append("Percentage =" + res.getString(3) + "\n");

            }

            showMessage("Data" + "", buffer.toString());
        }

    });
}

```

```

    }

    private void showMessage(String title, String message)
    {
        AlertDialog.Builder builder = new AlertDialog.Builder(this);
        builder.setCancelable(true);
        builder.setTitle(title);
        builder.setMessage(message);
        builder.show();

    }

}

```

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/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Name"

```

```
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.058" />
```

<EditText

```
android:id="@+id/editTextTextPersonName2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Roll no"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.15" />
```

<EditText

```
android:id="@+id/editTextTextPersonName3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Address"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
```

```
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.237" />
```

<EditText

```
android:id="@+id/editTextTextPersonName4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Percentage"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.388"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.333" />
```

<Button

```
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Insert"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.246"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.461" />
```

<Button

```
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="View"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.712"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.461" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

DataBaseHelper

```
package com.example.slip1_1;
```

```
import android.content.ContentValues;
```

```
import android.content.Context;
```

```
import android.database.Cursor;
```

```
import android.database.sqlite.SQLiteDatabase;
```

```
import android.database.sqlite.SQLiteOpenHelper;
```

```
import androidx.annotation.Nullable;
```

```
public class DatabaseHelper extends SQLiteOpenHelper {
```

```
    public static final String DATABASE_NAME = "stud.db";
```

```
    public static final String TABLE_NAME = "Student";
```

```
    public static final String COL_1 = "Name";
```

```
    public static final String COL_2 = "Rollno";
```

```
    public static final String COL_3 = "Address";
```

```
    public static final String COL_4 = "Percentage";
```

```

public DatabaseHelper(@Nullable Context context) {
    super(context, DATABASE_NAME, null, 1);
}

@Override
public void onCreate(SQLiteDatabase db) {
    db.execSQL("create table "+TABLE_NAME+"(NAME TEXT , ROLLNO INTEGER , ADDRESS TEXT ,
PERCENTAGE DOUBLE)");
}

@Override
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
    db.execSQL("Drop table if exists "+TABLE_NAME,null);
}

public boolean insertdata(String name, String rollno, String address, String percentage)
{
    SQLiteDatabase db = this.getWritableDatabase();
    ContentValues cv = new ContentValues();
    cv.put(COL_1,name);
    cv.put(COL_2,rollno);
    cv.put(COL_3,address);
    cv.put(COL_4,percentage);
    long res = db.insert(TABLE_NAME,null,cv);

    if(res==-1)
    {

```



```

        return false;
    }
    else
    {
        return true;
    }

}

public Cursor viewdata()
{
    SQLiteDatabase db = this.getWritableDatabase();
    Cursor res = db.rawQuery("select * from "+TABLE_NAME,null);
    return res;
}
}

```

Slip 9 = Q.1) Create an application that allows the user to enter a number in the textbox named „getnum“. Check whether the number in the textbox „getnum“ is Palindrome or not. Print the message accordingly in the label when the user clicks on the button „Check“.

```

MainActivity
package com.example.slip9_1;

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;

public class MainActivity extends AppCompatActivity {

    EditText ed1;
    Button b1;

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

        ed1 = findViewById(R.id.editTextTextPersonName);
        b1 = findViewById(R.id.button);

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                int n = Integer.parseInt(ed1.getText().toString());
                int i,sum=0;
                int on = n;
                while(n!=0)
                {
                    int r = n%10;
                    sum = (sum*10)+r;
                    n = n/10;
                }
                if(sum==on)
                {
```

```

        Toast.makeText(getApplicationContext(),"Palindrome",Toast.LENGTH_LONG).show();
    }
    else
    {
        Toast.makeText(getApplicationContext(),"Not Palindrome",Toast.LENGTH_LONG).show();

    }
}
});

}
}

```

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/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Enter a number"
        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="0.166" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    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="0.314" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Slip 9 = Q.2] Java android program to create simple calculator.

MainActivity

```
package com.example.slip9b;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import android.widget.EditText;

import android.widget.TextView;


public class MainActivity extends AppCompatActivity {

    EditText operand1, operand2;

    Button addBtn, subBtn, mulBtn, divBtn;

    TextView resultTextView;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        operand1 = findViewById(R.id.operand1);

        operand2 = findViewById(R.id.operand2);

        addBtn = findViewById(R.id.addBtn);

        subBtn = findViewById(R.id.subBtn);

        mulBtn = findViewById(R.id.mulBtn);

        divBtn = findViewById(R.id.divBtn);

        resultTextView = findViewById(R.id.resultTextView);


        addBtn.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                calculate('+');

            }

        });

        subBtn.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                calculate('-');
```

```

    }
});

mulBtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        calculate('*');
    }
});

divBtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        calculate('/');
    }
});
}

private void calculate(char operator){
    double num1 = Double.parseDouble(operand1.getText().toString());
    double num2 = Double.parseDouble(operand2.getText().toString());
    double result = 0;

    switch (operator) {
        case '+':
            result = num1 + num2;
            break;
        case '-':
            result = num1 - num2;
            break;
        case '*':
            result = num1 * num2;
            break;
    }
}

```

```

        case '/':
            if (num2 != 0) {
                result = num1 / num2;
            } else {
                resultTextView.setText("Cannot divide by zero");
                return;
            }
            break;
    }

    resultTextView.setText("Result: " + result);
}
}

```

XML

<EditText

```

    android:id="@+id/operand1"
    android:layout_width="391dp"
    android:layout_height="60dp"
    android:hint="Operand 1"
    android:inputType="numberDecimal"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.68"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.039" />

```

<EditText

```

    android:id="@+id/operand2"
    android:layout_width="379dp"

```

```
android:layout_height="74dp"
android:layout_below="@id/operand1"
android:hint="Operand 2"
android:inputType="numberDecimal"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.484"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.232" />
```

<Button

```
android:id="@+id/addBtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@id/operand2"
android:text="Add"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.191"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.546" />
```

<Button

```
android:id="@+id/subBtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@id/addBtn"
android:text="Subtract"
app:layout_constraintBottom_toBottomOf="parent"
```



```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.154"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.439" />
```

<Button

```
android:id="@+id/mulBtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@id/subBtn"
android:text="Multiply"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.904"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.439" />
```

<Button

```
android:id="@+id/divBtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_below="@id/mulBtn"
android:text="Divide"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.876"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.546" />
```

```
<TextView
    android:id="@+id/resultTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/divBtn"
    android:layout_marginTop="16dp"
    android:text=""
    android:textSize="20sp" />
```

Slip 10 = Q.1] Create an application that allows the user to enter a number in the textbox named getnum. Check whether the number in the textbox getnum is Armstrong or not. Print the message using Toast control when the user clicks on the button Check.

MainActivity

```
package com.example.slip9_1;
```

```
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;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    EditText ed1;
```

Button b1;

@Override

protected void onCreate(Bundle savedInstanceState) {

 super.onCreate(savedInstanceState);

 setContentView(R.layout.activity_main);

 ed1 = findViewById(R.id.editTextTextPersonName);

 b1 = findViewById(R.id.button);

 b1.setOnClickListener(new View.OnClickListener() {

 @Override

 public void onClick(View v) {

 int n = Integer.parseInt(ed1.getText().toString());

 int i,sum=0;

 int on = n;

 while(n!=0)

 {

 int r = n%10;

 sum = sum+(r*r*r);

 n = n/10;

 }

 if(sum==on)

 {

 Toast.makeText(getApplicationContext(),"Armstrong",Toast.LENGTH_LONG).show();

 }

 else

 {

 Toast.makeText(getApplicationContext(),"Not Armstrong ",Toast.LENGTH_LONG).show();

 }

```

    }
});

}
}

```

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/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Enter a number"
    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="0.166" />

<Button

```

```
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button"
        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="0.314" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Slip 11 = Q.1] Create an Android Application to accept two numbers to calculate its Power and Average. Create two buttons: Power and Average. Display the appropriate result on the next activity on Button click.

MainActivity

```
package com.example.myapplication;
```

```
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;
```

```
import android.widget.Toast;
```

```

public class MainActivity extends AppCompatActivity {

    EditText ed1,ed2;

    Button b1,b2,b3;

    int p = 0;

    int avg = 0;

    String p1,avg1;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        ed1 = findViewById(R.id.editTextTextPersonName);
        ed2 = findViewById(R.id.editTextTextPersonName2);

        b1 = findViewById(R.id.button);
        b2 = findViewById(R.id.button2);
        b3 = findViewById(R.id.button3);

        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                int n1 = Integer.parseInt(ed1.getText().toString());

                int n2 = Integer.parseInt(ed2.getText().toString());

                p = (int) Math.pow(n1,n2);

                p1 = String.valueOf(p);

                Toast.makeText(getApplicationContext(),"PowerCalculated ",Toast.LENGTH_LONG).show();

            }

        });
}

```

```

b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        int n1 = Integer.parseInt(ed1.getText().toString());
        int n2 = Integer.parseInt(ed2.getText().toString());

        avg = (n1+n2)/2;
        avg1 = String.valueOf(avg);

        Toast.makeText(getApplicationContext(),"AvgCalculated ",Toast.LENGTH_LONG).show();

    }
});

```

```

b3.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Intent i = new Intent(MainActivity.this, SecondActivity.class);
        i.putExtra("Power",p1);
        i.putExtra("Avg",avg1);
        startActivity(i);
    }
});

```

```

}
}

```

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/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Enter N1"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.402"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.1" />
```

```
<EditText

    android:id="@+id/editTextTextPersonName2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Enter N2"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```



```
app:layout_constraintHorizontal_bias="0.402"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toTopOf="parent"  
app:layout_constraintVertical_bias="0.22" />
```

```
<Button  
    android:id="@+id/button"  
    android:layout_width="157dp"  
    android:layout_height="61dp"  
    android:text="Power"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.125"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toTopOf="parent"  
    app:layout_constraintVertical_bias="0.358" />
```

```
<Button  
    android:id="@+id/button2"  
    android:layout_width="157dp"  
    android:layout_height="61dp"  
    android:text="Average"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.866"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toTopOf="parent"  
    app:layout_constraintVertical_bias="0.358" />
```

```
<Button  
    android:id="@+id/button3"
```

```
        android:layout_width="262dp"
        android:layout_height="66dp"
        android:text="Display"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

SecondActivity

```
package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;

public class SecondActivity extends AppCompatActivity {
    TextView t1;

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

        t1 = findViewById(R.id.textView);

        Intent i = getIntent();
        String msg = ((Intent) i).getStringExtra("Power");
```

```

String msg2 = i.getStringExtra("Avg");

t1.setText(msg+"\n"+msg2);

}

}

```

Second 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">

<TextView

    android:id="@+id/textView"

    android:layout_width="211dp"

    android:layout_height="273dp"

    android:textSize="50sp"

    app:layout_constraintBottom_toBottomOf="parent"

    app:layout_constraintEnd_toEndOf="parent"

    app:layout_constraintStart_toStartOf="parent"

    app:layout_constraintTop_toTopOf="parent"

    tools:ignore="MissingConstraints" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Slip 11 = Q.2] Create an Android Application to perform following string operation according to user selection of radio button

MainActivity

```
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.TextView;
```

```
import java.util.Locale;
```

```
public class MainActivity extends AppCompatActivity
```

```
{
```

```
    Button click;
```

```
    TextView output;
```

```
    EditText str;
```

```
    RadioGroup radioGroup;
```

```
    RadioButton uc,lc,r_5c,l_5c;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState)
```

```
{
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
click = findViewById(R.id.button);
output = findViewById(R.id.textView4);
str = findViewById(R.id.editTextTextPersonName);
radioGroup = findViewById(R.id.radioGroup);

uc = findViewById(R.id.radioButton);
lc = findViewById(R.id.radioButton2);
r_5c = findViewById(R.id.radioButton3);
l_5c = findViewById(R.id.radioButton4);

click.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View view)
    {
        int select = radioGroup.getCheckedRadioButtonId();

        switch (select) {
            case R.id.radioButton:
                String upper = str.getText().toString();
                output.setText(upper.toUpperCase());
                break;
            case R.id.radioButton2:
                String lower = str.getText().toString();
                output.setText(lower.toLowerCase());
                break;
            case R.id.radioButton3:
                String right_5 = str.getText().toString();
                if (right_5.length() >= 5)
                {
                    right_5 = right_5.substring(right_5.length() - 5);
```

```

        output.setText(right_5);
    }

    break;
case R.id.radioButton4:
    String left_5 = str.getText().toString();
    if (left_5.length() >= 5)
    {
        left_5 = left_5.substring(0, 5);
        output.setText(left_5);
    }
    break;
}

}

});
}
}

```

XML

<TextView

```

    android:id="@+id/textView"
    android:layout_width="155dp"
    android:layout_height="53dp"
    android:text="Enter String : "
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.195"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.069" />

```

```
<EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="200dp"
    android:layout_height="49dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:text=""
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.236"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.146" />
```

```
<RadioGroup
    android:id="@+id/radioGroup"
    android:layout_width="241dp"
    android:layout_height="196dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.294"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.344">
```

```
<RadioButton
    android:id="@+id/radioButton"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="UpperCase" />
```

```
<RadioButton  
    android:id="@+id/radioButton2"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="LowerCase" />
```

```
<RadioButton  
    android:id="@+id/radioButton3"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="Right 5 character" />
```

```
<RadioButton  
    android:id="@+id/radioButton4"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="Left 5 character" />
```

```
</RadioGroup>
```

```
<Button  
    android:id="@+id/button"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Click"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.621"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toTopOf="parent"  
    app:layout_constraintVertical_bias="0.609" />
```



```
<TextView
    android:id="@+id/textView3"
    android:layout_width="118dp"
    android:layout_height="34dp"
    android:text="Output"
    android:textSize="25sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.232"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.708" />
```

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="203dp"
    android:layout_height="62dp"
    android:text=""
    android:textSize="25sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.326"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.807" />
```

Slip 12 = Q.1] Construct an Android app that toggles a light bulb ON and OFF when the user clicks on toggle button.

MainActivity

```
import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.ImageView;

import android.widget.ToggleButton;


public class MainActivity extends AppCompatActivity {

    ToggleButton toggleButton;

    ImageView imageView;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        toggleButton = findViewById(R.id.toggleButton);

        imageView = findViewById(R.id.imageView);


        imageView.setImageDrawable(getResources().getDrawable(R.drawable.light_off));

        toggleButton.setOnClickListener(new View.OnClickListener()

        {

            @Override

            public void onClick(View view)

            {

                if(toggleButton.isChecked())

                {

                    imageView.setImageDrawable(getResources().getDrawable(R.drawable.light_on));

                }

                else

                {

                    imageView.setImageDrawable(getResources().getDrawable(R.drawable.light_off));

                }

            }

        })

    }

}
```

```

    }
    });
}
}

```

XML

<ToggleButton

```

    android:id="@+id/toggleButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="ToggleButton"
    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="0.614" />

```

<ImageView

```

    android:id="@+id/imageView"
    android:layout_width="230dp"
    android:layout_height="241dp"
    app:layout_constraintBottom_toTopOf="@+id/toggleButton"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    />

```

Selector.xml

```

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

```

```
<item android:state_checked="true" android:drawable="@drawable/ic_power_on"/>

<item android:state_checked="false"
android:drawable="@drawable/ic_power_settings_new_black_24dp"/>

</selector>
```

Slip 12 = Q.2] Create an Android application which will ask the user to input his / her name. A message should display the two items concatenated in a label. Change the format of the label using radio buttons and check boxes for selection. The user can make the label text bold, underlined or italic as well as change its color. Also include buttons to display the message in the label, clear the text boxes as well as label. Finally exit.

MainActivity

```
package com.example.slip5_2;

import android.graphics.Color;
import android.graphics.Typeface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.CheckBox;
import android.widget.EditText;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends AppCompatActivity {

    EditText editTextName, editTextMessage;
    Button buttonDisplay, buttonClear;
    CheckBox checkBoxBold, checkBoxItalic, checkBoxUnderline;
    RadioGroup radioGroup;
    RadioButton radioButtonRed, radioButtonBlue, radioButtonGreen;
    TextView textViewMessage;

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

        editTextName = findViewById(R.id.editTextTextPersonName);
        editTextMessage = findViewById(R.id.editTextTextPersonName2);

        buttonDisplay = findViewById(R.id.button);
        buttonClear = findViewById(R.id.button2);

        checkBoxBold = findViewById(R.id.checkBox);
        checkBoxItalic = findViewById(R.id.checkBox2);
        checkBoxUnderline = findViewById(R.id.checkBox3);

        radioGroup = findViewById(R.id.radioGroup);
        radioButtonRed = findViewById(R.id.radioButton2);
        radioButtonBlue = findViewById(R.id.radioButton3);
        radioButtonGreen = findViewById(R.id.radioButton);

        textViewMessage = findViewById(R.id.textView);
```

```
buttonDisplay.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        String name = editTextName.getText().toString();  
        String msg = editTextMessage.getText().toString();  
        String message = name + ": " + msg;  
  
        int style = 0;  
        if (checkBoxBold.isChecked()) {  
            style |= Typeface.BOLD;  
        }  
        if (checkBoxUnderline.isChecked()) {  
            //style |= Typeface.UNDERLINE;  
        }  
        if (checkBoxItalic.isChecked()) {  
            style |= Typeface.ITALIC;  
        }  
  
        textViewMessage.setText(message);  
        textViewMessage.setTypeface(null, style);  
  
        int color = Color.BLACK;  
        int selectedColorId = radioGroup.getCheckedRadioButtonId();  
        switch (selectedColorId) {  
            case R.id.radioButton2:  
                color = Color.RED;  
                break;  
            case R.id.radioButton3:  
                color = Color.GREEN;  
                break;
```

```

        case R.id.radioButton:
            color = Color.BLUE;
            break;
    }
    textViewMessage.setTextColor(color);
}
});

buttonClear.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editTextName.setText("");
        editTextMessage.setText("");
        textViewMessage.setText("");
    }
});
}
}

```

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/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.079"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.08" />
```

```
<EditText
    android:id="@+id/editTextTextPersonName2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.079"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.173" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="169dp"
    android:layout_height="54dp"
    android:text="Display"
```



```
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.078"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.28" />
```

<RadioGroup

```
android:id="@+id/radioGroup"
android:layout_width="168dp"
android:layout_height="142dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.065"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.439">
```

<RadioButton

```
android:id="@+id/radioButton2"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Red" />
```

<RadioButton

```
android:id="@+id/radioButton3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Blue" />
```

<RadioButton

```
        android:id="@+id/radioButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Green" />
</RadioGroup>
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="169dp"
    android:layout_height="54dp"
    android:text="Concatenate"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.884"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.28" />
```

```
<CheckBox
    android:id="@+id/checkBox"
    android:layout_width="103dp"
    android:layout_height="45dp"
    android:text="Bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.085"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.629" />
```

```
<CheckBox
```

```
android:id="@+id/checkBox2"
android:layout_width="103dp"
android:layout_height="45dp"
android:text="Italics"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.461"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.631" />
```

<CheckBox

```
android:id="@+id/checkBox3"
android:layout_width="103dp"
android:layout_height="45dp"
android:text="Underline"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.883"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.629" />
```

<TextView

```
android:id="@+id/textView"
android:layout_width="290dp"
android:layout_height="81dp"
android:textSize="40sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.495"
```

```
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.827" />

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

Slip 13 = Q.1] Java android program to demonstrate Registration form with validation.

```
MainActivity
package com.example.slip13_1;

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;

public class MainActivity extends AppCompatActivity {

    EditText ed1,ed2,ed3,ed4;
    Button b1;

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

```

ed1 = findViewById(R.id.editTextTextPersonName);
ed2 = findViewById(R.id.editTextTextPersonName2);
ed3 = findViewById(R.id.editTextTextPersonName3);
ed4 = findViewById(R.id.editTextTextPersonName4);

b1 = findViewById(R.id.button);

b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String name = ed1.getText().toString();
        String Address = ed2.getText().toString();
        String Mn = ed3.getText().toString();
        String Age = ed4.getText().toString();

        if(name.isEmpty() || Address.isEmpty() || Mn.isEmpty() || Age.isEmpty())
        {
            Toast.makeText(getApplicationContext(),"ALL Fields
Required",Toast.LENGTH_LONG).show();
        }
        else
        {
            Toast.makeText(getApplicationContext(),"Registration
Successful!!!",Toast.LENGTH_LONG).show();

        }
    }
});
}

```

```
}
```

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/editTextTextPersonName"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:ems="10"
```

```
    android:inputType="textPersonName"
```

```
    android:text="Name"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.417"
```

```
    app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent"
```

```
    app:layout_constraintVertical_bias="0.12" />
```

```
<EditText
```

```
    android:id="@+id/editTextTextPersonName2"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:ems="10"
```

```
android:inputType="textPersonName"
android:text="Address"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.417"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.217" />
```

<EditText

```
android:id="@+id/editTextTextPersonName3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Mobile No"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.432"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.319" />
```

<EditText

```
android:id="@+id/editTextTextPersonName4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Age"
app:layout_constraintBottom_toBottomOf="parent"
```

```

        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.432"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.418" />

<Button
    android:id="@+id/button"
    android:layout_width="140dp"
    android:layout_height="55dp"
    android:text="Register"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.464"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.538" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Slip 14 = Q.1] Construct an Android application to accept a number and calculate and display Factorial of a given number in TextView

MainActivity

```
package com.example.slip14_1;
```

```
import androidx.appcompat.app.AppCompatActivity;
```



```
import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;


public class MainActivity extends AppCompatActivity {

    EditText ed1;

    Button b1;

    TextView t1;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        ed1 = findViewById(R.id.editTextTextPersonName);

        b1 = findViewById(R.id.button);

        t1 = findViewById(R.id.textView);


        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                int n = Integer.parseInt(ed1.getText().toString());

                int i,f = 1;


                for(i=1;i<=n;i++)

                {

                    f=f*i;

                }

            }

        });

    }

}
```

```

        String fact = String.valueOf(f);

        t1.setText(fact);
    }

});

}

}

```

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/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Enter a number"
        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="0.185" />

```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    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="0.322" />
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="269dp"
    android:layout_height="114dp"
    android:textSize="50sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:ignore="MissingConstraints" />
```

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

Slip 14 = Q.2] Create an Android application, which show Login Form. After clicking LOGIN button display the “Login Successful...” message if username and password is same else display “Invalid Login” message in Toast Control.

MainActivity

```
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;


public class MainActivity extends AppCompatActivity
{
    Button login;

    EditText user,pass;

    @Override

    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        login = findViewById(R.id.button);

        user = findViewById(R.id.editTextTextPersonName);

        pass = findViewById(R.id.editTextTextPersonName2);


        login.setOnClickListener(new View.OnClickListener()
        {
            @Override

            public void onClick(View view)
            {
                String username = user.getText().toString();

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


                if(username.equals("shaunak") && password.equals("aaaaa"))
                {
```

```

        Toast.makeText(getApplicationContext(),"Login
Successful",Toast.LENGTH_LONG).show();

    }

    else {

        Toast.makeText(getApplicationContext(),"Login
Unsuccessful",Toast.LENGTH_LONG).show();

    }

}

});

}

}

```

XML

<EditText

```

    android:id="@+id/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text=""
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.343"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.148" />

```

<EditText

```

    android:id="@+id/editTextTextPersonName2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"

```

```
android:text=""
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.343"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.32" />
```

<TextView

```
android:id="@+id/textView"
android:layout_width="248dp"
android:layout_height="35dp"
android:text="Enter Username : "
android:textSize="25sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.423"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.096" />
```

<TextView

```
android:id="@+id/textView2"
android:layout_width="210dp"
android:layout_height="33dp"
android:text="Enter Password : "
android:textSize="25sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.343"
app:layout_constraintStart_toStartOf="parent"
```

```
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.267" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Login"
    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="0.464" />
```

Slip 15 = Q1] Construct an Android application to accept two numbers in two EditText, with four buttons as ADD, SUB, DIV and MULT and display Result using Toast Control.

MainActivity

```
package com.example.slip15_1;
```

```
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;
```

```
public class MainActivity extends AppCompatActivity {
```

```
EditText ed1,ed2;
```

```
Button b1,b2,b3,b4;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

```
    ed1 = findViewById(R.id.editTextTextPersonName);
```

```
    ed2 = findViewById(R.id.editTextTextPersonName2);
```

```
    b1 = findViewById(R.id.button);
```

```
    b2 = findViewById(R.id.button2);
```

```
    b3 = findViewById(R.id.button3);
```

```
    b4 = findViewById(R.id.button4);
```

```
b1.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
        int n1 = Integer.parseInt(ed1.getText().toString());
```

```
        int n2 = Integer.parseInt(ed2.getText().toString());
```

```
        int a = n1+n2;
```

```
        String ans = String.valueOf(a);
```

```
        Toast.makeText(getApplicationContext(),"Ans = "+ans,Toast.LENGTH_LONG).show();
```

```
    }
```

```
});
```

```
b2.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```



```

        int n1 = Integer.parseInt(ed1.getText().toString());
        int n2 = Integer.parseInt(ed2.getText().toString());

        int a = n1-n2;

        String ans = String.valueOf(a);

        Toast.makeText(getApplicationContext(),"Ans = "+ans,Toast.LENGTH_LONG).show();

    }

});

b3.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        int n1 = Integer.parseInt(ed1.getText().toString());

        int n2 = Integer.parseInt(ed2.getText().toString());

        int a = n1*n2;

        String ans = String.valueOf(a);

        Toast.makeText(getApplicationContext(),"Ans = "+ans,Toast.LENGTH_LONG).show();

    }

});

b4.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        int n1 = Integer.parseInt(ed1.getText().toString());

        int n2 = Integer.parseInt(ed2.getText().toString());

        int a = n1/n2;

        String ans = String.valueOf(a);

        Toast.makeText(getApplicationContext(),"Ans = "+ans,Toast.LENGTH_LONG).show();

```

```

    }

    });

}

}

```

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/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Enter n1"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.402"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.131" />

```

```

<EditText

    android:id="@+id/editTextTextPersonName2"

```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Enter n2"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.407"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.239" />
```

<Button

```
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="ADD"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.258"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.368" />
```

<Button

```
android:id="@+id/button2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="SUB"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintHorizontal_bias="0.621"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.367" />
```

<Button

```
android:id="@+id/button3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="MUL"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.258"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.469" />
```

<Button

```
android:id="@+id/button4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="DIV"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.621"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.468" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

Slip 16 = Q1] Create a Simple Android Application Which Send —Hello|| message from one activity to another with help of Button (Use Intent).

MainActivity

```
package com.example.slip16_1;
```

```
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 ed1;
```

```
    Button b1;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
        ed1 = findViewById(R.id.editTextTextPersonName);
```

```
        b1 = findViewById(R.id.button);
```

```
        b1.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

```

String a = ed1.getText().toString();

Intent i = new Intent(MainActivity.this,SecondActivity.class);
i.putExtra("Str",a);
startActivity(i);
}
});
}
}

```

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/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Name"
        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="0.141" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    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="0.285" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

SecondActivity

```
package com.example.slip16_1;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.content.Intent;
```

```
import android.os.Bundle;
```

```
import android.widget.TextView;
```

```
public class SecondActivity extends AppCompatActivity {
```

```
    TextView t1;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```

setContentView(R.layout.activity_second);

t1 = findViewById(R.id.textView);

Intent i = getIntent();
String msg = i.getStringExtra("Str");

t1.setText(msg);

}
}

```

Second 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">

<TextView
    android:id="@+id/textView"
    android:layout_width="286dp"
    android:layout_height="206dp"
    android:textSize="50sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"

```



```
        app:layout_constraintVertical_bias="0.444" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Slip 16 = Q2] Create an Android application, with two activity first activity will have an EditText and a Button where the user can enter player name and after clicking on button the entered name will be display in another Activity. Second activity has the BACK button to transition to first activity (Using Intent)

MainActivity

```
package com.example.slip16_1;
```

```
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 ed1;
```

```
    Button b1;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```

ed1 = findViewById(R.id.editTextTextPersonName);

b1 = findViewById(R.id.button);

b1.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String a = ed1.getText().toString();

        Intent i = new Intent(MainActivity.this,SecondActivity.class);
        i.putExtra("Str",a);
        startActivity(i);
    }
});
}
}

```

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/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"

```

```
android:inputType="textPersonName"
android:text="Name"
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="0.141" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Button"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

SecondActivity

```
package com.example.slip16_1;

import androidx.appcompat.app.AppCompatActivity;

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

public class SecondActivity extends AppCompatActivity {
```

```
TextView t1;
```

```
Button b1;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_second);
```

```
    t1 = findViewById(R.id.textView);
```

```
    b1 = findViewById(R.id.button2);
```

```
    Intent i = getIntent();
```

```
    String msg = i.getStringExtra("Str");
```

```
    t1.setText(msg);
```

```
    b1.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
```

```
        public void onClick(View v) {
```

```
            Intent i2 = new Intent(SecondActivity.this, MainActivity.class);
```

```
            startActivity(i2);
```

```
        }
```

```
    });
```

```
}
```

```
}
```

Second 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">
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="286dp"
    android:layout_height="206dp"
    android:textSize="50sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.496"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.114" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="302dp"
    android:layout_height="90dp"
    android:text="back"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.422"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.673" />
```

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

Slip 18 = Q1] Create an Android Application that will change color of the screen and change the font size of text view using xml

MainActivity

```
package com.example.slip18_1;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.graphics.Color;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.TextView;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    private TextView textView;
```

```
    private int fontSize = 24;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
        textView = findViewById(R.id.textView);
```

```
        // Set the initial color of the screen
```

```
        getWindow().getDecorView().setBackgroundColor(Color.BLUE);
```

```
    }
```

```

public void increaseFontSize(View view) {
    fontSize += 4;
    textView.setTextSize(fontSize);
}

public void decreaseFontSize(View view) {
    fontSize -= 4;
    if (fontSize < 0) {
        fontSize = 0;
    }
    textView.setTextSize(fontSize);
}
}

```

XML

```

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

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/btnIncreaseFont"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Increase Font Size"
        android:onClick="increaseFontSize"
        android:layout_below="@id/textView"

```

```
android:layout_marginTop="16dp"
```

```
tools:ignore="OnClick" />
```

```
<Button
```

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

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:text="Decrease Font Size"
```

```
    android:onClick="decreaseFontSize"
```

```
    android:layout_below="@id/textView"
```

```
    android:layout_marginStart="16dp"
```

```
    android:layout_marginTop="16dp"
```

```
    android:layout_toEndOf="@id/btnIncreaseFont"/>
```

```
<TextView
```

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

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:text="Hello, Android!"
```

```
    android:textSize="24sp"
```

```
    android:layout_centerInParent="true"/>
```

```
</RelativeLayout>
```

**Slip 18 = Q2] Create table Project (id, name, dept, city).
Create Application to perform the following operations.
(using SQLite database) i] Add at least 5 records. ii] Display
all the records.**

```
// do the same for Project
```

```
MainActivity
```



```
package com.example.prac2_registrationform;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
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 {

    DatabaseHelper db;
    EditText ed1,ed2,ed3,ed4;
    Button reg,vi;

    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        db = new DatabaseHelper(this);

        ed1 = findViewById(R.id.editTextTextPersonName);
        ed2 = findViewById(R.id.editTextTextPassword);
        ed3 = findViewById(R.id.editTextTextPersonName3);
        ed4 = findViewById(R.id.editTextTextEmailAddress);

        reg = findViewById(R.id.button);
```

```

vi = findViewById(R.id.button2);

Register();

ViewAll();
}

private void Register() {
    reg.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            boolean reg =
db.insertdata(ed1.getText().toString(),ed2.getText().toString(),ed3.getText().toString(),ed4.getText().
toString());
            if(reg == true)
            {
                Toast.makeText(MainActivity.this,"Registration
Successful!!",Toast.LENGTH_LONG).show();
            }
            else
            {
                Toast.makeText(MainActivity.this,"Registration Failed  !!",Toast.LENGTH_LONG).show();
            }

        }
    });
}

private void ViewAll() {
    vi.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Cursor res = db.getAllData();

```

```

        if(res.getCount()==0)
        {
            showMessage ("Error","Nothing Found");

            return ;
        }

        StringBuffer buffer = new StringBuffer();
        while(res.moveToNext())
        {
            buffer.append("Name = "+res.getString(0)+"\n");
            buffer.append("Age = "+res.getString(1)+"\n");
            buffer.append("PhoneNO = "+res.getString(2)+"\n");
            buffer.append("Email; = "+res.getString(3)+"\n");

        }

        showMessage("Data"+"",buffer.toString());
    }
    });
}

```

```

private void showMessage(String title, String message) {
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}

}

```

DataBase Helper

```

package com.example.prac2_registrationform;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DatabaseHelper extends SQLiteOpenHelper
{
    public static final String DATABASE_NAME = "User.db";
    public static final String TABLE_NAME = "usr";
    public static final String COL_1 = "Name";
    public static final String COL_2 = "Age";
    public static final String COL_3 = "PhoneNo";
    public static final String COL_4 = "Email";

    public DatabaseHelper(@Nullable Context context) {
        super(context, DATABASE_NAME, null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL(" create table "+TABLE_NAME+"(NAME TEXT , AGE TEXT , PHONENO INTEGER , EMAIL TEXT)");
    }

```

@Override

```
public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
```

```
    db.execSQL("DROP TABLE IF EXISTS "+TABLE_NAME);
```

```
}
```

```
public boolean insertdata(String name, String age, String phoneno, String Email) {
```

```
    SQLiteDatabase db = this.getWritableDatabase();
```

```
    ContentValues cv = new ContentValues();
```

```
    cv.put(COL_1, name);
```

```
    cv.put(COL_2, age);
```

```
    cv.put(COL_3, phoneno);
```

```
    cv.put(COL_4, Email);
```

```
    long res = db.insert(TABLE_NAME, null, cv);
```

```
    if (res == -1) {
```

```
        return false;
```

```
    } else {
```

```
        return true;
```

```
    }
```

```
}
```

```
public Cursor getAllData()
```

```
{
```

```
    SQLiteDatabase db = this.getWritableDatabase();
```

```
    Cursor res =db.rawQuery("select * from "+TABLE_NAME,null);
```

```
    return res;
```

```
}
```

```
}
```

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/editTextTextPersonName"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:ems="10"
```

```
    android:inputType="textPersonName"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.313"
```

```
    app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent"
```

```
    app:layout_constraintVertical_bias="0.157"
```

```
    tools:ignore="MissingConstraints" />
```

```
<TextView
```

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

```
    android:layout_width="187dp"
```

```
    android:layout_height="55dp"
```

```
    android:text="Enter Name : "
```

```
android:textSize="20sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.281"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.078"
tools:ignore="MissingConstraints" />
```

<TextView

```
android:id="@+id/textView2"
android:layout_width="187dp"
android:layout_height="55dp"
android:text="Enter Age :."
android:textSize="20sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.281"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.257"
tools:ignore="MissingConstraints" />
```

<EditText

```
android:id="@+id/editTextTextPassword"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPassword"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintHorizontal_bias="0.313"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.333"
tools:ignore="MissingConstraints" />
```

<TextView

```
android:id="@+id/textView3"
android:layout_width="187dp"
android:layout_height="55dp"
android:text="Enter PhoneNo :."
android:textSize="20sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.281"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.436"
tools:ignore="MissingConstraints" />
```

<EditText

```
android:id="@+id/editTextTextPersonName3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.313"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
```



```
app:layout_constraintVertical_bias="0.51"  
tools:ignore="MissingConstraints" />
```

<TextView

```
    android:id="@+id/textView4"  
    android:layout_width="187dp"  
    android:layout_height="55dp"  
    android:text="Enter Email : "  
    android:textSize="20sp"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintEnd_toEndOf="parent"  
    app:layout_constraintHorizontal_bias="0.281"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toTopOf="parent"  
    app:layout_constraintVertical_bias="0.622"  
    tools:ignore="MissingConstraints" />
```

<EditText

```
    android:id="@+id/editTextTextEmailAddress"  
    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_constraintHorizontal_bias="0.313"  
    app:layout_constraintStart_toStartOf="parent"  
    app:layout_constraintTop_toTopOf="parent"  
    app:layout_constraintVertical_bias="0.693" />
```

<Button

```
android:id="@+id/button"
android:layout_width="135dp"
android:layout_height="54dp"
android:text="Register"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.137"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.85" />
```

<Button

```
android:id="@+id/button2"
android:layout_width="135dp"
android:layout_height="54dp"
android:text="View"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.768"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.85" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

Slip 19 = Q1] Write an Android Program to Change the Image Displayed on the Screen.

MainActivity

```
package com.example.slip19_1;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import android.widget.ImageSwitcher;
```

```
import android.widget.ImageView;
```

```
import android.widget.ViewSwitcher;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    private Button previousbtn, nextbtn;
```

```
    private ImageSwitcher imgsw;
```

```
    private int[] images =
```

```
{R.drawable.a1,R.drawable.a2,R.drawable.a3,R.drawable.a4,R.drawable.a5,R.drawable.a6,R.drawable.a7,R.drawable.a8};
```

```
    private int position = 0;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
        previousbtn = (Button)findViewById(R.id.btnPrevious);
```

```
        nextbtn = (Button)findViewById(R.id.btnNext);
```

```
        imgsw = (ImageSwitcher) findViewById(R.id.imgSw);
```

```
        imgsw.setFactory(new ViewSwitcher.ViewFactory() {
```

```
            @Override
```

```
            public View makeView()
```

```
            {
```

```
                ImageView imgVw= new ImageView(MainActivity.this);
```

```
                imgVw.setImageResource(images[position]);
```

```
                return imgVw;
```

```
            }
```

```
        });
```

```

imgsw.setInAnimation(this, android.R.anim.slide_in_left);
imgsw.setOutAnimation(this, android.R.anim.slide_out_right);
previousbtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v)
    {
        if(position>0)
            position--;
        else if(position<0)
            position = 0;
        imgsw.setImageResource(images[position]);
    }
});
nextbtn.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        if(position<images.length)
            position++;
        if(position>=images.length)

            position = images.length-1;
        imgsw.setImageResource(images[position]);
    }
});
}
}

```

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">
```

```
<ImageSwitcher

    android:id="@+id/imgSw"
    android:layout_width="376dp"
    android:layout_height="533dp"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.457"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.08" >
```

```
</ImageSwitcher>
```

```
<Button

    android:id="@+id/btnNext"
    android:layout_width="141dp"
    android:layout_height="77dp"

    android:text="Next"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```

```
app:layout_constraintHorizontal_bias="0.073"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.879" />
```

```
<Button
    android:id="@+id/btnPrevious"
    android:layout_width="138dp"
    android:layout_height="73dp"
    android:text="Previous"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.765"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.876" />
```

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

Slip 19 = Q2] Construct an Android Application to create two option menu as Find Factorial and Find Sum of Digits. Accept a number and calculate Factorial and Sum of Digits of a given number by clicking Menu.

MainActivity

```
package com.example.slip19_2;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.content.Intent;
```

```
import android.os.Bundle;

import android.view.Menu;

import android.view.MenuInflater;

import android.view.MenuItem;


public class MainActivity extends AppCompatActivity {


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

    }


    public MenuInflater getMenuInflater()

    {

        return super.getMenuInflater();

    }


    public boolean onCreateOptionsMenu(Menu menu)

    {

        MenuInflater mi = getMenuInflater();

        mi.inflate(R.menu.menuugar, menu);

        return true;

    }


    public boolean onOptionsItemSelected(MenuItem item)

    {

        switch (item.getItemId())

        {
```

```

        case R.id.item1:

            Intent i = new Intent(MainActivity.this,factorial.class);

            startActivity(i);


        case R.id.item2:

            Intent i2 = new Intent(MainActivity.this,sumofdigits.class);

            startActivity(i2);


    }

    return super.onOptionsItemSelected(item);
}
}

```

Menu 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:title="Factorial" android:id="@+id/item1" />
    <item android:title="Sum of Digits" android:id="@+id/item2" />
</menu>

```

Factorial

```

package com.example.slip19_2;

import androidx.appcompat.app.AppCompatActivity;


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

```



```
import android.widget.TextView;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;


public class factorial extends AppCompatActivity {


    private EditText editTextNumber;

    private Button buttonCalculate;

    private TextView textViewResult;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        editTextNumber = findViewById(R.id.editTextNumber);

        buttonCalculate = findViewById(R.id.buttonCalculate);

        textViewResult = findViewById(R.id.textViewResult);


        buttonCalculate.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                calculateFactorial();

            }

        });

    }


    private void calculateFactorial() {

        String input = editTextNumber.getText().toString().trim();


        if (input.isEmpty()) {
```

```

        Toast.makeText(this, "Please enter a number", Toast.LENGTH_SHORT).show();

        return;
    }

    int number = Integer.parseInt(input);

    if (number < 0) {
        Toast.makeText(this, "Please enter a non-negative number", Toast.LENGTH_SHORT).show();
        return;
    }

    long factorial = calculateRecursiveFactorial(number);
    textViewResult.setText("Factorial: " + factorial);
}

private long calculateRecursiveFactorial(int number) {
    if (number == 0) {
        return 1;
    } else {
        return number * calculateRecursiveFactorial(number - 1);
    }
}
}

```

factorial 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/editTextNumber"
```

```
    android:layout_width="271dp"
```

```
    android:layout_height="37dp"
```

```
    android:layout_margin="16dp"
```

```
    android:hint="Enter a number"
```

```
    android:inputType="number"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent"
```

```
    app:layout_constraintVertical_bias="0.134" />
```

```
<Button
```

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

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginTop="72dp"
```

```
    android:text="Calculate Factorial"
```

```
    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="0.206" />
```

```
<TextView
```

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

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Factorial: "
        android:textSize="20sp"
        android:textStyle="bold"
        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" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Sum of Digits

```

package com.example.slip19_2;

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

import androidx.appcompat.app.AppCompatActivity;

public class sumofdigits extends AppCompatActivity {

    private EditText editTextNumber;
    private Button buttonCalculate;
    private TextView textViewResult;

    @Override

```

```
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);  
  
    editTextNumber = findViewById(R.id.editTextNumber);  
    buttonCalculate = findViewById(R.id.buttonCalculate);  
    textViewResult = findViewById(R.id.textViewResult);  
  
    buttonCalculate.setOnClickListener(new View.OnClickListener() {  
        @Override  
        public void onClick(View v) {  
            calculateSumOfDigits();  
        }  
    });  
}
```

```
private void calculateSumOfDigits() {  
    String input = editTextNumber.getText().toString().trim();  
  
    if (input.isEmpty()) {  
        textViewResult.setText("Please enter a number.");  
        return;  
    }  
}
```

```
int number = Integer.parseInt(input);  
int sum = 0;
```

```
while (number != 0) {  
    sum += number % 10;  
    number /= 10;  
}
```

```
        textViewResult.setText("Sum of Digits: " + sum);
    }
}
```

Sum of Digits 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/editTextNumber"
    android:layout_width="259dp"
    android:layout_height="55dp"
    android:layout_margin="16dp"
    android:hint="Enter a number"
    android:inputType="number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.201" />
```

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

```
android:layout_height="wrap_content"
android:text="Calculate Sum of Digits"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.373" />
```

```
<TextView
    android:id="@+id/textViewResult"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Sum of Digits: "
    android:textSize="20sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.55"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
```

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

Slip 20 = Q1] Write an application to accept two numbers from the user and displays them. But Reject input if both numbers are greater than 20 and asks for two new numbers

MainActivity

```
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;


public class MainActivity extends AppCompatActivity
{
    Button check;

    EditText num1,num2;

    @Override

    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        num1 = findViewById(R.id.editTextTextPersonName);
        num2 = findViewById(R.id.editTextTextPersonName2);


        check = findViewById(R.id.button);


        check.setOnClickListener(new View.OnClickListener()
        {
            @Override

            public void onClick(View view)
            {
                int no1 = Integer.parseInt(num1.getText().toString());

                int no2 = Integer.parseInt(num2.getText().toString());


                if(no1 > 20 || no2 > 20)
                {
```



```

        Toast.makeText(getApplicationContext(),"Please enter number less than
20",Toast.LENGTH_LONG).show();
    }
    else
    {
        Toast.makeText(getApplicationContext(),no1 + "\n" + no2,Toast.LENGTH_LONG).show();
    }
}
});
}
}

```

XML

<EditText

```

    android:id="@+id/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    android:text="Name"
    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="0.109" />

```

<EditText

```

    android:id="@+id/editTextTextPersonName2"

```

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Name"
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="0.252" />
```

```
<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Check"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.466"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.39" />
```

Slip 21 = Q.1] Create a Application which shows Life Cycle of Activity

MainActivity

```
package com.example.myapplication;
```

```
import android.os.Bundle;

import android.util.Log;

import android.widget.Toast;


import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity {


    private static final String TAG = "LifecycleActivity";


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d(TAG, "onCreate called");
        showToast("onCreate");
    }


    @Override
    protected void onStart() {
        super.onStart();
        Log.d(TAG, "onStart called");
        showToast("onStart");
    }


    @Override
    protected void onResume() {
        super.onResume();
        Log.d(TAG, "onResume called");
```

```
        showToast("onResume");  
    }  
}
```

```
@Override  
protected void onPause() {  
    super.onPause();  
    Log.d(TAG, "onPause called");  
    showToast("onPause");  
}
```

```
@Override  
protected void onStop() {  
    super.onStop();  
    Log.d(TAG, "onStop called");  
    showToast("onStop");  
}
```

```
@Override  
protected void onDestroy() {  
    super.onDestroy();  
    Log.d(TAG, "onDestroy called");  
    showToast("onDestroy");  
}
```

```
@Override  
protected void onRestart() {  
    super.onRestart();  
    Log.d(TAG, "onRestart called");  
    showToast("onRestart");  
}
```

```

private void showToast(String message) {
    Toast.makeText(this, message, Toast.LENGTH_SHORT).show();
}
}

```

XML

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Lifecycle Activity"
        android:textSize="24sp"
        android:textStyle="bold"
        android:layout_centerInParent="true"/>

</RelativeLayout>

```

Slip 22 = Q1] Write an Android Program to Change the Image Displayed on the Screen.

MainActivity

```

package com.example.slip19_1;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageSwitcher;
import android.widget.ImageView;
import android.widget.ViewSwitcher;

public class MainActivity extends AppCompatActivity {

    private Button previousbtn, nextbtn;

    private ImageSwitcher imgsw;

    private int[] images =
    {R.drawable.a1,R.drawable.a2,R.drawable.a3,R.drawable.a4,R.drawable.a5,R.drawable.a6,R.drawable.a7,R.drawable.a8};

    private int position = 0;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        previousbtn = (Button)findViewById(R.id.btnPrevious);

        nextbtn = (Button)findViewById(R.id.btnNext);

        imgsw = (ImageSwitcher) findViewById(R.id.imgSw);

        imgsw.setFactory(new ViewSwitcher.ViewFactory() {

            @Override

            public View makeView()

            {

                ImageView imgVw= new ImageView(MainActivity.this);

                imgVw.setImageResource(images[position]);

                return imgVw;
            }
        });
    }
}

```

```

    }
});
imgsw.setInAnimation(this, android.R.anim.slide_in_left);
imgsw.setOutAnimation(this, android.R.anim.slide_out_right);
previousbtn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v)
    {
        if(position>0)
            position--;
        else if(position<0)
            position = 0;
        imgsw.setImageResource(images[position]);
    }
});
nextbtn.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        if(position<images.length)
            position++;
        if(position>=images.length)

            position = images.length-1;
        imgsw.setImageResource(images[position]);
    }
});
}
}

```

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">
```

```
<ImageSwitcher
```

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

```
    android:layout_width="376dp"
```

```
    android:layout_height="533dp"
```

```
    android:layout_alignParentEnd="true"
```

```
    android:layout_alignParentRight="true"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.457"
```

```
    app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent"
```

```
    app:layout_constraintVertical_bias="0.08" >
```

```
</ImageSwitcher>
```

```
<Button
```

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

```
    android:layout_width="141dp"
```

```
    android:layout_height="77dp"
```

```
    android:text="Next"
```



```

app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.073"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.879" />

```

```

<Button
    android:id="@+id/btnPrevious"
    android:layout_width="138dp"
    android:layout_height="73dp"
    android:text="Previous"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.765"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.876" />

```

```

</androidx.constraintlayout.widget.ConstraintLayout>

```

Slip 22 = Q.2] Perform following numeric operation according to user selection of radio button

MainActivity

```

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.TextView;


public class MainActivity extends AppCompatActivity {


    Button click;

    TextView output;

    EditText num;

    RadioGroup radioGroup;

    RadioButton uc,lc,r_5c,l_5c;


    @Override

    protected void onCreate(Bundle savedInstanceState)
    {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        click = findViewById(R.id.button);

        output = findViewById(R.id.textView4);

        num = findViewById(R.id.editTextTextPersonName);

        radioGroup = findViewById(R.id.radioGroup);


        uc = findViewById(R.id.radioButton);

        lc = findViewById(R.id.radioButton2);

        r_5c = findViewById(R.id.radioButton3);


        click.setOnClickListener(new View.OnClickListener()

        {

            @Override

```

```
public void onClick(View view)
{
    int select = radioGroup.getCheckedRadioButtonId();

    switch (select)
    {
        case R.id.radioButton:
            String odd_even;
            int no = Integer.parseInt(num.getText().toString());
            if(no%2==0)
            {
                odd_even = "Number is even";
            }
            else
            {
                odd_even = "Number is odd";
            }
            output.setText(odd_even);
            break;
        case R.id.radioButton2:
            String pos_neg;
            int n = Integer.parseInt(num.getText().toString());
            if(n<0)
            {
                pos_neg = "Number is Negative";
            }
            else
            {
                pos_neg = "Number is Positive";
            }
            output.setText(pos_neg);
    }
}
```

```

        break;
    case R.id.radioButton3:
        int number = Integer.parseInt(num.getText().toString());
        int sq = number * number;
        output.setText(String.valueOf(sq));
        break;
    }
}
});
}
}

```

XML

<TextView

```

    android:id="@+id/textView"
    android:layout_width="155dp"
    android:layout_height="53dp"
    android:text="Enter Number : "
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.195"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.069" />

```

<EditText

```
android:id="@+id/editTextTextPersonName"
android:layout_width="200dp"
android:layout_height="49dp"
android:ems="10"
android:inputType="textPersonName"
android:text=""
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.236"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.146" />
```

<RadioGroup

```
android:id="@+id/radioGroup"
android:layout_width="237dp"
android:layout_height="146dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.328"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.298">
```

<RadioButton

```
android:id="@+id/radioButton"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:text="Odd or Even" />
```

<RadioButton

```
    android:id="@+id/radioButton2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Positive or Negative" />
```

```
<RadioButton
```

```
    android:id="@+id/radioButton3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Square" />
```

```
</RadioGroup>
```

```
<Button
```

```
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Click"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.634"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.524" />
```

```
<TextView
```

```
    android:id="@+id/textView3"
    android:layout_width="118dp"
    android:layout_height="34dp"
    android:text="Output"
    android:textSize="25sp"
```

```
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.194"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.601" />
```

```
<TextView
    android:id="@+id/textView4"
    android:layout_width="203dp"
    android:layout_height="62dp"
    android:text=""
    android:textSize="25sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.341"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.707" />
```

Slip 23 = Q. 1] Write a Java android program to demonstrate implicit intent.

MainActivity

```
package com.example.slip23_1;
```

```
import android.content.Intent;
```

```
import android.net.Uri;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private Button buttonOpenWebsite;
    private Button buttonMakeCall;

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

        buttonOpenWebsite = findViewById(R.id.buttonOpenWebsite);

        buttonOpenWebsite.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String url = "https://www.google.com";
                Intent intent = new Intent(Intent.ACTION_VIEW);
                intent.setData(Uri.parse(url));
                startActivity(intent);
            }
        });
    }
}

```

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/buttonOpenWebsite"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="16dp"
        android:text="Open Website"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.449"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.31" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Slip 23 = Q.2) Create an Android application which will ask the user to input his / her name. A message should display the two items concatenated in a label. Change the format of the label using radio buttons and check boxes for selection. The user can make the label text bold, underlined or italic as well as change its color. Also include buttons to display the message in the label, clear the text boxes as well as label. Finally exit.

MainActivity

```
package com.example.slip5_2;
```

```
import android.graphics.Color;
```

```
import android.graphics.Typeface;
```

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
import android.widget.Button;
```

```
import android.widget.CheckBox;
```

```
import android.widget.EditText;
```

```
import android.widget.RadioButton;
```

```
import android.widget.RadioGroup;
```

```
import android.widget.TextView;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends AppCompatActivity {
```

```
    EditText editTextName, editTextMessage;
```

```
    Button buttonDisplay, buttonClear;
```

```
    CheckBox checkBoxBold, checkBoxItalic, checkBoxUnderline;
```

```
    RadioGroup radioGroup;
```

```
    RadioButton radioButtonRed, radioButtonBlue, radioButtonGreen;
```

```
    TextView textViewMessage;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
editTextName = findViewById(R.id.editTextTextPersonName);  
editTextMessage = findViewById(R.id.editTextTextPersonName2);
```

```
buttonDisplay = findViewById(R.id.button);  
buttonClear = findViewById(R.id.button2);
```

```
checkBoxBold = findViewById(R.id.checkBox);  
checkBoxItalic = findViewById(R.id.checkBox2);  
checkBoxUnderline = findViewById(R.id.checkBox3);
```

```
radioGroup = findViewById(R.id.radioGroup);  
radioButtonRed = findViewById(R.id.radioButton2);  
radioButtonBlue = findViewById(R.id.radioButton3);  
radioButtonGreen = findViewById(R.id.radioButton);
```

```
textViewMessage = findViewById(R.id.textView);
```

```
buttonDisplay.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        String name = editTextName.getText().toString();  
        String msg = editTextMessage.getText().toString();  
        String message = name + ": " + msg;  
  
        int style = 0;  
        if (checkBoxBold.isChecked()) {  
            style |= Typeface.BOLD;  
        }  
        if (checkBoxUnderline.isChecked()) {  
            //style |= Typeface.UNDERLINE;  
        }  
    }  
});
```

```

    }

    if (checkBoxItalic.isChecked()) {
        style |= Typeface.ITALIC;
    }

    textViewMessage.setText(message);
    textViewMessage.setTypeface(null, style);

    int color = Color.BLACK;
    int selectedColorId = radioGroup.getCheckedRadioButtonId();
    switch (selectedColorId) {
        case R.id.radioButton2:
            color = Color.RED;
            break;
        case R.id.radioButton3:
            color = Color.GREEN;
            break;
        case R.id.radioButton:
            color = Color.BLUE;
            break;
    }
    textViewMessage.setTextColor(color);
}

});

```

```

buttonClear.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        editTextName.setText("");
        editTextMessage.setText("");
        textViewMessage.setText("");
    }
});

```

```

    }
    });

}
}

```

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/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.079"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.08" />

```

```

<EditText

```

```
android:id="@+id/editTextTextPersonName2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.079"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.173" />
```

<Button

```
android:id="@+id/button"
android:layout_width="169dp"
android:layout_height="54dp"
android:text="Display"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.078"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.28" />
```

<RadioGroup

```
android:id="@+id/radioGroup"
android:layout_width="168dp"
android:layout_height="142dp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.065"
```

```
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.439">
```

```
<RadioButton
    android:id="@+id/radioButton2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Red" />
```

```
<RadioButton
    android:id="@+id/radioButton3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Blue" />
```

```
<RadioButton
    android:id="@+id/radioButton"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Green" />
```

```
</RadioGroup>
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="169dp"
    android:layout_height="54dp"
    android:text="Concatenate"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.884"
```

```
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.28" />
```

<CheckBox

```
android:id="@+id/checkBox"
android:layout_width="103dp"
android:layout_height="45dp"
android:text="Bold"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.085"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.629" />
```

<CheckBox

```
android:id="@+id/checkBox2"
android:layout_width="103dp"
android:layout_height="45dp"
android:text="Italics"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.461"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.631" />
```

<CheckBox

```
android:id="@+id/checkBox3"
android:layout_width="103dp"
```



```
android:layout_height="45dp"
android:text="Underline"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.883"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.629" />
```

```
<TextView
    android:id="@+id/textView"
    android:layout_width="290dp"
    android:layout_height="81dp"
    android:textSize="40sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.495"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.827" />
```

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

Slip 24 = Q.1] Write an application to accept a string from the user. With two buttons to display the string in Uppercase and Lowercase using the toast message.

MainActivity

```
package com.example.slip24_1;
```

```
import androidx.appcompat.app.AppCompatActivity;
```

```
import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EdgeEffect;

import android.widget.EditText;

import android.widget.TextView;


public class MainActivity extends AppCompatActivity {

    EditText ed1;

    Button b1,b2;

    TextView t1;


    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);


        ed1 = findViewById(R.id.editTextTextPersonName);


        b1 = findViewById(R.id.button);

        b2 = findViewById(R.id.button2);


        t1 = findViewById(R.id.textView);


        b1.setOnClickListener(new View.OnClickListener() {

            @Override

            public void onClick(View v) {

                String str = ed1.getText().toString();

                String st = str.toLowerCase();

                t1.setText(st);
```

```

    }
});

b2.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String str = ed1.getText().toString();
        String st = str.toUpperCase();
        t1.setText(st);
    }
});
}
}

```

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="259dp"
        android:layout_height="101dp"
        app:layout_constraintBottom_toBottomOf="parent"

```

```
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.61"
android:textSize="50sp"/>
```

```
<Button
    android:id="@+id/button"
    android:layout_width="234dp"
    android:layout_height="61dp"
    android:text="LowerCase"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.367"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.231" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="231dp"
    android:layout_height="57dp"
    android:text="UpperCase"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.361"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.357" />
```

```
<EditText
```

```

        android:id="@+id/editTextTextPersonName"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:text="Enter Str"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.323"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.097" />

```

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

Slip 24 = Q.2] Create table Car (id, name, type, color). Create Java Android Application for performing the following operation on the table. (Using SQLite database) i) Insert 5 New Car Details. ii) Show All the Car Detail

MainActivity // do for car

```

package com.example.prac2_registrationform;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
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 {
```

```
    DatabaseHelper db;
```

```
    EditText ed1,ed2,ed3,ed4;
```

```
    Button reg,vi;
```

```
    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
        db = new DatabaseHelper(this);
```

```
        ed1 = findViewById(R.id.editTextTextPersonName);
```

```
        ed2 = findViewById(R.id.editTextTextPassword);
```

```
        ed3 = findViewById(R.id.editTextTextPersonName3);
```

```
        ed4 = findViewById(R.id.editTextTextEmailAddress);
```

```
        reg = findViewById(R.id.button);
```

```
        vi = findViewById(R.id.button2);
```

```
        Register();
```

```
        ViewAll();
```

```
    }
```

```
    private void Register() {
```

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

```
            @Override
```

```
            public void onClick(View v) {
```

```

        boolean reg =
db.insertdata(ed1.getText().toString(),ed2.getText().toString(),ed3.getText().toString(),ed4.getText().
toString());

        if(reg == true)
        {
            Toast.makeText(MainActivity.this,"Registration
Successful!!",Toast.LENGTH_LONG).show();
        }
        else
        {
            Toast.makeText(MainActivity.this,"Registration Failed  !!",Toast.LENGTH_LONG).show();

        }

    }

});
}

private void ViewAll() {
    vi.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            Cursor res = db.getAllData();
            if(res.getCount()==0)
            {
                showMessage ("Error","Nothing Found");
                return ;
            }

            StringBuffer buffer = new StringBuffer();
            while(res.moveToNext())
            {
                buffer.append("Name = "+res.getString(0)+"\n");
                buffer.append("Age = "+res.getString(1)+"\n");
            }
        }
    });
}

```

```

        buffer.append("PhoneNO = "+res.getString(2)+"\n");
        buffer.append("Email; = "+res.getString(3)+"\n");

    }
    showMessage("Data"+"",buffer.toString());
}
});
}

private void showMessage(String title, String message) {
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setCancelable(true);
    builder.setTitle(title);
    builder.setMessage(message);
    builder.show();
}

}

```

DataBase Helper

```

package com.example.prac2_registrationform;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

```



```

public class DatabaseHelper extends SQLiteOpenHelper
{
    public static final String DATABASE_NAME = "User.db";
    public static final String TABLE_NAME = "usr";
    public static final String COL_1 = "Name";
    public static final String COL_2 = "Age";
    public static final String COL_3 = "PhoneNo";
    public static final String COL_4 = "Email";

    public DatabaseHelper(@Nullable Context context) {
        super(context, DATABASE_NAME, null, 1);
    }

    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL(" create table "+TABLE_NAME+"(NAME TEXT , AGE TEXT , PHONENO INTEGER ,
EMAIL TEXT)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE IF EXISTS "+TABLE_NAME);
    }

    public boolean insertdata(String name, String age, String phoneno, String Email) {
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues cv = new ContentValues();
        cv.put(COL_1, name);
        cv.put(COL_2, age);

```

```

        cv.put(COL_3, phoneno);
        cv.put(COL_4, Email);

        long res = db.insert(TABLE_NAME, null, cv);

        if (res == -1) {
            return false;
        } else {
            return true;
        }
    }

    public Cursor getAllData()
    {
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor res =db.rawQuery("select * from "+TABLE_NAME,null);
        return res;

    }

}

```

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/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.313"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.157"
    tools:ignore="MissingConstraints" />
```

```
<TextView
```

```
    android:id="@+id/textView"
    android:layout_width="187dp"
    android:layout_height="55dp"
    android:text="Enter Name : "
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.281"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.078"
    tools:ignore="MissingConstraints" />
```

```
<TextView
```

```
android:id="@+id/textView2"
android:layout_width="187dp"
android:layout_height="55dp"
android:text="Enter Age : "
android:textSize="20sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.281"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.257"
tools:ignore="MissingConstraints" />
```

<EditText

```
android:id="@+id/editTextTextPassword"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPassword"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.313"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.333"
tools:ignore="MissingConstraints" />
```

<TextView

```
android:id="@+id/textView3"
android:layout_width="187dp"
android:layout_height="55dp"
```

```
android:text="Enter PhoneNo :"  
android:textSize="20sp"  
app:layout_constraintBottom_toBottomOf="parent"  
app:layout_constraintEnd_toEndOf="parent"  
app:layout_constraintHorizontal_bias="0.281"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toTopOf="parent"  
app:layout_constraintVertical_bias="0.436"  
tools:ignore="MissingConstraints" />
```

<EditText

```
android:id="@+id/editTextTextPersonName3"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:ems="10"  
android:inputType="textPersonName"  
app:layout_constraintBottom_toBottomOf="parent"  
app:layout_constraintEnd_toEndOf="parent"  
app:layout_constraintHorizontal_bias="0.313"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toTopOf="parent"  
app:layout_constraintVertical_bias="0.51"  
tools:ignore="MissingConstraints" />
```

<TextView

```
android:id="@+id/textView4"  
android:layout_width="187dp"  
android:layout_height="55dp"  
android:text="Enter Email : "  
android:textSize="20sp"  
app:layout_constraintBottom_toBottomOf="parent"
```

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.281"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.622"
tools:ignore="MissingConstraints" />
```

<EditText

```
android:id="@+id/editTextTextEmailAddress"
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_constraintHorizontal_bias="0.313"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.693" />
```

<Button

```
android:id="@+id/button"
android:layout_width="135dp"
android:layout_height="54dp"
android:text="Register"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.137"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.85" />
```

```
<Button
    android:id="@+id/button2"
    android:layout_width="135dp"
    android:layout_height="54dp"
    android:text="View"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.768"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.85" />

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

Slip 25 = Q.1] Create an android application for SMS activity

MainActivity

```
package com.example.slip24_1;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
```

```
EditText ed1;
```

```
Button b1,b2;
```

```
TextView t1;
```

```
@Override
```

```
protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
```

```
    setContentView(R.layout.activity_main);
```

```
    ed1 = findViewById(R.id.editTextTextPersonName);
```

```
    b1 = findViewById(R.id.button);
```

```
    b2 = findViewById(R.id.button2);
```

```
    t1 = findViewById(R.id.textView);
```

```
    b1.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
```

```
        public void onClick(View v) {
```

```
            String str = ed1.getText().toString();
```

```
            String st = str.toLowerCase();
```

```
            t1.setText(st);
```

```
        }
```

```
    });
```

```
    b2.setOnClickListener(new View.OnClickListener() {
```

```
        @Override
```

```
        public void onClick(View v) {
```

```
            String str = ed1.getText().toString();
```

```
            String st = str.toUpperCase();
```



```

        t1.setText(st);

    }

});

}

}

```

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="259dp"
        android:layout_height="101dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.61"
        android:textSize="50sp"/>

    <Button

        android:id="@+id/button"

```

```
android:layout_width="234dp"
android:layout_height="61dp"
android:text="LowerCase"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.367"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.231" />
```

<Button

```
android:id="@+id/button2"
android:layout_width="231dp"
android:layout_height="57dp"
android:text="UpperCase"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.361"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.357" />
```

<EditText

```
android:id="@+id/editTextTextPersonName"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Enter Str"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
```

```

        app:layout_constraintHorizontal_bias="0.323"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.097" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Slip 25 = Q.2] Create an Android application, which show Login Form in table layout. After clicking LOGIN button display the “Login Successful...” message if username and password is same else display “Invalid Login” message in Toast Control.

MainActivity

```

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;

public class MainActivity extends AppCompatActivity
{
    Button login;
    EditText user,pass;
    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
    }
}

```

```

setContentView(R.layout.activity_main);

login = findViewById(R.id.button);
user = findViewById(R.id.editTextTextPersonName);
pass = findViewById(R.id.editTextTextPersonName2);

login.setOnClickListener(new View.OnClickListener()
{
    @Override
    public void onClick(View view)
    {
        String username = user.getText().toString();
        String password = pass.getText().toString();

        if(username.equals("shaunak") && password.equals("aaaaa"))
        {
            Toast.makeText(getApplicationContext(),"Login
Successful",Toast.LENGTH_LONG).show();
        }
        else {
            Toast.makeText(getApplicationContext(),"Login
Unsuccessful",Toast.LENGTH_LONG).show();
        }
    }
});
}
}

```

XML

```

<EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"

```

```
android:ems="10"
android:inputType="textPersonName"
android:text=""
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.343"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.148" />
```

<EditText

```
android:id="@+id/editTextTextPersonName2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text=""
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.343"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.32" />
```

<TextView

```
android:id="@+id/textView"
android:layout_width="248dp"
android:layout_height="35dp"
android:text="Enter Username : "
android:textSize="25sp"
app:layout_constraintBottom_toBottomOf="parent"
```

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.423"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.096" />
```

<TextView

```
android:id="@+id/textView2"
android:layout_width="210dp"
android:layout_height="33dp"
android:text="Enter Password : "
android:textSize="25sp"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.343"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.267" />
```

<Button

```
android:id="@+id/button"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Login"
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="0.464" />
```

