

Q 1 Java Android Program to demonstrate login form with validation.

activity_main.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/username"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Username"
        android:textColor="@color/black"
        android:textSize="25sp"
        android:textStyle="bold|normal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.27"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.307" />

    <EditText
        android:id="@+id/edusername"
        android:layout_width="255dp"
        android:layout_height="50dp"
        android:ems="10"
        android:hint="Username"
        android:inputType="textEmailAddress"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.512"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.364" />

    <TextView
        android:id="@+id>Password"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Password"
        android:textColor="@color/black"
        android:textSize="25sp"
        android:textStyle="bold|normal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.26"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.44" />
```

```

<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="0.688" />

<EditText
    android:id="@+id/editTextTextEmailAddress2"
    android:layout_width="263dp"
    android:layout_height="54dp"
    android:ems="10"
    android:inputType="textEmailAddress"
    android:hint="Password"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.527"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.503" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

// Add your project package name

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.text.TextUtils;
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 {

    TextView email,password;
    EditText ed_email,ed_password;
    Button login;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        email=findViewById(R.id.username);
        password=findViewById(R.id.Password);

        ed_email=findViewById(R.id.edusername);
        ed_password=findViewById(R.id.editTextTextEmailAddress2);

        login=findViewById(R.id.button);
    }
}

```

```

        login.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if (!TextUtils.isEmpty(ed_email.getText().toString()) &&
                    !TextUtils.isEmpty(ed_password.getText().toString())) {

                    if (ed_email.getText().toString().equals("root") &&
                        ed_password.getText().toString().equals("pg@pass1")) {
                        Toast.makeText(MainActivity.this, "Login SuccessFully",
                        Toast.LENGTH_SHORT).show();
                    } else{
                        Toast.makeText(MainActivity.this, "Login Failed",
                        Toast.LENGTH_SHORT).show();
                    }
                } else {
                    Toast.makeText(MainActivity.this, "Field is empty",
                    Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}

```

Q 2

Java Android Program to demonstrate Registration form with validation.

activity_main.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/confirm_password"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="confirm password"
        android:inputType="textPassword"
        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="0.415" />

    <TextView
        android:id="@+id/registration_form"

```

```

        android:layout_width="208dp"
        android:layout_height="55dp"
        android:text="Registration"
        android:textSize="35sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.07" />

<EditText
    android:id="@+id/email"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textEmailAddress"
    android:minHeight="48dp"
    android:hint="Email"
    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="0.229" />

<EditText
    android:id="@+id/password"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="textPassword"
    android:hint="password"
    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="0.319" />

<Button
    android:id="@+id/registerbtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="registar"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.567" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.text.TextUtils;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
```

```

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    TextView textView;
    EditText email,password,confirm_password;
    Button register;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        textView=findViewById(R.id.registration_form);
        email=findViewById(R.id.email);
        password=findViewById(R.id.password);
        register=findViewById(R.id.registerbtn);
        confirm_password=findViewById(R.id.confirm_password);

        register.setOnClickListener(view -> {

            if (!TextUtils.isEmpty(email.getText().toString())
                && !TextUtils.isEmpty(password.getText().toString())
                && !TextUtils.isEmpty(confirm_password.getText().toString()))
            {

                if (confirm_password.getText().toString().equals(password.getText().toString()))
                {
                    Toast.makeText(getApplicationContext(), "Registration succssfully", Toast.LENGTH_LONG).show();
                }
                else{
                    Toast.makeText(getApplicationContext(), "Credintial not match", Toast.LENGTH_LONG).show();
                }
            }else{
                Toast.makeText(getApplicationContext(), "Inpute missing",
Toast.LENGTH_LONG).show();
            }
        });
    }
}

```

Q3

Create the simple calculator shown below also perform appropriate operatio

activity_main.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"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/edt1"

```

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    tools:ignore="LabelFor, SpeakableTextPresentCheck"
    android:importantForAutofill="no"
    android:inputType="number" />

<Button
    android:id="@+id/button1"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/button4"
    android:layout_alignRight="@+id/button4"
    android:layout_below="@+id/edt1"
    android:layout_marginTop="94dp"
    android:text="@string/_1" />

<Button
    android:id="@+id/button2"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignTop="@+id/button1"
    android:layout_toStartOf="@+id/button3"
    android:text="@string/_2" />

<Button
    android:id="@+id/button3"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignTop="@+id/button2"
    android:layout_centerHorizontal="true"
    android:text="@string/_3" />

<Button
    android:id="@+id/button4"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button1"
    android:layout_toStartOf="@+id/button2"
    android:text="@string/_4" />

<Button
    android:id="@+id/button5"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignBottom="@+id/button4"
    android:layout_alignLeft="@+id/button2"
    android:layout_alignStart="@+id/button2"
    android:text="@string/_5" />

<Button
    android:id="@+id/button6"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button3"
```

```
    android:layout_alignStart="@+id/button3"
    android:layout_below="@+id/button3"
    android:text="@string/_6" />

<Button
    android:id="@+id/button7"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button4"
    android:layout_toStartOf="@+id/button2"
    android:text="@string/_7" />

<Button
    android:id="@+id/button8"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button5"
    android:layout_alignStart="@+id/button5"
    android:layout_below="@+id/button5"
    android:text="@string/_8" />

<Button
    android:id="@+id/button9"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button6"
    android:layout_alignStart="@+id/button6"
    android:layout_below="@+id/button6"
    android:text="@string/_9" />

<Button
    android:id="@+id/buttonadd"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/edt1"
    android:layout_alignRight="@+id/edt1"
    android:layout_alignTop="@+id/button3"
    android:layout_marginLeft="46dp"
    android:layout_marginStart="46dp"
    android:layout_toEndOf="@+id/button3"
    android:text="@string/plus" />

<Button
    android:id="@+id/buttonsub"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/buttonadd"
    android:layout_alignLeft="@+id/buttonadd"
    android:layout_alignRight="@+id/buttonadd"
    android:layout_alignStart="@+id/buttonadd"
    android:layout_below="@+id/buttonadd"
    android:text="@string/minus" />

<Button
    android:id="@+id/buttonmul"
    style="?android:attr/buttonStyleSmall"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/buttonsub"
    android:layout_alignParentEnd="true"
    android:layout_alignParentRight="true"
    android:layout_alignStart="@+id/buttonsub"
    android:layout_below="@+id/buttonsub"
    android:text="@string/muilt" />

<Button
    android:id="@+id/button10"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@+id/button7"
    android:layout_toStartOf="@+id/button2"
    android:text="@string/dot" />

<Button
    android:id="@+id/button0"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button8"
    android:layout_alignStart="@+id/button8"
    android:layout_below="@+id/button8"
    android:text="@string/_0" />

<Button
    android:id="@+id/buttonC"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignLeft="@+id/button9"
    android:layout_alignStart="@+id/button9"
    android:layout_below="@+id/button9"
    android:text="@string/c" />

<Button
    android:id="@+id/buttondiv"
    style="?android:attr/buttonStyleSmall"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/buttonmul"
    android:layout_alignLeft="@+id/buttonmul"
    android:layout_alignRight="@+id/buttonmul"
    android:layout_alignStart="@+id/buttonmul"
    android:layout_below="@+id/buttonmul"
    android:text="@string/div" />

<Button
    android:id="@+id/buttononeql"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignEnd="@+id/buttondiv"
    android:layout_alignLeft="@+id/button10"
    android:layout_alignRight="@+id/buttondiv"
    android:layout_alignStart="@+id/button10"
    android:layout_below="@+id/button0"
    android:layout_marginTop="37dp"
    android:text="@string/equal" />
```

```
</RelativeLayout>
```

MainActivity.java

```
import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    Button button0, button1, button2, button3, button4, button5, button6,
        button7, button8, button9, buttonAdd, buttonSub, buttonDivision,
        buttonMul, button10, buttonC, buttonEqual;
    EditText EditText;

    float mValueOne, mValueTwo;

    boolean Addition, Subtract, Multiplication, Division;

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

        button0 = (Button) findViewById(R.id.button0);
        button1 = (Button) findViewById(R.id.button1);
        button2 = (Button) findViewById(R.id.button2);
        button3 = (Button) findViewById(R.id.button3);
        button4 = (Button) findViewById(R.id.button4);
        button5 = (Button) findViewById(R.id.button5);
        button6 = (Button) findViewById(R.id.button6);
        button7 = (Button) findViewById(R.id.button7);
        button8 = (Button) findViewById(R.id.button8);
        button9 = (Button) findViewById(R.id.button9);
        button10 = (Button) findViewById(R.id.button10);
        buttonAdd = (Button) findViewById(R.id.buttonadd);
        buttonSub = (Button) findViewById(R.id.buttonsab);
        buttonMul = (Button) findViewById(R.id.buttonmul);
        buttonDivision = (Button) findViewById(R.id.buttondiv);
        buttonC = (Button) findViewById(R.id.buttonC);
        buttonEqual = (Button) findViewById(R.id.buttoneql);
        EditText = (EditText) findViewById(R.id.edt1);

        button1.setOnClickListener(v -> EditText.setText(EditText.getText() +
        "1"));
        button2.setOnClickListener(v -> EditText.setText(EditText.getText() +
        "2"));
        button3.setOnClickListener(v -> EditText.setText(EditText.getText() +
        "3"));
        button4.setOnClickListener(v -> EditText.setText(EditText.getText() +
        "4"));
        button5.setOnClickListener(v -> EditText.setText(EditText.getText() +
```

```

    "5"));
}

button6.setOnClickListener(v -> EditText.setText(EditText.getText() +
"6"));

button7.setOnClickListener(v -> EditText.setText(EditText.getText() +
"7"));

button8.setOnClickListener(v -> EditText.setText(EditText.getText() +
"8"));

button9.setOnClickListener(v -> EditText.setText(EditText.getText() +
"9"));

button0.setOnClickListener(v -> EditText.setText(EditText.getText() +
"0"));

buttonAdd.setOnClickListener(v -> {

    if (EditText == null) {
    } else {
        mValueOne = Float.parseFloat(EditText.getText() + "");
        Addition = true;
        EditText.setText(null);
    }
});

buttonSub.setOnClickListener(v -> {
    mValueOne = Float.parseFloat(EditText.getText() + "");
    Subtract = true;
    EditText.setText(null);
});

buttonMul.setOnClickListener(v -> {
    mValueOne = Float.parseFloat(EditText.getText() + "");
    Multiplication = true;
    EditText.setText(null);
});

buttonDivision.setOnClickListener(v -> {
    mValueOne = Float.parseFloat(EditText.getText() + "");
    Division = true;
    EditText.setText(null);
});

buttonEqual.setOnClickListener(v -> {
    mValueTwo = Float.parseFloat(EditText.getText() + "");

    if (Addition) {
        EditText.setText(mValueOne + mValueTwo + "");
        Addition = false;
    }

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

    if (Multiplication) {
        EditText.setText(mValueOne * mValueTwo + "");
        Multiplication = false;
    }
}

```

```

        }

        if (Division) {
            EditText.setText(mValueOne / mValueTwo + "");
            Division = false;
        }
    });

buttonC.setOnClickListener(v -> EditText.setText(""));

button10.setOnClickListener(v -> EditText.setText(EditText.getText() +
"."));

}
}
}

```

string.xml

```

<resources>
    <string name="_1">1</string>
    <string name="_2">2</string>
    <string name="_3">3</string>
    <string name="_4">4</string>
    <string name="_5">5</string>
    <string name="_6">6</string>
    <string name="_7">7</string>
    <string name="_8">8</string>
    <string name="_9">9</string>
    <string name="plus">+</string>
    <string name="minus">-</string>
    <string name="muilt">*</string>
    <string name="dot">. </string>
    <string name="_0">0</string>
    <string name="c">C</string>
    <string name="div">/</string>
    <string name="equal">=</string>
</resources>

```

Q 4

Create an Android application which examine, that a phone number, which a user has entered is in 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).

activity_main.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>Title"
    android:layout_width="390dp"
    android:layout_height="wrap_content"
    android:text="@string/enter_your_number_with_area_code"
    android:textColor="@color/black"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.322"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.437" />

<EditText
    android:id="@+id/number"
    android:layout_width="390dp"
    android:layout_height="65dp"
    android:ems="10"
    android:hint="@string/number"
    android:inputType="number"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.38"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.507"
    android:importantForAutofill="no" />

<Button
    android:id="@+id/submit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/submit"
    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="0.657" />

<TextView
    android:id="@+id>Note"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"

    android:text="@string/area_code_should_be_start_with_n040_041_050_0400_044"
    android:textColor="@color/black"
    android:textStyle="normal"
    android:textSize="25sp"
    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="0.186" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

string.xml

```

<resources>
    <string name="submit">Submit</string>
    <string name="number">Number</string>
    <string name="enter_your_number_with_area_code">Enter Your number with Area
code</string>
    <string name="area_code_should_be_start_with_n040_041_050_0400_044">Area code
should be Start with \n040 , 041 , 050 , 0400, 044</string>
</resources>

```

MainActivity.java

```

// add your project package name
import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    TextView title,note;
    EditText number;
    Button submit;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        title=findViewById(R.id.Title);
        note=findViewById(R.id.Note);
        number=findViewById(R.id.number);
        submit=findViewById(R.id.submit);

        submit.setOnClickListener(view -> isSubstring());
    }

    private void isSubstring() {
        String input = number.getText().toString();

        if (input.startsWith("040") || input.startsWith("041") ||
            input.startsWith("050")|| input.startsWith("0400") ||
            input.startsWith("044")) {
            Toast.makeText(this, "Area code is present in given number ",
```

```

        Toast.LENGTH_SHORT).show();
    }
    else{
        Toast.makeText(this, "Area code is not present in given number",
Toast.LENGTH_SHORT).show();
    }
}
}

```

Q 5

By using Spinner, Buttons. Write a program to draw following GUI.

activity_main.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/label"
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:text="Enter Spinner Element"
        android:textColor="@color/black"
        android:textStyle="bold|normal"
        android:textSize="25sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.138"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.078" />

    <EditText
        android:id="@+id/input"
        android:layout_width="300dp"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="type element"
        android:inputType="textPersonName"
        android:minHeight="48dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.144"

```

```

        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.128" />

    <Button
        android:id="@+id/add"
        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="0.28"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.265" />

    <Button
        android:id="@+id/remove"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="remove"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.7"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.265" />

    <Spinner
        android:id="@+id/spinner"
        android:layout_width="290dp"
        android:layout_height="66dp"
        android:minHeight="48dp"
        android:prompt="@color/black"
        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="0.398"/>

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

//Add your project package name

import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Spinner;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

```

```
import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {

    TextView label;
    EditText input;
    Button add,remove;
    Spinner spinner;
    String Name="ANDROID";
    String elements;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        label = findViewById(R.id.label);
        input = findViewById(R.id.input);
        add = findViewById(R.id.add);
        remove = findViewById(R.id.remove);
        spinner = findViewById(R.id.spinner);

        ArrayList<String> arrayList = new ArrayList<>();
        arrayList.add("ANDROID");

        add.setOnClickListener(view -> {
            elements=input.getText().toString();
            arrayList.add(elements);
        });

        remove.setOnClickListener(view -> {
            String elements=input.getText().toString();
            arrayList.remove(elements);
        });

        ArrayAdapter<String> arrayAdapter = new ArrayAdapter<>(this,
        android.R.layout.simple_spinner_item, arrayList);

        arrayAdapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
        spinner.setAdapter(arrayAdapter);
        spinner.setOnItemSelectedListener(new
        AdapterView.OnItemSelectedListener() {
            @Override
            public void onItemSelected(AdapterView<?> parent, View view, int
            position, long id) {
                Name = parent.getItemAtPosition(position).toString();
                Toast.makeText(getApplicationContext(), "Selected: " + Name,
                Toast.LENGTH_LONG).show();
            }
            @Override
            public void onNothingSelected(AdapterView <?> parent) {
            }
        });
    }
}
```

Q7 Construct an app to display the image on date wise.

activity_main.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/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:onClick=" setDate"
        android:text="@string/date_button_set"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.479"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.166" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/button1"
        android:layout_centerInParent="true"
        android:layout_toStartOf="@+id/button1"
        android:text="@string/date_view_set"
        android:textStyle="bold"
        android:textSize="30sp"
        android:textAppearance="?android:attr/textAppearanceMedium"
        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="0.07" />

    <TextView
        android:id="@+id/textView3"
        android:layout_width="121dp"
        android:layout_height="31dp"
        android:layout_below="@+id/textView2"
        android:layout_alignEnd="@+id/button1"
        android:layout_centerVertical="true"
        android:layout_toEndOf="@+id/textView2"
        android:text="@string/date_selected"
```

```

        android:textSize="25sp"
        android:textStyle="bold"
        android:textAppearance="?android:attr/textAppearanceMedium"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.263" />

    <ImageView
        android:id="@+id/image"
        android:layout_width="304dp"
        android:layout_height="316dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.494"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.661"
        tools:ignore="ContentDescription" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

//add your project package name

// Add any 4 images into drawble folder and give name according to this program

import static com.example.datewiseimageexample.R.drawable.img;
import static com.example.datewiseimageexample.R.drawable.img_1;
import static com.example.datewiseimageexample.R.drawable.img_2;
import static com.example.datewiseimageexample.R.drawable.img_3;

import android.app.DatePickerDialog;
import android.app.Dialog;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity{

    private Calendar calendar;
    private TextView dateView;
    private ImageView imageView;
    private int year, month, day;

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

```

```

        dateView = findViewById(R.id.textView3);
        imageView=findViewById(R.id.image);
        calendar = Calendar.getInstance();
        year = calendar.get(Calendar.YEAR);

        month = calendar.get(Calendar.MONTH);
        day = calendar.get(Calendar.DAY_OF_MONTH);
        showDate(year, month+1, day);
    }

    @SuppressWarnings("deprecation")
    public void setDate(View view) {
        showDialog(999);
    }

    @Override
    protected Dialog onCreateDialog(int id) {
        if (id == 999)
        {
            return new DatePickerDialog(this, myDateListener, year, month, day);
        }
        return null;
    }

    private DatePickerDialog.OnDateSetListener myDateListener = (arg0, arg1,
    arg2, arg3) -> showDate(arg1, arg2+1, arg3);

    private void showDate(int year, int month, int day) {
        dateView.setText(new StringBuilder().append(day).append("/")
                .append(month).append("/").append(year));

        switch (month){
            case 1:imageView.setImageResource(img);
            break;
            case 2:imageView.setImageResource(img);
            break;
            case 3:imageView.setImageResource(img);
            break;
            case 4:imageView.setImageResource(img);
            break;
            case 5:imageView.setImageResource(img_1);
            break;
            case 6:imageView.setImageResource(img_1);
            break;
            case 7:imageView.setImageResource(img_1);
            break;
            case 8:imageView.setImageResource(img_1);
            break;
            case 9:imageView.setImageResource(img_3);
            break;
            case 10:imageView.setImageResource(img_3);
            break;
            case 11:imageView.setImageResource(img_3);
            break;
            case 12:imageView.setImageResource(img_3);
            break;
            default:
                imageView.setImageResource(img_2);
                throw new IllegalStateException("Unexpected value: " + month);
        }
    }
}

```

```
}
```

string.xml

```
<resources>
    <string name="date_button_set">Date button set</string>
    <string name="date_label_set">Date label set</string>
    <string name="date_view_set">Date view set</string>
    <string name="date_selected">Date selected</string>
</resources>
```

Q 8

Construct image switcher using setFactory()

activity_main.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>Title"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Image Switcher"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.47"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.045" />

    <ImageSwitcher
        android:id="@+id/imageSwitcher"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

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

```

        android:layout_centerHorizontal="true"
        android:text="@string/left"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.886"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.764" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignStart="@+id/button"
        android:layout_alignLeft="@+id/button"
        android:layout_alignParentBottom="true"
        android:text="@string/right"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.149"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.764" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

//add Your project package name

//add Any 2 Images into drawable folder and give name according to program

import android.app.ActionBar.LayoutParams;
import android.app.Activity;
import android.os.Bundle;
import android.widget.Button;
import android.widget.ImageSwitcher;
import android.widget.ImageView;
import android.widget.Toast;

public class MainActivity extends Activity {
    private ImageSwitcher sw;
    private Button b1,b2;

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

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

        sw = (ImageSwitcher) findViewById(R.id.imageSwitcher);
        sw.setFactory(() -> {
            ImageView myView = new ImageView(getApplicationContext());
            myView.setScaleType(ImageView.ScaleType.FIT_CENTER);
            myView.setLayoutParams(new
                ImageSwitcher.LayoutParams(LayoutParams.WRAP_CONTENT,
                LayoutParams.WRAP_CONTENT));
        });
    }
}

```

```

        return myView;
    });

    b1.setOnClickListener(v -> {
        Toast.makeText(getApplicationContext(), "Right Image",
            Toast.LENGTH_LONG).show();
        sw.setImageResource(R.drawable.img);
    });

    b2.setOnClickListener(v -> {
        Toast.makeText(getApplicationContext(), "Left Image",
            Toast.LENGTH_LONG).show();
        sw.setImageResource(R.drawable.img_1);
    });
}
}
}

```

string.xml

```

<resources>
    <string name="left">left</string>
    <string name="right">right</string>
</resources>

```

Q 9

Construct a bank app to display different menu like windrow, deposite etc.

activity_main.xml

```

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/enter_amount"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.166"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.055" />

```

```
<EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="5dp"
    android:layout_marginBottom="620dp"
    android:ems="10"
    android:inputType="number"
    android:hint="@string/amount"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.238"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView"
    app:layout_constraintVertical_bias="0.0"
    android:importantForAutofill="no" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="34dp"
    android:layout_marginBottom="539dp"
    android:text="@string/deposite"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.256"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName"
    app:layout_constraintVertical_bias="0.0" />

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="52dp"
    android:layout_marginTop="34dp"
    android:text="@string/widraw"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toEndOf="@+id/button"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName"
    app:layout_constraintVertical_bias="0.0" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="78dp"
    android:layout_marginBottom="65dp"
    android:textSize="20sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toTopOf="@+id/textView3"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/button"
    app:layout_constraintVertical_bias="0.0" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"
        android:text="@string/reduct_or_remaining_amount"
        android:textSize="20sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.494"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.517" />

    </androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

// add your project package name

import android.annotation.SuppressLint;
import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    TextView label,minimum_Amount,Amount;
    EditText inpuTe;
    Button deposite,widraw;

    double min_Amount=1000.0;
    double amount=0.0;
    String final_amount="";

    @SuppressLint("SetTextI18n")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        label=findViewById(R.id.textView);
        minimum_Amount=findViewById(R.id.textView2);
        Amount=findViewById(R.id.textView3);

        inpuTe=findViewById(R.id.editTextTextPersonName);

        deposite=findViewById(R.id.button);
        widraw=findViewById(R.id.button2);

        minimum_Amount.setText("Minimum Amount set as 1000");

        deposite.setOnClickListener(view -> {

            amount= Double.parseDouble(inpuTe.getText().toString());

            final_amount= String.valueOf(min_Amount + amount);

            Amount.setText("Available Amount is "+final_amount);
        });
    }
}

```

```

    });

widraw.setOnClickListener(view -> {
    amount= Double.parseDouble(inpute.getText().toString());
    final_amount= String.valueOf(min_Amount - amount);
    Amount.setText("Remaining Amount is "+final_amount);
});
}
}

```

string.xml

```

<resources>
    <string name="enter_amount">Enter amount</string>
    <string name="amount">Amount</string>
    <string name="deposite">Deposite</string>
    <string name="widraw">Widraw</string>
    <string name="available">Available</string>
    <string name="previos_amount">Previos Amount</string>
    <string name="reduct_amount">Reduct Amount</string>
    <string name="total_amount">Total Amount</string>
    <string name="textview">TextView</string>
    <string name="reduct_or_remaining_amount">Reduct Or Remaining amount</string>
</resources>

```

Q 10

Create an Android application, where the user can enter player name and points in one view and display it in another view.

activity_main.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/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter Player Name"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.288"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"

```

```
    app:layout_constraintVertical_bias="0.243" />

<EditText
    android:id="@+id/name_edt"
    android:layout_width="286dp"
    android:layout_height="46dp"
    android:ems="10"
    android:hint="Name"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.462"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.31" />

<TextView
    android:id="@+id/point"
    android:layout_width="229dp"
    android:layout_height="34dp"
    android:layout_marginTop="12dp"
    android:text="Player Point"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.318"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/name_edt" />

<EditText
    android:id="@+id/point_edt"
    android:layout_width="311dp"
    android:layout_height="49dp"
    android:layout_marginTop="12dp"
    android:ems="10"
    android:hint="Pont"
    android:inputType="number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.58"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/point"
    app:layout_constraintVertical_bias="0.002" />

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="158dp"
    android:layout_marginTop="44dp"
    android:layout_marginEnd="159dp"
    android:layout_marginBottom="272dp"
    android:text="Show"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/point_edt" />

<TextView
    android:id="@+id/name_set"
    android:layout_width="wrap_content"
```

```

        android:layout_height="wrap_content"
        android:layout_marginStart="187dp"
        android:layout_marginTop="37dp"
        android:layout_marginEnd="167dp"
        android:layout_marginBottom="216dp"
        android:text="TextView"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/button" />

<TextView
    android:id="@+id/point_set"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="189dp"
    android:layout_marginTop="24dp"
    android:layout_marginEnd="165dp"
    android:layout_marginBottom="173dp"
    android:text="TextView"
    android:textSize="25dp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/name_set" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

//add your project package name

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 {

    TextView name,point,name_dsply,point_dsply;
    EditText name_edt,point_edt;
    Button submit;

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

        name=findViewById(R.id.name);
        point=findViewById(R.id.point);
        name_edt=findViewById(R.id.name_edt);

```

```
point_edt=findViewById(R.id.point_edt);
name_dsply=findViewById(R.id.name_set);
point_dsply=findViewById(R.id.point_set);

submit=findViewById(R.id.button);
submit.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if (name_edt==null){
            Toast.makeText(getApplicationContext(),"field is empty",Toast.LENGTH_SHORT).show();
        }else{
            name_dsply.setText(name_edt.getText().toString());
        }
        if (point_edt==null){
            Toast.makeText(getApplicationContext(),"field is empty",Toast.LENGTH_SHORT).show();
        }else{
            point_dsply.setText(point_edt.getText().toString());
        }
    });
}
```

string.xml

```
<resources>
    <string name="enter_player_name">Enter Player Name</string>
    <string name="name">Name</string>
    <string name="player_point">Player Point</string>
    <string name="pont">Pont</string>
    <string name="show">Show</string>
    <string name="textview">TextView</string>
</resources>
```

Q 11

Create an Android application, the user can enter 10 students information and stored it in file and display student information in second view and also search the particular student information.

activity_main.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/textView2"
    android:layout_width="337dp"
    android:layout_height="28dp"
    android:text="@string/file_content"
    android:textAlignment="center"
    android:textColor="#000"
    android:textSize="24sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.52" />

<Button
    android:id="@+id/write_button"
    android:layout_width="wrap_content"
    android:layout_height="48dp"
    android:layout_marginStart="160dp"
    android:layout_marginEnd="159dp"
    android:layout_marginBottom="16dp"
    android:text="@string/write"
    app:layout_constraintBottom_toTopOf="@+id/read_button"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.904" />

<Button
    android:id="@+id/read_button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="160dp"
    android:layout_marginEnd="158dp"
    android:layout_marginBottom="48dp"
    android:text="@string/read"
    app:layout_constraintBottom_toTopOf="@+id/textView2"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent" />

<EditText
    android:id="@+id/userInput"
    android:layout_width="319dp"
    android:layout_height="50dp"
    android:layout_marginStart="46dp"
    android:layout_marginTop="91dp"
    android:layout_marginEnd="46dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="@string/type_student_name"
    app:layout_constraintEnd_toEndOf="parent"
```

```

        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        android:importantForAutofill="no" />

<TextView
    android:id="@+id/content"
    android:layout_width="332dp"
    android:layout_height="306dp"
    android:layout_marginStart="33dp"
    android:layout_marginTop="21dp"
    android:layout_marginEnd="33dp"
    android:layout_marginBottom="6dp"
    android:textAlignment="center"
    android:textColor="#000"
    android:textStyle="bold|normal"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.461"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView2"
    app:layout_constraintVertical_bias="0.0" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

//add your project package name

import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import java.io.File;
import java.io.FileWriter;
import java.io.IOException;
import java.util.Scanner;

public class MainActivity extends AppCompatActivity {

    // declare the variables
    Button read, write;
    EditText userInput;
    TextView fileContent;

    File file;
    FileWriter writer;

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

        read = findViewById(R.id.read_button);
        write = findViewById(R.id.write_button);
        userInput = findViewById(R.id.userInput);
        fileContent = findViewById(R.id.content);
    }
}

```

```

        createfile();

        read.setOnClickListener(view -> readData());

        write.setOnClickListener(view -> writeData());
    }

    public void createfile () {
        file = new File(MainActivity.this.getFilesDir(), "text");
        if (!file.exists()) {
            file.mkdir();
        }
        try {
            File gpxfile = new File(file, "sample");
            FileWriter writer = new FileWriter(gpxfile);
            Toast.makeText(MainActivity.this, "File created successfully", Toast.LENGTH_SHORT).show();
            writer.close();
        } catch (IOException exception) {
            Toast.makeText(getApplicationContext(), "unexpect Error occurred " + exception, Toast.LENGTH_SHORT).show();
            exception.printStackTrace();
        }
    }

    public void writeData () {

        try {
            File gpxfile = new File(file, "sample");
            writer = new FileWriter(gpxfile);
            writer.append(userInput.getText().toString()).append("\n");
            writer.close();
            Toast.makeText(getApplicationContext(), "content write in File sucessfully", Toast.LENGTH_SHORT).show();
        } catch (IOException e) {
            Toast.makeText(getApplicationContext(), "Unexpected error occurred", Toast.LENGTH_SHORT).show();
            e.printStackTrace();
        }
    }

    public void readData () {
        try {
            File gpxfile = new File(file, "sample");
            Scanner dataReader = new Scanner(gpxfile);
            while (dataReader.hasNextLine()) {
                String fileData = dataReader.nextLine();
                fileContent.setText(fileData);
            }
            dataReader.close();
            //writer.flush();
        } catch(Exception exception) {
            exception.printStackTrace();
            Toast.makeText(getApplicationContext(), "Unexpected error occurred", Toast.LENGTH_SHORT).show();
        }
    }
}

```

```
    }  
}
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
    package="com.example.studentinfoexample">  
  
    <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>  
    <uses-permission android:name="android.permission.READ_EXTERNAL_STORAGE"/>  
  
    <application  
        android:allowBackup="true"  
        android:icon="@mipmap/ic_launcher"  
        android:label="@string/app_name"  
        android:roundIcon="@mipmap/ic_launcher_round"  
        android:supportsRtl="true"  
        android:theme="@style/Theme.StudentInfoExample">  
        <activity  
            android:name=".MainActivity"  
            android:exported="true">  
            <intent-filter>  
                <action android:name="android.intent.action.MAIN" />  
  
                <category android:name="android.intent.category.LAUNCHER" />  
            </intent-filter>  
        </activity>  
    </application>  
  
</manifest>
```

string.xml

```
<resources>  
    <string name="file_content">File Content</string>  
    <string name="read">Read</string>  
    <string name="write">Write</string>  
    <string name="type_student_name">Type Student Name</string>  
</resources>
```

Q 12

Write an application to accept two numbers from the user, and displays them, but reject input if both numbers are greater than 10 and asks for two new numbers.

activity_main.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/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter Number"
        android:textColor="@color/black"
        android:textSize="25sp"
        android:textStyle="bold|normal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.317"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.345" />

    <EditText
        android:id="@+id/input"
        android:layout_width="250dp"
        android:layout_height="51dp"
        android:hint="@string/enter_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="0.404"
        android:inputType="number"
        android:importantForAutofill="no" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/check"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/input"
        app:layout_constraintVertical_bias="0.106" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        android:textSize="25sp"
        android:textStyle="bold|normal"
        android:textColor="@color/black"
        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="0.689" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
// Add your project package name
import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    Button submit;
    EditText input;
    TextView textView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        submit=findViewById(R.id.button);
        input=findViewById(R.id.input);
        textView=findViewById(R.id.textView);

        submit.setOnClickListener(view -> {

            int num= Integer.parseInt(input.getText().toString());

            int len=input.getText().toString().length();

            if(2<=len){
                Toast.makeText(getApplicationContext(),"wrong input try
again..",Toast.LENGTH_SHORT).show();
                input.setText("");
            }
            else{
                Toast.makeText(getApplicationContext(),"right
input",Toast.LENGTH_SHORT).show();
                textView.setText("Given number is "+num);
            }
        });
    }
}
```

string.xml

```
<resources>
    <string name="check">check</string>
    <string name="enter_number">Enter number</string>
</resources>
```

Q 13

Create table Customer (id, name, address, phno). Create Application for Performing the following operation on the table. (using sqlite database) i) Insert New Customer Details. ii) Show All the Customer Details

activity_main.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/id"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/customer_id"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.09"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.072" />

    <EditText
        android:id="@+id/id_edt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="@string/id"
        android:importantForAutofill="no"
        android:inputType="number"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.989"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.072" />

    <TextView
        android:id="@+id/name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/name"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.07"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.17" />

<EditText
    android:id="@+id/name_edt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:autofillHints="no"
    android:ems="10"
    android:hint="@string/name"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.989"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.173" />

<TextView
    android:id="@+id/address"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/address"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.076"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.263" />

<EditText
    android:id="@+id/Address_edt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="@string/address"
    android:importantForAutofill="no"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="1.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.268" />

<TextView
    android:id="@+id/phone"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/phone_no"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.081"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
```

```
    app:layout_constraintVertical_bias="0.362" />

<EditText
    android:id="@+id/phone_edt"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="@string/phone_no"
    android:importantForAutofill="no"
    android:inputType="phone"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="1.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.367" />

<Button
    android:id="@+id/save_btn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/save"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.436"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.477" />

<TextView
    android:id="@+id/textView5"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="TextView"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.48"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.613" />

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

MainActivity.java

```
//add your project package name

import android.content.ContentValues;
import android.database.Cursor;
import android.database.SQLException;
import android.database.sqlite.SQLiteDatabase;
import android.os.Bundle;
import android.util.Log;
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;

import java.util.List;

public class MainActivity extends AppCompatActivity {

    TextView id,name,address,phone_no,result;
    EditText id_edt,name_edt,address_edt,phone_edt;
    Button save_btn;

    int c_id;
    long c_phone_no;
    String c_name;
    String c_Address;

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

        id = findViewById(R.id.id);
        name = findViewById(R.id.name);
        address = findViewById(R.id.address);
        phone_no = findViewById(R.id.phone);
        id_edt = findViewById(R.id.id_edt);
        name_edt = findViewById(R.id.name_edt);
        address_edt = findViewById(R.id.Address_edt);
        phone_edt = findViewById(R.id.phone_edt);
        save_btn = findViewById(R.id.save_btn);

        result = findViewById(R.id.textView5);

        try {
```

```
//create database
SQLiteDatabase Empdatabase =
openOrCreateDatabase("Emp", MODE_ENABLE_WRITE_AHEAD_LOGGING, null);

//create table
Empdatabase.execSQL("CREATE TABLE IF NOT EXISTS Emp(cid int,cname TEXT,cAddress
TEXT,cphoneno long);");

save_btn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if(Empdatabase!=null){
            Toast.makeText(getApplicationContext(),"database created
successfully",Toast.LENGTH_SHORT).show();
        }

        c_id= Integer.parseInt(id_edt.getText().toString());
        c_name=name_edt.getText().toString();
        c_Address=address_edt.getText().toString();
        c_phone_no= Long.parseLong(phone_edt.getText().toString());

        Empdatabase.execSQL("INSERT INTO Emp VALUES('"+c_id+"','"+c_name+"','"+c_Address+"');");
        result.setText("Customer id Is "+c_id+"\nCustomer name is "+c_name+"\nCustomer Address
"+c_Address+"\nCustomer Phone No is "+c_phone_no+"");
    }
});

}catch(SQLException exception){
    exception.printStackTrace();
}

}
```

string.xml

```
<resources>
    <string name="save">Save</string>
    <string name="show">Show</string>
    <string name="phone_no">Phone No</string>
    <string name="address">Address</string>
    <string name="name">Name</string>
    <string name="id">Id</string>
    <string name="customer_id">Customer Id</string>
</resources>
```

Q 14

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 control named lbdisplay when the user clicks on the button 'check'.

activity_main.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="number"
        android:hint="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="0.268" />

    <TextView
        android:id="@+id/TextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter Number"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.392"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.195" />

    <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_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
// Add your project package name

import android.os.Bundle;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    TextView textView;
    EditText input;
    Button button;

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

        textView=findViewById(R.id.TextView);
        input=findViewById(R.id.editTextTextPersonName);
        button=findViewById(R.id.button);

        button.setOnClickListener(view -> {

            if (!input.getText().toString().equals("")){
                int Inpu= Integer.parseInt(input.getText().toString());
                isPalindrome(Inpu);
            }else{
                Toast.makeText(getApplicationContext(),"Please enter
input",Toast.LENGTH_SHORT).show();
            }
        });
    }

    public void isPalindrome(int s) {

        int r,sum=0,temp;

        temp=s;
        while(s>0){
            r=s%10;
            sum=(sum*10)+r;
            s=s/10;
        }
        if (temp==sum){
            Toast.makeText(getApplicationContext(),"Given number is
Palindrome",Toast.LENGTH_SHORT).show();
        }
        else{
            Toast.makeText(getApplicationContext(),"Given number is Not
Palindrome",Toast.LENGTH_SHORT).show();
        }
    }
}
```

Q 15

Create Following Table: Emp (emp_no,emp_name,address,phone,salary)
Dept (dept_no,dept_name,location) Emp-Dept is related with one-many relationship. Create application for performing the following Operation on the table 1) Add Records into Emp and Dept table. 2) Accept Department name from User and delete employee information which belongs to that department.

activity_main.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/Employee"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Employee"
        android:textColor="@color/black"
        android:textSize="25sp"
        android:textStyle="bold|normal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.112"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.057" />

    <TextView
        android:id="@+id/emp_id"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="id"
        android:textColor="@color/black"
        android:textSize="20sp"
        android:textStyle="bold|normal"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.22"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.139" />

    <EditText
        android:id="@+id/edt_emp_id"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Id"
        android:inputType="number" />
```

```
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.786"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.142"
    tools:ignore="TouchTargetSizeCheck" />

<TextView
    android:id="@+id/emp_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Name"
    android:textColor="@color/black"
    android:textStyle="bold|normal"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.198"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.228" />

<EditText
    android:id="@+id/edt_emp_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Name"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.791"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.234"
    tools:ignore="TouchTargetSizeCheck" />

<TextView
    android:id="@+id/emp_adress"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Address"
    android:textSize="20sp"
    android:textStyle="normal|bold"
    android:textColor="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.201"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.317" />

<EditText
    android:id="@+id/edt_emp_Add"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Address"
    android:inputType="textPostalAddress"
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.791"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.329"
    tools:ignore="TouchTargetSizeCheck" />

<TextView
    android:id="@+id/emp_phone_no"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Phone no"
    android:textSize="20sp"
    android:textStyle="normal|bold"
    android:textColor="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.201"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.412" />

<EditText
    android:id="@+id/edt_emp_phoneNo"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Phone No"
    android:inputType="phone"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.796"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.427"
    tools:ignore="TouchTargetSizeCheck" />

<TextView
    android:id="@+id/emp_salary"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Salary"
    android:textColor="@color/black"
    android:textStyle="bold|normal"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.201"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.515" />

<EditText
    android:id="@+id/edt_emp_salary"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="number"
    android:hint="Salary"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.8"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.534" />

<TextView
    android:id="@+id/Department"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Departments"
    android:textColor="@color/black"
    android:textStyle="bold|normal"
    android:textSize="25sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.096"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.616" />

<TextView
    android:id="@+id/dept_no"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="No"
    android:textSize="20sp"
    android:textStyle="normal|bold"
    android:textColor="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.189"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.691" />

<TextView
    android:id="@+id/dept_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Name"
    android:textColor="@color/black"
    android:textStyle="bold|normal"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.189"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.787" />

<TextView
    android:id="@+id/dept_location"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Location"
    android:textSize="20sp"
    android:textStyle="bold|normal"
    android:textColor="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.201"
```

```
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.891" />

<EditText
    android:id="@+id/edt_dept_no"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Number"
    android:inputType="number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.805"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.717"
    tools:ignore="TouchTargetSizeCheck" />

<EditText
    android:id="@+id/edt_dept_name"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Name"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.805"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.817"
    tools:ignore="TouchTargetSizeCheck" />

<EditText
    android:id="@+id/edt_dept_location"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:hint="Location"
    android:inputType="textPostalAddress"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.81"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.913"
    tools:ignore="TouchTargetSizeCheck" />

<Button
    android:id="@+id/button"
    android:layout_width="82dp"
    android:layout_height="41dp"
    android:text="Save"
    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="0.994"
    tools:ignore="TouchTargetSizeCheck" />
```

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

MainActivity.java

```
//Add your project package name

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.database.SQLException;
import android.database.sqlite.SQLiteDatabase;
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 {

    TextView emp_id,emp_name,emp_add,emp_phone,emp_sal;
    EditText edt_emp_id,edt_emp_name,edt_emp_add,edt_emp_phone,edt_emp_sal;

    TextView dpt_no,dpt_name,dpt_loc;
    EditText edt_dpt_no,edt_dpt_name,edt_dpt_loc;
    Button save;

    int id,DPT_id;
    long phone_no;
    double salary;
    String address,name,DPT_name="",DPT_loc;

    SQLiteDatabase Empdatabase;

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

        emp_id=findViewById(R.id.emp_id);
        emp_name=findViewById(R.id.emp_name);
        emp_add=findViewById(R.id.emp_adress);
        emp_phone=findViewById(R.id.emp_phone_no);
        emp_sal=findViewById(R.id.emp_salary);

        edt_emp_id=findViewById(R.id.edt_emp_id);
        edt_emp_name=findViewById(R.id.edt_emp_name);
        edt_emp_add=findViewById(R.id.edt_emp_Add);
        edt_emp_phone=findViewById(R.id.edt_emp_phoneNo);
        edt_emp_sal=findViewById(R.id.edt_emp_salary);

        dpt_no=findViewById(R.id.dept_no);
        dpt_name=findViewById(R.id.dept_name);
        dpt_loc=findViewById(R.id.dept_location);

        edt_dpt_no=findViewById(R.id.edt_dept_no);
        edt_dpt_name=findViewById(R.id.edt_dept_name);
        edt_dpt_loc=findViewById(R.id.edt_dept_location);
```

```

    save=findViewById(R.id.button);

    try {
        //create database
        Empdatabase =
openOrCreateDatabase("Emp", MODE_ENABLE_WRITE_AHEAD_LOGGING, null);

        //create employee table
        Empdatabase.execSQL("CREATE TABLE IF NOT EXISTS emp(id int PRIMARY
KEY,name TEXT,Address TEXT,phoneno long,sal double);");

        //create department table
        Empdatabase.execSQL("CREATE TABLE IF NOT EXISTS DPT(dpt_id int PRIMARY
KEY,dpt_name TEXT,location TEXT,FOREIGN KEY (dpt_id) REFERENCES emp(id));");

        save.setOnClickListener(view -> {
            if(Empdatabase!=null){
                Toast.makeText(getApplicationContext(),"database created
successfully",Toast.LENGTH_SHORT).show();
            }

            id= Integer.parseInt(edt_emp_id.getText().toString());
            name=edt_emp_name.getText().toString();
            address=edt_emp_add.getText().toString();
            phone_no= Long.parseLong(edt_emp_phone.getText().toString());
            salary= Double.parseDouble(edt_emp_sal.getText().toString());

            Empdatabase.execSQL("INSERT INTO emp
VALUES('"+id+"','"+name+"','"+address+"','"+salary+"','"+phone_no+"');");
            DPT_id= Integer.parseInt(edt_dpt_no.getText().toString());
            DPT_name=edt_dpt_name.getText().toString();
            DPT_loc=edt_dpt_loc.getText().toString();

            Empdatabase.execSQL("INSERT INTO DPT
VALUES('"+DPT_id+"','"+DPT_name+"','"+ DPT_loc+"');");
            Toast.makeText(MainActivity.this, "dpt id is "+DPT_name,
Toast.LENGTH_SHORT).show();
            //result.setText("Customer id Is "+id+"\nCustomer name is
"+name+"\nCustomer Address "+address+"\nCustomer Phone No is "+phone_no+"\n
Customer salary is "+salary);
            Intent intent =new
Intent(MainActivity.this,SecondActivity.class);
            startActivity(intent);
        });
    } catch(SQLException exception){
        exception.getStackTrace();
    }
}
}

```

SecondActivity.java

```
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 SecondActivity extends MainActivity {

    TextView textView;
    EditText editText;
    Button button;

    String temp="";

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

        textView=findViewById(R.id.textView);
        editText=findViewById(R.id.DepartmentName);
        button=findViewById(R.id.button2);

        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {

                try {
                    temp = editText.getText().toString();
                    sec.Empdatabase.execSQL("DELETE FROM DPT WHERE
"+DPT_name+"='"+temp+"';");
                    Toast.makeText(SecondActivity.this,(""+DPT_name,
                    Toast.LENGTH_LONG).show();
                } catch (NullPointerException exception) {
                    Toast.makeText(SecondActivity.this, "error
occured"+exception.getStackTrace(), Toast.LENGTH_LONG).show();
                }
            }
        });
    }
}

```

activity_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="336dp"
        android:layout_height="51dp"
        android:text="Enter Department name which you have delete"
        android:textColor="@color/black"
        android:textSize="20sp"

```

```

        android:textStyle="normal|bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.076" />

<EditText
    android:id="@+id/DepartmentName"
    android:layout_width="332dp"
    android:layout_height="59dp"
    android:ems="10"
    android:inputType="textPersonName"
    android:hint="Enter department Name"
    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="0.157" />

<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Delete"
    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>
```

Q 16

Perform following numeric operation according to user selection of radio button

activity_main.xml

```

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter number"
        android:textColor="@color/black"
```

```
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.189"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.053" />

<EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:ems="10"
    android:inputType="number"
    android:hint="Enter number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.243"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.104" />

<RadioGroup
    android:id="@+id/radioGroup"
    android:layout_width="313dp"
    android:layout_height="190dp"
    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="0.274">

    <RadioButton
        android:id="@+id/radio1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="odd or even" />

    <RadioButton
        android:id="@+id/radio2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Positive or negative" />

    <RadioButton
        android:id="@+id/radio3"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="square" />

    <RadioButton
        android:id="@+id/radio4"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Fctorial" />
```

```

</RadioGroup>

<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="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.538" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Answer"
    android:textColor="@color/black"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.15"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.651" />

<EditText
    android:id="@+id/editTextTextPersonName2"
    android:layout_width="339dp"
    android:layout_height="56dp"
    android:ems="10"
    android:hint="Answer"
    android:inputType="number"
    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="0.722" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

//add your package name

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 android.widget.Toast;

public class MainActivity extends AppCompatActivity {

```

```

TextView label;
EditText input,output;
RadioGroup radioGroup;
Button submit;
double number;

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

    label=findViewById(R.id.textView);
    input=findViewById(R.id.editTextTextPersonName);
    output=findViewById(R.id.editTextTextPersonName2);
    radioGroup=findViewById(R.id.radioGroup);
    submit=findViewById(R.id.button);

    radioGroup.clearCheck();

    submit.setOnClickListener(new View.OnClickListener() {

        @Override
        public void onClick(View view) {

            number= Double.parseDouble(input.getText().toString());

            int selectedId = radioGroup.getCheckedRadioButtonId();
            switch (selectedId)
            {
                case R.id.radio1:if (number%2==0){
                    output.setText("Number is Even");
                }else{
                    output.setText("Number is odd");
                }
                break;
                case R.id.radio2:if (number>=0)
                {
                    output.setText("number is positive");
                }else
                {
                    output.setText("number is negative");
                }
                break;
                case R.id.radio3:if (number>=0)
                {
                    int sr=(int)Math.sqrt(number);
                    if((sr*sr)==number)
                    {

output.setText("number is perfect squar");
                }else
                {

output.setText("number is not perfect squar");
                }
                break;
                case R.id.radio4:int fact=1;

```

```
        for(int i=1;i<=number;i++)
        {
            fact*=i;
        }
        output.setText("factorial of "+number+
is "+fact);
        break;
    }
}
});
```

Q 17

Perform following string operation according to user selection of radio button.

activity_main.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">

    <!-- add button For Submit the Selected item-->

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter Number"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.062"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.088" />

    <EditText
        android:id="@+id/editTextNumber"
        android:layout_width="271dp"
        android:layout_height="55dp"
        android:ems="10"
        android:inputType="text"
        android:textColor="@color/white"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.114"
        app:layout_constraintStart_toStartOf="parent" />
```

```
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.14" />

<RadioGroup
    android:id="@+id/groupradio"
    android:layout_width="367dp"
    android:layout_height="199dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.344">

    <RadioButton
        android:id="@+id/radia_id1"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Uppercase"
        android:textSize="20dp" />

    <RadioButton
        android:id="@+id/radia_id2"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="LowerCase"
        android:textSize="20dp" />

    <RadioButton
        android:id="@+id/radia_id3"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Right 5 Charecter"
        android:textSize="20dp" />

    <RadioButton
        android:id="@+id/radia_id4"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Left 5 Charecter"
        android:textSize="20dp" />
</RadioGroup>

<Button
    android:id="@+id/submit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="click"
    android:textSize="15sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.848"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.578" />

<TextView
    android:id="@+id/textView2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
```

```

        android:text="Answer is "
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.084"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.685" />

<EditText
    android:id="@+id/editTextNumber2"
    android:layout_width="262dp"
    android:layout_height="58dp"
    android:ems="10"
    android:inputType="text"
    android:textColor="@color/white"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.167"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.771" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

// Add your project package name

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 android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    RadioGroup radioGroup;
    Button submit;
    TextView label1,label2;
    EditText input,output;

    String uppercase="";

```

```

String lowercase="";
String left5char="";
String right5char="";

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

    submit = findViewById(R.id.submit);
    radioGroup = findViewById(R.id.groupradio);

    label1=findViewById(R.id.textView);
    label2=findViewById(R.id.textView2);

    input=findViewById(R.id.editTextNumber);
    output=findViewById(R.id.editTextNumber2);

    radioGroup.clearCheck();

    submit.setOnClickListener(new View.OnClickListener() {

        @Override
        public void onClick(View v)
        {
            int selectedId = radioGroup.getCheckedRadioButtonId();

            if (selectedId == -1) {
                Toast.makeText(MainActivity.this, "No option has been
selected",
                    Toast.LENGTH_SHORT)
                    .show();
            }
            else {

                switch (selectedId)
                {
                    case R.id.radia_id1:
uppercase=input.getText().toString();

output.setText(uppercase.toUpperCase());
break;

                    case R.id.radia_id2:
lowercase=input.getText().toString();

output.setText(lowercase.toLowerCase());
break;

                    case R.id.radia_id3:left5char=input.getText().toString();
int tmp =left5char.length()-5;
String
str1=left5char.substring(tmp);
output.setText(str1);
break;

                    case R.id.radia_id4:
right5char=input.getText().toString();

```

```
        String str=right5char.substring(0,5);
        output.setText(str);
        break;

    default:Toast.makeText(getApplicationContext(),"invalid
input",Toast.LENGTH_SHORT)
        .show();
    }
}
});
```

Q 18

Java android program to perform all arthmatic opertaion using calculators
activity_main.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/input2"
        android:layout_width="270dp"
        android:layout_height="40dp"
        android:hint="@string/number"
        android:importantForAutofill="no"
        android:inputType="number"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.319"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.238" />

    <TextView
        android:id="@+id/label2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/enter_number"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.164"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintVertical_bias="0.238" />

```

```
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.024" />

<TextView
    android:id="@+id/label"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/enter_number"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.176"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.173" />

<EditText
    android:id="@+id/input"
    android:layout_width="270dp"
    android:layout_height="40dp"
    android:hint="@string/number"
    android:importantForAutofill="no"
    android:inputType="number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.317"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.087" />

<RadioGroup
    android:id="@+id/groupradio"
    android:layout_width="337dp"
    android:layout_height="208dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.608"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.451">

    <RadioButton
        android:id="@+id/radia_id1"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Addition"
        android:textSize="20dp" />

    <RadioButton
        android:id="@+id/radia_id2"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Substration"
        android:textSize="20dp" />

    <RadioButton
        android:id="@+id/radia_id3"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
```

```

        android:text="Division"
        android:textSize="20dp" />

    <RadioButton
        android:id="@+id/radia_id4"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Multiplecation"
        android:textSize="20dp" />
</RadioGroup>

<Button
    android:id="@+id/button"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/click"
    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="0.672" />

<EditText
    android:id="@+id/Ans_dt"
    android:layout_width="333dp"
    android:layout_height="55dp"
    android:textColor="@color/black"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.666"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.818" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

// Add your project package name
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 android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private RadioGroup radioGroup;
    Button submit;
    TextView label1,label2;
    EditText input1,input2,output;
    double number1;

```

```

double number2;
double result;

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

    submit = findViewById(R.id.button);
    radioGroup = findViewById(R.id.groupradio);

    label1=findViewById(R.id.label);
    label2=findViewById(R.id.label2);

    input1=findViewById(R.id.input);
    input2=findViewById(R.id.input2);
    output=findViewById(R.id.Ans_dt);

    radioGroup.clearCheck();

    submit.setOnClickListener(new View.OnClickListener() {

        @Override
        public void onClick(View v)
        {
            number1= Double.parseDouble(input1.getText().toString());
            number2= Double.parseDouble(input2.getText().toString());

            int selectedId = radioGroup.getCheckedRadioButtonId();

            if (selectedId == -1) {
                Toast.makeText(MainActivity.this, "No option has been
selected",
                    Toast.LENGTH_SHORT)
                    .show();
            }
            else {

                switch (selectedId)
                {
                    case R.id.radia_id1: result =number1+number2;
                        output.setText(""+result);
                        break;

                    case R.id.radia_id2: result =number1-number2;
                        output.setText(""+result);
                        break;

                    case R.id.radia_id3: result =number1/number2;
                        output.setText(""+result);
                        break;

                    case R.id.radia_id4: result =number1*number2;
                        output.setText(""+result);
                        break;

                    default:Toast.makeText(getApplicationContext(),"invalid
                }
            }
        }
    });
}

```

Q 19

Java android program to change the image Displayed on the screen
activity_main.xml

//Add any two images into drawable folder and give name according
//below program

```
<?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/image"
        android:layout_width="300dp"
        android:layout_height="300dp"
        android:src="@drawable/img"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <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="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.795" />

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

MainActivity.java

```
// Add your project package name
import static com.example.changeimage.R.drawable.img_1;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

    ImageView imageView;
    Button button;

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

        imageView=findViewById(R.id.image);
        button=findViewById(R.id.button);

        imageView.setImageResource(R.drawable.img);
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                imageView.setImageResource(img_1);
            }
        });
    }
}
```

Q 20

Java android program to demonstrate the Alert Dialog Box
activity_main.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="Click"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

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

        button = findViewById(R.id.button);

        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                AlertDialog.Builder builder = new
                AlertDialog.Builder(MainActivity.this);

                builder.setMessage("Do you want to exit ?");
                builder.setTitle("Alert...!");
                builder.setCancelable(false);

                builder.setPositiveButton("Yes", new
                DialogInterface.OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialog, int which) {
                        finish();
                    }
                });
                builder.setNegativeButton("No", new
                DialogInterface.OnClickListener() {
                    @Override
                    public void onClick(DialogInterface dialog, int which) {
                        dialog.cancel();
                    }
                });
            }
        });

        AlertDialog alertDialog = builder.create();

        alertDialog.show();
    }
}

```

```
    });
}
}
```

Q 22

Java android program to demonstrate list view Activity with all operations(Insert , delete , searach)

activity_main.xml

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/enter_elements"
        android:textColor="@color/black"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.106"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.041" />

    <EditText
        android:id="@+id/editTextTextPersonName"
        android:layout_width="248dp"
        android:layout_height="50dp"
        android:ems="10"
        android:hint="@string/name"
        android:importantForAutofill="no"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.152"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView"
        app:layout_constraintVertical_bias="0.0" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="34dp"
        android:text="@string/list_elemets"
```

```
        android:textColor="@color/black"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.095"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName"
        app:layout_constraintVertical_bias="0.0" />

    <ListView
        android:id="@+id/_dynamic"
        android:layout_width="match_parent"
        android:layout_height="300dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.378"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/textView2"
        app:layout_constraintVertical_bias="0.0" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/add"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.242"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/_dynamic"
        app:layout_constraintVertical_bias="0.31" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="30dp"
        android:layout_marginEnd="30dp"
        android:text="@string/search"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="1.0"
        app:layout_constraintStart_toEndOf="@+id/editTextTextPersonName"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.083" />

    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="80dp"
        android:text="@string/remove"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.824"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/_dynamic"
        app:layout_constraintVertical_bias="0.0" />

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

MainActivity.java

```
// Add your project package name

import android.os.Bundle;
import android.view.View;
import android.widget.ArrayAdapter;
import android.widget.Button;
import android.widget.EditText;
import android.widget.ListView;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.List;

public class MainActivity extends AppCompatActivity {

    TextView label_add_elements, label_list_iteam;
    ListView listView;
    EditText input_box;
    Button add, search, remove;

    String list="";

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

        label_add_elements=findViewById(R.id.textView);
        input_box=findViewById(R.id.editTextTextPersonName);
        label_list_iteam=findViewById(R.id.textView2);
        listView=findViewById(R.id._dynamic);
        add=findViewById(R.id.button);
        search=findViewById(R.id.button2);
        remove=findViewById(R.id.button4);

        final List<String> ListElementsArrayList = new
        ArrayList<>(Arrays.asList(list));

        final ArrayAdapter<String> adapter = new ArrayAdapter<>
            (MainActivity.this, android.R.layout.simple_list_item_1,
        ListElementsArrayList);

        listView.setAdapter(adapter);

        add.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (input_box.getText().toString() != null) {
                    ListElementsArrayList.add(input_box.getText().toString());
                    adapter.notifyDataSetChanged();
                    Toast.makeText(getApplicationContext(), "given element Added
in list", Toast.LENGTH_SHORT).show();
                }
            }
        });
    }

    else{
        Toast.makeText(getApplicationContext(),"Text box in
Empty",Toast.LENGTH_SHORT).show();
    }
}
```

```

        }
    }
});;

remove.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if
(ListElementsArrayList.contains(input_box.getText().toString())) {
            ListElementsArrayList.remove(input_box.getText().toString());
            adapter.notifyDataSetChanged();
            Toast.makeText(getApplicationContext(), "given element remove
from list", Toast.LENGTH_SHORT).show();
        }
        else{
            Toast.makeText(getApplicationContext(),"given element not
present in list",Toast.LENGTH_SHORT).show();
        }
    }
});;

search.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        String item=input_box.getText().toString();
        if ((ListElementsArrayList.contains(item)) &&
(input_box.getText().toString()!=null)){
            Toast.makeText(getApplicationContext(),"given Element
"+item+ " Present in list",Toast.LENGTH_SHORT).show();
        }
        else{
            Toast.makeText(getApplicationContext(),"given Element
"+item+ " not present in list",Toast.LENGTH_SHORT).show();
        }
    }
});;
}
}

```

string.xml

```

<resources>
    <string name="enter_elements">Enter Elements</string>
    <string name="name">Name</string>
    <string name="list_elements">List Elements</string>
    <string name="add">Add</string>
    <string name="search">Search</string>
    <string name="remove">Remove</string>
</resources>

```

Q 23

Java android to display SMS from the phone number which are in your contact

AndroidManifest.xml

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

    <uses-permission android:name="android.permission.READ_SMS"/>
    <uses-permission android:name="android.permission.READ_CONTACTS"/>

    <!--After declaration and installation this app go to
    your smartphone setting -> permission manager and allow to read SMS and contact
    otherwise this application will crash unexpectedly-->

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.SMS_read_Example">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

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

</manifest>
```

activity_main.xml

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```
//add your project package name

import java.util.ArrayList;
import java.util.List;
import android.annotation.SuppressLint;
import android.app.ListActivity;
import android.content.ContentResolver;
import android.database.Cursor;
import android.net.Uri;
import android.os.Bundle;
import android.provider.BaseColumns;
import android.provider.ContactsContract;
import android.util.Log;
import android.view.View;
import android.widget.ListView;
import android.widget.Toast;

public class MainActivity extends ListActivity {

    @Override
    protected void onDestroy() {
        // TODO Auto-generated method stub
        super.onDestroy();
    }

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

        List<SmsFormat> List = new ArrayList<SmsFormat>();

        Uri uri = Uri.parse("content://sms/inbox");
        Cursor cur = getContentResolver().query(uri, null, null, null, null);
        startManagingCursor(cur);

        if (cur.moveToFirst()) {
            for (int i = 0; i < cur.getCount(); i++) {
                SmsFormat sms = new SmsFormat();
                if (cur.getColumnIndexOrThrow("body") > -1) {
                    sms.setBody(cur
                                .getString(cur.getColumnIndexOrThrow("body"))
                                .toString());
                }
                if (cur.getColumnIndexOrThrow("address") > -1) {
                    sms.setNumber(cur.getString(
                                  cur.getColumnIndexOrThrow("address")).toString());
                }
            }
            String name = null;
            name = Search(cur.getString(
                          cur.getColumnIndexOrThrow("address")).toString());
        }
    }
}
```

```

        if (name != " ") {
            sms.setName(name);
            List.add(sms);
        }
        cur.moveToNext();
    }
}
cur.close();

setListAdapter(newListAdapter(this, List));

}

@Override
protected void onListItemClick(ListView l, View v, int position, long id) {
    SmsFormat sms = (SmsFormat) getListAdapter().getItem(position);
    Log.i("MSG", sms.getBody());
}

@SuppressWarnings("Range")
public String Search(String number) {
    Uri uri = Uri.withAppendedPath(
        ContactsContract.PhoneLookup.CONTENT_FILTER_URI,
        Uri.encode(number));
    String name = " ";

    ContentResolver contentResolver = getContentResolver();
    Cursor contactLookup = contentResolver.query(uri, new String[] {
        BaseColumns._ID,
        ContactsContract.PhoneLookup.DISPLAY_NAME },
        null, null, null);

    try {
        if (contactLookup != null && contactLookup.getCount() > 0) {
            contactLookup.moveToNext();
            name =
contactLookup.getString(contactLookup.getColumnIndex(ContactsContract.Data.DISPLA
Y_NAME));
        }
    } finally {
        if (contactLookup != null) {
            contactLookup.close();
        }
    }
    return name;
}
}

```

SmsFormat.java

```

// Add your project package name

public class SmsFormat {

    private String number;
    private String body;
    private String name;

```

```

public String getName() {
    return name;
}

public void setName(String name) {
    this.name = name;
}

public String getNumber() {
    return number;
}

public void setNumber(String number) {
    this.number = number;
}

public String getBody() {
    return body;
}

public void setBody(String body) {
    this.body = body;
}

}

```

ListAdapter.java

```

// Add your project package name

import java.util.List;
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ArrayAdapter;
import android.widget.TextView;

public class ListAdapter extends ArrayAdapter<SmsFormat> {

    private final Context context;
    private final List<SmsFormat> smslist;

    public ListAdapter(Context context, List<SmsFormat> smsList) {
        super(context, R.layout.activity_main, smsList);
        this.context = context;
        this.smslist = smsList;
    }

    @Override
    public View getView(int position, View convertView, ViewGroup parent) {
        LayoutInflater inflater = (LayoutInflater) context
            .getSystemService(Context.LAYOUT_INFLATER_SERVICE);

        View rowView = inflater.inflate(R.layout.activity_main, parent, false);

        TextView senderNumber = (TextView) rowView.findViewById(R.id.textView);

```

```

        senderNumber.setText(smslist.get(position).getName() + "\n"
            + smslist.get(position).getNumber() + "\n" + "\n"
            + smslist.get(position).getBody());
    }

    return rowView;
}

}

```

Q 24

Java Android Program to send email with attachment.

activity_main.xml

```

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

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="To"
        android:textColor="@color/black"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.116"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.025" />

    <EditText
        android:id="@+id/editTextTextEmailAddress"
        android:layout_width="300dp"
        android:layout_height="60dp"
        android:ems="10"
        android:hint="Email Address"
        android:inputType="textEmailAddress"
        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="0.077" />

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"

```

```
    android:text="Subject"
    android:textColor="@color/black"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.135"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextEmailAddress"
    app:layout_constraintVertical_bias="0.027" />

<EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="300dp"
    android:layout_height="60dp"
    android:ems="10"
    android:hint="Subjct"
    android:inputType="textPersonName"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.356"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView2"
    app:layout_constraintVertical_bias="0.0" />

<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="25dp"
    android:text="Mail Body"
    android:textColor="@color/black"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.147"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName"
    app:layout_constraintVertical_bias="0.013" />

<EditText
    android:id="@+id/editTextTextMultiLine"
    android:layout_width="300dp"
    android:layout_height="250dp"
    android:ems="10"
    android:gravity="start|top"
    android:hint="Type Main descreption"
    android:inputType="textMultiLine"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.356"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView3"
    app:layout_constraintVertical_bias="0.0" />

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

```

        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.209"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextMultiLine"
        app:layout_constraintVertical_bias="0.234" />

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20dp"
        android:text="Attach"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.634"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextMultiLine"
        app:layout_constraintVertical_bias="0.172" />

    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="132dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextMultiLine"
        app:layout_constraintVertical_bias="0.0" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

MainActivity.java

```

// Add your project package name

import android.app.Activity;
import android.content.Intent;
import android.net.Uri;
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 Activity {
    EditText etEmail;
    EditText etSubject;
    EditText etMessage;
    Button Send;
    Button attachment;
    TextView attachment_TV;
    String email;
    String subject;
    String message;

```

```

Uri URI = null;
private static final int PICK_FROM_GALLERY = 101;
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    etEmail = findViewById(R.id.editTextTextEmailAddress);
    etSubject = findViewById(R.id.editTextTextPersonName);
    etMessage = findViewById(R.id.editTextTextMultiLine);
    attachment_TV=findViewById(R.id.textView4);
    attachment = findViewById(R.id.button3);
    Send = findViewById(R.id.button);
    Send.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            sendEmail();
        }
    });
    //attachment button listener
    attachment.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            openFolder();
        }
    });
}
protected void onActivityResult(int requestCode, int resultCode, Intent data)
{
    if (requestCode == PICK_FROM_GALLERY && resultCode == RESULT_OK) {
        URI = data.getData();
        attachment_TV.setText(URI.getLastPathSegment());
        attachment_TV.setVisibility(View.VISIBLE);
    }
}
public void sendEmail() {
    try {
        email = etEmail.getText().toString();
        subject = etSubject.getText().toString();
        message = etMessage.getText().toString();
        final Intent emailIntent = new
Intent(android.content.Intent.ACTION_SEND);
        emailIntent.setType("plain/text");
        emailIntent.putExtra(android.content.Intent.EXTRA_EMAIL, new
String[]{email});
        emailIntent.putExtra(android.content.Intent.EXTRA_SUBJECT, subject);
        if (URI != null) {
            emailIntent.putExtra(Intent.EXTRA_STREAM, URI);
        }
        emailIntent.putExtra(android.content.Intent.EXTRA_TEXT, message);
        this.startActivity(Intent.createChooser(emailIntent, "Sending
email..."));
    } catch (Throwable t) {
        Toast.makeText(this, "Request failed try again: "+ t.toString(),
Toast.LENGTH_LONG).show();
    }
}
public void openFolder() {
    Intent intent = new Intent();
    intent.setType("image/*");
    intent.setAction(Intent.ACTION_GET_CONTENT);
    intent.putExtra("return-data", true);
}

```

```

        startActivityForResult(Intent.createChooser(intent, "Complete action
using"), PICK_FROM_GALLERY);
    }
}

```

Q 25

Create an Android application which will ask the user to input his name and a message, display the two items concatenated in a label, and 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 and change its color .include buttons to display the message in the label, clear the text boxes and label and then exit.

activity_main.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/name_txt"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Name"
        android:textColor="@color/black"
        android:textSize="25sp"
        android:textStyle="bold"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.093"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.043" />

    <EditText
        android:id="@+id/Name_edt"
        android:layout_width="315dp"
        android:layout_height="56dp"
        android:ems="10"
        android:hint="Name"
        android:inputType="textPersonName"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.333"
        app:layout_constraintStart_toStartOf="parent"

```

```
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.094" />

<TextView
    android:id="@+id/message"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Message"
    android:textColor="@color/black"
    android:textSize="25sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.103"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.223" />

<EditText
    android:id="@+id/message_edt"
    android:layout_width="324dp"
    android:layout_height="127dp"
    android:ems="10"
    android:gravity="start|top"
    android:hint="type message"
    android:inputType="textMultiLine"
    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="0.314" />

<RadioGroup
    android:id="@+id/radiogroup"
    android:layout_width="325dp"
    android:layout_height="196dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.31"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.641">

    <RadioButton
        android:id="@+id/radia_id1"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Underline"
        android:textSize="20dp" />

    <RadioButton
        android:id="@+id/radia_id2"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Bold"
        android:textSize="20dp" />

    <RadioButton
        android:id="@+id/radia_id3"
        android:layout_width="fill_parent"
```

```
        android:layout_height="wrap_content"
        android:text="Italic"
        android:textSize="20dp" />

    <RadioButton
        android:id="@+id/radia_id4"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="Colour"
        android:textSize="20dp" />

</RadioGroup>

<CheckBox
    android:id="@+id/checkBox"
    android:layout_width="324dp"
    android:layout_height="54dp"
    android:text="chnage Size"
    android:textSize="20sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.329"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.796" />

<TextView
    android:id="@+id/result"
    android:layout_width="325dp"
    android:layout_height="70dp"
    android:maxLines="3"
    android:text="your message"
    android:gravity="center_horizontal"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.337"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.897" />

<Button
    android:id="@+id/Clear"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Clear"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.608"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.994" />

<Button
    android:id="@+id/submit"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Submit"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.949"
    app:layout_constraintStart_toStartOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.994" />

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

MainActivity.java

```
//Add your project package name
import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.graphics.Paint;
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 android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private RadioGroup radioGroup;
    Button submit,clear;
    TextView label1,label2,result;
    EditText name,message;
    CheckBox checkBox;

    String str1="";
    String str2="";
    String ConcatString="";

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

        clear=findViewById(R.id.Clear);
        submit = findViewById(R.id.submit);
        radioGroup = findViewById(R.id.radiogroup);
        checkBox=findViewById(R.id.checkBox);
        label1=findViewById(R.id.name_txt);
        label2=findViewById(R.id.message);
        result=findViewById(R.id.result);
        name=findViewById(R.id.Name_edt);
        message=findViewById(R.id.message_edt);

        radioGroup.clearCheck();
    }
}
```

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

    @Override
    public void onClick(View v)
    {
        int selectedId = radioGroup.getCheckedRadioButtonId();

        str1=name.getText().toString();
        str2=message.getText().toString();

        ConcatString=str2.concat(str1);
        result.setText(ConcatString);

        if (checkBox.isChecked()){
            result.setTextSize(30);
        }

        if (selectedId == -1) {
            Toast.makeText(MainActivity.this, "No option has been
selected",
                Toast.LENGTH_SHORT)
                .show();
        }
        else {

            switch (selectedId)
            {
                case R.id.radia_id1:result.setPaintFlags
                    (result.getPaintFlags() |
Paint.UNDERLINE_TEXT_FLAG);
                    break;

                case R.id.radia_id2:result.setTypeface(null,
Typeface.BOLD);
                    break;

                case
R.id.radia_id3:result.setTypeface(null,Typeface.ITALIC);
                    break;

                case
R.id.radia_id4:result.setTextColor(Color.parseColor("#00FF00"));
                    break;

                default:Toast.makeText(getApplicationContext(),"invalid
input",
                    Toast.LENGTH_SHORT)
                    .show();
            }
        }
    });
});

clear.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        name.setText("");
    }
});
```

```
    message.setText("");
    radioGroup.clearCheck();
    checkBox.setChecked(false);
    result.setText("");
}
}
}
}
```