

❖ Program_40_42

- Activity_main.xml

```
=><?xml version="1.0" encoding="utf-8"?>
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <LinearLayout
        android:orientation="vertical"
        android:padding="16dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content">

        <!-- Program 40 : Calculator -->
        <TextView
            android:text="Calculator"
            android:textSize="22sp"
            android:textStyle="bold"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"/>

        <EditText
            android:id="@+id/num1"
            android:hint="First Number"
            android:inputType="numberDecimal"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"/>

        <EditText
            android:id="@+id/num2"
            android:hint="Second Number"
            android:inputType="numberDecimal"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"/>

        <Button
            android:id="@+id/btnAdd"
            android:text="Add"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"/>

        <Button
            android:id="@+id/btnSub"
            android:text="Sub"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"/>

        <Button
            android:id="@+id/btnMul"
            android:text="Mul"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"/>

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

```

        android:text="Div"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>

<TextView
    android:id="@+id/resultCalc"
    android:text="Result:"
    android:textSize="18sp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<!-- Program 41 : Marks -->
<TextView
    android:text="Student Marks"
    android:textSize="22sp"
    android:textStyle="bold"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/m1"
    android:hint="Subject 1"
    android:inputType="number"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/m2"
    android:hint="Subject 2"
    android:inputType="number"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/m3"
    android:hint="Subject 3"
    android:inputType="number"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<Button
    android:id="@+id/btnMarks"
    android:text="Calculate Total and Percentage"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<TextView
    android:id="@+id/resultMarks"
    android:text="Total and Percentage:"
    android:textSize="18sp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<!-- Program 42 : Simple Interest -->
<TextView
    android:text="Simple Interest"
    android:textSize="22sp"

```

```

        android:textStyle="bold"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/principal"
    android:hint="Principal"
    android:inputType="numberDecimal"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/rate"
    android:hint="Rate"
    android:inputType="numberDecimal"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<EditText
    android:id="@+id/time"
    android:hint="Time"
    android:inputType="numberDecimal"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<Button
    android:id="@+id/btnSI"
    android:text="Calculate Simple Interest"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<TextView
    android:id="@+id/resultSI"
    android:text="Simple Interest:"
    android:textSize="18sp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

</LinearLayout>
</ScrollView>

```

MainActivity.kt

```

=>package com.example.program_40_42

import android.os.Bundle
import android.widget.*
import androidx.appcompat.app.AppCompatActivity

class MainActivity : AppCompatActivity() {

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
    }
}

```

```

setContentView(R.layout.activity_main)

// Calculator
val n1 = findViewById<EditText>(R.id.num1)
val n2 = findViewById<EditText>(R.id.num2)
val resultCalc = findViewById<TextView>(R.id.resultCalc)

findViewById<Button>(R.id.btnAdd).setOnClickListener {
    val res = n1.text.toString().toDouble() +
n2.text.toString().toDouble()
    resultCalc.text = "Result: $res"
}

findViewById<Button>(R.id.btnSub).setOnClickListener {
    val res = n1.text.toString().toDouble() -
n2.text.toString().toDouble()
    resultCalc.text = "Result: $res"
}

findViewById<Button>(R.id.btnMul).setOnClickListener {
    val res = n1.text.toString().toDouble() *
n2.text.toString().toDouble()
    resultCalc.text = "Result: $res"
}

findViewById<Button>(R.id.btnDiv).setOnClickListener {
    val res = n1.text.toString().toDouble() /
n2.text.toString().toDouble()
    resultCalc.text = "Result: $res"
}

// Marks
val m1 = findViewById<EditText>(R.id.m1)
val m2 = findViewById<EditText>(R.id.m2)
val m3 = findViewById<EditText>(R.id.m3)
val resultMarks = findViewById<TextView>(R.id.resultMarks)

findViewById<Button>(R.id.btnMarks).setOnClickListener {
    val total = m1.text.toString().toInt() +
        m2.text.toString().toInt() +
        m3.text.toString().toInt()
    val per = total / 3.0
    resultMarks.text = "Total: $total\nPercentage: $per"
}

// Simple Interest
val p = findViewById<EditText>(R.id.principal)
val r = findViewById<EditText>(R.id.rate)
val t = findViewById<EditText>(R.id.time)
val resultSI = findViewById<TextView>(R.id.resultSI)

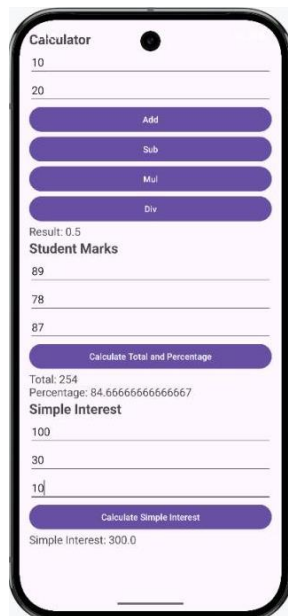
findViewById<Button>(R.id.btnSI).setOnClickListener {
    val si = (p.text.toString().toDouble() *
        r.text.toString().toDouble() *
        t.text.toString().toDouble()) / 100
    resultSI.text = "Simple Interest: $si"
}

```

```
}
}
```

- Output

=>



❖ Program_43_45

- Activity_main.xml

```
=><?xml version="1.0" encoding="utf-8"?>
<ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <LinearLayout
        android:orientation="vertical"
        android:padding="16dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:id="@+id/mainLayout">

        <!-- Program 43 -->
        <TextView
            android:text="Gender Selection"
            android:textSize="22sp"
```

```

        android:textStyle="bold"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>

<RadioGroup
    android:id="@+id/genderGroup"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

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

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

<!-- Program 44 -->
<TextView
    android:text="Background Color"
    android:textSize="22sp"
    android:textStyle="bold"
    android:layout_marginTop="20dp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"/>

<RadioGroup
    android:id="@+id/colorGroup"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

    <RadioButton android:id="@+id/red"
        android:text="Red"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <RadioButton android:id="@+id/green"
        android:text="Green"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <RadioButton android:id="@+id/blue"
        android:text="Blue"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>
</RadioGroup>

<!-- Program 45 -->
<TextView
    android:text="Background Image"
    android:textSize="22sp"
    android:textStyle="bold"

```

```

        android:layout_marginTop="20dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>

<RadioGroup
    android:id="@+id/imageGroup"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

    <RadioButton android:id="@+id/img1"
        android:text="Image 1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <RadioButton android:id="@+id/img2"
        android:text="Image 2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <RadioButton android:id="@+id/img3"
        android:text="Image 3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <RadioButton android:id="@+id/img4"
        android:text="Image 4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <RadioButton android:id="@+id/img5"
        android:text="Image 5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

</RadioGroup>

</LinearLayout>
</ScrollView>

```

- MainActivity.kt

```

=>package com.example.program_43_45

import android.graphics.Color
import android.os.Bundle
import android.widget.*
import androidx.appcompat.app.AppCompatActivity

class MainActivity : AppCompatActivity() {

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        val mainLayout = findViewById<LinearLayout>(R.id.mainLayout)
    }
}

```

```

// Program 43 - Gender Toast
val genderGroup = findViewById<RadioGroup>(R.id.genderGroup)
genderGroup.setOnCheckedChangeListener { _, checkedId ->
    when (checkedId) {
        R.id.rbMale ->
            Toast.makeText(this, "Male is Radio Button",
Toast.LENGTH_SHORT).show()
        R.id.rbFemale ->
            Toast.makeText(this, "Female is Radio Button",
Toast.LENGTH_SHORT).show()
    }
}

// Program 44 - Change Color
val colorGroup = findViewById<RadioGroup>(R.id.colorGroup)
colorGroup.setOnCheckedChangeListener { _, checkedId ->
    when (checkedId) {
        R.id.red -> mainLayout.setBackgroundColor(Color.RED)
        R.id.green -> mainLayout.setBackgroundColor(Color.GREEN)
        R.id.blue -> mainLayout.setBackgroundColor(Color.BLUE)
    }
}

// Program 45 - Change Image
val imageGroup = findViewById<RadioGroup>(R.id.imageGroup)
imageGroup.setOnCheckedChangeListener { _, checkedId ->
    when (checkedId) {
        R.id.img1 ->
mainLayout.setBackgroundResource(R.drawable.flag)
        R.id.img2 ->
mainLayout.setBackgroundResource(R.drawable.bhagat_singh)
        R.id.img3 ->
mainLayout.setBackgroundResource(R.drawable.swami_vivekananda)
        R.id.img4 ->
mainLayout.setBackgroundResource(R.drawable.virat_kohli)
        R.id.img5 ->
mainLayout.setBackgroundResource(R.drawable.hardik_pandya)
    }
}
}
}

```

- Output

