스마트폰 프로그래밍
Assign #10

(제목 : 간단 계산기, 이미지 보기 수정)

학번 : 2016305078
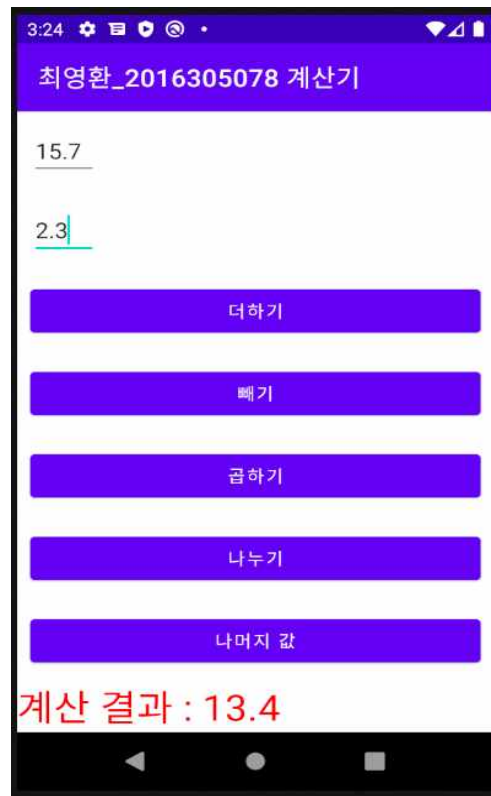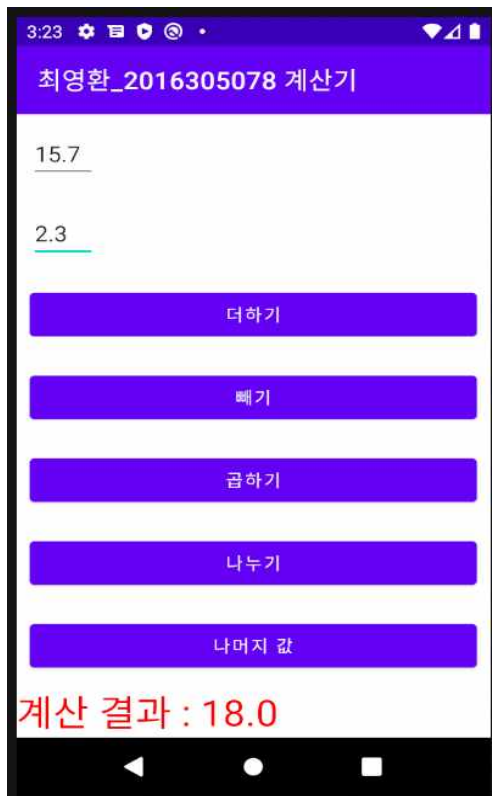
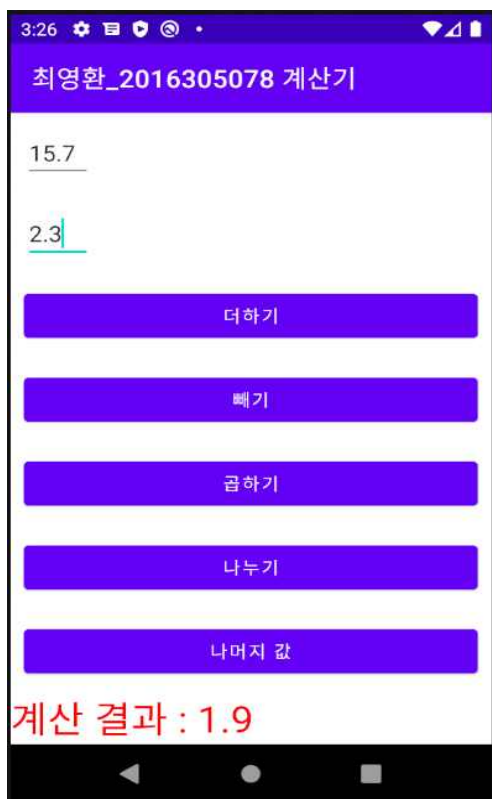성명 : 최 영 환

제출일자 : 2021.12.03

<実행화면>

3:23 ☼ 目 🛡 ⓡ ·   ▼⊿🔋
최영환_2016305078 계산기

15.7

2.3

더하기

빼기

곱하기

나누기

나머지 값

계산 결과 : 18.0

◀ ● ■

3:24 ☼ 目 🛡 ⓡ ·   ▼⊿🔋
최영환_2016305078 계산기

15.7

2.3

더하기

빼기

곱하기

나누기

나머지 값

계산 결과 : 13.4

◀ ● ■

3:25 ☼ 目 🛡 ⓡ ·   ▼⊿🔋
최영환_2016305078 계산기

15.7

2.3

더하기

빼기

곱하기

나누기

나머지 값

계산 결과 : 36.1

◀ ● ■

3:25 ☼ 目 🛡 ⓡ ·   ▼⊿🔋
최영환_2016305078 계산기

15.7

2.3

더하기

빼기

곱하기

나누기

나머지 값

계산 결과 : 6.8

◀ ● ■

3:26 최영환_2016305078 계산기

15.7

2.3

더하기
빼기
곱하기
나누기
나머지 값

계산 결과 : 1.9

3:28 최영환_2016305078 계산기

15.7

0

더하기
빼기
곱하기
나누기
나머지 값

오류 발생! 0을 나눌 수 없습니다!

계산 결과 :

3:30 최영환_2016305078 계산기

15.7

숫자2

더하기
빼기
곱하기
나누기
나머지 값

값을 입력하세요!

계산 결과 :

3:30 최영환_2016305078 계산기

숫자1

10100

더하기
빼기
곱하기
나누기
나머지 값

값을 입력하세요!

계산 결과 :

<MainActivity.java>

```kotlin
package com.example.simplecalculator

import ...

class MainActivity : AppCompatActivity() {
    lateinit var edit1: EditText;  lateinit var edit2: EditText
    lateinit var btnAdd: Button;   lateinit var btnSub: Button;
    lateinit var btnMul: Button;   lateinit var btnDiv: Button
    lateinit var btnRem: Button
    lateinit var textResult: TextView
    lateinit var num1: String;    lateinit var num2: String
    var result: Float? = null

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

        edit1 = findViewById<EditText>(R.id.Edit1)
        edit2 = findViewById<EditText>(R.id.Edit2)
        btnAdd = findViewById<Button>(R.id.BtnAdd)
        btnSub = findViewById<Button>(R.id.BtnSub)
        btnMul = findViewById<Button>(R.id.BtnMul)
        btnDiv = findViewById<Button>(R.id.BtnDiv)
        btnRem = findViewById<Button>(R.id.BtnRem)

        textResult = findViewById<TextView>(R.id.TextResult)

        btnAdd.setOnTouchListener { view, motionEvent ->
            num1 = edit1.text.toString()
            num2 = edit2.text.toString()
            if (num1.length == 0 || num2.length == 0){
                Toast.makeText( context: this,  text: "값을 입력하세요!", Toast.LENGTH_SHORT).show()
            }
            else{
                result = num1.toFloat() + num2.toFloat()
                textResult.text = "계산 결과 : " + String.format("%.1f", result)
            }
            false  ^setOnTouchListener
        }

        btnSub.setOnTouchListener { view, motionEvent ->
            num1 = edit1.text.toString()
            num2 = edit2.text.toString()
            if (num1.length == 0 || num2.length == 0){
                Toast.makeText( context: this,  text: "값을 입력하세요!", Toast.LENGTH_SHORT).show()
            }
            else{
                result = num1.toFloat() - num2.toFloat()
                textResult.text = "계산 결과 : " + String.format("%.1f", result)
            }
            false  ^setOnTouchListener
        }

        btnMul.setOnTouchListener { view, motionEvent ->
            num1 = edit1.text.toString()
            num2 = edit2.text.toString()
            if (num1.length == 0 || num2.length == 0){
                Toast.makeText( context: this,  text: "값을 입력하세요!", Toast.LENGTH_SHORT).show()
            }
            else {
                result = num1.toFloat() * num2.toFloat()
                textResult.text = "계산 결과 : " + String.format("%.1f", result)
            }
            false  ^setOnTouchListener
        }
```

```kotlin
        btnDiv.setOnTouchListener { view, motionEvent ->
            num1 = edit1.text.toString()
            num2 = edit2.text.toString()
            if (num1.length == 0 || num2.length == 0){
                Toast.makeText( context: this, text: "값을 입력하세요!", Toast.LENGTH_SHORT).show()
            }
            else {
                result = num1.toFloat() / num2.toFloat()
                if(num1.toFloat() != 0.0f && num2.toFloat() != 0.0f) {
                    textResult.text = "계산 결과 : " + String.format("%.1f", result)
                }
                else{
                    Toast.makeText( context: this@MainActivity, text: "오류 발생! 0을 나눌 수 없습니다!", Toast.LENGTH_SHORT).show()
                    textResult.text = "계산 결과 : "
                }
            }
            false  ^setOnTouchListener
        }

        btnRem.setOnTouchListener { view, motionEvent ->
            num1 = edit1.text.toString()
            num2 = edit2.text.toString()
            if (num1.length == 0 || num2.length == 0){
                Toast.makeText( context: this, text: "값을 입력하세요!", Toast.LENGTH_SHORT).show()
            }
            else {
                result = num1.toFloat() % num2.toFloat()
                if(num1.toFloat() != 0.0f && num2.toFloat() != 0.0f) {
                    textResult.text = "계산 결과 : " + String.format("%.1f", result)
                }
                else{
                    Toast.makeText( context: this@MainActivity, text: "오류 발생! 0을 나눌 수 없습니다!", Toast.LENGTH_SHORT).show()
                    textResult.text = "계산 결과 : "
                }
            }
            false  ^setOnTouchListener
        }
    }
}
```

package com.example.simplecalculator
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.Button
import android.widget.EditText
import android.widget.TextView
import android.widget.Toast
class MainActivity : AppCompatActivity() {
    lateinit var edit1: EditText;   lateinit var edit2: EditText
    lateinit var btnAdd: Button;   lateinit var btnSub: Button;
    lateinit var btnMul: Button;   lateinit var btnDiv: Button
    lateinit var btnRem: Button
    lateinit var textResult: TextView
    lateinit var num1: String;   lateinit var num2: String
    var result: Float? =null
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        edit1 = findViewById <EditText >(R.id.Edit1)
        edit2 = findViewById <EditText >(R.id.Edit2)
        btnAdd = findViewById <Button >(R.id.BtnAdd)
        btnSub = findViewById <Button >(R.id.BtnSub)

```kotlin
btnMul = findViewById <Button >(R.id.BtnMul)
btnDiv = findViewById <Button >(R.id.BtnDiv)
btnRem = findViewById <Button >(R.id.BtnRem)
textResult = findViewById <TextView >(R.id.TextResult)
btnAdd.setOnTouchListener { view, motionEvent ->
    num1 = edit1.text.toString()
    num2 = edit2.text.toString()
    if (num1.length ==0 || num2.length ==0){
        Toast.makeText(this, "값을 입력하세요!", Toast.LENGTH_SHORT).show()
    }
    else{
        result = num1.toFloat() + num2.toFloat()
        textResult.text ="계산 결과 : "+String.format("%.1f", result)
    }
    false
}
btnSub.setOnTouchListener { view, motionEvent ->
    num1 = edit1.text.toString()
    num2 = edit2.text.toString()
    if (num1.length ==0 || num2.length ==0){
        Toast.makeText(this, "값을 입력하세요!", Toast.LENGTH_SHORT).show()
    }
    else{
        result = num1.toFloat() - num2.toFloat()
        textResult.text ="계산 결과 : "+String.format("%.1f", result)
    }
    false
}
btnMul.setOnTouchListener { view, motionEvent ->
    num1 = edit1.text.toString()
    num2 = edit2.text.toString()
    if (num1.length ==0 || num2.length ==0){
        Toast.makeText(this, "값을 입력하세요!", Toast.LENGTH_SHORT).show()
    }
    else {
        result = num1.toFloat() * num2.toFloat()
        textResult.text ="계산 결과 : "+String.format("%.1f", result)
    }
    false
}
btnDiv.setOnTouchListener { view, motionEvent ->
```
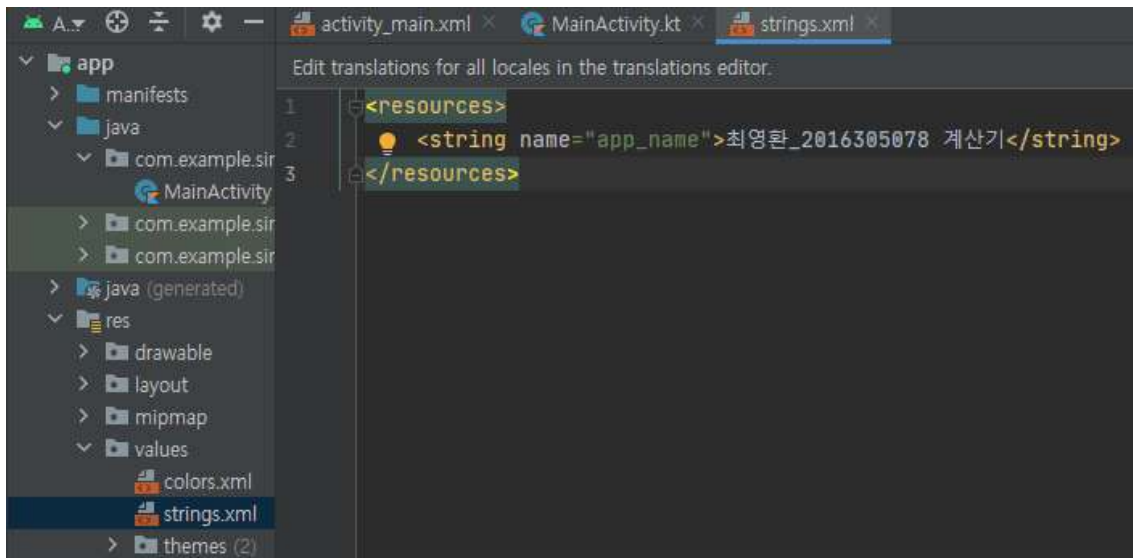
```kotlin
            num1 = edit1.text.toString()
            num2 = edit2.text.toString()
            if (num1.length ==0 || num2.length ==0){
                Toast.makeText(this, "값을 입력하세요!", Toast.LENGTH_SHORT).show()
            }
            else {
                result = num1.toFloat() / num2.toFloat()
                if(num1.toFloat() !=0.0f && num2.toFloat() !=0.0f) {
                    textResult.text ="계산 결과 : "+String.format("%.1f", result)
                }
                else{
                    Toast.makeText(this@MainActivity, "오류 발생! 0을 나눌 수 없습니
다!", Toast.LENGTH_SHORT).show()
                    textResult.text ="계산 결과 : "
                }
            }
            false
        }
        btnRem.setOnTouchListener { view, motionEvent ->
            num1 = edit1.text.toString()
            num2 = edit2.text.toString()
            if (num1.length ==0 || num2.length ==0){
                Toast.makeText(this, "값을 입력하세요!", Toast.LENGTH_SHORT).show()
            }
            else {
                result = num1.toFloat() % num2.toFloat()
                if(num1.toFloat() !=0.0f && num2.toFloat() !=0.0f) {
                    textResult.text ="계산 결과 : "+String.format("%.1f", result)
                }
                else{
                    Toast.makeText(this@MainActivity, "오류 발생! 0을 나눌 수 없습니
다!", Toast.LENGTH_SHORT).show()
                    textResult.text ="계산 결과 : "
                }
            }
            false
        }
    }
}
```
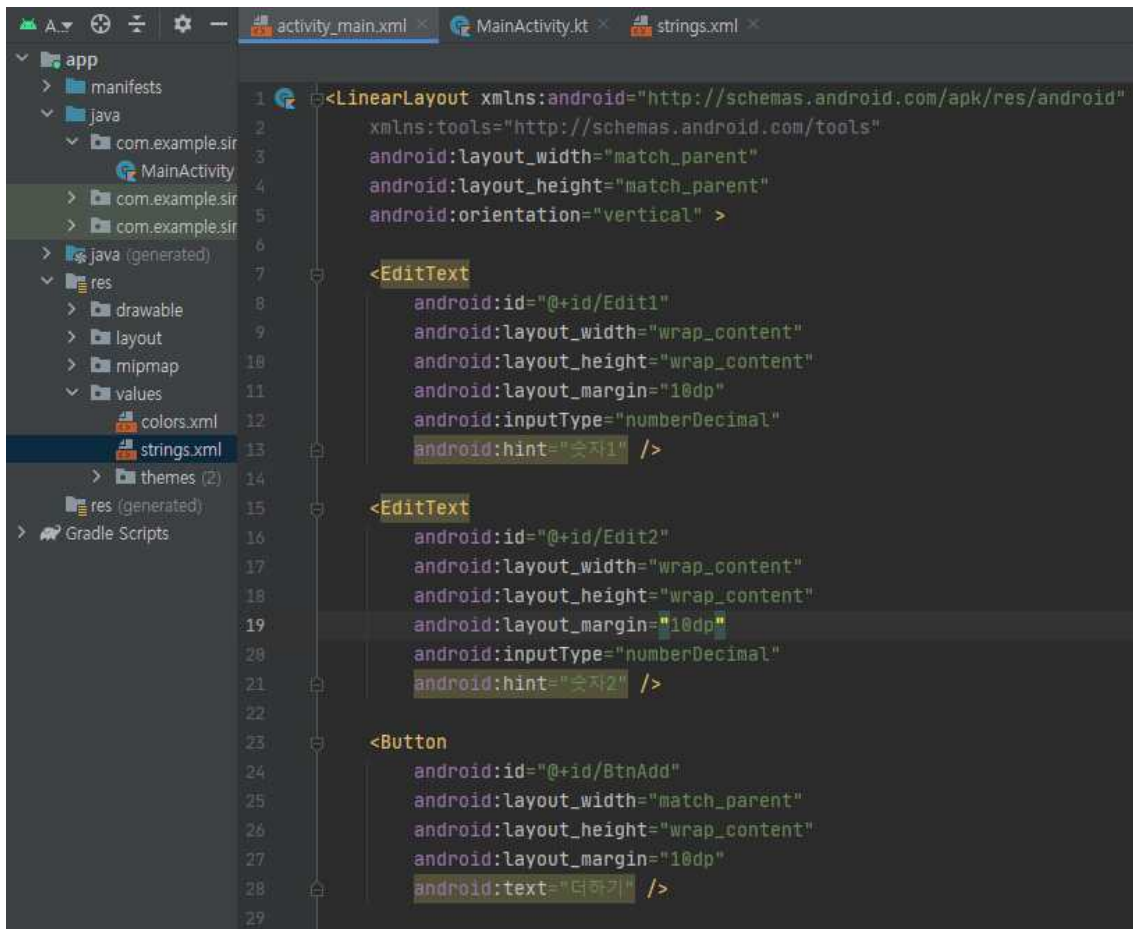
```xml
<resources >
    <string name="app_name">최영환_2016305078 계산기 </string >
</resources >
```

```xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical" >

    <EditText
        android:id="@+id/Edit1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:inputType="numberDecimal"
        android:hint="숫자1" />

    <EditText
        android:id="@+id/Edit2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:inputType="numberDecimal"
        android:hint="숫자2" />

    <Button
        android:id="@+id/BtnAdd"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="더하기" />
```
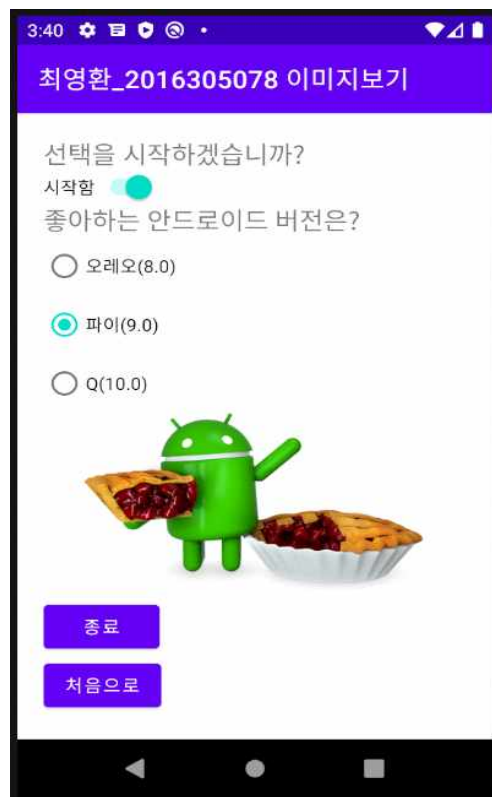
```xml
        <Button
            android:id="@+id/BtnSub"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:text="빼기" />

        <Button
            android:id="@+id/BtnMul"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:text="곱하기" />

        <Button
            android:id="@+id/BtnDiv"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:text="나누기" />

        <Button
            android:id="@+id/BtnRem"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:text="나머지 값" />

        <TextView
            android:id="@+id/TextResult"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="계산 결과 : "
            android:layout_weight="1"
            android:textColor="#FF0000"
            android:textSize="30dp" />

</LinearLayout>
```
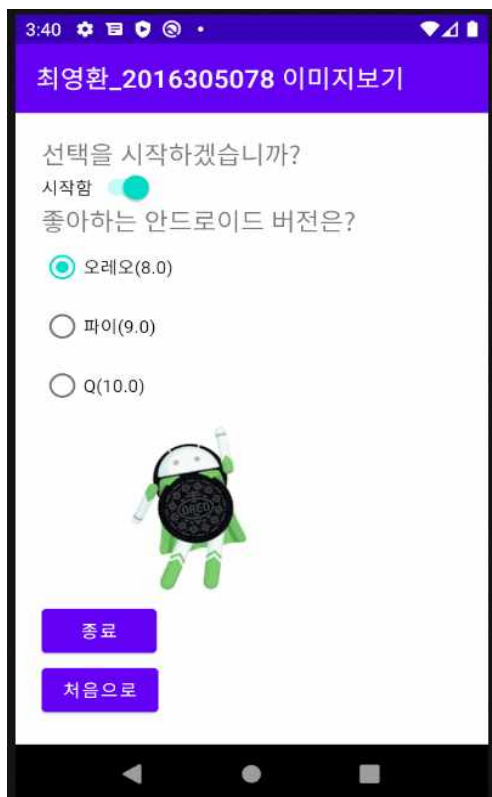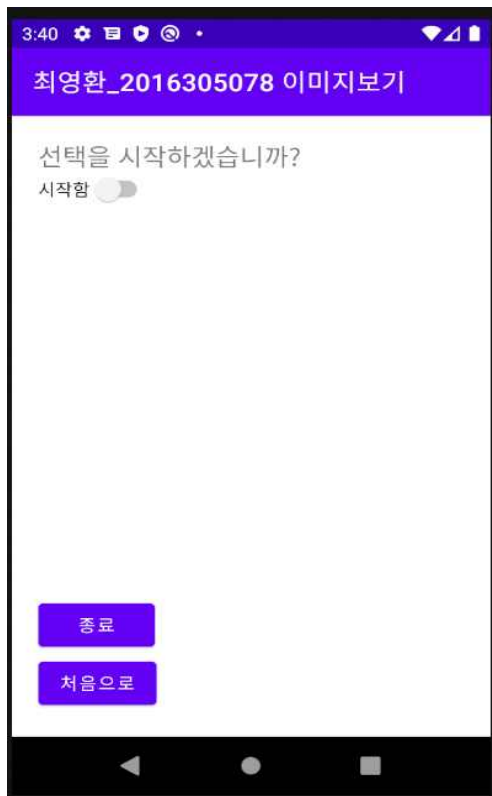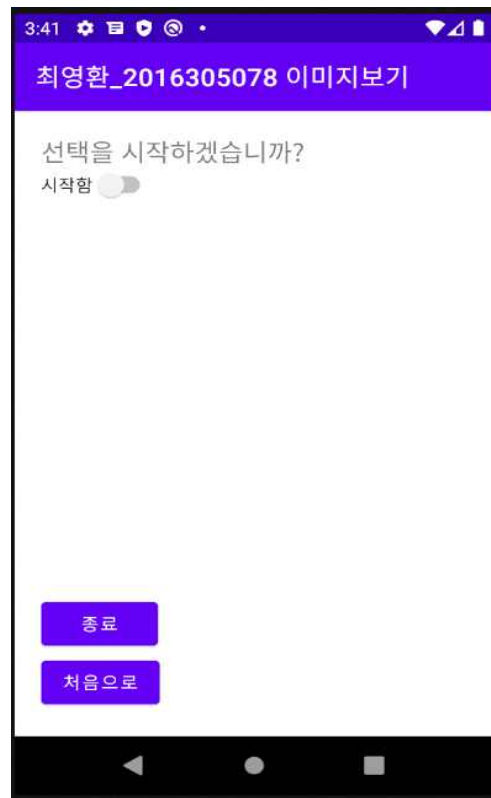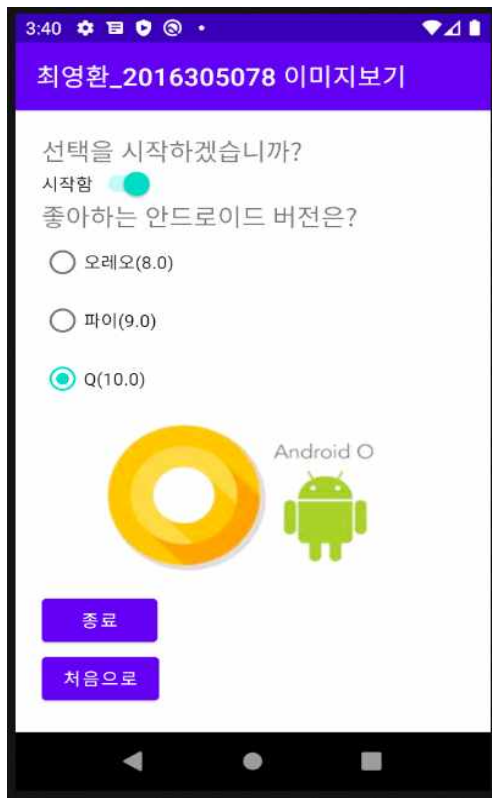
```xml
<LinearLayout  xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:orientation="vertical">
    <EditText
android:id="@+id/Edit1"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:inputType="numberDecimal"
android:hint="숫자1"/>
    <EditText
android:id="@+id/Edit2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:inputType="numberDecimal"
android:hint="숫자2"/>
    <Button
android:id="@+id/BtnAdd"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:text="더하기"/>
    <Button
android:id="@+id/BtnSub"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:text="빼기"/>
    <Button
android:id="@+id/BtnMul"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:text="곱하기"/>
    <Button
android:id="@+id/BtnDiv"
android:layout_width="match_parent"
android:layout_height="wrap_content"
```

```xml
        android:layout_margin="10dp"
        android:text="나누기"/>
        <Button
        android:id="@+id/BtnRem"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="10dp"
        android:text="나머지 값"/>
        <TextView
        android:id="@+id/TextResult"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="계산 결과 : "
        android:layout_weight="1"
        android:textColor="#FF0000"
        android:textSize="30dp"/>
</LinearLayout  >
```
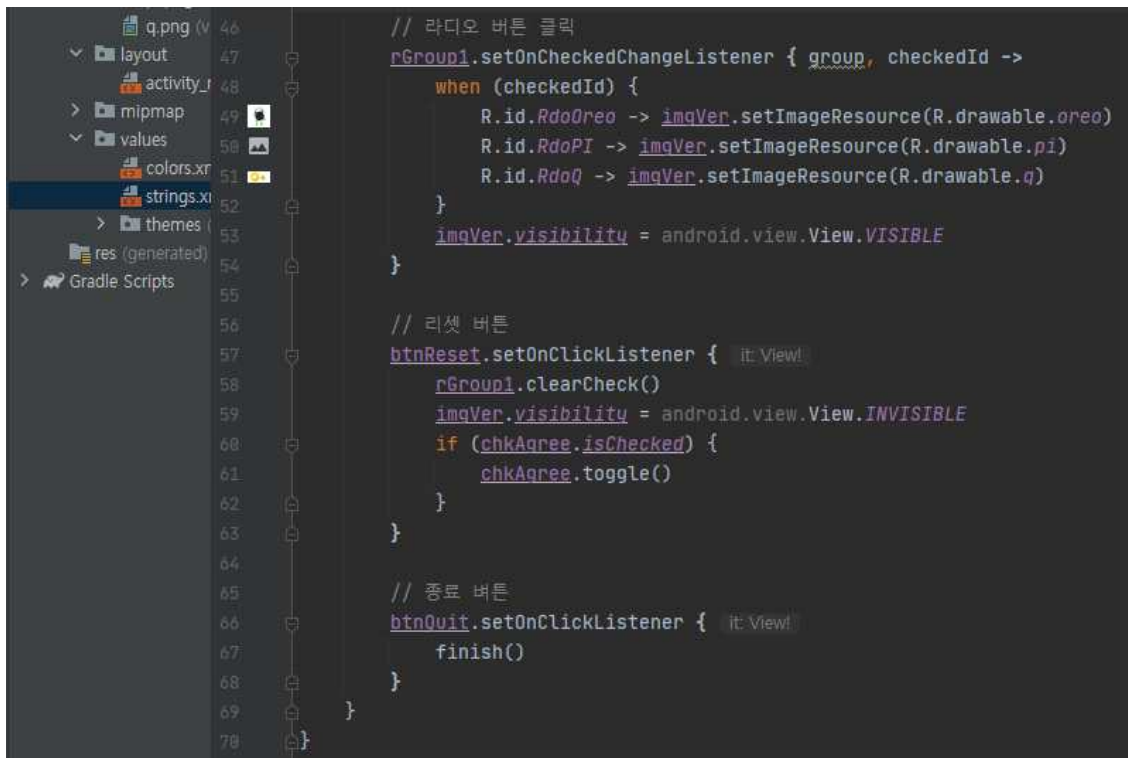
※ 리셋 버튼과 종료 버튼 모두 정상 동작함을 확인하였습니다.

<MainActivity.java>

```kotlin
package com.example.simpleimageviewer

import ...

class MainActivity : AppCompatActivity() {
    lateinit var text1: TextView;          lateinit var text2: TextView
    lateinit var chkAgree: Switch;         lateinit var imgVer: ImageView
    lateinit var rGroup1: RadioGroup;      lateinit var rdoDog: RadioButton
    lateinit var rdoCat: RadioButton;      lateinit var rdoRabbit: RadioButton
    lateinit var btnQuit: Button;          lateinit var btnReset: Button

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

        text1 = findViewById<TextView>(R.id.Text1)
        chkAgree = findViewById<Switch>(R.id.ChkAgree)

        text2 = findViewById<TextView>(R.id.Text2)
        rGroup1 = findViewById<RadioGroup>(R.id.Rgroup1)
        rdoDog = findViewById<RadioButton>(R.id.RdoOreo)
        rdoCat = findViewById<RadioButton>(R.id.RdoPI)
        rdoRabbit = findViewById<RadioButton>(R.id.RdoQ)

        btnReset = findViewById<Button>(R.id.BtnReset)
        btnQuit = findViewById<Button>(R.id.BtnQuit)
        imgVer = findViewById<ImageView>(R.id.ImgVer)

        // 스위치
        chkAgree.setOnCheckedChangeListener { compoundButton, b ->
            // 체크되면 모두 보이도록 설정
            if (chkAgree.isChecked == true) {
                text2.visibility = android.view.View.VISIBLE
                rGroup1.visibility = android.view.View.VISIBLE
            // 미체크시 모두 안보이도록 설정
            } else {
                text2.visibility = android.view.View.INVISIBLE
                rGroup1.visibility = android.view.View.INVISIBLE
                imgVer.visibility = android.view.View.INVISIBLE
            }
        }
    }
}
```

```kotlin
// 라디오 버튼 클릭
rGroup1.setOnCheckedChangeListener { group, checkedId ->
    when (checkedId) {
        R.id.RdoOreo -> imgVer.setImageResource(R.drawable.oreo)
        R.id.RdoPI -> imgVer.setImageResource(R.drawable.pi)
        R.id.RdoQ -> imgVer.setImageResource(R.drawable.q)
    }
    imgVer.visibility = android.view.View.VISIBLE
}

// 리셋 버튼
btnReset.setOnClickListener { it: View!
    rGroup1.clearCheck()
    imgVer.visibility = android.view.View.INVISIBLE
    if (chkAgree.isChecked) {
        chkAgree.toggle()
    }
}

// 종료 벼튼
btnQuit.setOnClickListener { it: View!
    finish()
}
}
}
```

```kotlin
package com.example.simpleimageviewer
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.view.View
import android.widget.*
class MainActivity : AppCompatActivity() {
    lateinit var text1: TextView;          lateinit var text2: TextView
    lateinit var chkAgree: Switch;          lateinit var imgVer: ImageView
    lateinit var rGroup1: RadioGroup;     lateinit var rdoDog: RadioButton
    lateinit var rdoCat: RadioButton;     lateinit var rdoRabbit: RadioButton
    lateinit var btnQuit: Button;          lateinit var btnReset: Button
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
        text1 = findViewById <TextView >(R.id.Text1)
        chkAgree = findViewById <Switch >(R.id.ChkAgree)
        text2 = findViewById <TextView >(R.id.Text2)
        rGroup1 = findViewById <RadioGroup >(R.id.Rgroup1)
        rdoDog = findViewById <RadioButton >(R.id.RdoOreo)
        rdoCat = findViewById <RadioButton >(R.id.RdoPI)
        rdoRabbit = findViewById <RadioButton >(R.id.RdoQ)
        btnReset = findViewById <Button >(R.id.BtnReset)
```

```kotlin
        btnQuit = findViewById <Button >(R.id.BtnQuit)
        imgVer = findViewById <ImageView >(R.id.ImgVer)
        // 스위치
        chkAgree.setOnCheckedChangeListener { compoundButton, b ->
            // 체크되면 모두 보이도록 설정
            if (chkAgree.isChecked ==true) {
                text2.visibility = android.view.View.VISIBLE
                rGroup1.visibility = android.view.View.VISIBLE
            // 미체크시 모두 안보이도록 설정
            } else {
                text2.visibility = android.view.View.INVISIBLE
                rGroup1.visibility = android.view.View.INVISIBLE
                imgVer.visibility = android.view.View.INVISIBLE
            }
        }
        // 라디오 버튼 클릭
        rGroup1.setOnCheckedChangeListener { group, checkedId ->
            when (checkedId) {
                R.id.RdoOreo -> imgVer.setImageResource(R.drawable.oreo)
                R.id.RdoPI -> imgVer.setImageResource(R.drawable.pi)
                R.id.RdoQ -> imgVer.setImageResource(R.drawable.q)
            }
            imgVer.visibility = android.view.View.VISIBLE
        }
        // 리셋 버튼
        btnReset.setOnClickListener {
            rGroup1.clearCheck()
            imgVer.visibility = android.view.View.INVISIBLE
            if (chkAgree.isChecked) {
                chkAgree.toggle()
            }
        }
        // 종료 벼튼
        btnQuit.setOnClickListener {
            finish()
        }
    }
}
```
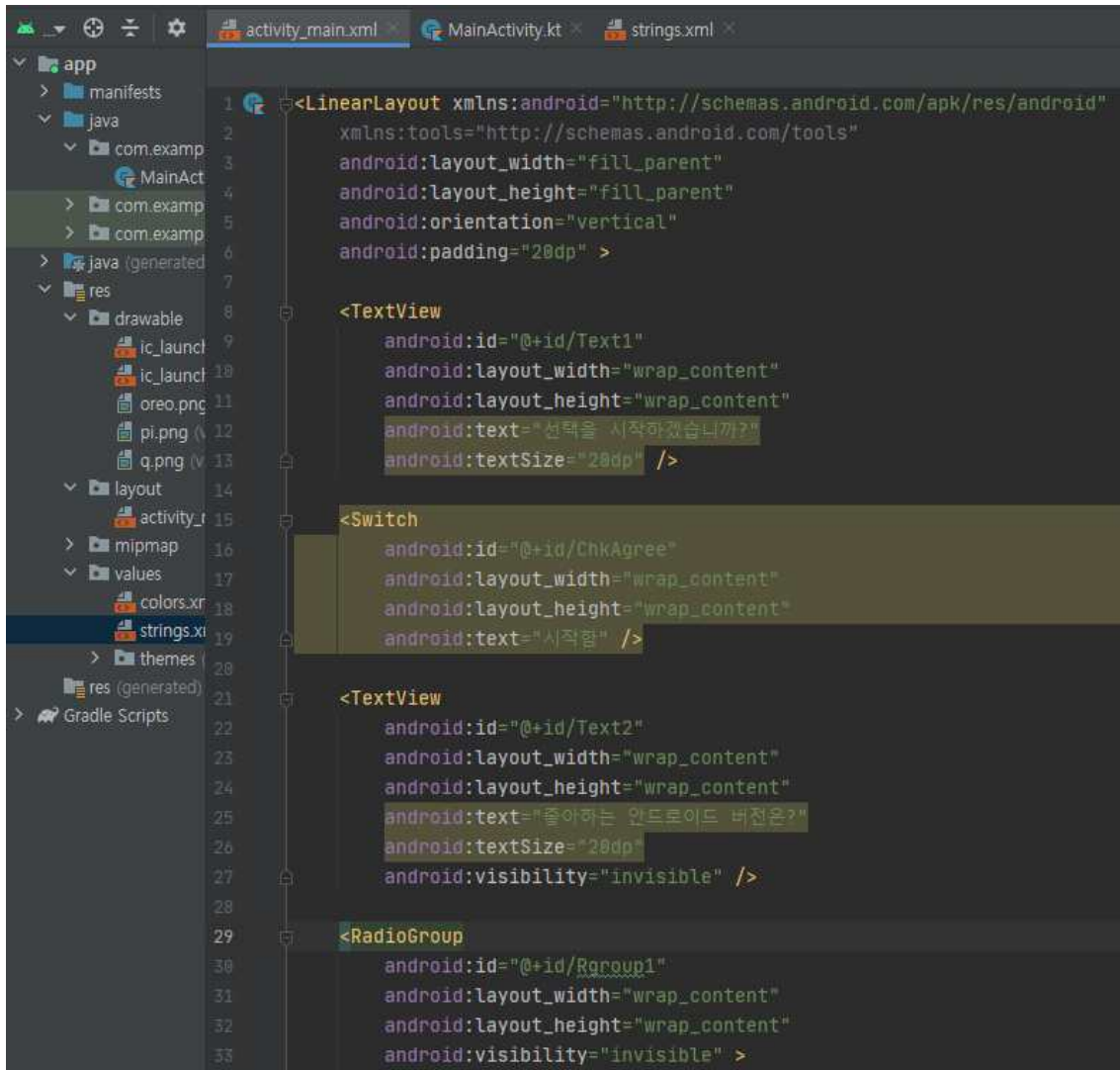
```xml
<resources >
    <string name="app_name">최영환_2016305078 이미지보기 </string >
</resources >
```

```xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical"
    android:padding="20dp" >

    <TextView
        android:id="@+id/Text1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="선택을 시작하겠습니까?"
        android:textSize="20dp" />

    <Switch
        android:id="@+id/ChkAgree"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="시작함" />

    <TextView
        android:id="@+id/Text2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="좋아하는 안드로이드 버전은?"
        android:textSize="20dp"
        android:visibility="invisible" />

    <RadioGroup
        android:id="@+id/Rgroup1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:visibility="invisible" >
```

```xml
        <RadioButton
            android:id="@+id/RdoOreo"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="오레오(8.0)" />

        <RadioButton
            android:id="@+id/RdoPI"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="파이(9.0)" />

        <RadioButton
            android:id="@+id/RdoQ"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Q(10.0)" />
    </RadioGroup>

    <ImageView
        android:id="@+id/ImgVer"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"/>

    <Button
        android:id="@+id/BtnQuit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="종료"/>

    <Button
        android:id="@+id/BtnReset"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="처음으로"/>

</LinearLayout>
```

```xml
<LinearLayout  xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    android:orientation="vertical"
    android:padding="20dp">
    <TextView
        android:id="@+id/Text1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="선택을  시작하겠습니까?"
        android:textSize="20dp"/>
    <Switch
        android:id="@+id/ChkAgree"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="시작함"/>
    <TextView
        android:id="@+id/Text2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="좋아하는  안드로이드  버전은?"
        android:textSize="20dp"
        android:visibility="invisible"/>
    <RadioGroup
        android:id="@+id/Rgroup1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:visibility="invisible">
        <RadioButton
            android:id="@+id/RdoOreo"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="오레오(8.0)"/>
        <RadioButton
            android:id="@+id/RdoPI"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="파이(9.0)"/>
        <RadioButton
            android:id="@+id/RdoQ"
```

```xml
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Q(10.0)"/>
    </RadioGroup >
    <ImageView
        android:id="@+id/ImgVer"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"/>
    <Button
        android:id="@+id/BtnQuit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="종료"/>
    <Button
        android:id="@+id/BtnReset"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="처음으로"/>
</LinearLayout >
```