

APLICACIONES MÓVILES

Tarea virtual 2

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ASIGNATURA: Aplicaciones Móviles

CURSO: DSE08

Tarea virtual 2

Tema:

Diseño de un prototipo para iniciar una aplicación móvil

Objetivo:

El objetivo de la actividad es que el estudiante inicie el diseño de una aplicación completa para una empresa seleccionada.

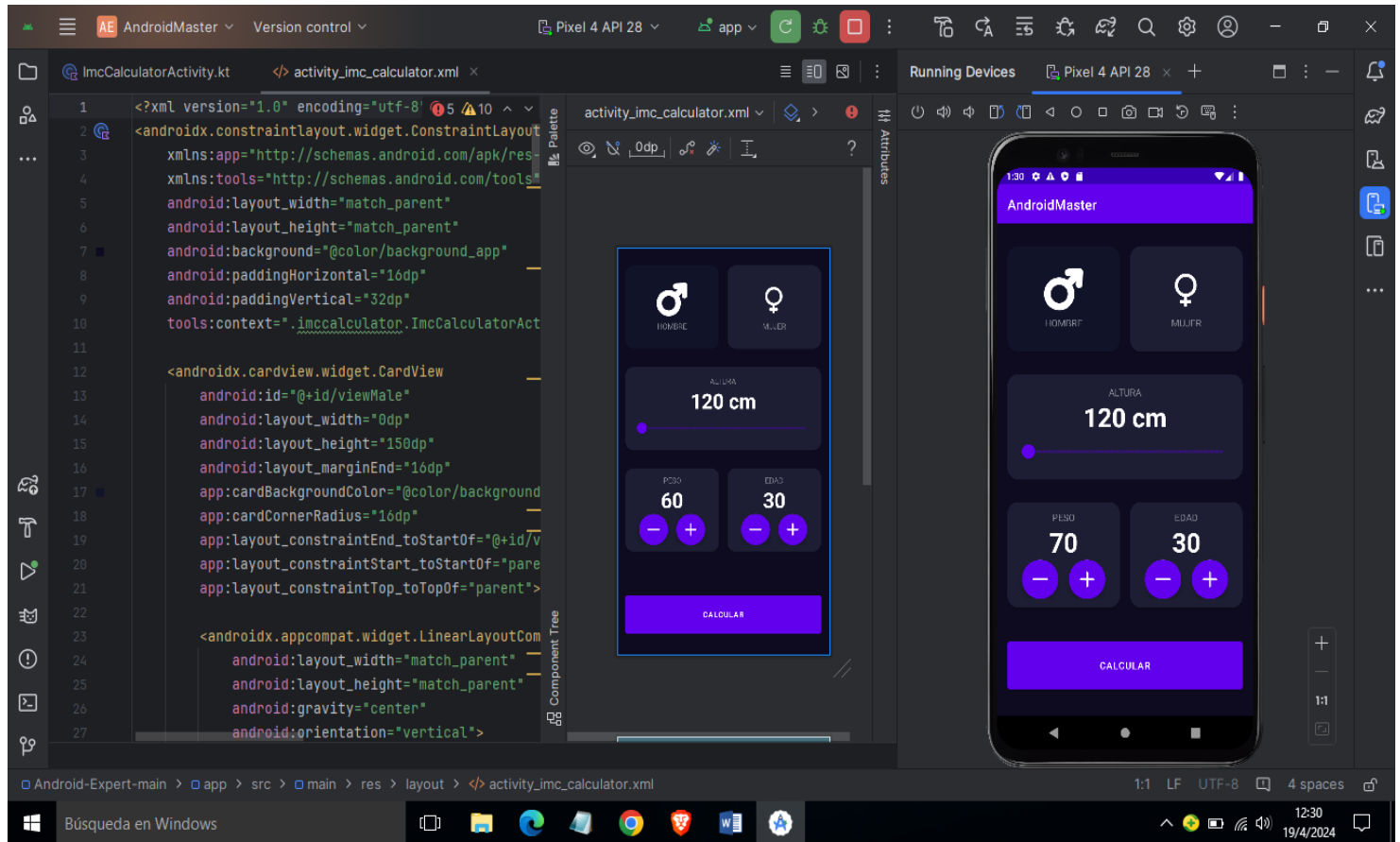
Instrucciones:

1. Diseñar una app que realice los cálculos de IMC (Índice de masa corporal).
2. Utilizar ConstraintLayout para el layout principal.
3. Crear espacios correspondientes que dividirán la pantalla principal de nuestra app utilizando el componente cardView.
4. La interfaz final debe asemejarse a la imagen propuesta.
5. Se deben crear solo los cardView, mas no los componentes que se encuentran dentro de ellas.

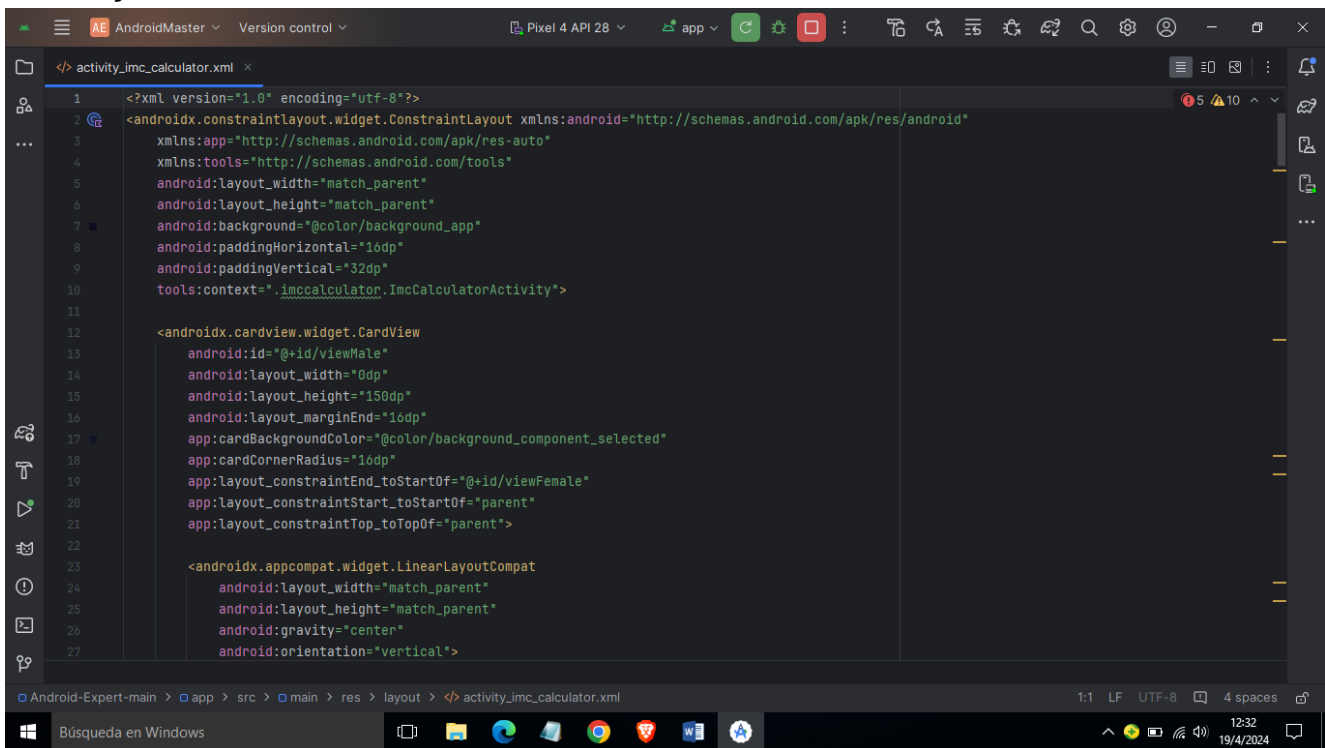


Valor: 15ptos

CAPTURA DE PANTALLA DEL PROYECTO



activity_imc_calculator.xml



```

1  <?xml version="1.0" encoding="utf-8"?>
2  <androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      xmlns:app="http://schemas.android.com/apk/res-auto"
4      xmlns:tools="http://schemas.android.com/tools"
5      android:layout_width="match_parent"
6      android:layout_height="match_parent"
7      android:background="@color/background_app"
8      android:paddingHorizontal="16dp"
9      android:paddingVertical="32dp"
10     tools:context=".imccalculator.ImcCalculatorActivity">
11
12     <androidx.cardview.widget.CardView
13         android:id="@+id/viewMale"
14         android:layout_width="0dp"
15         android:layout_height="150dp"
16         android:layout_marginEnd="16dp"
17         app:cardBackgroundColor="@color/background_component_selected"
18         app:cardCornerRadius="16dp"
19         app:layout_constraintEnd_toStartOf="@+id/viewFemale"
20         app:layout_constraintStart_toStartOf="parent"
21         app:layout_constraintTop_toTopOf="parent">
22
23     <androidx.appcompat.widget.LinearLayoutCompat
24         android:layout_width="match_parent"
25         android:layout_height="match_parent"
26         android:gravity="center"
27         android:orientation="vertical">

```

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:background="@color/background_app"
android:paddingHorizontal="16dp"
android:paddingVertical="32dp"
tools:context=".imccalculator.ImcCalculatorActivity">

<androidx.cardview.widget.CardView
    android:id="@+id/viewMale"
    android:layout_width="0dp"
    android:layout_height="150dp"
    android:layout_marginEnd="16dp"
    app:cardBackgroundColor="@color/background_component_selected"
    app:cardCornerRadius="16dp"
    app:layout_constraintEnd_toStartOf="@+id/viewFemale"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent">

<androidx.appcompat.widget.LinearLayoutCompat
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center"
    android:orientation="vertical">

<ImageView
    android:layout_width="60dp"
    android:layout_height="60dp"
    android:layout_marginBottom="8dp"
    android:src="@drawable/ic_male"
    app:tint="@color/white" />

```

```

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/male"
            android:textAllCaps="true"
            android:textColor="@color/title_text" />

    </androidx.appcompat.widget.LinearLayoutCompat>

</androidx.cardview.widget.CardView>

<androidx.cardview.widget.CardView
    android:id="@+id/viewFemale"
    android:layout_width="0dp"
    android:layout_height="150dp"
    app:cardBackgroundColor="@color/background_component"
    app:cardCornerRadius="16dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/viewMale"
    app:layout_constraintTop_toTopOf="parent">

    <androidx.appcompat.widget.LinearLayoutCompat
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:gravity="center"
        android:orientation="vertical">

        <ImageView
            android:layout_width="60dp"
            android:layout_height="60dp"
            android:src="@drawable/ic_female"
            app:tint="@color/white" />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginTop="8dp"
            android:text="@string/female"
            android:textAllCaps="true"
            android:textColor="@color/title_text" />

    </androidx.appcompat.widget.LinearLayoutCompat>

</androidx.cardview.widget.CardView>

<androidx.cardview.widget.CardView
    android:id="@+id/viewHeight"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="32dp"
    app:cardBackgroundColor="@color/background_component"
    app:cardCornerRadius="16dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/viewMale">

    <androidx.appcompat.widget.LinearLayoutCompat
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_margin="16dp"
        android:gravity="center"
        android:orientation="vertical">

```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/height"
    android:textAllCaps="true"
    android:textColor="@color/title_text" />

<TextView
    android:id="@+id/tvHeight"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="120 cm"
    android:textColor="@color/white"
    android:textSize="38sp"
    android:textStyle="bold" />

<com.google.android.material.slider.RangeSlider
    android:id="@+id/rsHeight"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:stepSize="1"
    android:valueFrom="120"
    android:valueTo="200" />

</androidx.appcompat.widget.LinearLayoutCompat>

</androidx.cardview.widget.CardView>

<androidx.cardview.widget.CardView
    android:id="@+id/viewWeight"
    android:layout_width="0dp"
    android:layout_height="150dp"
    android:layout_marginTop="32dp"
    android:layout_marginEnd="16dp"
    app:cardBackgroundColor="@color/background_component"
    app:cardCornerRadius="16dp"
    app:layout_constraintEnd_toStartOf="@+id/viewAge"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/viewHeight">

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

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/weight"
            android:textAllCaps="true"
            android:textColor="@color/title_text" />

        <TextView
            android:id="@+id/tvWeight"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textColor="@color/white"
            android:textSize="38sp"
            android:textStyle="bold"
            tools:text="60" />

    </androidx.appcompat.widget.LinearLayoutCompat>
```

```
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:orientation="horizontal">

<com.google.android.material.floatingactionbutton.FloatingActionButton
    android:id="@+id/btnSubtractWeight"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="16dp"
    android:src="@drawable/ic_subtract"
    app:backgroundTint="@color/background_fab"
    app:tint="@color/white" />

<com.google.android.material.floatingactionbutton.FloatingActionButton
    android:id="@+id/btnPlusWeight"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:src="@drawable/ic_plus"
    app:backgroundTint="@color/background_fab"
    app:tint="@color/white" />

</androidx.appcompat.widget.LinearLayoutCompat>

</LinearLayout>

</androidx.cardview.widget.CardView>

<androidx.cardview.widget.CardView
    android:id="@+id/viewAge"
    android:layout_width="0dp"
    android:layout_height="150dp"
    android:layout_marginTop="32dp"
    app:cardBackgroundColor="@color/background_component"
    app:cardCornerRadius="16dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/viewWeight"
    app:layout_constraintTop_toBottomOf="@+id/viewHeight">

    <androidx.appcompat.widget.LinearLayoutCompat
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:gravity="center"
        android:orientation="vertical">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="@string/age"
            android:textAllCaps="true"
            android:textColor="@color/title_text" />

        <TextView
            android:id="@+id/tvAge"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textColor="@color/white"
            android:textSize="38sp"
            android:textStyle="bold"
            tools:text="30" />

    </androidx.appcompat.widget.LinearLayoutCompat>
```

```
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:orientation="horizontal">

<com.google.android.material.floatingactionbutton.FloatingActionButton
    android:id="@+id/btnSubtractAge"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginEnd="16dp"
    android:src="@drawable/ic_subtract"
    app:backgroundTint="@color/background_fab"
    app:tint="@color/white" />

<com.google.android.material.floatingactionbutton.FloatingActionButton
    android:id="@+id/btnPlusAge"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:src="@drawable/ic_plus"
    app:backgroundTint="@color/background_fab"
    app:tint="@color/white" />

</androidx.appcompat.widget.LinearLayoutCompat>

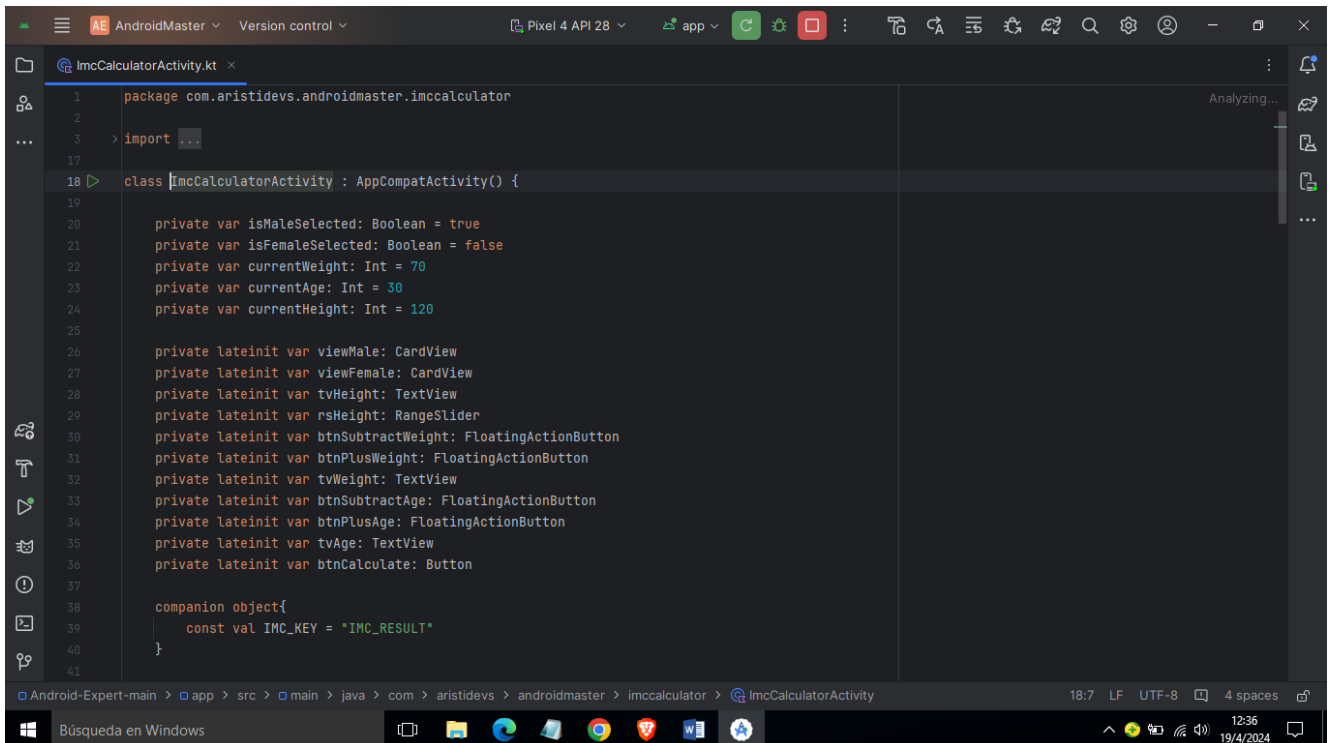
</androidx.appcompat.widget.LinearLayoutCompat>

</androidx.cardview.widget.CardView>

<Button
    android:id="@+id/btnCalculate"
    android:layout_width="0dp"
    android:layout_height="80dp"
    android:text="@string/calculate"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent" />

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


ImcCalculatorActivity.kt



```
1 package com.aristidevs.androidmaster.imccalculator
2
3 > import ...
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18 class ImcCalculatorActivity : AppCompatActivity() {
19
20     private var isMaleSelected: Boolean = true
21     private var isFemaleSelected: Boolean = false
22     private var currentWeight: Int = 70
23     private var currentAge: Int = 30
24     private var currentHeight: Int = 120
25
26     private lateinit var viewMale: CardView
27     private lateinit var viewFemale: CardView
28     private lateinit var tvHeight: TextView
29     private lateinit var rsHeight: RangeSlider
30     private lateinit var btnSubtractWeight: FloatingActionButton
31     private lateinit var btnPlusWeight: FloatingActionButton
32     private lateinit var tvWeight: TextView
33     private lateinit var btnSubtractAge: FloatingActionButton
34     private lateinit var btnPlusAge: FloatingActionButton
35     private lateinit var tvAge: TextView
36     private lateinit var btnCalculate: Button
37
38     companion object {
39         const val IMC_KEY = "IMC_RESULT"
40     }
41 }
```

```
package com.aristidevs.androidmaster.imccalculator

import android.content.Context
import android.content.Intent
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.util.Log
import android.widget.Button
import android.widget.TextView
import androidx.cardview.widget.CardView
import androidx.core.content.ContextCompat
import com.aristidevs.androidmaster.R
import com.google.android.material.floatingactionbutton.FloatingActionButton
import com.google.android.material.slider.RangeSlider
import org.w3c.dom.Text
import java.text.DecimalFormat

class ImcCalculatorActivity : AppCompatActivity() {

    private var isMaleSelected: Boolean = true
    private var isFemaleSelected: Boolean = false
    private var currentWeight: Int = 70
    private var currentAge: Int = 30
    private var currentHeight: Int = 120

    private lateinit var viewMale: CardView
    private lateinit var viewFemale: CardView
    private lateinit var tvHeight: TextView
    private lateinit var rsHeight: RangeSlider
    private lateinit var btnSubtractWeight: FloatingActionButton
    private lateinit var btnPlusWeight: FloatingActionButton
    private lateinit var tvWeight: TextView
    private lateinit var btnSubtractAge: FloatingActionButton
    private lateinit var btnPlusAge: FloatingActionButton
```

```
private lateinit var tvAge: TextView
private lateinit var btnCalculate: Button

companion object {
    const val IMC_KEY = "IMC_RESULT"
}

override fun onCreate(savedInstanceState: Bundle?) {
    super.onCreate(savedInstanceState)
    setContentView(R.layout.activity_imc_calculator)
    initComponents()
    initListeners()
    initUI()
}

private fun initComponents() {
    viewMale = findViewById(R.id.viewMale)
    viewFemale = findViewById(R.id.viewFemale)
    tvHeight = findViewById(R.id.tvHeight)
    rsHeight = findViewById(R.id.rsHeight)
    btnSubtractWeight = findViewById(R.id.btnSubtractWeight)
    btnPlusWeight = findViewById(R.id.btnPlusWeight)
    tvWeight = findViewById(R.id.tvWeight)
    btnSubtractAge = findViewById(R.id.btnSubtractAge)
    btnPlusAge = findViewById(R.id.btnPlusAge)
    tvAge = findViewById(R.id.tvAge)
    btnCalculate = findViewById(R.id.btnCalculate)
}

private fun initListeners() {
    viewMale.setOnClickListener {
        changeGender()
        setGenderColor()
    }
    viewFemale.setOnClickListener {
        changeGender()
        setGenderColor()
    }
    rsHeight.addOnChangeListener { _, value, _ ->
        val df = DecimalFormat("#.##")
        currentHeight = df.format(value).toInt()
        tvHeight.text = "$currentHeight cm"
    }
    btnPlusWeight.setOnClickListener {
        currentWeight += 1
        setWeight()
    }
    btnSubtractWeight.setOnClickListener {
        currentWeight -= 1
        setWeight()
    }
    btnPlusAge.setOnClickListener {
        currentAge += 1
        setAge()
    }
    btnSubtractAge.setOnClickListener {
        currentAge -= 1
        setAge()
    }
    btnCalculate.setOnClickListener {
        val result = calculateIMC()
        navigateToResult(result)
    }
}
```

```
private fun navigateToResult(result: Double) {
    val intent = Intent(this, ResultIMCAActivity::class.java)
    intent.putExtra(IMC_KEY, result)
    startActivity(intent)
}

private fun calculateIMC():Double {
    val df = DecimalFormat("#.##")
    val imc = currentWeight / (currentHeight.toDouble() /100 *
currentHeight.toDouble()/100)
    return df.format(imc).toDouble()
}

private fun setAge() {
    tvAge.text = currentAge.toString()
}

private fun setWeight() {
    tvWeight.text = currentWeight.toString()
}

private fun changeGender() {
    isMaleSelected = !isMaleSelected
    isFemaleSelected = !isFemaleSelected
}

private fun setGenderColor() {
    viewMale.setCardBackgroundColor(getBackgroundColor(isMaleSelected))
    viewFemale.setCardBackgroundColor(getBackgroundColor(isFemaleSelected))
}

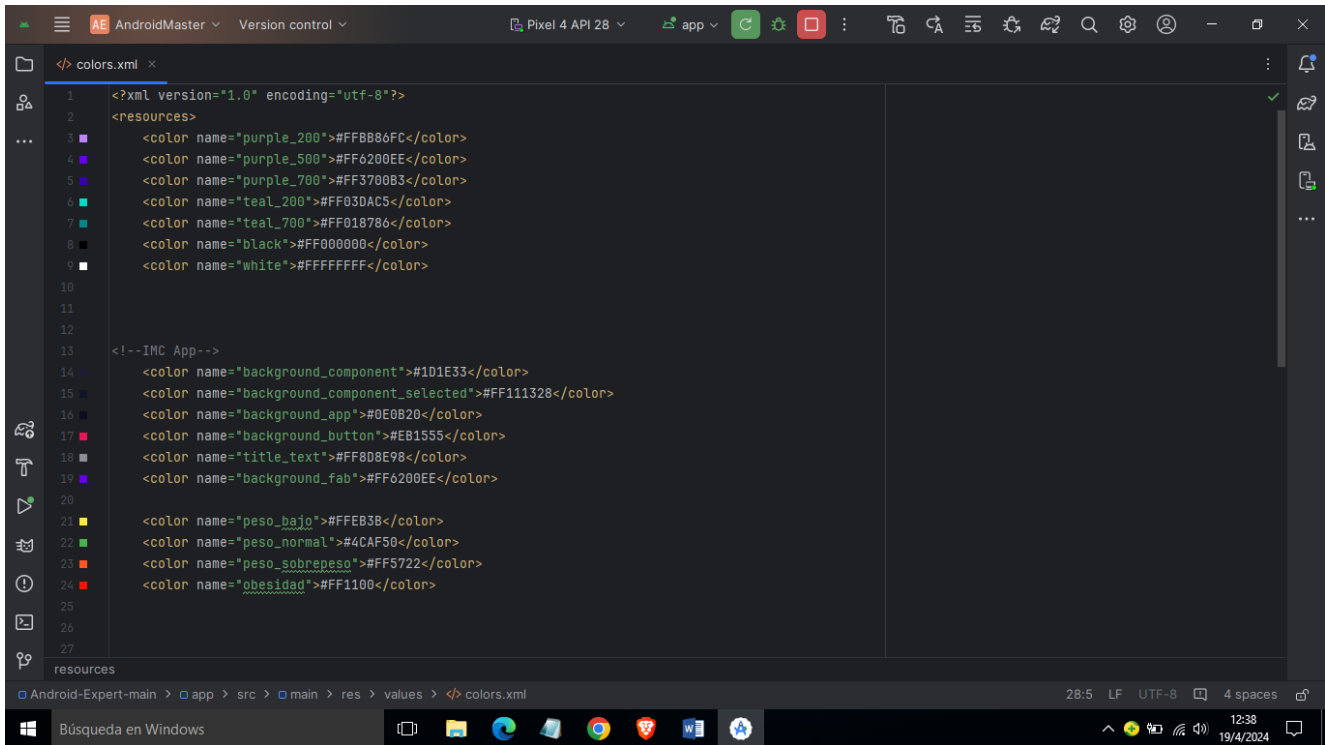
private fun getBackgroundColor(isSelectedComponent: Boolean): Int {

    val colorReference = if (isSelectedComponent) {
        R.color.background_component_selected
    } else {
        R.color.background_component
    }

    return ContextCompat.getColor(this, colorReference)
}

private fun initUI() {
    setGenderColor()
    setWeight()
    setAge()
}
}
```

colors.xml

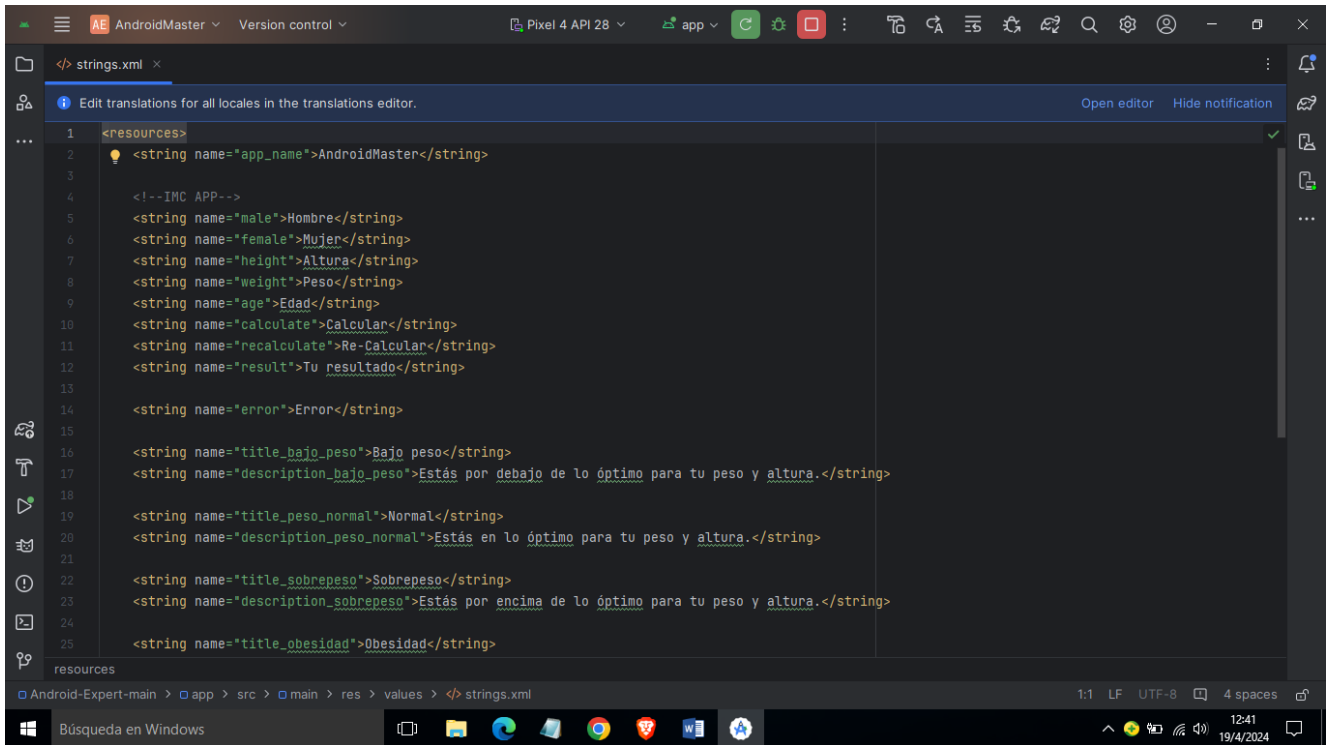


```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="purple_200">#FFBB86FC</color>
    <color name="purple_500">#FF6200EE</color>
    <color name="purple_700">#FF3700B3</color>
    <color name="teal_200">#FF03DAC5</color>
    <color name="teal_700">#FF018786</color>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFFF</color>

    <!--IMC App-->
    <color name="background_component">#1D1E33</color>
    <color name="background_component_selected">#FF111328</color>
    <color name="background_app">#0E0B20</color>
    <color name="background_button">#EB1555</color>
    <color name="title_text">#FF8D8E98</color>
    <color name="background_fab">#FF6200EE</color>

    <color name="peso_bajo">#FFEB3B</color>
    <color name="peso_normal">#4CAF50</color>
    <color name="peso_sobrepeso">#FF5722</color>
    <color name="obesidad">#FF1100</color>
</resources>
```

strings.xml



```
<resources>
  <string name="app_name">AndroidMaster</string>

  <!--IMC APP-->
  <string name="male">Hombre</string>
  <string name="female">Mujer</string>
  <string name="height">Altura</string>
  <string name="weight">Peso</string>
  <string name="age">Edad</string>
  <string name="calculate">Calcular</string>
  <string name="recalculate">Re-Calcular</string>
  <string name="result">Tu resultado</string>

  <string name="error">Error</string>

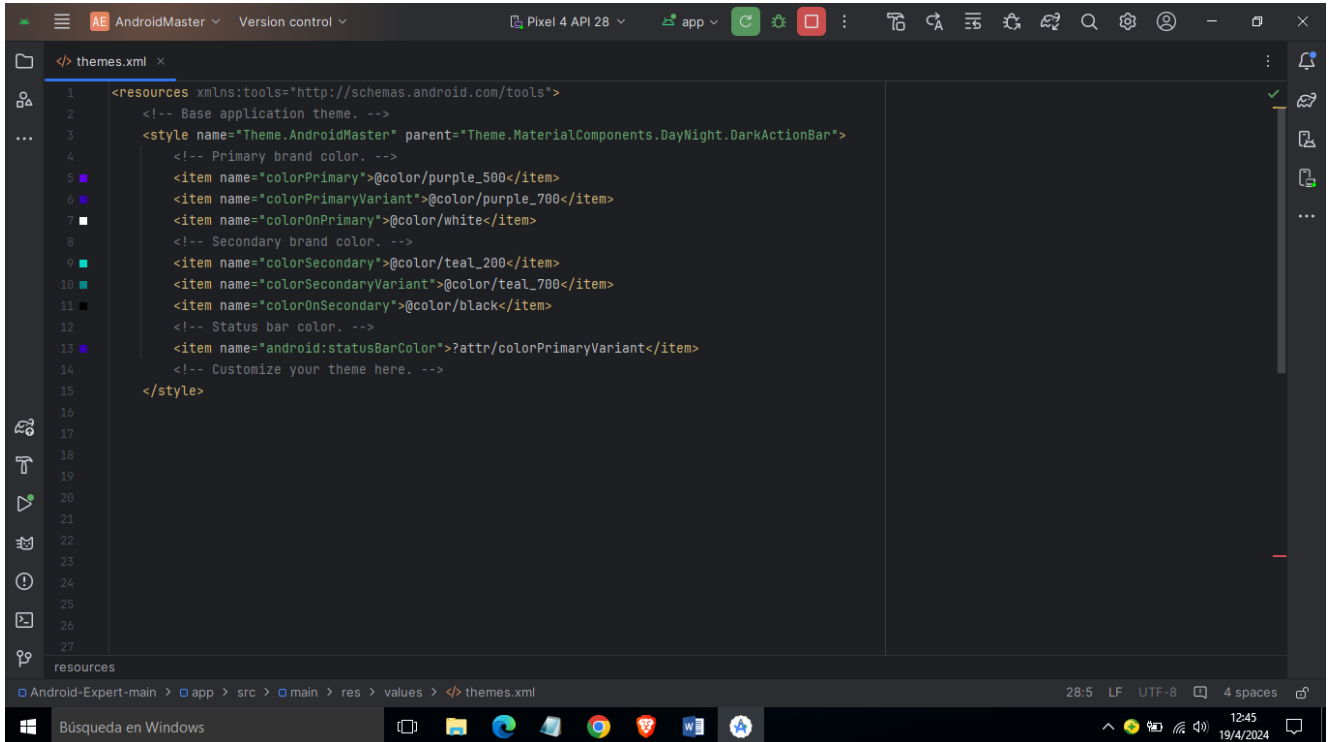
  <string name="title_bajo_peso">Bajo peso</string>
  <string name="description_bajo_peso">Estás por debajo de lo óptimo para tu
  peso y altura.</string>

  <string name="title_peso_normal">Normal</string>
  <string name="description_peso_normal">Estás en lo óptimo para tu peso y
  altura.</string>

  <string name="title_sobrepeso">Sobrepeso</string>
  <string name="description_sobrepeso">Estás por encima de lo óptimo para tu
  peso y altura.</string>

  <string name="title_obesidad">Obesidad</string>
  <string name="description_obesidad">Estás MUY por encima de lo óptimo para tu
  peso y altura.</string>
</resources>
```

themes.xml



The screenshot shows an IDE window with the file 'themes.xml' open. The code defines a theme named 'Theme.AndroidMaster' that inherits from 'Theme.MaterialComponents.DayNight.DarkActionBar'. It sets various color attributes for primary, secondary, and status bar colors. The IDE interface includes a sidebar with project navigation, a main editor area, and a bottom status bar showing file encoding and line numbers.

```
1 <resources xmlns:tools="http://schemas.android.com/tools">
2   <!-- Base application theme. -->
3   <style name="Theme.AndroidMaster" parent="Theme.MaterialComponents.DayNight.DarkActionBar">
4     <!-- Primary brand color. -->
5     <item name="colorPrimary">@color/purple_500</item>
6     <item name="colorPrimaryVariant">@color/purple_700</item>
7     <item name="colorOnPrimary">@color/white</item>
8     <!-- Secondary brand color. -->
9     <item name="colorSecondary">@color/teal_200</item>
10    <item name="colorSecondaryVariant">@color/teal_700</item>
11    <item name="colorOnSecondary">@color/black</item>
12    <!-- Status bar color. -->
13    <item name="android:statusBarColor">?attr/colorPrimaryVariant</item>
14    <!-- Customize your theme here. -->
15  </style>
16
17
18
19
20
21
22
23
24
25
26
27 </resources>
```

```
<resources xmlns:tools="http://schemas.android.com/tools">
  <!-- Base application theme. -->
  <style name="Theme.AndroidMaster"
parent="Theme.MaterialComponents.DayNight.DarkActionBar">
    <!-- Primary brand color. -->
    <item name="colorPrimary">@color/purple_500</item>
    <item name="colorPrimaryVariant">@color/purple_700</item>
    <item name="colorOnPrimary">@color/white</item>
    <!-- Secondary brand color. -->
    <item name="colorSecondary">@color/teal_200</item>
    <item name="colorSecondaryVariant">@color/teal_700</item>
    <item name="colorOnSecondary">@color/black</item>
    <!-- Status bar color. -->
    <item name="android:statusBarColor">?attr/colorPrimaryVariant</item>
    <!-- Customize your theme here. -->
  </style>
</resources>
```