MOBILE APPLICATIONS LAB 3

SPLASH SCREEN

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CLASS: 5 BCA-'B'

A splash screen in mobile app development is an introductory screen that appears when an app is launched, displaying a logo, app name, or other branding elements. It provides a visually appealing transition while the app is loading and initializing, enhancing the user experience by reducing the perception of wait time.

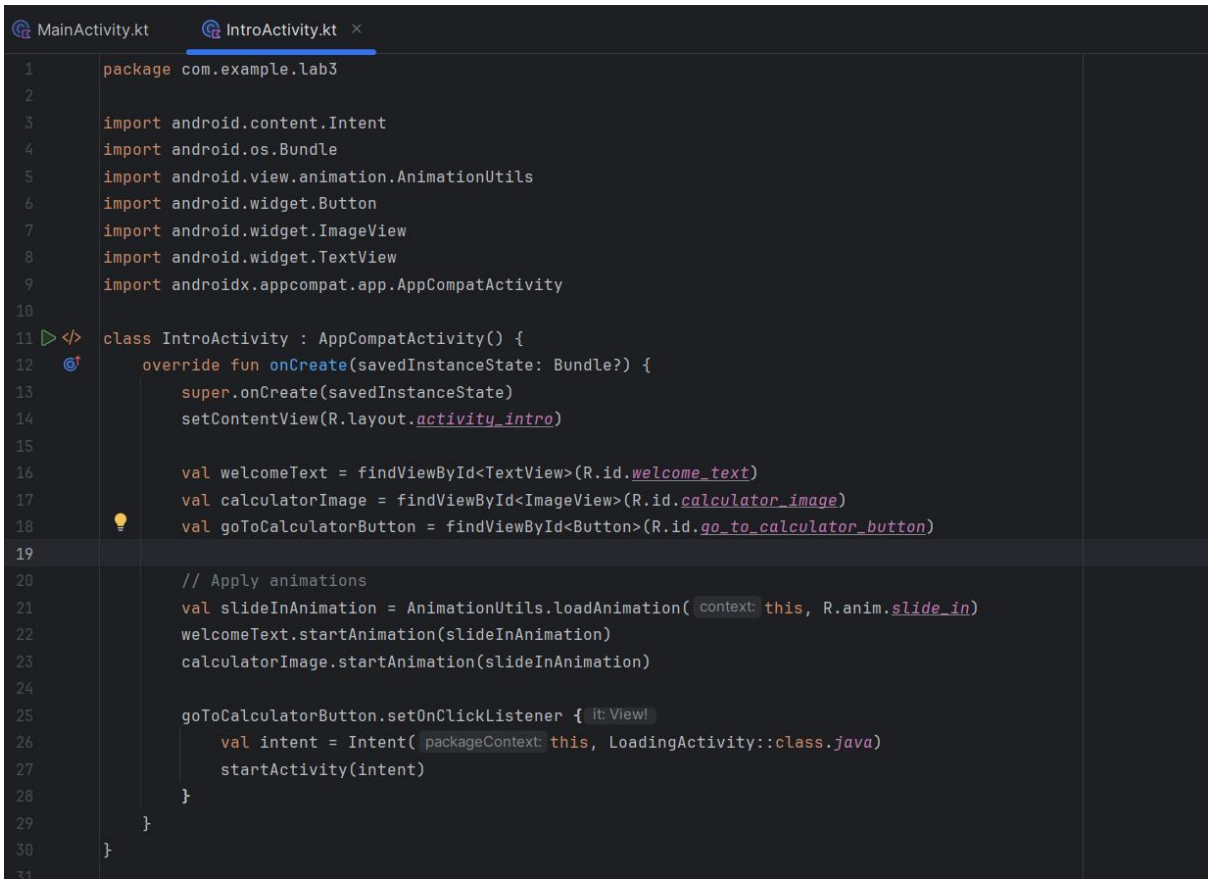
CODE:

MainActivity.kt

MainActivity.kt

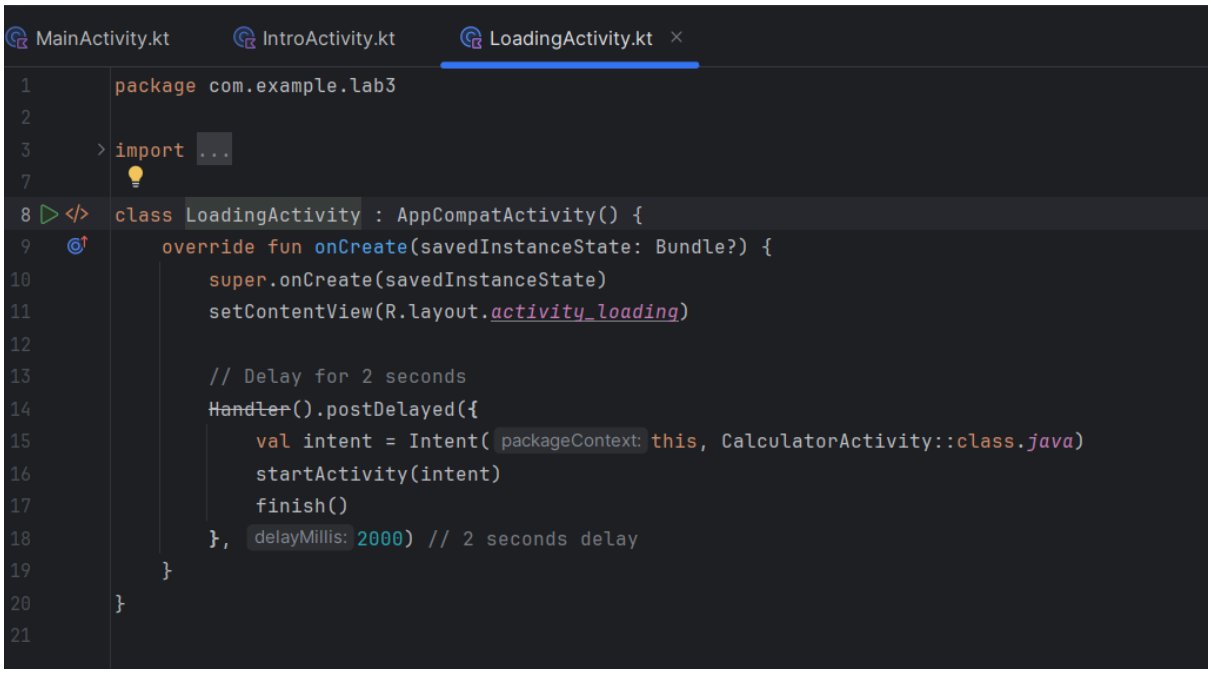
```kotlin
package com.example.lab3

import android.content.Intent
import android.os.Bundle
import android.os.Handler
import androidx.appcompat.app.AppCompatActivity

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

        // Delay for 2 seconds
        Handler().postDelayed({
            val intent = Intent( packageContext: this, IntroActivity::class.java)
            startActivity(intent)
            finish()
        }, delayMillis: 2000)
    }
}
```

IntroActivity.kt



```kotlin
package com.example.lab3

import android.content.Intent
import android.os.Bundle
import android.view.animation.AnimationUtils
import android.widget.Button
import android.widget.ImageView
import android.widget.TextView
import androidx.appcompat.app.AppCompatActivity

class IntroActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_intro)

        val welcomeText = findViewById<TextView>(R.id.welcome_text)
        val calculatorImage = findViewById<ImageView>(R.id.calculator_image)
        val goToCalculatorButton = findViewById<Button>(R.id.go_to_calculator_button)

        // Apply animations
        val slideInAnimation = AnimationUtils.loadAnimation( context: this, R.anim.slide_in)
        welcomeText.startAnimation(slideInAnimation)
        calculatorImage.startAnimation(slideInAnimation)

        goToCalculatorButton.setOnClickListener { it: View!
            val intent = Intent( packageContext: this, LoadingActivity::class.java)
            startActivity(intent)
        }
    }
}
```

LoadingActivity.kt



```kotlin
package com.example.lab3

import ...

class LoadingActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_loading)

        // Delay for 2 seconds
        Handler().postDelayed({
            val intent = Intent( packageContext: this, CalculatorActivity::class.java)
            startActivity(intent)
            finish()
        }, delayMillis: 2000) // 2 seconds delay
    }
}
```

CalculatorActivity.kt

MainActivity.kt IntroActivity.kt LoadingActivity.kt CalculatorActivity.kt

```kotlin
package com.example.lab3

import ...

class CalculatorActivity : AppCompatActivity() {
    private lateinit var display: TextView
    private var currentNumber = ""
    private var operator = ""
    private var result = 0.0

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

        display = findViewById(R.id.display)

        // Setup buttons and their click listeners
        setupButtons()
    }

    private fun setupButtons() {
        val buttons = listOf(
            R.id.button_0 to "0", R.id.button_1 to "1", R.id.button_2 to "2",
            R.id.button_3 to "3", R.id.button_4 to "4", R.id.button_5 to "5",
            R.id.button_6 to "6", R.id.button_7 to "7", R.id.button_8 to "8",
            R.id.button_9 to "9", R.id.button_add to "+", R.id.button_subtract to "-",
            R.id.button_multiply to "×", R.id.button_divide to "/",
            R.id.button_equals to "=", R.id.button_clear to "AC",
            R.id.button_decimal to "."
        )
```

MainActivity.kt IntroActivity.kt LoadingActivity.kt CalculatorActivity.kt

```kotlin
        for ((id, text) in buttons) {
            findViewById<Button>(id).setOnClickListener { onButtonClick(text) }
        }
    }

    private fun onButtonClick(text: String) {
        when (text) {
            "AC" -> clear()
            "+", "-", "×", "/" -> setOperator(text)
            "=" -> calculate()
            "." -> appendDecimal()
            else -> appendNumber(text)
        }
    }

    private fun clear() {
        currentNumber = ""
        operator = ""
        result = 0.0
        display.text = "0"
    }

    private fun setOperator(op: String) {
        if (currentNumber.isNotEmpty()) {
            result = currentNumber.toDouble()
            currentNumber = ""
        }
        operator = op
    }
```

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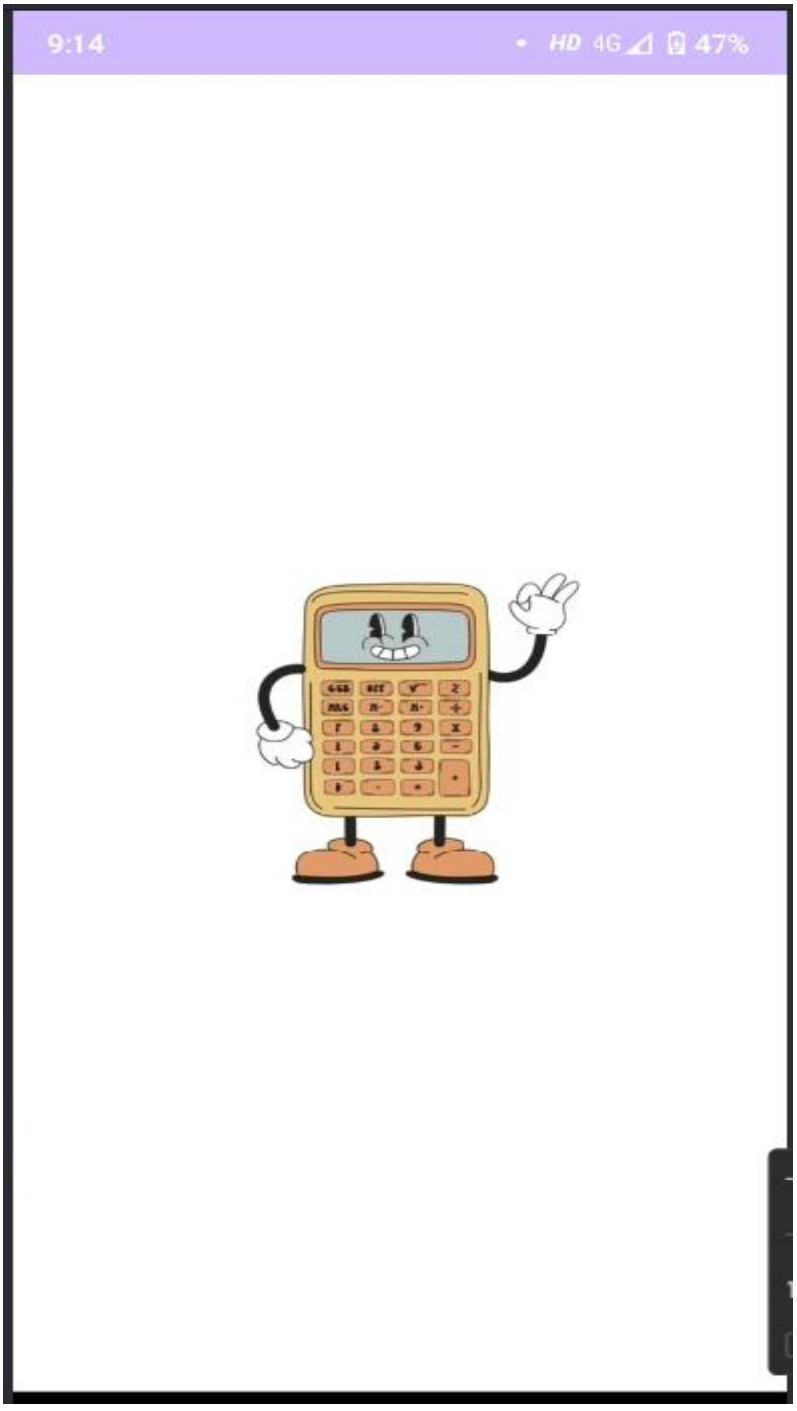
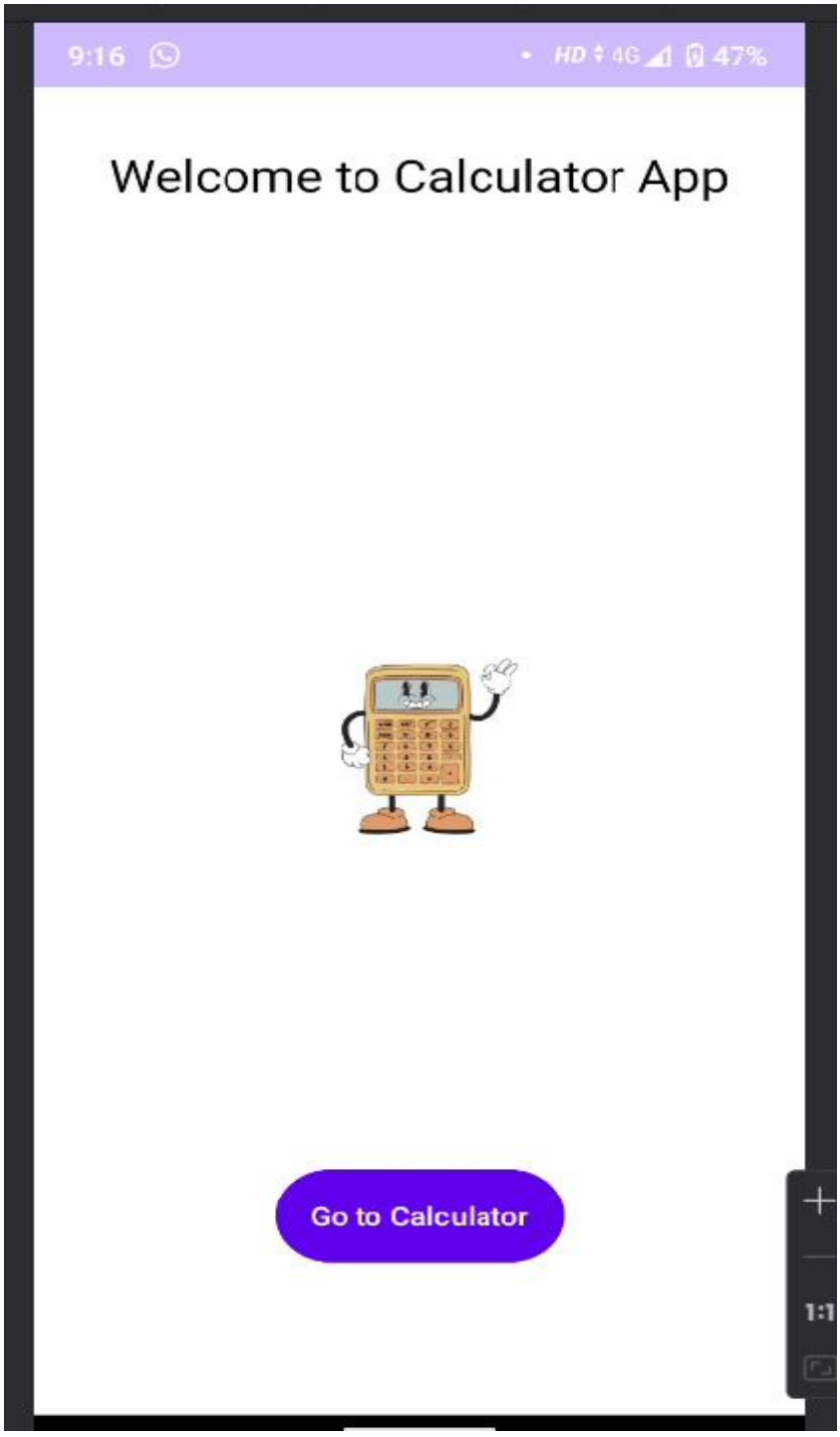
```
64
65          private fun calculate() {
66              if (currentNumber.isNotEmpty()) {
67                  val number = currentNumber.toDouble()
68                  result = when (operator) {
69                      "+" -> result + number
70                      "-" -> result - number
71                      "×" -> result * number
72                      "/" -> result / number
73                      else -> result
74                  }
75                  display.text = result.toString()
76                  currentNumber = ""
77                  operator = ""
78              }
79          }
80
81          private fun appendNumber(number: String) {
82              currentNumber += number
83              display.text = currentNumber
84          }
85
86          private fun appendDecimal() {
87              if (!currentNumber.contains( other: ".")) {
88                  currentNumber += "."
89                  display.text = currentNumber
90              }
91          }
92      }
93
```

OUTPUT:

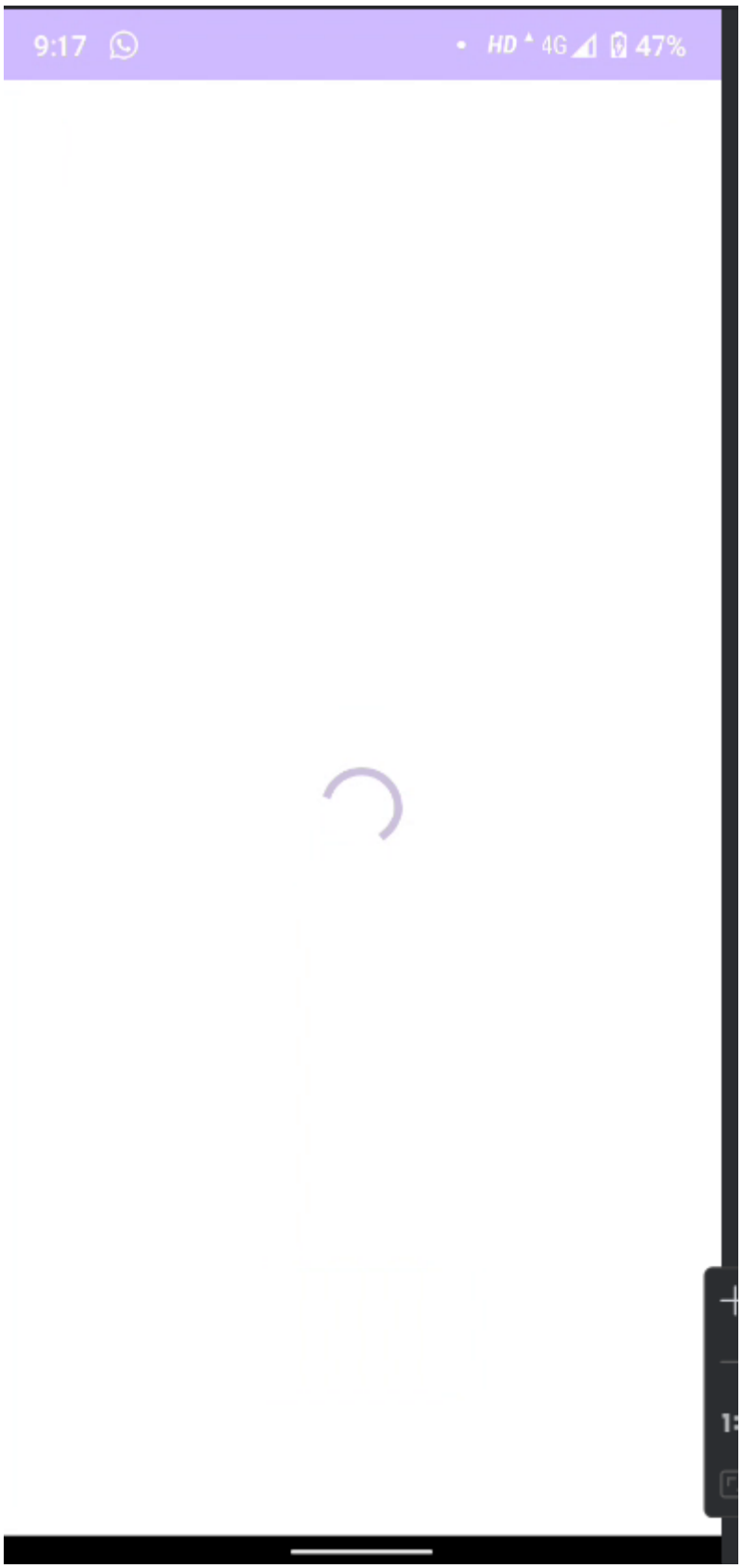
First splash screen on app opening:



2nd Activity: (transition applied for complexity)



2nd Splash Screen(upon button click)



4th Activity with calculator functionalities: