

## EXP 9

## CALCULATOR APP

### AIM

To develop a **simple and cute Calculator App** in Android Studio using Kotlin, allowing the user to perform basic arithmetic operations (Addition, Subtraction, Multiplication, Division) with a mobile-friendly interface and clear input/output validation.

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### ALGORITHM

1. Start the app.
  2. Display two input fields for numbers.
  3. Show buttons: **+** **-** **×** **÷** and **C** (clear).
  4. User enters two numbers and taps a button.
  5. App checks if both inputs are valid numbers:
    - If not: show a toast message “Enter valid numbers”.
    - If valid:
      - Perform the selected operation.
      - Show the result on the screen.
  6. Clear button resets everything.
  7. End.
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### CODE

#### MainActivity.kt

```
kotlin
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package com.example.calci

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

class MainActivity : AppCompatActivity() {
    private lateinit var num1: EditText
    private lateinit var num2: EditText
    private lateinit var result: TextView
    private lateinit var addBtn: Button
    private lateinit var subBtn: Button
    private lateinit var mulBtn: Button
    private lateinit var divBtn: Button
    private lateinit var clearBtn: Button
```

```

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

    num1 = findViewById(R.id.number1)
    num2 = findViewById(R.id.number2)
    result = findViewById(R.id.result)
    addBtn = findViewById(R.id.add)
    subBtn = findViewById(R.id.subtract)
    mulBtn = findViewById(R.id.multiply)
    divBtn = findViewById(R.id.divide)
    clearBtn = findViewById(R.id.clear)

    addBtn.setOnClickListener { calculate("+") }
    subBtn.setOnClickListener { calculate("-") }
    mulBtn.setOnClickListener { calculate("*") }
    divBtn.setOnClickListener { calculate("/") }
    clearBtn.setOnClickListener {
        num1.text.clear()
        num2.text.clear()
        result.text = ""
    }
}

private fun calculate(op: String) {
    val n1Text = num1.text.toString()
    val n2Text = num2.text.toString()

    if (n1Text.isEmpty() || n2Text.isEmpty()) {
        Toast.makeText(this, "Enter valid numbers",
Toast.LENGTH_SHORT).show()
        return
    }

    val n1 = n1Text.toDouble()
    val n2 = n2Text.toDouble()
    val res = when (op) {
        "+" -> n1 + n2
        "-" -> n1 - n2
        "*" -> n1 * n2
        "/" -> {
            if (n2 == 0.0) {
                Toast.makeText(this, "Cannot divide by zero",
Toast.LENGTH_SHORT).show()
                return
            }
            n1 / n2
        }
        else -> 0.0
    }
    result.text = "Result: $res"
}
}

```

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## □ activity\_main.xml (Cute Styling UI)

```

xml
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<?xml version="1.0" encoding="utf-8"?>

```

```

<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="#FFF1F8"
    android:padding="24dp"
    android:gravity="center">

    <TextView
        android:text="Cute Calculator 🧮"
        android:textSize="28sp"
        android:textColor="#E91E63"
        android:layout_marginBottom="16dp"
        android:textStyle="bold"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />

    <EditText
        android:id="@+id/number1"
        android:hint="Enter Number 1"
        android:inputType="numberDecimal"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:backgroundTint="#E91E63"
        android:padding="10dp"
        android:layout_marginBottom="12dp" />

    <EditText
        android:id="@+id/number2"
        android:hint="Enter Number 2"
        android:inputType="numberDecimal"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:backgroundTint="#E91E63"
        android:padding="10dp"
        android:layout_marginBottom="24dp" />

    <LinearLayout
        android:orientation="horizontal"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:layout_marginBottom="16dp">

        <Button
            android:id="@+id/add"
            android:text="⊕"
            android:layout_width="0dp"
            android:layout_weight="1"
            android:layout_height="wrap_content"
            android:backgroundTint="#F8BBD0" />

        <Button
            android:id="@+id/subtract"
            android:text="⊖"
            android:layout_width="0dp"
            android:layout_weight="1"
            android:layout_height="wrap_content"
            android:backgroundTint="#F8BBD0"

```

```
        android:layout_marginStart="8dp"/>

        <Button
            android:id="@+id/multiply"
            android:text="✕"
            android:layout_width="0dp"
            android:layout_weight="1"
            android:layout_height="wrap_content"
            android:backgroundTint="#F8BBD0"
            android:layout_marginStart="8dp"/>

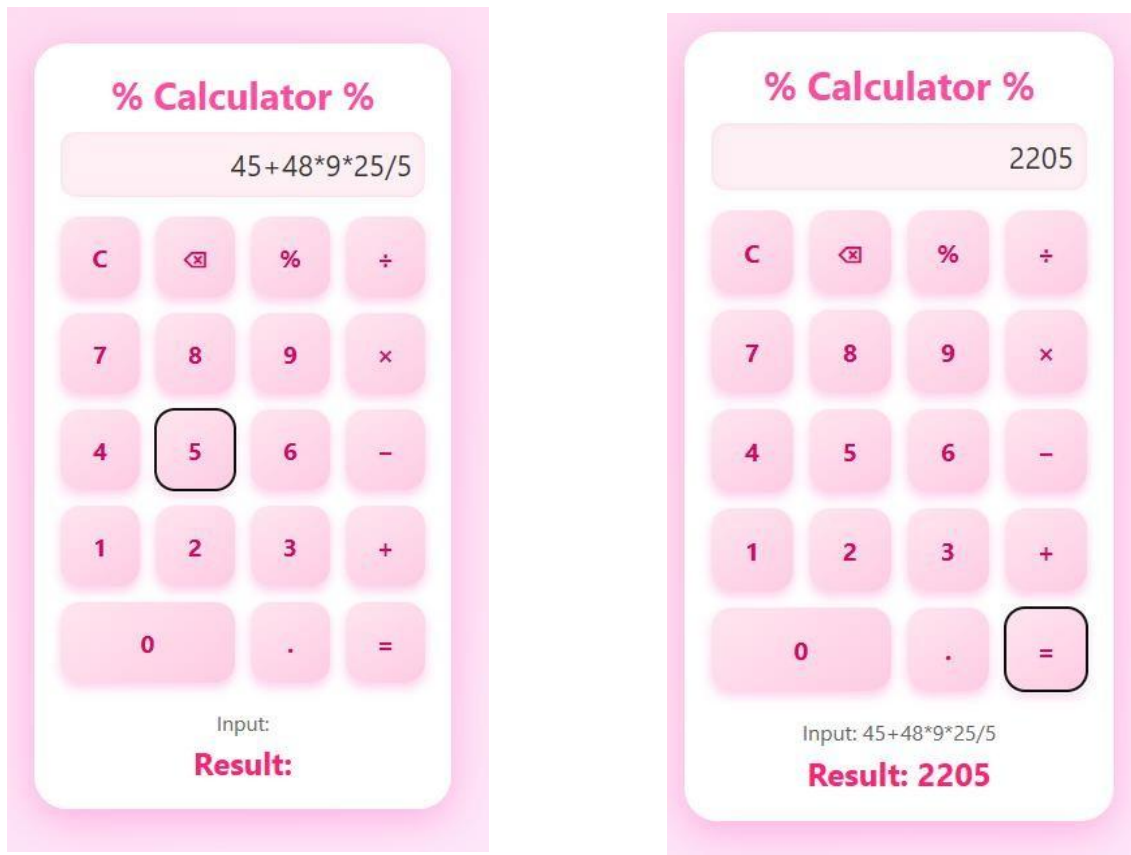
        <Button
            android:id="@+id/divide"
            android:text="÷"
            android:layout_width="0dp"
            android:layout_weight="1"
            android:layout_height="wrap_content"
            android:backgroundTint="#F8BBD0"
            android:layout_marginStart="8dp"/>
    </LinearLayout>

    <Button
        android:id="@+id/clear"
        android:text="✖ Clear"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:backgroundTint="#CE93D8"
        android:layout_marginBottom="16dp" />

    <TextView
        android:id="@+id/result"
        android:textSize="22sp"
        android:textStyle="bold"
        android:textColor="#880E4F"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
</LinearLayout>
```

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## OUTPUT:



## ✓ RESULT

Once you run the app:

- You can enter two numbers.
- Tap any operation: **+** **-** **×** **÷**
- Result appears below in bold.
- Clear button resets the input.
- If input is missing or invalid, you'll see a toast message.