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**Department of Computer Science  
2025-2026**

**Practical Assignment – 2**

**Class :- T.Y.B.C.A.(Science) Sem-VI**

**Subject:- Android Programming**

**Date:- 09/01/2026**

**1. Design following-add a border to an Android Layout.**



```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#3F51B5"> <!-- App background color -->

    <!-- Outer Layout (Acts as the Border) -->
    <LinearLayout
        android:layout_width="250dp"
        android:layout_height="250dp"
        android:layout_centerInParent="true"
        android:background="#CCCCCC" <!-- Border color -->
        android:padding="5dp"> <!-- Thickness of the border -->

    <!-- Inner Layout (Actual Content) -->
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:gravity="center"
        android:background="#6666FF"> <!-- Inner Background Color -->
```

```

<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Hello World!"
    android:textSize="20sp"
    android:textColor="#FFFFFF"/>
</LinearLayout>

</LinearLayout>

</RelativeLayout>

```

**2. Create following Vertical Scroll View Creation in Android.**



```

<?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">

    <ScrollView
        android:layout_width="match_parent"
        android:layout_height="match_parent">

        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="vertical"
            android:padding="10dp">

```

```
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="MainActivity"
    android:textSize="18sp"
    android:padding="10dp"
    android:background="#E0E0E0"/>

<!-- Buttons -->
<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Button 4"/>

<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Button 5"/>

<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Button 6"/>

<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Button 7"/>

<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Button 8"/>

<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Button 9"/>
```

```

<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Button 10"
    android:background="#FF9800"
    android:textColor="#FFFFFF"/>

</LinearLayout>
</ScrollView>
</LinearLayout>

```

**3. Create following layout which is changing android spinner text size with styles.**



```

<?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:padding="16dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Coffee?"
        android:textSize="18sp"
        android:textStyle="bold"
        android:paddingBottom="10dp"/>

    <Spinner
        android:id="@+id/spinner"
        android:layout_width="match_parent"

```

```

        android:layout_height="wrap_content"
        android:textSize="18sp"
        android:background="@android:drawable/btn_dropdown"
        android:popupBackground="#FFFFFF"/>

    </LinearLayout>

```

### **String.xml**

```

<resources>
    <string name="app_name">Spinner Style</string>

    <!-- Define coffee options for Spinner -->
    <string-array name="coffee_options">
        <item>Filter</item>
        <item>Americano</item>
        <item>Latte</item>
        <item>Espresso</item>
        <item>Cappuccino</item>
        <item>Mocha</item>
        <item>Skinny Latte</item>
        <item>Espresso Corretto</item>
    </string-array>

</resources>

```

#### **4. Create the simple calculator shown below also perform appropriate operation**

##### **Activity\_main.xml**

```

<?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:padding="16dp"
    android:gravity="center">

    <TextView
        android:id="@+id/tvResult"
        android:layout_width="match_parent"

```

```
    android:layout_height="100dp"
    android:background="#EEE"
    android:gravity="end"
    android:textSize="30sp"
    android:text="0"
    android:padding="16dp" />

<GridLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:columnCount="4"
    android:rowCount="5"
    android:padding="8dp">

    <!-- Number and operation buttons -->
    <Button android:id="@+id	btn7" android:text="7"/>
    <Button android:id="@+id	btn8" android:text="8"/>
    <Button android:id="@+id	btn9" android:text="9"/>
    <Button android:id="@+id	btnDivide" android:text="/" />

    <Button android:id="@+id	btn4" android:text="4"/>
    <Button android:id="@+id	btn5" android:text="5"/>
    <Button android:id="@+id	btn6" android:text="6"/>
    <Button android:id="@+id	btnMultiply" android:text="*"/>

    <Button android:id="@+id	btn1" android:text="1"/>
    <Button android:id="@+id	btn2" android:text="2"/>
    <Button android:id="@+id	btn3" android:text="3"/>
    <Button android:id="@+id	btnMinus" android:text="-"/>

    <Button android:id="@+id	btnClear" android:text="C"/>
    <Button android:id="@+id	btn0" android:text="0"/>
    <Button android:id="@+id	btnEqual" android:text="="/>
    <Button android:id="@+id	btnPlus" android:text="+"/>
</GridLayout>

</LinearLayout>
```

### MainActivity.java

```
package com.example.calculator;
```

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private TextView tvResult;
    private String currentInput = "";
    private String operator = "";
    private double firstNumber = 0;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        tvResult = findViewById(R.id.tvResult);

        // Number buttons
        findViewById(R.id.btn0).setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                onDigitClick("0");
            }
        });
        findViewById(R.id.btn1).setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                onDigitClick("1");
            }
        });
        findViewById(R.id.btn2).setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                onDigitClick("2");
            }
        });
    }

    private void onDigitClick(String digit) {
        if (operator.isEmpty()) {
            currentInput += digit;
            tvResult.setText(currentInput);
        } else {
            currentInput += digit;
            tvResult.setText(operator + currentInput);
        }
    }

    private void onOperatorClick(String operator) {
        if (!currentInput.isEmpty() && !operator.isEmpty()) {
            currentInput += operator;
            tvResult.setText(currentInput);
        }
    }

    private void onEqualClick() {
        if (!currentInput.isEmpty() && !operator.isEmpty()) {
            double result = calculate();
            currentInput = String.valueOf(result);
            tvResult.setText(currentInput);
        }
    }

    private double calculate() {
        double result = Double.parseDouble(currentInput);
        if (operator.equals("+")) {
            result += firstNumber;
        } else if (operator.equals("-")) {
            result -= firstNumber;
        } else if (operator.equals("*")) {
            result *= firstNumber;
        } else if (operator.equals("/")) {
            result /= firstNumber;
        }
        return result;
    }
}
```

```
findViewById(R.id.btn3).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onDigitClick("3");
    }
});
findViewById(R.id.btn4).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onDigitClick("4");
    }
});
findViewById(R.id.btn5).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onDigitClick("5");
    }
});
findViewById(R.id.btn6).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onDigitClick("6");
    }
});
findViewById(R.id.btn7).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onDigitClick("7");
    }
});
findViewById(R.id.btn8).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onDigitClick("8");
    }
});
findViewById(R.id.btn9).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onDigitClick("9");
    }
});
```

```
        }

    });

// Operator buttons
findViewById(R.id.btnPlus).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onOperatorClick("+");
    }
});
findViewById(R.id.btnMinus).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onOperatorClick("-");
    }
});
findViewById(R.id.btnMultiply).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onOperatorClick("*");
    }
});
findViewById(R.id.btnDivide).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onOperatorClick("/");
    }
});

// Other buttons
findViewById(R.id.btnClear).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        onClearClick();
    }
});

findViewById(R.id.btnEqual).setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
```

```
        onEqualClick();
    }
});

}

private void onDigitClick(String digit) {
    currentInput += digit;
    tvResult.setText(currentInput);
}

private void onOperatorClick(String op) {
    if (!currentInput.isEmpty()) {
        firstNumber = Double.parseDouble(currentInput);
        operator = op;
        currentInput = "";
        tvResult.setText(operator);
    }
}

private void onEqualClick() {
    if (!currentInput.isEmpty() && !operator.isEmpty()) {
        double secondNumber = Double.parseDouble(currentInput);
        double result = 0;

        switch (operator) {
            case "+":
                result = firstNumber + secondNumber;
                break;
            case "-":
                result = firstNumber - secondNumber;
                break;
            case "*":
                result = firstNumber * secondNumber;
                break;
            case "/":
                result = (secondNumber != 0) ? firstNumber / secondNumber : 0;
                break;
        }

        tvResult.setText(String.valueOf(result));
    }
}
```

```
        currentInput = String.valueOf(result);
        operator = "";
    }
}

private void onClearClick() {
    currentInput = "";
    operator = "";
    firstNumber = 0;
    tvResult.setText("0");
}
}
```

## 5. Design an Android Portrait and Landscape Screen Layout Example

