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Department of Computer Science

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Practical Assignment – 2

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

Subject:- Android Programming

Date:- 31/01/2025

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");
            }
        });
    }
}

```

```
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

