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Kelas : TI.22.A5

Tugas : Buatlah Method Program java Toast Number, dengan menghasilkan Bilangan Fibonacci

Deret_Bilangan_Fibonacci

Layout

Pada layout ini, saya membuat tiga button dan satu textview :

1. button_limit, berfungsi sebagai tombol “Set Limit” yang nantinya ketika di tekan akan muncul sebuah pop-up untuk masukan limit angka yang ingin kita hitung.
2. button_count, berfungsi sebagai tombol “count” yang nantinya ketika tombol ditekan akan menghitung bilangan fibonaccinya sesuai dengan yang kita limit. Juga berbeda warna pada setiap angka, agar tidak keliru.
3. 'button_restart', berfungsi sebagai tombol restart yang nantinya angka akan kembali ke awal.
4. Textview show_count, yang berfungsi untuk menampilkan angka atau bilangan fibonaccinya yang tepat berada di tengah.

Berikut adalah coding pada menu layout :

- **activity_toast.xml**

```
<?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"

   tools:ignore="ExtraText"

   tools:context="com.example.fibonaccisequence.MainActivity">
```

```
<Button
    android:id="@+id/button_limit"
    android:layout_width="409dp"
    android:layout_height="84dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="16dp"
    android:layout_marginEnd="8dp"
    android:background="@color/colorPrimary"
    android:onClick="setLimit"
    android:text="Masukkan Angka Limit"
    android:textColor="@android:color/white"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.507"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    tools:ignore="UsingOnClickInXml,VisualLintButtonSize" />

<Button
    android:id="@+id/button_count"
    android:layout_width="190dp"
    android:layout_height="80dp"
    android:layout_marginStart="8dp"
    android:layout_marginEnd="8dp"
```

```
    android:layout_marginBottom="24dp"
    android:background="@color/colorPrimary"
    android:onClick="countUp"
    android:text="Count"
    android:textColor="@android:color/white"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.039"
    app:layout_constraintStart_toStartOf="parent"
    tools:ignore="UsingOnClickInXml,VisualLintButtonSize" />

<Button
    android:id="@+id/button_restart"
    android:layout_width="190dp"
    android:layout_height="80dp"
    android:layout_marginStart="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginBottom="24dp"
    android:background="@color/colorPrimary"
    android:onClick="back1"
    android:text="Restart"
    android:textColor="@android:color/white"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintHorizontal_bias="0.965"
    app:layout_constraintStart_toStartOf="parent"
    tools:ignore="UsingOnClickInXml" />

<TextView
    android:id="@+id/show_count"
    android:layout_width="417dp"
    android:layout_height="649dp"
    android:layout_marginStart="8dp"
    android:layout_marginTop="8dp"
    android:layout_marginEnd="8dp"
    android:layout_marginBottom="8dp"
    android:background="#FFFF00"
    android:gravity="center_vertical"
    android:text="1"
    android:textAlignment="center"
    android:textColor="@color/colorPrimary"
    android:textSize="160sp"
    android:textStyle="bold"
    app:layout_constraintBottom_toTopOf="@id/button_count"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@id/button_limit"
    app:layout_constraintVertical_bias="0.0"
```

```
    tools:ignore="RtlCompat" />

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

- **Strings.xml**

```
<resources>
    <string name="app_name">FibonacciSequence</string>
    <string name="button_label_toast">Toast</string>
    <string name="button_label_count">Count</string>
    <string name="count_initial_value">1</string>
    <string name="toast_massage">Hello Toast!</string>
    <string name="button_label_restart">Restart</string>
    <string name="enter_fibonacci_limit">Masukkan Angka Limit</string>
</resources>
```

- **Colors.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <color name="black">#FF000000</color>
    <color name="white">#FFFFFFFF</color>
    <color name="blue">#3700B3</color>
    <color name="pink">#FFC0CB</color>
    <color name="colorPrimary">#3F5185</color>
    <color name="colorPrimaryDark">#303F9F</color>
```

```
    <color name="colorAccent">#FF4081</color>
    <color name="birumuda">#ABCBFA</color>
    <color name="salem">#F8C6E6</color>
    <color name ="purple">#E3A2ED</color>
    <color name="hijau">#92A676</color>
    <color name="biru">#8FC2EA</color>
    <color name="hijaumuda">#C2E69C</color>
    <color name="kuning">#FFEB3B</color>
    <color name="orange">#FF9800</color>
    <color name="cream">#E6C18A</color>
</resources>
```

JAVA CLASS

Pada Java class MainActivity.java berisi semua coding untuk menjalankan aplikasi. Seperti fungsi untuk tombol-tombol, dialog set limit, warna yang berbeda pada setiap angka, lalu warna background yang bisa berubah dan rumus bilangan fibonacci.

```
package com.example.fibonaccisequence;


import android.app.AlertDialog;

import android.content.DialogInterface;

import android.graphics.Color;

import android.os.Bundle;

import android.view.View;

import android.widget.EditText;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;



public class MainActivity extends AppCompatActivity {

    private TextView show_count;

    private int count = 1;

    private long fibNMinus1 = 1;

    private long fibNMinus2 = 1;

    private int limit = -1; // Inisialisasi limit dengan nilai default


    @Override
```

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_toast);

    show_count = findViewById(R.id.show_count);
}

public void countUp(View view) {
    if (count == 0) {
        show_count.setText("0");
    }
    else if (count == 1) {
        show_count.setText("1");
    }
    else {
        if (limit != -1 && count > limit) {
            // Jika count melebihi limit, atur ulang perhitungan
            count = 0;
            fibNMinus1 = 1;
            fibNMinus2 = 0;
            show_count.setText(getString(R.string.count_initial_value));
        }
        else {
            long fibCurrent = fibNMinus1 + fibNMinus2;
```

```
fibNMinus2 = fibNMinus1;
fibNMinus1 = fibCurrent;

//Mengatur warna teks berdasarkan angka Fibonacci
int colorResId = R.color.orange; // Warna Default
switch (count % 11) {
    case 1:
        colorResId = R.color.orange; // Warna Orange
        break;
    case 2:
        colorResId = R.color.hijaumuda; // Warna Hijau Muda
        break;
    case 3:
        colorResId = R.color.purple; // Warna Ungu
        break;
    case 4:
        colorResId = R.color.salem; // Warna Salem
        break;
    case 5:
        colorResId = R.color.birumuda; // Warna Biru Muda
        break;
    case 6 :
        colorResId = R.color.kuning; // Warna Kuning
        break;
```

```
            case 7:
                colorResId = R.color.hijau; // Warna Hijau
                break;
            case 8:
                colorResId = R.color.cream; // Warna Cream
                break;
            case 9:
                colorResId = R.color.pink; // Warna Pink
                break;
            case 10:
                colorResId = R.color.biru; // Warna Biru
                break;
            case 11:
                colorResId = R.color.colorAccent; // Warna Pink Tua
                break;
        }
        show_count.setTextColor(getResources().getColor(colorResId));
        show_count.setText(String.valueOf(fibCurrent));
        show_count.setBackgroundColor(Color.DKGRAY);
      }
    }

    count++;
}
```

```
public void back1(View view) {
    count = 1;
    fibNMinus1 = 1;
    fibNMinus2 = 0;
    show_count.setText(getString(R.string.count_initial_value));
}

public void setLimit(View view) {
    // Create and display a dialog to set the limit
    AlertDialog.Builder builder = new AlertDialog.Builder(this);
    builder.setTitle("Set Limit");

    final EditText input = new EditText(this);
    input.setInputType(android.text.InputType.TYPE_CLASS_NUMBER);
    builder.setView(input);

    builder.setPositiveButton("OK", new DialogInterface.OnClickListener() {
        @Override
        public void onClick(DialogInterface dialog, int which) {
            // Get the limit from the input and set it for calculations
            String limitStr = input.getText().toString();
            limit = Integer.parseInt(limitStr);
        }
```

```
        });


        builder.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.cancel();
            }
        });


        builder.show();
    }
}
```

Tampilan Design