Mortgage Payment Calculator

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The focus of this assignment was to create a mortgage payment calculator app using layouts, views and intents. The layouts were constructed with ConstraintLayout, offering an efficient approach to creating responsive designs. The app uses views to integrate elements like text fields, buttons, and images Additionally, intents helped with navigation within the application.Github link: https://github.com/Rayyan1023/Mortgage-payment-calculator

Layouts

I used constraint layouts in both of my UI xml files as it is very versatile and simple to use. The screenshots display some code within my home_page.xml and payment_results.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:id="@+id/mainPageTitle"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:layout_editor_absoluteX="1dp"
    tools:layout_editor_absoluteY="82dp">

    <TextView
        android:id="@+id/textView4"
        android:layout_width="407dp"
        android:layout_height="61dp"
        android:background="#4287f5"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.002" />

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Mortgage Payment Calculator"
        android:textColor="@color/black"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.022" />
```

```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">

    <TextView
        android:id="@+id/title"
        android:layout_width="407dp"
        android:layout_height="61dp"
        android:background="#f5a742"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.75"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.002" />

    <TextView
        android:id="@+id/infoPageTitle"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Payment Results"
        android:textColor="@color/black"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.022" />
```

Views

I used many different views within my mortgage application from textViews,buttons, imageViews, and editText views. The screenshots below show an example of each.

```xml
<com.google.android.material.textfield.TextInputEditText
    android:id="@+id/amortizationInput"
    android:layout_width="382dp"
    android:layout_height="43dp"
    android:hint="Number of Years"
    android:inputType="number"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.413"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.388" />
```

```xml
<Button
    android:id="@+id/submitButton"
    android:layout_width="245dp"
    android:layout_height="46dp"
    android:backgroundTint="#4287f5"
    android:text="Calculate Payments"
    android:textColor="@color/white"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.696" />
```

```
<TextView
    android:id="@+id/errText"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textColor="#FF0101"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.612" />
```

```
<ImageView
    android:id="@+id/imageView2"
    android:layout_width="300dp"
    android:layout_height="132dp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.495"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/submitButton"
    app:layout_constraintVertical_bias="0.289"
    app:srcCompat="@drawable/ontariotechu_og_image" />
```

Intents

I used intents in this assignment mainly for navigation and moving data from one activity to another. The screenshot below shows the use of intents from the mainAcitivty to the results activity. The mainActivity takes the user input and passes it onto the results activity for calculation.

```
// Method to navigate to the results activity with data
1 usage
public void viewPayment(Double mortgageAmount, Double annualRate, String paymentFreq, Integer months) {
    Intent intent = new Intent( packageContext: this, results.class);

    // Add data to the intent as key-value pairs

    // Value: mortgageAmount
    intent.putExtra( name: "mortgageAmount", mortgageAmount);
    // Value: annualRate
    intent.putExtra( name: "annualRate", annualRate);
    // Value: paymentFreq
    intent.putExtra( name: "paymentFreq", paymentFreq);
    // Value: months
    intent.putExtra( name: "month", months);

    // Start the results activity using the intent
    startActivity(intent);
}
```

Screenshots