SOFE 4640U

Mobile Application Development

Assignment 1

CRN 44434

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Report on Layouts, Views, and Intents in the EMI Calculator App

Introduction

This report explains how layouts, views, and intents were utilized in my EMI Calculator application, which allows users to calculate their Equated Monthly Installment (EMI) based on the mortgage amount, interest rate, and tenure. The app uses layouts to define the UI structure, views to collect user inputs and display results, and intents for potential activity navigation.

Layouts

In Android development, layouts define the structure and arrangement of UI elements in an app. In this project, the layout file used is activity_main.xml, which provides the visual structure of the EMI Calculator app.

LinearLayout

The Linear Layout is used to organize the views vertically in the app. This layout allows components to be placed one after the other in a single direction (either vertically or horizontally). For my app, a vertical Linear Layout was chosen to stack the input fields (for mortgage amount, interest rate, and tenure) and the result display.

Example from activity_main.xml:

```
<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">
```

Input Fields and Buttons

Inside the LinearLayout, my app uses EditText components to capture the user's input for the mortgage amount, interest rate, and tenure. A Button is placed below these input fields, allowing the user to trigger the EMI calculation.

The structure of the input fields and button is as follows:

```
<EditText
    android:id="@+id/etMortgageAmount"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="@string/mortgage_amount_hint"
    android:inputType="numberDecimal" />
```

```
<Button
    android:id="@+id/btnCalculate"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/calculate_emi" />
```

Views

In Android, views are the building blocks of the user interface. My app makes use of several types of views:

1. EditText: These are input fields that allow the user to enter the mortgage amount, interest rate, and loan tenure.

2. Button: This view is used for triggering actions. In this app, the button labeled “Calculate EMI” triggers the calculation when clicked.

3. TextView: This view is used to display the calculated EMI result once the calculation is complete.

Intents

An intent in Android is a messaging object that is used to request an action from another component of the app, such as opening a new activity or passing data between activities.

Implicit vs. Explicit Intents

- Explicit intents: These are used to directly specify the target activity.
- Implicit intents: These are used when you don’t specify the exact target component but instead request that a system component that can handle the action takes over.

In the current version of the EMI Calculator, no additional activities are implemented, so intents are not yet being used.

Conclusion

In summary, my EMI Calculator app effectively uses layouts to structure the user interface, views to collect user input and display the result, and has the potential to use intents for activity navigation as the app expands. These foundational components are critical for creating a user-friendly and functional Android application.