Green University of Bangladesh

Department of Computer Science and Engineering (CSE)
Semester: (Summer, Year: 2025), B.Sc. in CSE (Day)

Lab Report 1: Login Page Design with XML Using Nested Layouts

Course Title: Mobile Application Development Lab
Course Code: CSE-426
Section: 222-D2

<u>Students Details</u>

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Lab Project Status	
Marks:	**Signature:**
Comments:	**Date:**

Objective(s)

- To understand the use of XML in designing Android application layouts.

- To design a user-friendly Login Page with three input fields and two buttons.

- To implement horizontal nested layouts for aligning labels and fields in a single row.

- To apply UI improvements using modern Android attributes and best practices.

Problem Analysis

In Android development, the UI (User Interface) is typically defined using XML files. These layout files contain various views like `TextView`, `EditText`, `Button`, etc., arranged in containers like `LinearLayout`.

This lab requires:

- Aligning Name, Email, and Password fields in single-row horizontal layouts.

- Placing Login and Reset buttons side by side with enhanced styling.

- Maintaining responsiveness, readability, and consistent padding.

Task Breakdown

Task 1: Implement the Reset button having both an image and a text

Implementation:

```
<Button
    android:id="@+id/btnReset"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_weight="0"
    android:text="Reset"
    android:textAllCaps="false"
    android:textSize="16sp"
    android:drawableStart="@drawable/ic_reset"
    android:drawablePadding="8dp"
    android:backgroundTint="@android:color/holo_red_dark"
    android:textColor="@android:color/white"
    android:layout_marginStart="8dp"
    android:padding="12dp"
    android:elevation="4dp" />
```

Task 2: Create field for taking input of email address in a single row

Implementation:

```xml
<LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:paddingBottom="10dp">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Email:"
            android:layout_gravity="center_vertical"
            android:layout_marginEnd="10dp" />

        <EditText
            android:id="@+id/etEmail"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:inputType="textEmailAddress"
            android:background="@android:drawable/edit_text"
            android:hint="example@email.com" />

    </LinearLayout>
```

Task 3: Make the overall login page with 3 EditText fields and two buttons

Implementation:

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="16dp"
    android:orientation="vertical"
    android:background="#ffffff"
    tools:context=".MainActivity">

<!--    Name Field-->

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
```

```xml
        android:orientation="horizontal"
        android:paddingBottom="10dp">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Name:"
            android:layout_gravity="center_vertical"
            android:layout_marginEnd="10dp" />

        <EditText
            android:id="@+id/etName"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:inputType="textPersonName"
            android:background="@android:drawable/edit_text"
            android:hint="Enter your name" />
    </LinearLayout>

    <!--    Email Field -->
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:paddingBottom="10dp">

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Email:"
            android:layout_gravity="center_vertical"
            android:layout_marginEnd="10dp" />

        <EditText
            android:id="@+id/etEmail"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:inputType="textEmailAddress"
            android:background="@android:drawable/edit_text"
            android:hint="example@email.com" />

    </LinearLayout>

    <!--    Password Field -->
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:paddingBottom="10dp">
```

```xml
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Password:"
        android:layout_gravity="center_vertical"
        android:layout_marginEnd="10dp" />

    <EditText
        android:id="@+id/etPassword"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:background="@android:drawable/edit_text"
        android:inputType="textPassword"
        android:hint="Enter your password" />
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:orientation="horizontal"
    android:weightSum="2"
    android:gravity="center"
    android:baselineAligned="false">

    <Button
        android:id="@+id/btnLogin"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Login"
        android:textAllCaps="false"
        android:textSize="16sp"
        android:backgroundTint="@android:color/holo_blue_dark"
        android:textColor="@android:color/white"
        android:layout_marginEnd="8dp"
        android:padding="12dp"
        android:elevation="4dp"/>

    <Button
        android:id="@+id/btnReset"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="0"
        android:text="Reset"
        android:textAllCaps="false"
        android:textSize="16sp"
        android:drawableStart="@drawable/ic_reset"
        android:drawablePadding="8dp"
        android:backgroundTint="@android:color/holo_red_dark"
        android:textColor="@android:color/white"
```
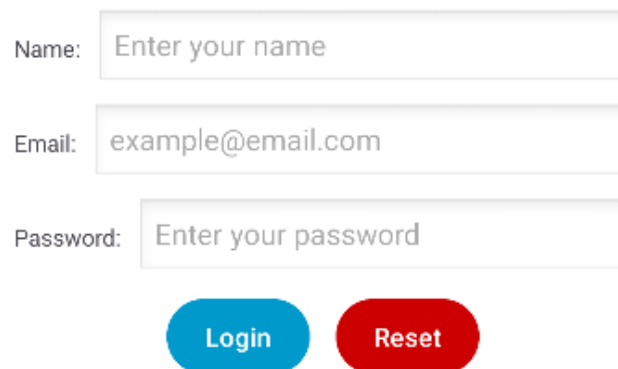
```xml
            android:layout_marginStart="8dp"
            android:padding="12dp"
            android:elevation="4dp" />

    </LinearLayout>
</LinearLayout>
```

Final Output

A clean and user-friendly login screen containing:

- Name field

- Email field

- Password field

- Login and Reset buttons

Discussion and Observations

- Nested `LinearLayout` was used effectively to align labels and fields.

- Use of `layout_weight` enabled responsive designs.

- Design was improved using elevation, padding, and modern attributes.

- Proper input types were assigned for better usability and validation.

Conclusion

This lab helped in building a functional and aesthetic login UI using XML in Android Studio. It enhanced understanding of layout nesting, styling views, maintaining responsive design, and applying material design concepts.