Lab Assignment 2: Unit Converter App (5%)

Introduction

The graphical user interface for an Android app is built using a hierarchy of View and ViewGroup objects. View objects are usually UI widgets such as buttons or text fields and ViewGroup objects are invisible view containers that define how the child views are laid out, such as in a grid or a vertical list. The main goal of this lab is to learn how to build a simple user interface.

Objectives

After completing Lab Assignment 2, you will be able to:

- Build a simple user interface.
- Recognize the different types of layouts in Android.
- Use input controls, such as text fields, spinners and buttons
- Respond to Click events and use toasts

App Description

In this lab, you will develop a Unit Converter App for temperature that converts Fahrenheit to Celsius and vise versa. The App starts with the main activity shown in Fig. 1 and allows the user to enter numeric values and choose the conversion type through spinners.

Celsius = (Fahrenheit - 32) * 5 / 9;
Fahrenheit = (Celsius * 9 / 5) + 32;

View video

- View the video file Lab2_video.mov that demonstrates the expected behaviour of the app in different scenarios.

Design Requirements

The App should meet the following design requirements:

1. Use Relative Layout
2. Use TextViews for labels and result
3. Use Spinners for unit selection
4. Use EditText to enter the value
5. Save all strings in strings.xml
   - If both units are the same, the app should respond with a toast message
   - If no value entered, the app should respond with a toast message
6. Update results onClick in all cases
7. Target device is Nexus 4 – API 23

Fig 1
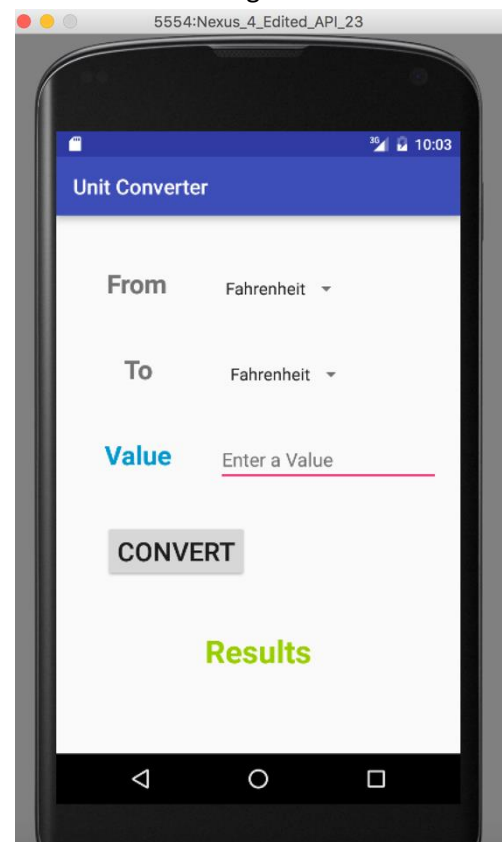
Submission Instructions

Instructions

1. Compress your project folder and rename the file **lab2_lastname.zip – Upload your compressed folder to Lab 2 drop box on Moodle**
2. Rename the app-debug.apk file **lab2_lastname.apk and email it to tru.cs.android@gmail.com**

Marking Rubric

Component	Marks	Description
Presentation	10%	- App design including, fonts, colors, sizes, etc.
Basics functionality	55%	- All the bare basic requirements of a unit converter must be satisfied and basic functionality is working perfectly.
Usability	20%	- Clear feedback on button clicks. - Hints for data entry. - Input validation.
User Interface quality	15%	- Control the Precision of Numerical Results (2 digits)
TOTAL	100%	