

Pass Task 2.1 Unit Converter App task

Task Description

Your task is to design and implement a Unit Converter App that allows users to convert between different units of measurement. The app should support conversions for length, weight, and temperature units.

Subtasks

Subtask 1: Design UI for the App

The first subtask is to design the user interface (UI) for the app. The UI should have the following components:

- A dropdown menu or spinner to select the source unit
- A dropdown menu or spinner to select the destination unit
- A text field to enter the value to be converted
- A button to initiate the conversion
- A text view to display the converted value

You may choose to use additional UI components, such as labels or images, to enhance the app's usability.

Subtask 2: Implement the Conversion Logic

The second subtask is to implement the conversion logic for the app. You will need to create a function that takes the source unit, destination unit, and input value as parameters, and returns the converted value. You can use the following conversion factors:

Length Conversions

- 1 inch = 2.54 cm
- 1 foot = 30.48 cm
- 1 yard = 91.44 cm
- 1 mile = 1.60934 km

Weight Conversions

- 1 pound = 0.453592 kg
- 1 ounce = 28.3495 g
- 1 ton = 907.185 kg

Temperature Conversions

- Celsius to Fahrenheit: $F = (C * 1.8) + 32$
- Fahrenheit to Celsius: $C = (F - 32) / 1.8$
- Celsius to Kelvin: $K = C + 273.15$
- Kelvin to Celsius: $C = K - 273.15$

Additional sub-task for SIT708 students

Subtask 3: Add Validation and Error Handling

The third subtask is to add validation and error handling to the app. You should ensure that the user enters a valid input value, and that the app does not crash if an invalid input is entered. You should also handle cases where the source unit and destination unit are the same.

Submission Details:

1. You must ensure that all your project files used for this task sit in a directory called “Task 2.1”.
2. All files are required to be uploaded and a link to the “Task 2.1” directory submitted to OnTrack.
3. Please make sure that unit chair and tutor have access to the folder.
4. A link to the demo video of your app running must be submitted by using the task submission page to OnTrack.
5. Submit your GitHub link and your MainActivity file to Ontrack.
6. It would be great if you could submit the screenshot of the main app screen.
7. This is an **individual** assignment, and you should submit **it by 8 pm AEST, Friday, Week 4.**