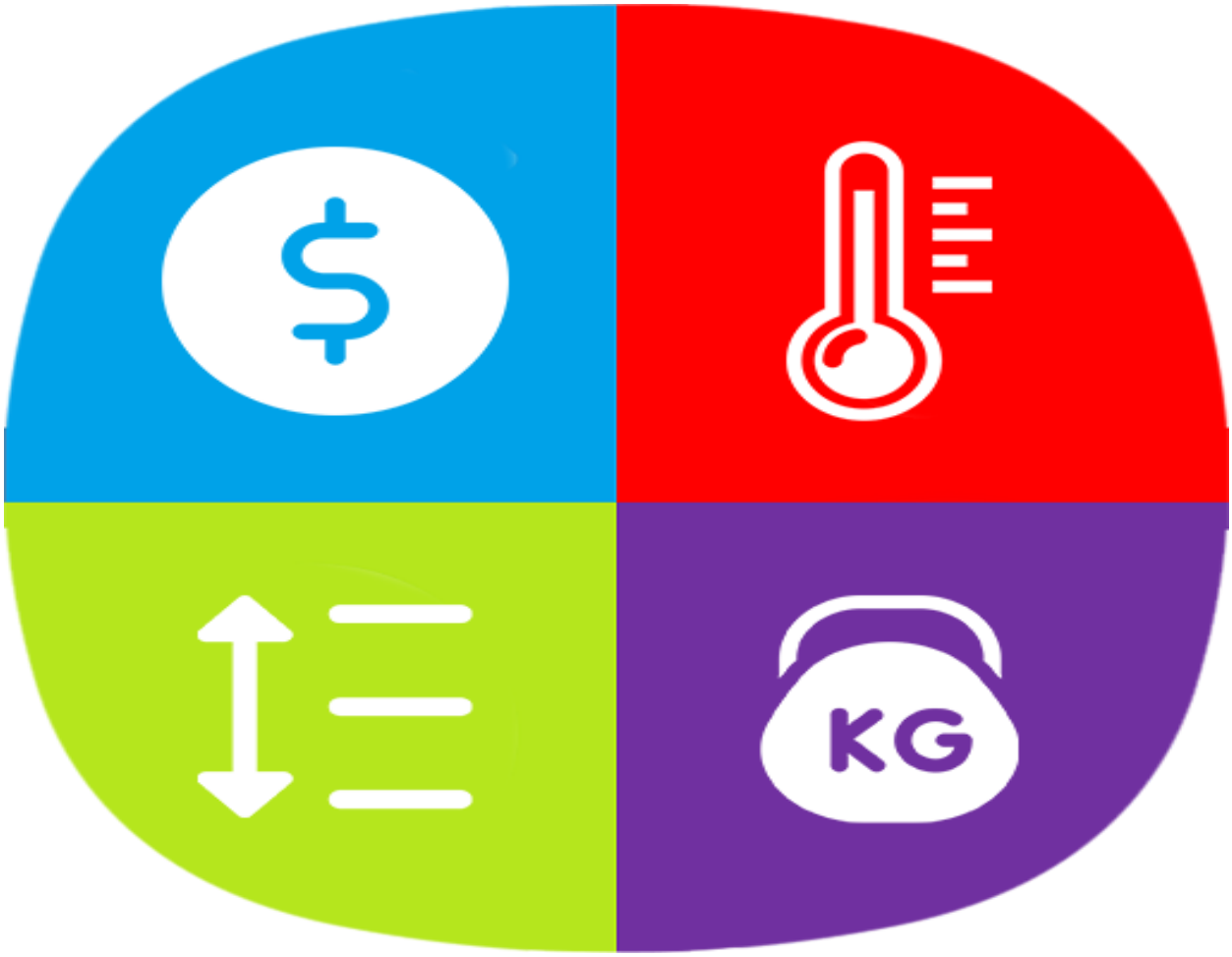
UNIT CONVERTER



Introduction:

The Unit Converter is a C project designed to provide a command-line interface for performing various unit conversions in the categories of temperature, currency, mass, and height. This documentation offers a comprehensive explanation of the project's purpose, code structure, functions, and the mathematical formulas employed.

Table of Contents:

1. Project Overview:

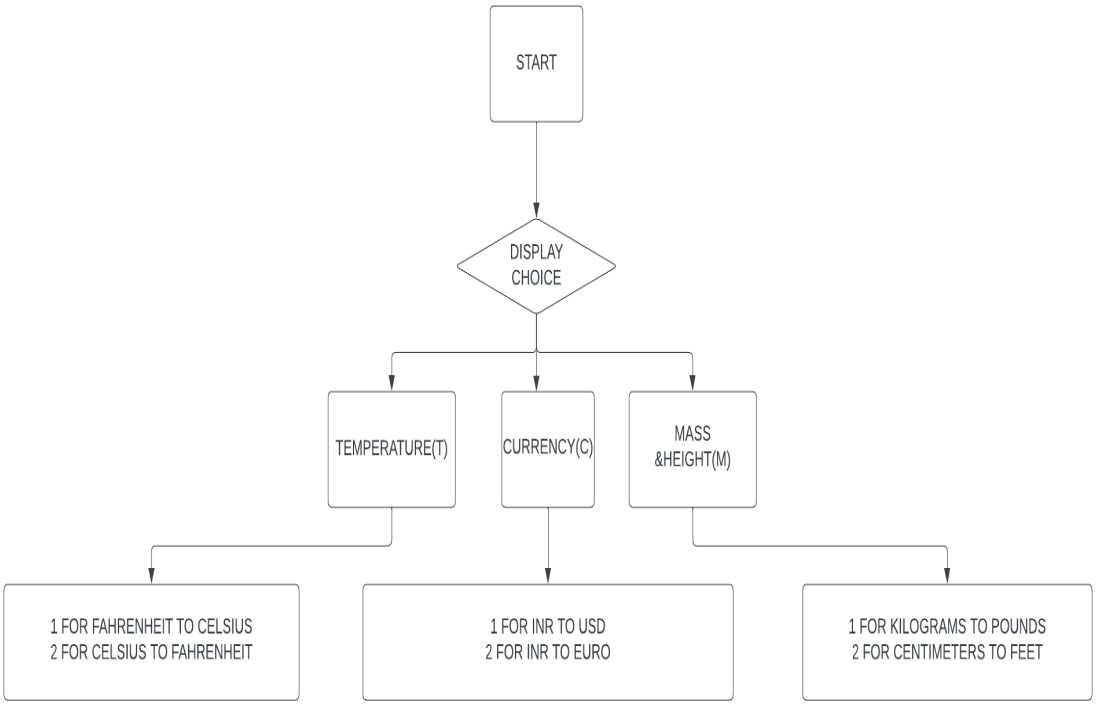
The Unit Converter is a utility designed to simplify unit conversions for everyday applications. It allows users to convert values between different units within three primary categories:

Temperature: Converts between Fahrenheit and Celsius.
Currency: Converts Indian Rupees (INR) to United States Dollars (USD) and Euros (EUR).

Mass & Height: Converts between Kilograms and Pounds for mass and Centimeters and Feet for height.
This project features a user-friendly, interactive command-line interface to facilitate easy unit conversions.

2. Flow chart:

The flowchart below illustrates the logic of the Unit Converter program:



3. How to Use:

To utilize the Unit Converter, follow these steps:

1. Compile the Program:

Open a terminal or command prompt.
Navigate to the directory containing the source code.
Compile the code using a C compiler (e.g., GCC) with an appropriate compilation command.

2. Run the Program:

Execute the compiled program from the command line.
The program will present a menu that prompts you to select a conversion category (Temperature, Currency, or Mass & Height).
Select a Conversion Category:

Enter the corresponding letter (T for Temperature, C for Currency, M for Mass & Height).

3. Choose a Conversion Type:

Based on your selected category, the program will guide you to choose a specific conversion within that category.

4. Enter the Value to Convert:

Provide the value that you want to convert (e.g., temperature in Fahrenheit, currency in INR, mass in Kilograms).
5. View the Conversion Result:

The program will display the converted value in the desired unit.

6. Continue or Exit:

After each conversion, you will have the option to perform another conversion or exit the prog

4. Code Structure:

The project consists of a single C source file named ‘unit_converter.c’. The code is organized into functions for each unit conversion category and includes a ‘main’ function to manage user interactions.

5. Functions and Formulas:

5.1. temperatureConverter:

- Purpose: Performs temperature conversions (Fahrenheit to Celsius and vice versa).
- User Input:
- Choice of conversion (1 for Fahrenheit to Celsius, 2 for Celsius to Fahrenheit).
- Temperature value to convert.
- Formulas:
- Fahrenheit to Celsius: (Fahrenheit - 32) * (5.0 / 9.0)
- Celsius to Fahrenheit: (Celsius * 9.0 / 5.0) + 32
- Output: Displays the converted temperature value.

5.2. currencyConverter:

- Purpose: Performs currency conversions (INR to USD and INR to EURO).
- User Input:
- Choice of conversion (1 for INR to USD, 2 for INR to EURO).
- Amount in INR to convert.
- Formulas:
- Conversion rates (you need to update these with current rates):
- INR to USD: INRtoUSD = userinputINRtoUSD / 83.03
- INR to EURO: INRtoEURO = userinputINRtoEURO / 88.85
- Output: Displays the converted currency value.

5.3. mass_and_heightConverter:

- Purpose: Performs mass and height conversions (Kilograms to pounds and Centimeters to Feet).
- User Input:
- Choice of conversion (1 for Kilograms to pounds, 2 for Centimeters to Feet).
- Value to convert (either Kilograms or Centimeters).
- Formulas:
- Kilograms to Pounds: KilogramsToPounds = userinputKilograms * 2.20462
- Centimeters to Feet: CentimetersToFeet = userinputCentimeters / 30.48
- Output: Displays the converted value in the respective unit.

6. Main Function:

The main function serves as the entry point of the program. It presents a user-friendly menu, allowing users to select their desired conversion

category. Based on the user's choice, it calls the appropriate conversion function and repeats the process until the user chooses to exit.

7. Conclusion:

The Unit Converter C project offers a practical solution for unit conversions across various categories. Understanding the mathematical formulas employed in the conversion functions allows for easy customization and updates to exchange rates or conversion factors. Whether you need to convert temperatures, currencies, or units of mass and height, this program simplifies the process and provides accurate results. Enjoy the flexibility and convenience of unit conversions with the Unit Converter.

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