Task-01

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Build a Temperature Conversion Program

Create a program that converts temperatures between Celsius, Fahrenheit, and Kelvin scales. The program should prompt the user to input a temperature value and the original unit of measurement. It should then convert the temperature to the other two units and display the converted values to the user. For example, if the user enters a temperature of 25 degrees Celsius, the program should convert it to Fahrenheit and Kelvin, and present the converted values as outputs.

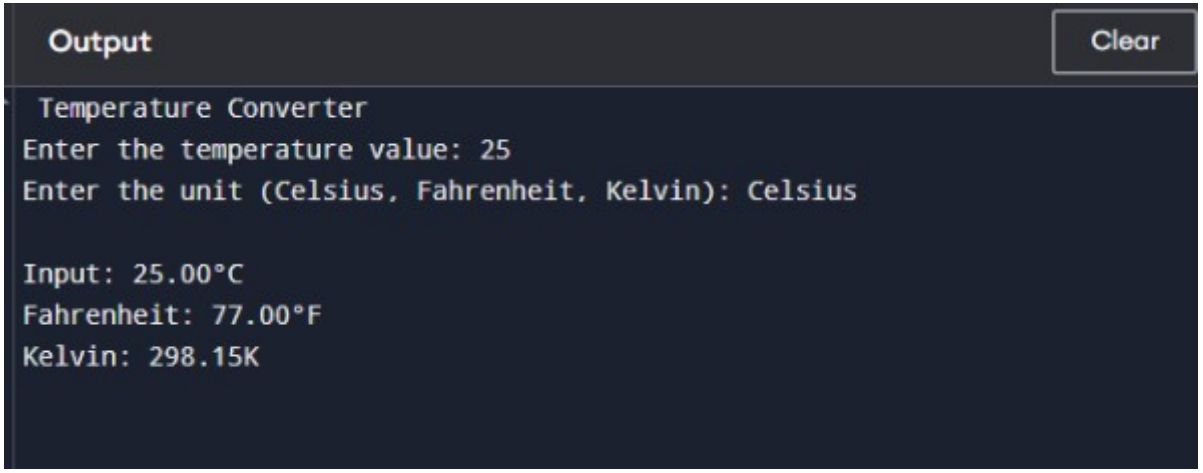
→

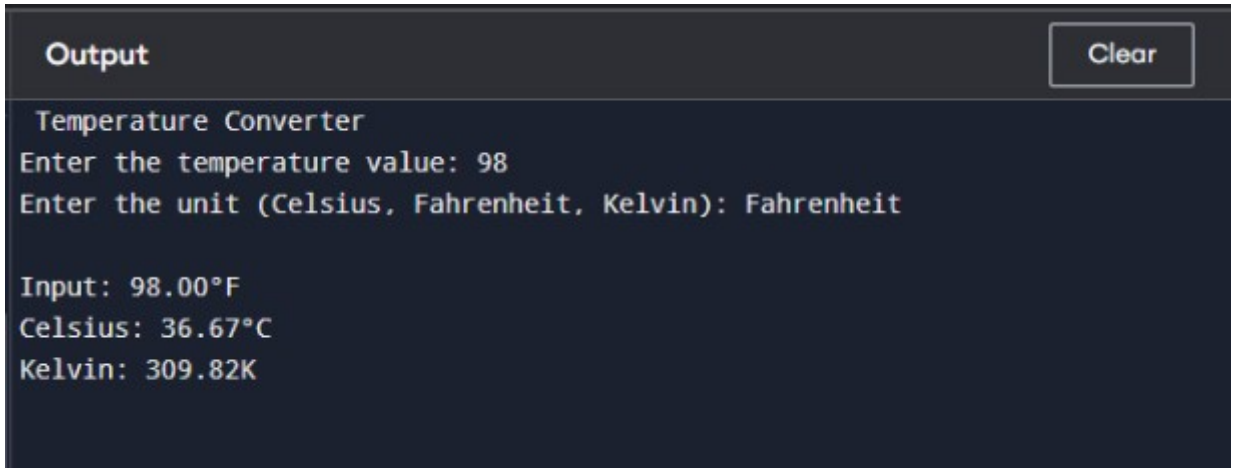
```c
#include <stdio.h>
#include <string.h>
#include <ctype.h>

// Function Prototypes
float celsiusToFahrenheit(float c);
float celsiusToKelvin(float c);
float fahrenheitToCelsius(float f);
float fahrenheitToKelvin(float f);
float kelvinToCelsius(float k);
float kelvinToFahrenheit(float k);

int main() {
    float temperature;
    char unit[20];

    printf(" Temperature Converter \n");
    printf("Enter the temperature value: ");
    scanf("%f", &temperature);

    printf("Enter the unit (Celsius, Fahrenheit, Kelvin): ");
    scanf("%s", unit);
```

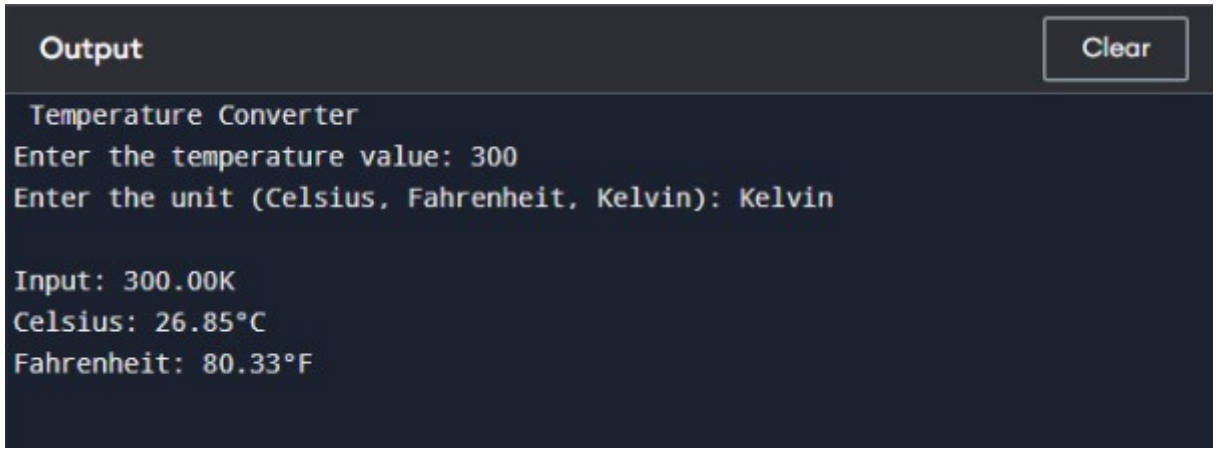
```c
    for(int i = 0; unit[i]; i++) {
        unit[i] = tolower(unit[i]);
    }

    // Perform conversions
    if(strcmp(unit, "celsius") == 0 || strcmp(unit, "c") == 0) {
        printf("\nInput: %.2f°C\n", temperature);
        printf("Fahrenheit: %.2f°F\n", celsiusToFahrenheit(temperature
            ));
        printf("Kelvin: %.2fK\n", celsiusToKelvin(temperature));
    }
    else if(strcmp(unit, "fahrenheit") == 0 || strcmp(unit, "f") == 0) {
        printf("\nInput: %.2f°F\n", temperature);
        printf("Celsius: %.2f°C\n", fahrenheitToCelsius(temperature));
        printf("Kelvin: %.2fK\n", fahrenheitToKelvin(temperature));
    }
    else if(strcmp(unit, "kelvin") == 0 || strcmp(unit, "k") == 0) {
        printf("\nInput: %.2fK\n", temperature);
        printf("Celsius: %.2f°C\n", kelvinToCelsius(temperature));
        printf("Fahrenheit: %.2f°F\n", kelvinToFahrenheit(temperature));
    }
    else {
```

```
        printf("Invalid unit! Please use Celsius, Fahrenheit, or Kelvin
            .\n");
    }

    return 0;
}

// Function Definitions

float celsiusToFahrenheit(float c) {
    return (c * 9.0 / 5.0) + 32;
}

float celsiusToKelvin(float c) {
    return c + 273.15;
}

float fahrenheitToCelsius(float f) {
    return (f - 32) * 5.0 / 9.0;
}

float fahrenheitToKelvin(float f) {
```

```
    return (f - 32) * 5.0 / 9.0;
}

float fahrenheitToKelvin(float f) {
    return (f - 32) * 5.0 / 9.0 + 273.15;
}

float kelvinToCelsius(float k) {
    return k - 273.15;
}

float kelvinToFahrenheit(float k) {
    return (k - 273.15) * 9.0 / 5.0 + 32;
}
```


Output
Clear
Temperature Converter
Enter the temperature value: 25
Enter the unit (Celsius, Fahrenheit, Kelvin): Celsius
Input: 25.00°C
Fahrenheit: 77.00°F
Kelvin: 298.15K


Output
Clear
Temperature Converter
Enter the temperature value: 98
Enter the unit (Celsius, Fahrenheit, Kelvin): Fahrenheit
Input: 98.00°F
Celsius: 36.67°C
Kelvin: 309.82K


Output
Clear
Temperature Converter
Enter the temperature value: 300
Enter the unit (Celsius, Fahrenheit, Kelvin): Kelvin
Input: 300.00K
Celsius: 26.85°C
Fahrenheit: 80.33°F