Assignment Cover**– be sure to keep a copy of all work submitted assessment**
To be completed by student – PLEASE PRINT CLEARLY

<table>
<tr><td colspan="3">Name: MD ISRAFIL SIDDIKY RIFAT</td></tr>
<tr><td colspan="3">ID Number: AF2311015342</td></tr>
<tr><td colspan="2">Lecturer:
MDM SITI ROBAYA BINTI JANTAN</td><td>Lab group / Tutorial group / Tutor (if applicable)
SECTION 1</td></tr>
<tr><td colspan="2">Course and Course Code:
PROGRAMMING FOR DATA SCIENCE (SWC2273)</td><td>Submission Date:
18 APR 2024</td></tr>
<tr><td colspan="2">Assignment No. / Title:</td><td>Extension & Late submission: ALLO WED / <u>DISALLOWED</u></td></tr>
<tr><td>Assignment type:
INDIVIDUAL</td><td>% of Assignment Mark</td><td>Returning Date:</td></tr>
<tr><td colspan="3">Penalties:
1. 10% of the original mark will be deducted for every one-week period after the submission date
2. No work will be accepted after two weeks of the deadline
3. If you were unable to submit the coursework on time due to extenuating circumstances you may be eligible for an extension
4. Extension will not exceed one week</td></tr>
<tr><td colspan="3">Declaration: I the undersigned confirm that I have read and agreed to abide by these regulations on plagiarism and cheating. I confirm that this piece of work is my own. I consent to appropriate storage of my work for checking to ensure that there is no plagiarism/ academic cheating.
Signature(s):

Full Name:</td></tr>
<tr><td colspan="3">This section may be used for feedback or other information:</td></tr>
</table>

SOLUTION :

- Changed temperature variable name to be consistent throughout the program.
- Corrected the cin statement to read the temperature instead of the scale in the main function.
- Fixed the function names in the function calls (celsiusToFahrenheit and fahrenheitToCelsius).
- Corrected the formulas in the conversion functions to ensure accurate conversion.
- Added function prototypes for the conversion functions before the main function.

Here's the corrected version of your C++ program with the bugs fixed:

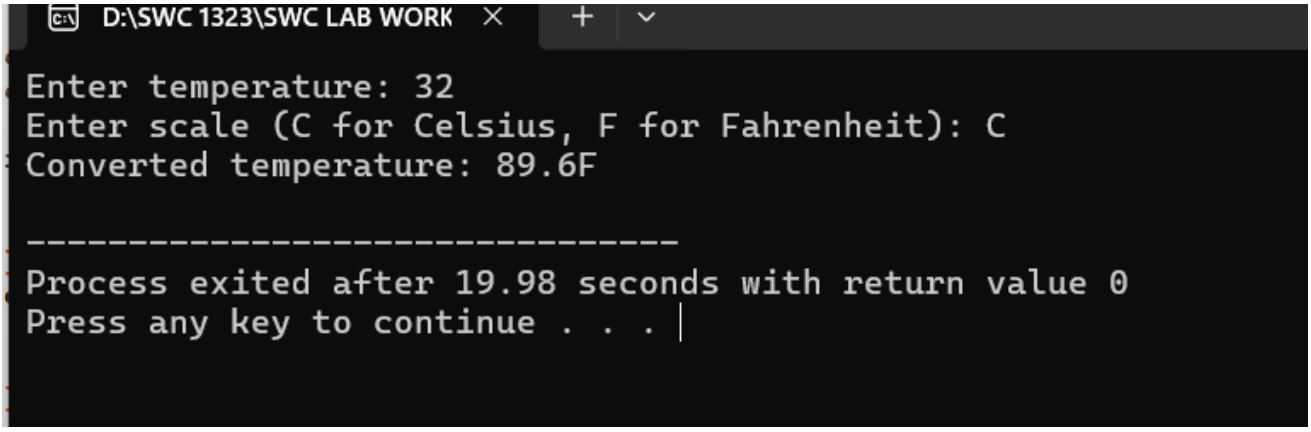
```
#include <iostream>

using namespace std;


// Function prototypes

double celsiusToFahrenheit(double celsius);

double fahrenheitToCelsius(double fahrenheit);


int main() {

    double temperature;

    char scale;


    cout << "Enter temperature: ";
```

```
    cin >> temperature; // Read temperature, not scale

    cout << "Enter scale (C for Celsius, F for Fahrenheit): ";
    cin >> scale; // Read scale

    if (scale == 'C' || scale == 'c') {
        double convertedTemp = celsiusToFahrenheit(temperature); // Pass temperature to the
function
        cout << "Converted temperature: " << convertedTemp << "F" << endl;
    }
    else if (scale == 'F' || scale == 'f') {
        double convertedTemp = fahrenheitToCelsius(temperature); // Pass temperature to the function
        cout << "Converted temperature: " << convertedTemp << "C" << endl;
    }
    else {
        cout << "Invalid scale entered." << endl; // Inform the user about invalid input
    }

    return 0;
}

// Function to convert Celsius to Fahrenheit
double celsiusToFahrenheit(double celsius) {
```

```
    return (celsius * 9/5) + 32; // Corrected formula
}

// Function to convert Fahrenheit to Celsius
double fahrenheitToCelsius(double fahrenheit) {
    return (fahrenheit - 32) * 5/9; // Corrected formula
}
```

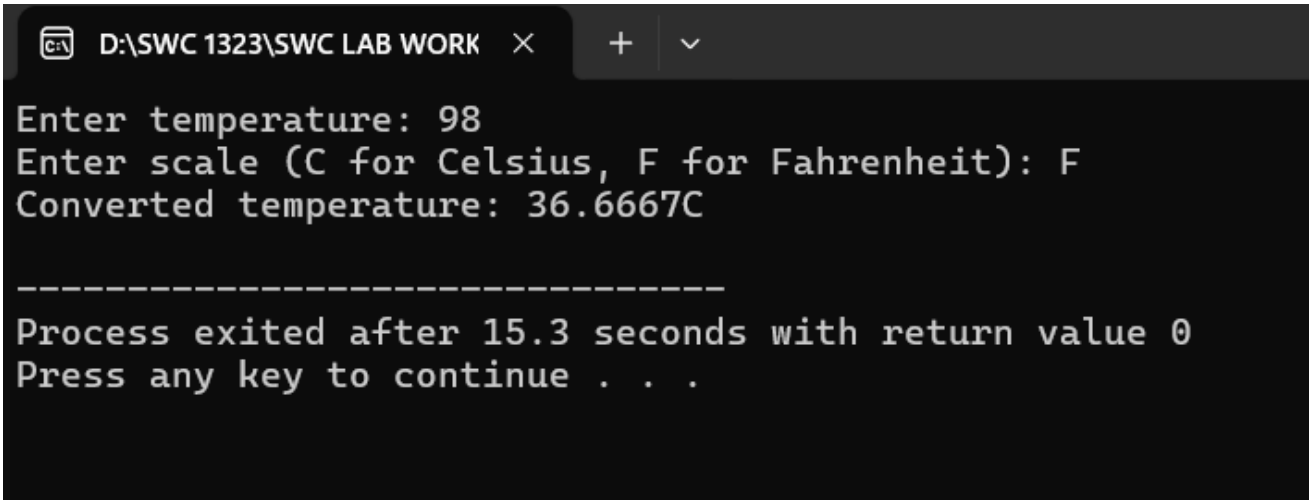
SWC LAB WORK 2.cpp

```cpp
#include <iostream>
using namespace std;

// Function prototypes
double celsiusToFahrenheit(double celsius);
double fahrenheitToCelsius(double fahrenheit);

int main() {
    double temperature;
    char scale;

    cout << "Enter temperature: ";
    cin >> temperature; // Read temperature, not scale

    cout << "Enter scale (C for Celsius, F for Fahrenheit): ";
    cin >> scale; // Read scale

    if (scale == 'C' || scale == 'c') {
        double convertedTemp = celsiusToFahrenheit(temperature); // Pass temperature to the function
        cout << "Converted temperature: " << convertedTemp << "F" << endl;
    }
    else if (scale == 'F' || scale == 'f') {
        double convertedTemp = fahrenheitToCelsius(temperature); // Pass temperature to the function
        cout << "Converted temperature: " << convertedTemp << "C" << endl;
    }
    else {
        cout << "Invalid scale entered." << endl; // Inform the user about invalid input
    }

    return 0;
}

// Function to convert Celsius to Fahrenheit
double celsiusToFahrenheit(double celsius) {
    return (celsius * 9/5) + 32; // Corrected formula
}

// Function to convert Fahrenheit to Celsius
double fahrenheitToCelsius(double fahrenheit) {
    return (fahrenheit - 32) * 5/9; // Corrected formula
}
```


D:\SWC 1323\SWC LAB WORK
Enter temperature: 32
Enter scale (C for Celsius, F for Fahrenheit): C
Converted temperature: 89.6F

Process exited after 19.98 seconds with return value 0
Press any key to continue . . .

WC


D:\SWC 1323\SWC LAB WORK
Enter temperature: 98
Enter scale (C for Celsius, F for Fahrenheit): F
Converted temperature: 36.6667C

Process exited after 15.3 seconds with return value 0
Press any key to continue . . .