Assignment No: 1

CS-114 – Fundamental of Programming

Submited by:

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Section: 'C'

Submitted to:

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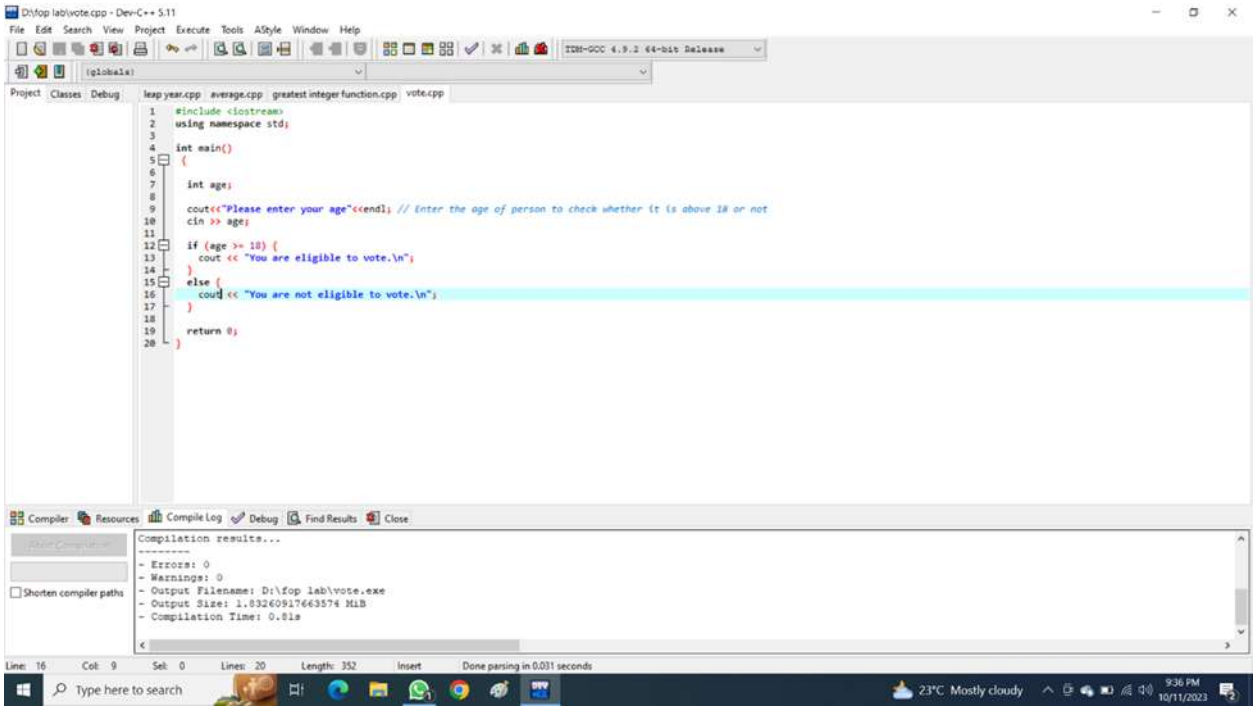
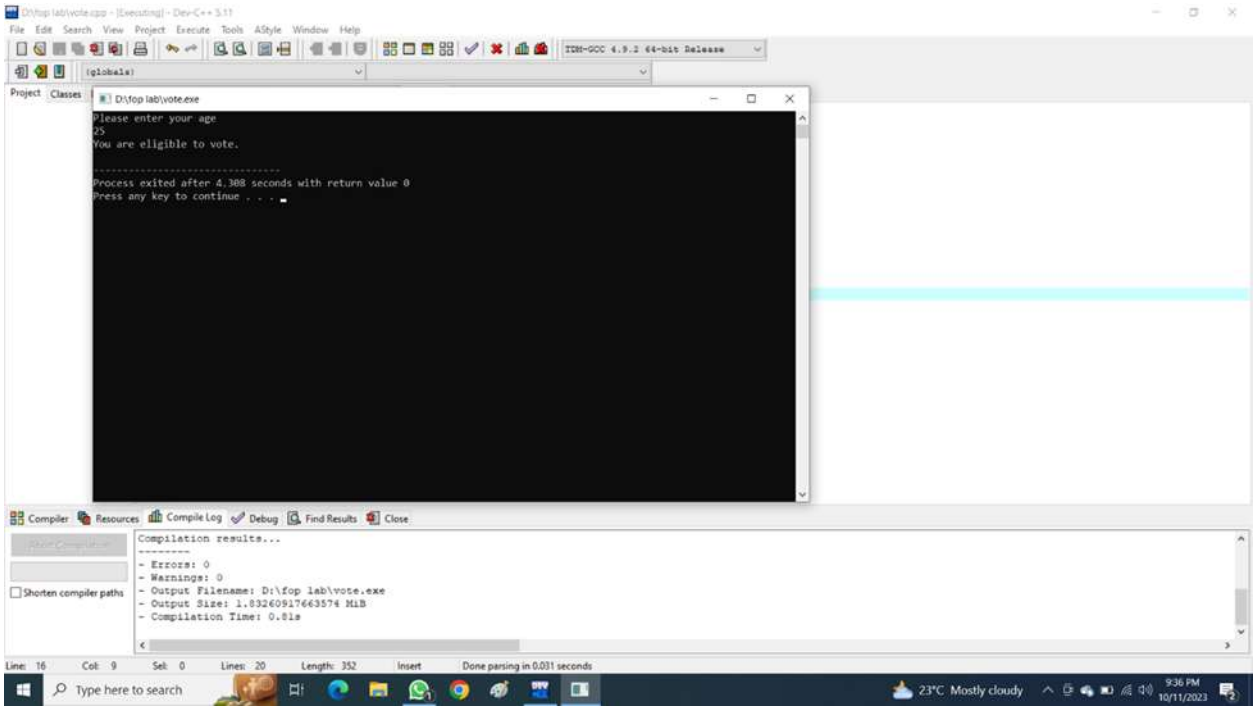
National University of Science and Technology (NUST), Islamabad

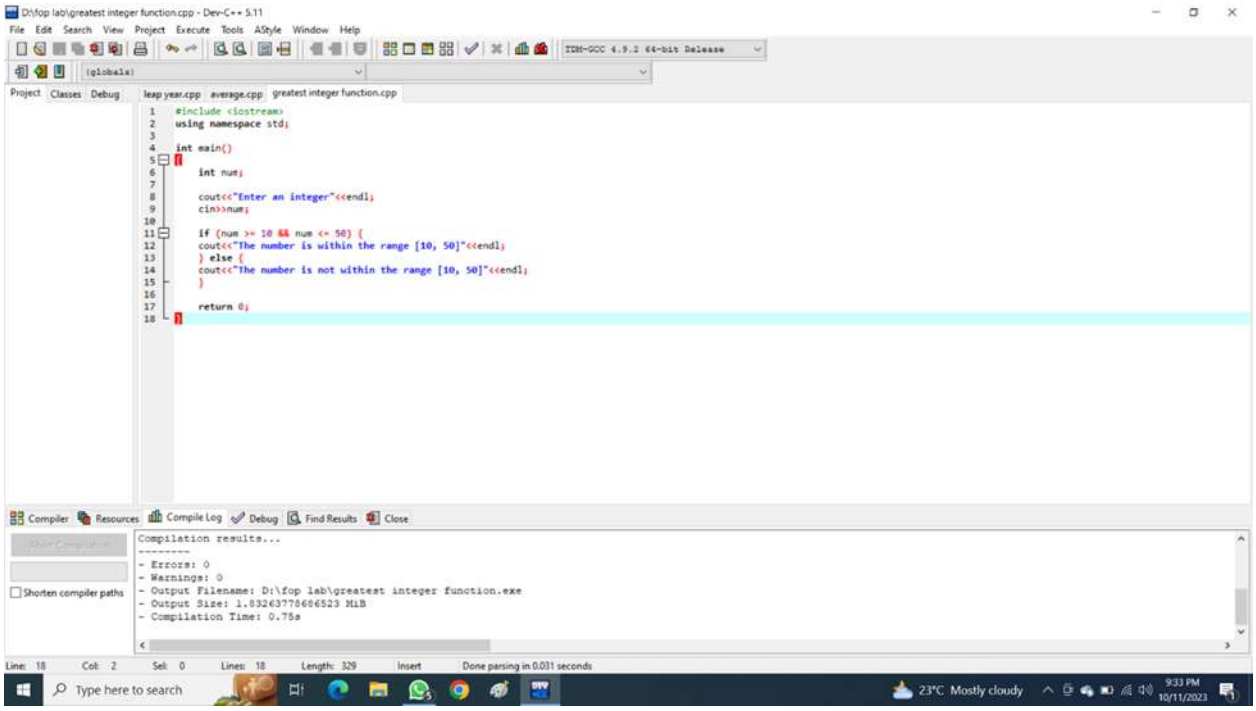
Lab Task: 2

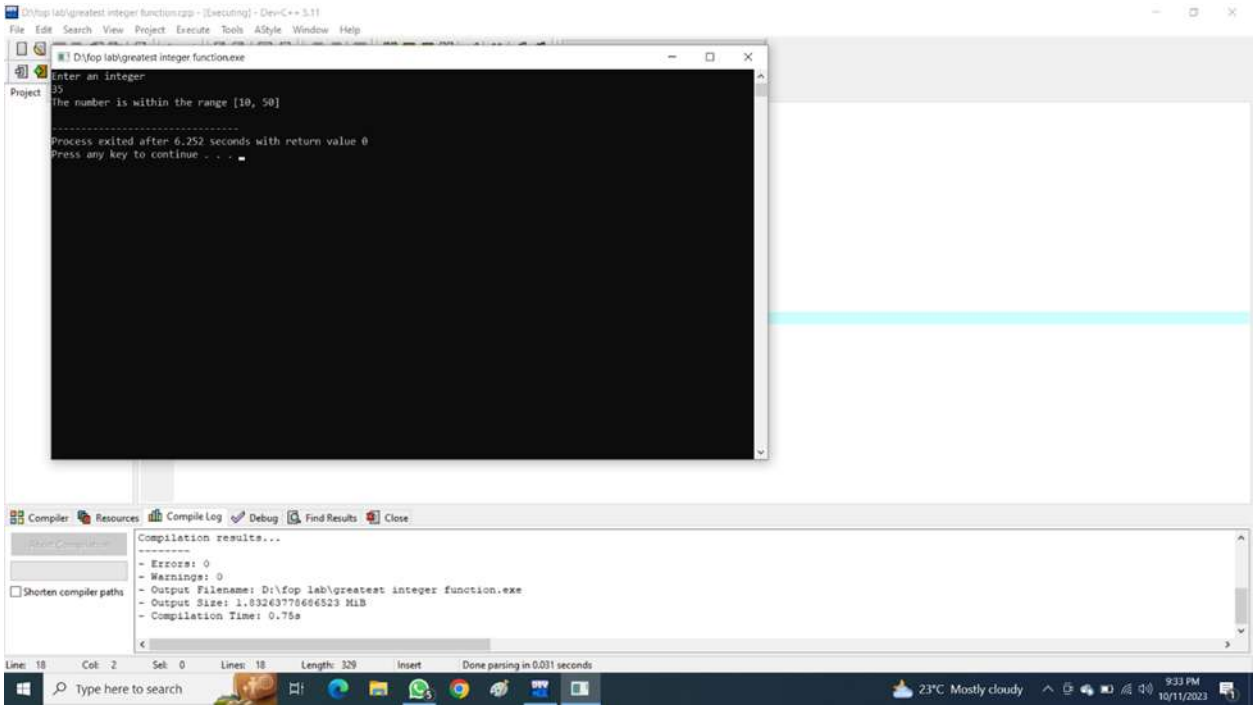
1. **Write a program that determines if a person is eligible to vote based on their age (e.g., 18 years or older) using logical operators.**



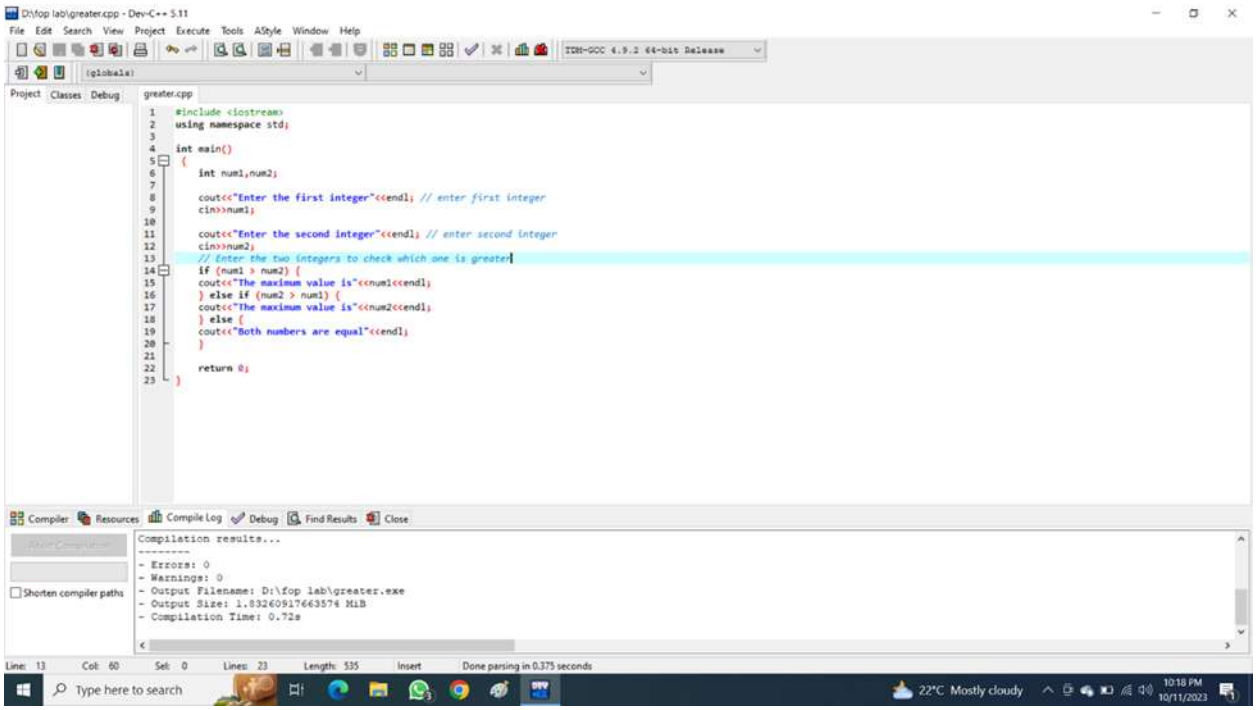


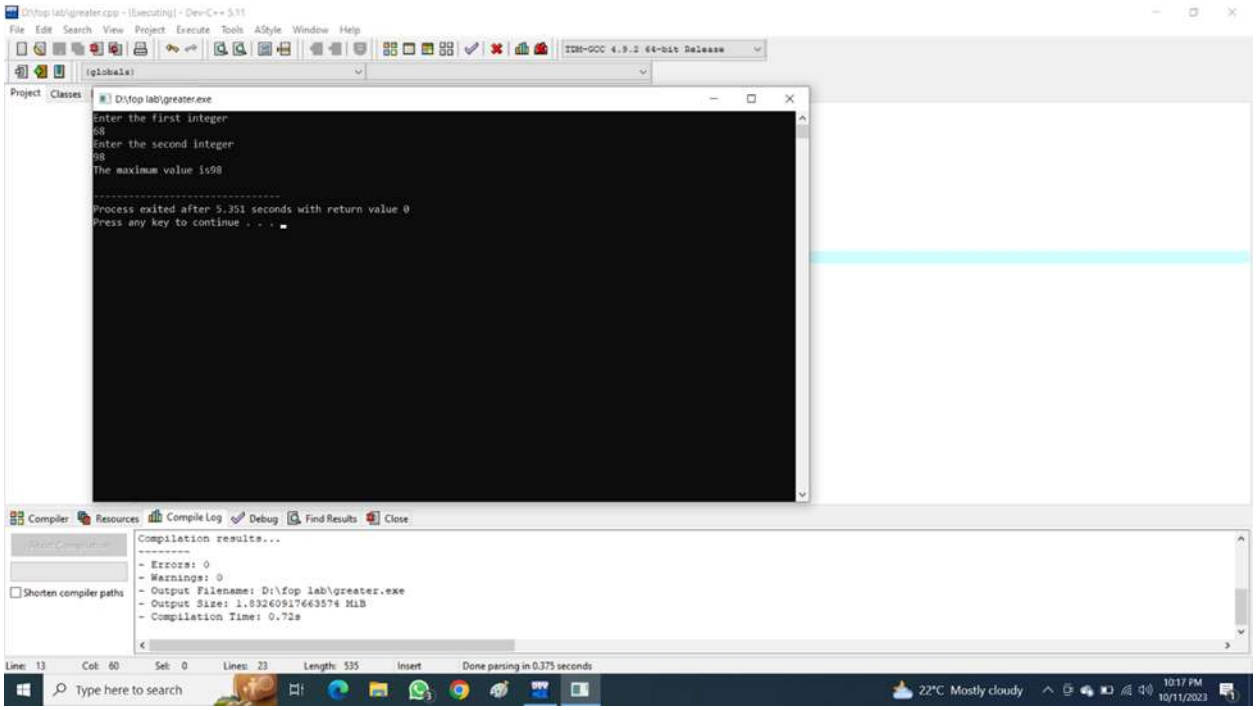
2. Write a program that takes an integer as input and checks if it falls within the range [10, 50] using logical operators.



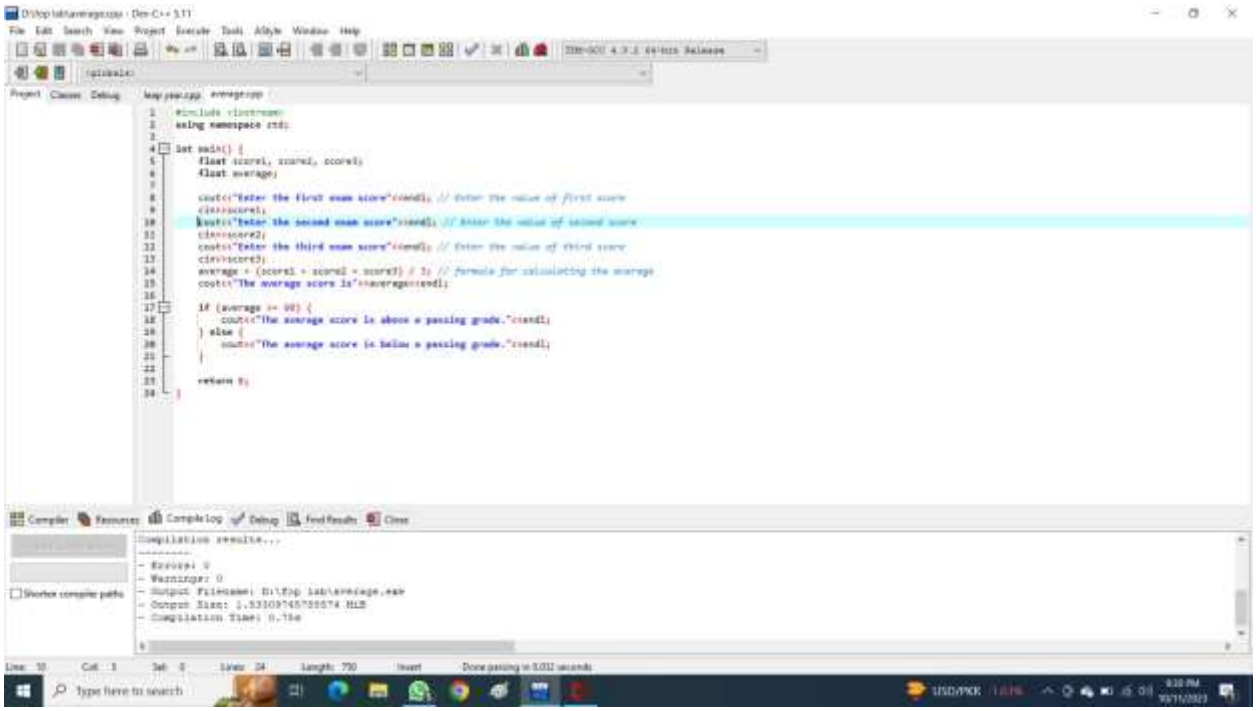


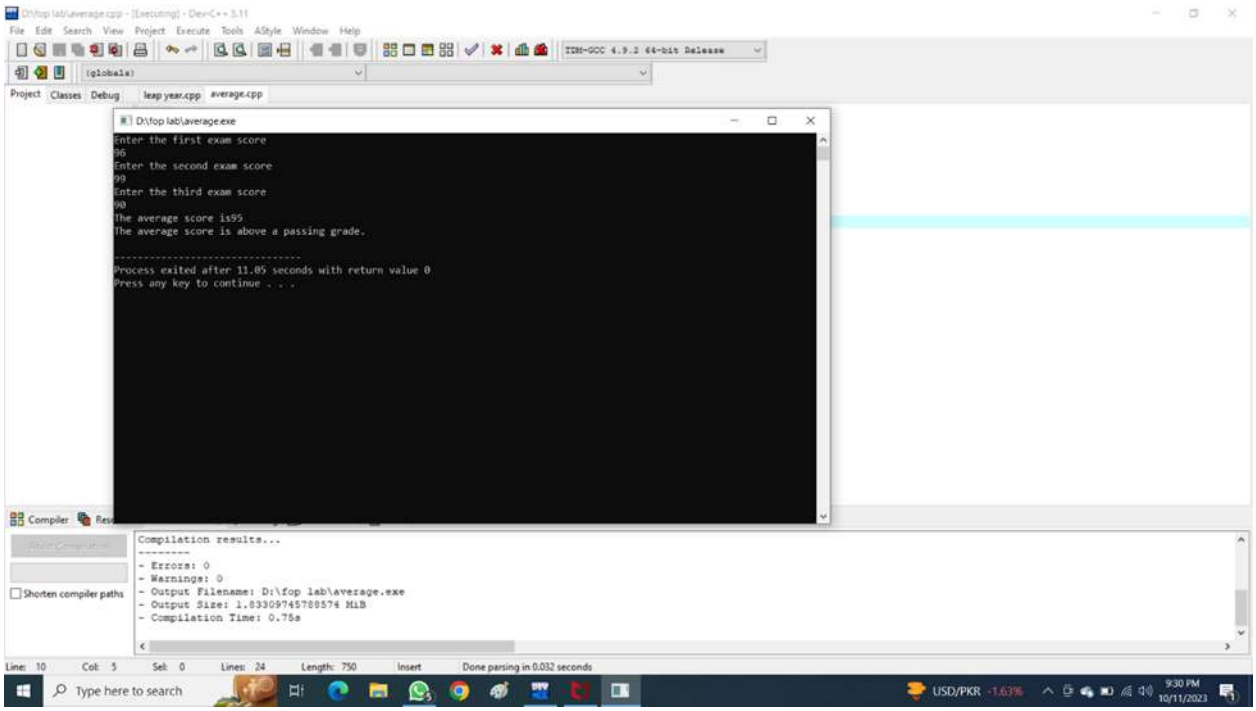
3. Write a C++ program to compare two integers and find the maximum value.





4. Write a C++ program to calculate the average of three exam scores and determine if it's above a passing grade (e.g., average >= 60).

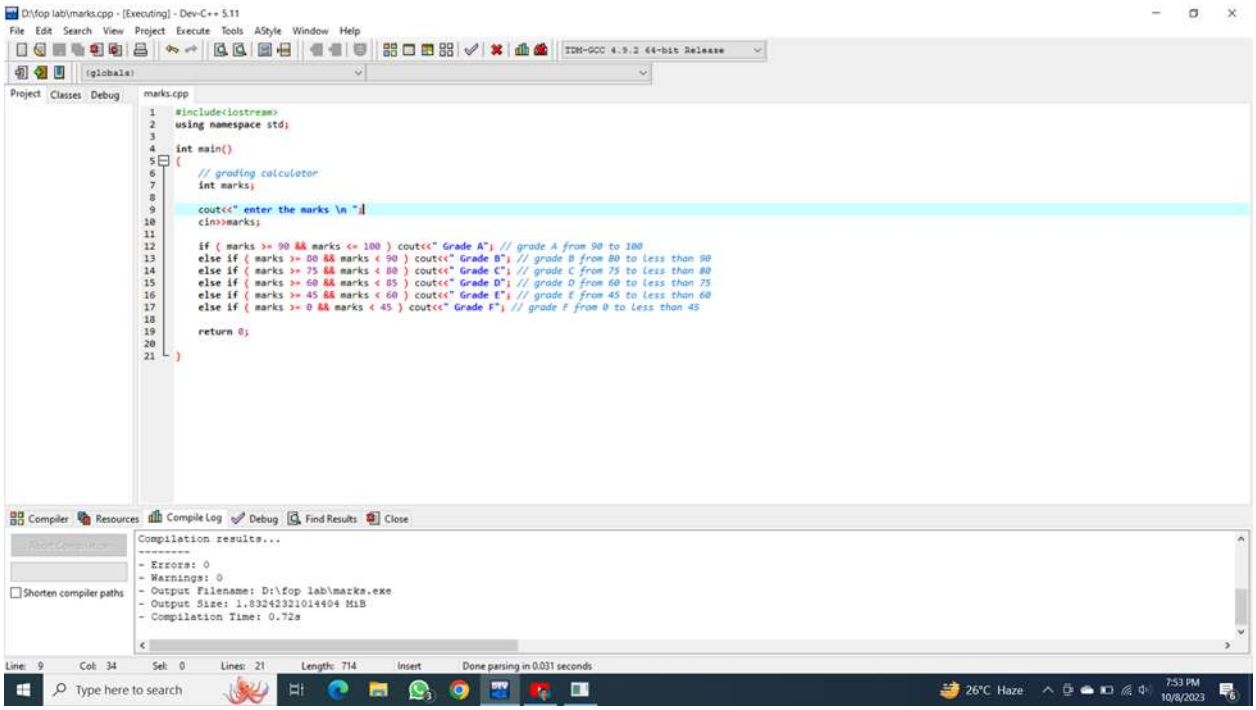


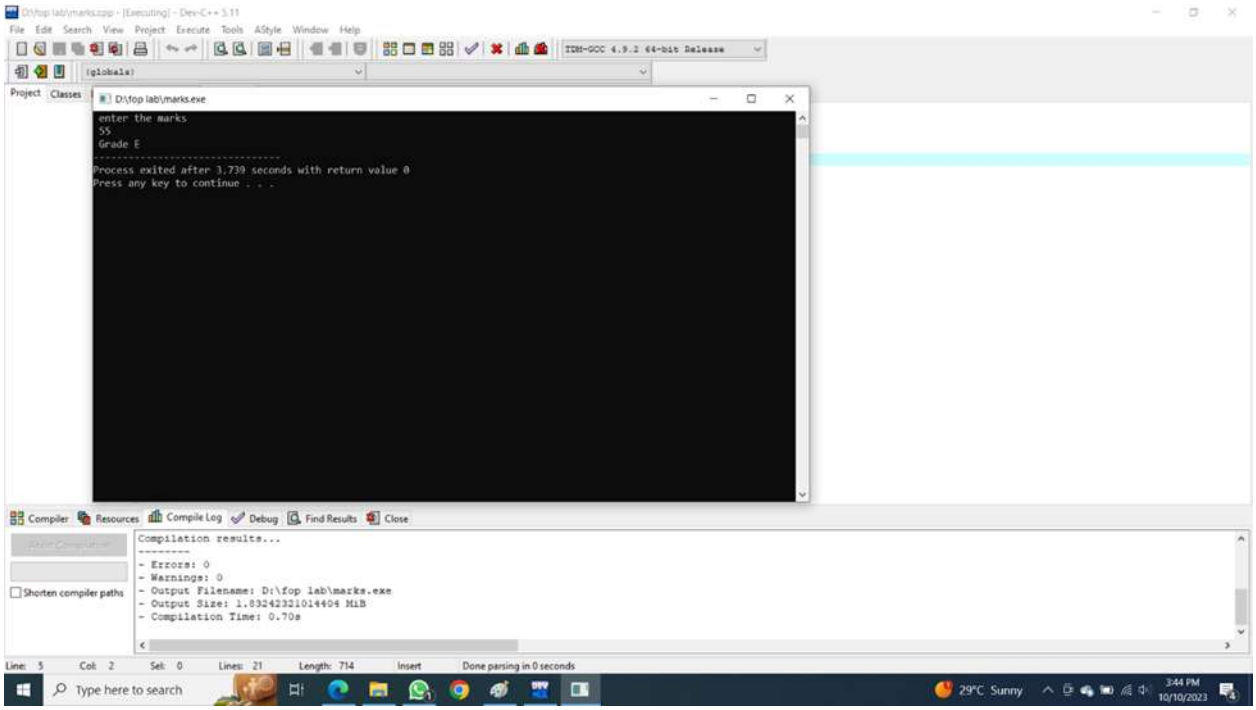


Home Task: 2

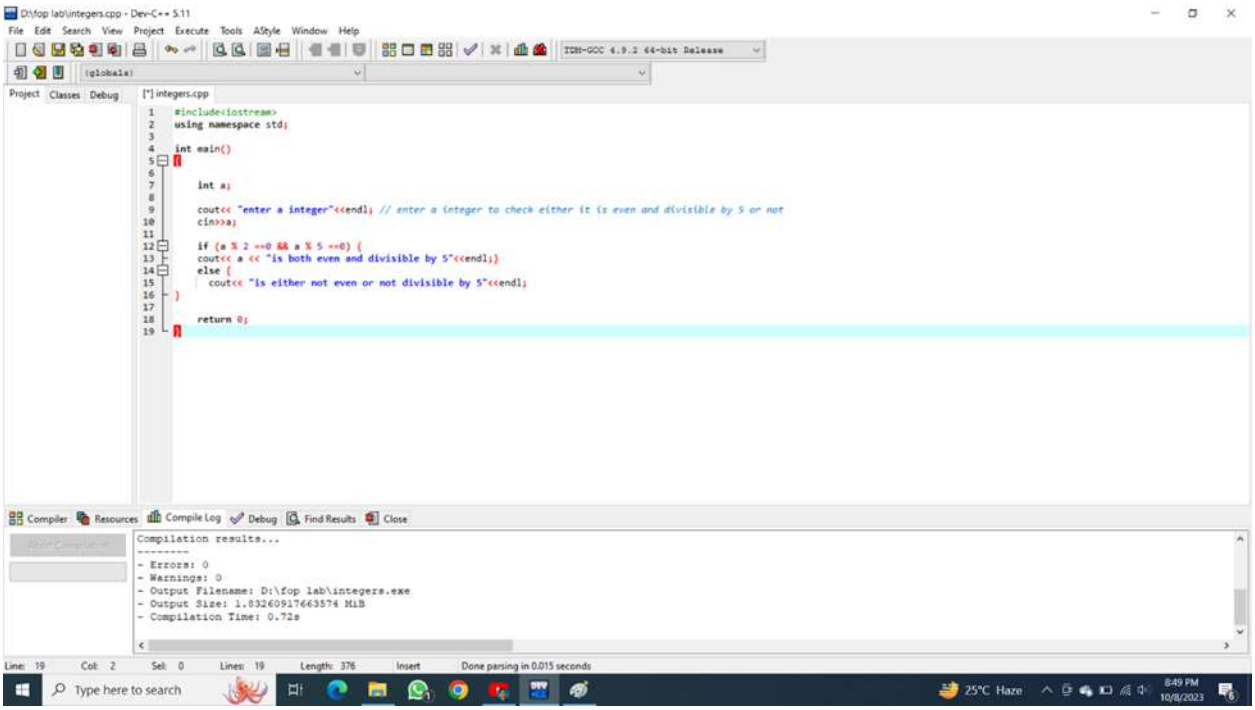
1) **Create a program that takes a student's score as input and assigns a grade based on predefined criteria using logical operators (e.g., A, B, C, D, F).**

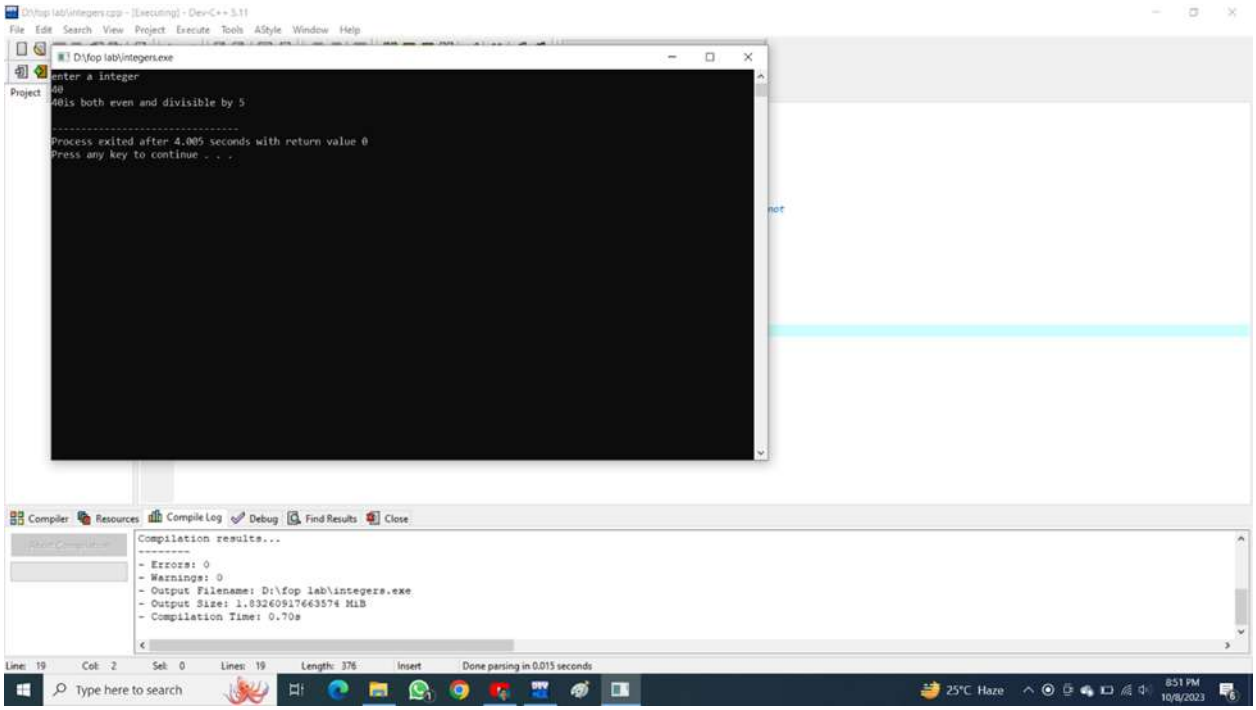
A-Grade: 90-100 Marks, B-Grade: 75-90 Marks, C-Grade: 60-75 Marks, D-Grade: 45-60 Marks, F-Grade: 0-45 Marks



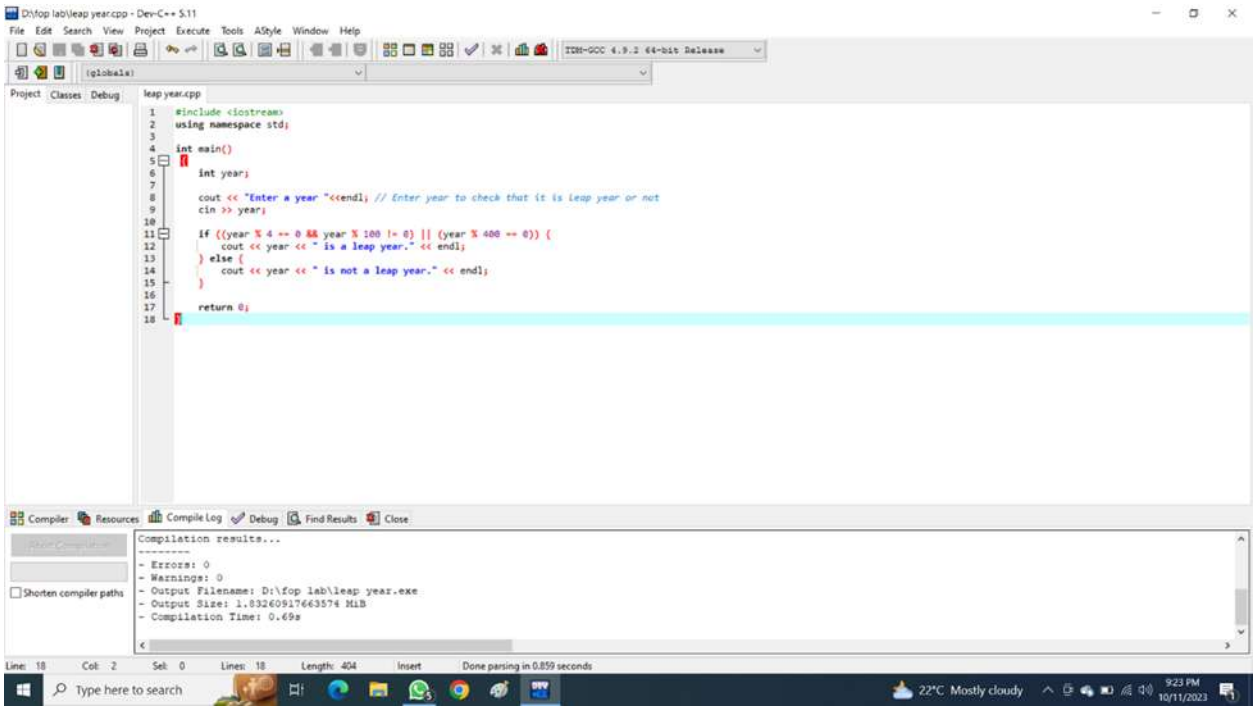


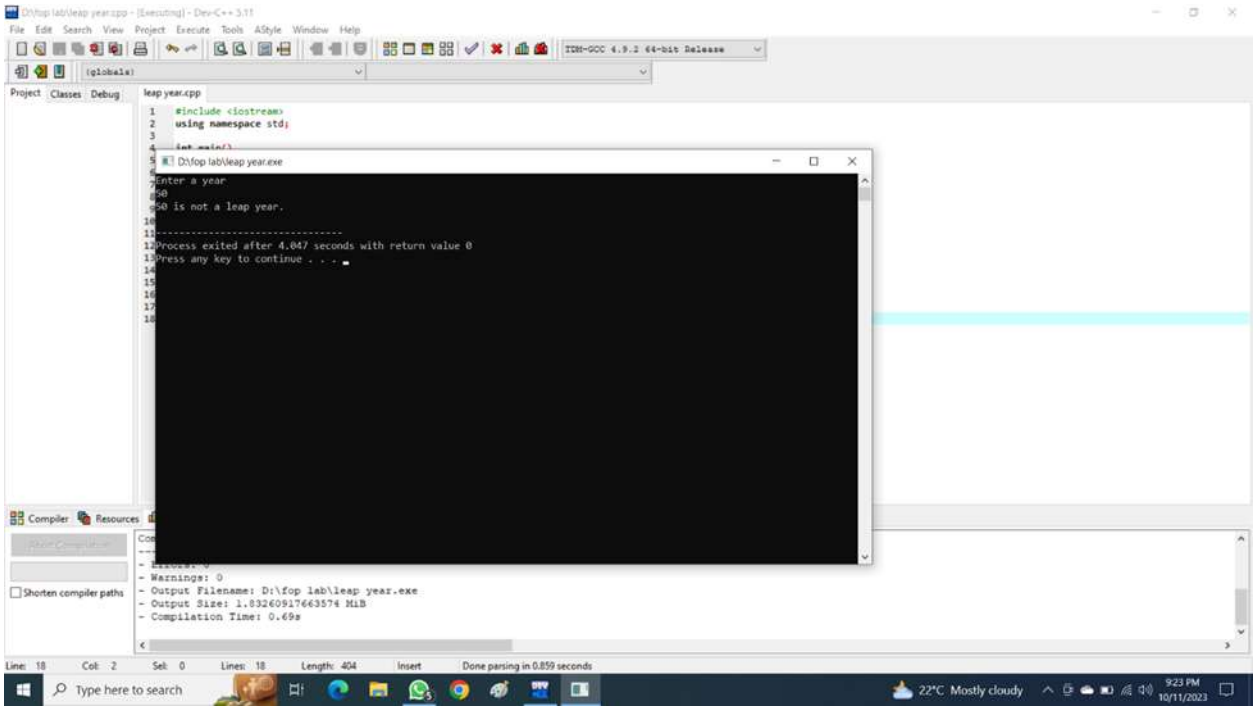
2)Write a program that takes an integer as input and determines if it is both even and divisible by 5



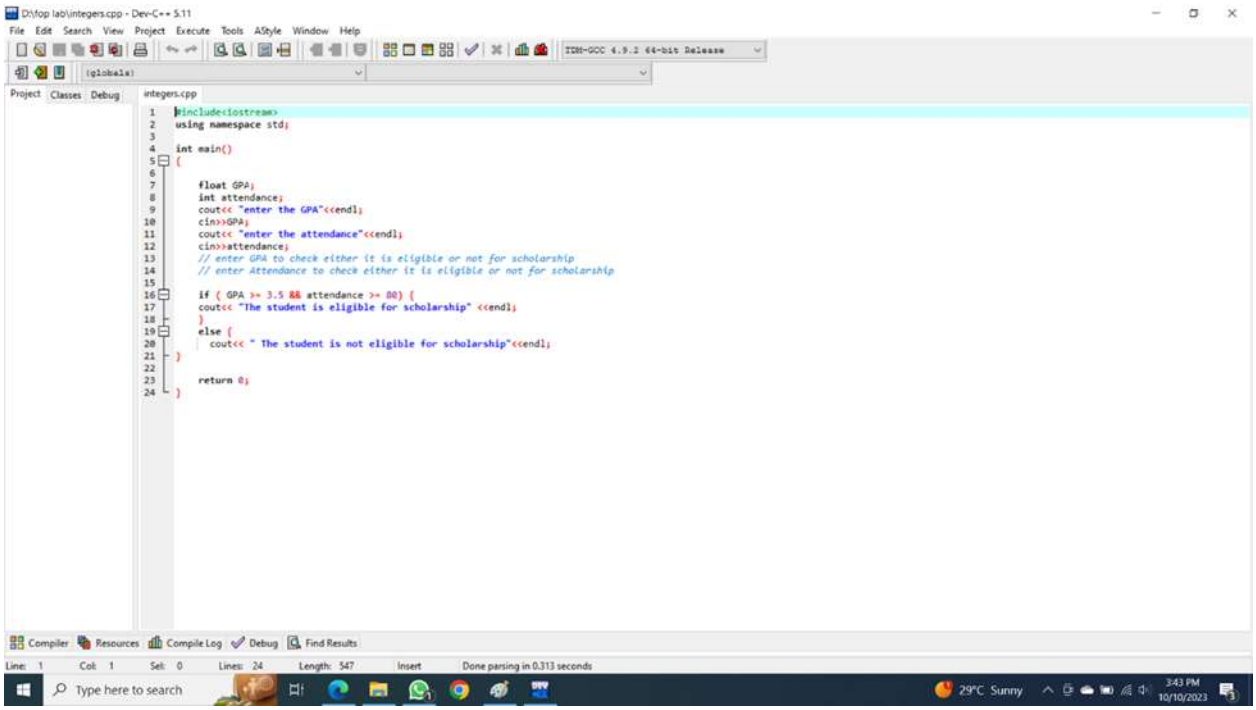


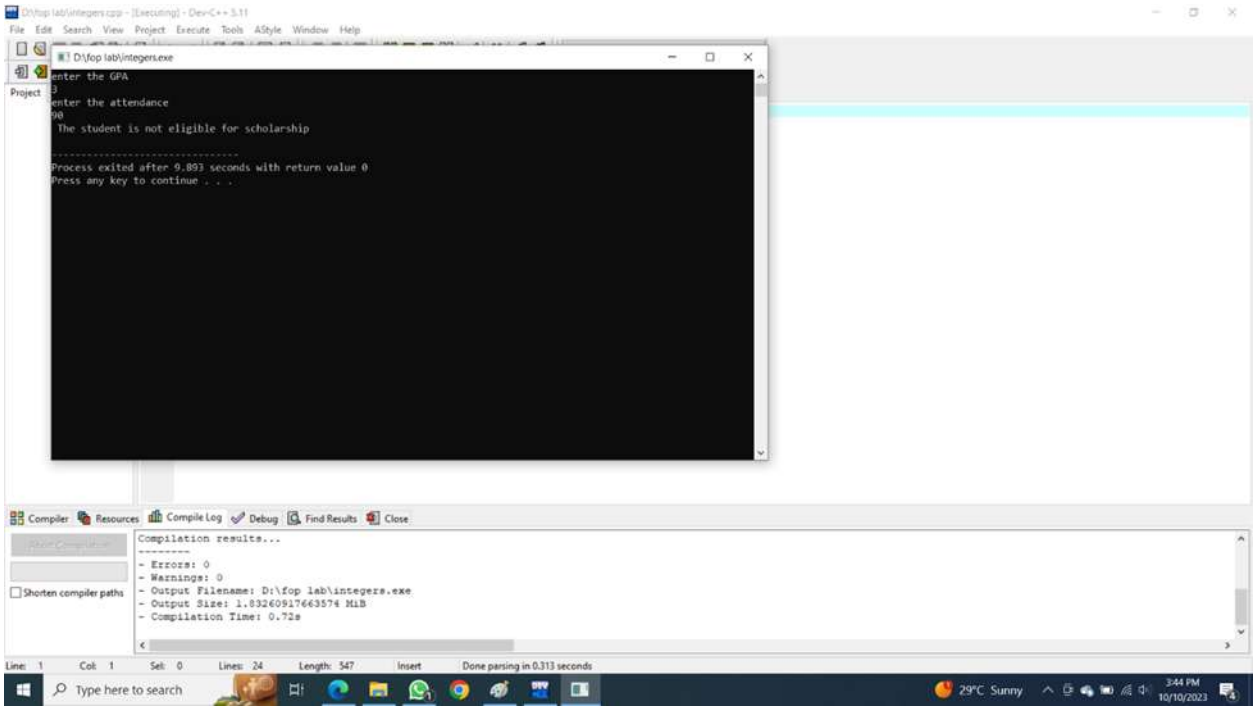
3. Create a C++ program that checks if a user-provided year is a leap year.



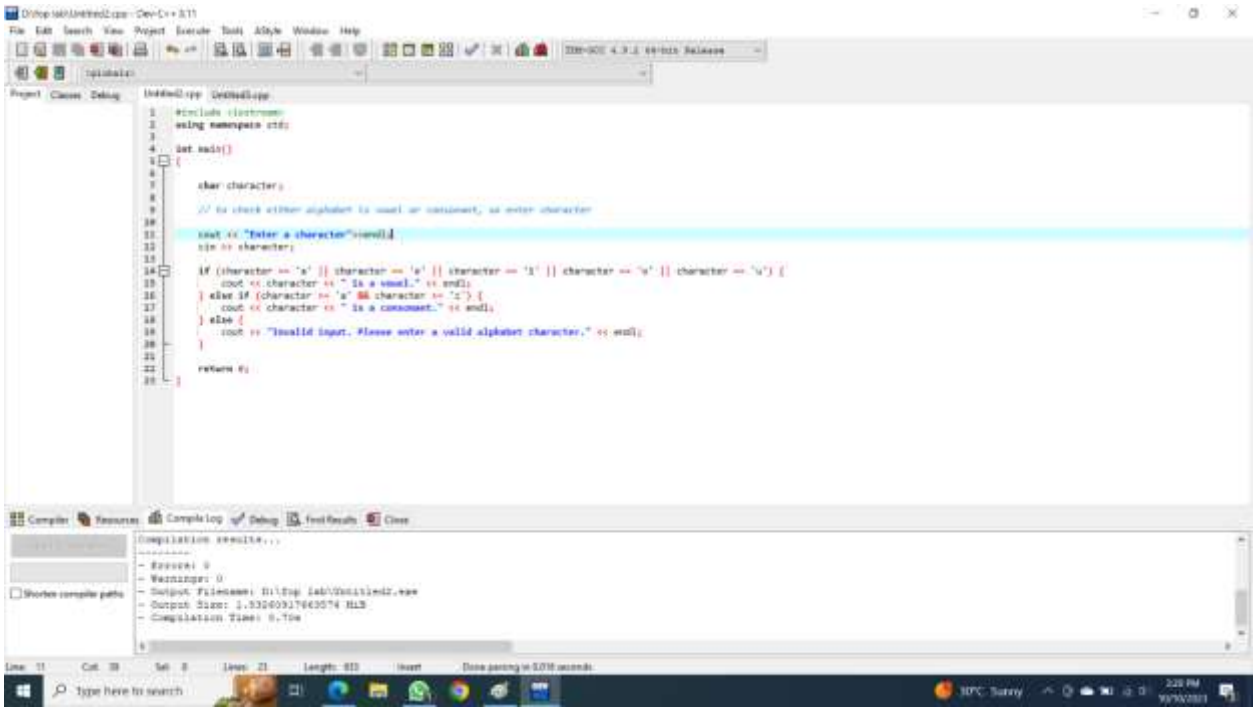


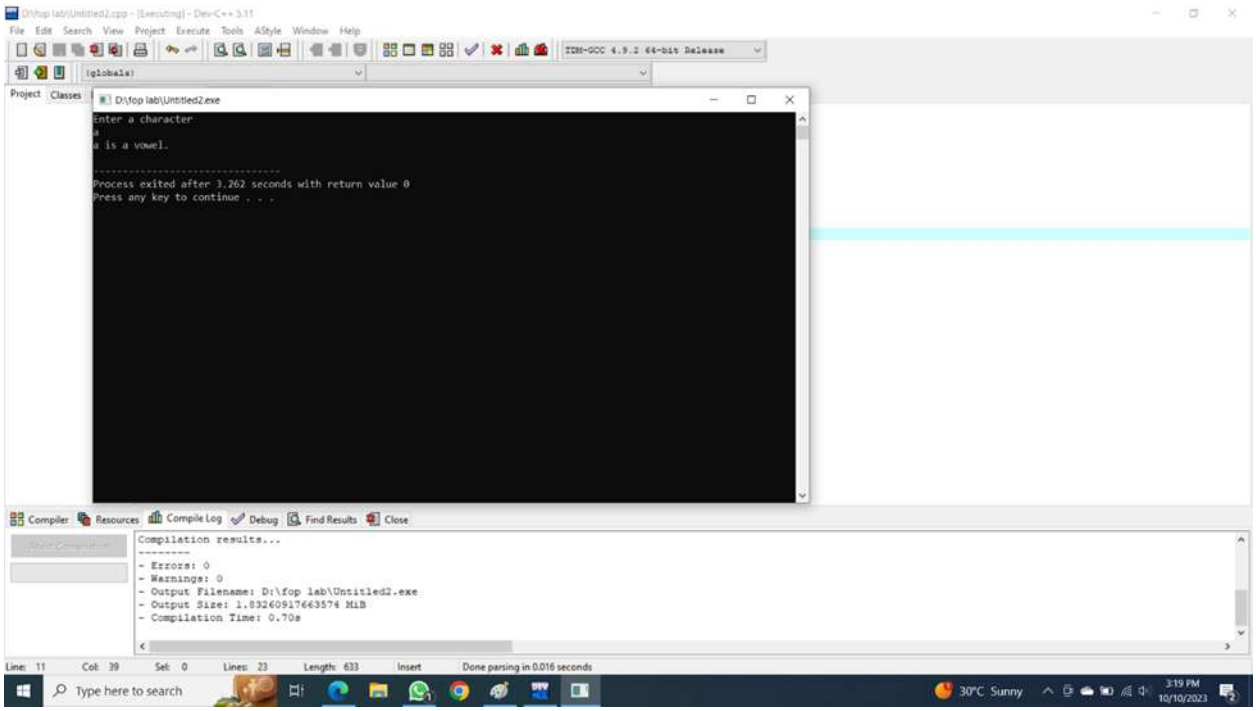
4. Create a C++ program that determines if a student is eligible for a scholarship based on their GPA (must have GPA >= 3.5) and attendance (must have attended at least 80% of classes).





5. Write a program that checks if a given character is a vowel (a, e, i, o, u) or a consonant using logical operators.

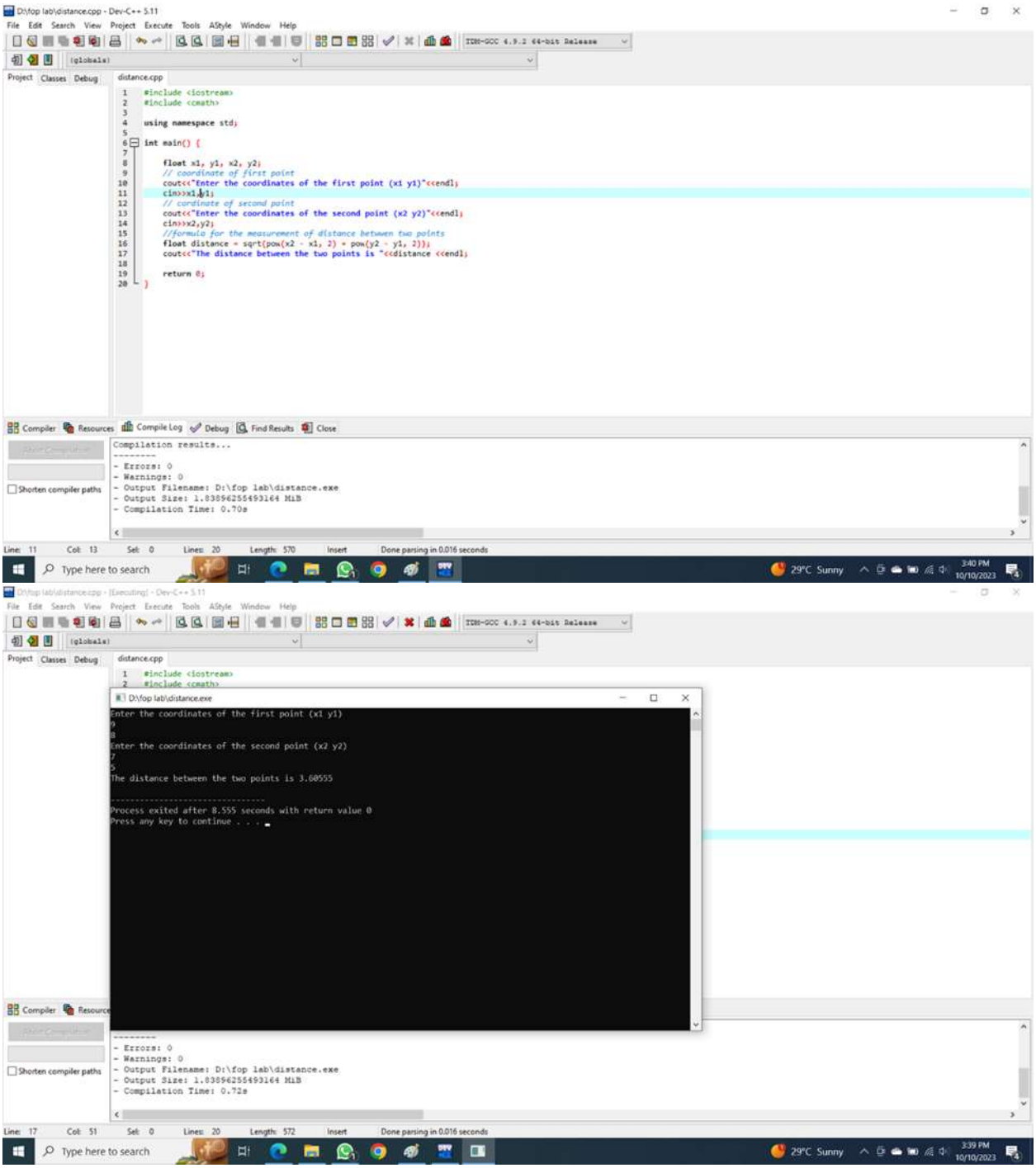




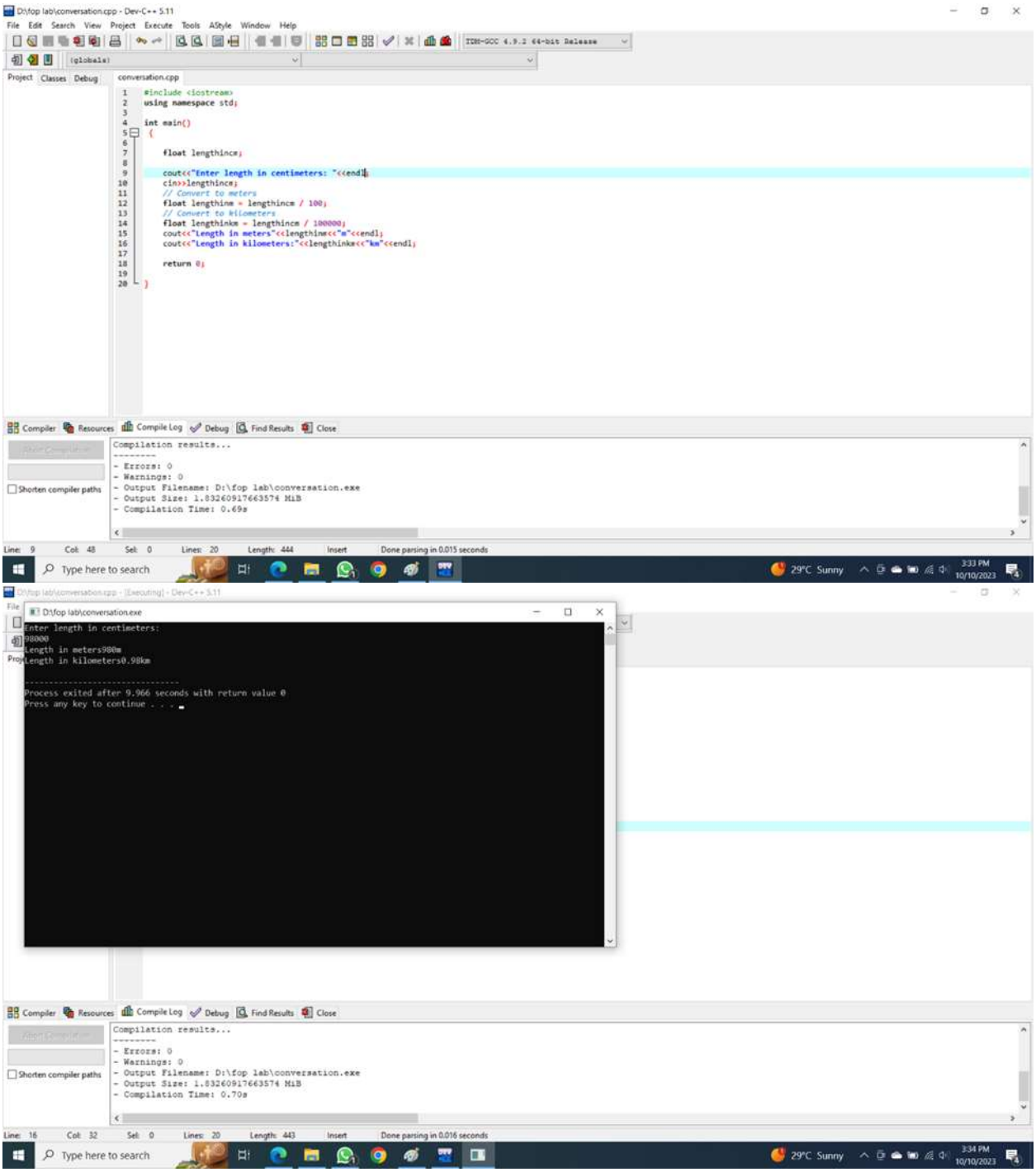
Home Task 1

1)Write a C ++ program to calculate distance between two points. The values of coordinates should be input by user.

$$\mathbf{d} = (\mathbf{x2} - \mathbf{x1})^2 + (\mathbf{y2} - \mathbf{y1})^2$$

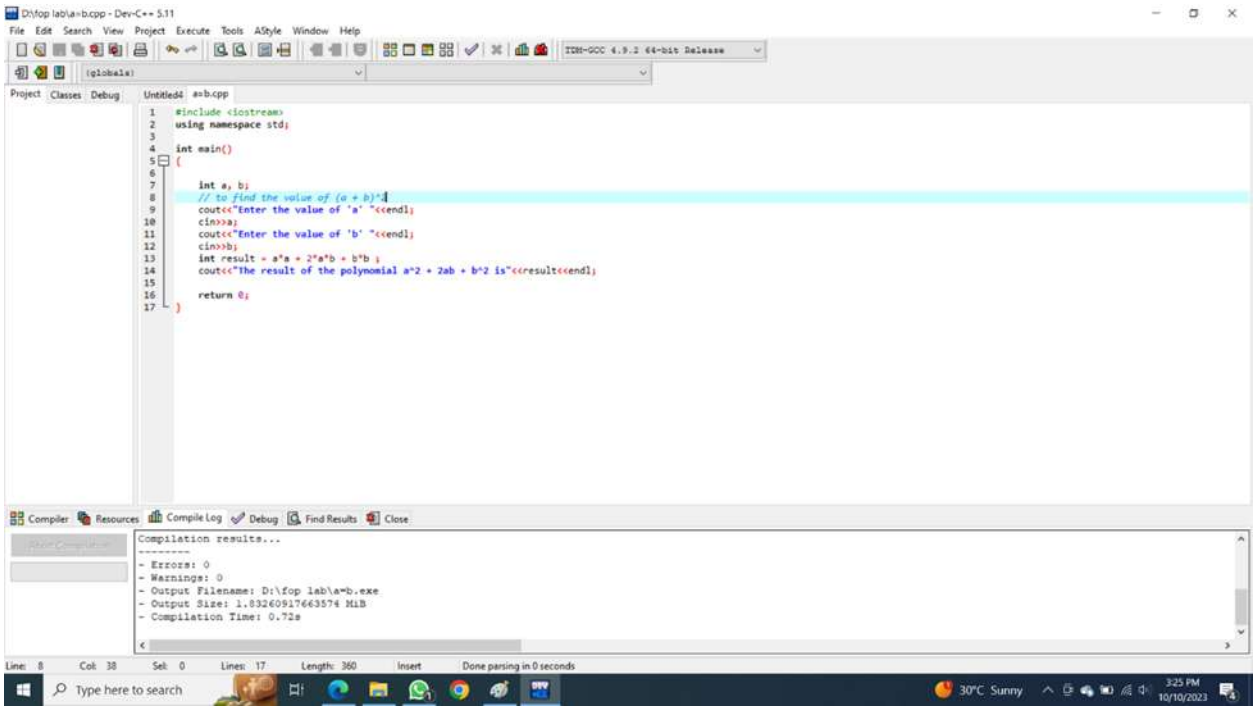


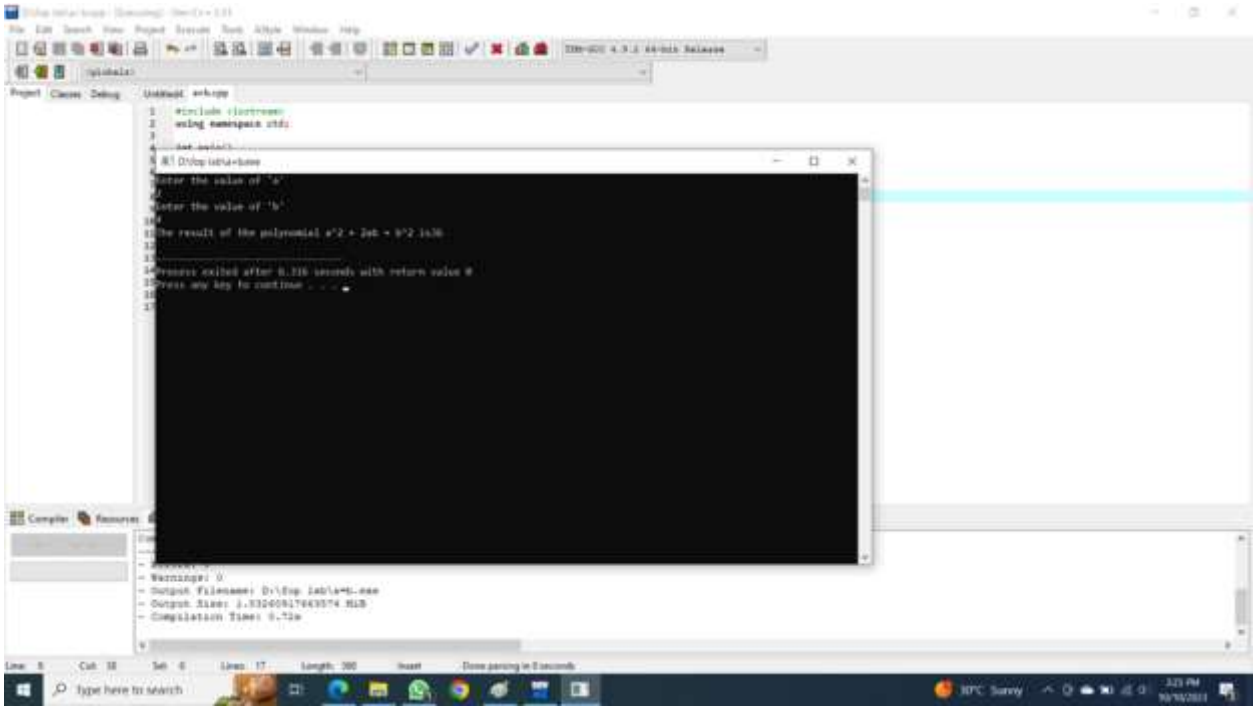
2)Write a code in C + to take length from user in centimeter and convert it into meter and kilometer.



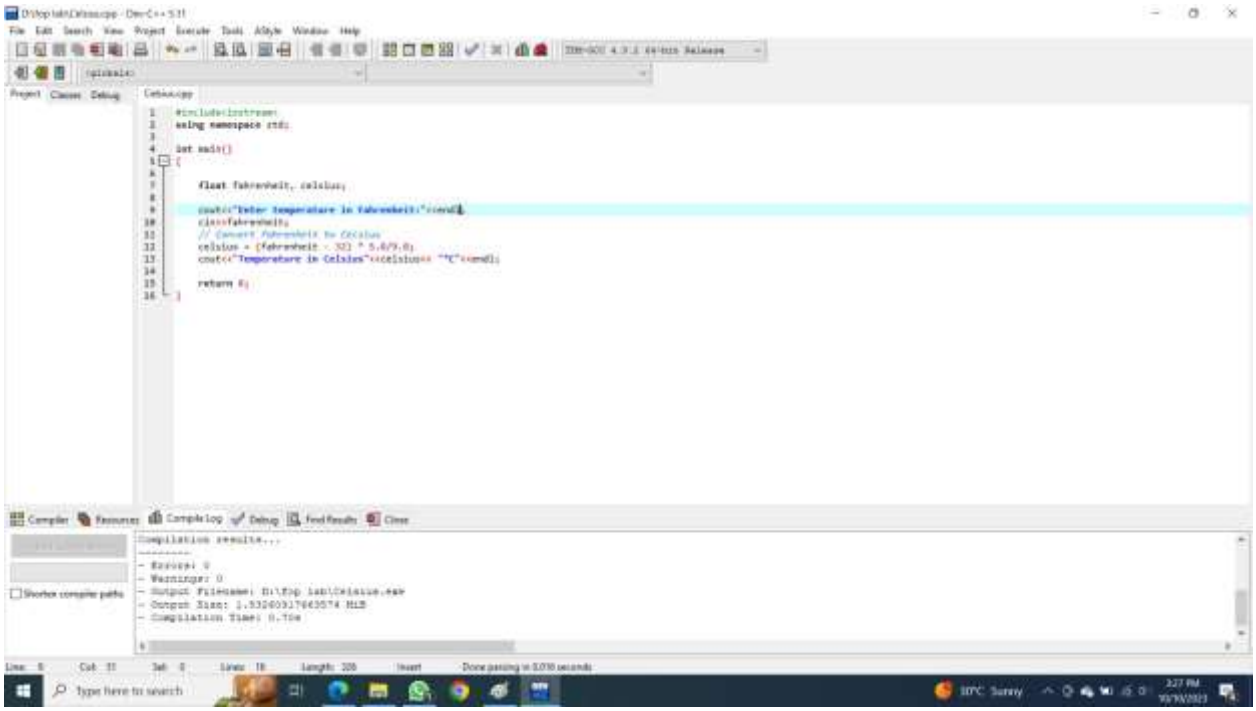
3)Write a code in C ++ that takes values of a and b from the user and displays result of polynomial

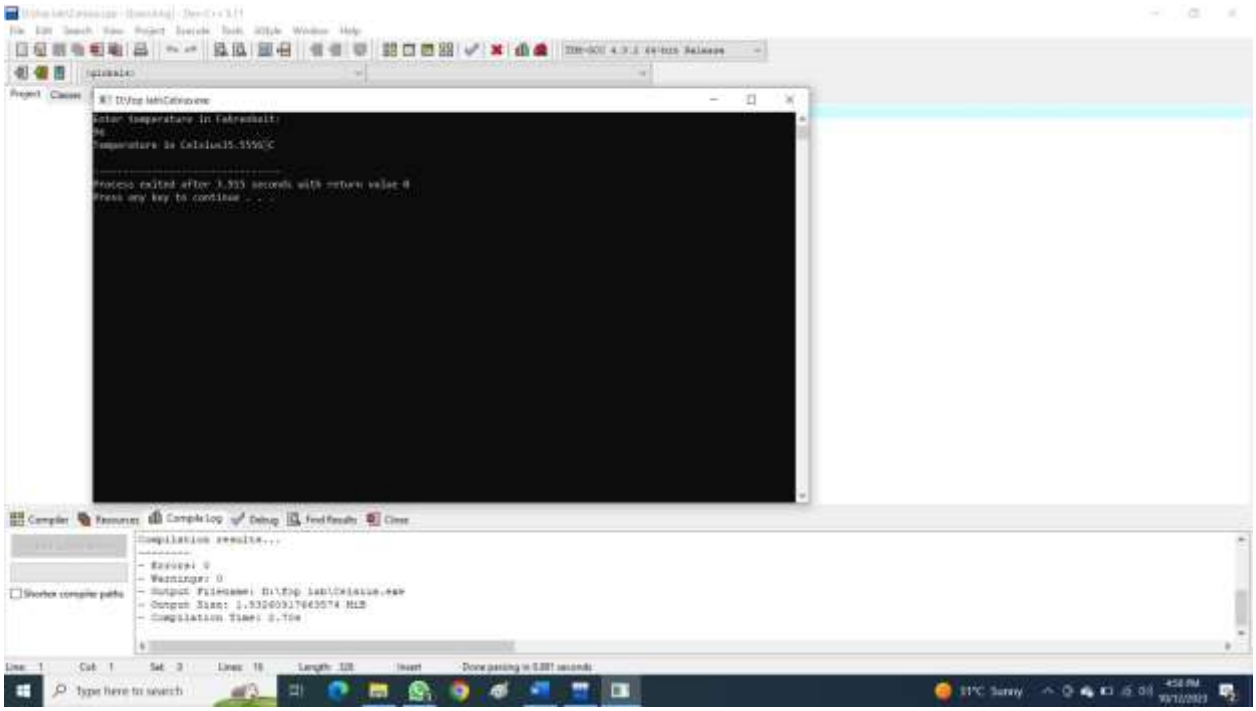
$$a^2 + 2ab + b^2$$





4)Write a program in C++ to convert temperature in Fahrenheit to Celsius.


#include<iostream>
using namespace std;
int main()
{
float fahrenheit, celsius;
cout<<"Enter temperature in Fahrenheit:"<<endl;
cin>>fahrenheit;
// Convert Fahrenheit to Celsius
celsius = (fahrenheit - 32) * 5.0/9.0;
cout<<"Temperature in Celsius"<<celsius<< "°C"<<endl;
return 0;
}
Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: D:\Exp lab\Celsius.exe
- Output Size: 1.5320031738376 MiB
- Compilation Time: 0.70s


Enter temperature in Fahrenheit:
96
Temperature in Celsius35.5556°C
Process exited after 3.955 seconds with return value 0
Press any key to continue . . .
Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: D:\Exp lab\Celsius.exe
- Output Size: 1.5320031738376 MiB
- Compilation Time: 0.70s