

1. C++ program to read in two integers and perform the following operations on them: addition, subtraction, multiplication, division, and modulo.

```
#include<iostream>
using namespace std;
int main(){
    int num1,num2;
    cout<<"Enter a number";
    cin>>num1;
    cout<<"Enter a number";
    cin>>num2;

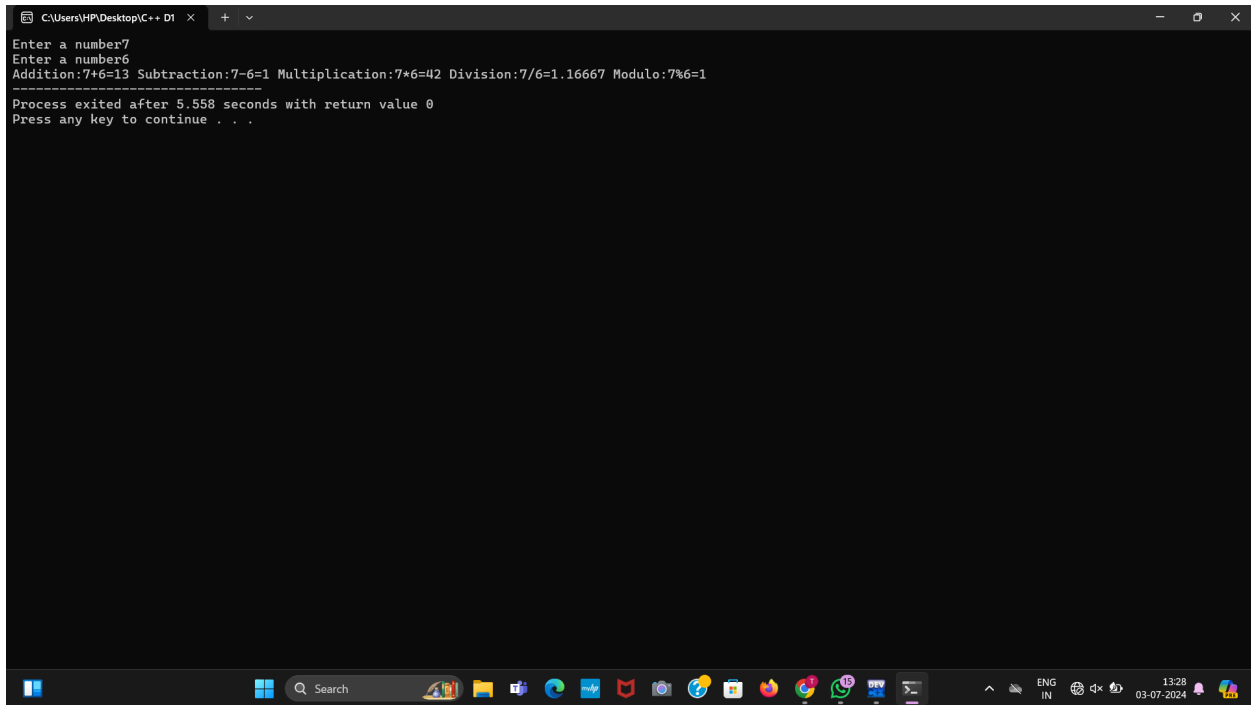
    int addition=num1+num2;
    int subtraction=num1-num2;
    int multiplication=num1*num2;
    if(num2!=0){
        double division=static_cast<double>(num1)/num2;
        int modulo=num1%num2;

        cout<<"\nAddition:"<<num1<<"+"<<num2<<"="<<addition;
        cout<<"\nSubtraction:"<<num1<<"-"<<num2<<"="<<subtraction;
        cout<<"\nMultiplication:"<<num1<<"*"<<num2<<"="<<multiplication;
        cout<<"\nDivision:"<<num1<<"/"<<num2<<"="<<division;
        cout<<"\nModulo:"<<num1<<"%"<<num2<<"="<<modulo;

    }
    else{
        cout<<"\nAddition:"<<num1<<"+"<<num2<<"="<<addition<<" ";
        cout<<"\nSubtraction:"<<num1<<"-"<<num2<<"="<<subtraction<<" ";
        cout<<"\nMultiplication:"<<num1<<"*"<<num2<<"="<<multiplication<<" ";
        cout<<"\nDivision::Division by Zero undefined"<<" ";
        cout<<"\nModulo::Modulo by Zero undefined";

    }
    return 0;
}
```

Output:

A screenshot of a Windows terminal window with a dark background. The window title bar shows 'C:\Users\HP\Desktop\C++ D1'. The terminal output is as follows:

```
Enter a number7
Enter a number6
Addition:7+6=13 Subtraction:7-6=1 Multiplication:7*6=42 Division:7/6=1.16667 Modulo:7%6=1
-----
Process exited after 5.558 seconds with return value 0
Press any key to continue . . .
```

The Windows taskbar is visible at the bottom, showing the Start button, a search bar, and various application icons. The system clock in the bottom right corner indicates the time is 13:28 on 03-07-2024.

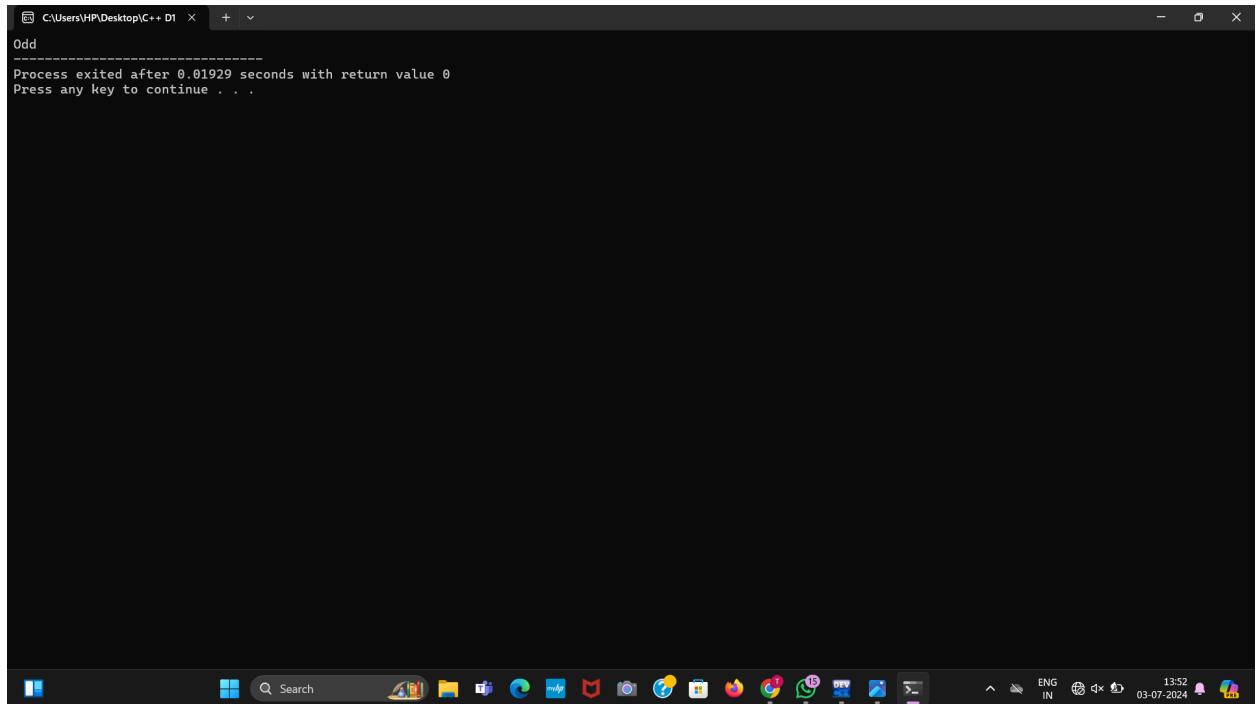
2. C++ program to determine the integer is odd or even

```
#include <iostream>
using namespace std;
bool isEven(int n) { return (n % 2 == 0); }

int main()
{
    int n = 101;
    if (isEven(n))
        cout << "Even";
    else
        cout << "Odd";

    return 0;
}
```

Output:



```
C:\Users\HP\Desktop\C++ D1
Odd
-----
Process exited after 0.01929 seconds with return value 0
Press any key to continue . . .
```

3. Program to compute the average of three integers

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

int main() {
    int num1, num2, num3;
    double average;

    cout << "Enter the first integer: ";
    cin >> num1;
    cout << "Enter the second integer: ";
    cin >> num2;
    cout << "Enter the third integer: ";
    cin >> num3;

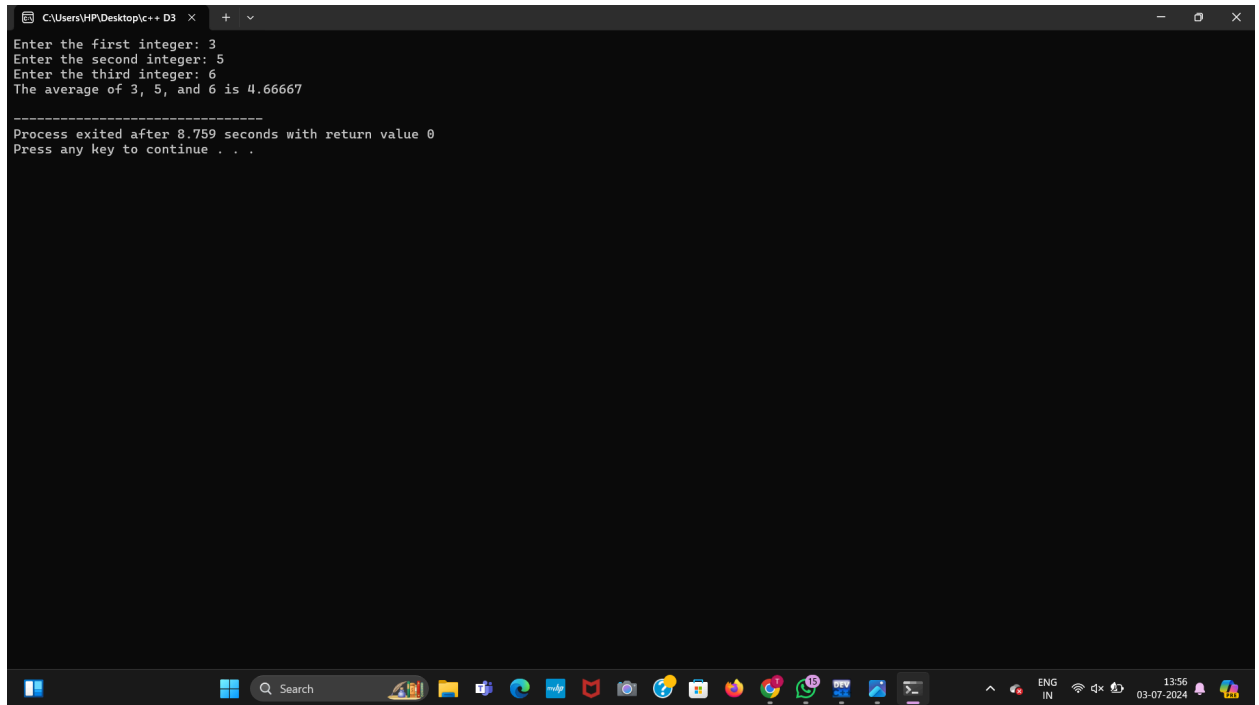
    average = (num1 + num2 + num3) / 3.0;

    cout << "The average of " << num1 << ", " << num2 << ", and " << num3 << " is " <<
    average << endl;

    return 0;
```

```
}
```

Output:

A screenshot of a Windows command prompt window titled "C:\Users\HP\Desktop\c++ D3". The window shows the output of a C++ program. The program prompts the user to enter three integers: 3, 5, and 6. It then calculates and displays the average of these three integers as 4.66667. Below the output, it states "Process exited after 8.759 seconds with return value 0" and "Press any key to continue . . .". The Windows taskbar is visible at the bottom, showing various application icons and the system clock indicating 13:56 on 03-07-2024.

```
C:\Users\HP\Desktop\c++ D3
Enter the first integer: 3
Enter the second integer: 5
Enter the third integer: 6
The average of 3, 5, and 6 is 4.66667

-----
Process exited after 8.759 seconds with return value 0
Press any key to continue . . .
```

4. Program to check two numbers are equal or not

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int num1, num2;
```

```
    cout << "Enter the first integer: ";
```

```
    cin >> num1;
```

```
    cout << "Enter the second integer: ";
```

```
    cin >> num2;
```

```
    if (num1 == num2) {
```

```
        cout << "The numbers " << num1 << " and " << num2 << " are equal." << endl;
```

```
    } else {
```

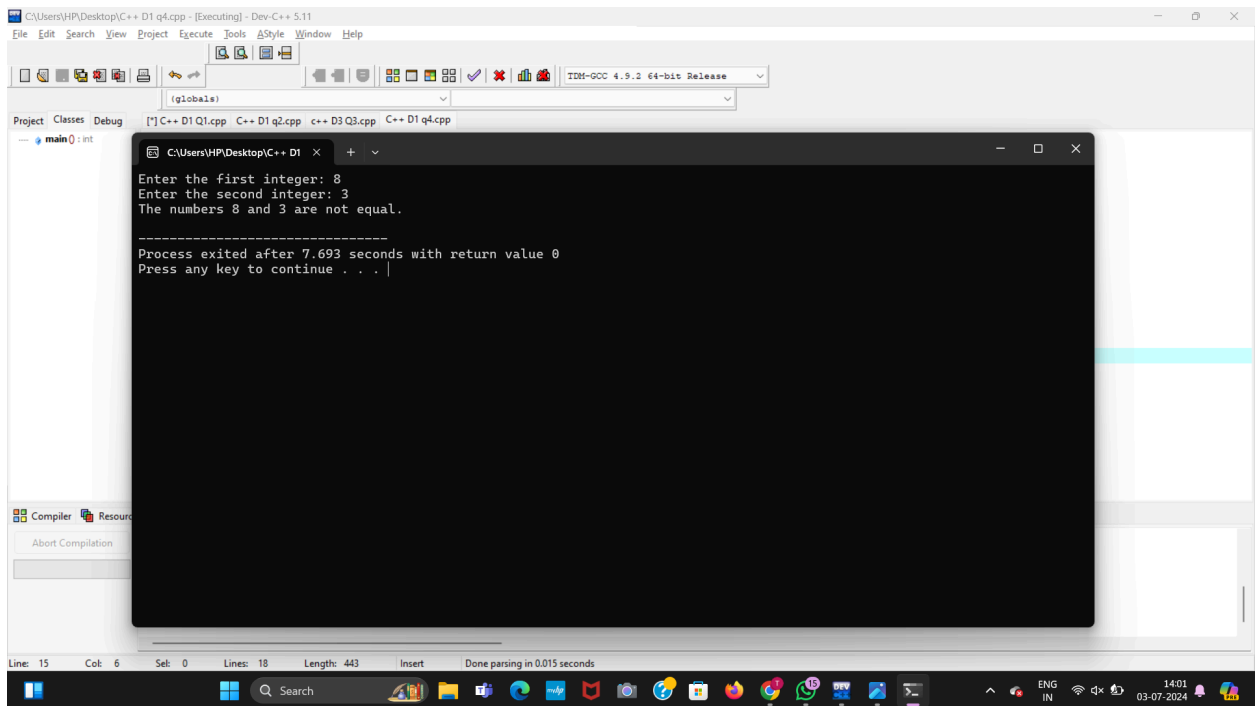
```
        cout << "The numbers " << num1 << " and " << num2 << " are not equal." << endl;
```

```
    }
```

```
    return 0;
```

```
}
```

Output:



The screenshot shows the Dev-C++ IDE with a project named "D1" and a file named "q4.cpp". The program is running, and the output window displays the following text:

```
Enter the first integer: 8
Enter the second integer: 3
The numbers 8 and 3 are not equal.

-----
Process exited after 7.693 seconds with return value 0
Press any key to continue . . .
```

5. Write a C++ program to read in two Floating numbers and perform the following operations on them: addition, subtraction, multiplication, division, and modulo.

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

```
int main() {
    float num1, num2;
    cout << "Enter the first floating-point number: ";
    cin >> num1;
    cout << "Enter the second floating-point number: ";
    cin >> num2;
    float addition = num1 + num2;
    float subtraction = num1 - num2;
    float multiplication = num1 * num2;

    if (num2 != 0) {
        float division = num1 / num2;
```

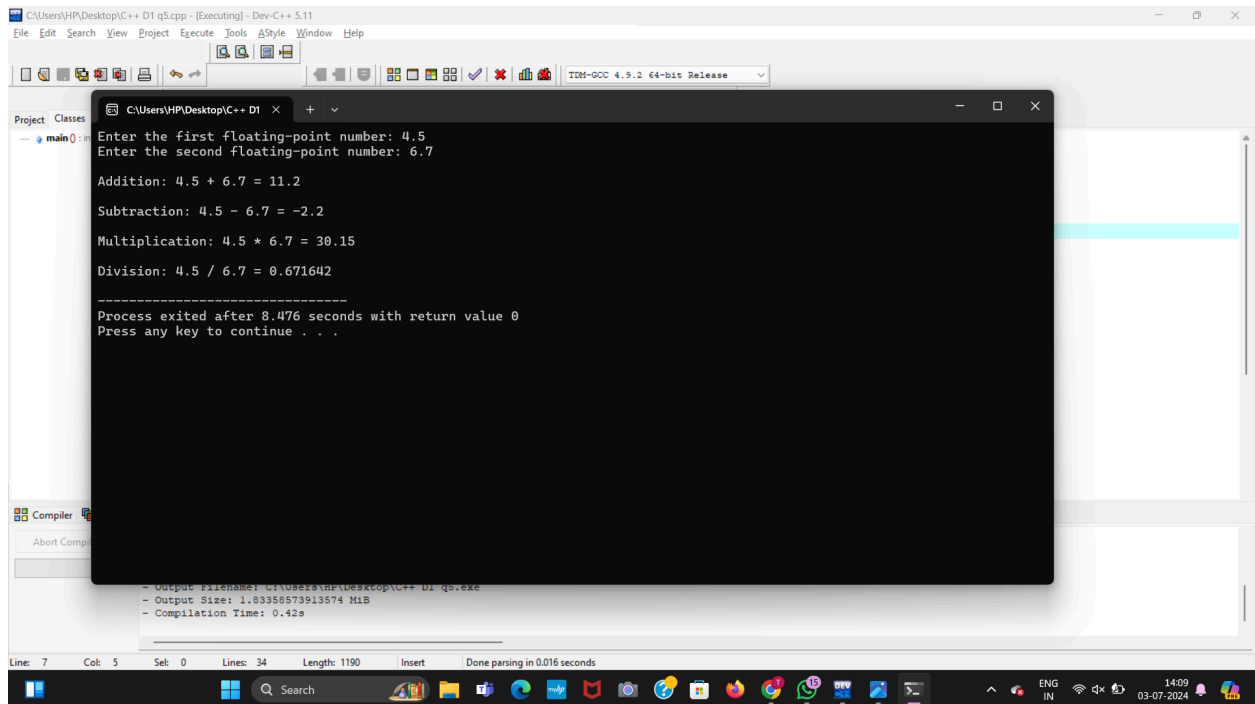
```

    cout << "\nAddition: " << num1 << " + " << num2 << " = " << addition << endl;
    cout << "\nSubtraction: " << num1 << " - " << num2 << " = " << subtraction << endl;
    cout << "\nMultiplication: " << num1 << " * " << num2 << " = " << multiplication << endl;
    cout << "\nDivision: " << num1 << " / " << num2 << " = " << division << endl;
} else {
    cout << "\nAddition: " << num1 << " + " << num2 << " = " << addition << endl;
    cout << "\nSubtraction: " << num1 << " - " << num2 << " = " << subtraction << endl;
    cout << "\nMultiplication: " << num1 << " * " << num2 << " = " << multiplication << endl;
    cout << "\nDivision: Division by zero is undefined" << endl;
}

return 0;
}

```

Output:



The screenshot shows the Dev-C++ IDE with a C++ program being executed. The program prompts the user to enter two floating-point numbers, 4.5 and 6.7. It then displays the results of four arithmetic operations: Addition (4.5 + 6.7 = 11.2), Subtraction (4.5 - 6.7 = -2.2), Multiplication (4.5 * 6.7 = 30.15), and Division (4.5 / 6.7 = 0.671642). The program also shows the execution time (8.476 seconds) and the return value (0). The output window is titled "C:\Users\HP\Desktop\C++ D1 q5.cpp" and the compiler output shows the program was compiled successfully.

```

Enter the first floating-point number: 4.5
Enter the second floating-point number: 6.7

Addition: 4.5 + 6.7 = 11.2
Subtraction: 4.5 - 6.7 = -2.2
Multiplication: 4.5 * 6.7 = 30.15
Division: 4.5 / 6.7 = 0.671642

-----
Process exited after 8.476 seconds with return value 0
Press any key to continue . . .

```

6. C++ Program to check the character is a vowel or consonant

```

#include <iostream>
using namespace std;
void vowelOrConsonant(char x)
{
    if (x == 'a' || x == 'e' || x == 'i' || x == 'o'
        || x == 'u' || x == 'A' || x == 'E' || x == 'I'

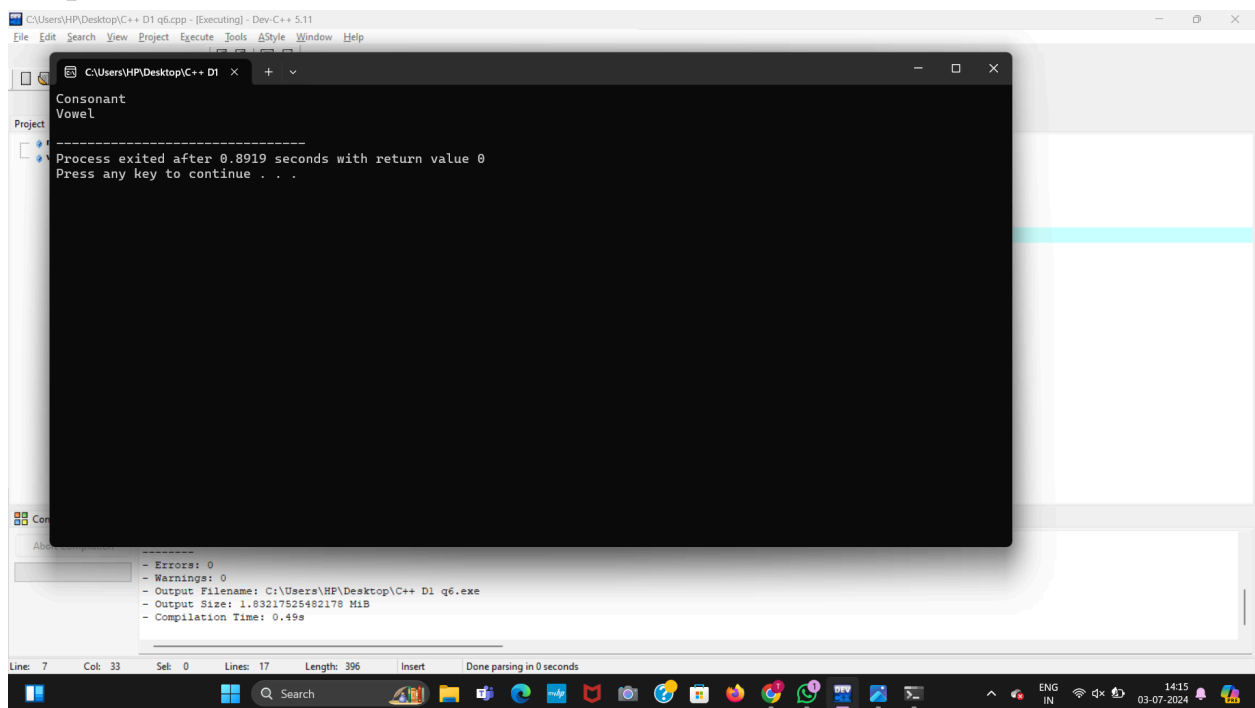
```

```

        || x == 'O' || x == 'U')
        cout << "Vowel" << endl;
    else
        cout << "Consonant" << endl;
}
int main()
{
    vowelOrConsonant('c');
    vowelOrConsonant('E');
    return 0;
}

```

Output:



7. C++ Program to check the number is positive, negative or zero

```

#include <iostream>
using namespace std;

int main() {
    int number;
    cout << "Enter an integer: ";
    cin >> number;
}

```

```

if (number > 0) {
    cout << number << " is positive." << endl;
} else if (number < 0) {
    cout << number << " is negative." << endl;
} else {
    cout << number << " is zero." << endl;
}
return 0;
}

```

Output:

The screenshot shows the Dev-C++ IDE interface. The main window displays the output of the program: "Enter an integer: -76" followed by "-76 is negative." and a separator line. Below the separator, it says "Process exited after 2.745 seconds with return value 0" and "Press any key to continue . . .". The bottom pane shows the compilation results, indicating 0 errors and 0 warnings. The status bar at the bottom shows the file path, line numbers, and other details.

8. C++ Program to determine which number is greater among two integers

```

#include<iostream>
using namespace std;
int main(){
    int num1,num2,num3;
    cout<<"Enter a number";
    cin>>num1;
    cout<<"Enter a number";
    cin>>num2;
    cout<<"Enter a number";
}

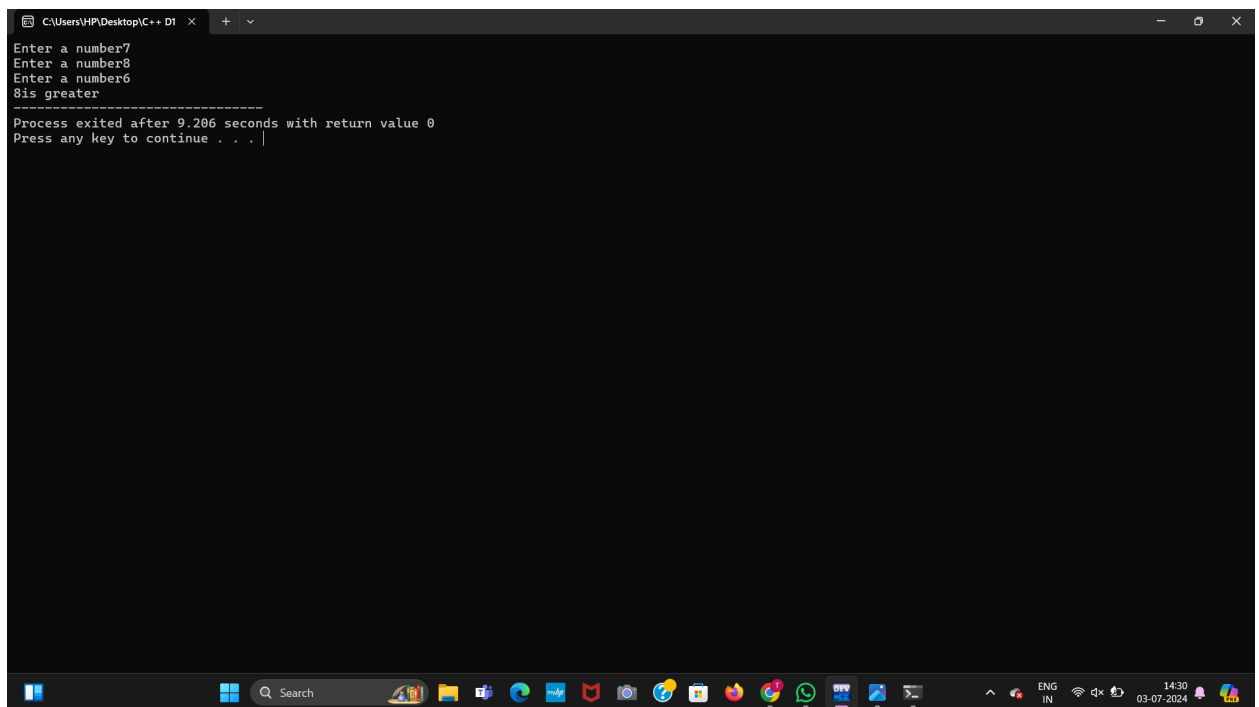
```



```
cin>>num3;
if(num1>=num2 && num1>=num3){
    cout<<num1<<"is greater"<<" ";

}
else if(num2>=num3 && num2>=num3){
    cout<<num2<<"is greater"<<" ";
}
else{
    cout<<num3<<"is greater"<<" ";
}
return 0;
}
```

Output:



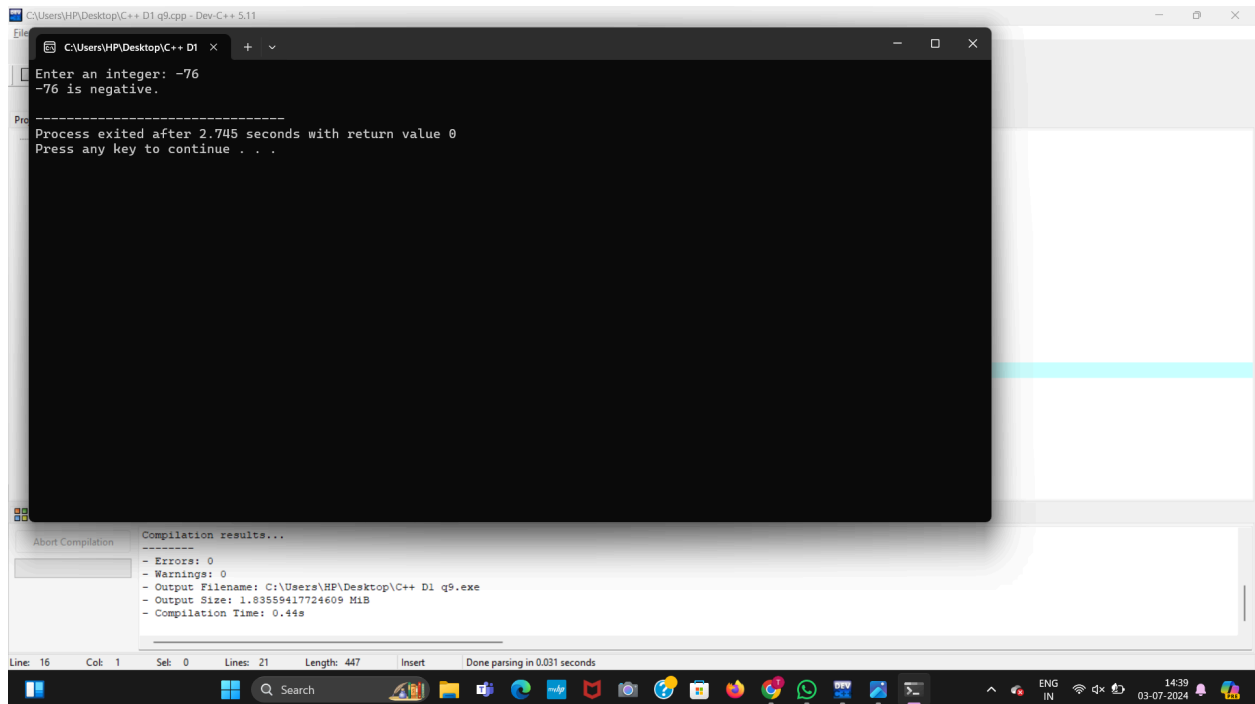
The screenshot shows a Windows command prompt window titled "C:\Users\HP\Desktop\C++ D1". The program prompts the user to enter three numbers: 7, 8, and 6. It then outputs "8is greater" followed by a line of dashes. The process exits after 9.286 seconds with a return value of 0. The Windows taskbar at the bottom shows the time as 14:30 on 03-07-2024.

```
C:\Users\HP\Desktop\C++ D1 >
Enter a number7
Enter a number8
Enter a number6
8is greater
-----
Process exited after 9.286 seconds with return value 0
Press any key to continue . . .
```

9. C++ Program to read a floating-number and round it to the nearest integer using the floor and ceil functions.

```
#include <iostream>
#include <math>
using namespace std;
int main() {
    float number;
    cout << "Enter a floating-point number: ";
    cin >> number;
    int roundedNumber;
    if (number >= 0) {
        roundedNumber = floor(number + 0.5);
    } else {
        roundedNumber = ceil(number - 0.5);
    }
    cout << "The rounded number is: " << roundedNumber << endl;
    return 0;
}
```

Output:



The screenshot shows the Dev-C++ IDE with a C++ program running. The program prompts the user to enter a floating-point number. The user has entered -76. The program output shows that -76 is negative and that the process exited after 2.745 seconds with a return value of 0. The compilation results panel at the bottom shows 0 errors and 0 warnings, with the output filename being C:\Users\HP\Desktop\C++ D1 q9.exe.

```
Enter an integer: -76
-76 is negative.

Process exited after 2.745 seconds with return value 0
Press any key to continue . . .

Compilation results...
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\HP\Desktop\C++ D1 q9.exe
- Output Size: 1.83559417724609 MiB
- Compilation Time: 0.44s
```

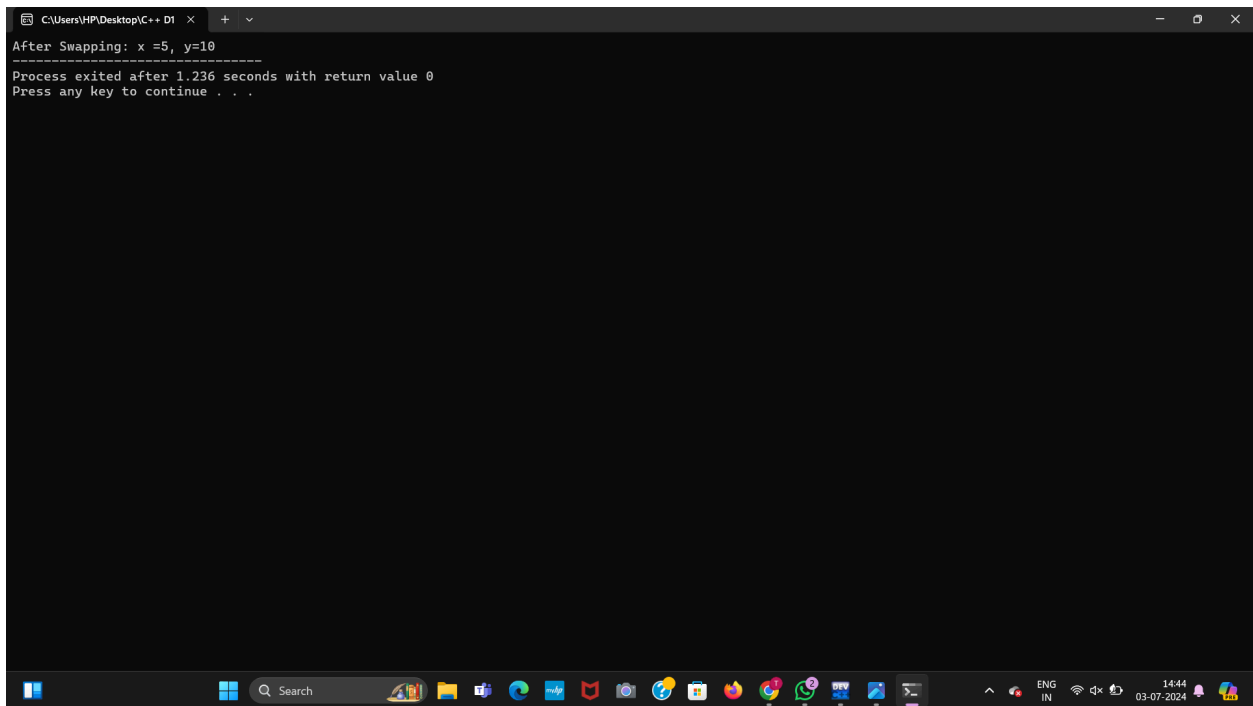
10. Program to swap two numbers using bitwise XOR operator

```
#include <bits/stdc++.h>
using namespace std;

int main()
{
    int x = 10, y = 5;

    x = x + y;
    y = x - y;
    x = x - y;
    cout << "After Swapping: \nx =" << x << "\ny=" << y;
}
```

Output:



```
C:\Users\HP\Desktop\C++ DI
After Swapping: x =5, y=10
-----
Process exited after 1.236 seconds with return value 0
Press any key to continue . . .
```