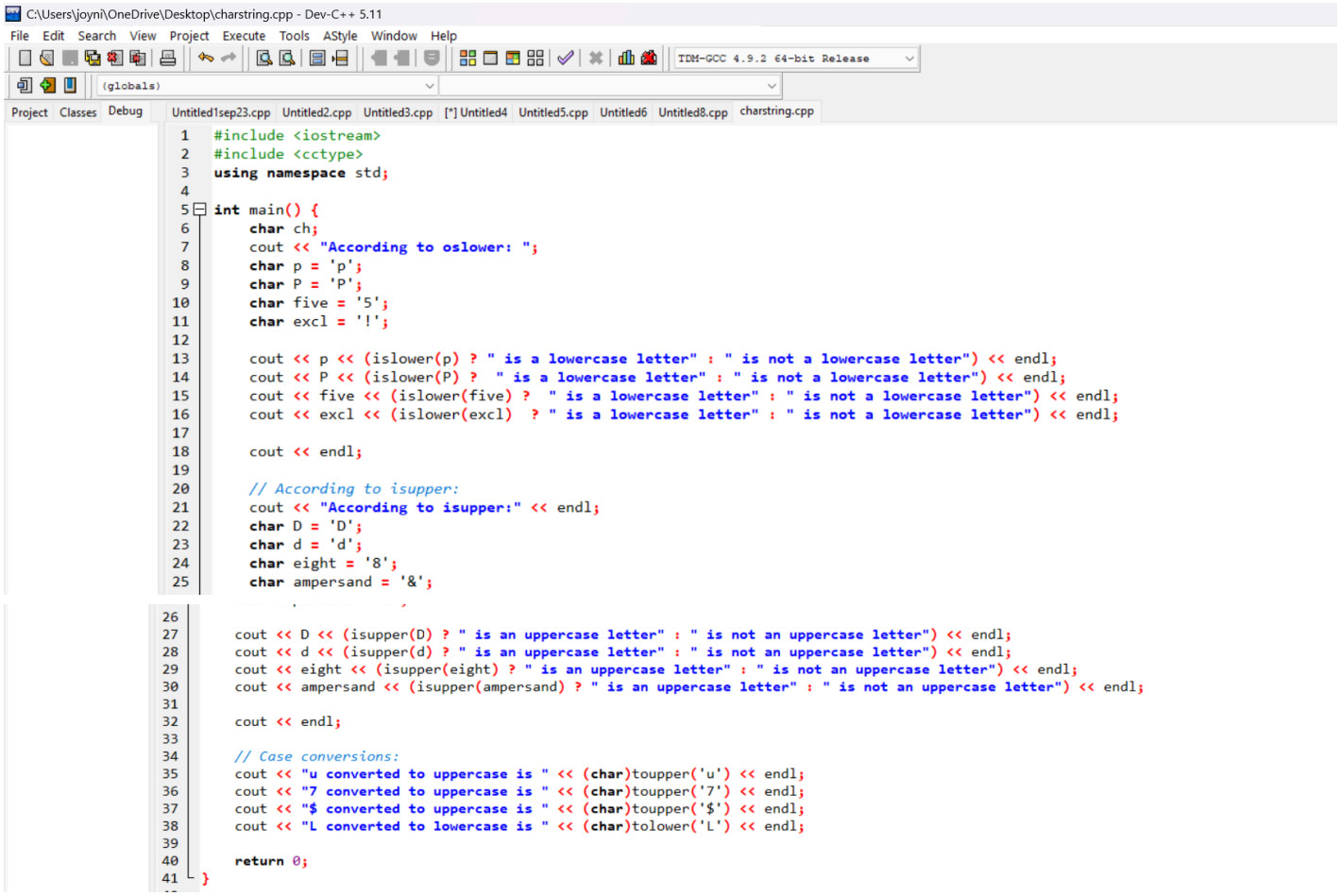
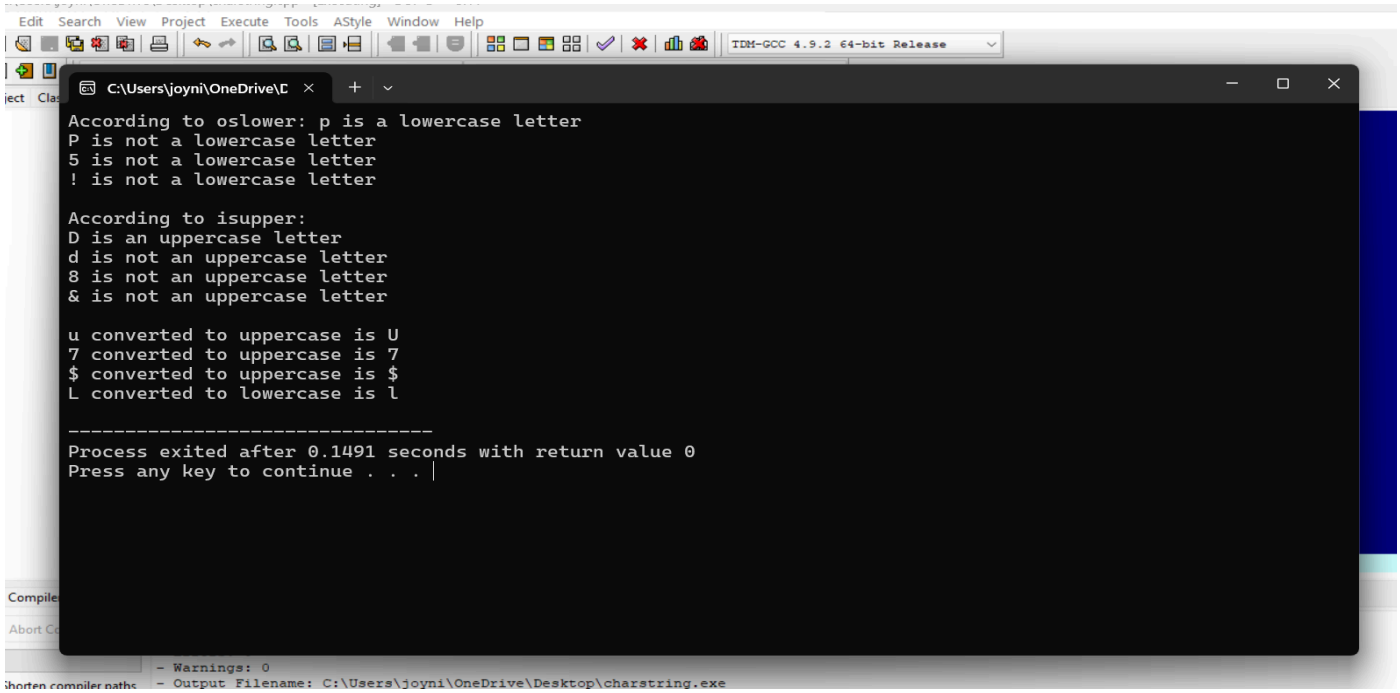
Activity No. n4.4	
Replace with Title	
Course Code: CPE007	**Program:** Computer Engineering
Course Title: Programming Logic and Design	**Date Performed: 09/23/25**
Section: CPE11S1	**Date Submitted:09/25/25**
Name(s): Cenndy M.Nieles	**Instructor: Engr. Jimlord M. Quejado**

6. Output

INPUT:



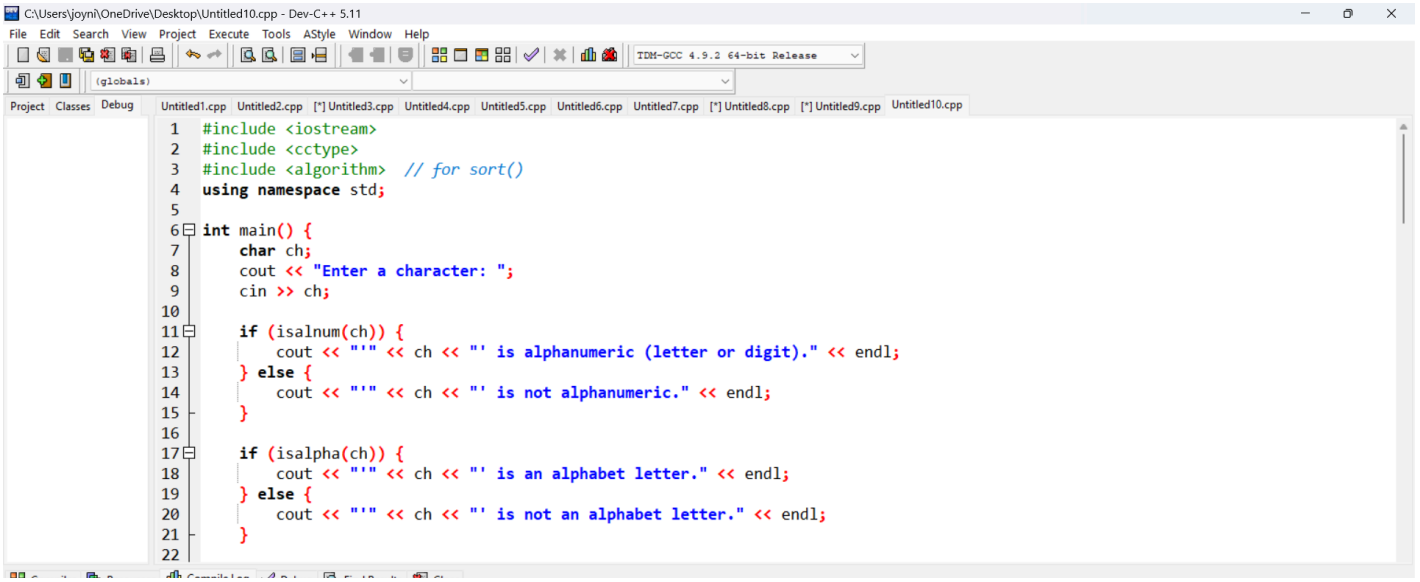
OUTPUT:

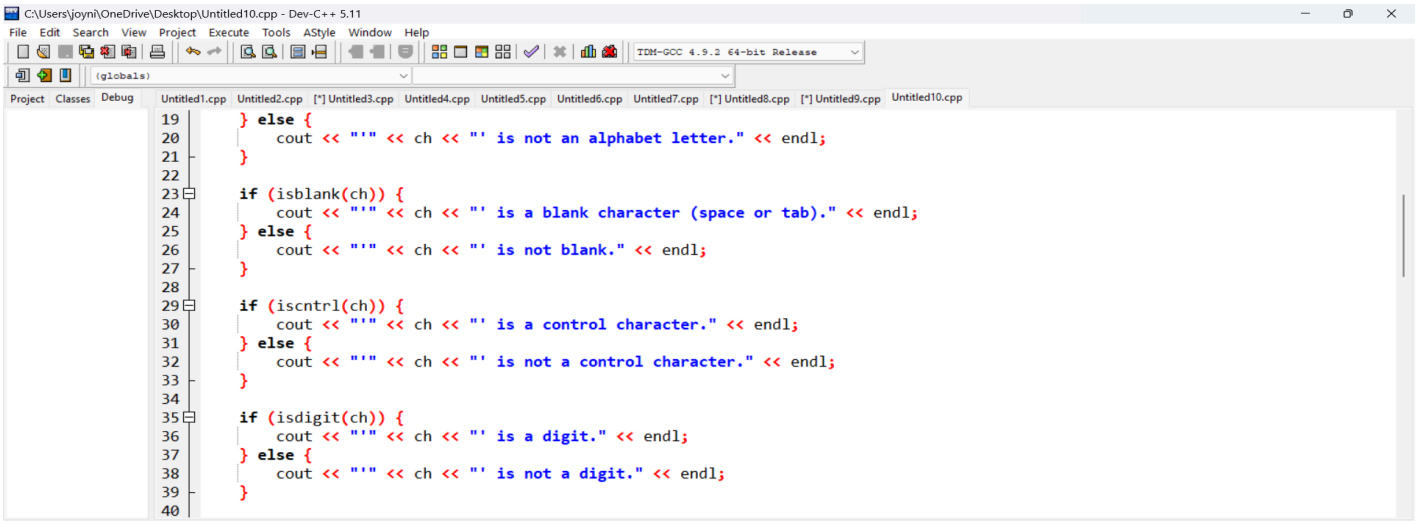


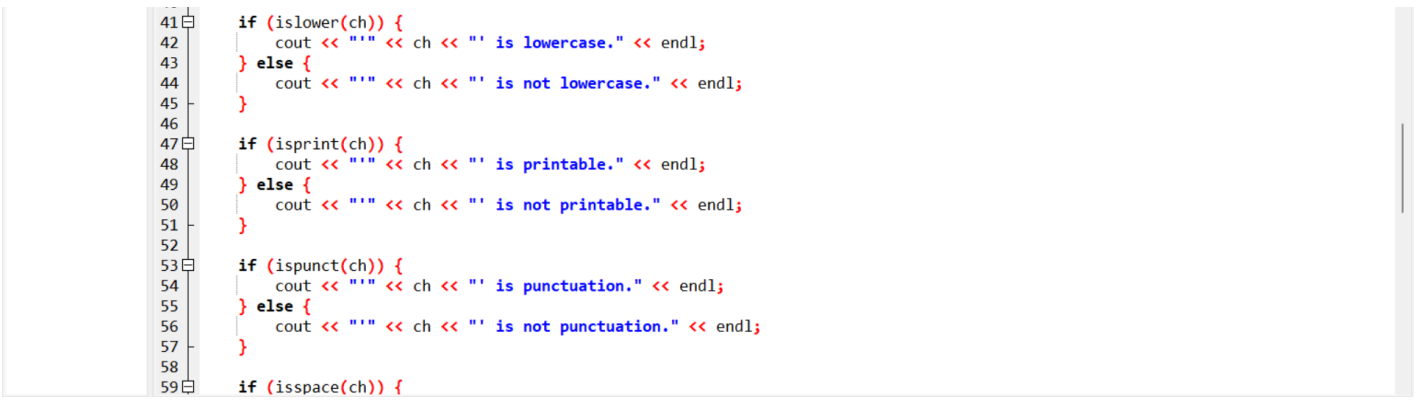
EXPLANATION: Four char variables are declared: p, P, five, and excl. They are initialized with a special character, a digit, an uppercase letter, and a lowercase letter, respectively.
Each character is printed using cout, along with a message indicating whether or not islower() returns true (a lowercase letter) or false (a non-lowercase letter). Do you employ the ternary operator condition? value_if_true: value_if_false to select the relevant message according to the islower() result.supper testsYou declare four char variables (D, d, eight, and ampersand) and use cout and the ternary operator to print whether isupper() returns true or false for each character. This is similar to the islower tests.Conversions of Cases.To convert the letter "u" to uppercase, use the toupper() function. Toupper() will return 'U' because 'u' is a lowercase letter. Prior to printing, the outcome is cast to char.You apply toupper() to the character '7'. Toupper() will return '7' unaltered because it is not a lowercase letter.You apply toupper() to the character "." Toupper() will return '$' unaltered because " is not a lowercase letter. You use tolower() to convert the character 'L' to lowercase. Tolower() will return 'l' since 'L' is an uppercase letter. Prior to printing, the outcome is cast to char.

7. Supplementary Activity

INPUT:

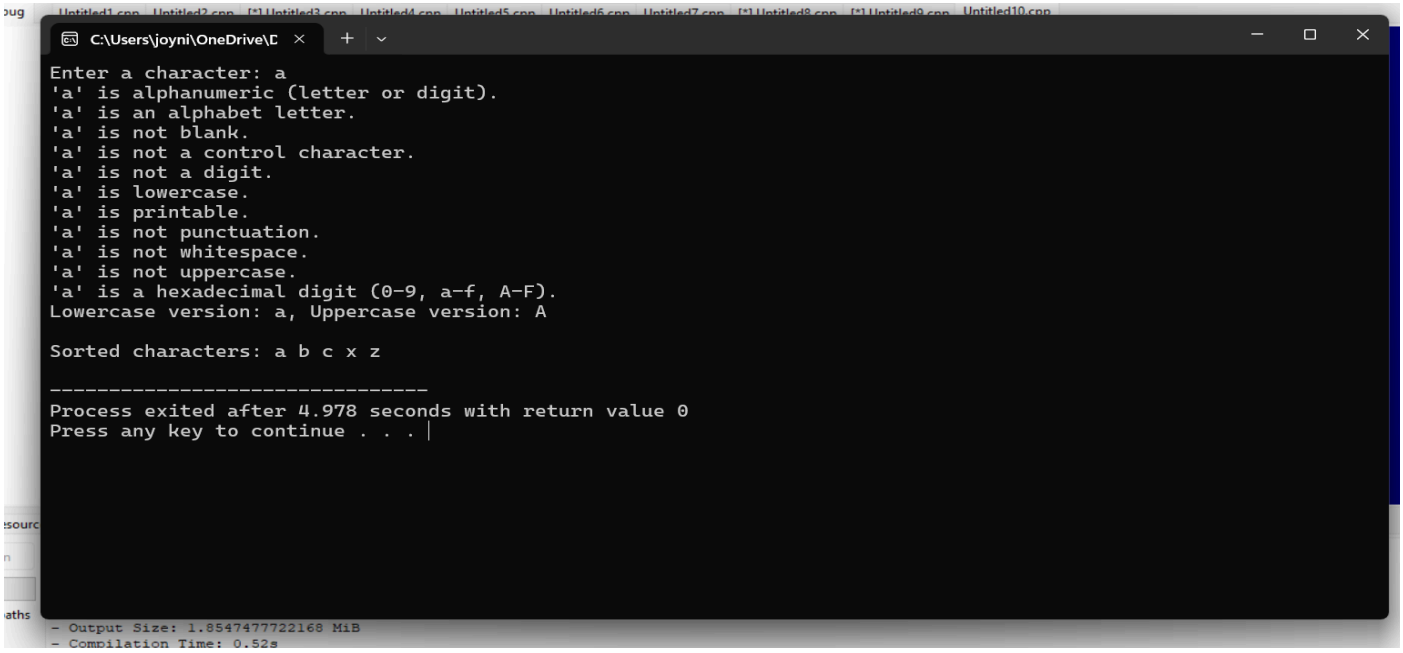

C:\Users\joyni\OneDrive\Desktop\Untitled10.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Untitled1.cpp Untitled2.cpp [*] Untitled3.cpp Untitled4.cpp Untitled5.cpp Untitled6.cpp Untitled7.cpp [*] Untitled8.cpp [*] Untitled9.cpp Untitled10.cpp
#include <iostream>
#include <cctype>
#include <algorithm> // for sort()
using namespace std;
int main() {
char ch;
cout << "Enter a character: ";
cin >> ch;
if (isalnum(ch)) {
cout << "'" << ch << "' is alphanumeric (letter or digit)." << endl;
} else {
cout << "'" << ch << "' is not alphanumeric." << endl;
}
if (isalpha(ch)) {
cout << "'" << ch << "' is an alphabet letter." << endl;
} else {
cout << "'" << ch << "' is not an alphabet letter." << endl;
}


C:\Users\joyni\OneDrive\Desktop\Untitled10.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
Untitled1.cpp Untitled2.cpp [*] Untitled3.cpp Untitled4.cpp Untitled5.cpp Untitled6.cpp Untitled7.cpp [*] Untitled8.cpp [*] Untitled9.cpp Untitled10.cpp
} else {
cout << "'" << ch << "' is not an alphabet letter." << endl;
}
if (isblank(ch)) {
cout << "'" << ch << "' is a blank character (space or tab)." << endl;
} else {
cout << "'" << ch << "' is not blank." << endl;
}
if (iscntrl(ch)) {
cout << "'" << ch << "' is a control character." << endl;
} else {
cout << "'" << ch << "' is not a control character." << endl;
}
if (isdigit(ch)) {
cout << "'" << ch << "' is a digit." << endl;
} else {
cout << "'" << ch << "' is not a digit." << endl;
}


if (islower(ch)) {
cout << "'" << ch << "' is lowercase." << endl;
} else {
cout << "'" << ch << "' is not lowercase." << endl;
}
if (isprint(ch)) {
cout << "'" << ch << "' is printable." << endl;
} else {
cout << "'" << ch << "' is not printable." << endl;
}
if (ispunct(ch)) {
cout << "'" << ch << "' is punctuation." << endl;
} else {
cout << "'" << ch << "' is not punctuation." << endl;
}
if (isspace(ch)) {

```
        cout << "'" << ch << "' is whitespace." << endl;
    } else {
        cout << "'" << ch << "' is not whitespace." << endl;
    }

    if (isupper(ch)) {
        cout << "'" << ch << "' is uppercase." << endl;
    } else {
        cout << "'" << ch << "' is not uppercase." << endl;
    }

    if (isxdigit(ch)) {
        cout << "'" << ch << "' is a hexadecimal digit (0-9, a-f, A-F)." << endl;
    } else {
        cout << "'" << ch << "' is not a hexadecimal digit." << endl;
    }

    if (isalpha(ch)) {
        cout << "Lowercase version: " << (char)tolower(ch)
             << ", Uppercase version: " << (char)toupper(ch) << endl;
    } else {
        cout << "Case conversion does not apply (not a letter)." << endl;
    }

    // Sorting array of characters
    char arr[] = {'z', 'a', 'c', 'x', 'b'};
    int n = sizeof(arr) / sizeof(arr[0]);

    sort(arr, arr + n);
    cout << "\nSorted characters: ";
    for (int i = 0; i < n; i++) {
        cout << arr[i] << " ";
    }
    cout << endl;

    return 0;
}
```

OUTPUT:



EXPLANATION:

Utilizing the library. After receiving a single character from the user, it performs a number of checks to identify the character type. It determines whether the character is a digit, a lowercase letter, a printable character, a punctuation symbol, a whitespace character, an uppercase letter, a hexadecimal digit, an alphabetic character, a blank space or tab, a control character, or an alphanumeric (letter or number).If the character is a letter, the program displays both its lowercase and uppercase versions after classifying it. Lastly, the program sorts a small array of characters ({'z','a','c','x','b'}) and prints them in alphabetical order to show how to use the sort() function from .

To put it briefly, this application teaches you how to use C++'s character classification, case conversion, and basic sorting functions.

main.cpp

Share Run

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

int main() {
     string str1, str2, str3, str4;
     int sum = 0;


    cout << "Enter the first integer string: ";
    cin >> str1;
    cout << "Enter the second integer string: ";
    cin >> str2;
    cout << "Enter the third integer string: ";
    cin >> str3;
    cout << "Enter the fourth integer string: ";
    cin >> str4;

    sum = stoi(str1) + stoi(str2) + stoi(str3) + stoi(str4);

    cout << "The total sum of the four values is: " << sum << endl;

     return 0;
}
```

OUTPUT:

Output Clear

```
Enter the first integer string: 1
Enter the second integer string: 2
Enter the third integer string: 3
Enter the fourth integer string: 4
The total sum of the four values is: 10


=== Code Execution Successful ===
```

OUTPUT:

C++ program that takes four numbers as input from the user, but instead of reading them as integers directly, it first stores them as strings. It then uses the stoi()function to convert each string into an integer. After converting all four strings, the program adds them together and stores the result in a variable called sum. Finally, it displays the total sum to the user on the screen. In short, your program demonstrates how to take string inputs, convert them into integers, perform arithmetic operations, and output the result.

8. Conclusion

Programmers can determine whether a character in C++ is a letter, digit, space, punctuation, or another specific type by using a range of functions from the library. Characters can be easily categorized and processed using these functions without requiring a manual comparison to ASCII values. Additionally, toupper() and tolower() allow characters to be changed from uppercase to lowercase, which is useful for case-insensitive comparisons or text formatting. Sorting characters enables us to place them in a particular order, typically determined by their ASCII values. Sorting tasks like alphabetical sorting is made simple by the sort() function from , which allows us to easily arrange characters in ascending order. Character sorting and classification work together to offer strong tools for effectively managing and arranging textual data in C++.