Unformatted input/output operations In C++

In this article, we will discuss the unformatted Input/Output operations In C++. Using objects **cin** and **cout** for the input and the output of data of various types is possible because of overloading of operator **>>** and **<<** to recognize all the basic C++ types. The operator **>>** is overloaded in the **istream class** and operator **<<** is overloaded in the ostream class.
The general format for reading data from the keyboard:

cin >> var1 >> var2 >> .... >> var_n;

- Here, $\mathbf{var_1}$, $\mathbf{var_2}$, ……, $\mathbf{var_n}$ are the variable names that are declared already.
- The input data must be separated by white space characters and the data type of user input must be similar to the data types of the variables which are declared in the program.
- The **operator >>** reads the data character by character and assigns it to the indicated location.
- Reading of variables terminates when white space occurs or character type occurs that does not match the destination type.

Program 1:

- C++

```
// C++ program to illustrate the
// input and output of the data
// entered by user
#include <iostream>
using namespace std;

// Driver Code
int main()
{
    int data;
    char val;

    // Input the data
    cin >> data;
    cin >> val;

    // Print the data
    cout << data << "    " << val;

    return 0;
}
```

Output:

```
harshit@harshit-Latitude-3410:~$ g++ -o output inputFormat.cpp
harshit@harshit-Latitude-3410:~$ ./output
Enter the data: 1234D
1234    D
harshit@harshit-Latitude-3410:~$
```

Explanation: In the above program, **123** is stored in the variable **val** of integer, and **B** is passed to the next **cin object** and stored in the data variable of character.

put() and get() functions:

The class **istream** and **ostream** have predefined functions get() and put(), to handle single character input and output operations. The function **get()** can be used in two ways, such as **get(char*)** and **get(void)** to fetch characters including blank spaces, newline characters, and tab. The function **get(char*)** assigns the value to a variable and **get(void)** to return the value of the character.

Syntax:

char data;

// get() return the character value and assign to data variable
data = cin.get();

// Display the value stored in data variable
cout.put(data);

Example:

char c;

// directly assign value to c
cin.get(c);

// Display the value stored in c variable
cout.put()

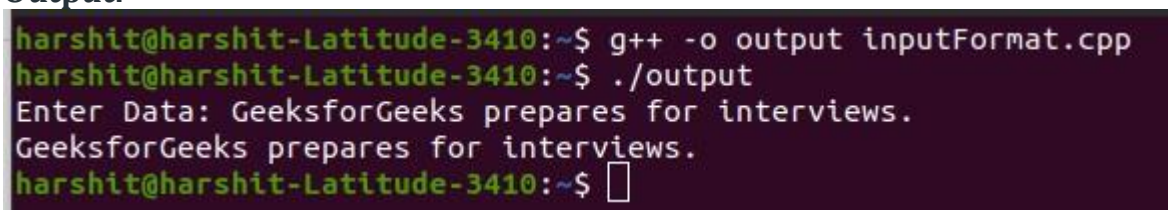
Program 2:

- C++

```cpp
// C++ program to illustrate the
// input and output of data using
// get() and puts()
#include <iostream>
using namespace std;

// Driver Code
int main()
{
    char data;
    int count = 0;
```

```
    cout << "Enter Data: ";

    // Get the data
    cin.get(data);

    while (data != '\n') {
        // Print the data
        cout.put(data);
        count++;

        // Get the data again
        cin.get(data);
    }

    return 0;
}
```

Output:



getline() and write() functions:

In C++, the function getline() and write() provide a more efficient way to handle line-oriented inputs and outputs. **getline()** function reads the complete line of text that ends with the new line character. This function can be invoked using the **cin object**.

Syntax:

cin.getline(variable_to_store_line, size);

The reading is terminated by the **'\n' (newline) character**. The new character is read by the function, but it does not display it, instead, it is replaced with a NULL character. After reading a particular string the **cin** automatically adds the newline character at end of the string.

The **write() function** displays the entire line in one go and its syntax is similar to the getline() function only that here **cout object** is used to invoke it.

Syntax:

cout.write(variable_to_store_line, size);

The key point to remember is that the **write() function** does not stop displaying the string automatically when a **NULL character** occurs. If the size is greater than the length of the line then, the **write() function** displays beyond the bound of the line.

Program 3:

- C++

```cpp
// C++ program to illustrate the
// input and output of file using
// getline() and write() function
#include <iostream>
#include <string>
using namespace std;

// Driver Code
int main()
{
    char line[100];

    // Get the input
    cin.getline(line, 10);

    // Print the data
    cout.write(line, 5);
    cout << endl;

    // Print the data
    cout.write(line, 20);

    cout << endl;

    return 0;
}
```