

Control Statements and Loops in C Plus Plus

Module 3 - Jump Statements in C Plus Plus

Jump statements in C++ alter the flow of program execution. These are used to:

1. Exit or skip parts of a program when certain conditions are met.
2. Control loops or terminate the execution of functions.

Types of Jump Statements in C++

In C++, there is four jump statement

1. break
2. continue
3. goto
4. return

Continue in C++

The C++ continue statement is used to execute other parts of the loop while skipping some parts declared inside the condition, rather than terminating the loop, it continues to execute the next iteration of the same loop. It is used with a decision-making statement which must be present inside the loop. This statement can be used inside for loop or while or do-while loop.

Example of continue Statement

Consider a scenario where all the numbers between 1 and 10 except number 5. So in this case, the idea is to use the continue statement after the value of i is 5.

Return in C++

The return statement takes control out of the function itself. It is stronger than a break. It is used to terminate the entire function after the execution of the function or after some condition.

Every function has a return statement with some returning value except the void() function. Although void() function can also have the return statement to end the execution of the function.

Break in C++

The C++ break statement is used to terminate the whole loop if the condition is met. Unlike the continue statement after the condition is met, it breaks the loop and the remaining part of the loop is not executed.

The break statement is used with decision-making statements such as if, if-else, or switch statement which is inside the for loop which can be for loop, while loop, or do-while loop. It forces the loop to stop the execution of the further iteration.

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**Introduction to 'C++' Language**

**Example of break Statement**

Consider a scenario where the series of a number is to be printed but not after a certain value K. So in this case, the idea is to use the **break statement** after the value of i is K.

**Goto statement in C++**

The C++ goto statement is used to jump directly to that part of the program to which it is being called. Every goto statement is associated with the label which takes them to part of the program for which they are called. The label statements can be written anywhere in the program it is **not necessary** to use them before or after the **goto** statement.

**Syntax**

```
goto label_name;
.
.
.
label_name:
```

**Summary Table**

Jump Statement	Purpose	Used In
break	Exits a loop or switch immediately	Loops, switch statements
continue	Skips to the next iteration of the loop	Loops
goto	Transfers control to a labeled statement	Anywhere in the program
return	Exits a function and returns a value	Functions

**Assignment**

Ques 1: Write a program that accepts 10 integers from the user and stops taking input when the number 0 is entered using a break statement.

Ques 2: Write a program that prints all numbers between 1 and 20 except multiples of 5, using the continue statement.

Ques 3: Write a program that takes input from the user and uses the goto statement to jump back to the input prompt if the user enters a negative number.

Ques 4: Write a program that asks the user for their name in a loop. If they enter "STOP," exit the loop using break. If the input is empty, skip to the next iteration using continue.