



Adapted from C++ Tutorial at <http://www.cplusplus.com/doc/tutorial/control/>
and C++ How To Program edited for our own purposes

Iteration Statements – while loop

The simplest kind of loop is the while-loop. Its syntax is:

```
while ( condition ) { statement }
```

The while-loop simply repeats statement while expression is true. If, after any execution of statement, expression is no longer true, the loop ends, and the program continues right after the loop.

```
1  // countdown timer using while loops
2
3  #include <iostream>
4  using namespace std;
5
6  int main()
7  {
8      int countDown;
9
10     cout << "Enter a positive value: ";
11     cin >> countDown;
12
13     while ( countDown >= 0 )
14     {
15         cout << countDown << ", ";
16         countDown--;
17     }
18
19 }
```

A thing to consider with while-loops is that the loop should end at some point, and thus the statement shall alter values checked in the condition in some way, so as to force it to become false at some point. Otherwise, the loop will continue looping forever. In this case, the loop includes *countdown--*, that decreases the value of the variable that is being evaluated in the condition (*countdown*) by one - this will eventually make the condition (*countdown >= 0*) false after a certain number of loop iterations. To be more specific, after 10 iterations, *countdown* becomes 0, making the condition no longer true, and ending the while-loop.