**Declaration of variables.**

C++ is a strongly-typed language, and requires every variable to be *declared* with its type before its first use. This informs the compiler the size to reserve in memory for the variable and how to interpret its value. The syntax to declare a new variable in C++ is straightforward: we simply write the type followed by the variable name (i.e., its identifier). For example:

|  |  |  |
| --- | --- | --- |
| 1 2 | int a;  float mynumber; |  |

These are two valid declarations of variables. The first one declares a variable of type *int* with the identifier *a*. The second one declares a variable of type *float* with the identifier *mynumber*. Once declared, the variables *a* and *mynumber* can be used within the rest of their scope in the program.

If declaring more than one variable of the same type, they can all be declared in a single statement by separating their identifiers with commas. For example:

|  |  |  |
| --- | --- | --- |
|  | int a, b, c; |  |

This declares three variables (a, b and c), all of them of type int, and has exactly the same meaning as:

|  |  |  |
| --- | --- | --- |
| 1 2 3 | int a;  int b;  int c; |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 | // operating with variables  #include <iostream>  using namespace std;  int main ()  {  // declaring variables:  int a, b;  int result;  // process:  a = 5;  b = 2;  a = a + 1;  result = a - b;  // print out the result:  cout << result;  // terminate the program:  return 0;  } | 4 | [Edit & Run](https://cplusplus.com/doc/tutorial/variables/) |

To see what variable declarations, look like in action within a program, let's have a look at the entire C++ code of the example about your mental memory proposed at the beginning of this chapter:

Don't be worried if something else than the variable declarations themselves look a bit strange to you. Most of it will be explained in more detail in coming chapters.