**Basic Input/Output.**

The example programs of the previous sections provided little interaction with the user, if any at all. They simply printed simple values on screen, but the standard library provides many additional ways to interact with the user via its input/output features. This section will present a short introduction to some of the most useful.

C++ uses a convenient abstraction called *streams* to perform input and output operations in sequential media such as the screen, the keyboard or a file. A *stream* is an entity where a program can either insert or extract characters to/from. There is no need to know details about the media associated to the stream or any of its internal specifications. All we need to know is that streams are a source/destination of characters, and that these characters are provided/accepted sequentially (i.e., one after another).

The standard library defines a handful of stream objects that can be used to access what are considered the standard sources and destinations of characters by the environment where the program runs:

|  |  |
| --- | --- |
| **stream** | **description** |
| cin | standard input stream |
| cout | standard output stream |
| cerr | standard error (output) stream |
| clog | standard logging (output) stream |

We are going to see in more detail only *cout* and *cin* (the standard output and input streams); *cerr* and *clog* are also output streams, so they essentially work like *cout*, with the only difference being that they identify streams for specific purposes: error messages and logging; which, in many cases, in most environment setups, they actually do the exact same thing: they print on screen, although they can also be individually redirected.