

Identifiers & Constants

Names used for variables, functions, types, constants, classes, and so on are called **identifiers**. Here are the language **syntax rules** for identifiers:

- A name must consist of letters, digits or the underscore.
- A name must **start with** a letter or a **single** underscore, not a number.
- Names are **case-sensitive**. The name **ABC** is not the same as the name **abc**.
- A name **cannot** be one of the [reserved keywords](#). While you **can** use names of library types (such as **string** or **vector** or **cout**) as identifiers, doing so **is just asking for trouble**; you should treat them the same as the built-in keywords.
- Only identifiers in the **standard library** may start with **two** underscores or an underscore followed by a capital (`__bob` and `_Bob` are **illegal** in user code). (The compiler can't enforce this rule, since it can't know if you are implementing part of the standard library.)

Here are the **naming conventions** we'll use in CS 150.

- Begin variables and functions with a lowercase letter: **limit** or **run()**.
- If a name consists of several words, you may use either of these:
 1. Capitalize the first letter of each word. This is known as **camelCase** and is widely used in Java.
 2. Use lowercase and underscore separators (**get_line**). This is known as **snake_case** is common in C and Python.
- Classes and other user-defined data types should begin with an uppercase letter, as in **Alien** or **Point3D**.

Constants

Values which appear literally in a calculation are called **magic numbers**. Your code will be much more reliable and much easier to maintain, if you **replace** all magic numbers with **named constants**, similar to this:

```
const double kLocalTaxRate = .00175;
```

While you may write named constants entirely in uppercase, (**PI** or **HALF_DOLLAR**), in C++ all-caps usually indicates the presence of a preprocessor **MACRO**, [which is discouraged](#). Instead, you may want to follow the [Google style guide](#) and start with a **k** (such as **kPi**).



This course content is offered under a [CC Attribution Non-Commercial](#) license. Content in this course can be considered under this license unless otherwise noted.