

# Predefined Symbols

There are several **predefined symbols** which your toolchain supplies, and which you can use in conditional compilation, like this example from StackOverflow, which tests for compiling on different platforms:

```
#ifdef _WIN32
    //define something for Windows (32-bit)
#elif __APPLE__
    // define something for OSX
#elif __linux
    // linux
#endif
```

These predefined symbols include those that are standard on every version of C++ and those that are common to GCC on every platform. There are also platform-specific symbols for other toolchains (such as the operating system). You can get a list of those by running **cpp -dM** from the shell.

For this problem, we care about is a **particular version of** C++. In the list of predefined standard constants, you'll see that **\_\_cplusplus** (double leading underscores) contains version numbers for each release of C++. You can use that to bracket your own versions of the **stoi()** and **stod()** functions.

Go back to your test program and use this facility to define the functions **only** if the symbol **\_\_cplusplus** is **<= 199711L**. Now you can compile and run with C++98 and with C++11/14/17/20 using the same source.

To implement the functions, just use code like this:

```
function stoi <- input str -> output int
    set result to 0
    construct an input string stream using str
    read from str into result
    return result
```

The **stod()** function will be identical, except **result** will be **double** instead of **int**.



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