

Templates

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1 Introduction to Templates

A **template** is a *very* powerful tool in C++. The basic idea is to use datatypes as parameters and have the compiler generate the relevant code for us. For example, you may want to write a function `sort()` that works for different datatypes. Rather than writing and maintaining multiple `sort()` functions, we can write a single `sort()` **template** and pass the datatype as a parameter.

1.1 How Do Templates Work?

Templates are expanded at compile time similar to macros. The difference is that the compiler does type checking before template expansion.

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