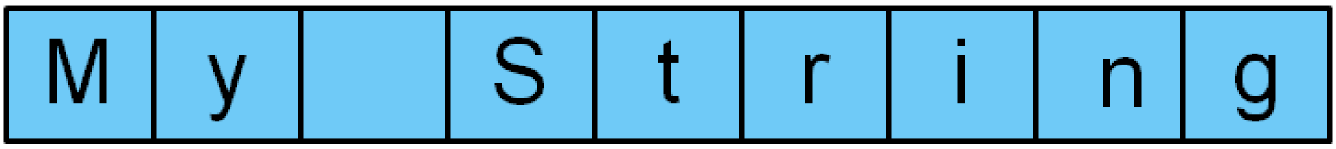
Introduction

In this chapter, we'll explore one of the most prominent classes in C++: Strings.
Let's begin!

A string is a sequence of characters. C++ has many methods to analyze or to change a string. C++ strings are the safe replacement for C Strings: `const char*`. Strings need the header `<string>`.



i A string is very similar to an std::vector

A string is similar to an `std::vector` containing characters. It supports a very similar interface. This means that in addition to the methods of the string class, we can access the algorithms of the Standard Template Library to work with the string.

The following code snippet has the variable `std::string name` with the value `RainerGrimm`. We have used the STL algorithm `std::find_if` to get the upper letter and then extract my first and last name into the variables `firstName` and `lastName`. The expression `name.begin()+1` shows that strings support random access iterators:

```
//string versus vector
...
#include <algorithm>
#include <string>

std::string name{"RainerGrimm"};
auto strIt= std::find_if(name.begin()+1, name.end(),
                         [](char c){ return std::isupper(c); });
if (strIt != name.end()){
```

```
if (strIt != name.end()){
  firstName= std::string(name.begin(), strIt);

  lastName= std::string(strIt, name.end());
}
```

Strings are class templates parametrized by their character, their character trait and their allocator. The character trait and the allocator have defaults.

```
template <typename charT, typename traits= char_traits<charT>, typename Allocator= allocator<
class basic_string;
```

C++ has synonyms for the character types `char`, `wchar_t`, `char16_t`, and `char32_t`.

```
typedef basic_string<char> string;
typedef basic_string<wchar_t> wstring;
typedef basic_string<char16_t> u16string;
typedef basic_string<char32_t> u32string;
```

i std::string is the string
When speaking about strings in C++, we refer with 99% probability to the specialization `std::basic_string` for the character type `char`. This statement is also true for this course.

In the next lesson, we'll discuss how to create and delete strings.