

Example: String Split

Here, we'll determine whether `string_view` can be used for splitting a string into several view objects.

`string_view` might be a potential optimization for string splitting. If you own a large persistent string, you might want to create a list of `string_view` objects that maps words of that larger string.

Note: The code is inspired by the article by [Marco Arena - string_view odi et amo1](#).

```
#include <iostream>
#include <string>
#include <vector>
#include <algorithm>
using namespace std;

std::vector<std::string_view>
splitSV(std::string_view strv, std::string_view delims = " ")
{
    std::vector<std::string_view> output; auto first = strv.begin();
    while (first != strv.end()) {
        const auto second = std::find_first_of( first, std::end(strv),
                                                std::cbegin(delims), std::cend(delims));

        if (first != second) {
            output.emplace_back(strv.substr(std::distance(strv.begin(), first), std::distance(first,
            }

        if (second == strv.end())
            break;
        first = std::next(second);
    }
    return output;
}

int main() {
    const std::string str {
        "Hello Extra,,, Super, Amazing World"
    };
    for (const auto& word : splitSV(str, " ,"))
        std::cout << word << '\n';
}
```

The algorithm iterates over the input `string_view` and finds breaks - characters that match the delimiter list. Then the code extracts part of that sequence - between the last and the new break. The sub-view is stored in the output vector.

Some notes regarding the implementation:

- The `string_view` version of the algorithm assumes the input string is persistent and not a temporary object. Be careful with the returned `vector` of `string_view` as it also points to the input string.
- The instruction `if (first != second)` - protects from adding empty “words”, in a case where there are multiple delimiters next to each other (like double spaces).
- The algorithm uses `std::find_first_of` but it’s also possible to use `string_view::find_first_of`. The member method doesn’t return an iterator, but the position in the string.
- The member method of `string_view` appeared to be slower than the `std::find_first_of` version in some tests when the number of delimiters is small.

If you want to see some experiments regarding the code in this section have a look at: [Performance of std::string_view vs std::string from C++17](#) and [Speeding Up string_view String Split Implementation](#). Those two blog posts describe the benchmark results and add some more possible improvements to the code.

That’s it for `std::string_view`. By now, you must have a better understanding of why this utility is a useful addition to C++. The summary and quiz ahead will help reinforce all the concepts we have learned here.

See you in the next section, where we will tackle `std::search`.