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Optionals in C++

Optionals

Our use case: Soon we're going to implement hash tables in C++. As you'll recall, our hash table may or may not have a value stored at any given index. Then the question becomes -- what to do with empty elements in our vector. One approach is to initialize the elements of our vector with some sentinel value to indicate that we haven't stored anything yet. This is cumbersome, and would complicate our implementation of hash tables.

Instead we will use C++ optionals.

Optionals

What is a C++ optional?

A C++ optional is just a wrapper around a value that can indicate whether or not there is a value or if it's just null (empty). To specify a type as being optional, e.g. `optional<int>` would represent something that could be empty or an `int`. Using C++ optionals for the elements of our hash table will give us a convenient way of handling empty elements.