4.2 — Void

ALEX MAY 24, 2021

Void is the easiest of the data types to explain. Basically, **void** means "no type"!

Consequentially, variables can not be defined with a type of void:

```
void value; // won't work, variables can't be defined with a void type
```

Void is typically used in several different contexts.

Functions that do not return a value

Most commonly, *void* is used to indicate that a function does not return a value:

```
void writeValue(int x) // void here means no return value
{
    std::cout << "The value of x is: " << x << '\n';
    // no return statement, because this function doesn't return a value
}
```

If you use a return statement to try to return a value in such a function, a compile error will result:

```
void noReturn(int x) // void here means no return value
{
    return 5; // error
}
```

On Visual Studio 2017, this produced the error:

```
error C2562: 'noReturn': 'void' function returning a value
```

Deprecated: Functions that do not take parameters

In C, void is used as a way to indicate that a function does not take any parameters:

```
int getValue(void) // void here means no
parameters
{
    int x{};
    std::cin >> x;
    return x;
}
```

Although this will compile in C++ (for backwards compatibility reasons), this use of keyword *void* is considered deprecated in C++. The following code is equivalent, and preferred in C++:

```
int getValue() // empty function parameters is an implicit
void
{
    int x{};
    std::cin >> x;
    return x;
}
```

Best practice

Use an empty parameter list instead of *void* to indicate that a function has no parameters.

Other uses of void

The void keyword has a third (more advanced) use in C++ that we cover in section 10.20 -- Void pointers. Since we haven't covered what a pointer is yet, you don't need to worry about this case for now.

Let's move on!

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