C permits initializers of this kind, provided that the structure we're initializing (`part2`, in this case) has automatic storage duration (it's local to a function and hasn't been declared `static`). The initializer can be any expression of the proper type, including a function call that returns a structure.

automatic storage duration ➤10.1

C99

Compound Literals

Section 9.3 introduced the C99 feature known as the ***compound literal.*** In that section, compound literals were used to create unnamed arrays, usually for the purpose of passing the array to a function. A compound literal can also be used to create a structure "on the fly," without first storing it in a variable. The resulting structure can be passed as a parameter, returned by a function, or assigned to a variable. Let's look at a couple of examples.

First, we can use a compound literal to create a structure that will be passed to a function. For example, we could call the `print_part` function as follows:

```
print_part((struct part) {528, "Disk drive", 10});
```

The compound literal (shown in **bold**) creates a `part` structure containing the members 528, `"Disk drive"`, and 10, in that order. This structure is then passed to `print_part`, which displays it.

Here's how a compound literal might be assigned to a variable:

```
part1 = (struct part) {528, "Disk drive", 10};
```

This statement resembles a declaration containing an initializer, but it's not the same—initializers can appear only in declarations, not in statements such as this one.

In general, a compound literal consists of a type name within parentheses, followed by a set of values enclosed by braces. In the case of a compound literal that represents a structure, the type name can be a structure tag preceded by the word `struct`—as in our examples—or a `typedef` name. A compound literal may contain designators, just like a designated initializer:

```
print_part((struct part) {.on_hand = 10,
                          .name = "Disk drive",
                          .number = 528});
```

A compound literal may fail to provide full initialization, in which case any uninitialized members default to zero.

16.3 Nested Arrays and Structures

Structures and arrays can be combined without restriction. Arrays may have structures as their elements, and structures may contain arrays and structures as members. We've already seen an example of an array nested inside a structure (the