

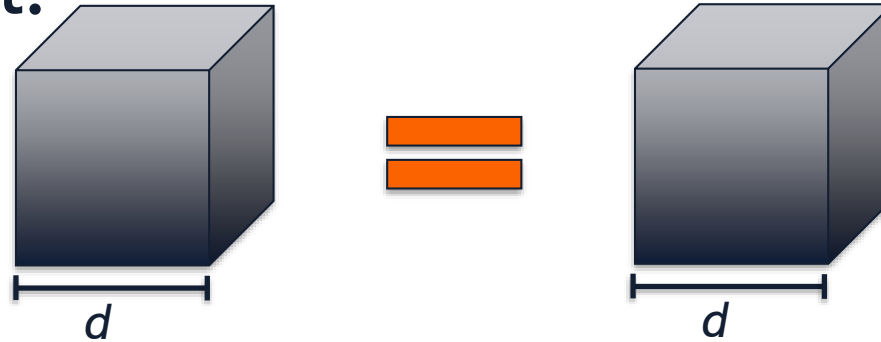
# Copy Assignment Operator

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In C++, a copy assignment operator defines the behavior when an object is copied using the assignment operator **=**.

Object:



# Copy Constructor vs. Assignment

A copy constructor creates a new object (constructor).

An assignment operator assigns a value to an existing object.

- An assignment operator is always called on an object that has already been constructed.

# Automatic Assignment Operator

If an assignment operator is not provided, the C++ compiler provides an automatic assignment operator.

The automatic assignment operator will copy the contents of all member variables.

# Custom Assignment Operator

A custom assignment operator is:

- Is a public member function of the class.
- Has the function name **operator=**.
- Has a return value of a reference of the class' type.
- Has exactly one argument
  - The argument must be **const reference** of the class' type.

Example: **Cube & Cube::operator=(const Cube & obj)**

## cpp-assignmentOp/Cube.cpp

```
10 namespace uiuc {
11     Cube::Cube() {
12         length_ = 1;
13         std::cout << "Default constructor invoked!" << std::endl;
14     }
15
16     Cube::Cube(const Cube & obj) {
17         length_ = obj.length_;
18         std::cout << "Copy constructor invoked!" << std::endl;
19     }
20
21     Cube & Cube::operator=(const Cube & obj) {
22         length_ = obj.length_;
23         std::cout << "Assignment operator invoked!" << std::endl;
24         return *this;
25     }
```

...

## cpp-assignmentOp/main.cpp

```
8  #include "Cube.h"
9  using uiuc::Cube;
10
11 int main() {
12     Cube c;
13     Cube myCube;
14
15     myCube = c;
16
17     return 0;
18 }
```