Topic: Object technology
- Analysis, design, programming, operating systems, databases
- An alternative to modular decomposition in system design
- Encapsulation
- Objects are instances of classes
- Inheritance: class hierarchies

An object has...
- Abstraction and typing: It is an instance of a class
- Encapsulation: It is separate from other objects
- Modularity: Objects may contain other objects
- Hierarchy: Its class may be derived from other classes
- Concurrency: Multiple objects of the same class may exist at the same time
- Persistence: Most objects exist for a duration

A C++ class declaration
```cpp
struct employees
{
    char name[40];
    int salary,
        hours_worked;
    calculate_paycheck();
};
```

Inheritance in C++
```cpp
struct instructors : employees
{
    char office[40];
};
```
- An instructor has all the properties and operations of an employee, plus an office.

Four special kinds of class
- Container (collection): Class whose instances contain instances of another class
- Iterator: Iterator objects scan through collections
- Derived class: Class that inherits from another class
- Base class: Class from which derived classes may inherit

Containment vs. inheritance
- Containment is a relationship between instances of classes
- Inheritance is a relationship between classes
The right mouse button is “object oriented”

- Point to an object (icon, button, window, etc.) and click with right button.
- Operations (methods) are listed on the menu that appears.
- Data members are listed under “properties”. You can change certain properties of an object.

Advantages of object technology

- Natural way to model real-world situations
- Uses familiar concepts
- Increases productivity in application development
- Facilitates code reusability