class
The programs we’ve been writing all semester have been “procedural”

They have centered on the procedures or actions that take place in a program one step at a time

In a procedural program, data is usually passed from one function to another in a logical sequence

This loose coupling of data and procedures is harder to manage as programs get more complex
Object-Oriented Programming

Object-oriented programming is centered on creating objects.

Objects are code blocks that contain both data and procedures.

“Data attributes” are simply variables that reference data.

The procedures an object performs are known as “methods.”

An object’s methods are functions that perform operations on the object’s data attributes.
Object-Oriented Programming

Advantages

OOP addresses code and data separation through “encapsulation” and “data hiding.”

Encapsulation refers to the combination of data and code in a single object.

Data hiding refers to an object’s ability to hide its data attributes from code that is outside the object.

An object typically hides its data, but allows outside code to access its methods.
Before an object is created, it must be designed as a class.

A class is code that specifies the data attributes and methods for a particular type of object.

A class itself is not an object, but a detailed description of a particular type of object.

When a class is used to create an object, it’s referred to as an “instance” of that object.