# CS251L

OBJECT ORIENTED PROGRAMMING

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Object Basics

- An **object** encapsulates **data** *and* **operations** into a single entity

- To create an object we must first declare a **class**

- A class is a "template" or "blueprint" for an object

- In the class we declare

  - **instance variables** – primitive variables of which each object gets its own copy

  - **methods** – operations that the object can "do" (usually utilizing its own instance variables)

Object Basics
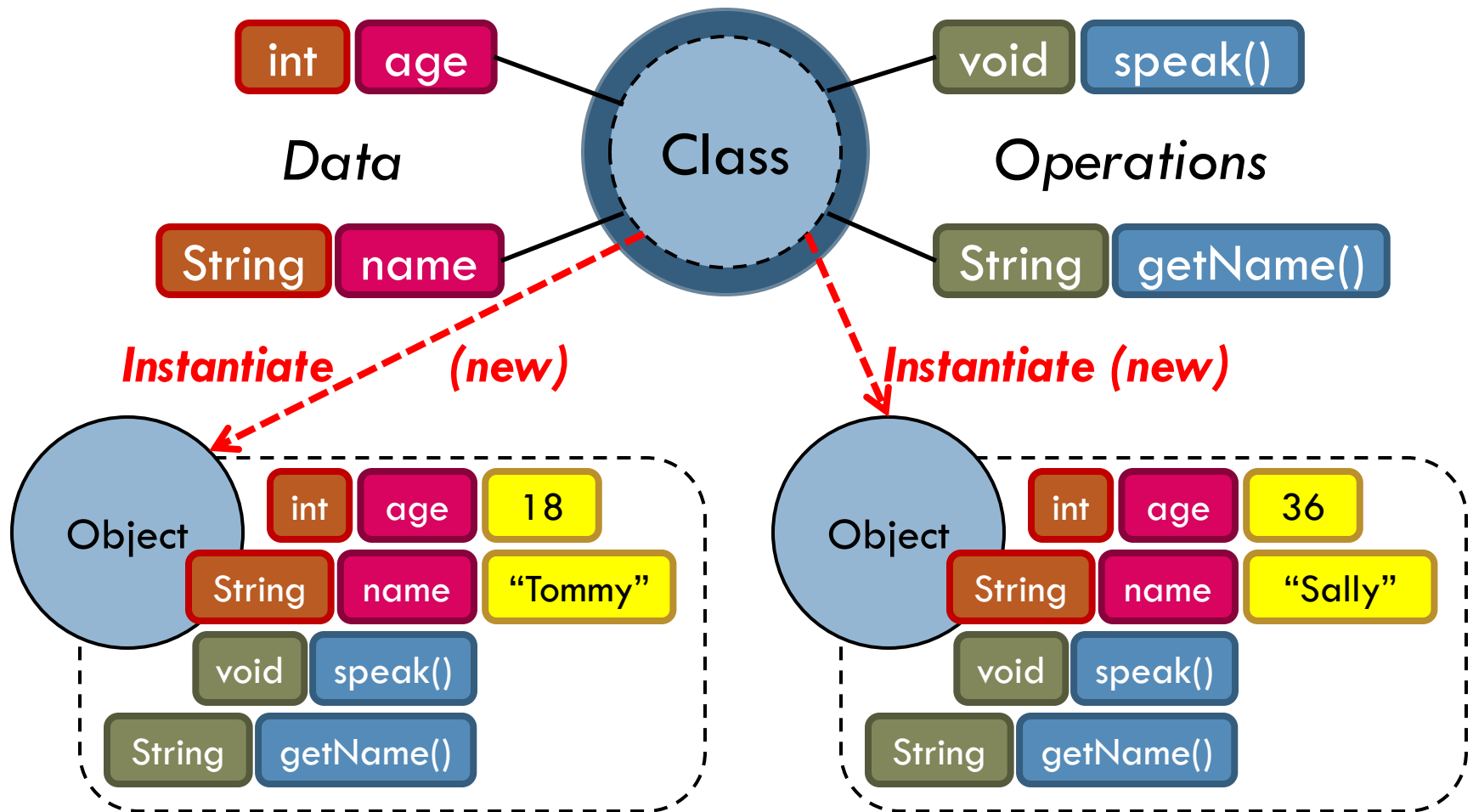
Object Basics
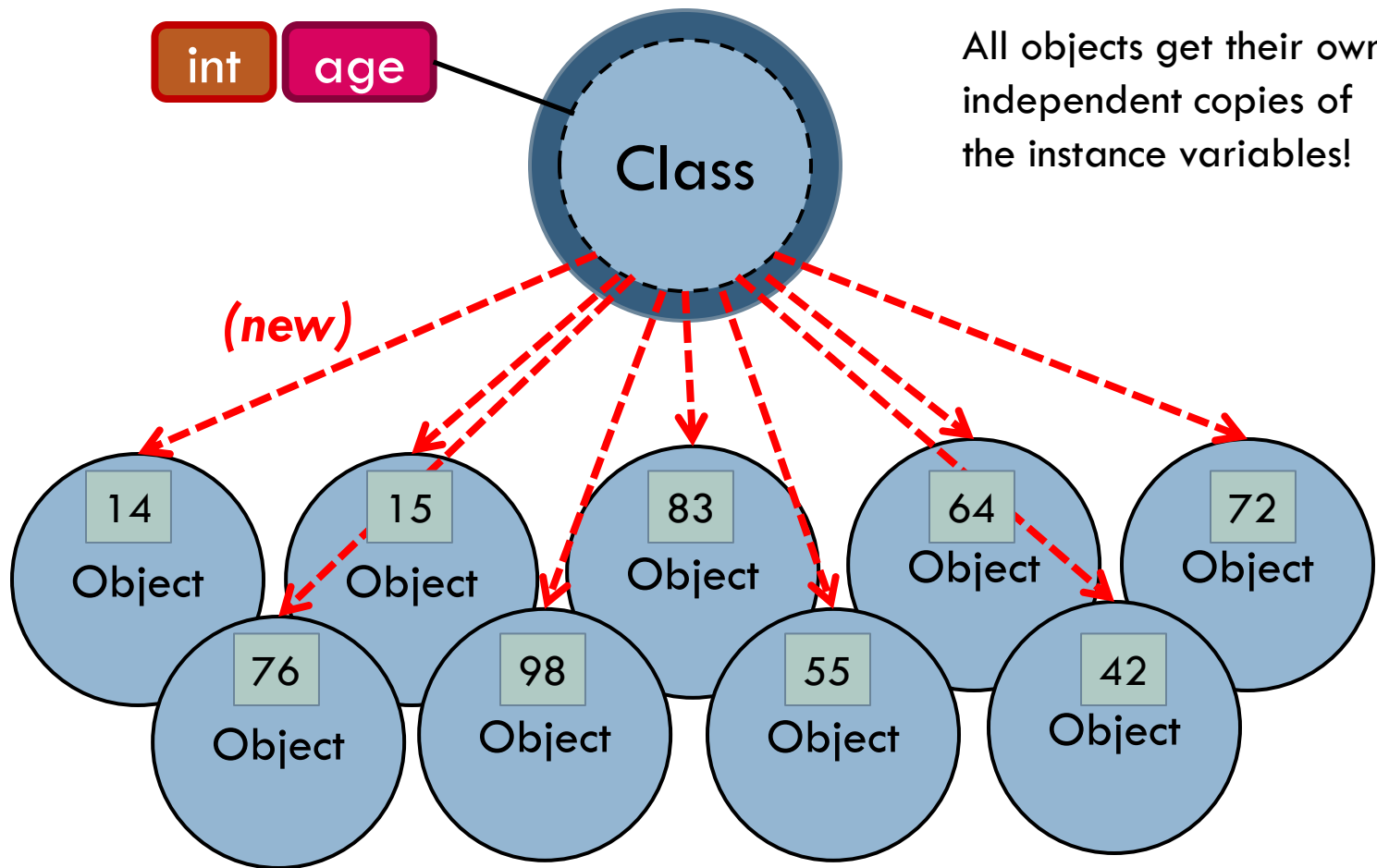
Eclipse Demo

- Many related variables app
- New class
- Encapsulation
  - Default initialization
- Data hiding
  - Objects passed by reference
  - Accessors (getters)
  - Mutators (setters)
- Constructors
  - Overloading
- toString method

Eclipse Demo

- Part 1: Related but independent variables
- Part 2: Class with public IV's to show encapsulation, default initialization, adds updatePerson with negative value, pass by reference vs. pass by value
- Part 3: Adds accessors and mutators for all IV's, guard against negative ages, data hiding
- Part 4: Adds constructors, speak method
- Part 5: Adds copy constructor, toString method