CMSC 131
Object-Oriented Programming I

Copy Constructors, this reference

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This material is based on material provided by Ben Bederson, Bonnie Dorr, Fawzi Emad, David Mount, Jan Plane

Overview

- Copy Constructor
- this reference
- Code duplication

Legible Code in Quizzes/Exams

- It is very important you write code in exams and quizzes that is legible and clear. Good indentation is extremely important. You will lose significant credit if your code is not legible and well indented. Please print when you write your code and do not use variables that are easy to confuse (e.g., i, j)

Copy Constructor

- Constructor that takes as parameter an instance of the same class
  - Uses the data from the parameter object to initialize the data of the new object
- Example: HighDefTv.java
- Let's create a memory map for this example
  - Do we need to duplicate the String field?
  - Immutable class → cannot change state
- Object duplication usually involves a method called clone()

this Reference

- Current Object
  - Represents the object a non-static method operates on
- **this**
  - Represents a reference to the current object
  - It is a special reference initialized for you
  - It does not make sense in a static method

this Reference

- When we use it?
  - **Example:** CD.java/CDDriver.java
  - **Use #1**: To tell parameters from instance variables
    - Notice that we could refer to instance variables by using

      this.<instanceVariableName>
  - **Use #2**: To call constructors from another constructors
    - **this** must be the first statement in the constructor
  - **Use #3**: In equals method implementation
    - To identify a self comparison
  - **Use #4**: To return a reference to the current object
    - Cascading of method calls
  - **Use #5**: To define non-static methods based on static ones
- Eclipse capitalizes on the use of this when automatically defining code
  - Source →"Generate Constructors using fields"