Object Class

CS 272 Software Development

Professor Sophie Engle
Department of Computer Science

Object Class

- All classes in Java extend the **Object** class
  - Can explicitly **extend**, otherwise implicit

- Objects are initialized via the **new** keyword*
  - Some classes (arrays, strings) have shortcuts
    - `int[] a = new int[] {1, 2, 3};`
    - `int[] a = {1, 2, 3};`

https://www.cs.usfca.edu/~cs272/javadoc/api/java.base/java/lang/Object.html

Object Methods

- `int hashCode()`
  - Returns a hash code of the object (similar to an id)
  - Often overridden to be based on content and not the unique object identifier (e.g. `String` class)

- `boolean equals(Object object)`
  - Returns `true` if both hash codes are equal

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Object Methods

- `Class<?> getClass()`
  - Returns a `Class` object with information such as the class name, package, etc.

- `String toString()`
  - By default returns class name and hash code
  - Usually overridden by subclasses

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Object Methods

- `Object clone()`
  - Returns a *shallow* copy of object

- ~~`void finalize()`~~
  - Called by the garbage collector to perform "housekeeping" before reclaiming memory
  - Never sure when this method is called

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Object Methods

- `void notify()`
  `void notifyAll()`
  `void wait( ... )`
  - Related to multithreading, which is covered later
  - *Multithreading is built-in to the core of Java!*

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Questions?

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