

# Ch8: Abstract Classes

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CMPT167

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# Review of last time

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- Method overloading
  - Operator overloading not in Java
- JApplet
  - `init()/destroy()`
  - `start()/stop()`
  - `draw()`

# Implementing Abstract Classes

- Abstract classes
  - Not meant to be directly **instantiated**
  - Make a **subclass** and instantiate that
  - May define **virtual** methods with empty or non-useful bodies
    - ◆ Subclass **overrides** virtual method with own implementation
- Everything is a subclass of **java.lang.Object**
  - **toString()**: **virtual** method, used by **System.out.print()**

# Example: TimeTest

- (See java/ examples directory)
- Time1 is a subclass of Object
  - No main() function
  - Instantiated in TimeTest
- TimeTest is our main program
  - Testbed for the Time1 class

# TODO

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- Midterm next week Wed 21Feb
- Lab3 due next week Wed 21Feb:
  - Recursion (fractal tree)