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Java Object-Oriented Concepts

Lesson 4 - Using Objects

Objectives

- Review good class design
- Understand cohesion in classes
- Understand composition
- Understand method overloading

Cohesion

- Classes should do one job and do it well
- Don't think too small
 - Don't have one class per math operation
 - Have one class that does all math operations
- Don't think too big
 - Delegate to other classes for duties outside area of responsibility

Composition

- Objects can be made up of other objects
- Helps with delegation and cohesion
 - Ex. having a Scanner class property to handle Console I/O
- Class-level properties can be used in all methods of the class
- These objects are part of the ‘private implementation’

Method Overloading

- Method Signature:
- Name of Method + Parameter List
 - `add(int a, int b)`
 - Note: return type is not included in signature... why?
- Can have many methods with the same name as long as the signature differs
 - `int add(int a, int b)`
 - `double add(double a, double b)`

Method Overloading

- Examples we've already seen:
 - `System.out.println(...)`
 - `String.valueOf(...)`