# Workshop: How to Design Class Hierarchies

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## Day 1

### Monday am:

Overview and Introductions
Design recipes in HtDP:

- Structure of data: containment, union
- Self-referential data

### Monday pm:

Classes: data definitions, pictures, constructors
Making examples of objects
Composition
Union data definitions, pictures, examples

## Day 2

### Tuesday am:

Self-referential data - lists and trees

### Tuesday pm:

Design recipes for class hierarchies
Methods for simple classes

## Day 3

### Wednesday am:

Design recipes for methods
Methods for classes with containment

### Wednesday pm:

Methods for union
Abstract vs. concrete methods in the abstract class

## Day 4:

### Thursday am:

Methods for lists, trees, and similar structures
Single point of control
Sorting
Data definitions for cyclic class hierarchies

### Thursday pm:

Designing methods for cyclic class hierarchies: mutation and assignment

## Day 5:

### Friday am:

Abstractions
Abstracting over a list of Objects - sorting, min, max
Implementing interfaces
`Comparable` vs `Comparator`

### Friday pm:

Abstraction: Function objects (IString2Bool)
Inner classes
(Maybe) Outlook for further study:

- Equality and mutation
- Moving on to Java classes; reading docs