

Object Systems

CS 242

October 2, 2017

Useful programming patterns

- 1. Associations between data and control**
- 2. Abstraction over hidden state ("encapsulation")**
- 3. Associations between kinds of data**
- 4. Reuse of code based on associations**
- 5. Common underlying properties of data**

Let's build an object system!

Other systems focus on types and perf

- **Java's object system has a complex type system**
 - Interfaces, private/protected members
 - Abstract classes
 - Subtyping and polymorphism

- **C++'s object system has high-perf features**
 - Distinguishing virtual methods from non-virtual
 - Optimizing runtime representation of objects

To be discussed: mixins/composition

- **Raging debate: composition over inheritance?**
 - Has-a vs. is-a relation
- **Also called: mixins, traits, multiple inheritance**
 - These are all slightly different, but approximately the same idea
- **Good example of an up-and-coming idea!**

Logistics

- **Feedback form on the website**
- **Homework is due on Wednesday**
- **My office hours are tonight**