

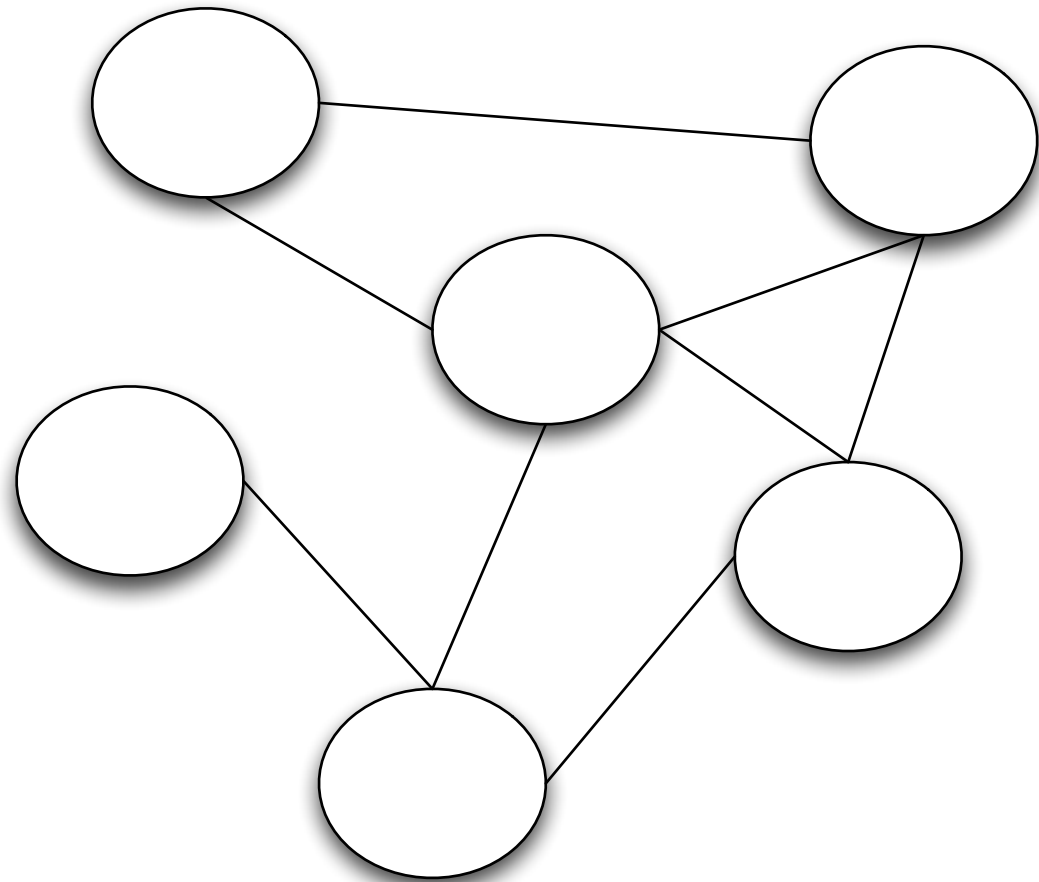
CS 535 Object-Oriented Programming & Design
Fall Semester, 2008
Doc 17 Heuristics Chapter 3
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References

Object-Oriented Design Heuristics, Riel, Addison-Wesley, 1996, Chapter 3

OO Program



Building Blocks

OrderedCollection

String

Dictionary

Characters

Streams

Ants

etc.

"Main"

AntApplicationModel open

Modify the Ant demo so that the drawing is done by a view rather than by Ant and Colony objects.

this seems less OOP

How OO can go wrong

God class

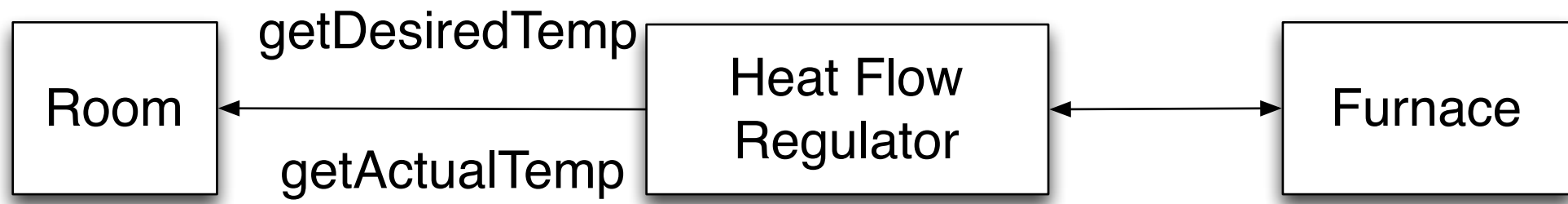
Proliferation of classes

God Class

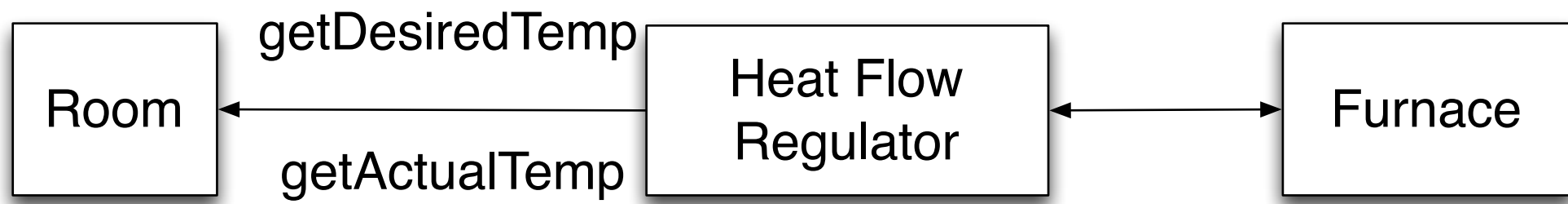
most of a program's overall functionality is coded into a single "all-knowing" object, which maintains most of the information about the entire program and provides most of the methods for manipulating this data

Wikipedia

Example



Example



Heuristics

Distribute system intelligence horizontally as uniform as possible

Do not create god classes/objects

Be very suspicious of a class whose name contains Driver, Manager, System

Beware of classes that have many accessor methods defined in there public interface

Beware of classes that have too much noncommunicating behavoir

The Accessor Issue

If data and operations are together why do we need accessors?

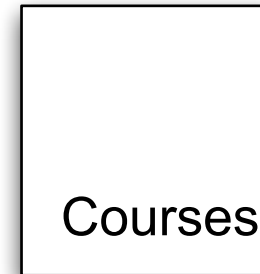
Why accessors

Objects sometimes have to collaborate

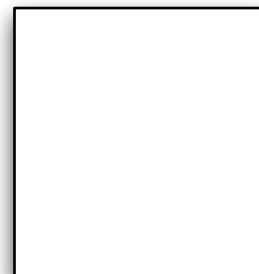
Course



Student



CourseOffering



Using GUIs

Model should not depend on the interface
The interface should depend on the model

So interface needs to access data in the model using accessors

But

Model should not use accessors unless needed

Proliferation of Classes Problem

Eliminate irrelevant classes from your design

Eliminate classes that are outside the system

Do not turn an operation into a class

Role of Agent Classes

During design time many agents are found to be irrelevant and should be removed

