

Software Eng

Objects

Admin

- Schedule & Quizzes
- Read chapter 10 in clean code

Your old jargon terms

- Making clean classes means making good on those old jargon terms
 - Encapsulation
 - Cohesion
 - Coupling
 - So tell me what each one means

Encapsulation

- Yup Encapsulation:
 - keep private data (and helper functions/mehtods) private

Cohesion

- Traditional Cohesion definition:
 - A class represents a single concept
 - Single noun
- Good working cohesion definition
 - A class has a single responsibility
- How can we tell a class is cohesive?

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 - A class has a single responsibility
- How can we tell a class is cohesive?
 - Nice Bob Martin rule of thumb: if all of the methods are working on the same instance variables, then high cohesion
 - Logical conclusion: all methods work on all instance variable → most cohesive

Show Martin examples

- Page 137-139 in clean code

Coupling

- Coupling: connections between classes
 - Want to reduce
 - But not at the expense of diminishing cohesion
 - Modules/packages/friends (in the c++ sense) can all provide useful coupled 'chunks' of a program.
 - Then reduce coupling between these chunks

Martin's rule of thumb

- Bob Martin's rule of thumb for class design:
 - Make it small

Martin's rule of thumb

- Bob Martin's rule of thumb for class design:
 - Make it small
 - **No, smaller than that!**
- C++ Classes that has more than 64k of text
 - Easy
 - Class we just looked at? Harder to tell it was too big.

Class exercise

- Lets look at printprimes handout
 - Is this ok code?
 - Obviously not



Class exercise

- Lets look at printprimes handout
 - Is this ok code?
 - Obviously not
- Now look at McGill code
 - Is this clean code? Why or why not?

Write and then clean

- It is ok to write it first to make it work
 - Pass the test etc
 - Then go back and clean it up
 - Red-green-REFACTOR
 - Even Bob Martin says this is ok.
 - So long as you do go back and clean things up.

Cohesion and change

- The more cohesive your class is,
 - The more it can change.
 - Without breaking
 - Listing 10.9 vs 10.10