Facts and Fallacies of Software Engineering

by Robert L. Glass

Fallacy 10: You teach people how to program by showing them how to write programs.

Presentation by: Randy Olson

Learn to code by coding

Typical approach:

1. Teach student coding language rules

2. Send student off to write program applying those rules

This method does not align with how we learn any other language

We learn to *read* first,

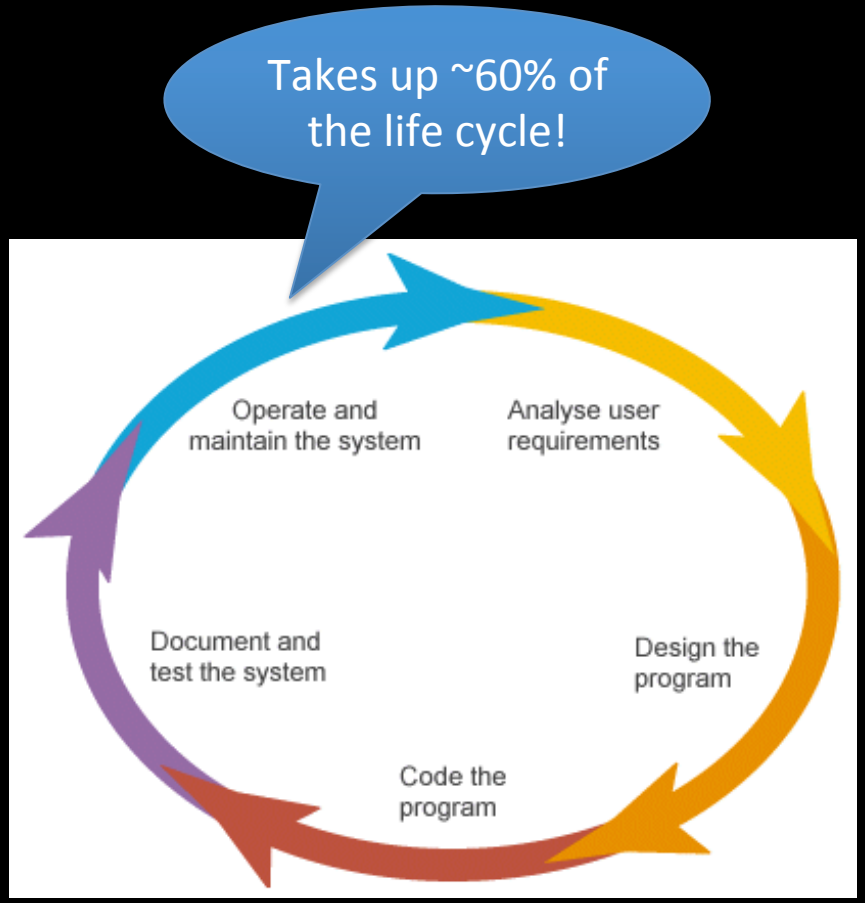
then we learn to write.

Professional programmers spend most of their time reading code

Fact 31: Error removal is the most time-consuming phase of the life cycle.

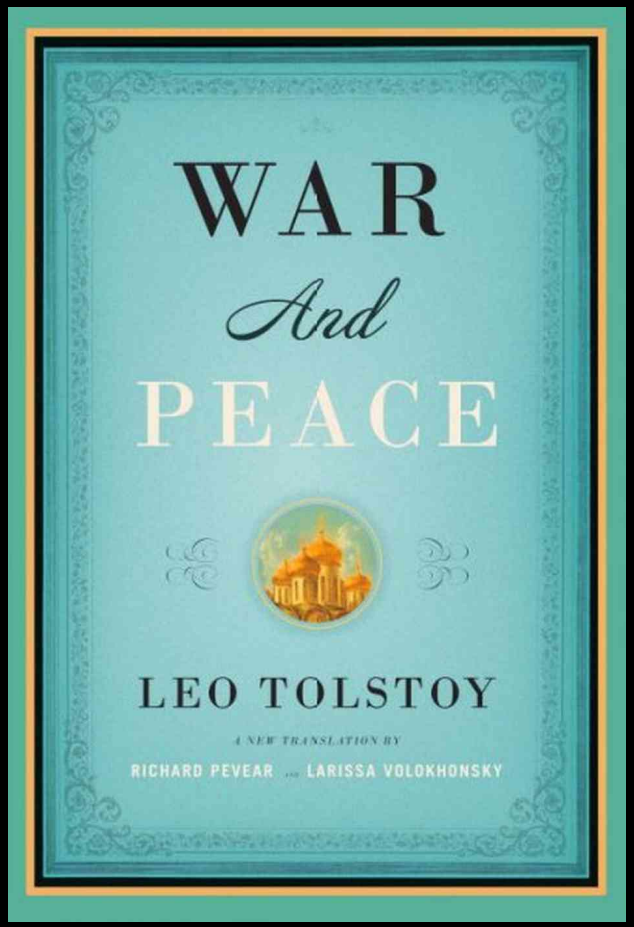
Fact 41: Maintenance typically consumes 40-80% of software costs.

Both of these phases involve extensive code reading!



So why are colleges teaching programming skills backwards?

Reason #1:
There is no exemplary code



We do not yet have a *War and Peace* of coding

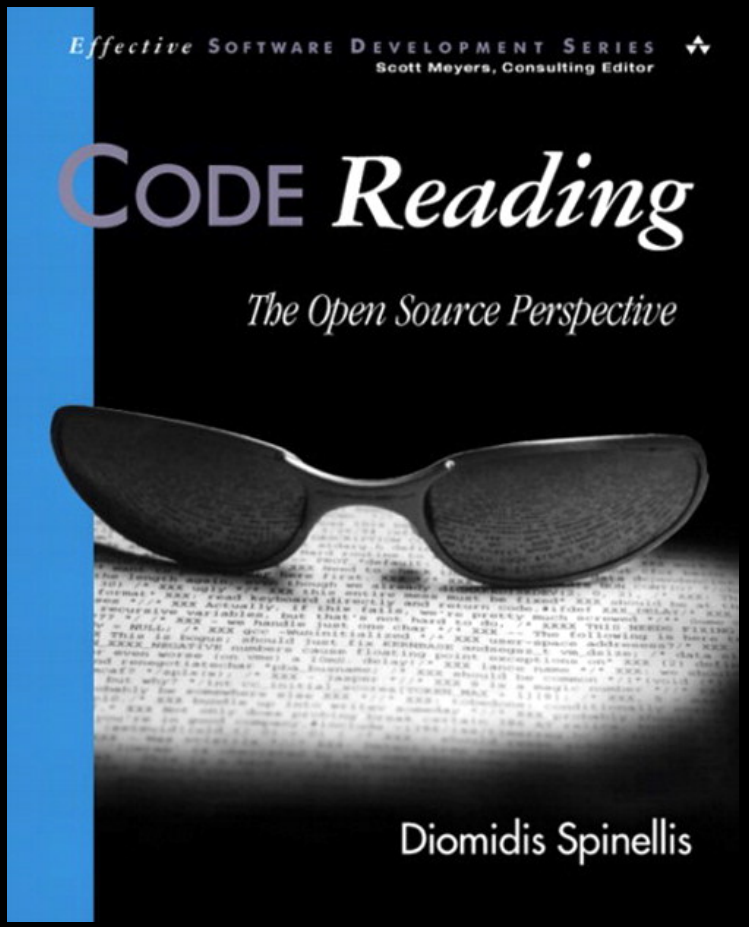
Hard to agree on what makes for exemplary code

- Fast execution?
- Fewest SLOC?
- Most comments?
- Easiest to extend?

Reason #2:
There are no code reading books

I could only find one book dedicated to code reading

… but it is more about debugging than code reading.



Reason #3:
Writing-before-reading is institutionalized

Standard curriculum dictates code writing-before-reading.

It's hard to change institutionalized things!

Reason #4:
Code reading is laborious

The only time we really read code is during code maintenance.

Nobody likes to maintain code...

which means nobody likes to read code.

Should we teach code reading-before-writing?