

15-412

“...It's harder than it looks...”

Open-Source Project Advice Sep. 2, 2026

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Outline

Build it now

Read it three times

Talk about it

Write a design document

The merge problem

Build It Now

Where to get started?

- The project isn't well documented
 - Neither “how to use” nor “what's inside”
- There's code all over the place
 - In multiple languages
- The build system is strange
 - It's trying to achieve goals you don't understand
- Where to begin?

Build it now

- Get it built, get it installed, get it configured, get it running
 - The support network focuses on these steps!
 - Great forcing function for reading man pages, error logs

Reading The Code

Wow, that's a lot of source code!

- **OpenOffice: more than 200 megabytes!**

How can I understand all of it?

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- Bad news: you probably can't
- Good news: you probably can't

Reading The Code

Wow, that's a lot of source code!

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How can I understand all of it?

- Bad news: you probably can't
- Good news: you may not *need to*

What to do?

- Pick “your part” (at least tentatively)
- Read “your part”

Reading The Code

Wow, “my part” is a lot of code!

- 10,000 lines...wow...

How can I understand all of it?

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Reading The Code

Wow, “my part” is a lot of code!

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How can I understand all of it?

- Bad news: you probably can't
- Good news: a future version of you probably can
 - How??

Read It Three Times

What to do?

- Print it out
- Read it three times

First time

- Read the first page
- Turn to the next page; repeat as necessary
- Don't get bogged down trying to become an expert
 - You can't
- Doing this step ASAP is really important

Read It Three Times

First time

- Read the first page
- Turn to the next page; repeat as necessary

Second time

- Read from top to bottom
- Take notes
 - Module breakdown
 - Module sizes, how much assembly code?
 - Calling conventions

Third time – the charm

- Try to understand how the parts fit together
- Draw at least one picture

Talk About It

Teaching is a *great* way to understand things

Prepare a “15-minute presentation”

- Motivation, Outline, ..., Conclusion
- Practice it a couple of times
- Don't forget pictures!
 - (Yes, they take time)

Talk About It

Teaching is a *great* way to understand things

Prepare a “15-minute presentation”

- Motivation, Outline, ..., Conclusion
- Practice it a couple of times
- Don't forget pictures!
 - (Yes, they take time)

Presenting it will take 30 minutes

- “Extra” discussion will be valuable
- Don't worry, you'll get better at it
 - Especially if you do it three times

Write A Design Document

Project motivation

Project approach

Code base features

- Lines of code, lines of asm, #modules, ...
- What you plan to add

Structural challenges

How you plan to measure the result

How does the group receive code submissions?

The Merge Problem

Life cycle

- You pull down the code
- You work away busily
- “Code complete”
- Debugged
- Measured

Time to commit back to the mother ship

- Oops, their code is now totally different

The painful tradeoff

Summary

Build it now

Read it three times

Talk about it

Write a design document

The merge problem