

Design Documentation

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Administrativa

- Homework 4 has been released.

Learning Goals

- Articulate the various purposes of a design document.
- Use design documentation to ensure that the correct thing is being implemented.
- Write useful, clear, high-quality design documentation.

Why write a design doc?



Why write a design doc?

- Communicate among and with stakeholders in a system.
 - Receive guidance on present decisions
 - Resolve uncertainty
 - Inform future engineers dealing with your system.
- Overall: make sure you are implementing the right thing, and also *not* implementing the *wrong* thing.
- A key element of design documentation is ***feedback***
 - (which is probably why so many orgs use Google Docs...)
- Happy side effect: writing it out can help you clarify your own design thinking, as you specify:
 - What are you going to do?
 - Why are you doing it that way?
 - What assumptions/tradeoffs are you making?

Who is a design doc *for*?

- Effective communication starts by considering the audience.
- Several possible intended audiences; in this class, we focus on documents intended for generally technical stakeholders:
 - Other engineers on your team
 - Other engineers on other teams
 - Technical/project/product managers
 - Yourself, in the future.
- The design doc should be accessible to an informed and competent engineer in your organization.

Common pitfalls

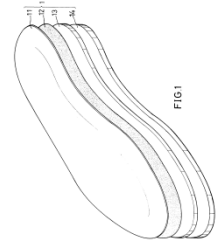
- Too little detail, especially on *rationale*.
- Too MUCH detail, especially on the specifics of code.
- Impenetrable diagrams that Future Reader will not be able to discern.
- Documentation that fails to evolve with the real system.

Architecture Disentangled

Architecture as
structures and relations
(the actual system)



Architecture as
documentation
(representations of the system)



Architecture as (design) process
(activities around the other two)



Common parts/templates

- Overview/feature description: what problem is being solved?
 - High-level requirements, both functional and quality
- Background/key terms
- Goals/non goals
- Design alternatives, tradeoffs, assumptions
- Decision
- Other considerations/elements of design

Examples: SourceGraph RFCs

<https://docs.sourcegraph.com/dev/rfcs>