NORBIS

SENTER FOR
DIGITALT LIV
NORGE

Code that you *want* to read

David Grellscheid

UNIVERSITETET I BERGEN

The Abdus Salam
International Centre
for Theoretical Physics

Research software

- Most research software is not of high quality
  - Typically written by graduate students:
    - without a good overview of existing software
    - with little software experience
    - with little incentive to write high quality code
  - Often maintained by postdocs:
    - with little time
    - need to consider software a tool to write papers
  - Advised by faculty
    - with no time
    - oftentimes also with little software experience
- How does this affect our field (Reproducibility? Archival? “Standing on the shoulders of giants”?)
- There is a complexity limit to what we can get out of a PhD student.

Ivan Girotto, ICTP

How to improve?

Write code with care, it'll live longer than you think

Don't be afraid to spend time doing it right

Look for good practice

Little things matter a lot in the long run

Write your code with / for others

Seek out feedback whenever possible

This workshop

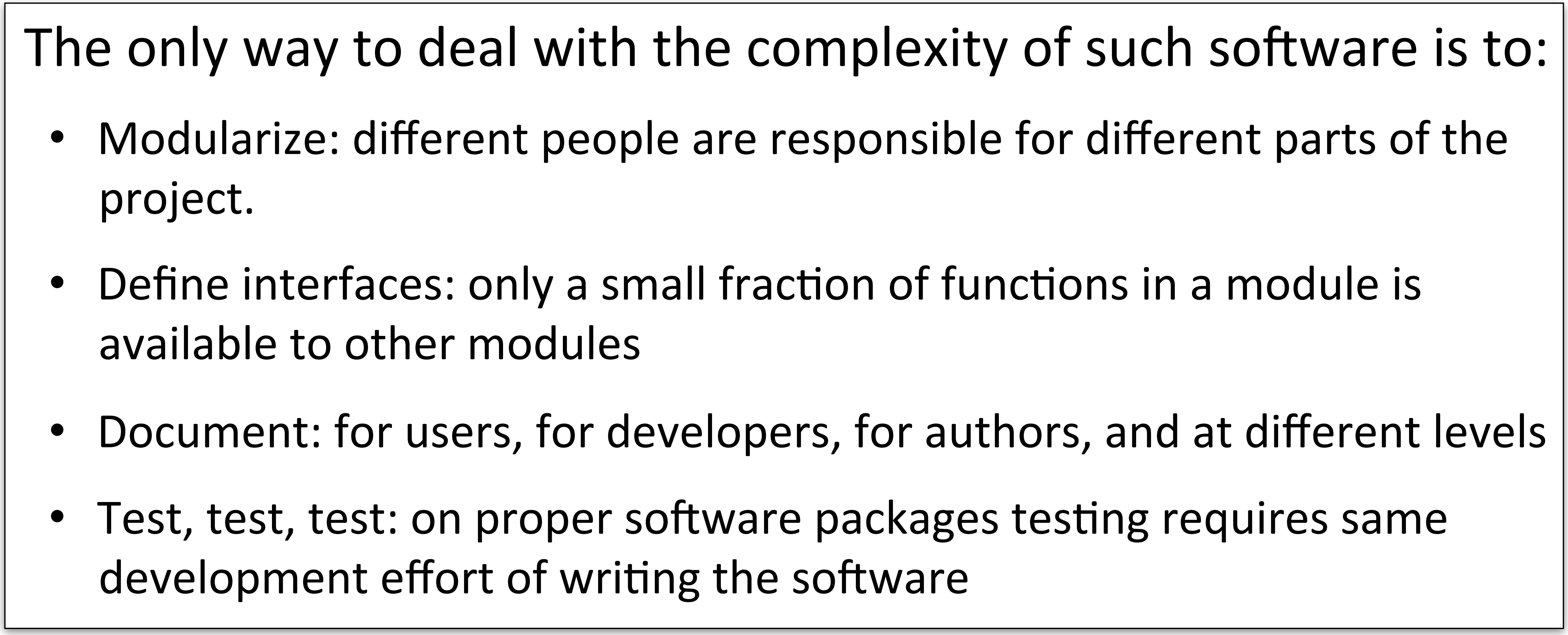
Think back to school:

Learning to read and write doesn't take too long,

but there's a lot more that goes into a good essay!

Selection of useful topics
Not enough time for deep detail
Take it as starting points!

How to improve?



The only way to deal with the complexity of such software is to:

- Modularize: different people are responsible for different parts of the project.
- Define interfaces: only a small fraction of functions in a module is available to other modules
- Document: for users, for developers, for authors, and at different levels
- Test, test, test: on proper software packages testing requires same development effort of writing the software

Ivan Girotto, ICTP

NORBIS

SENTER FOR
DIGITALT LIV
NORGE

Robert C. Martin, *Clean Code*

https://gist.github.com/wojteklu/73c6914cc446146b8b533c0988cf8d29