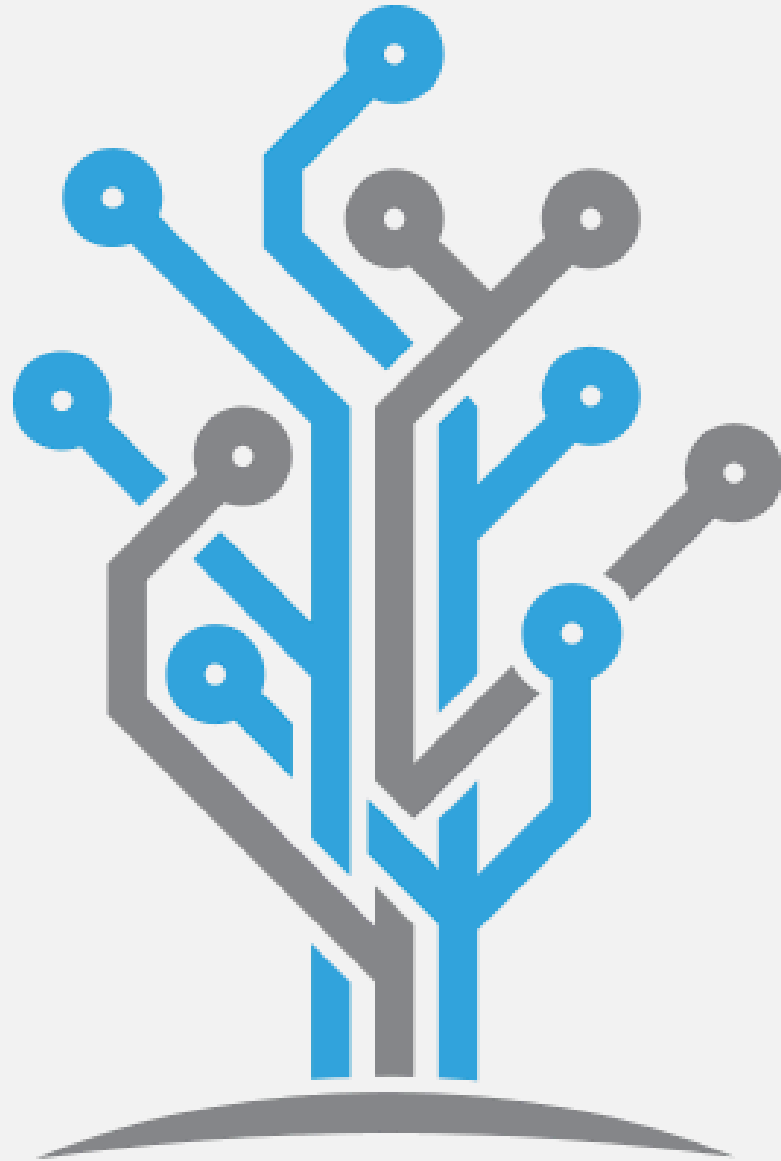


NodeJS

środowisko i technologia ServerSide

PAWEŁ ŁUKASZUK



technologist (tek nol'ə jist) a person who is an expert in the use of technology.

technologize (tek nol'ə jīz) to make technological or an industry.

technology (tek nol'ə jē) 1 science of the mechanical and applied science: He studied electricity. 2 the body of tools, materials, techniques, and processes used to produce goods and services and to meet human needs: Science has contributed much to technology. 3 a particular application of technology. To reach the moon, we need new tools and techniques. 4 a method, process, or system of doing something: The new technology for a net release of fusion energy is being developed by American scientists.

technician a person who is an expert in the use of technology.

technical 1 of or relating to technology: a technical drawing. 2 of or relating to a particular field of technology: technical assistance.

technician a person who is an expert in the use of technology.

technician a noncommissioned officer in the U.S. Air Force, ranking between sergeant and master sergeant.

Quote

There are only two hard things in Computer Science:
cache invalidation and naming things.

Phil Karlton



Question #1

```
function showProfileName(login) {  
    //...  
}
```

Question #1

```
function showProfileName(login) {  
    //...  
    request(urlObject, (error,response,body) => {  
        //...  
        console.log('Login ->',downloadObject.login)  
        console.log("Numbers of public repos ->",  
                    downloadObject.public_repos)  
        //...  
    })  
}
```

Question #2

```
async function result(num) {  
    //...  
}
```


Question #2

```
async function result(num) {  
    //...  
    const res = await func(num);  
    try{  
        await write(dataJson.filename, res.data);  
        console.log('OK');  
    } catch(error) {  
        console.log(`${error} - operation error`);  
    }  
}
```

Question #3

curr1

Question #3

```
collection.forEach((current, index) => { /* ... */ });
```

Pure functions

```
function rootSquare(input) {  
  return Math.sqrt(input);  
}
```

- always returns the same result if the same arguments are passed
- it does not depend on any state or data change during a program's execution. only depends on its input arguments.
- does not produce any observable side effects such as network requests or data mutation



Pure functions

- Predictable: produces a predictable output for the same inputs.
- Readable: anyone reading the function as a standalone unit can understand its purpose completely.
- Reusable: can reuse the function at multiple places of the source code without altering its and the caller's behavior.
- Testable: can test it as an independent unit.



Technical debt

Technical/technological debt: a phenomenon in which, due to the choice of a seemingly easier and cheaper option to implement, the total cost of choosing this option becomes less profitable in the long run than choosing a more time-consuming but objectively better and more refined solution.



Technical debt

Taking on technical debt is usually beneficial.

But only in a certain time frame!



Technical debt - causes

- imprecise/evolving requirements during the project
- time pressure
- airtight solutions that prevent customization
- focus on making a quick profit
- lack of standards and good practices in the initial phases
- lack of competence of people involved in the project
- changes in requirements too late, resulting in no time or budget to properly incorporate them into the project.



Technical debt - results

- high number of errors and incomplete functioning of the application
- long time and high cost of making changes to the code
- reduction in performance, reliability, quality, robustness
- difficulty in finding new employees





Code review

Code review / code inspection:

A software engineering practice aimed at detecting and correcting errors made in code during the software writing phase, thereby improving the quality of the product being developed, involves the review of code written by a programmer by another person before the code is merged into a version control system and submitted for testing.



Code review goals

- improve code quality
- improving project quality
- improving team quality



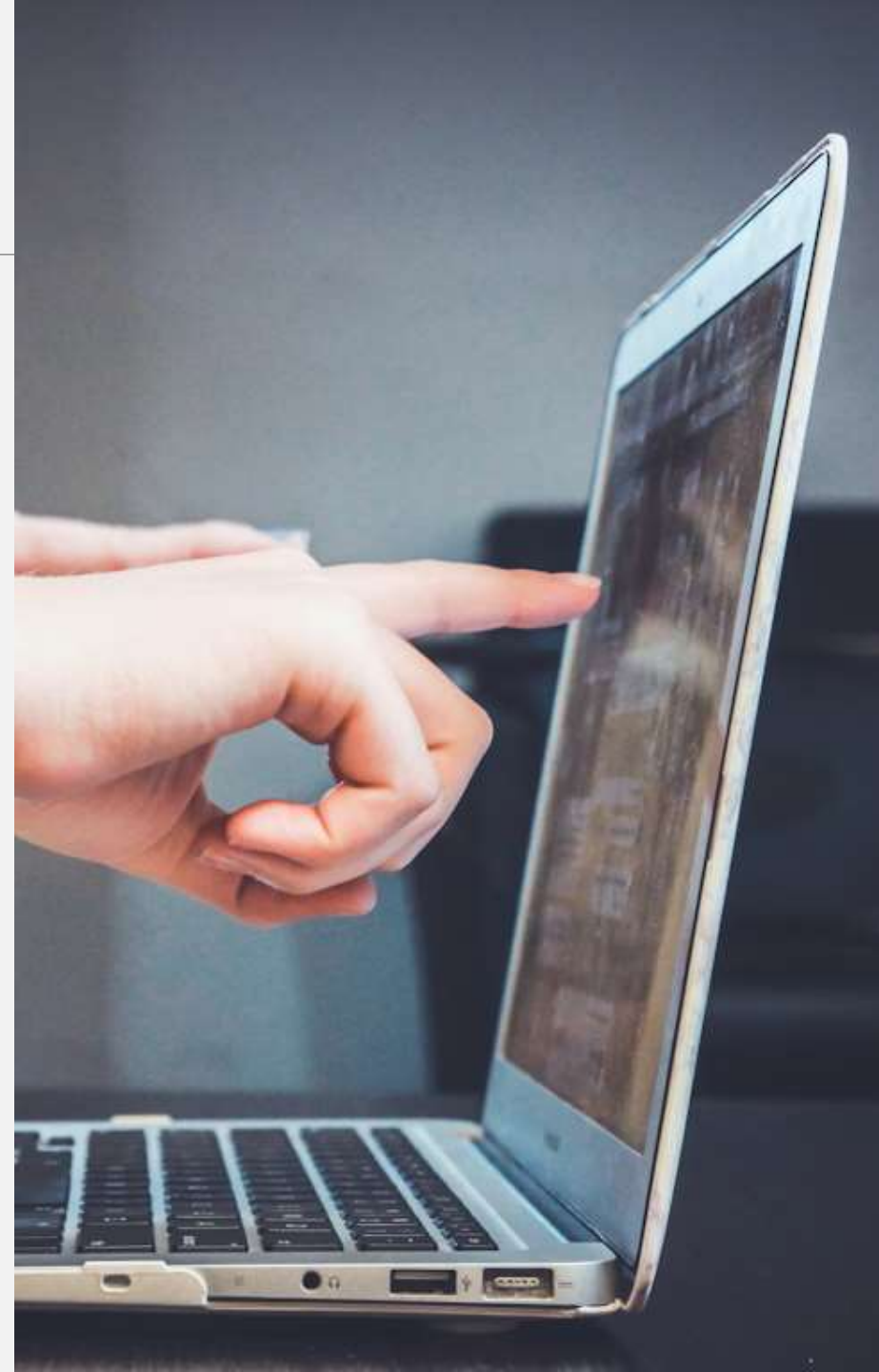
Code review bad habits

- measuring code quality
- measuring the quality of the solution/project/product (that's what tests are for)
- blocking changes

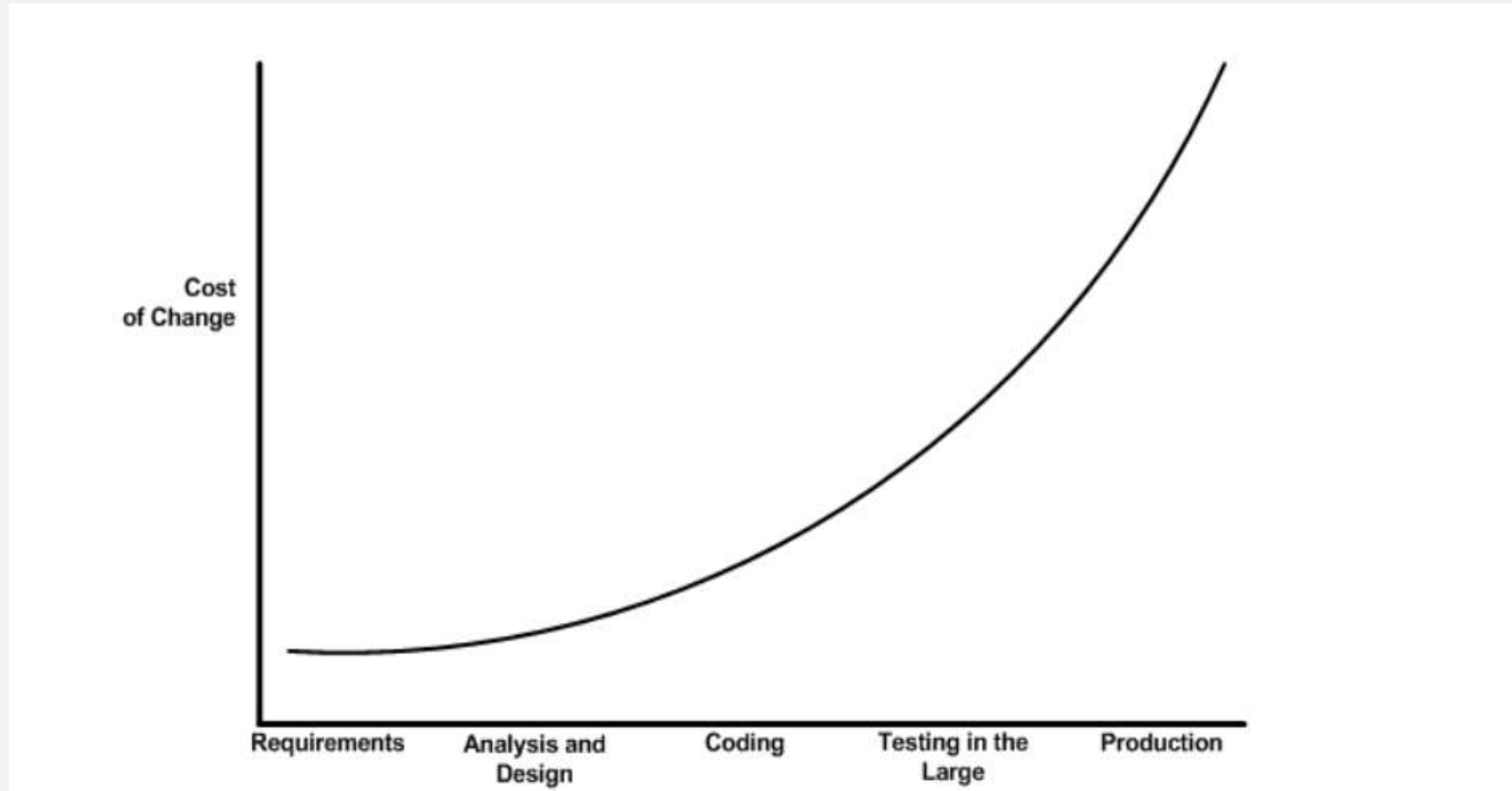


Code review effects

- faster finding of defects
- better code quality
- knowledge transfer within the team
- propagation of responsibility/code-ownership
- generation of new ideas
- better communication within the team
- gaining trust between team members



Code review effects



Software developing

- build right thing
- build thing right
- build it fast *
- build it together

* fast = reasonable speed



Code review as amplifier

**Code review doesn't not always solve problems,
sometimes only shows where problems are**

Code review as amplifier

- reinforces the good and bad qualities of participants
- shows problems in the organization



Code review as amplifier

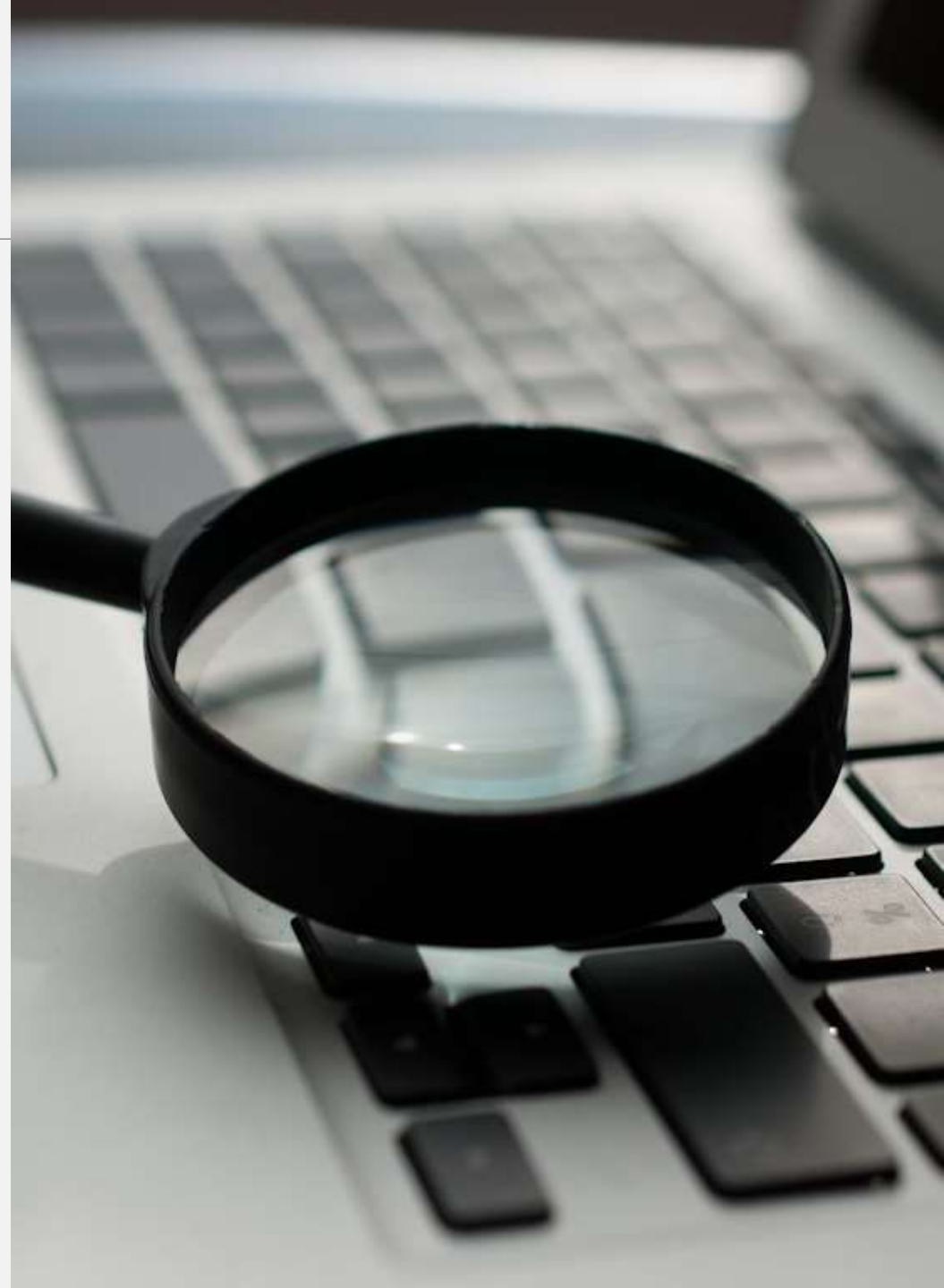
- bad organizational culture
- difficult personalities
- lack of concern for results
- avoidance of responsibility
- lack of commitment
- fear of conflict
- lack of trust

Book: Patrick Lencioni: The Five Dysfunctions of a Team /
Pięć dysfunkcji pracy zespołowej



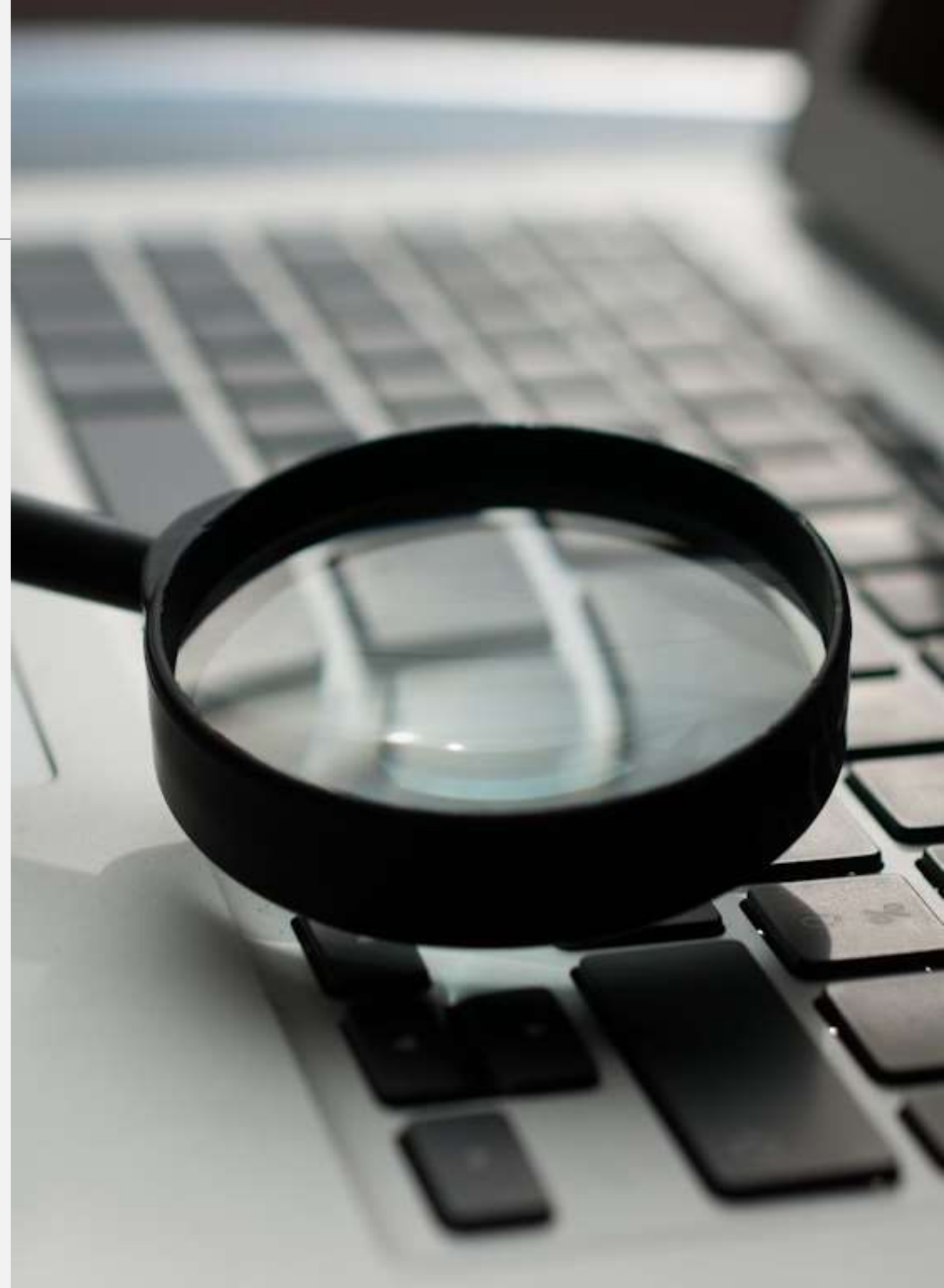
Before merging code #1

- update documentation
- prepare list of changes
- check if you implement the requirements
- check edge cases, exceptional cases, non-obvious cases
- show the direction in which you are going
- check the correctness of the build, tests, etc
- organize your commits - non-functional changes can be done in a separate PR



Before merging code #2

- use draft PR (if tools allow)
- do a code review of your own code (ideally after a short break)
- if something needs clarification, comments in code are better than in review - those in code are more accessible
- be open to suggestions
- be humble and attentive



Code review as amplifier

This is not just YOUR code
After merge it will be code of the TEAM

Bad habits

- lot of changes in one review
- code created for a long time
- not responding to comments
- IKEA effect
- code not tested



Literature

Programowanie:

- S. Mancuso Software Craftsman. Profesjonalizm, czysty kod i techniczna perfekcja
- D. Thomas, A. Hunt Pragmatyczny programista. Od czeladnika do mistrza

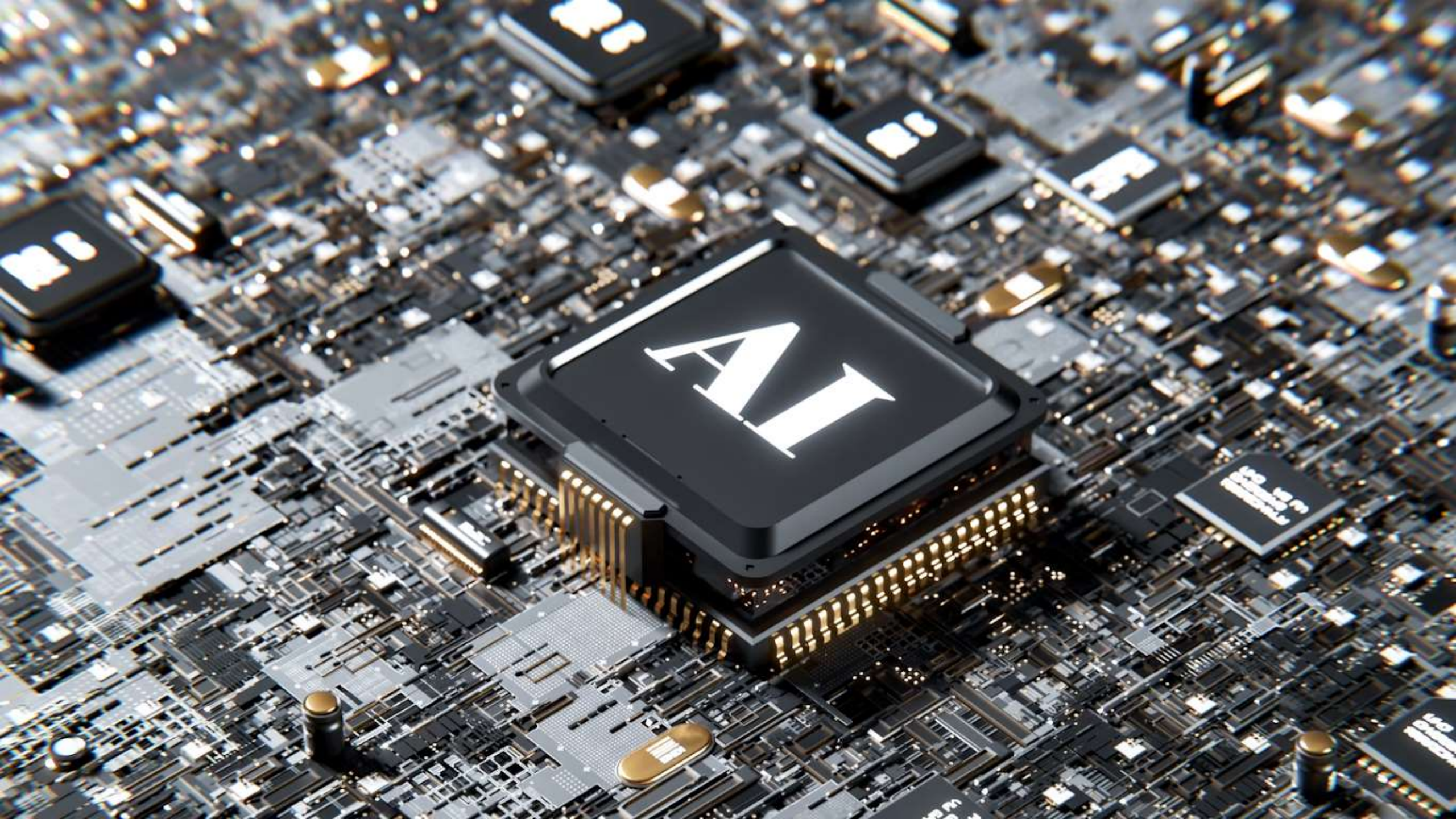
Komunikacja:

- R. Fisher Dochodząc do Tak
- M. McKay M. Davis P. Fanning Sztuka skutecznego porozumiewania się
- D. Carnegie Jak zdobyć przyjaciół i zjednać sobie ludzi
- R. B. Cialdini Wywieranie wpływu na ludzi. Teoria i praktyka
- M. B. Rosenberg Porozumienie bez przemocy. O języku życia

Psychologia lekko powiązana z komunikacją

- D. Kahneman Pułapki myślenia. O myśleniu szybkim i wolnym
- S. Peters Paradoks Szympansa





„AI” tools

- <https://chat.openai.com>
- <https://perplexity.ai>
- <https://theresanaiforthat.com>

Sample prompt:

Please review the code provided in the message. Keep in mind that it's only a fragment, so some references may not be complete. Analyze the code in terms of logic, good practices, readability, naming conventions and overall "clean code" practices. Be critical and provide a concise set of bullet points that will help an experienced developer fix the code if needed.



Style guides

Google:

<https://google.github.io/styleguide/jsguide.html>

Mozilla:

https://developer.mozilla.org/en-US/docs/MDN/Writing_guidelines/Writing_style_guide/Code_style_guide/JavaScript

JavaScript Standard Style

<https://standardjs.com/index.html>

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VS Code extension

Prettier – Code formatter

<https://marketplace.visualstudio.com/items?itemName=esbenp.prettier-vscode>

Format Document → Shift + Alt + F

Style summary

It is less important what style you use
but you must use it consistently.