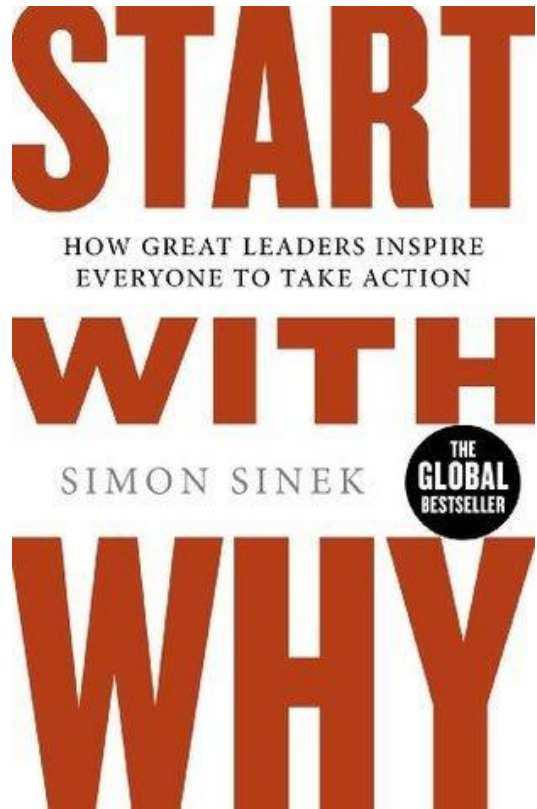


Communication sucks

communication in software development - language perspective

Communication in software development



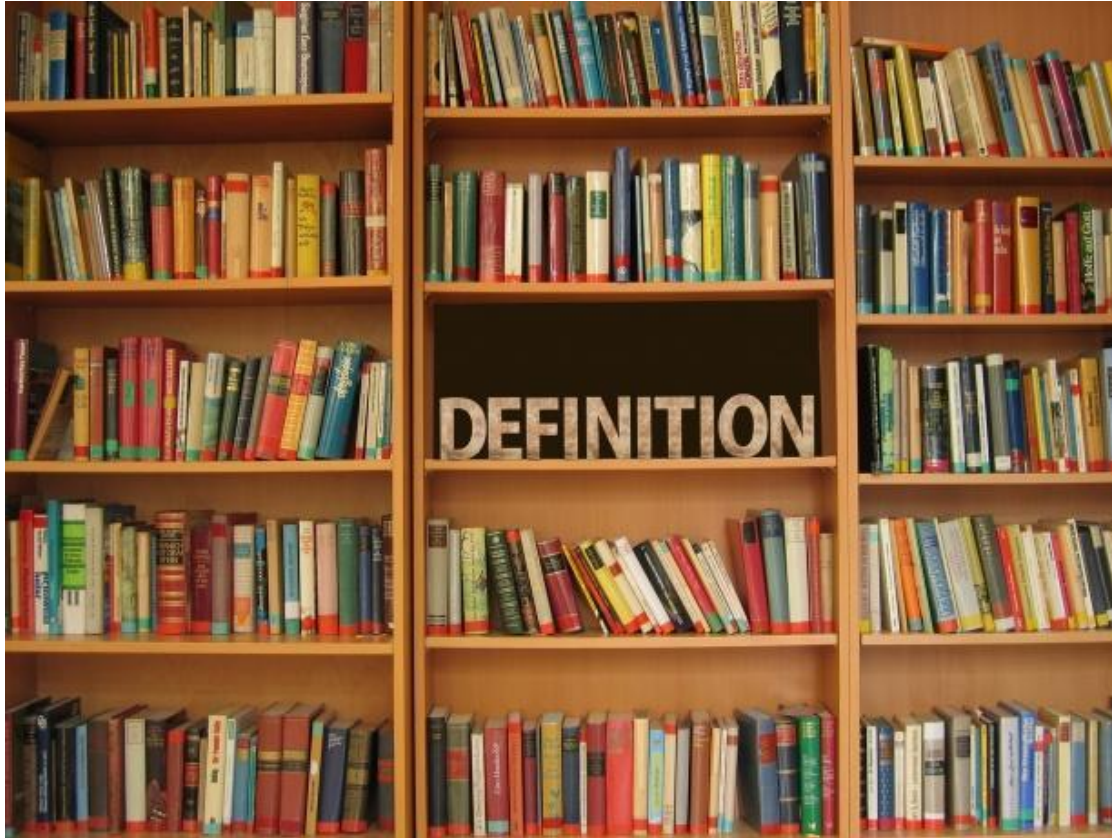
Why this topic?

- the natural option to transfer information
- neglected topic
- now more important than ever (AI)
- transferable skill

Why me?

- 25+ years professional experience
- more complexity → more talking
- communication is **not** my natural skill

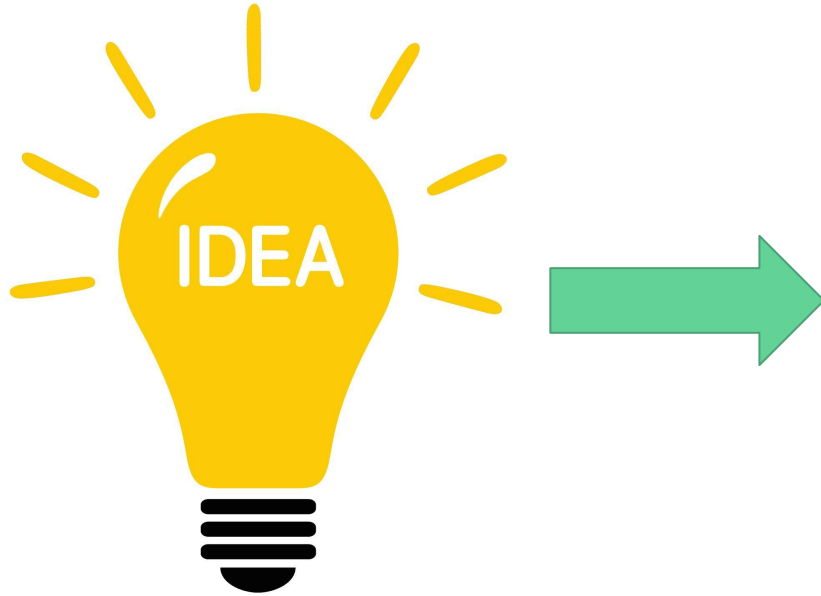
Communication in software development



Communication in software development

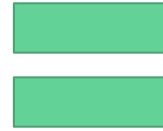
- communicate (lat.) - to **share**, to make **common**
- talk focus is “low-level”/assembly
 - language side
 - exchanging messages
 - extracting information
- **out of scope**
 - how to win the conversation
 - how to convince people
 - how to build rapport
 - how to interpret or elicit emotions

Communication in **software development**

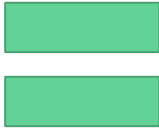
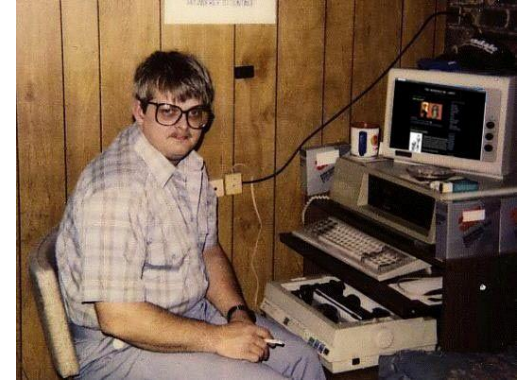


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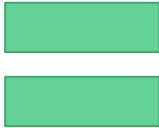
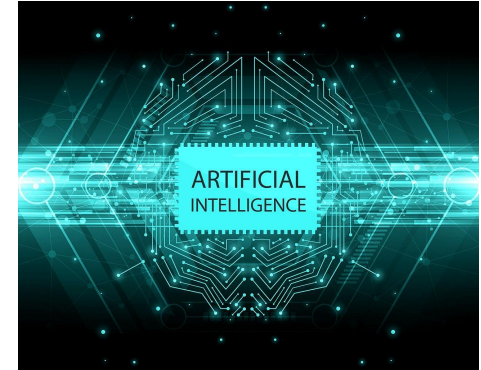
Communication in **software development**



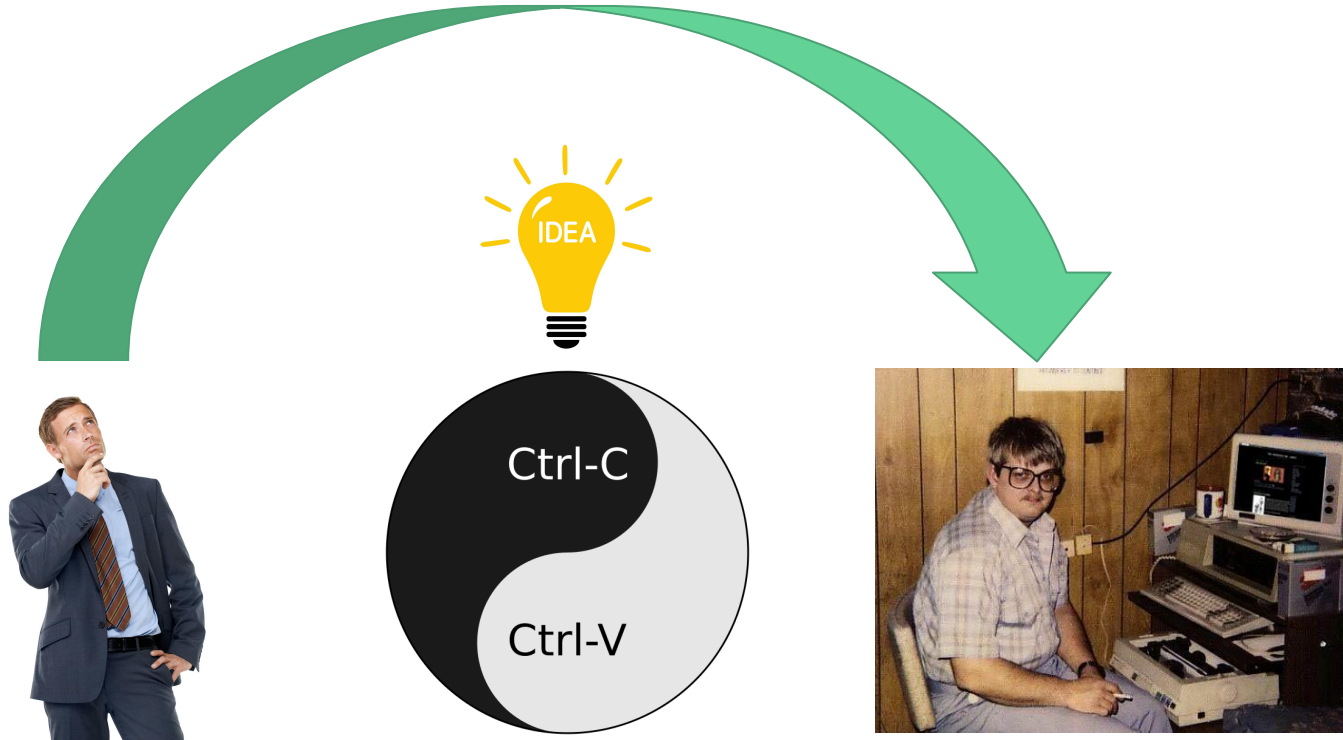
Communication in **software development**



Communication in **software development**



Communication in software development



Communication in software development

Open your mind - for copying



Copy &
Paste method

Definitive guide



Communication in software development



Communication in software development

How Projects Really Work (version 1.0)

Create your own cartoon at www.projectcartoon.com



How the customer explained it



How the project leader understood it



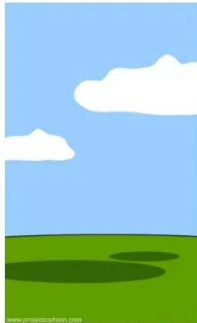
How the analyst designed it



How the programmer wrote it



How the business consultant described it



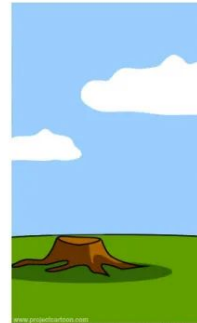
How the project was documented



What operations installed



How the customer was billed



How it was supported

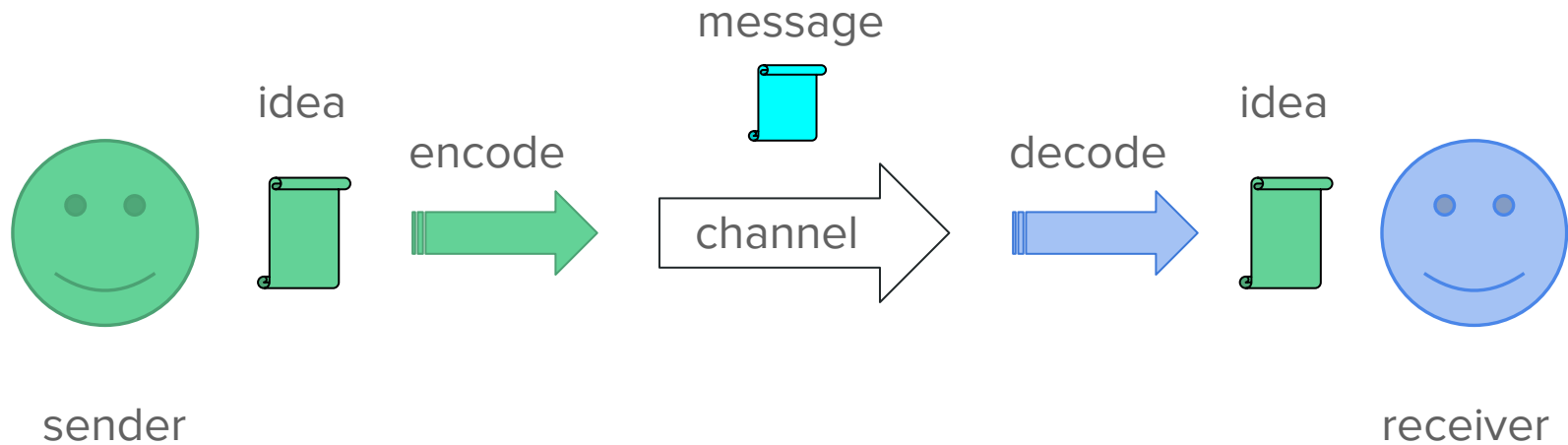


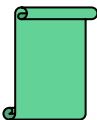
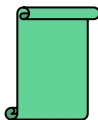
What the customer really needed

Communication in **software development**

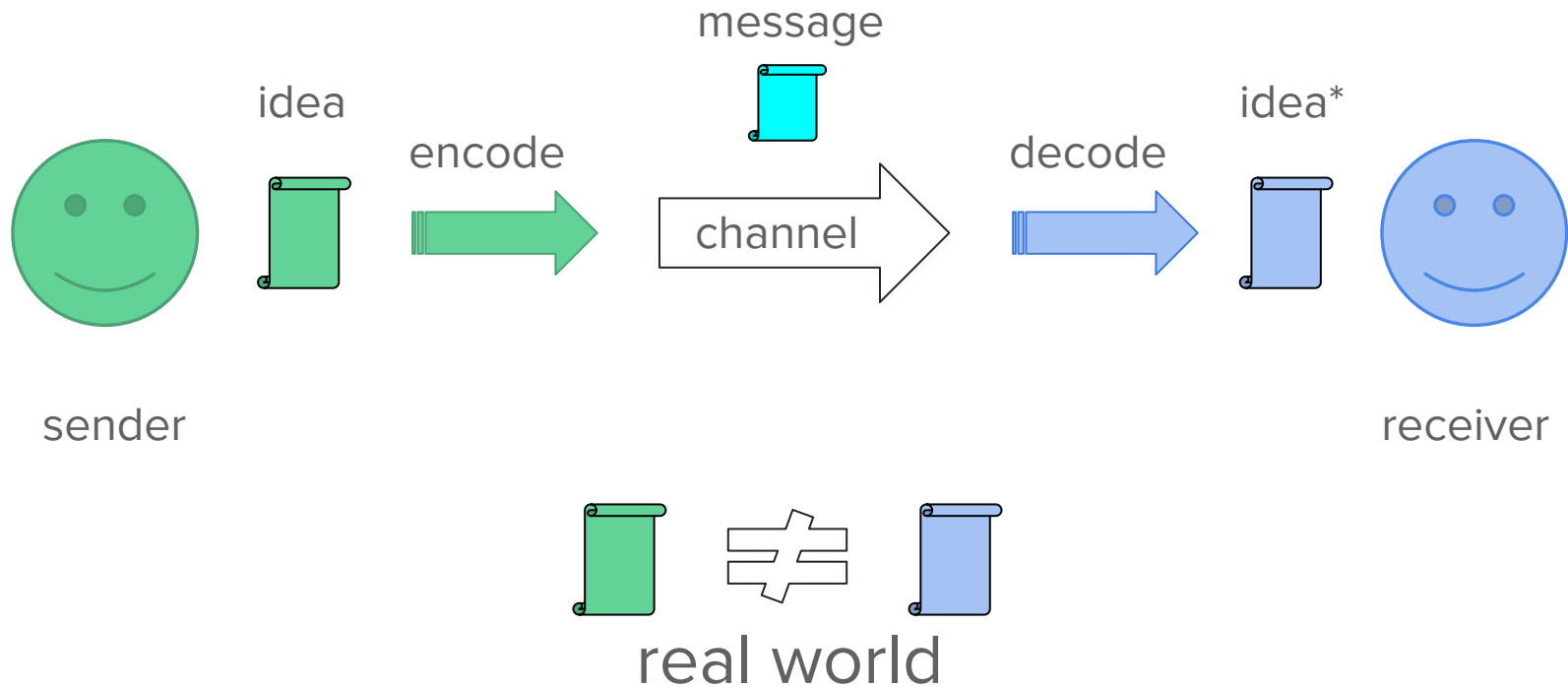
why?

Communication in software development

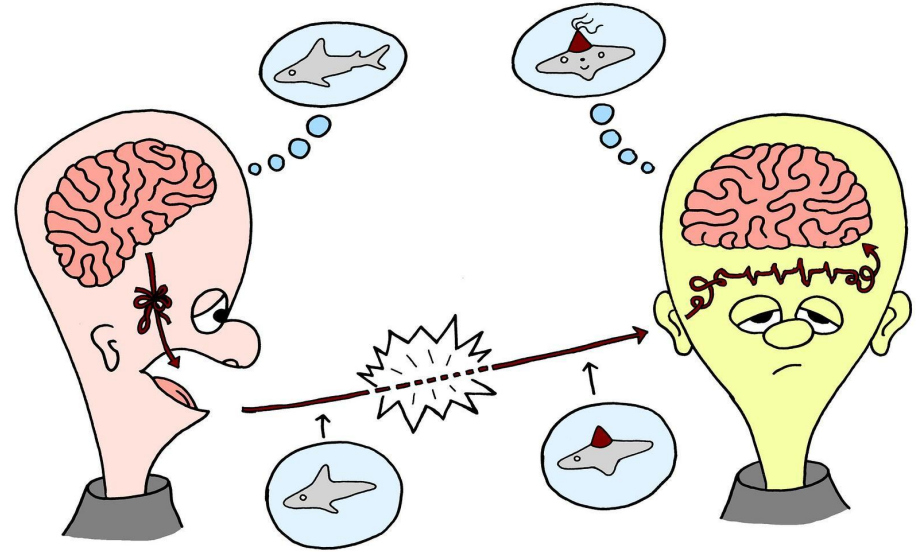
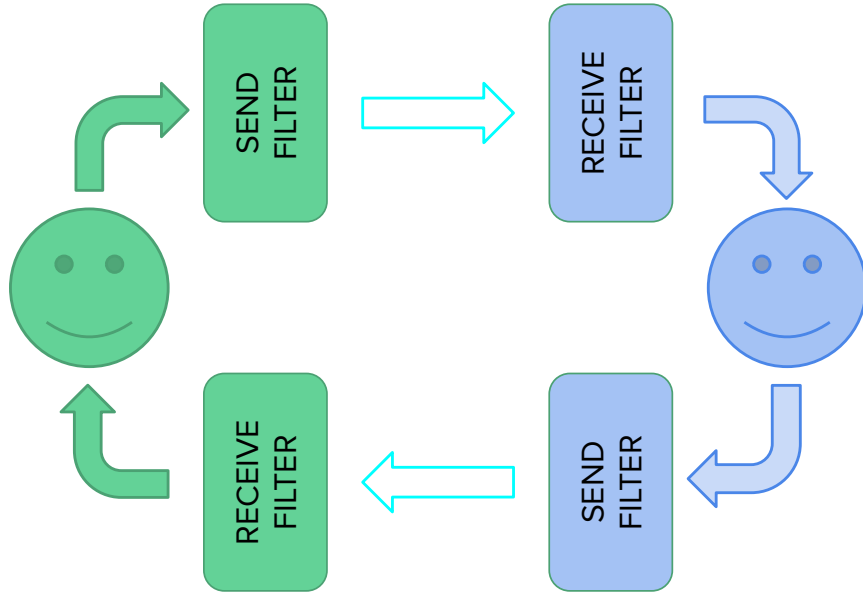


 = 
ideal world, low level view

Communication in software development



Communication in software development



Communication in software development



Communication in software development

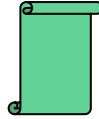


Receiver focus

Communication in software development



- distorted
- incomplete



- syntactically correct
- semantically correct

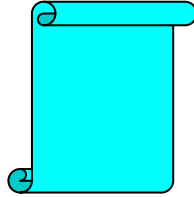


easy to notice
and challenge



hard to notice
and challenge

Communication in software development



accept



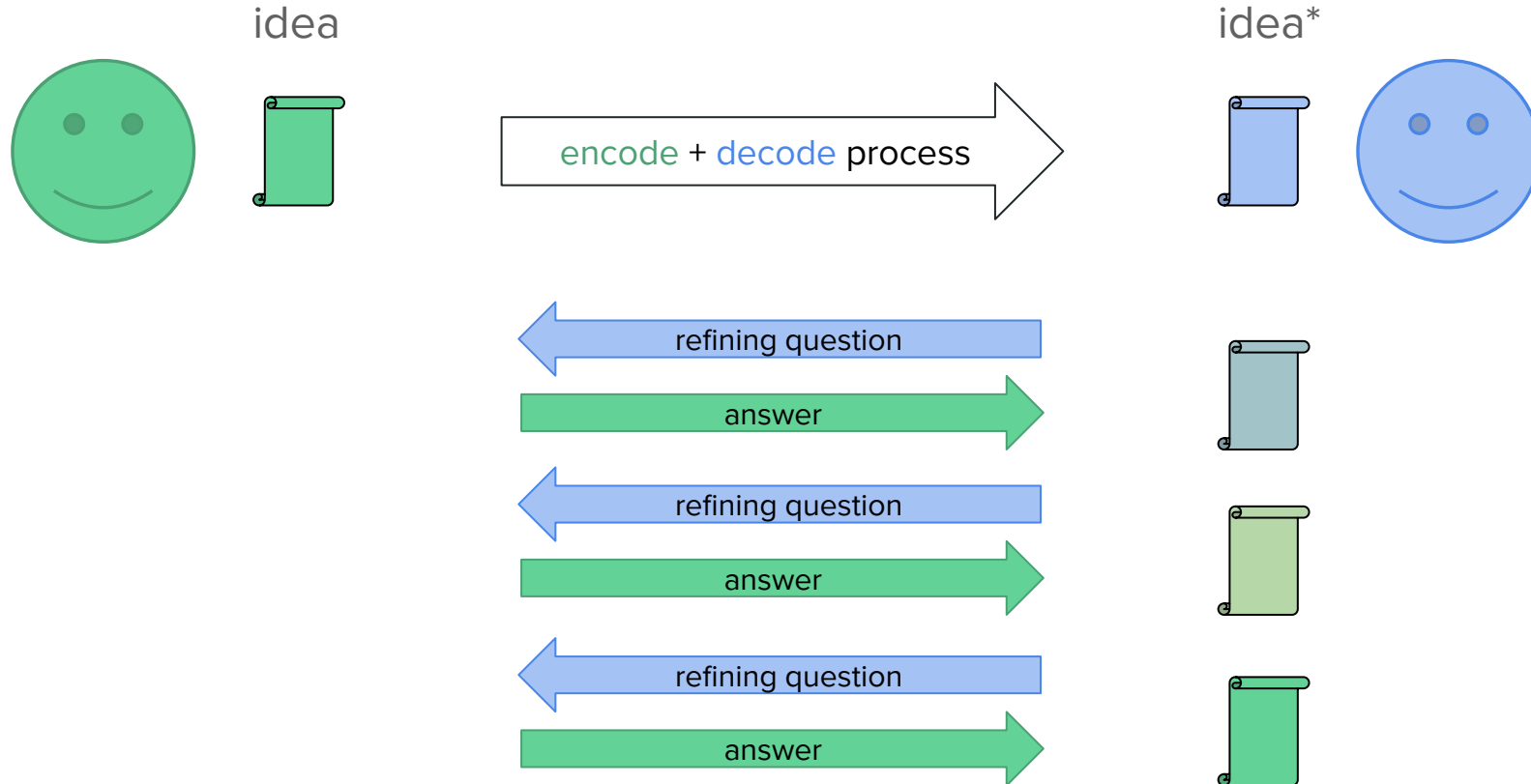
guess



ask



Communication in software development

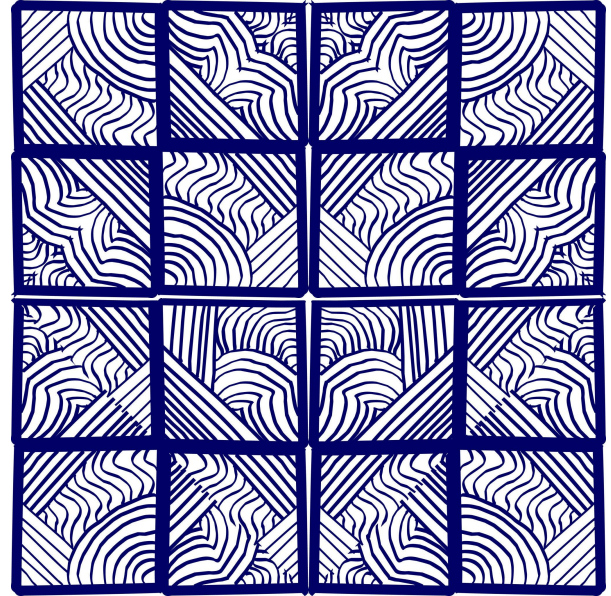
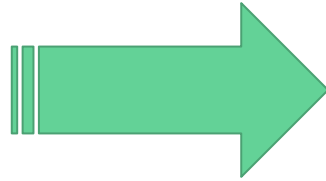


Communication in software development



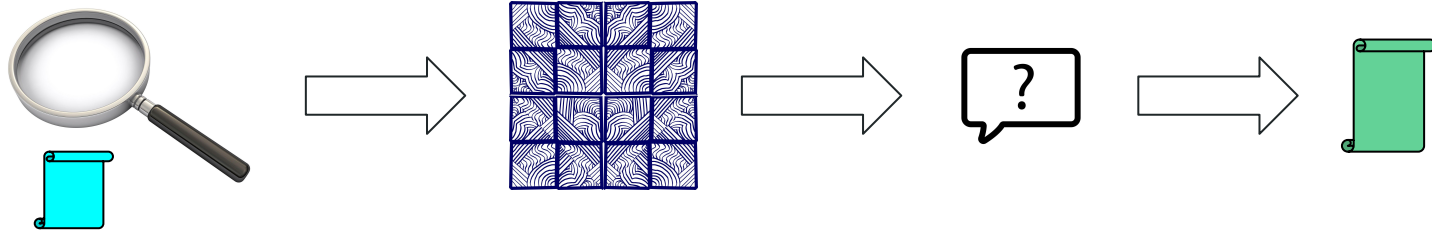
What to ask?

Communication in software development



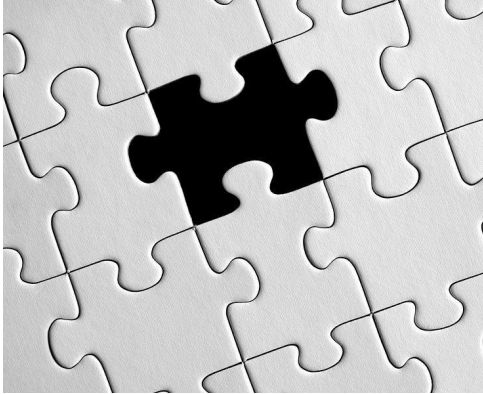
Language patterns
(Meta-Model)

Communication in software development



Receiver focus

Information can be...



...deleted



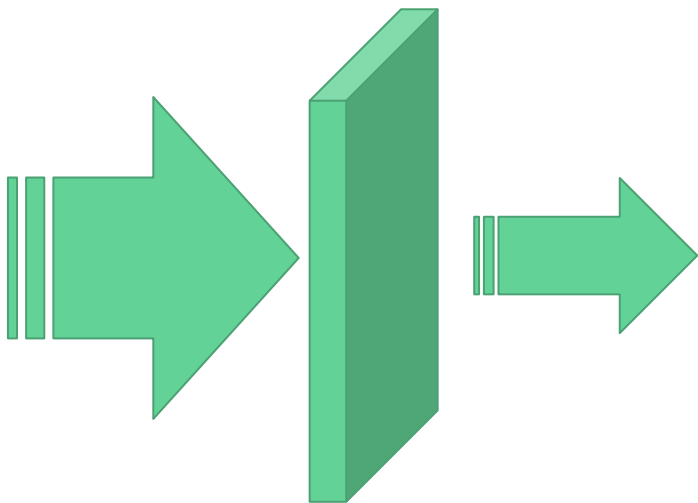
...distorted



...generalized

Deletion

Deletion filter



- negative hallucination
- [gorilla experiment](#)



Deletion - simple deletion

Missing subject or object.

Needs refactoring.

What exactly?

Decision was made.

Who made it? About what?



Deletion - comparative deletion

Missing baseline of the comparison.

This talk could be better.

Than what? In which way better?

The new system should be easier to use.

Than what? In which way?



Deletion - unspecified noun

Noun is vague, refers to unspecified person, group or thing.

It doesn't work.

What exactly is "it".

We decided not to do this.

Who are "we"? What is "this"?



Deletion - unspecified verb

Unclear how the action/process is done.

Req: the system should handle errors gracefully.

How exactly “handling errors gracefully” looks like?

A user pays at the checkout.

How the process of paying looks like?



Deletion - nominalization

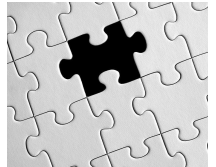
A process “frozen” into a noun.

Communication sucks.

Who is communicating what to whom and what for?

We need better a documentation.

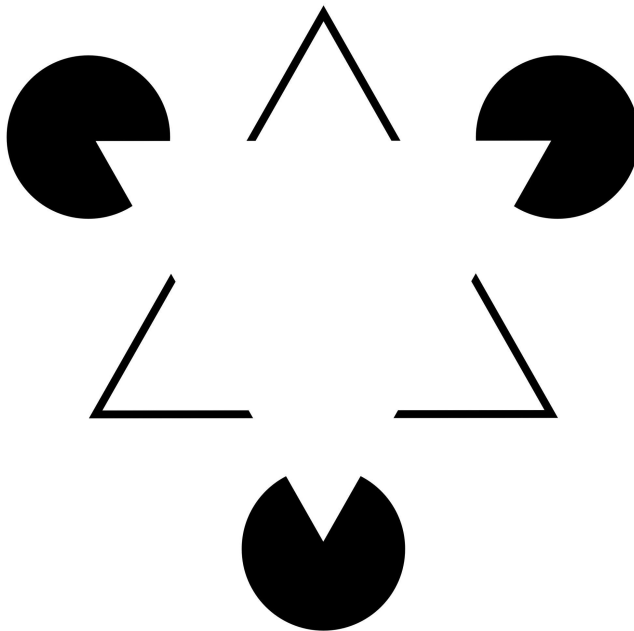
Documentation → documenting → who? for whom? how? what for?



Distortion



positive hallucinations



Distortion - cause-effect

One thing is causing another thing, causal connection of things/events.

Clean code causes terrible performance.

How specifically does CC causes it?

Writing tests annoys me.

How specifically...



Distortion - complex equivalence

Two distinct events/things are equated: “this means that”.

Comments mean the code failed to speak for itself.

How does comments mean...? Could there be other reasons?

He didn't respond to my message - he is ignoring me.

Could there be other reasons for missing a response?



Distortion - mind reading

Speaker claims to know others' internal state.

Customers will love this feature.

How do you know that? Any evidences?

You can easily add this feature.

How do you know it going to be easy?



Distortion - presuppositions

Hidden assumptions embedded in the statement as a fact.
The receiver must accept it to process the message.

What makes you assume that...

Are we going to ship this feature on Friday or Monday?

We have something to ship.

We are going to ship it.

There are only 2 options to choose from.

When are you going to clean up this mess?

There is a mess.

It needs cleaning up.

You will do it.



Generalization



- rules,
- judgments,
- constrains

Generalization - universal quantifier

A word introducing a universal rule without exceptions.

Red light (always) follows the single yellow.

Always? In every intersection? In every country?

We never have more than 4 digital outputs.

Never ever? Has there ever been a one time when you needed 5 or more?



Generalization - lost performative

Value judgement without naming the judge - seems to be “universal truth”.

Obviously the most stable OS is Windows.

According to whom it is the most stable?

Real developers use Linux.

Who says so?



Generalization - modal operator of possibility

Possibility is blocked → “there is no choice”.

It is impossible to get this data pushed to you on change.

What stops it? Is there a technical limitation, maybe capability (nobody to fix it), internal policy?

There is no way we can support both versions.

What blocks it? Company policy? Technical limitations?



Generalization - modal operator of necessity

Something must (or not) be done → “there is no choice”.

We have to add delay before sending a message.

What happens if we don't?

You have to use float for all the numbers in the code.

What if we don't?



Communication in software development

Is it enough?



Nope... but it helps.

Communication in software development

What can we do?

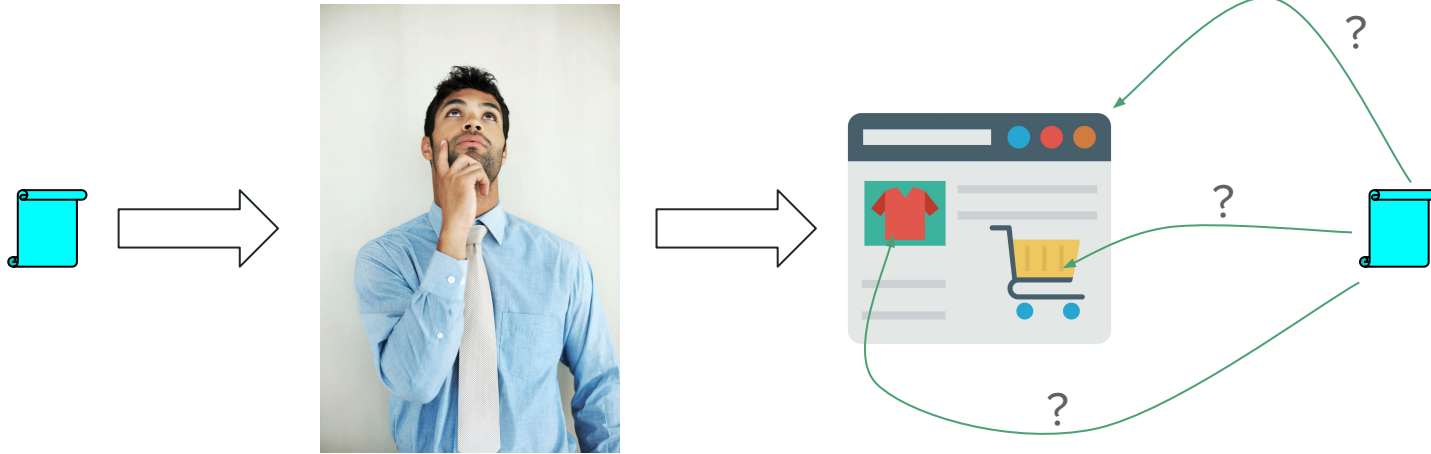


Pay attention to the language



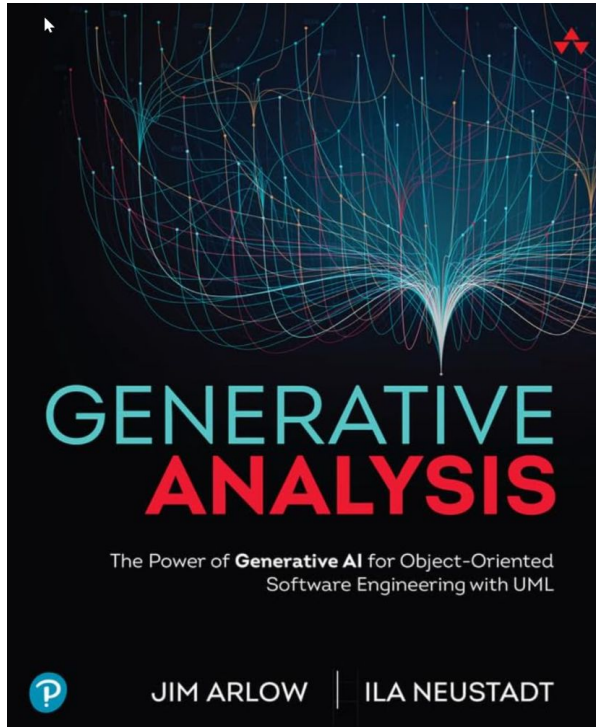
- not clear → clarify
- clear → ensure it is clear :-)
- ask “stupid” questions
- simple terms (reduce complexity)
- common vocabulary
- focus on important information
- prefer **how** over *why*
- use representational tracking

Representational tracking



Is all you imagined in the message(s)? If not - you are hallucinating.

Sources, links



Sources, links

- https://en.wikipedia.org/wiki/Symbolic_communication → language models
- https://en.wikipedia.org/wiki/Shannon%E2%80%93Weaver_model
- https://en.wikipedia.org/wiki/Schramm%27s_model_of_communication
- https://en.wikipedia.org/wiki/Transformational_grammar → deep and surface structure
- https://en.wikipedia.org/wiki/Neuro-linguistic_programming → meta-model
- https://en.wikipedia.org/wiki/Map%E2%80%93territory_relation → “map is not the territory”
- license free stock images (google slides)
- <https://www.publicdomainpictures.net/en/view-image.php?image=296675&picture=define-definition>
- https://commons.wikimedia.org/wiki/File:Idea_House.jpg
- <https://commons.wikimedia.org/wiki/File:Binary-code.png>
- <https://de.m.wikipedia.org/wiki/Datei:Kopimizm.svg>
- <https://www.flickr.com/photos/jurgenappelo/5201250095>
- https://commons.wikimedia.org/wiki/File:Greek_Medical_Texts_Welcome_L0050065.jpg
- <https://www.rawpixel.com/image/5921076/free-missing-jigsaw-public-domain-cc0-photo>
- https://commons.wikimedia.org/wiki/File:Traffic_Light_-_Realistic.jpg
- <https://www.illusionsindex.org/i/kanizsa-triangle>



NLP - neuro-linguistic programming?



NLP (as whole) vs Meta Model (as part of the NLP)

- NLP - considered as pseudoscience
 - eye-accessing cues - no or weak evidence
 - modality preferences/learning styles - no or weak evidence
 - therapeutic outcome claims - no or weak evidence
- Meta-model
 - no neurological claim
 - based on:
 - transformational grammar (Chomsky) - distinction between surface structure and deep structure
 - general semantics (Korzybski) - “map is not the territory”, process of abstracting (deletion, distortion, generalization)
 - observations of real transcripts of real therapists (V. Satir and F. Perls) and extracting patterns

Meta-model - claims

- People omit information when speaking
- People generalize specific experiences into rules
- People speak in nominalizations (process → noun)
- Asking questions recovers missing information

