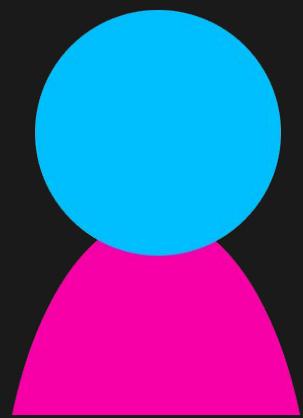
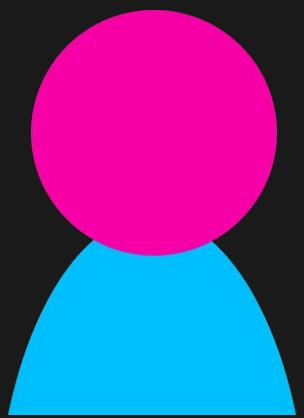
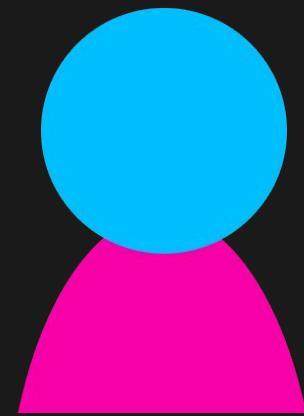
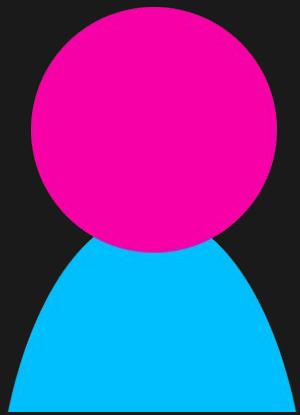
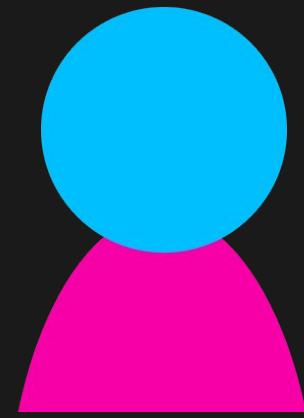
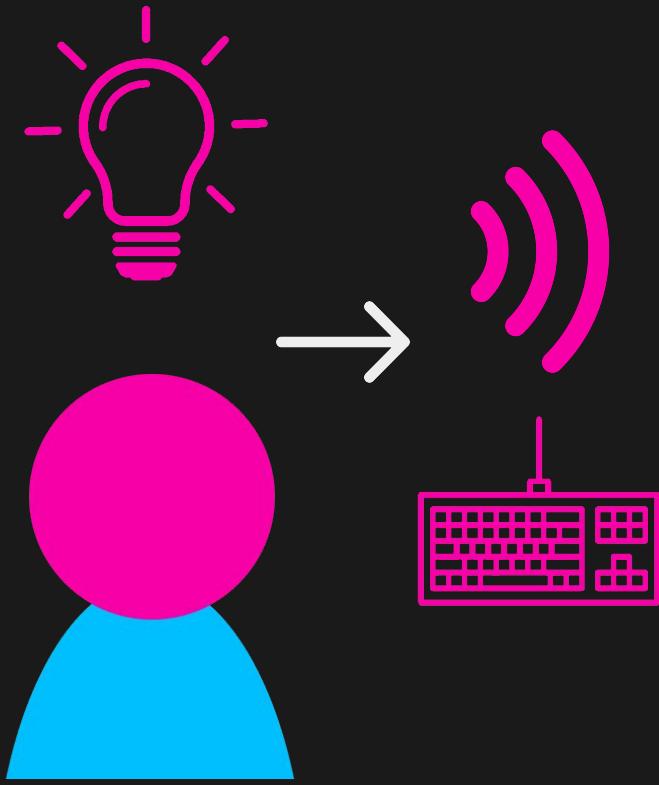


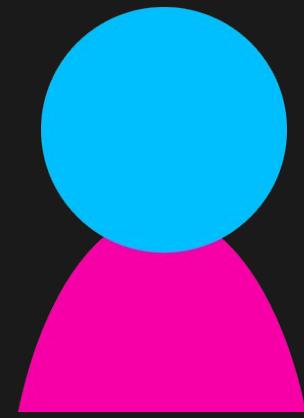
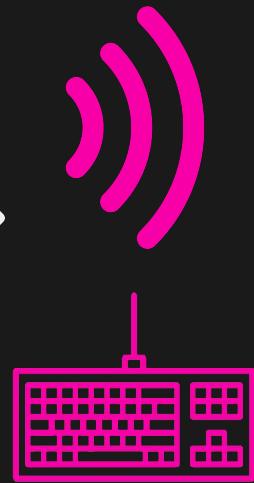
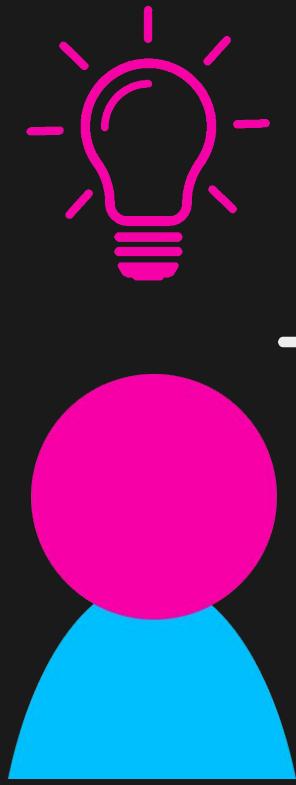
Language Games

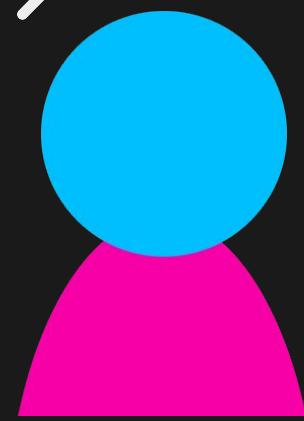
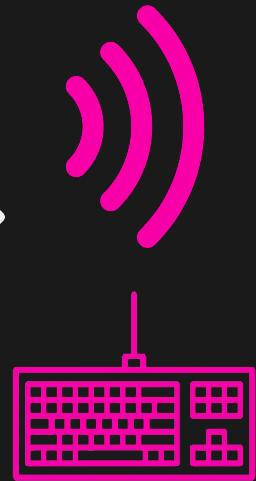
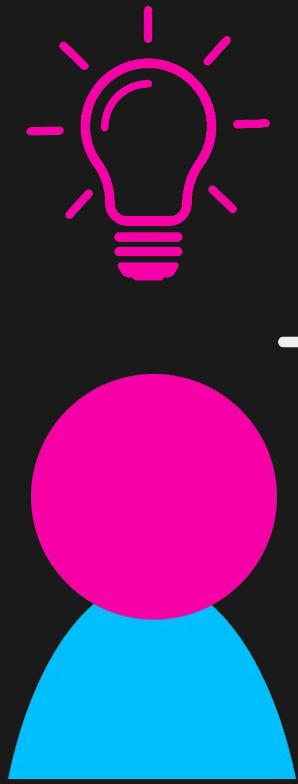
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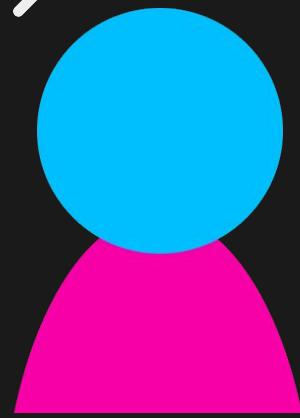
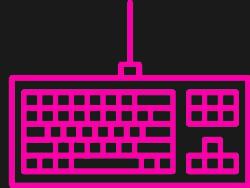
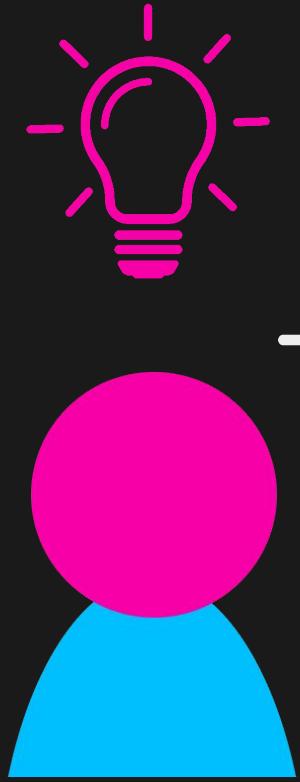


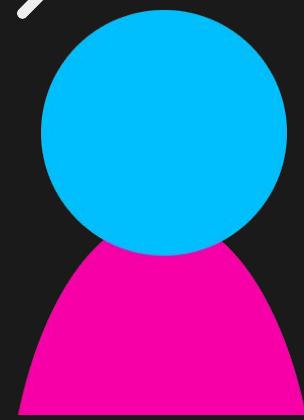
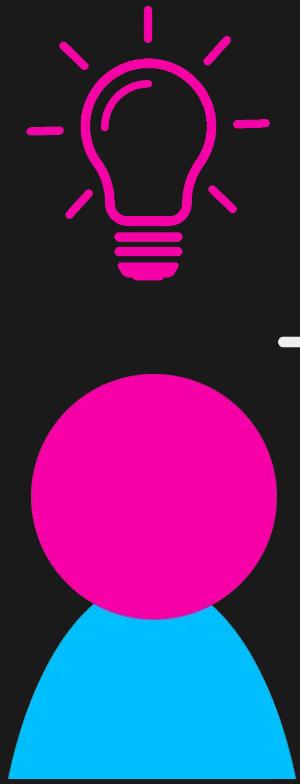


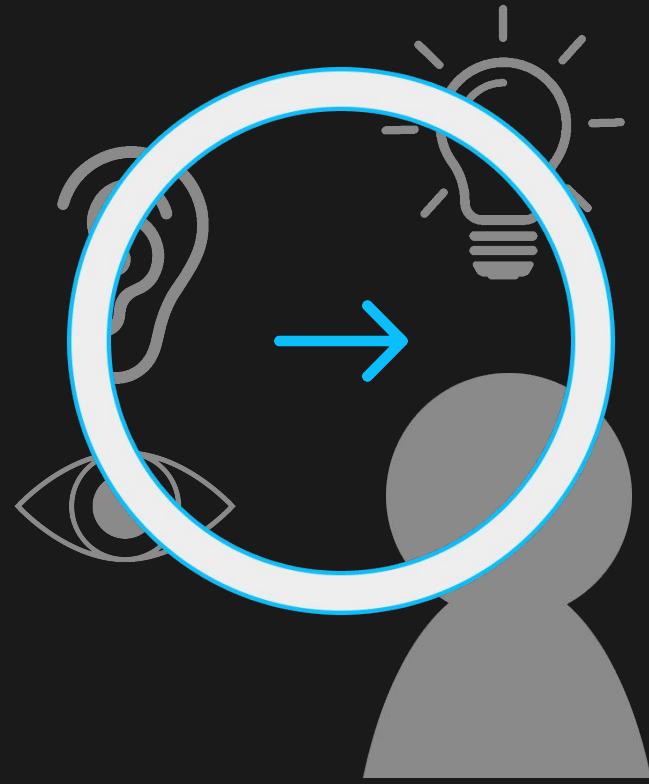
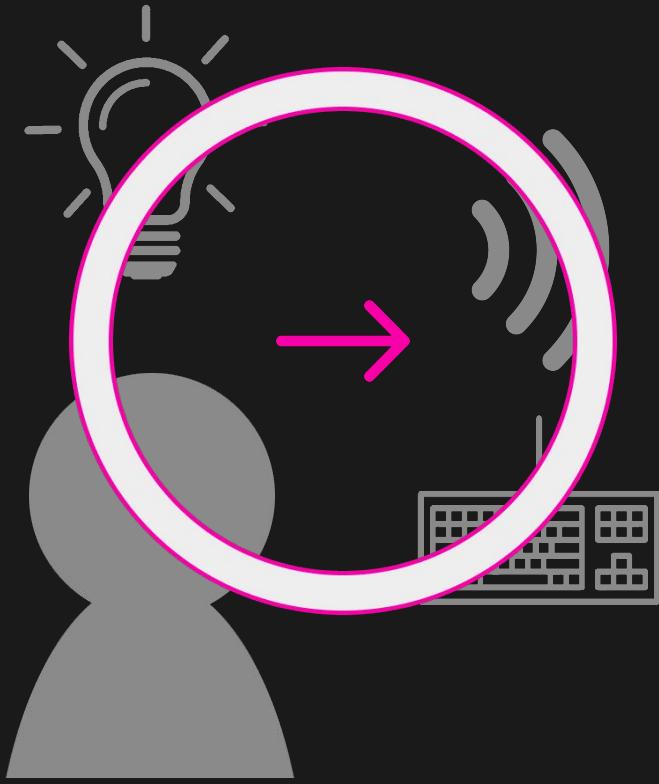


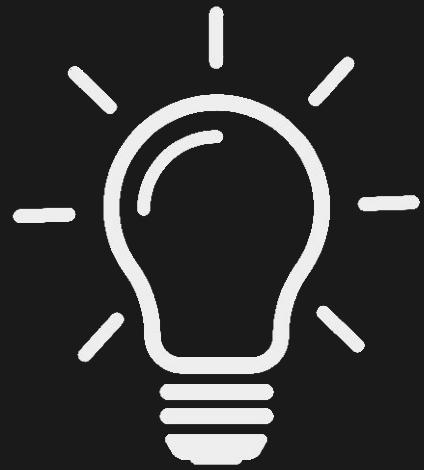














Ferdinand de Saussure

1857-1913

A black and white profile photograph of Ferdinand de Saussure, showing him from the chest up. He is facing left, wearing a dark suit jacket over a white shirt and a dark tie. His hair is dark and neatly styled, and he has a well-groomed mustache. The background is a dark, textured studio backdrop.

Ferdinand de Saussure

1857-1913

One of the founders of 20th
century linguistics



Ferdinand de Saussure

1857-1913

One of the founders of 20th
century linguistics

One of the two major founders
of *semiotics*





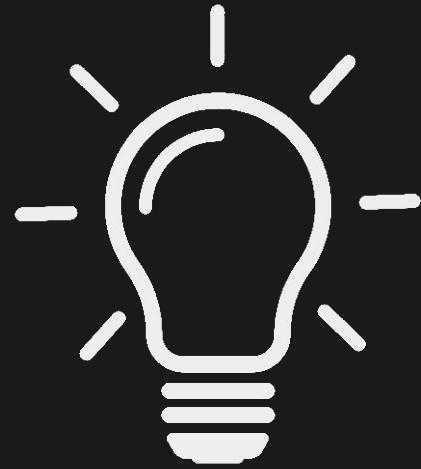
signified



signified



signifier



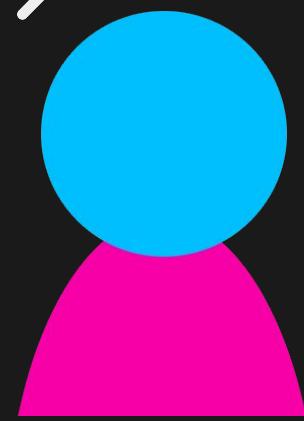
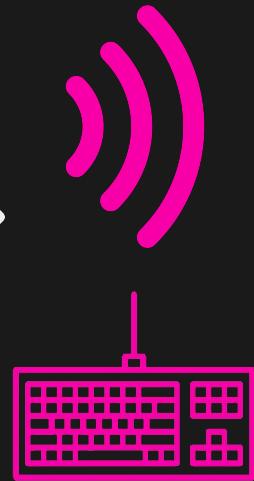
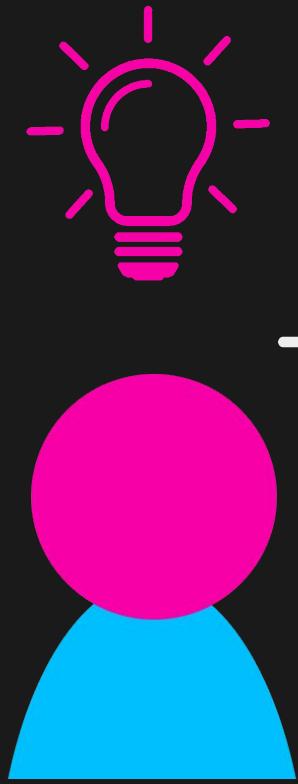
~~signified~~
concept

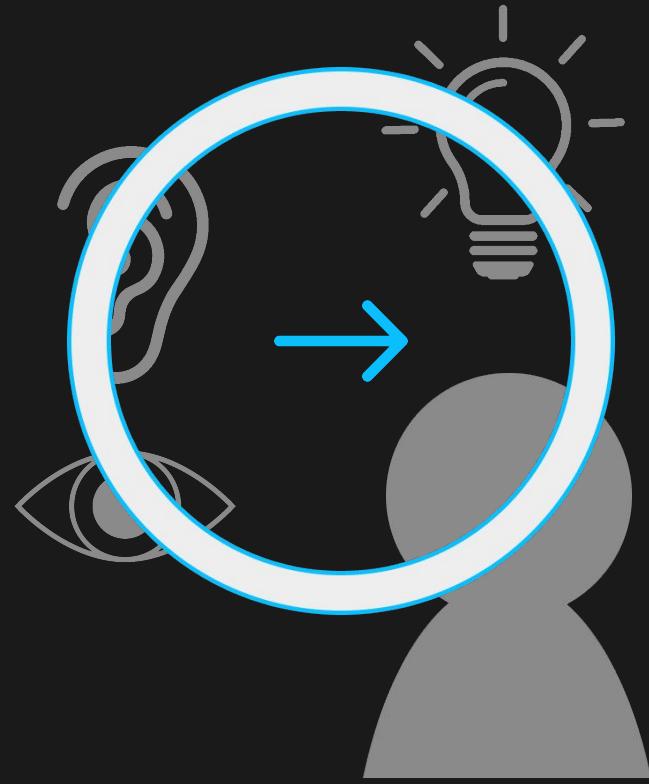
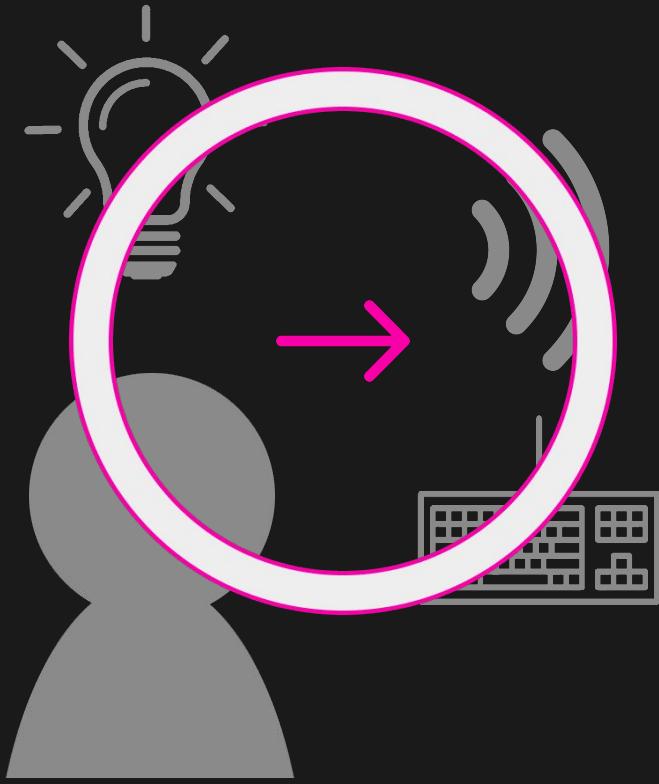
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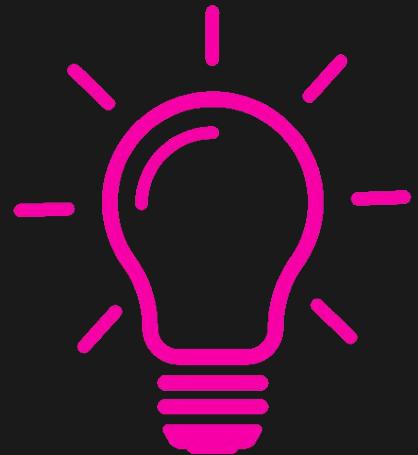






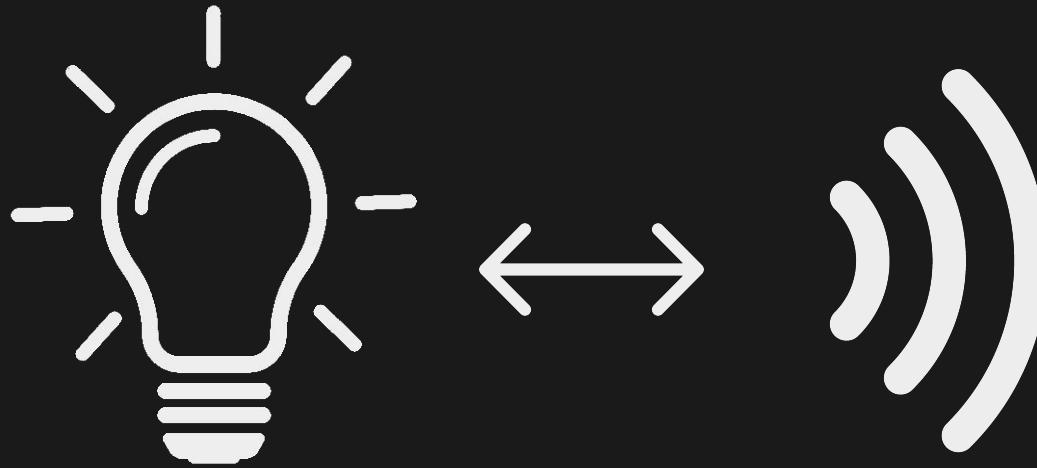






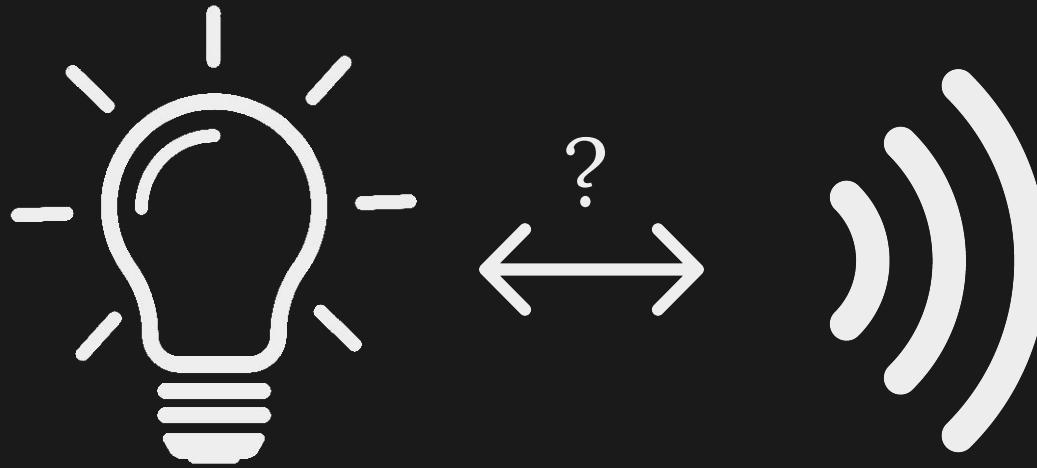


saudade



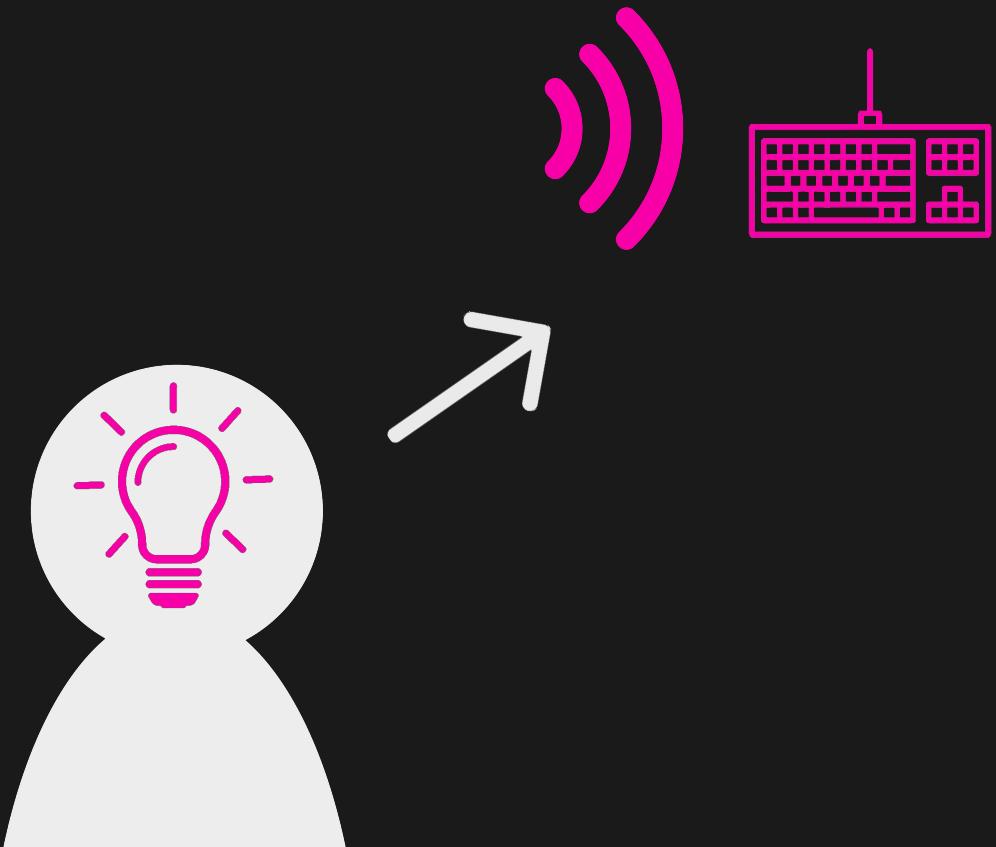
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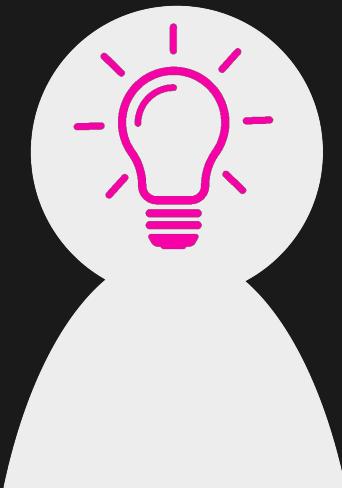
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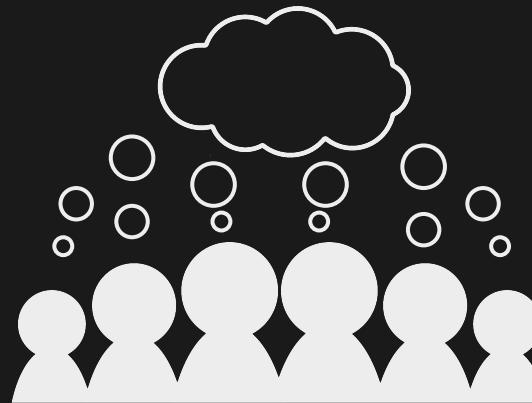


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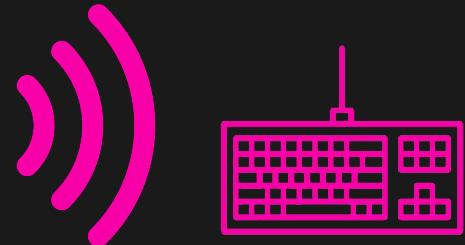
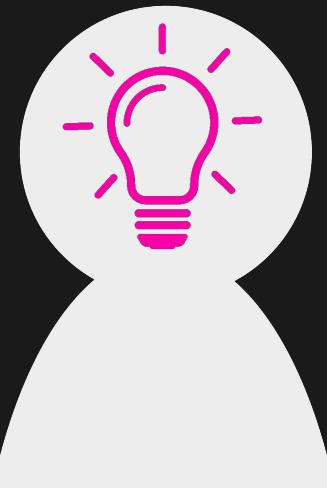
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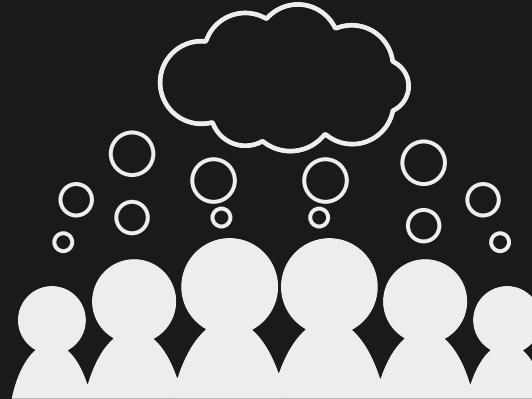




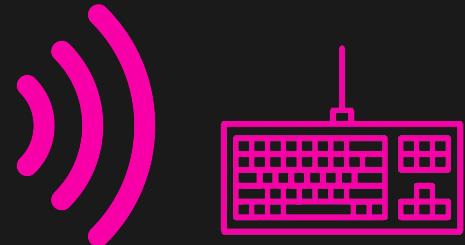
langue



parole



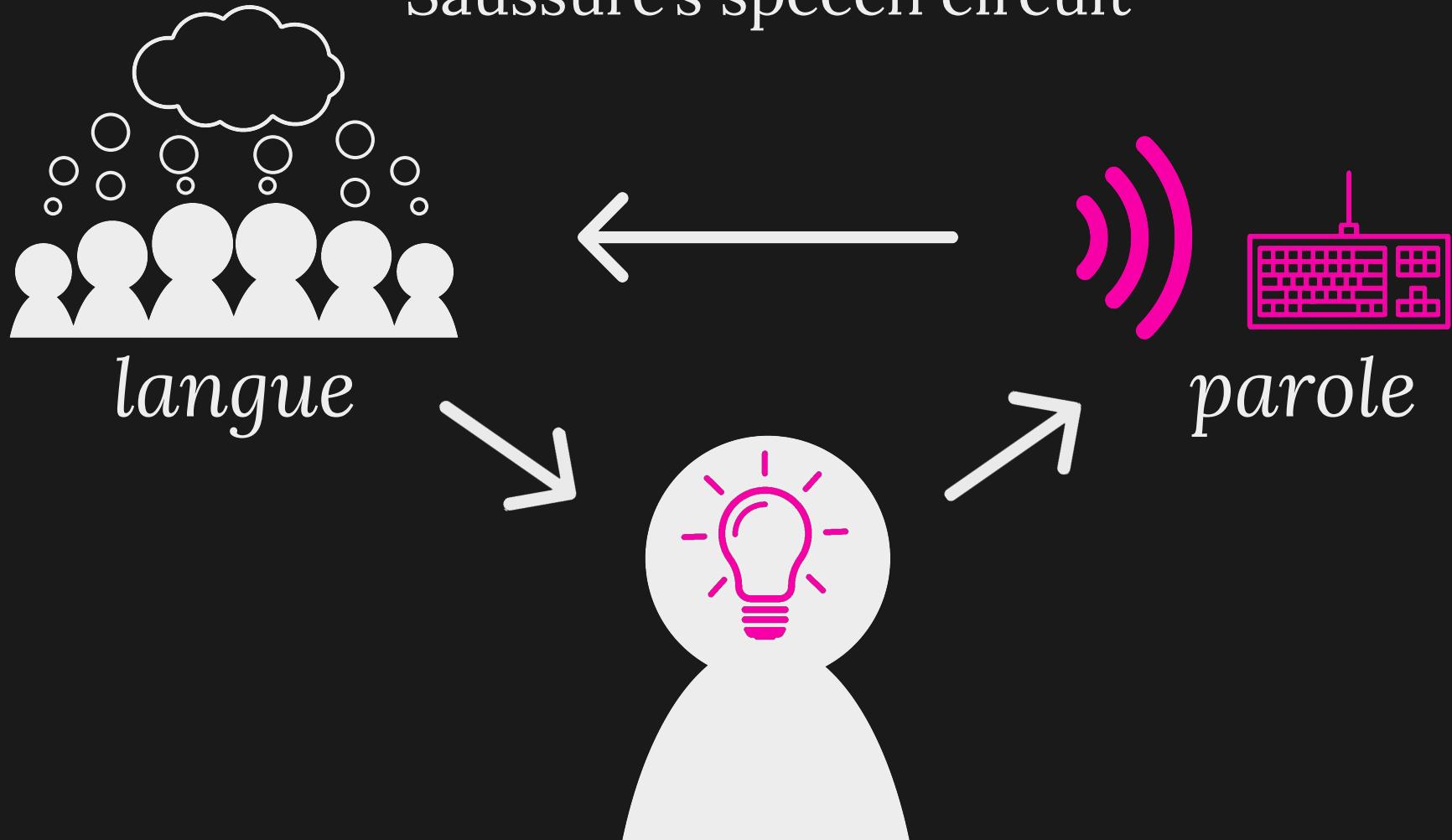
langue



parole



Saussure's speech circuit





langue



Ludwig Wittgenstein

1889-1951

A black and white portrait photograph of Ludwig Wittgenstein, showing him from the chest up. He has dark, wavy hair and is wearing a light-colored collared shirt under a dark, textured jacket. The background is a mottled, light-colored surface.

Ludwig Wittgenstein

1889-1951

Philosopher of logic,
mathematics, and language

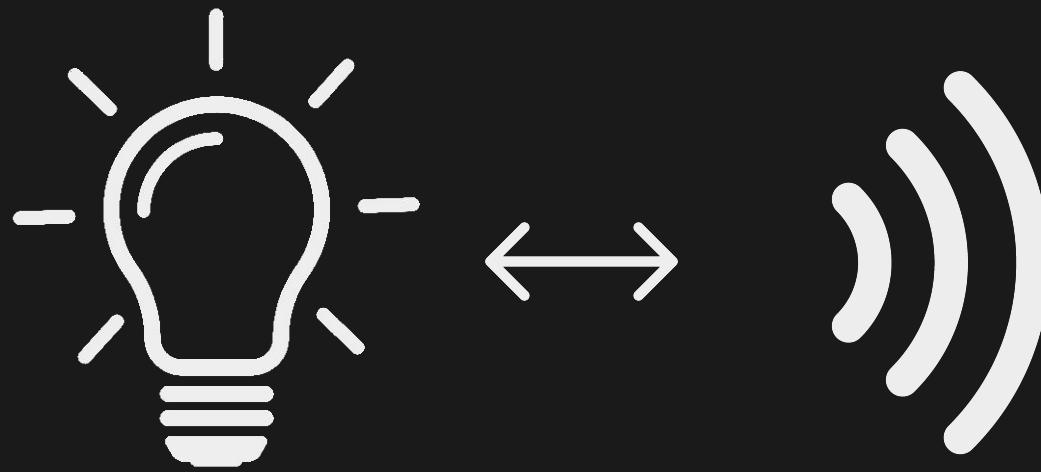


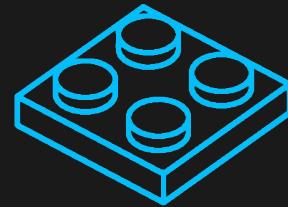
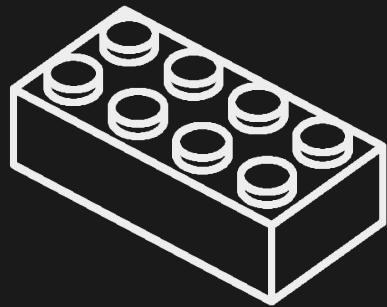
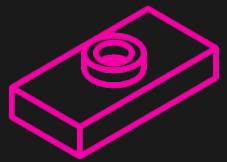
Ludwig Wittgenstein

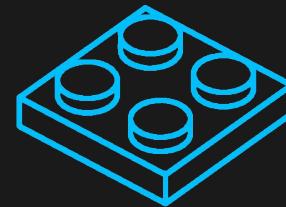
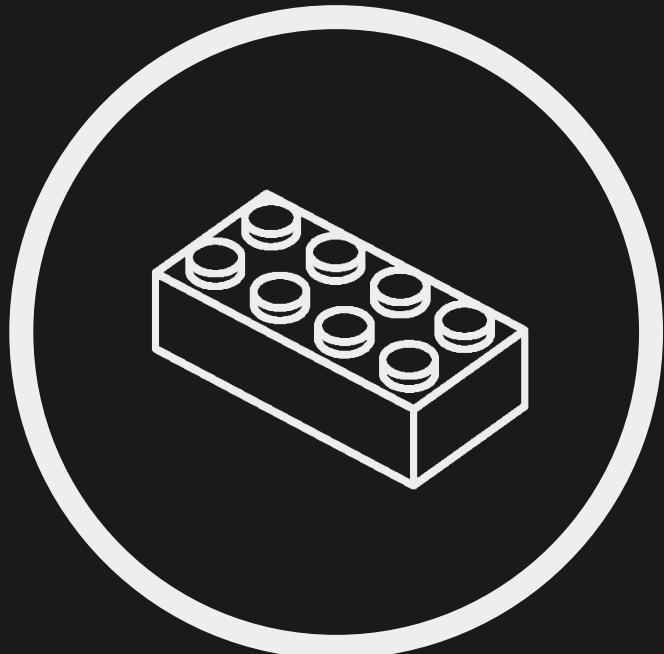
1889-1951

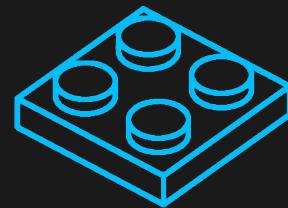
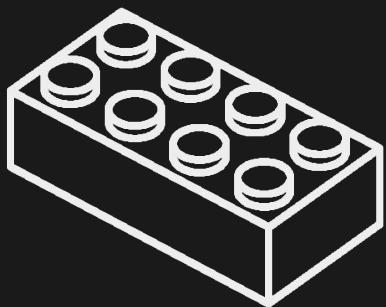
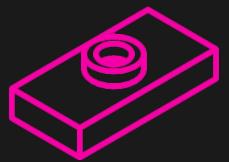
Philosopher of logic,
mathematics, and language

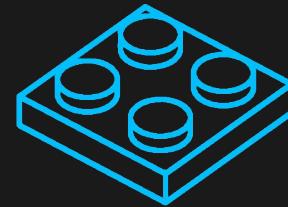
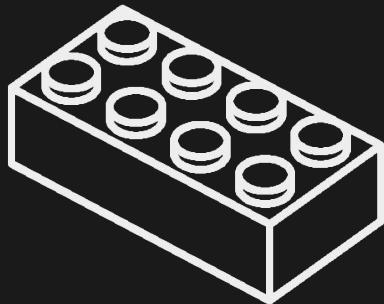
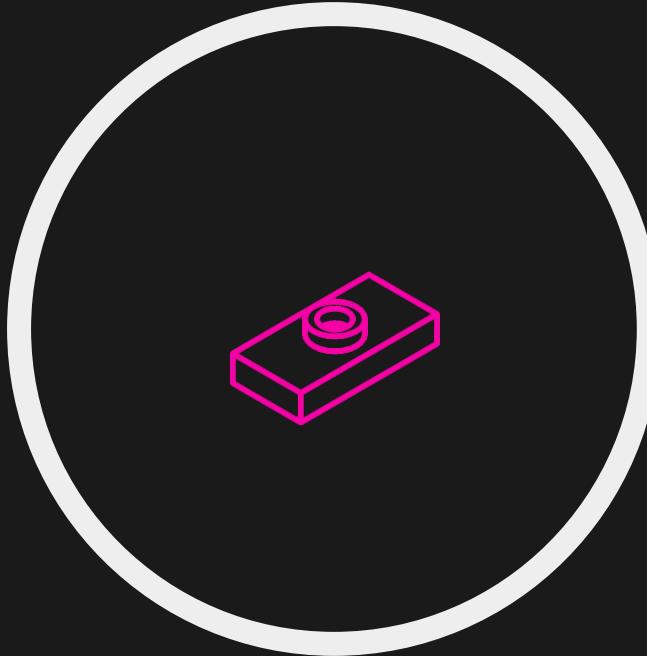
Created the concept of
language-games

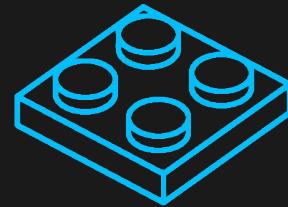
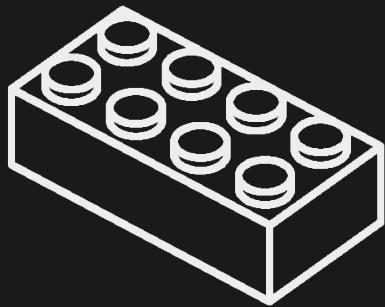
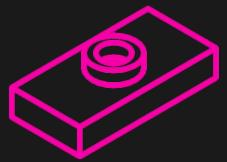












More people have been
to Berlin than I have.

We need to unsharpen
the baby.

context sets the rules for a
language-game

saudade

THIS IS NOT A
PLACE OF HONOR





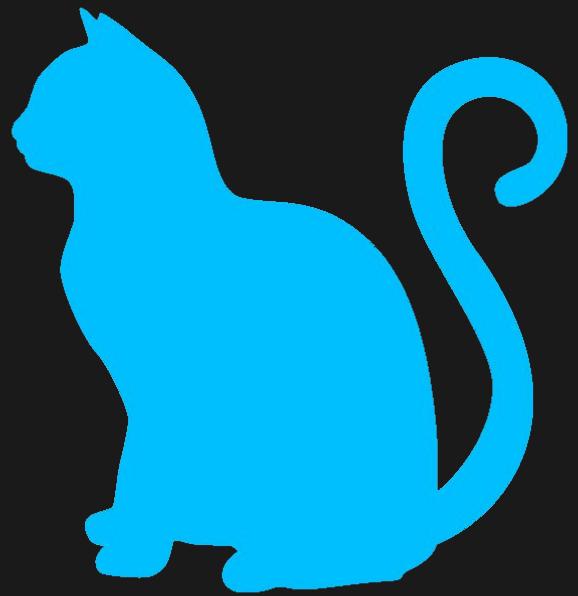


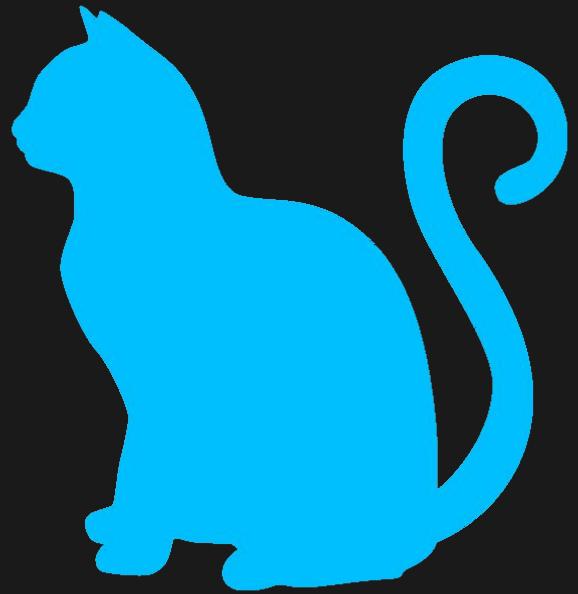












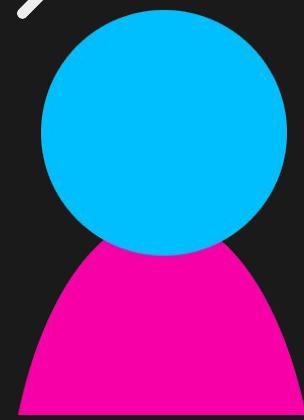
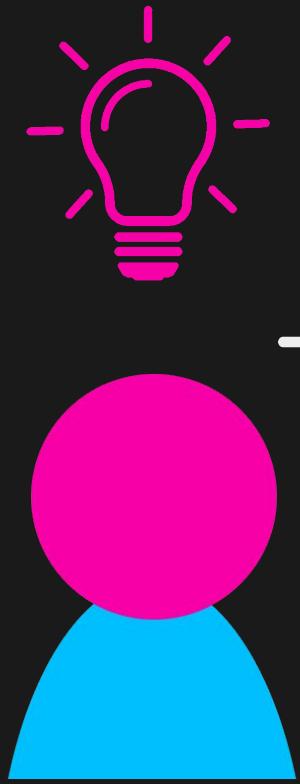
“Don’t Change Color, Kitty”

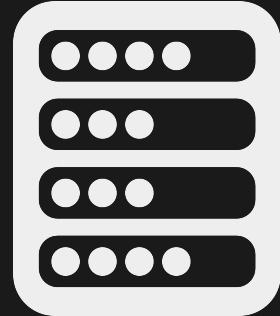
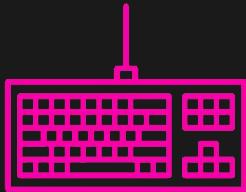
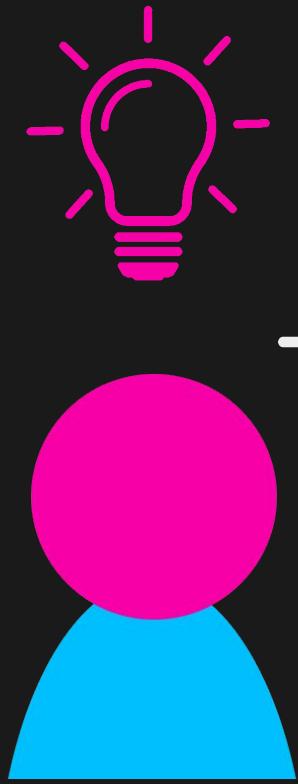


slaps roof of conference keynote

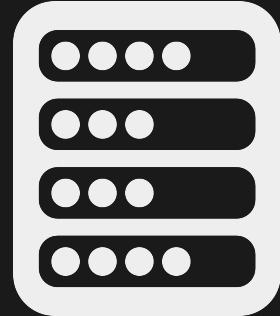
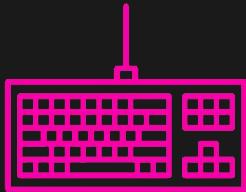
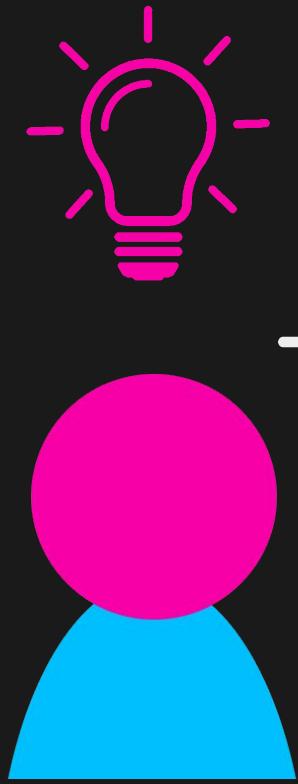
**this bad boy can fit
so many memes in it**

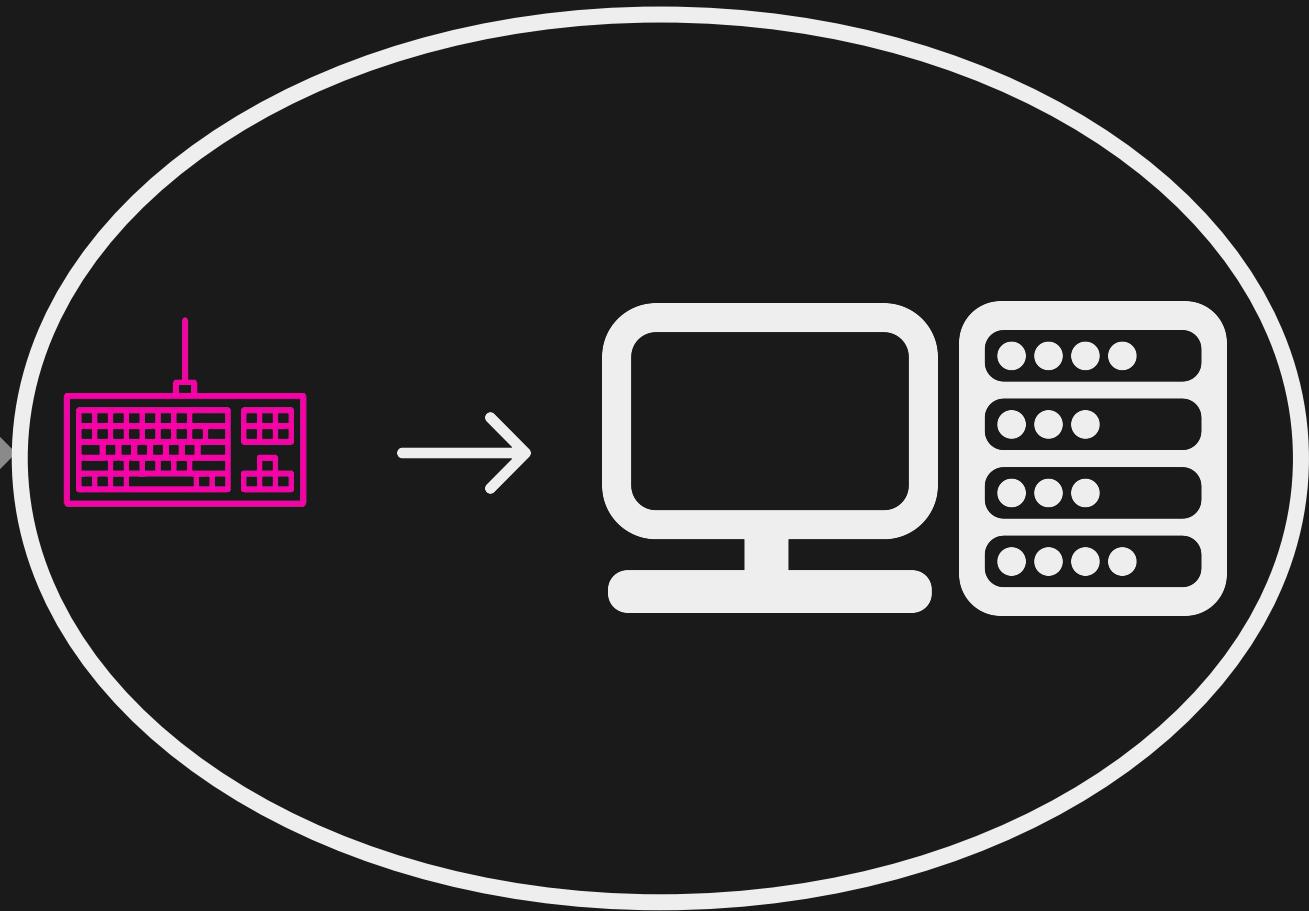
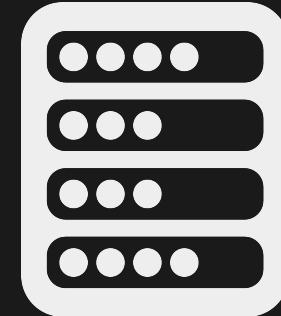
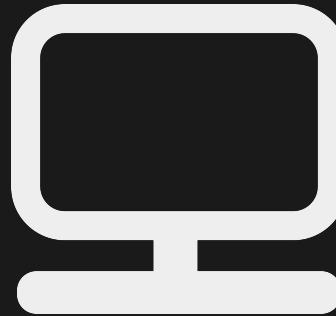
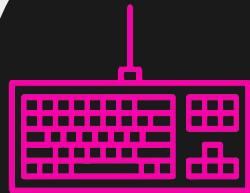
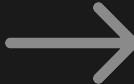
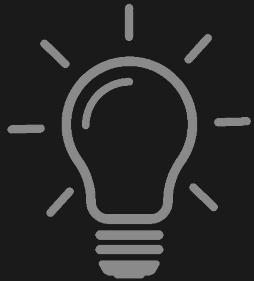


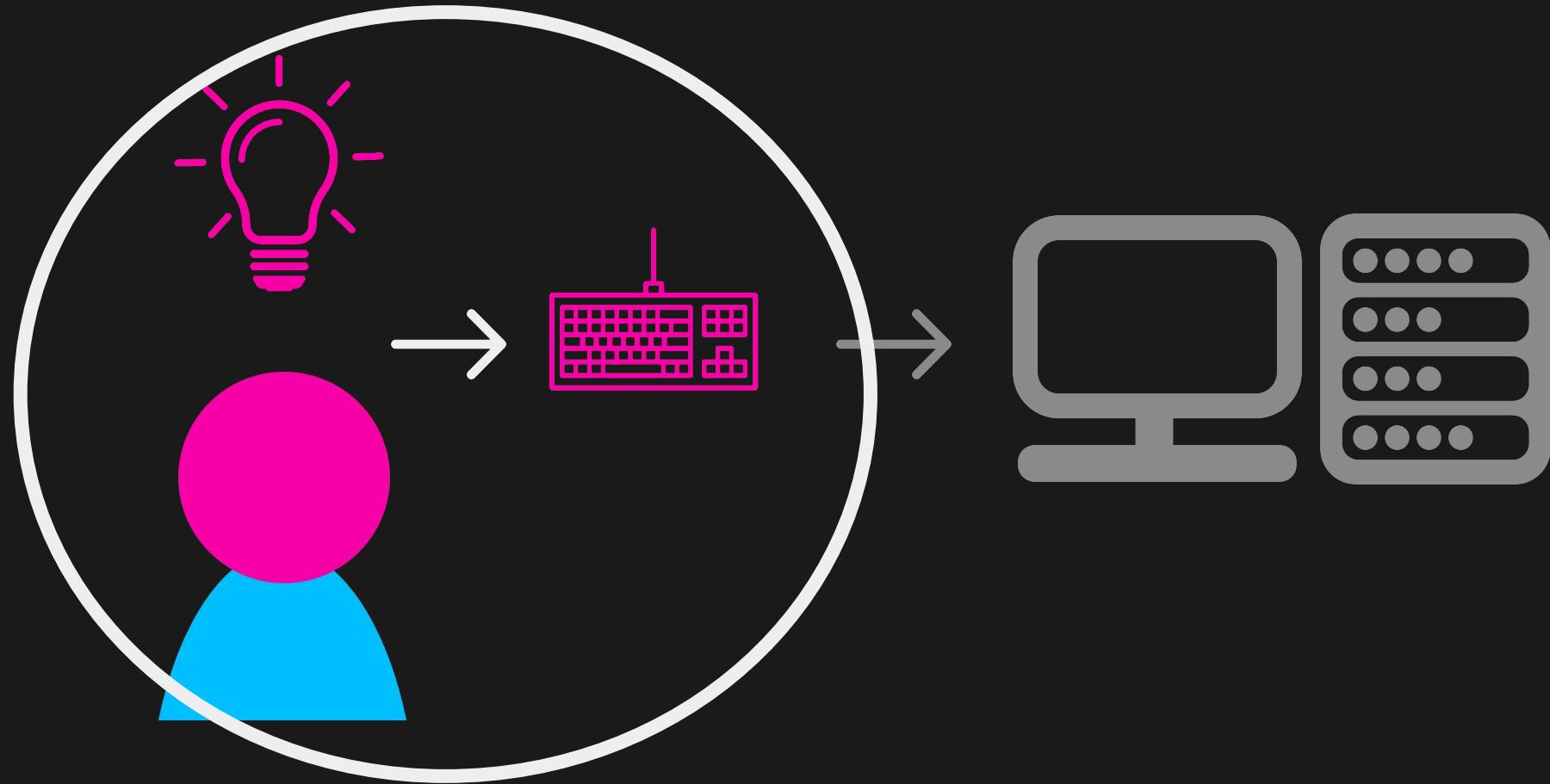


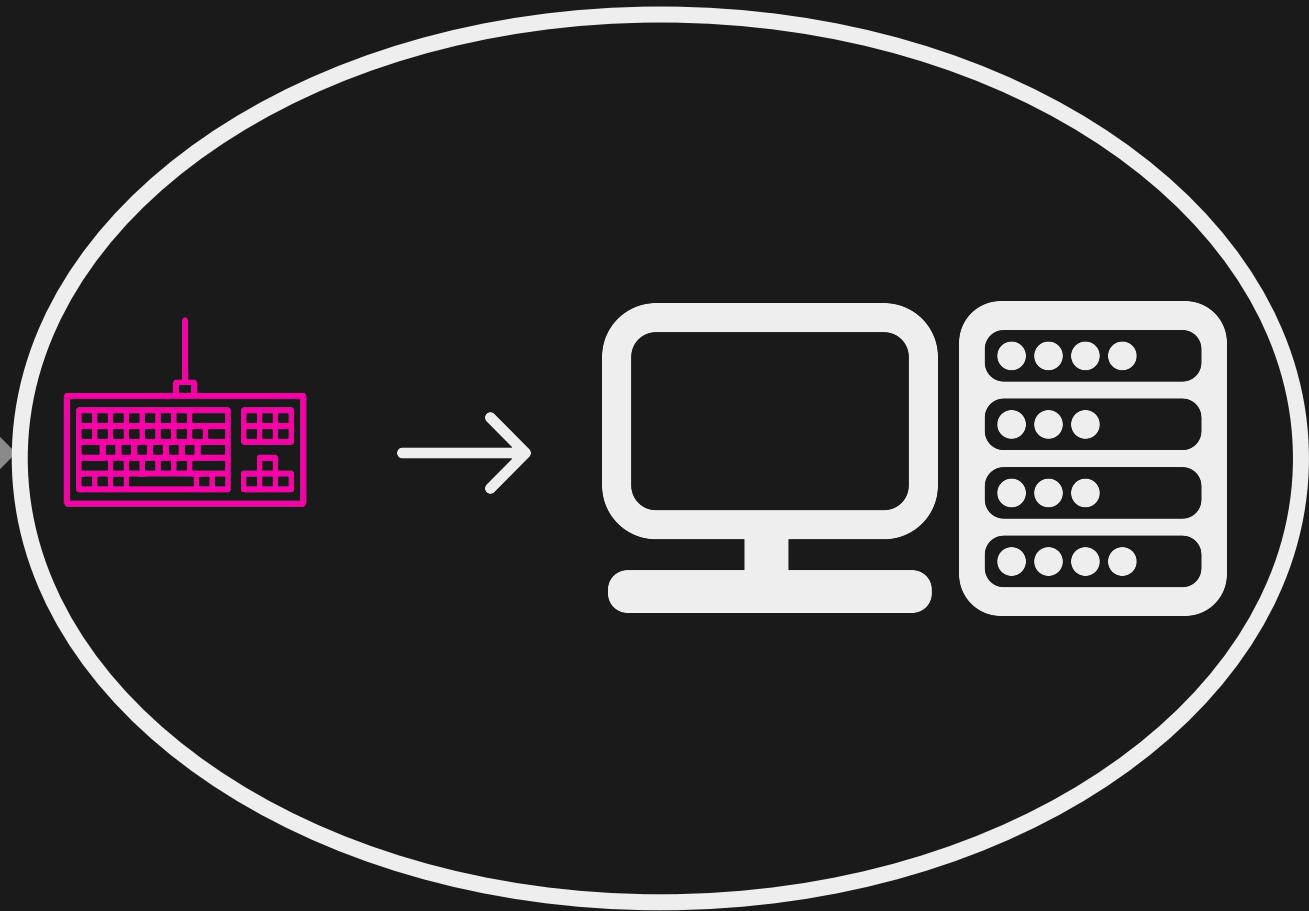
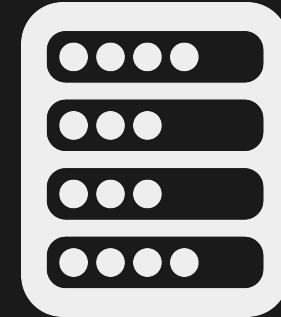
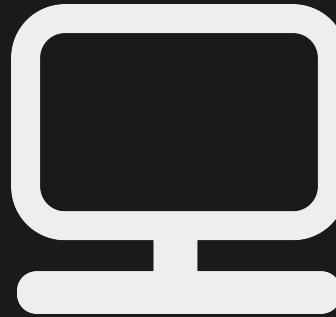
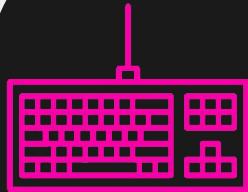
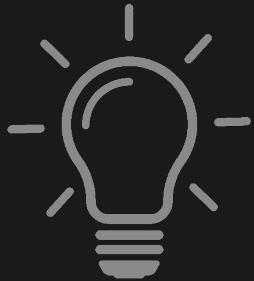
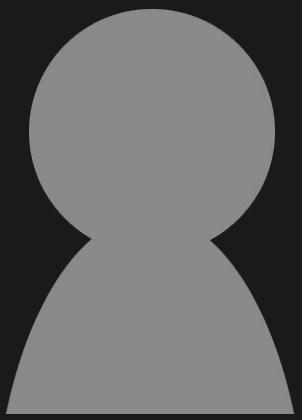


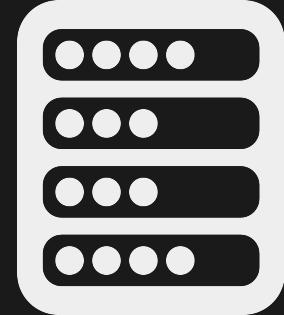
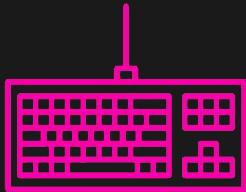
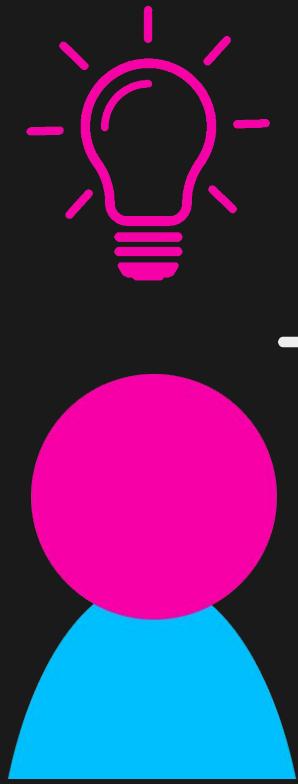
A programming language is a
set of rules for a language-game

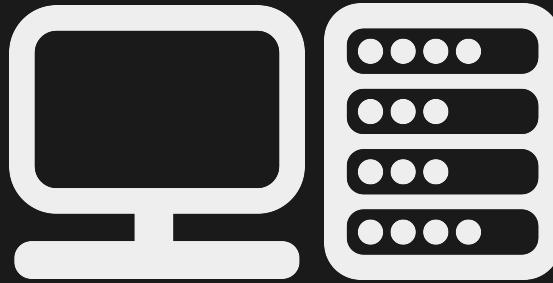
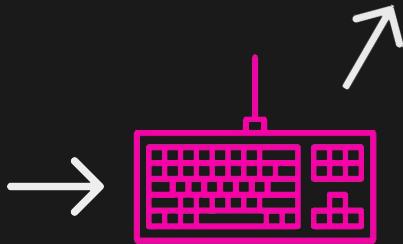
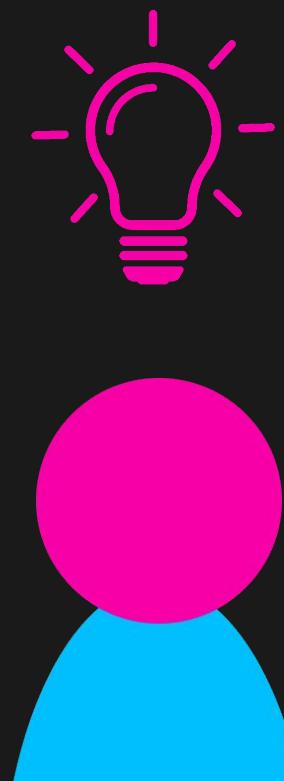


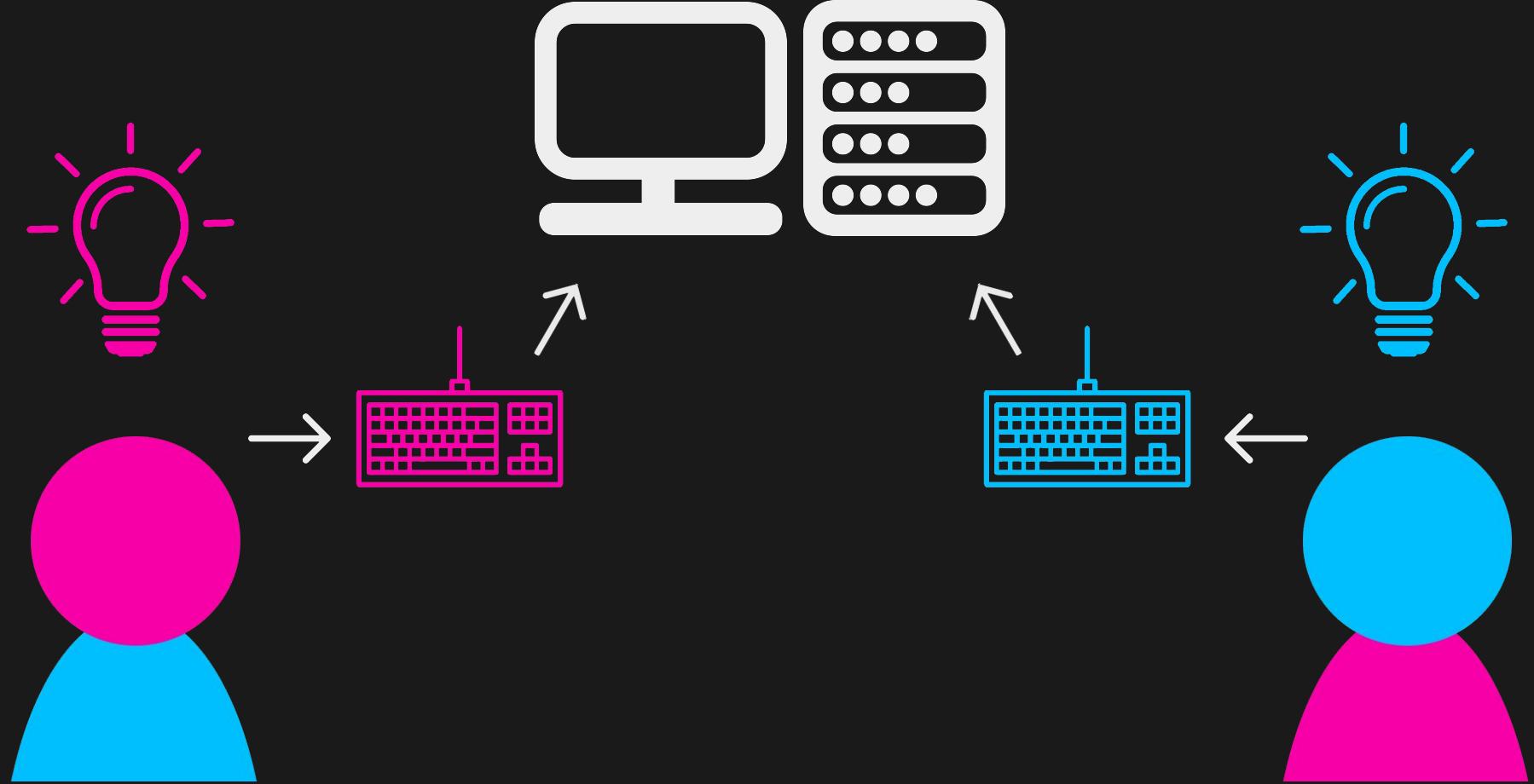


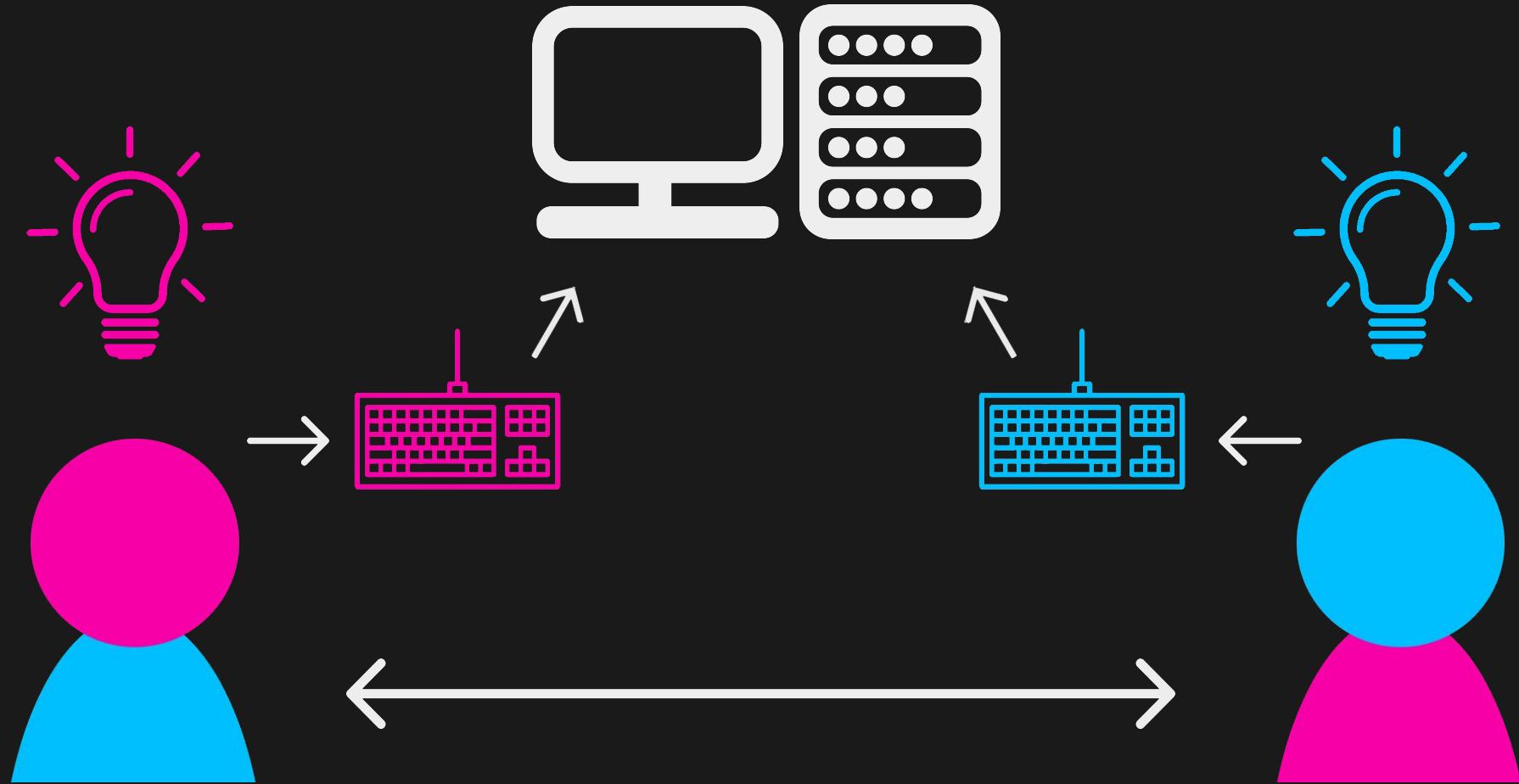


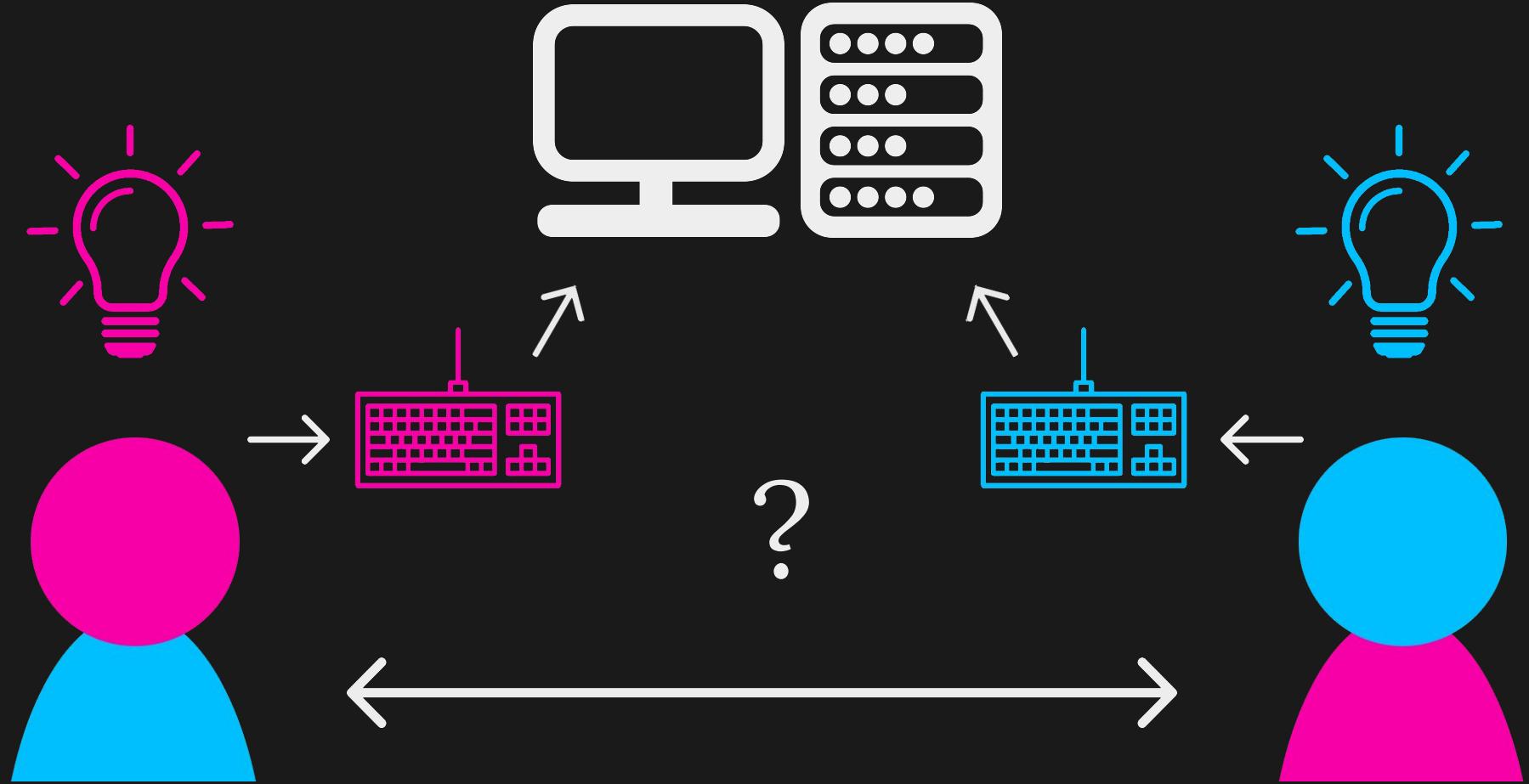




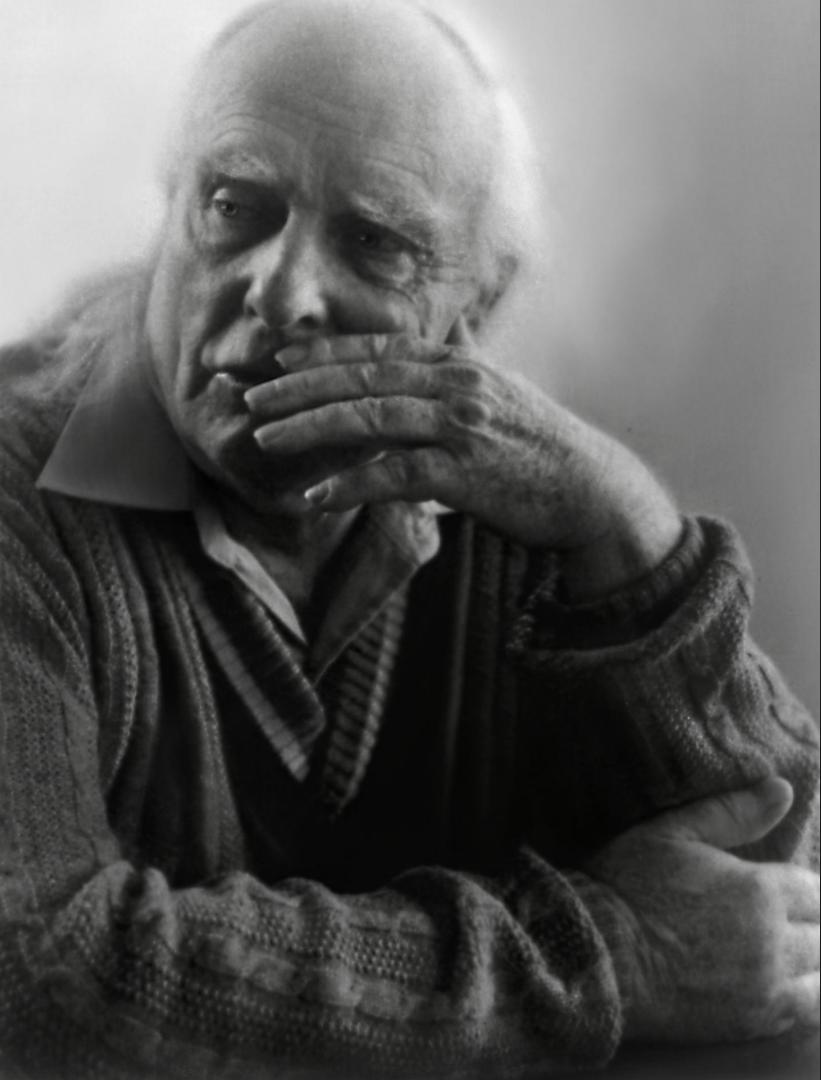






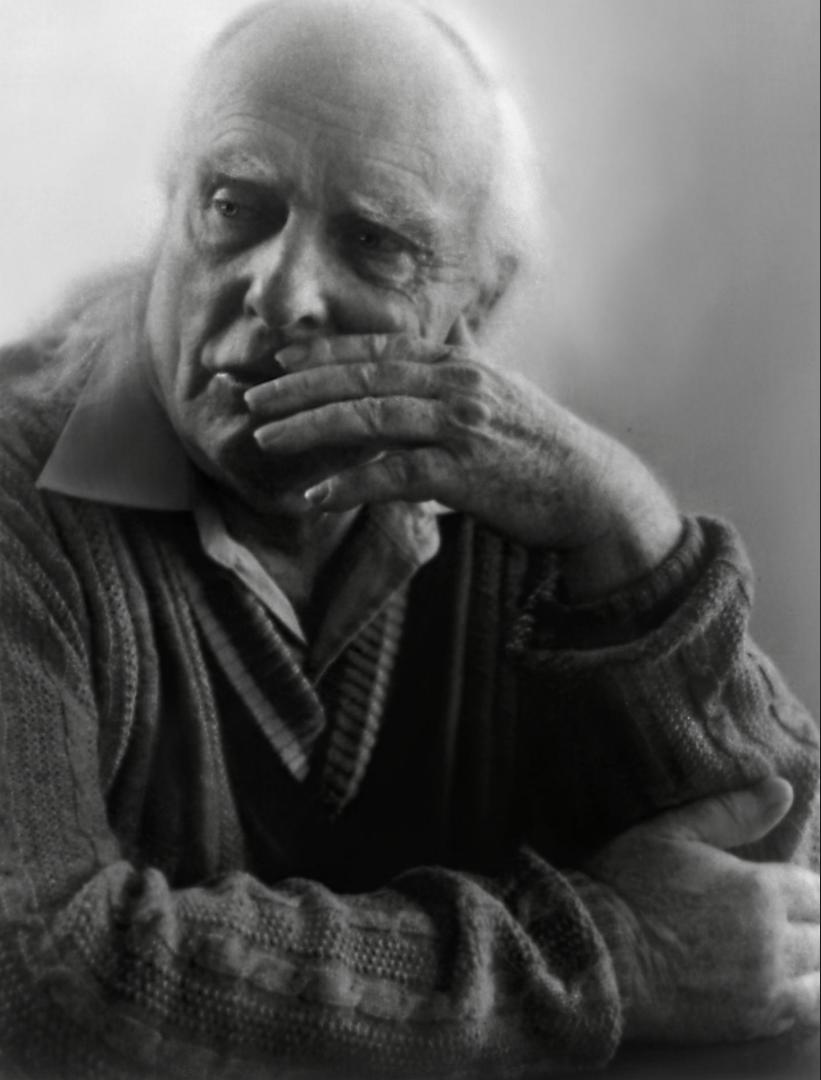


**when we build software together,
we use code to communicate in
addition to other means**



Paul Grice

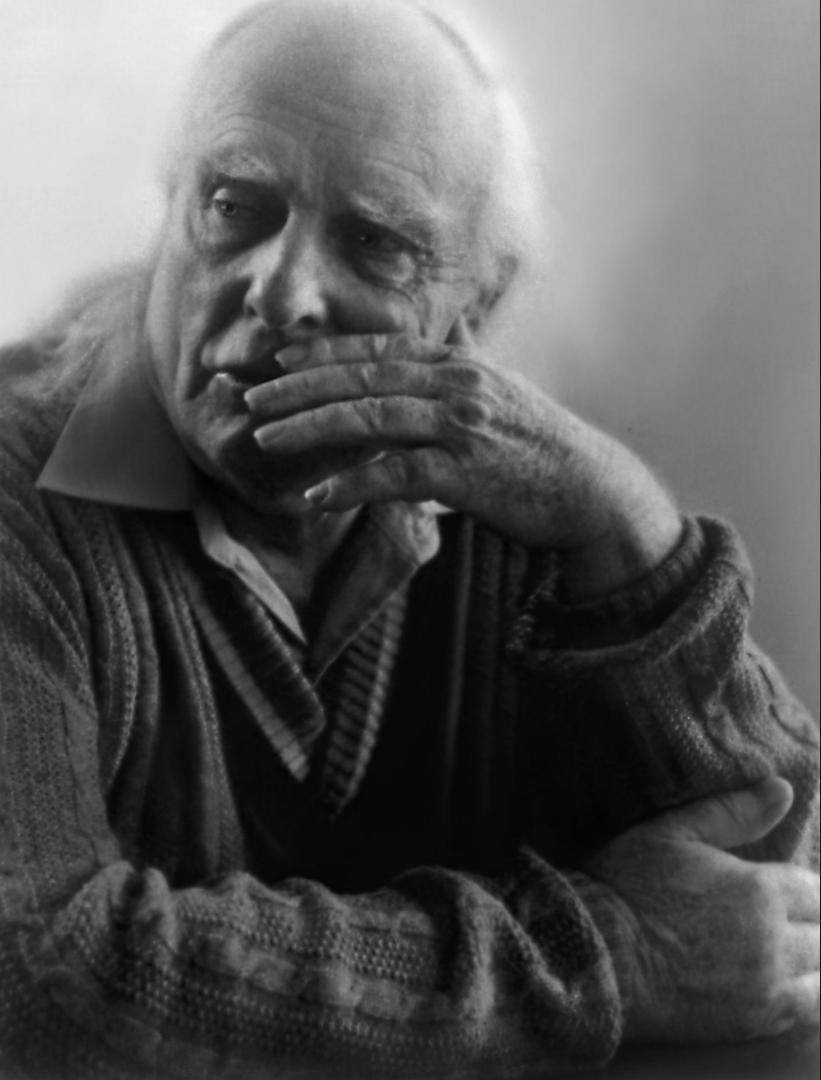
1913-1988



Paul Grice

1913-1988

Philosopher of language



Paul Grice

1913-1988

Philosopher of language

Created the theory of the
cooperative principle

Maxim of quantity

be as informative as
required, but not more

Maxim of quantity

be as informative as required, but not more

Maxim of truth

only say things you know, or reasonably believe, to be true

Maxim of quantity

be as informative as required, but not more

Maxim of truth

only say things you know, or reasonably believe, to be true

Maxim of relevance

don't include information you do not know to be relevant

Maxim of quantity

be as informative as required, but not more

Maxim of truth

only say things you know, or reasonably believe, to be true

Maxim of relevance

don't include information you do not know to be relevant

Maxim of clarity

avoid ambiguity and obscure language, and present your message in a way that is easy to process

what about code?

Maxim of quantity

be as informative as required, but not more

Maxim of quantity

be as informative as required, but not more



make sure your code actually solves the stated problem

make sure your data structures actually encode the
information you need

scope your code appropriately

Maxim of truth

only say things you know, or reasonably believe, to be true

Maxim of truth

only say things you know, or reasonably believe, to be true



validate your assumptions

throw errors when necessary rather than failing silently -
don't pretend things are fine when they aren't

Maxim of relevance

don't include information you do not know to be relevant

Maxim of relevance

don't include information you do not know to be relevant



factor out separate use cases to avoid one megafunction
covering a thousand branches

don't have unused variables

Maxim of clarity

avoid ambiguity and obscure language, and present your message in a way that is easy to process

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write clean, well-documented code

focus on readability, not elegance

match your code's structure to the structure of the problem it solves

Maxim of clarity

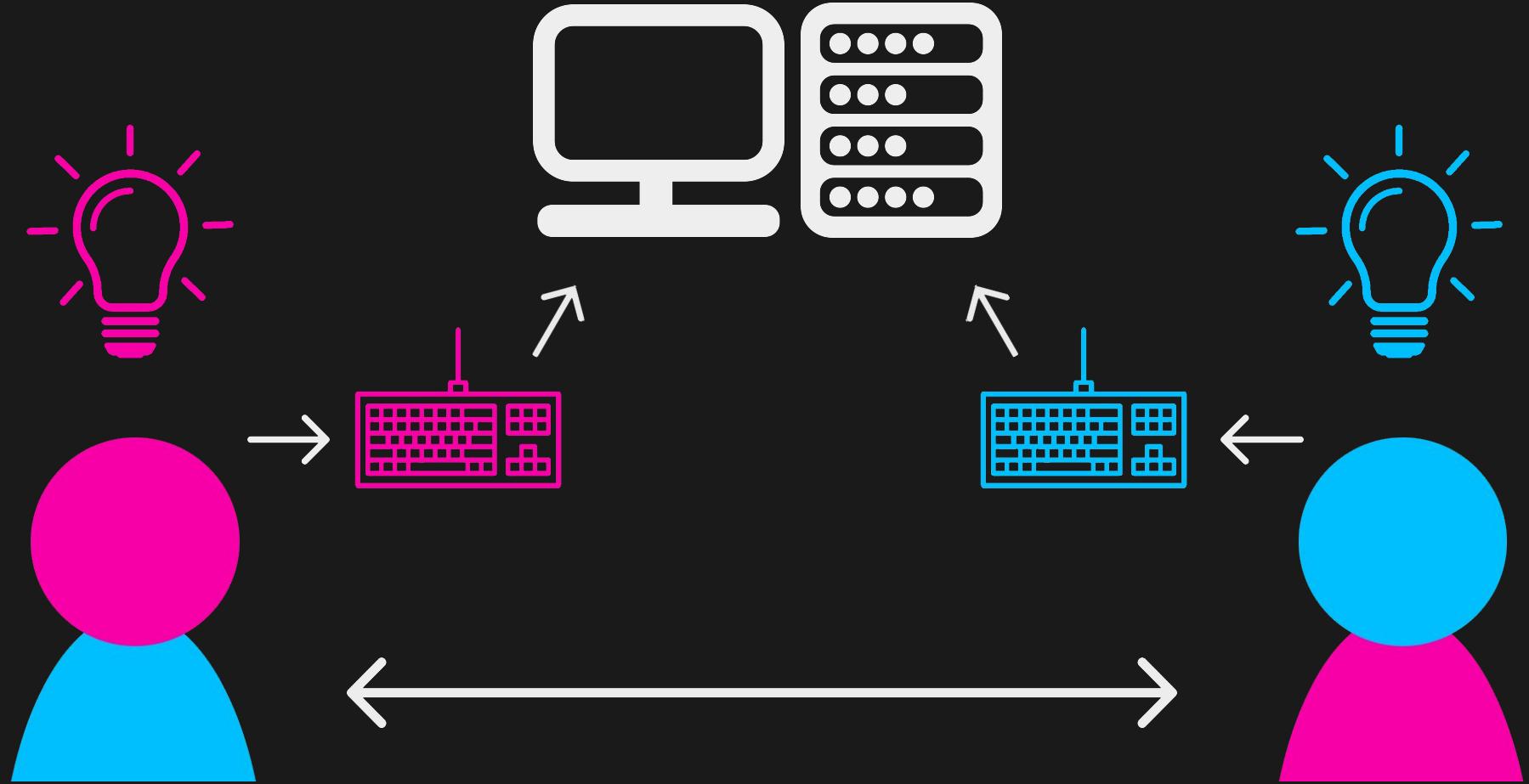
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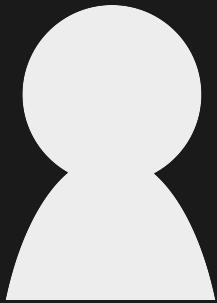


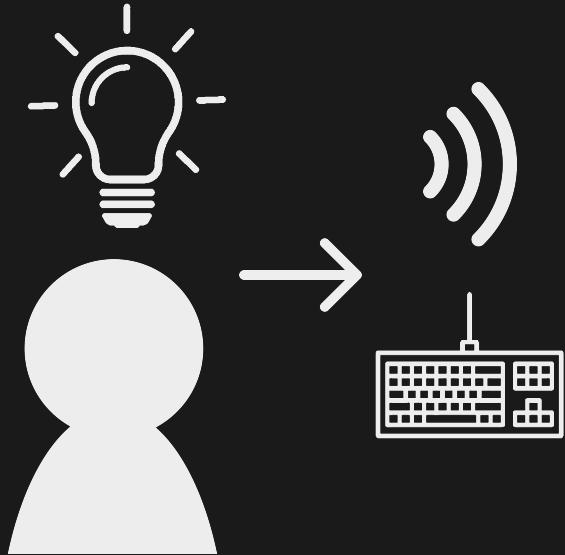
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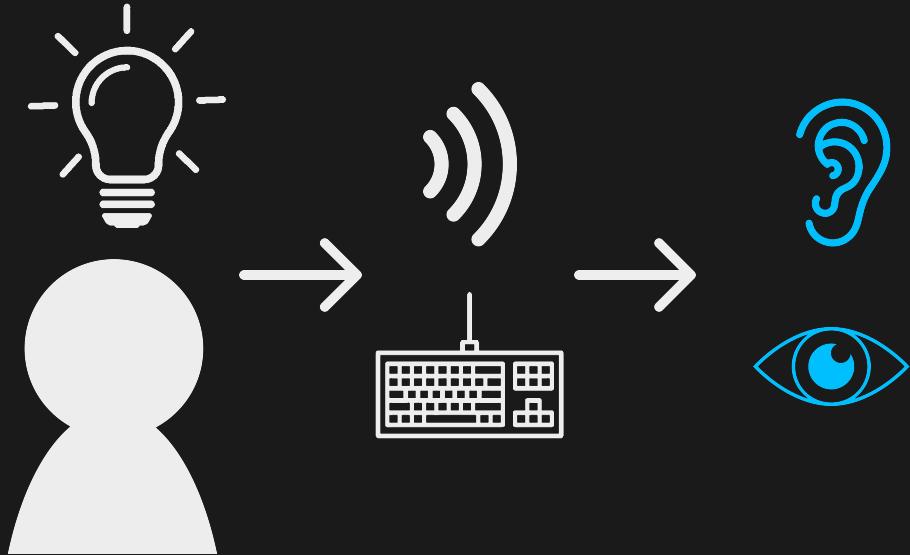
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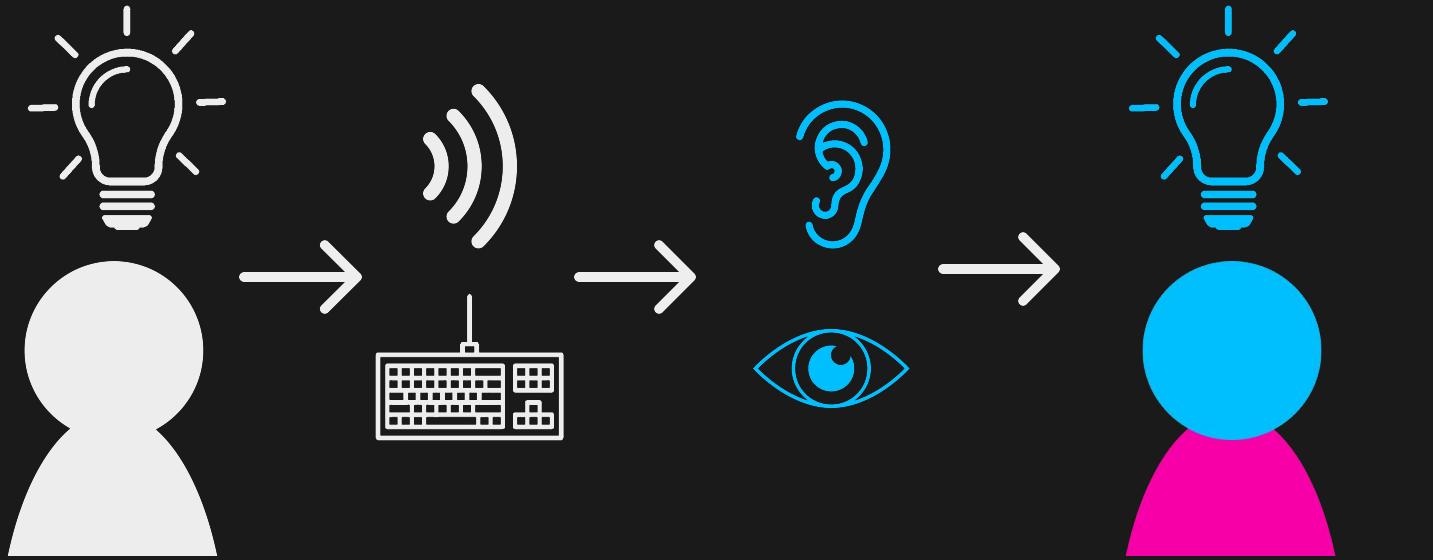




stakeholders

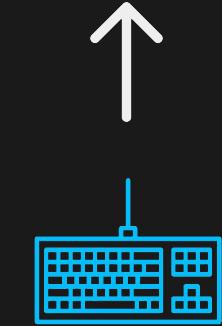
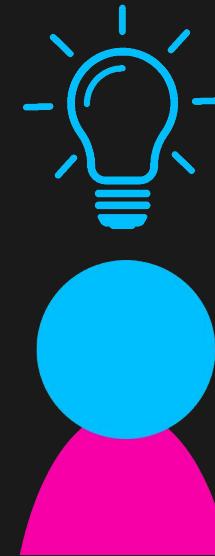
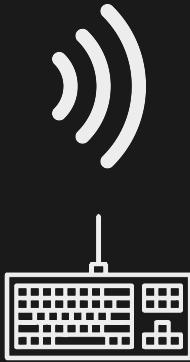
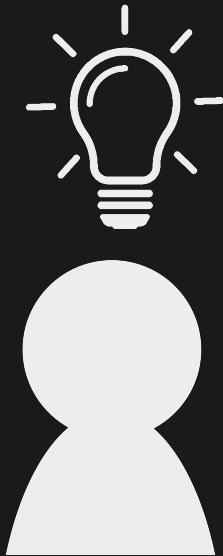


stakeholders



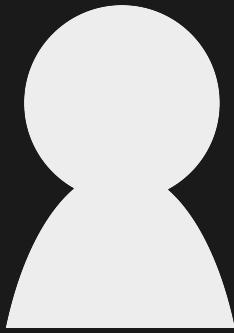
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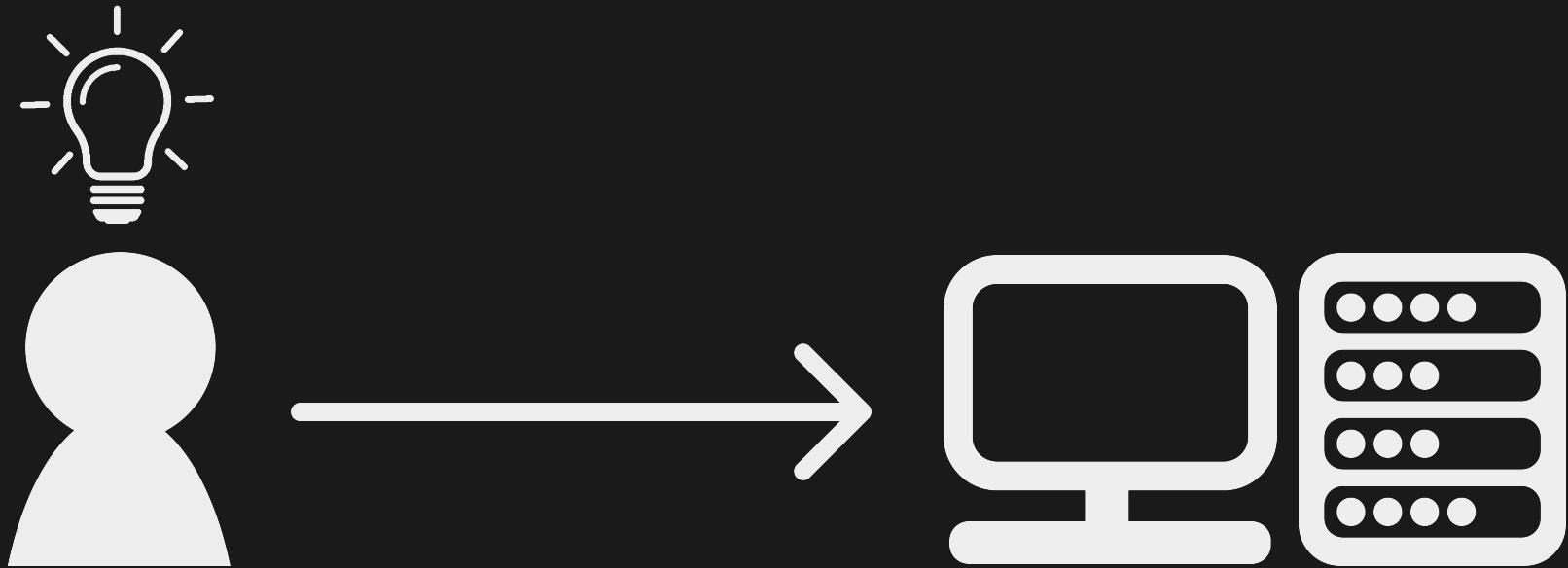
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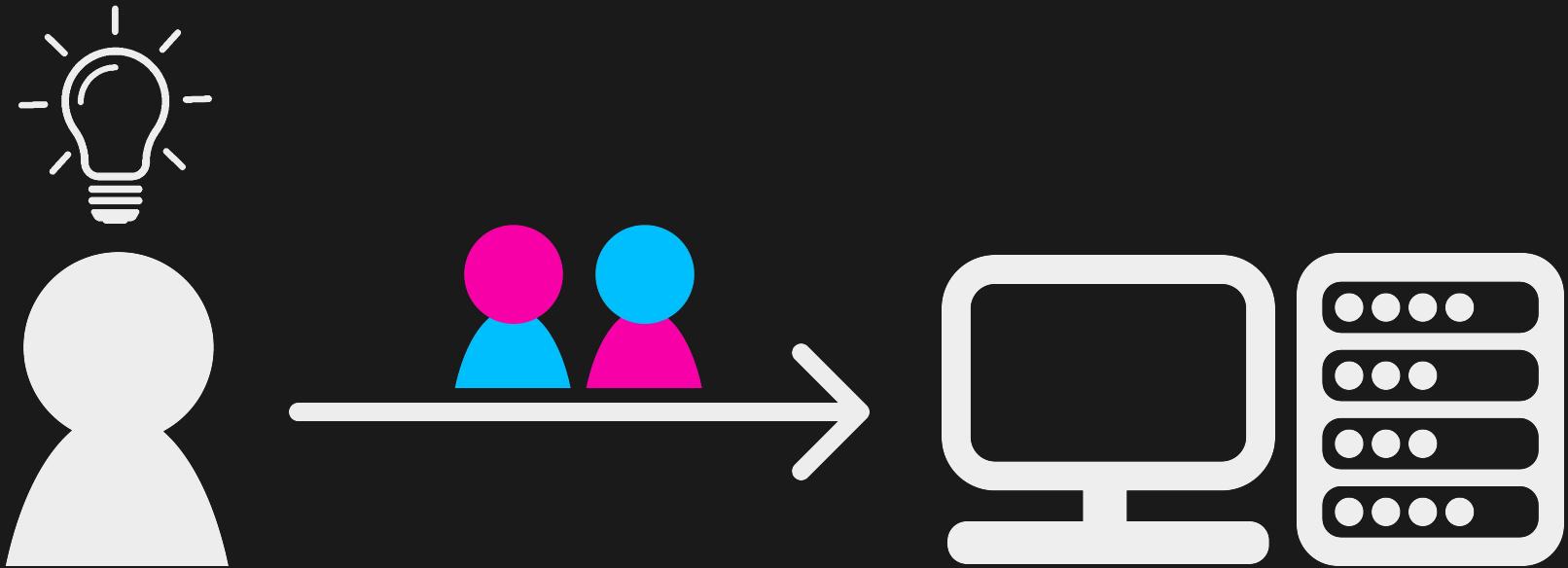


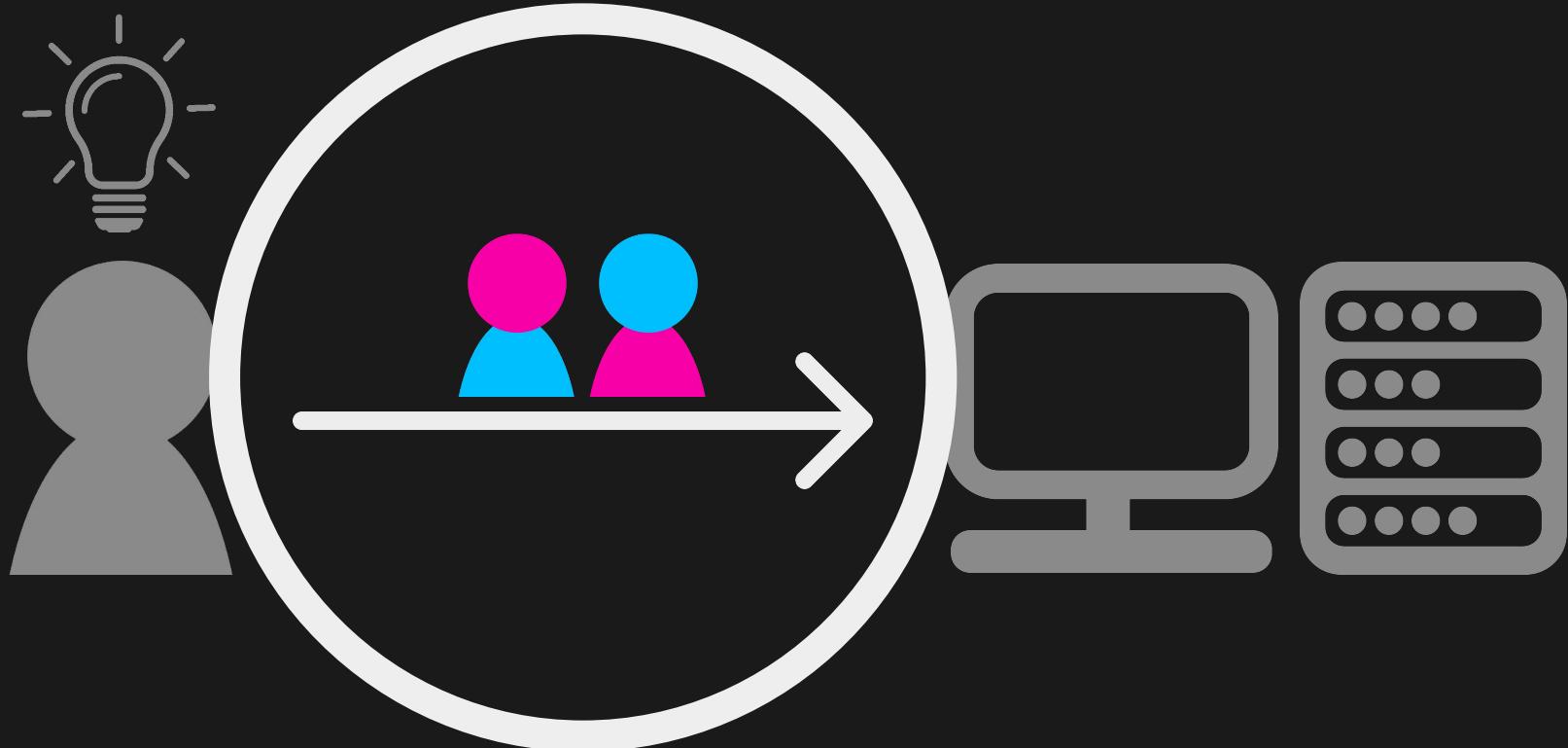
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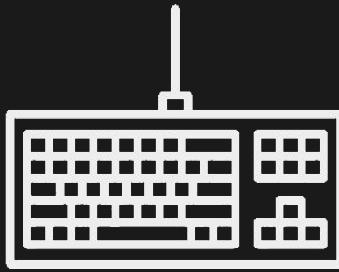
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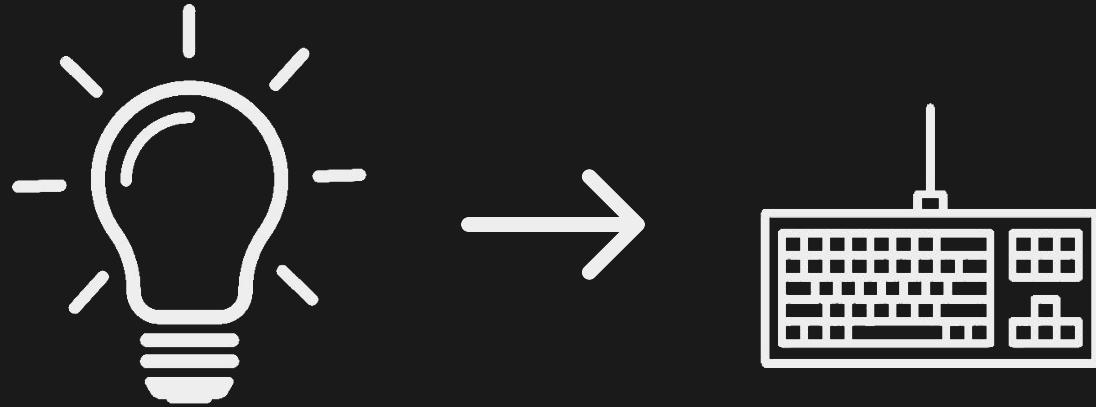












re-using context



re-using context

... so we can *all* play the same language-game



re-using context

... so we can *all* play the same language-game

... so we don't have to spend effort translating



re-using context

... so we can *all* play the same language-game

... so we don't have to spend effort translating

... so our signifiers match our concepts

conclusions

 computers are awesome 

 computers are awesome 

 communication is hard... 

 computers are awesome 

 communication is hard... 

... but we *can* get better at it

