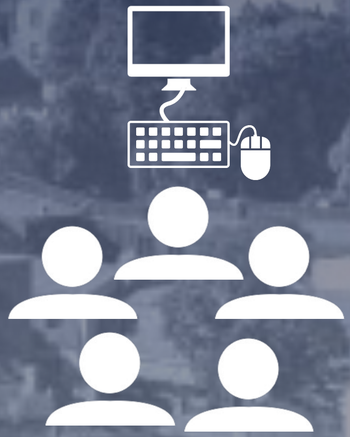
TOPCONF TALLINN

Pair and Mob Programming

Secret weapon for agile and continuous software development

Thomas Much
@thmuch
#topconfTallinn



About…

Thomas Much

Freelancer, Hamburg

@thmuch

#topconfTallinn

Agile Developer Coach

Software Developer (Java et al.)

A long time ago in a galaxy far,
far away….

The other day,
in an office next to you….

“Woah, who’s supposed to maintain this crap?”

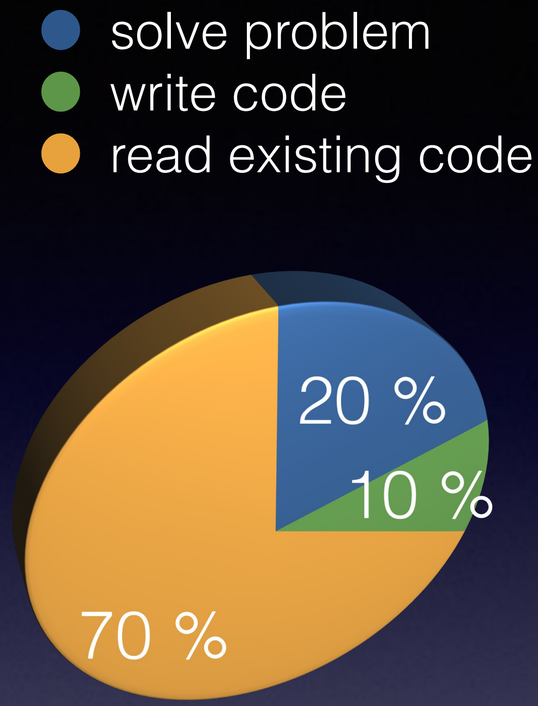
“Who wrote that code?”

“Oh. That was me.”

“Leave that to <insert name here>,

he wrote that in his #!@%&$!? coding style.”

Problem: Readability



- We read code a lot more often than we write it
- Understanding code is essential for product care and maintenance!

https://www.slideshare.net/cairolali/langlebige-architekturen

- We developers tend to write sloppy code – or too “clever” code
- *Who’s going to give us feedback – before it’s too late?*

Problem: Simplicity

“Everyone knows that debugging is twice as hard
as writing a program in the first place.

So if you're as clever as you can be when you write it,
how will you ever debug it?”

– Brian Kernighan

Who protects us from being too “clever”?

“We’ve got a mandatory code review process!”

Code reviews?

Honesty of reviews questionable (for systemic reasons).

Wrong incentives.

Feedback too late.

Who's really going to make major changes then?

“Developer A is on vacation,
we’ll get the urgent bugfix afterwards.”

“Developer B has left the company,
we’ll have to rewrite his apps from scratch.”

“It will take months before newly-hired developer C
fully understands our project and code.”

Problem: Know-how transfer

Missing know-how transfer.

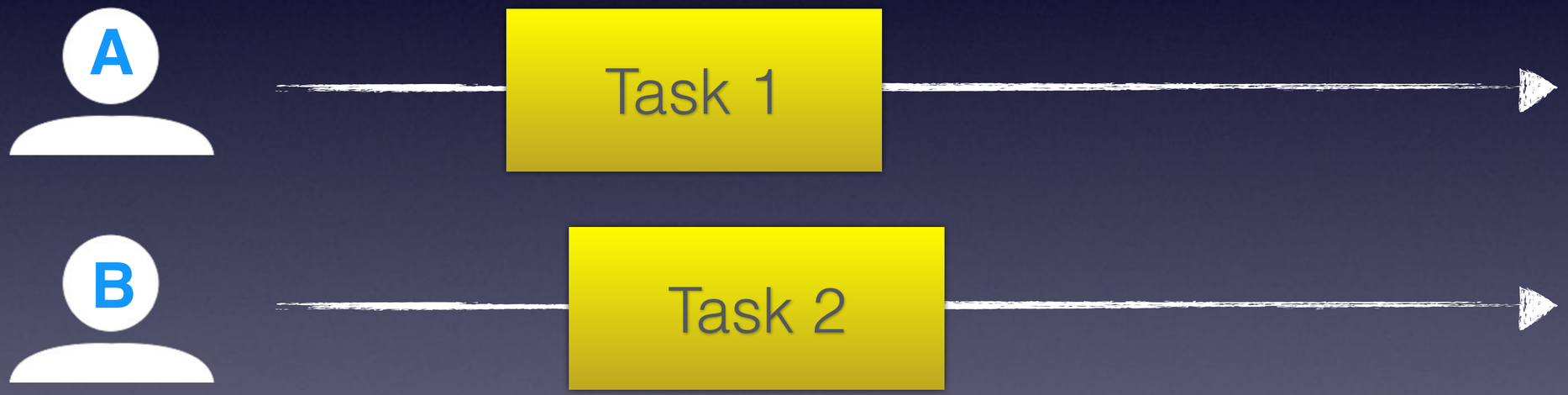
No collective ~~code~~ product ownership.

How? Documentation, workshops, trainings …

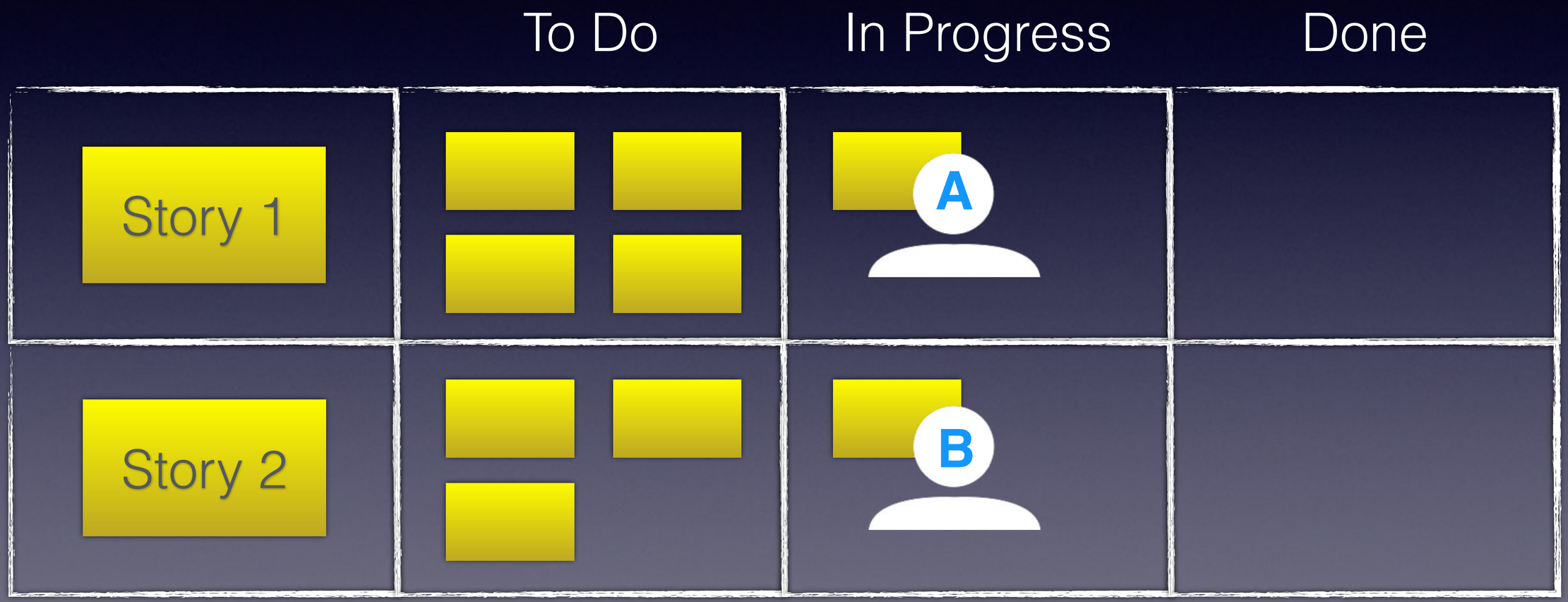
Are we working together as a team on our product / code?

“But we *are* a team?!”

“Team”work



Solution! “Let’s become agile.”

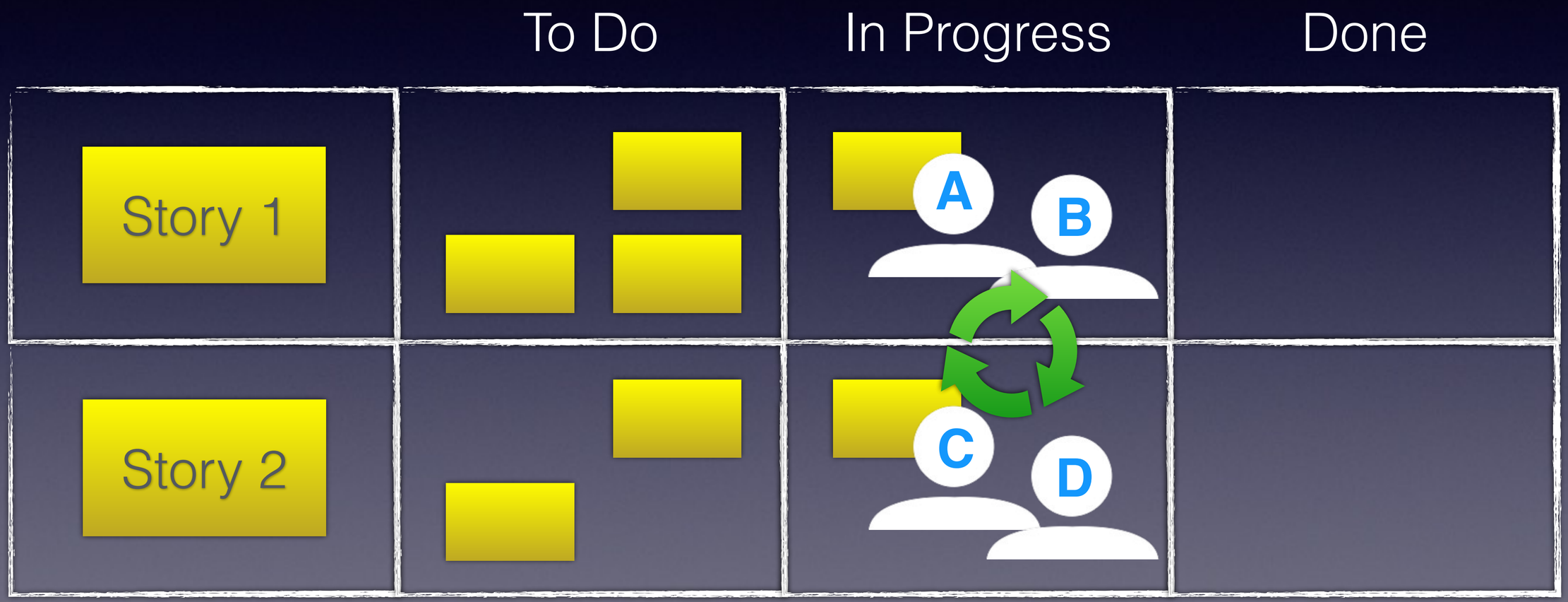


“If your agile Team has individual work assignments,

I suspect it is neither agile nor team.”

– Tim Ottinger

Real team collaboration



Problem: Collaboration

How can we really work *together*

instead of just next to each other?

Problems!?

Readability / Simplicity / Intelligibility

Maintainability

Know-how transfer / Collaboration

What do we want to achieve?

Getting things “done” quickly?

(“devil-may-care”, release & run)

Or rather develop maintainable software?

Maintainable software

In “my” projects:
Clients have to / want to maintain software themselves.

Our goal*:*
Develop maintainable software.

Supported by pair programming.

Pair programming coachin

Idea: *Actively*

Since 2013: N

E-commerce, E

OTTO

DEV.OTTO.DE

— DEV + OPS BEI OTTO.DE —

About Meet Us GitHub Jobs Impressum

Continuous Delivery

Process Automation and Continuous Delivery at OTTO.de

Successful Mountaineering – Reaching the Summit of LHOTSE with Agile Software Development

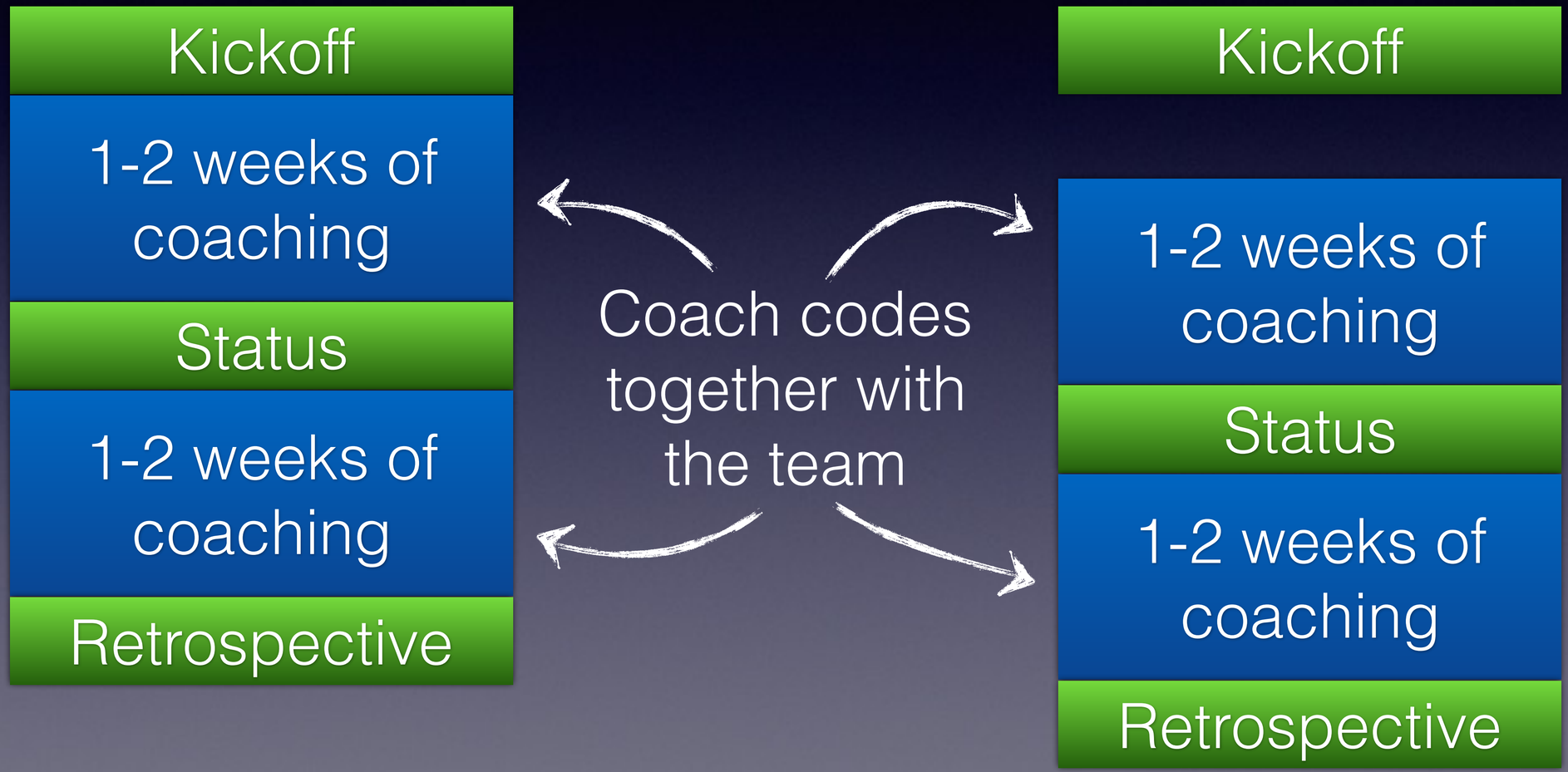
LHOTSE is the internal code name for our project

Continuous Everything: Fast Feedback Driven Development

Fast feedback is a cornerstone of agile software development. When developing the LHOTSE project at Otto, we tried to be as agile as possible

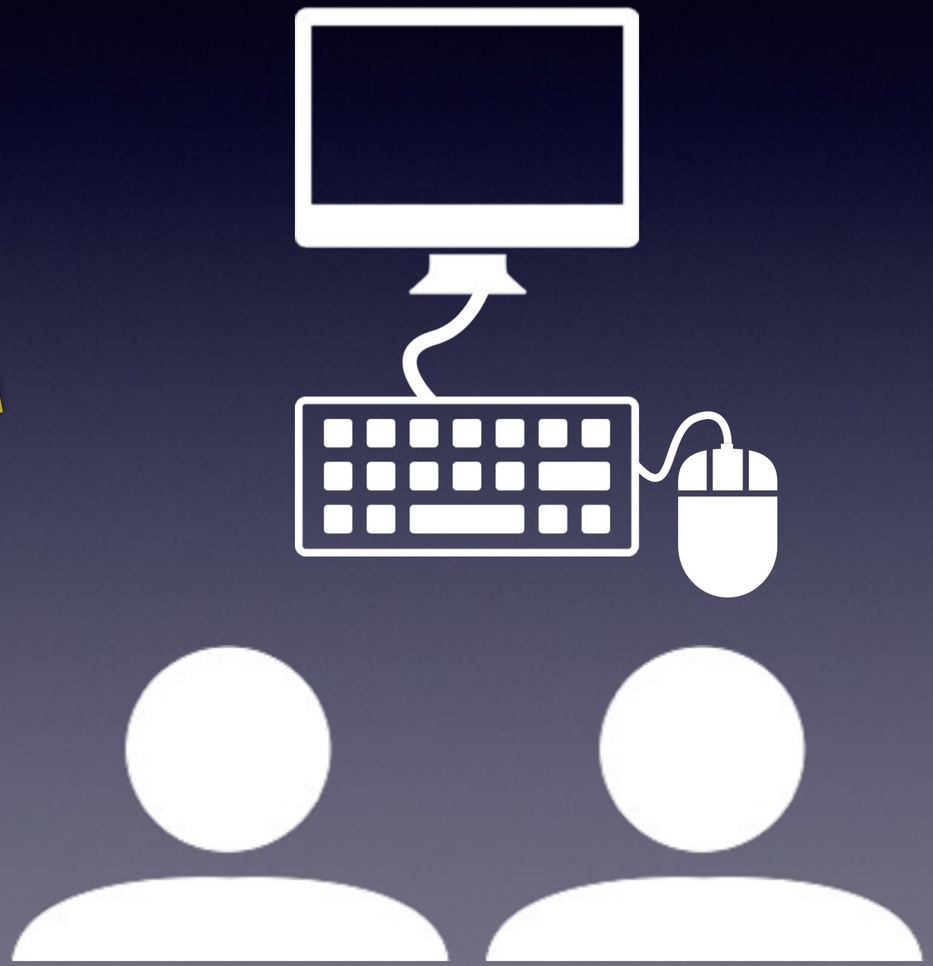
Timetable

½ or 1 sprint

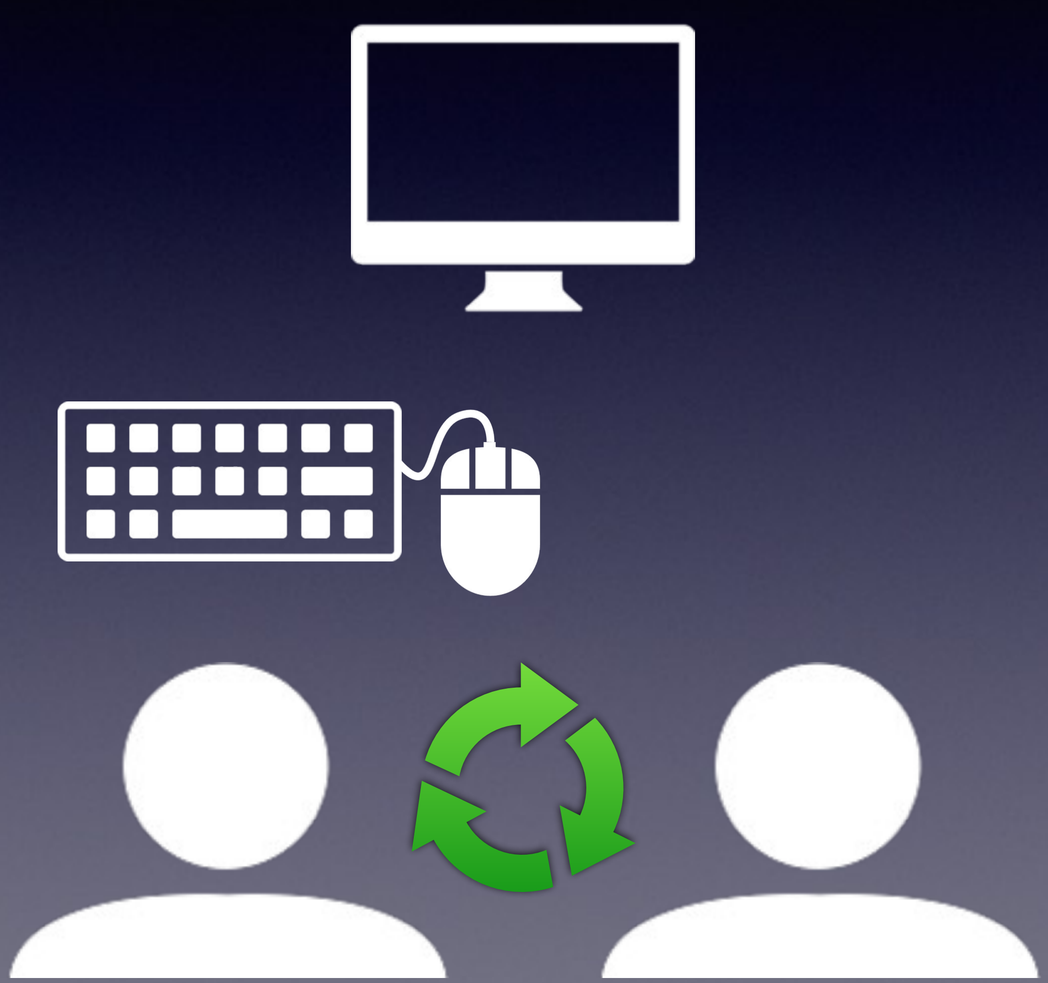


Pair programming in a nutshell

1
task



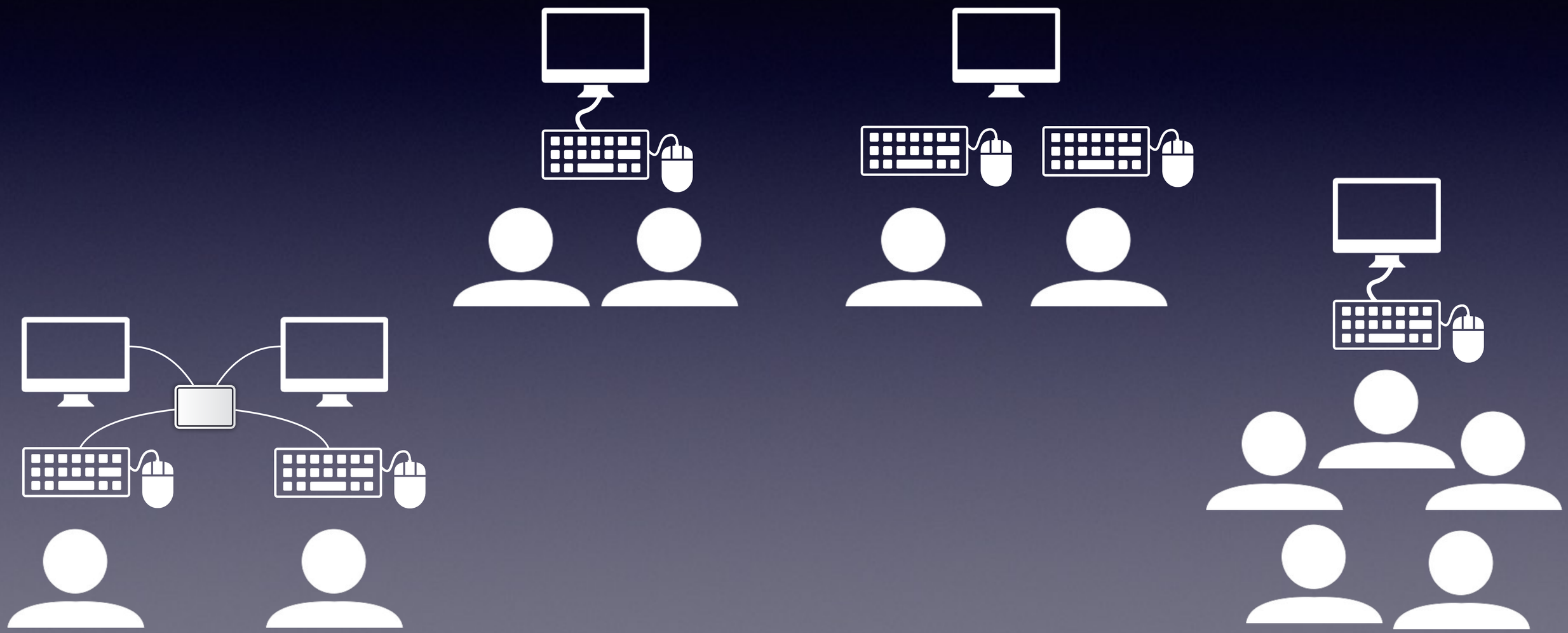
Driver & navigator



https://commons.wikimedia.org/wiki/File:FORD_Taunus_17M_P2_deLuxe_Steering_wheel.jpg

http://www.marcusvenzke.de/HamburgKarte/

Variants



Pair programming – our salvation

Know-how transfer

Collective ~~code~~ product ownership

Clean code

Maintainability

Quality

Nothing new

Pair programming – ca. 1992? .. 2000 …

Extreme programming (XP) – ca. 1996 .. 2000 …

“Flaccid Scrum” (Fowler 2009): Scrum = XP - practices 🤔

Pair programming is “in”

Boss:
“We’re doing pair programming now.
You’ll sit in pairs in front of your computers!”

Developer A: “Finally!”
Developer B: “No. Not really. Not again.”
Developer C: “???”

“The other one’s way too fast.”

“The other one’s way too slow and just doesn’t get it.”

“I’m exhausted. Every. Single. Evening.”

“I’d rather work alone.”

Anti-patterns

Fixed pair works a story.

That story takes 4 weeks or more.

Basically one developer owns the keyboard.

Variation, relief & creativity are missing completely!

Small print

We can’t do without exercises

appropriate communication

switching roles

taking breaks efficiently

pair rotation

how to deal with different levels of knowledge

preparation of stories & tasks

Appropriate communication

silence ⟷ too much talking

As engineers we have to practice communicating with people…

Driver explains “why”, not “how”.

Navigator does not criticise details.

Proper pair programming

Proper pair programming is

communicating by writing down code.

Not just talking about hypothetical code.

Why pair programming helps us

*We are subject to certain "**brain patterns**":*

interpretation

"how" vs. "why"

…

https://www.smidig.de/2015/12/brain-patterns-for-software-development/

https://javabarista.blogspot.de/2016/06/pair-programming-das-gehirn.html

Switching roles

- Frequently!
- Every few minutes?!
- *Keeps attentiveness & creativity alive.*

ping-pong programming
red-green-refactor
TDD

Code reviews: ongoing & implicit

Pair programming = software peer review.

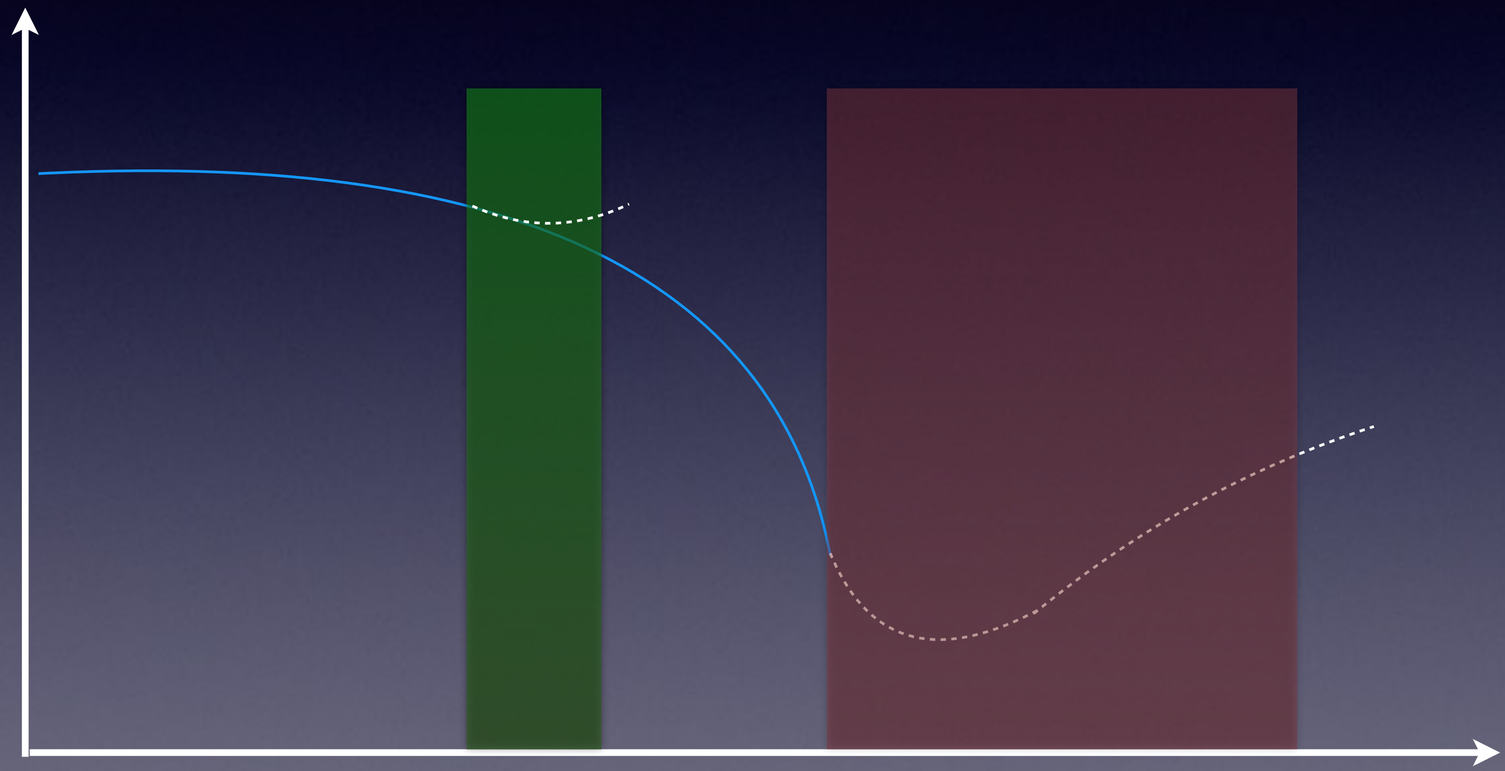
Timely feedback.

Even for major changes.

Easier to mention positive things!

Explicit code reviews: optional.

Attentiveness & creativity



Taking breaks efficiently

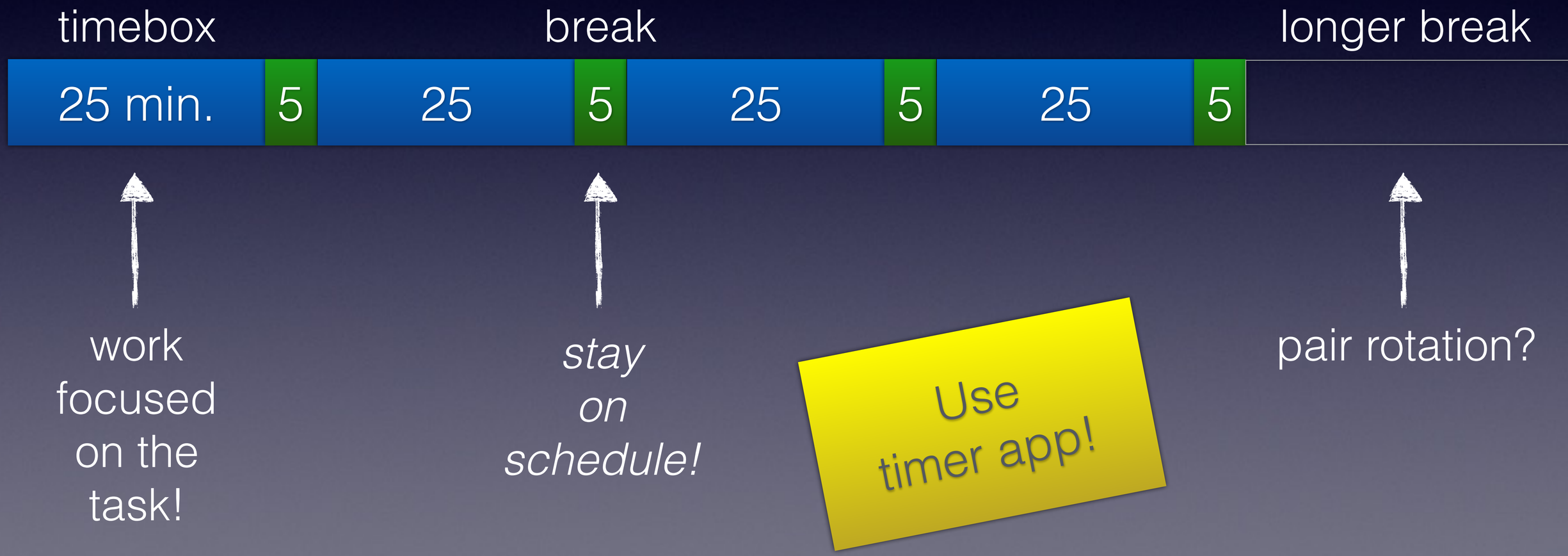
Before attentiveness decreases too much.

Life hack of choice: “Pomodoro”

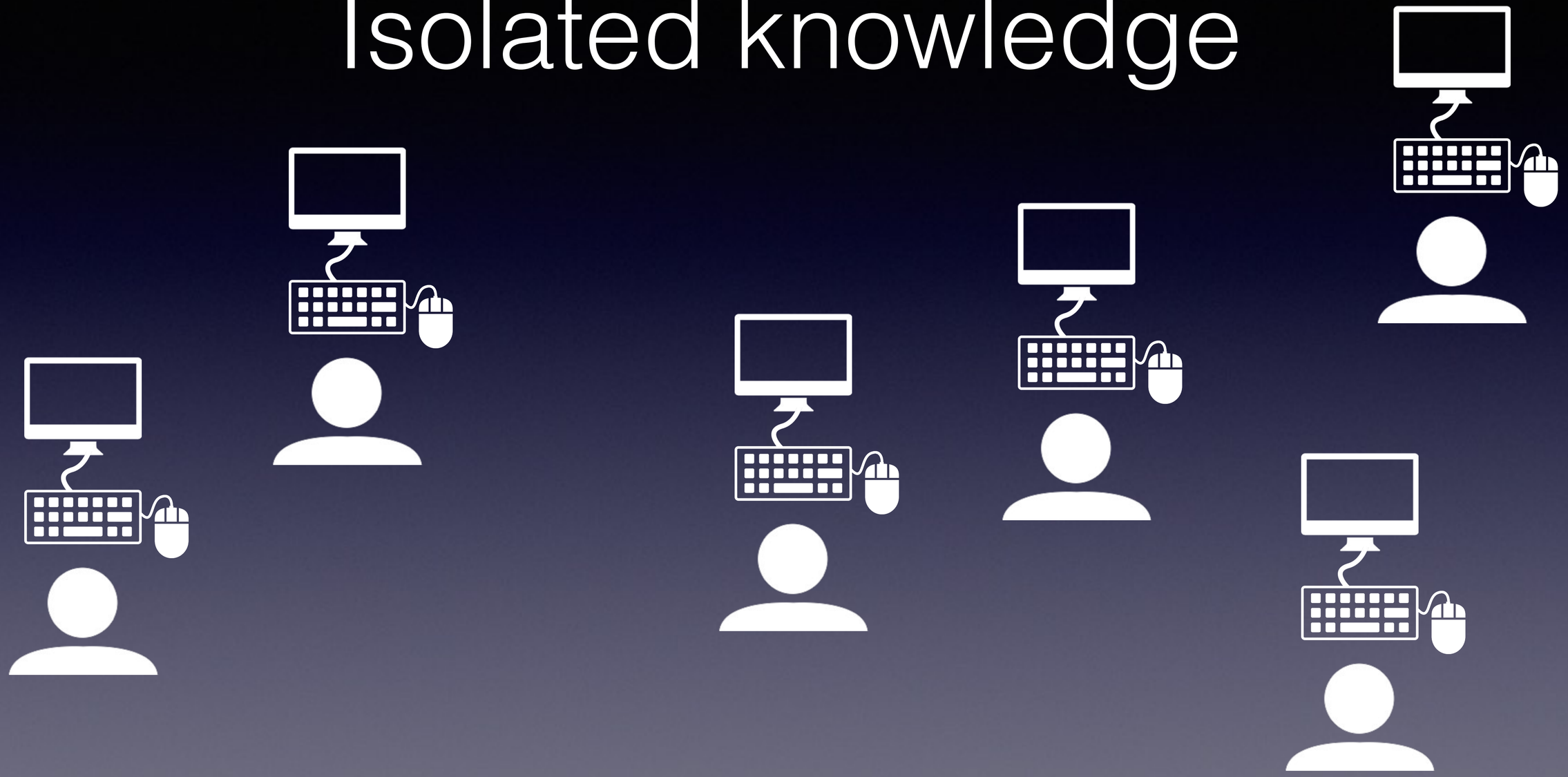
time management method

https://en.wikipedia.org/wiki/File:Il_pomodoro.jpg

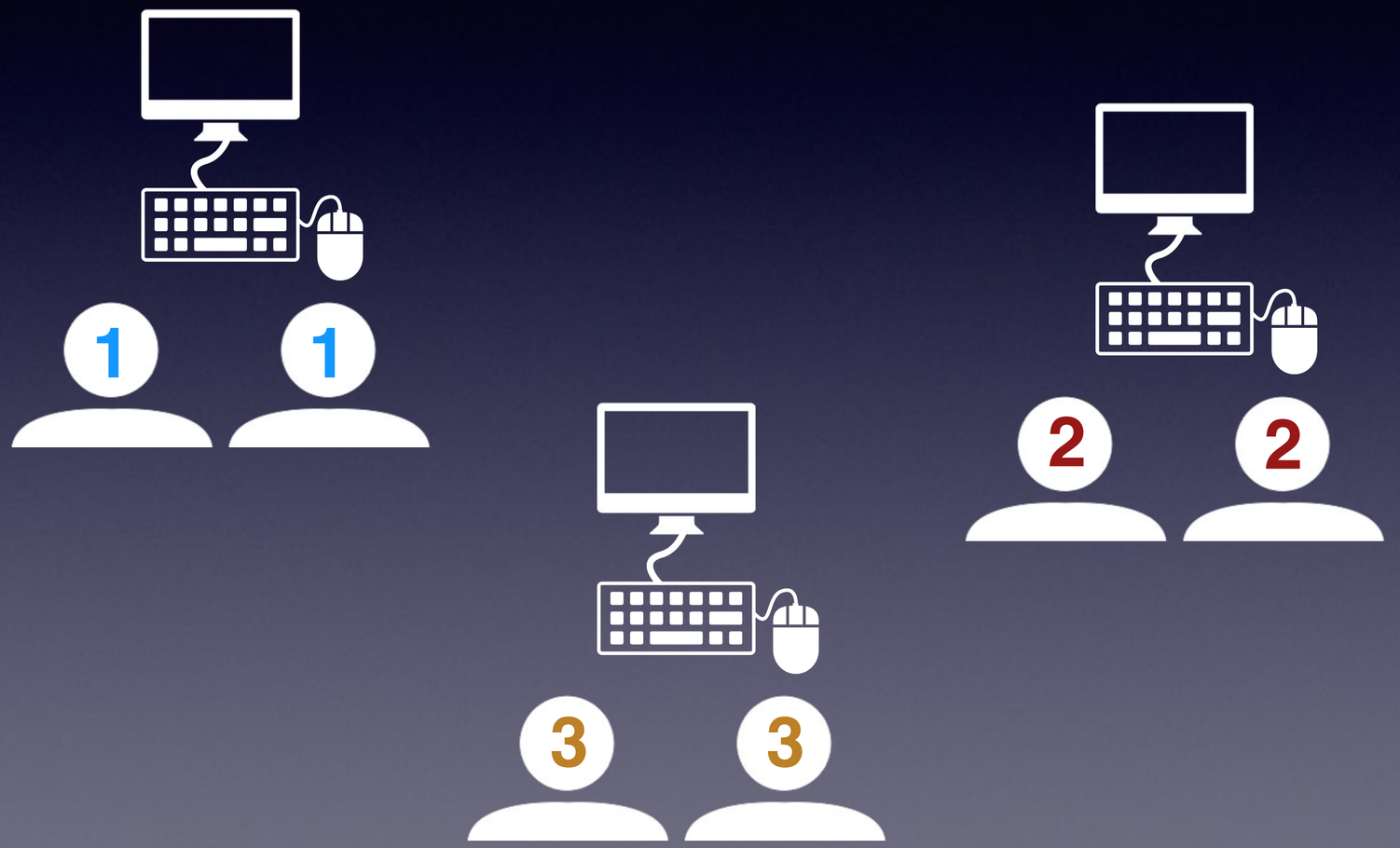
Taking breaks efficiently



Isolated knowledge

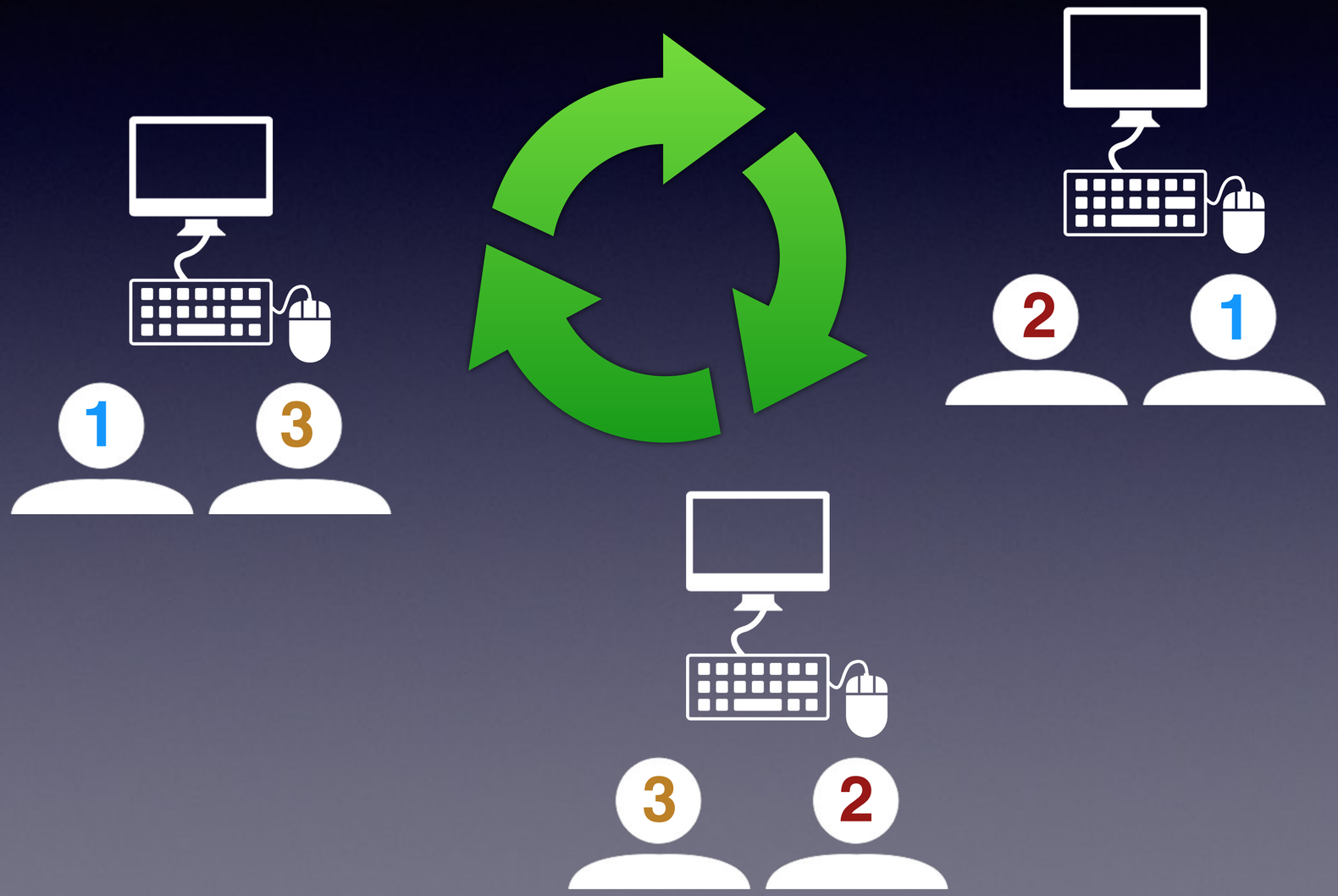


Isolated knowledge 2.0



At least
once a day

Pair rotation!



Who with whom?

All together!

Sparring partner

expert & expert

Know-how transfer.
Beginner’s mind!

expert & beginner

beginner & beginner

Discover project.
Reveal weak spots.

What about the coach?

Coach is an expert (methodically, sometimes technically)

Coach is a beginner (functionally, often technically)

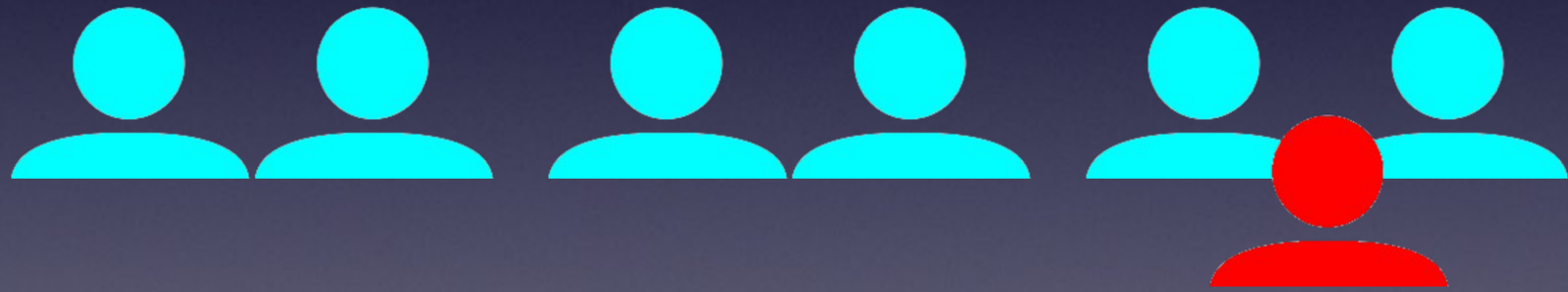
Realistic collaboration!

Acceptance

The coach …

is a pairing partner

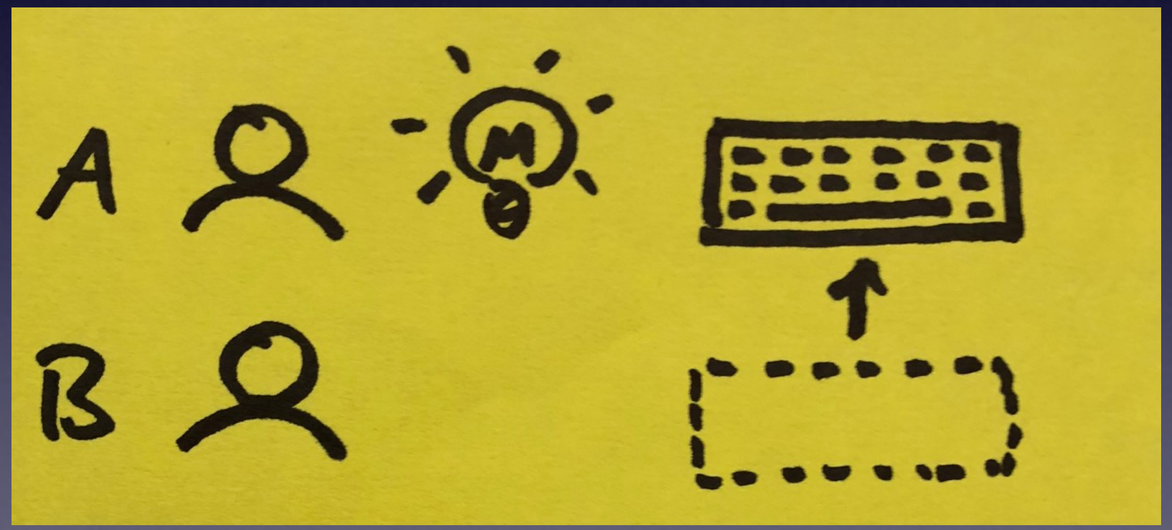
watches other pairs



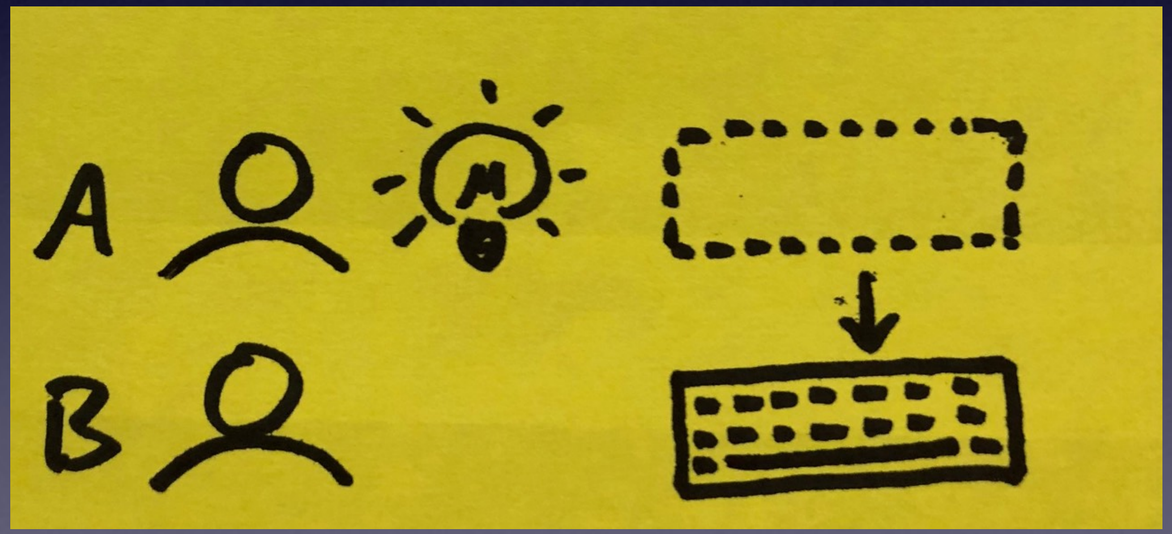
practises together with the team:
Switching roles. Pair rotation. Taking breaks. Variants of pair programming.

Variants of pair programming

“classic”



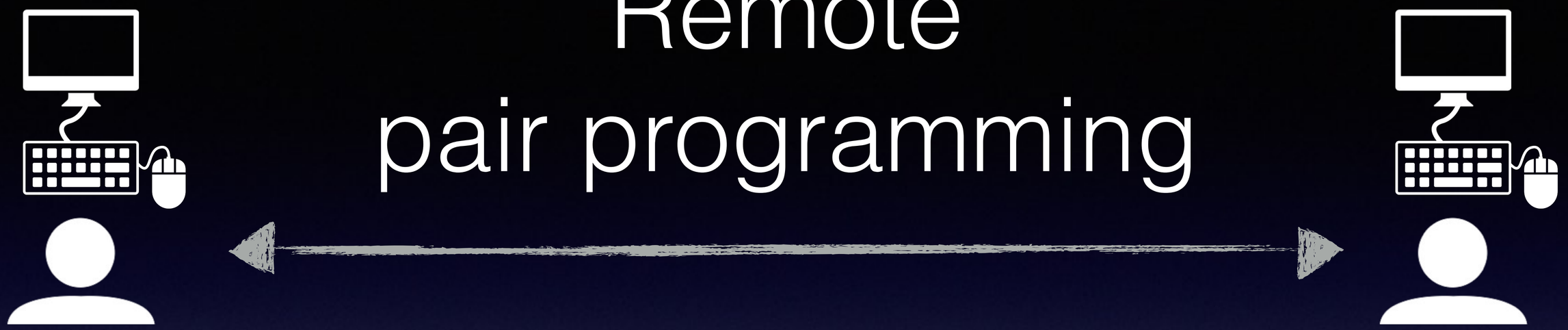
“strong style”



@LlewellynFalco

https://twitter.com/thmuch/status/959456902877974528

Remote pair programming



Be an experienced offline (co-located) pair programmer first!

Tools:
Floobits editor IDE plug-in, AWS Cloud 9 etc.
TeamViewer, Skype, appear.in, Tuple.app etc.

Give it a try. Depends a lot on your network (proxies etc.).

Comprehensive collaboration

Across roles:
Dev, Ops, QA, UX, … PO

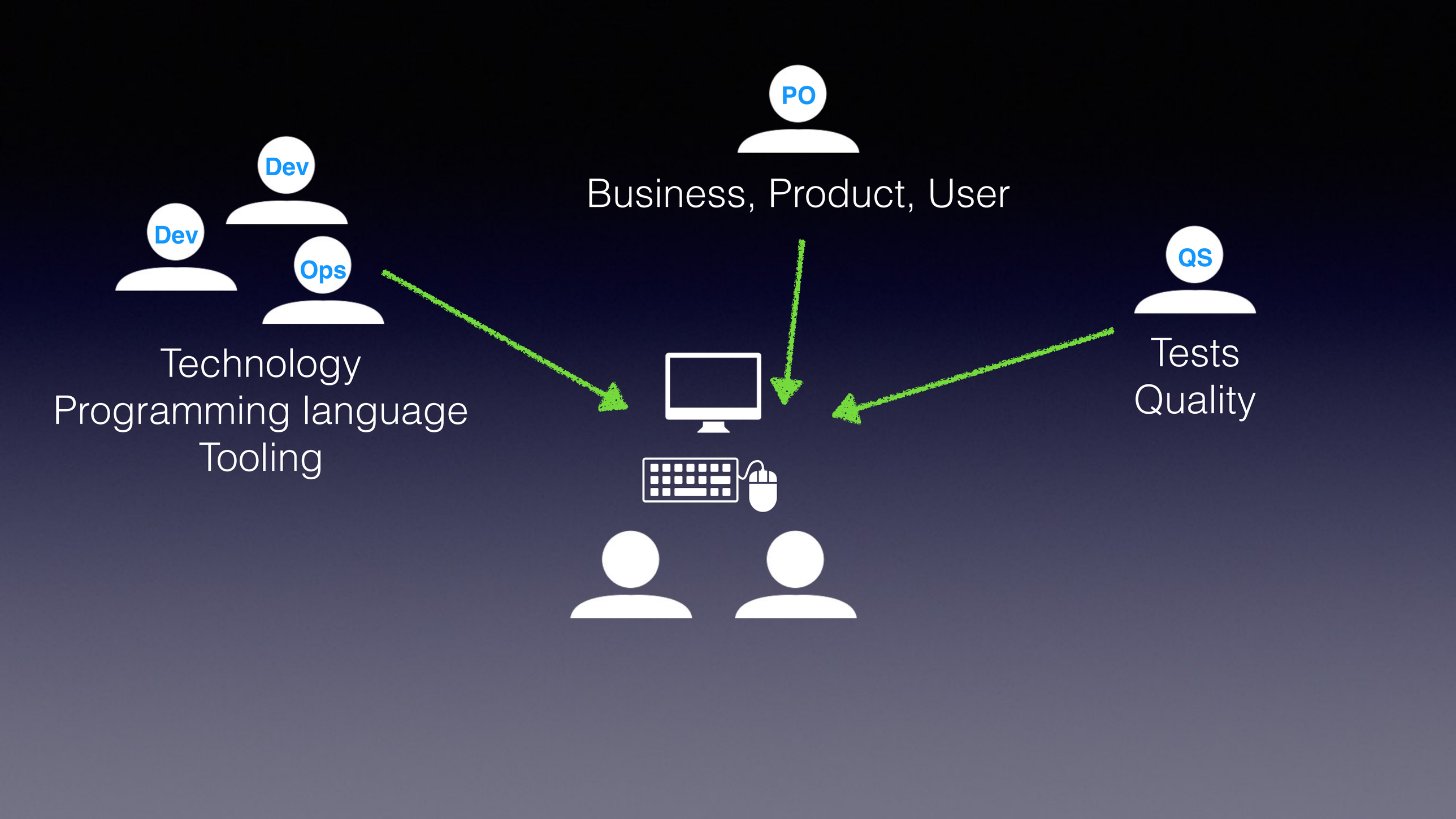
Pair Doing – “Pair on Everything”

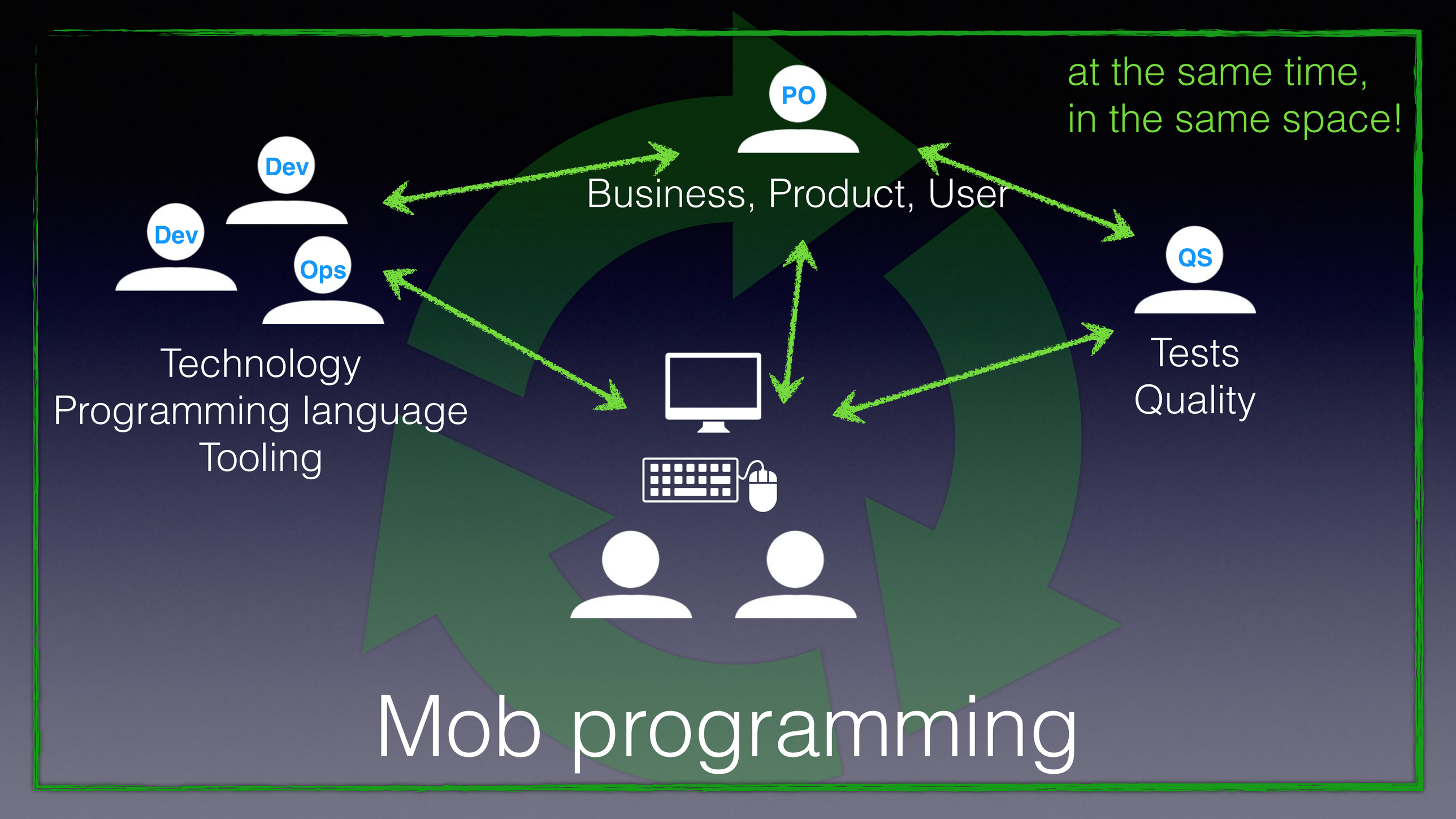
Change of perspective.

Business
Product
User

Technology
Programming language
Tooling

Tests
Quality


PO
Business, Product, User
Dev
Dev
Ops
Technology
Programming language
Tooling
QS
Tests
Quality


at the same time,
in the same space!
PO
Business, Product, User
Dev
Dev
Ops
Technology
Programming language
Tooling
QS
Tests
Quality
Mob programming

Mob programming

“It’s about getting the **BEST** (not the **most**) from your team.”

– Llewellyn Falco

“All the brilliant minds working on the same thing,
at the same time, on the same computer.”

“Continuous Integration of Ideas”

– Woody Zuill

Mob programming

Switch roles!

Fixed timebox
(every 5-10 min.), *http://mobster.cc*

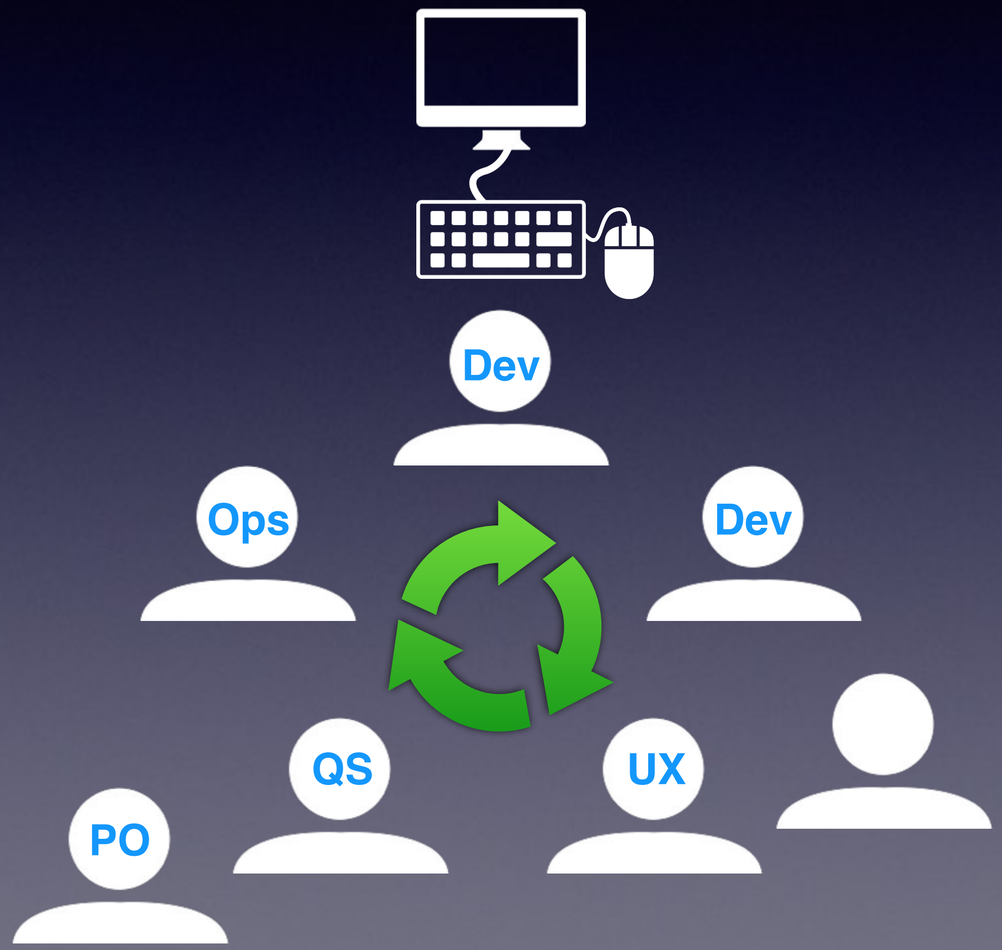
Feels less cramped
compared to pair programming.

Mob programming

Dynamic mob:
coming and going.

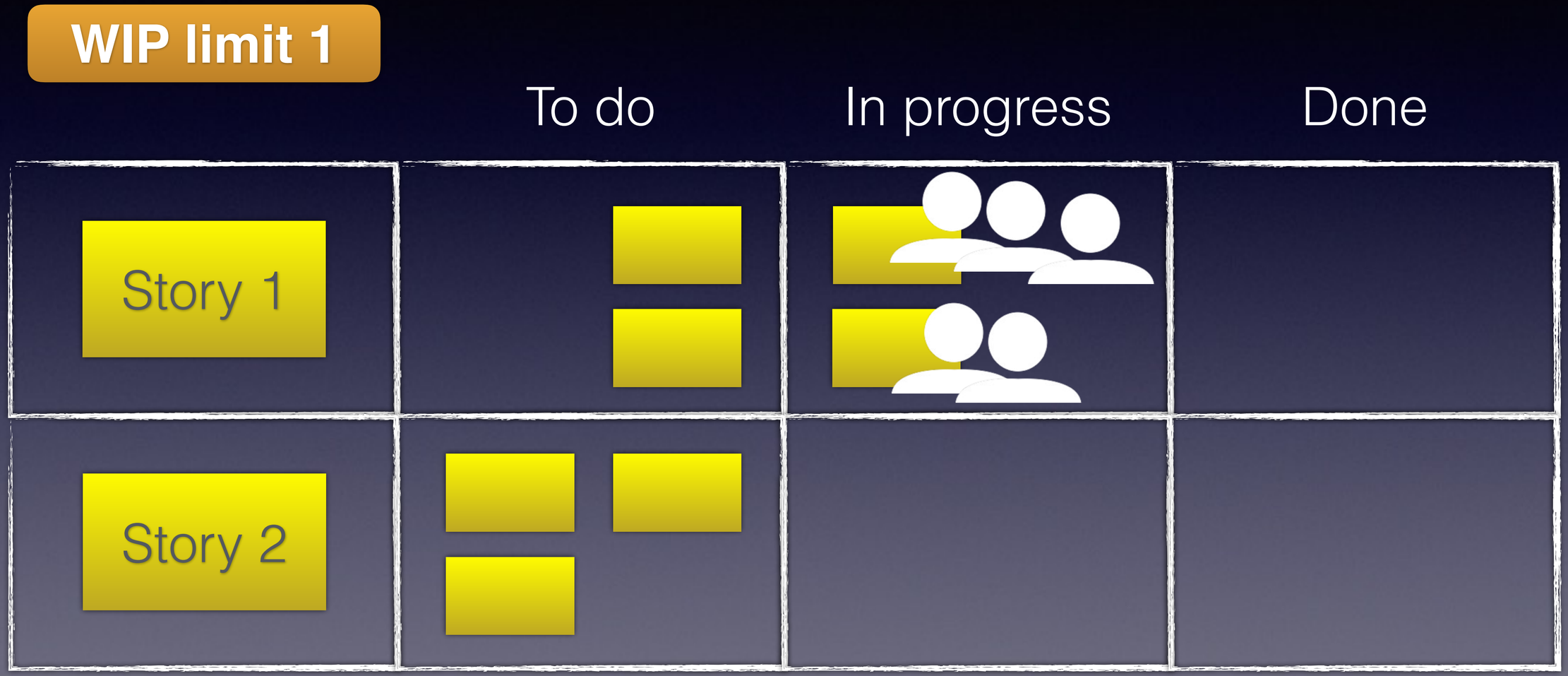
Across team roles!

Getting the **most important** task done first.

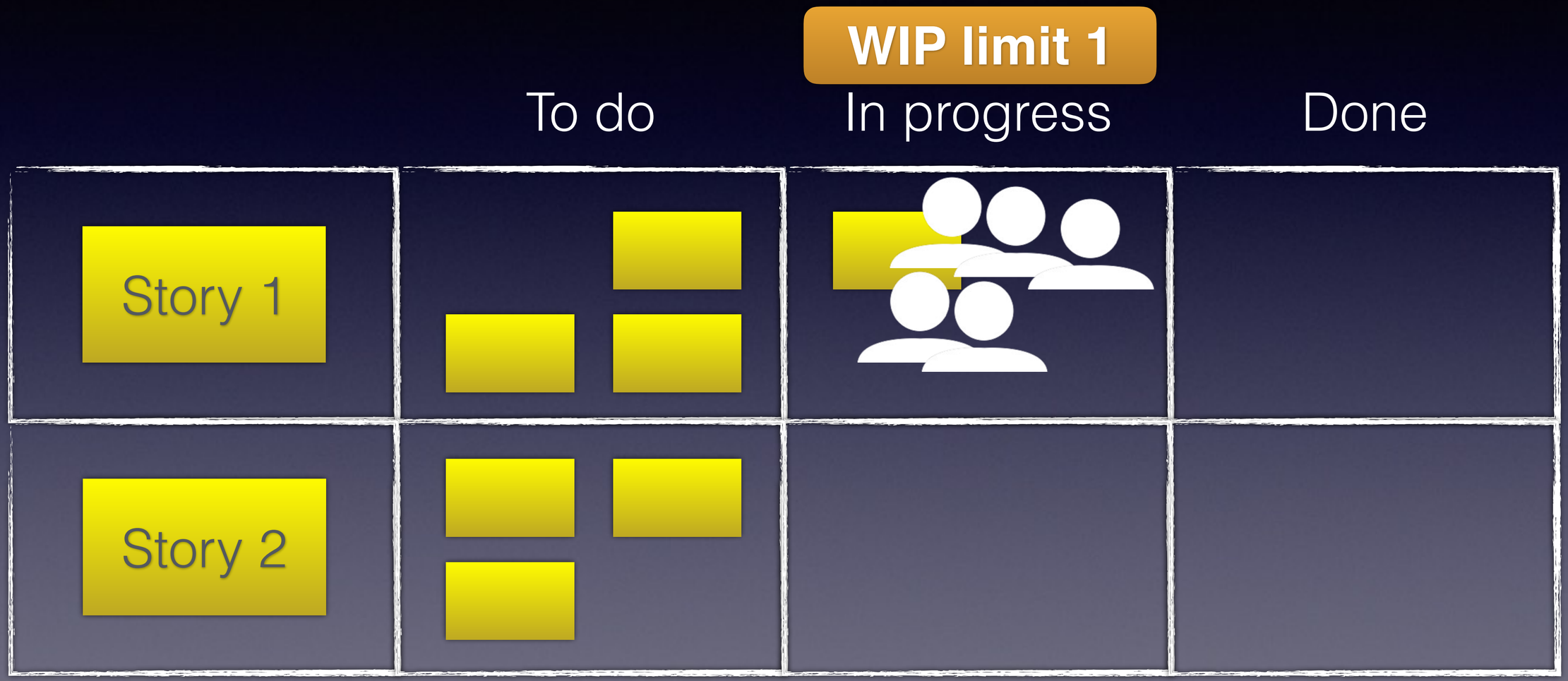


Highest priority first!

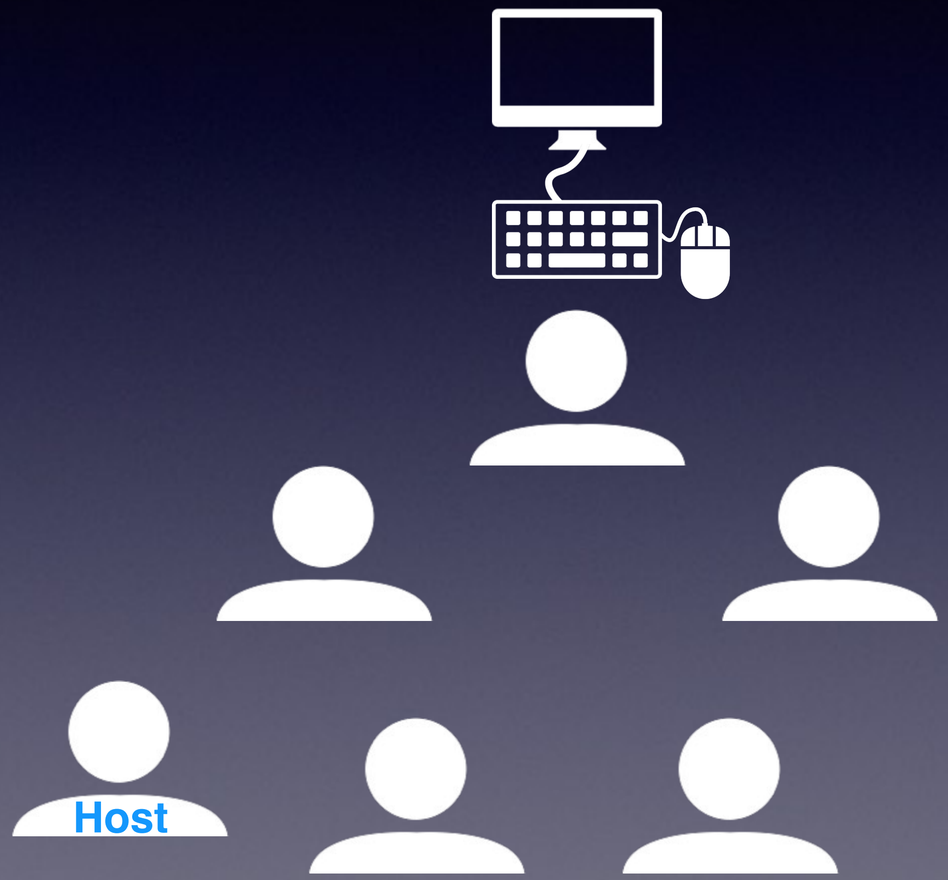
WIP limit 1

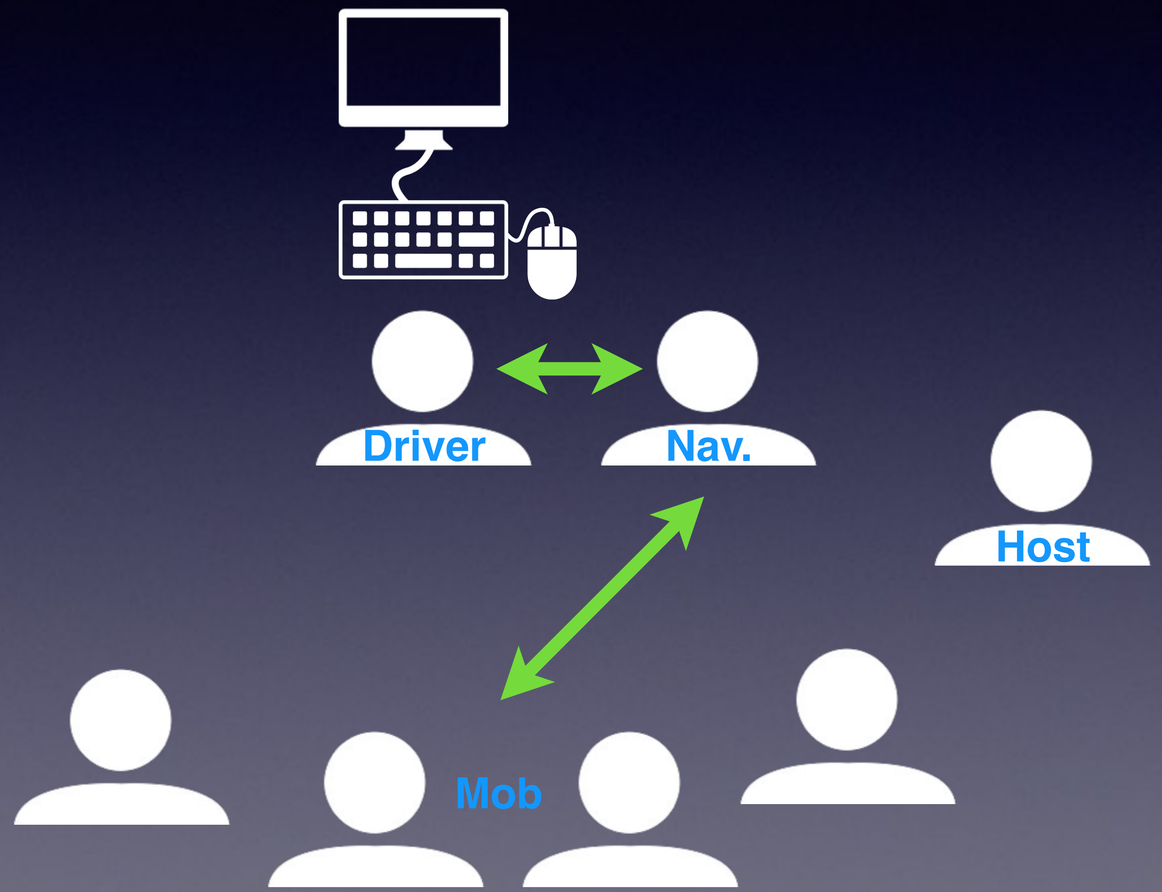


Highest priority first!

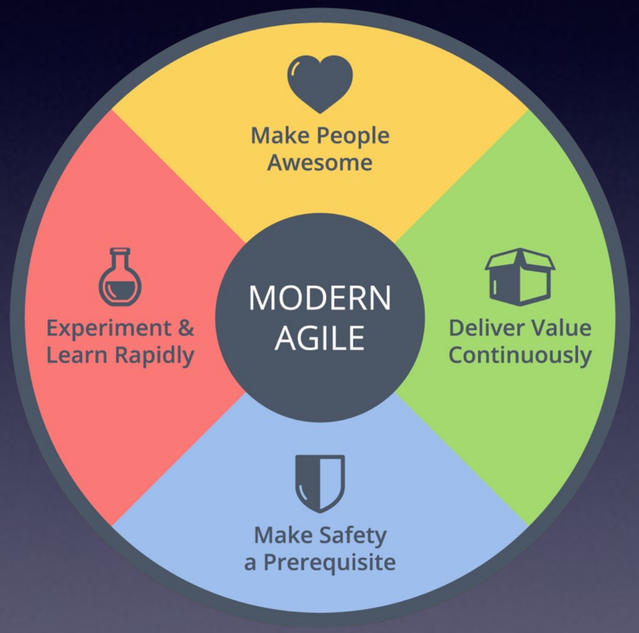


Mob programming – setups





Modern Agile



Pair & mob programming are part of it, simple as that.

http://modernagile.org/

And still …

“I’m faster alone.”

Raise awareness

“If you want to go **fast**, go **alone**.

If you want to go **far**, go **together**.”

– African proverb

Take care of the details

Many reasons for rejection…

Proponents and opponents must compromise.

Fix clear agreements.

“Short-time pair programming”, for instance.

One small step for a developer, one giant leap for a team!

“Don't think of pair programming
as 2 people doing the work of one.

Think of it as 2 people avoiding the rework of 7.”

– Jason Gorman

Speed… velocity… pace…

We follow these principles:

…

Agile processes promote sustainable development.
The sponsors, developers, and users should be able
to maintain a **constant pace** indefinitely.

…

http://agilemanifesto.org/principles.html

100% pair programming?

Probably not. But:

Should be standard programming practice!

No excuses for not working i

How much % per day do

Much of the real coding time

working in pairs!

Allow for solo time!

For learning something new, reading, doing research etc.

Recap

Pair & mob programming strengthen agile processes.

Focus on developer skills & programming practices.

Coaching helps establishing pair & mob programming long-term.

Developers experience benefits hands-on.

Methodical agile coaching – important!

But:

Don’t forget coaching of programming practices.

Mob Programming

Pair Programming

Know-How Transfer

Coaching

Pomodoro

Questions?

XP

Readability

Modern Agile

Simplicity

Strong Style Pairing

Velocity

Speed

TDD

Collective Product Ownership

Thank you!

thomas@muchsoft.com
www.javabarista.de
@thmuch