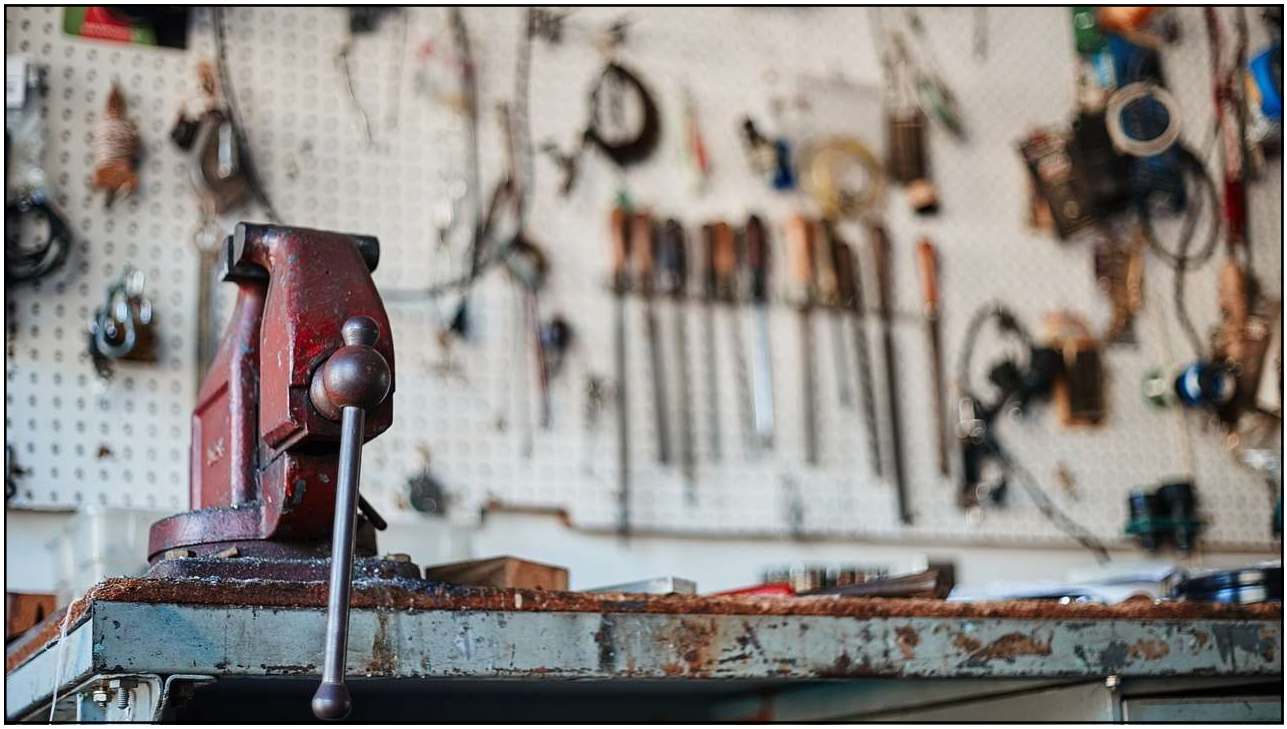
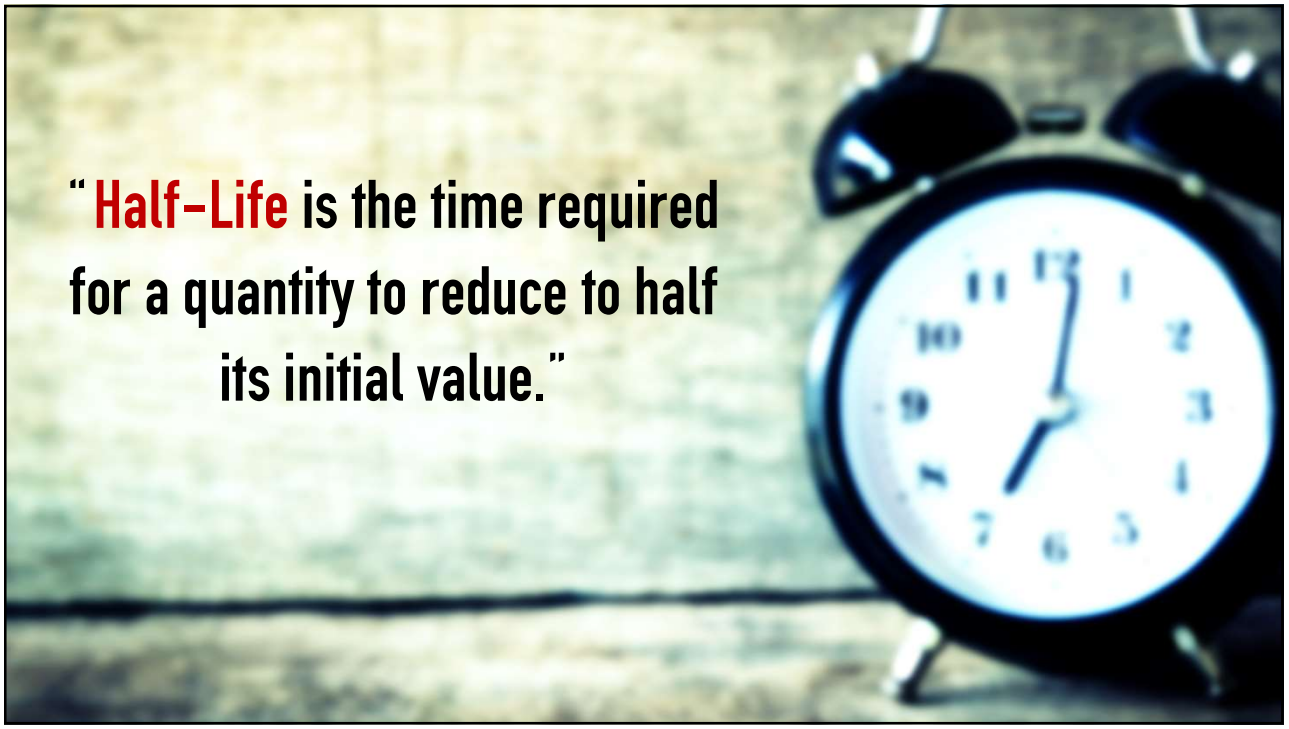
Learning Through Tinkering

Tom Cools
@TCoolsIT
www.tomcools.be




"Half-Life is the time required for a quantity to reduce to half its initial value."

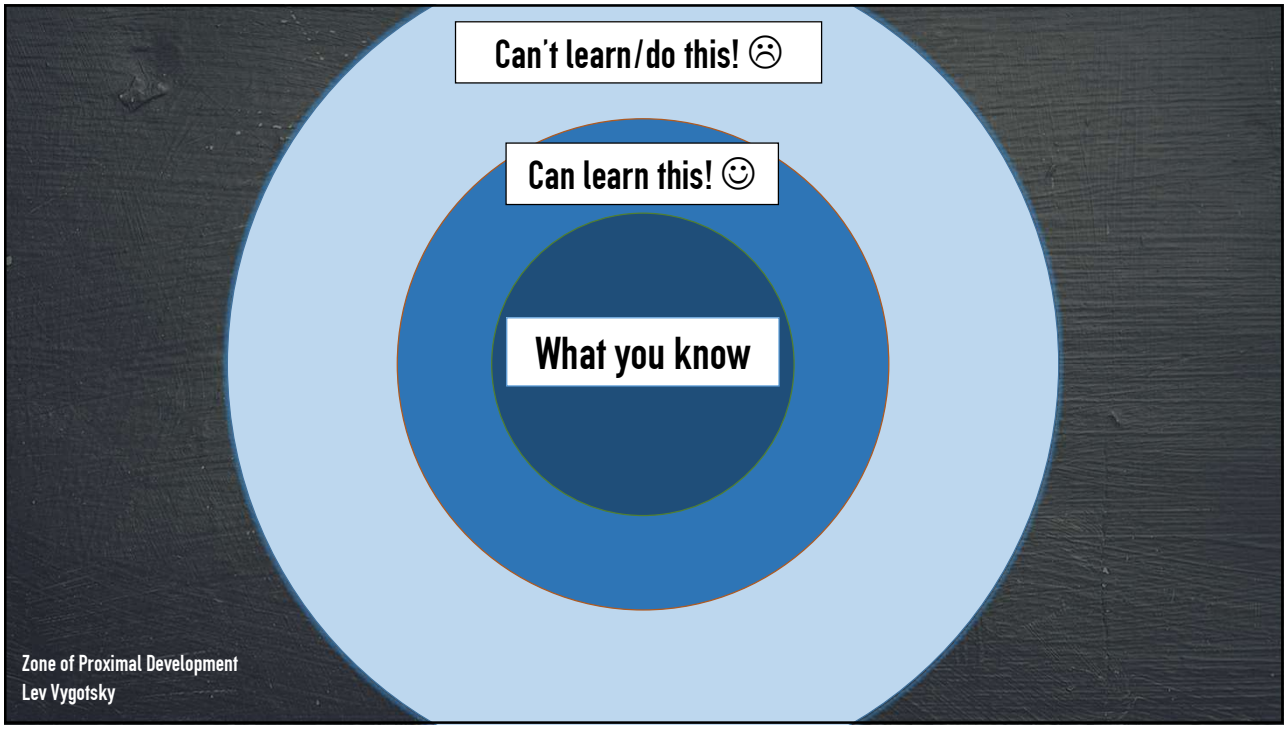
The Half-Life of relevant knowledge in the IT-Sector:
2 to 5 years

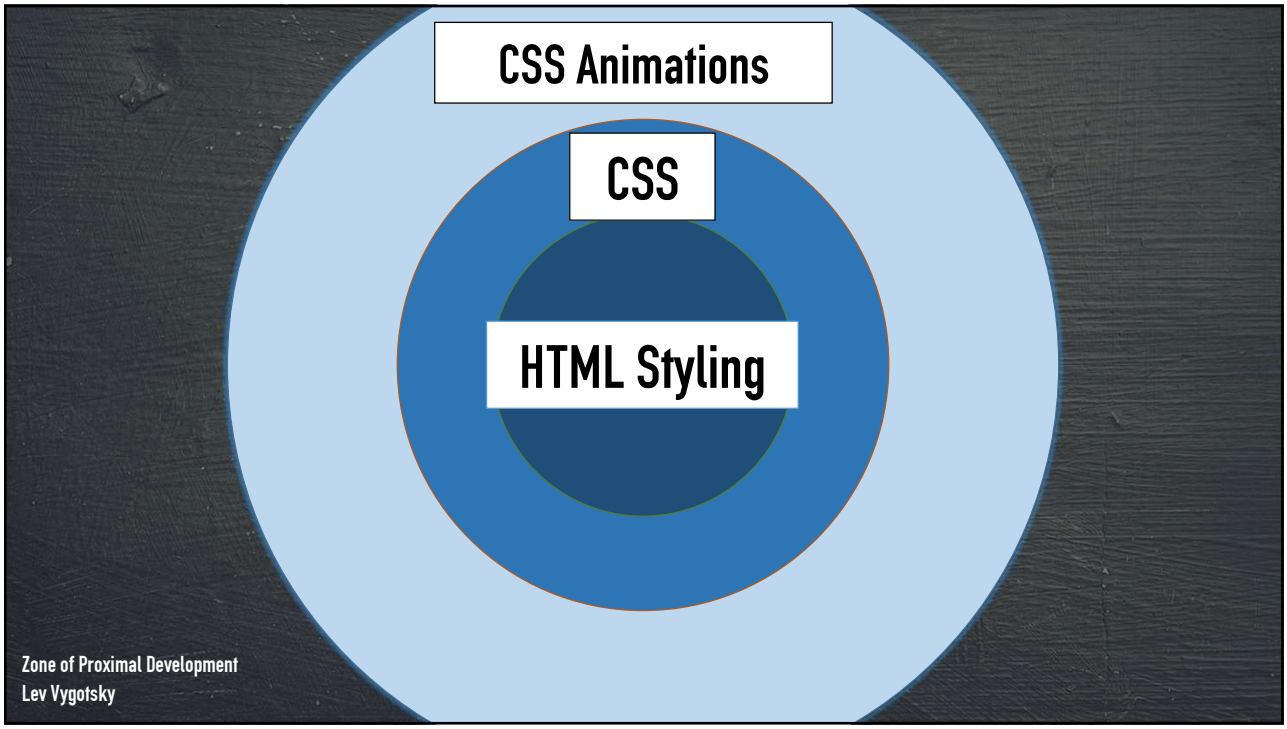
Learning Through Tinkering

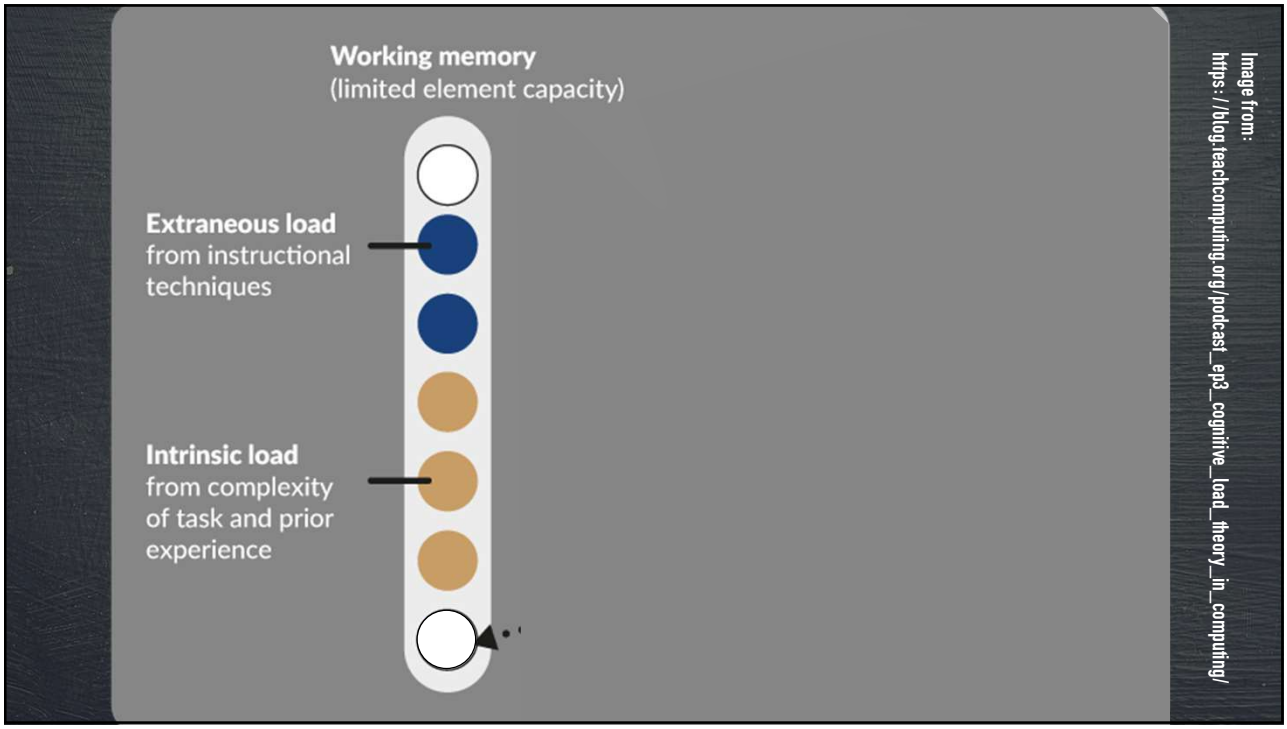
- Finding the right things to learn about;
- Applying what you learned;
- Common mistakes while learning;
- Getting to most out of your new knowledge;

Learning Through Tinkering

- Finding the right things to learn about;
- Applying what you learned;
- Common mistakes while learning;
- Getting to most out of your new knowledge;


Can't learn/do this! ☹
Can learn this! ☺
What you know
Zone of Proximal Development
Lev Vygotsky


CSS Animations
CSS
HTML Styling
Zone of Proximal Development
Lev Vygotsky


Working memory
(limited element capacity)
Extraneous load
from instructional
techniques
Intrinsic load
from complexity
of task and prior
experience
Image from:
https://blog.teachcomputing.org/podcast_ep3_cognitive_load_theory_in_computing/

"Technical implementations decay faster than the concepts they are based on"

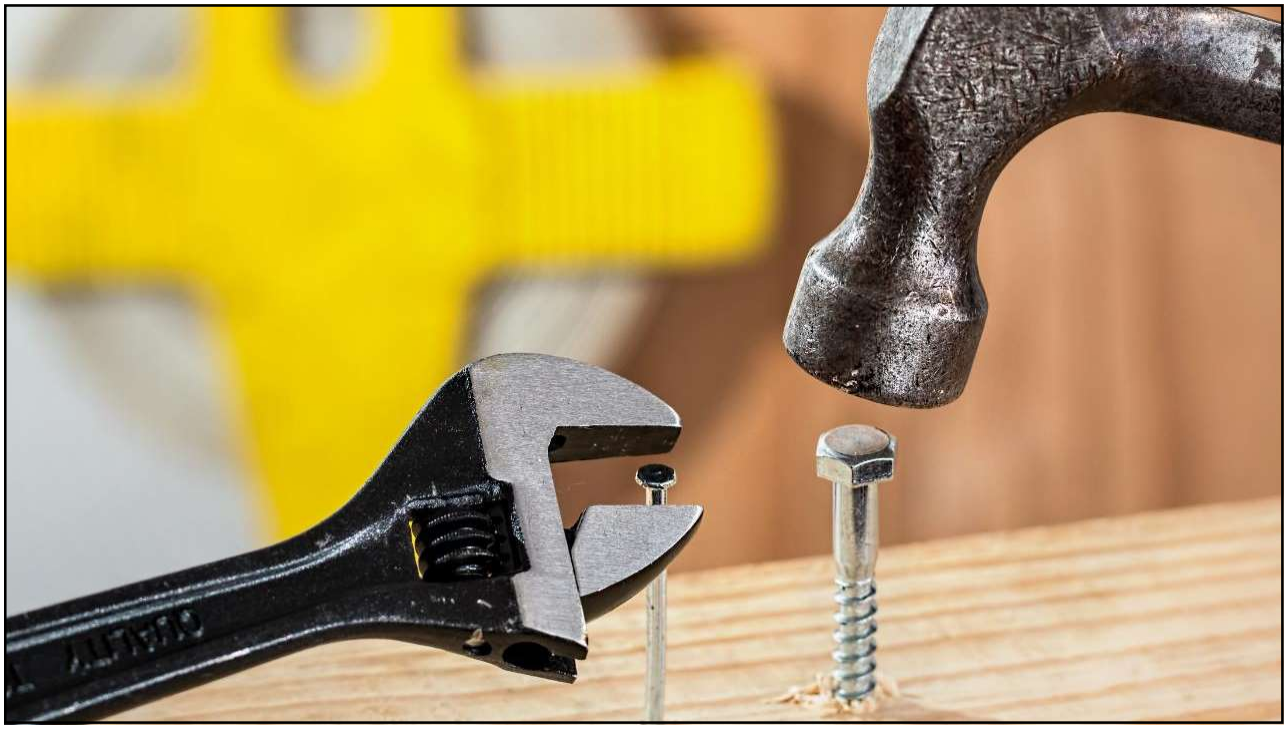
Concepts don't decay as fast

- Object Oriented Programming
- Functional Programming
- TDD
- DDD
- Design Patterns
- Clean Code

CODING COACH

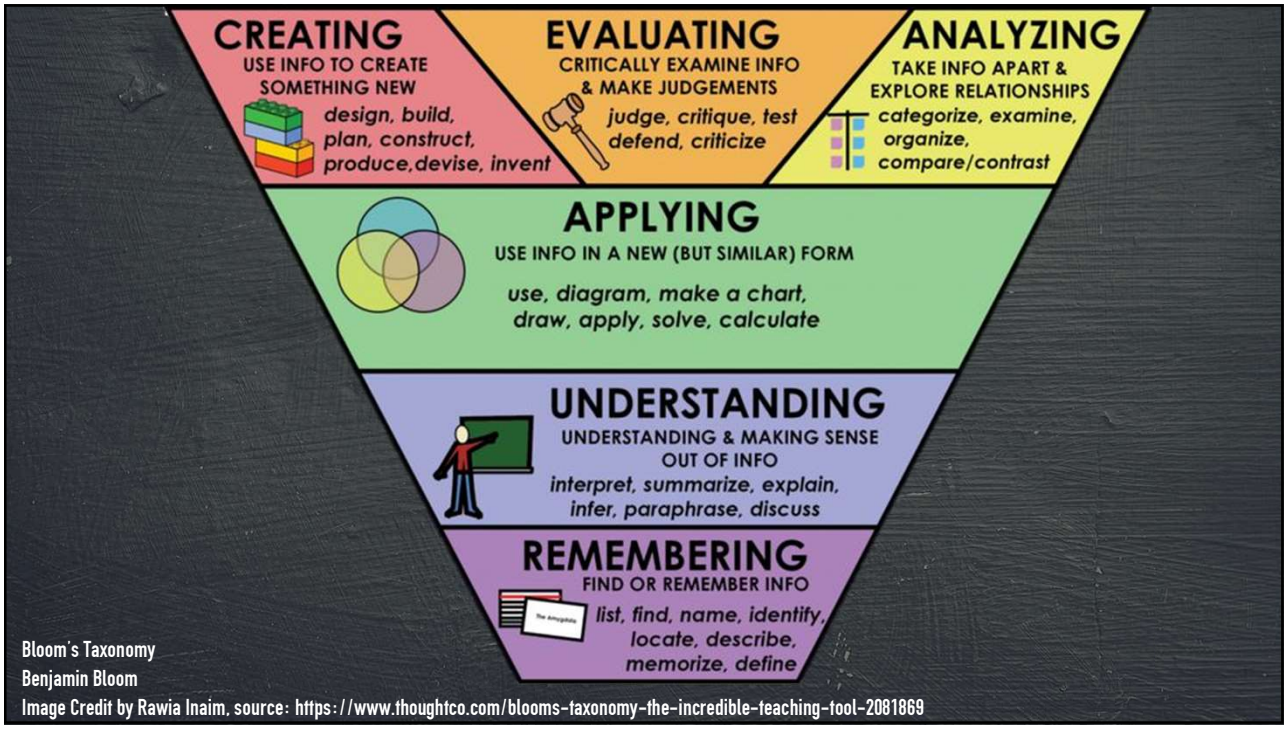
Connecting developers with mentors worldwide

FIND A MENTOR



Learning Through Tinkering

- Finding the right things to learn about;
- Applying what you learned;
- Common mistakes while learning;
- Getting to most out of your new knowledge;



Bloom's Taxonomy
Benjamin Bloom
Image Credit by Rawia Inaim, source: https://www.thoughtco.com/blooms-taxonomy-the-incredible-teaching-tool-2081869

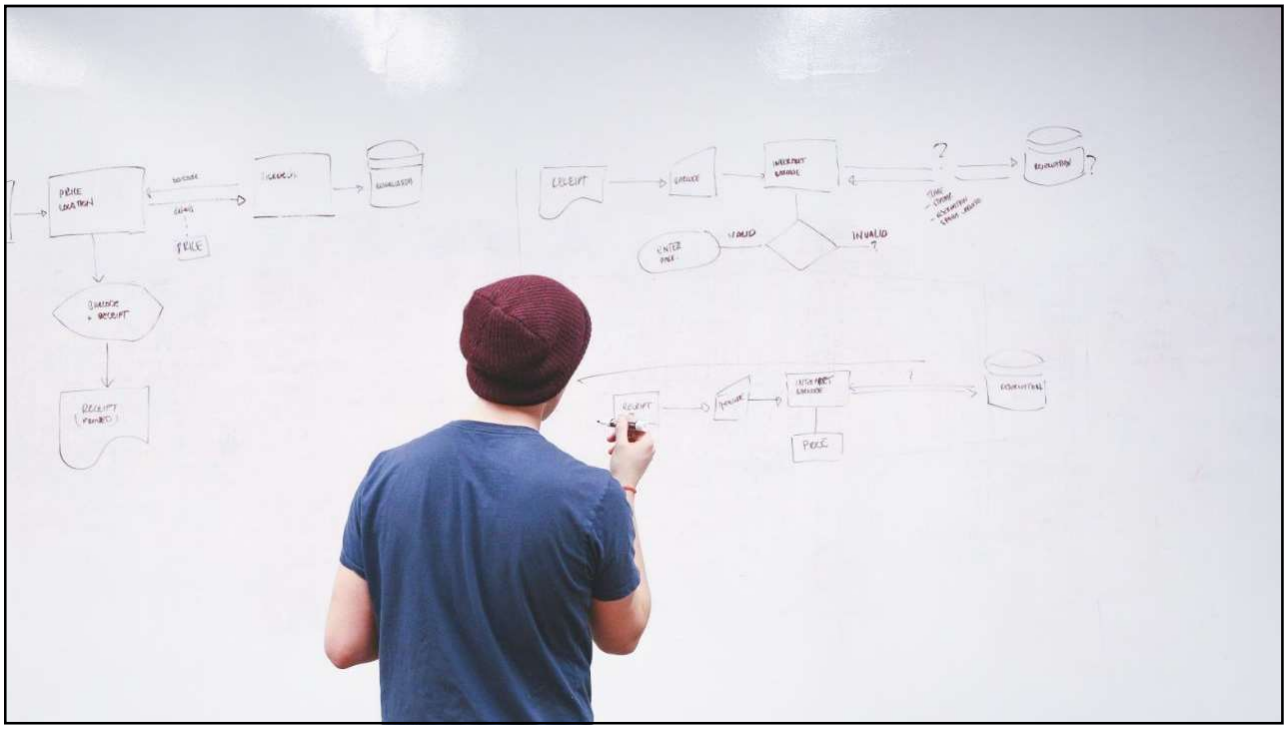
What is tinkering?

"Experimenting with ideas/frameworks
in an integrated environment
to fully understand their capabilities"

Limit
Yourself

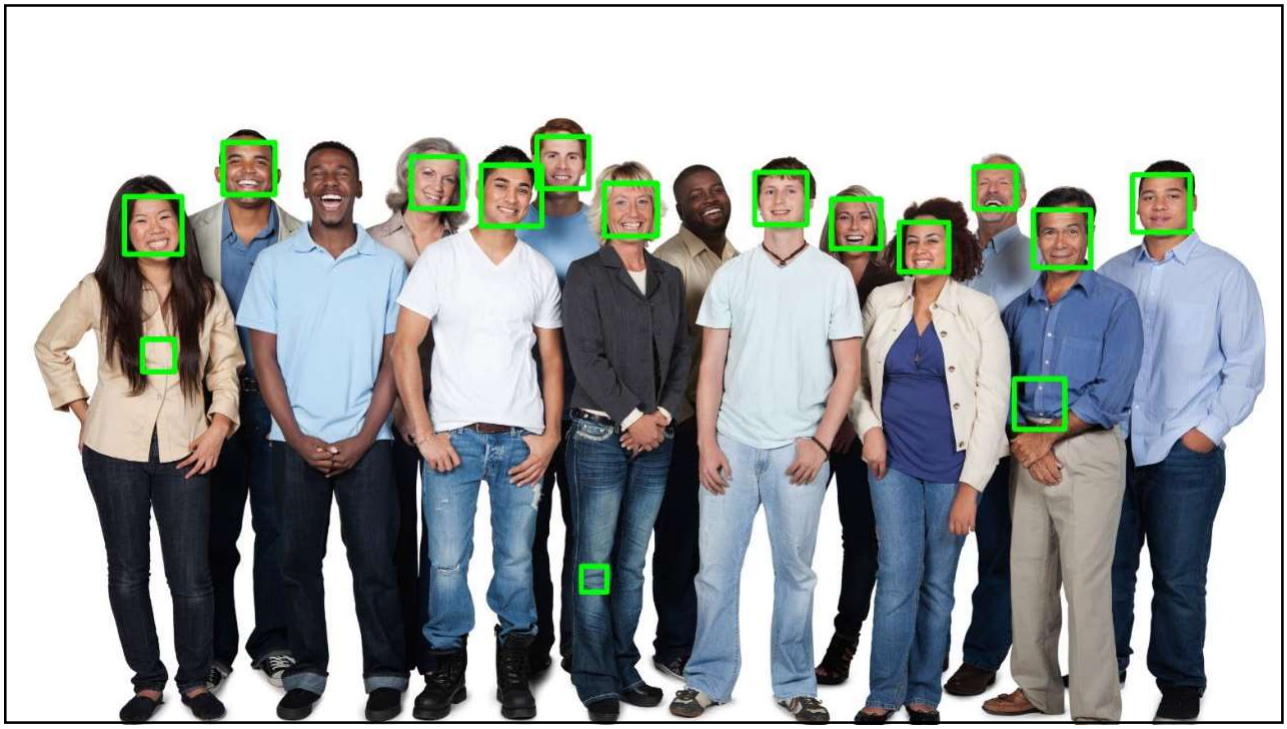
Limit
Yourself

Reflect



OpenCV

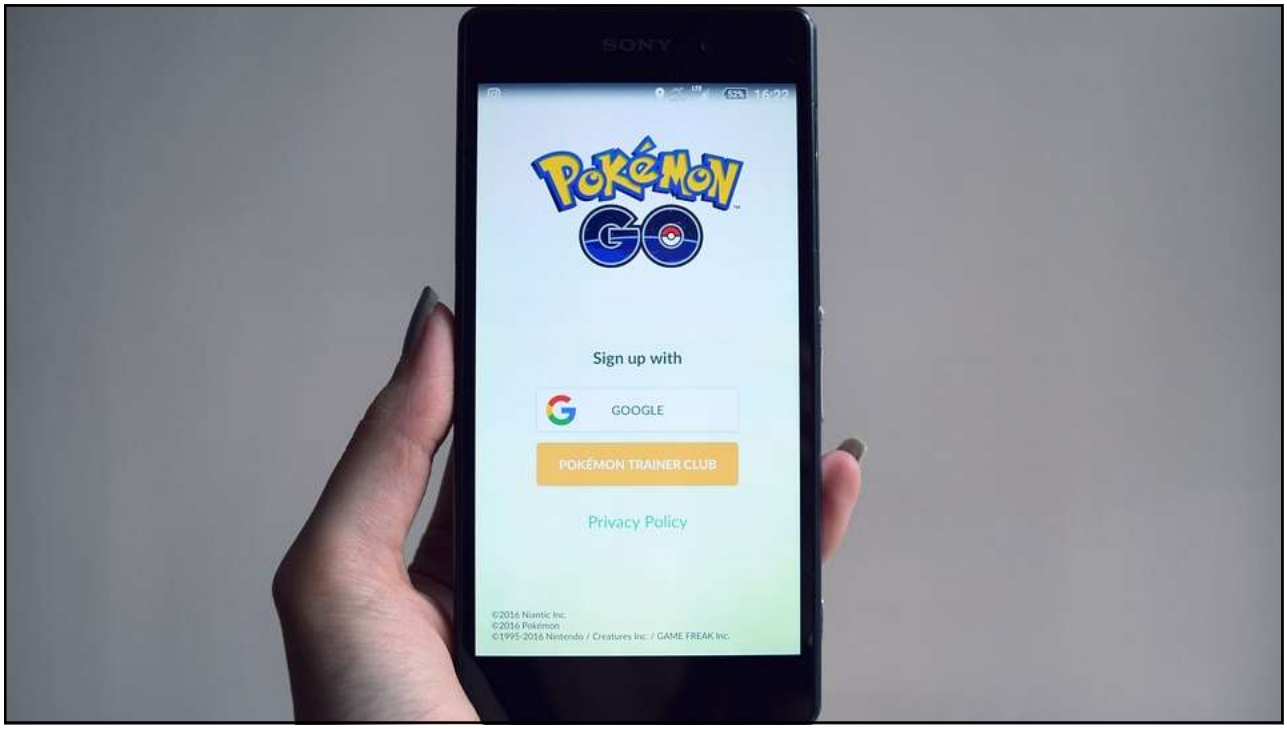
Microsoft Cognitive Services
Face API

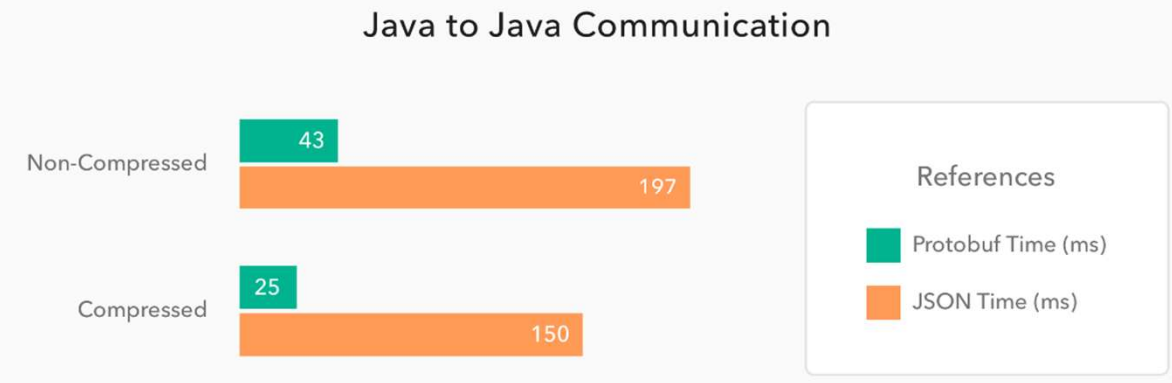


Reflect

Be conscious about
your learning goals

Image: CERN – ATLAS calorimeter
http://cdsweb.cern.ch/record/910381#02

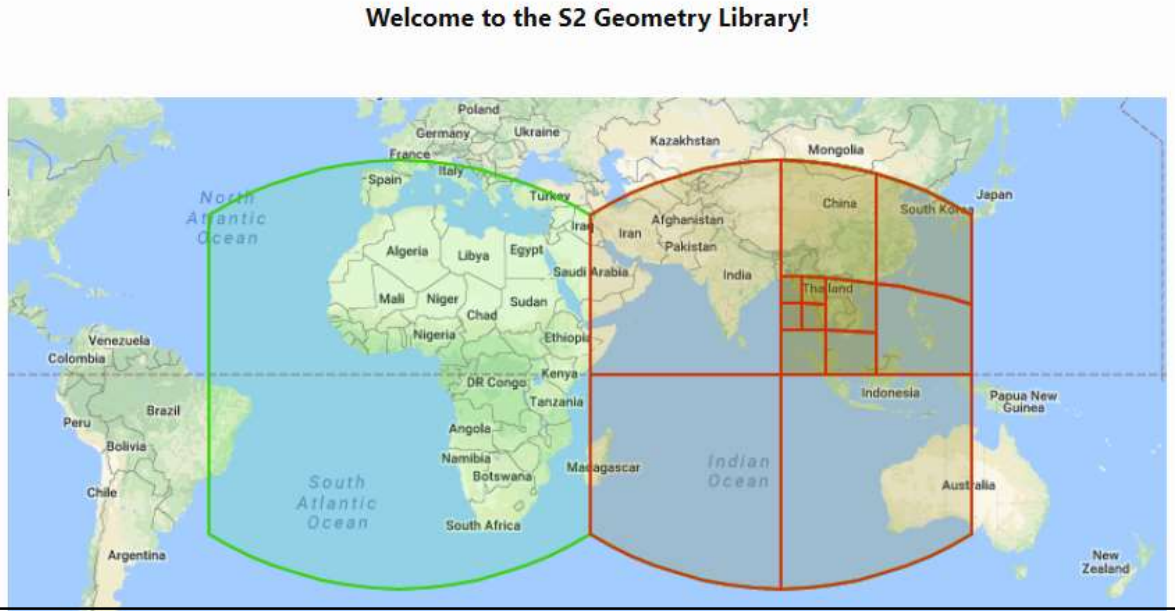




Source: https://auth0.com/blog/beating-json-performance-with-protobuf/

S2 Geometry

From: http://s2geometry.io/



Be concious about
your learning goals

Alternative
Approaches

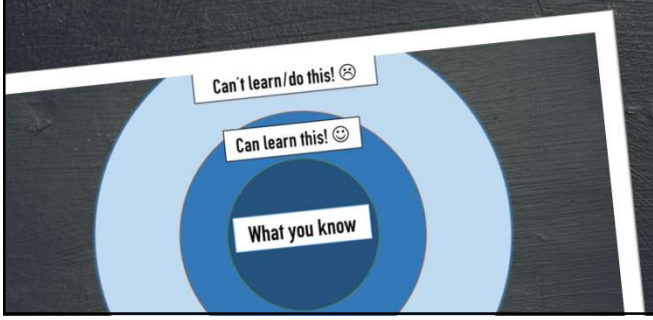
Character: "Chonk" by purr.in.ink
Twitter: @purrinink

Alternative
Approaches

Learning Through Tinkering

- Finding the right things to learn about;
- Applying what you learned;
- **Common mistakes while learning;**
- Getting to most out of your new knowledge;

Too much new stuff

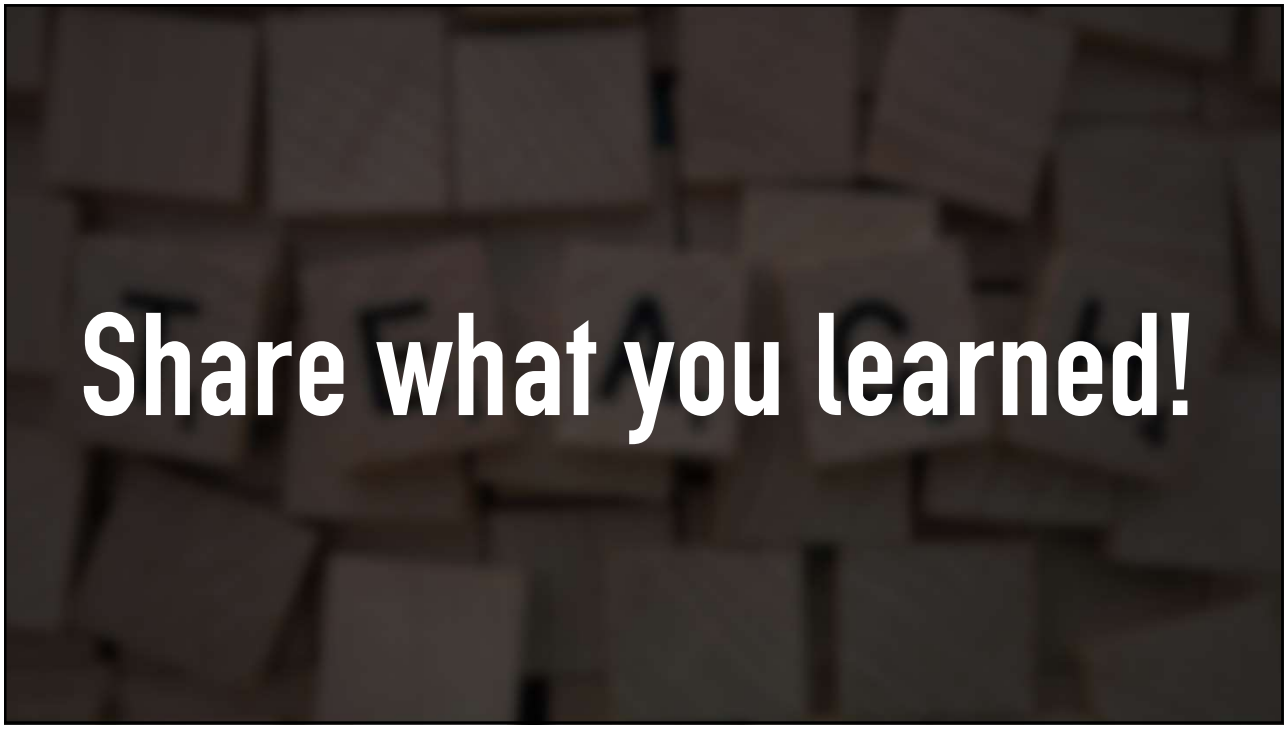


Cramming new knowledge

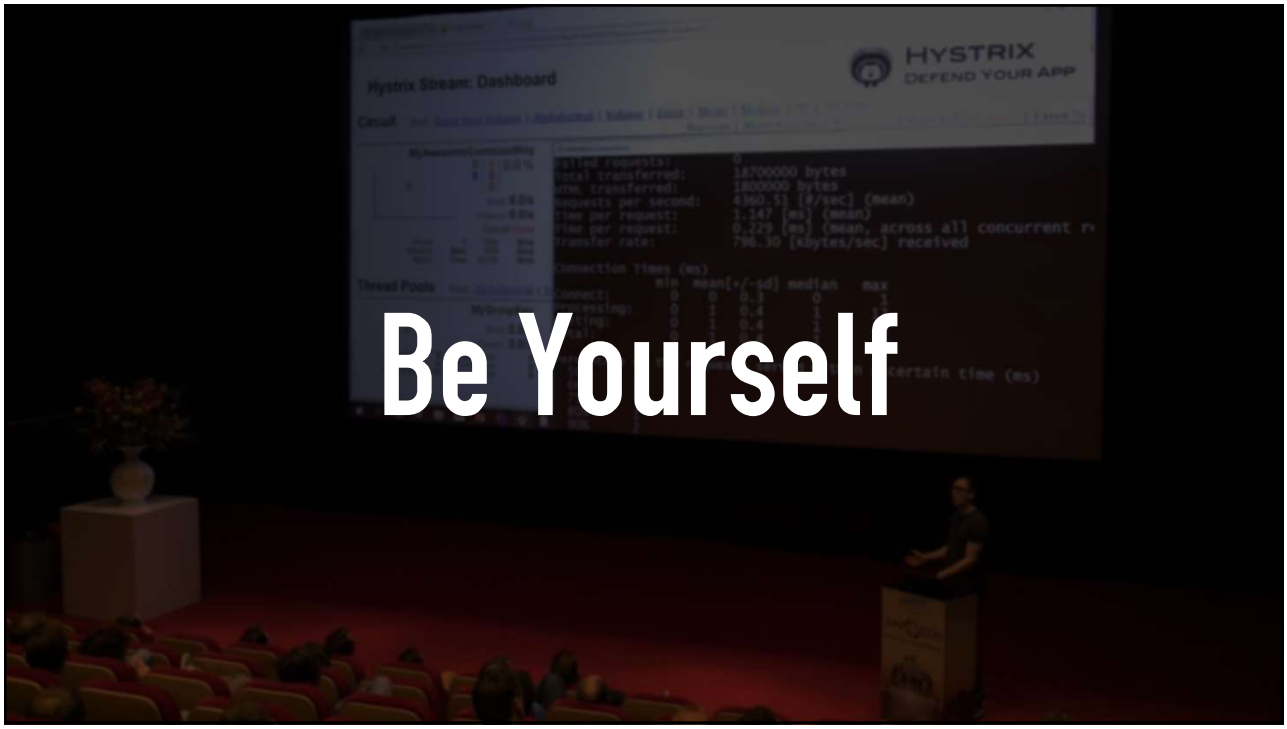
StackOverflow Based Development

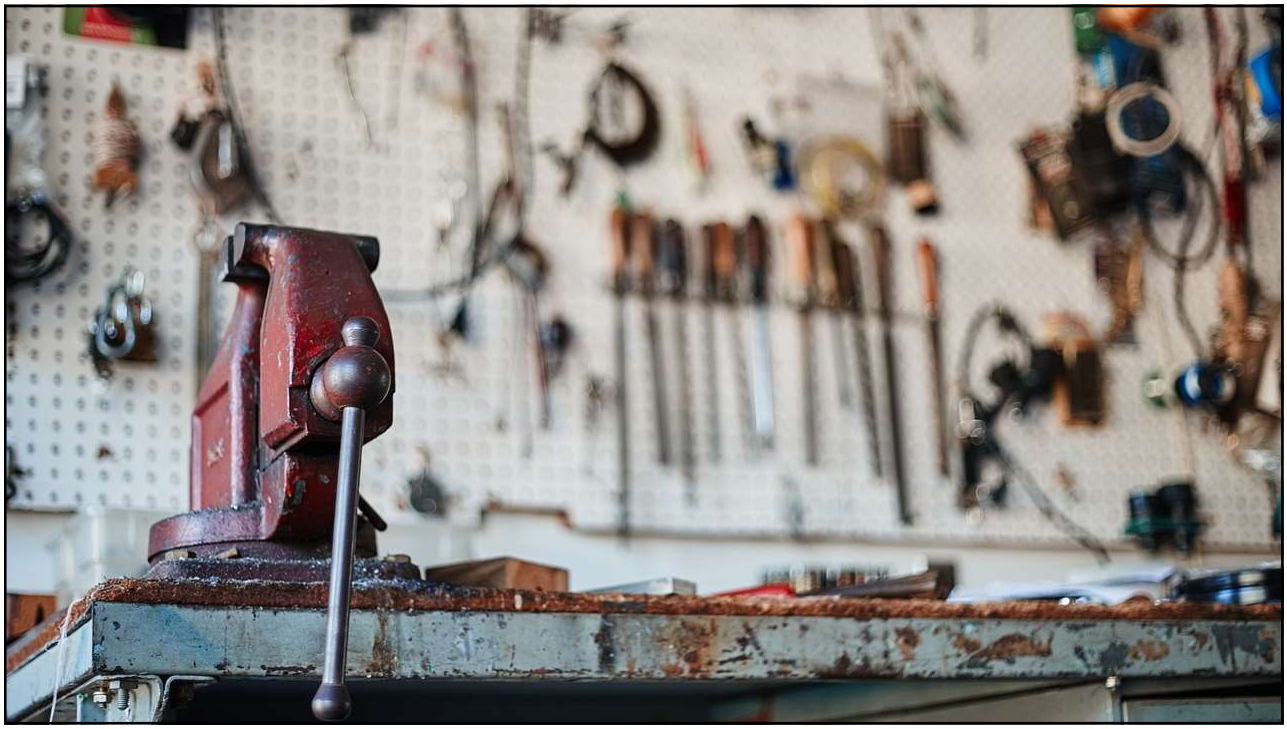
AKA, the copy-paste loop

Learning Through Tinkering
• Finding the right things to learn about;
• Applying what you learned;
• Common mistakes while learning;
• Getting to most out of your new knowledge;


Share what you learned!

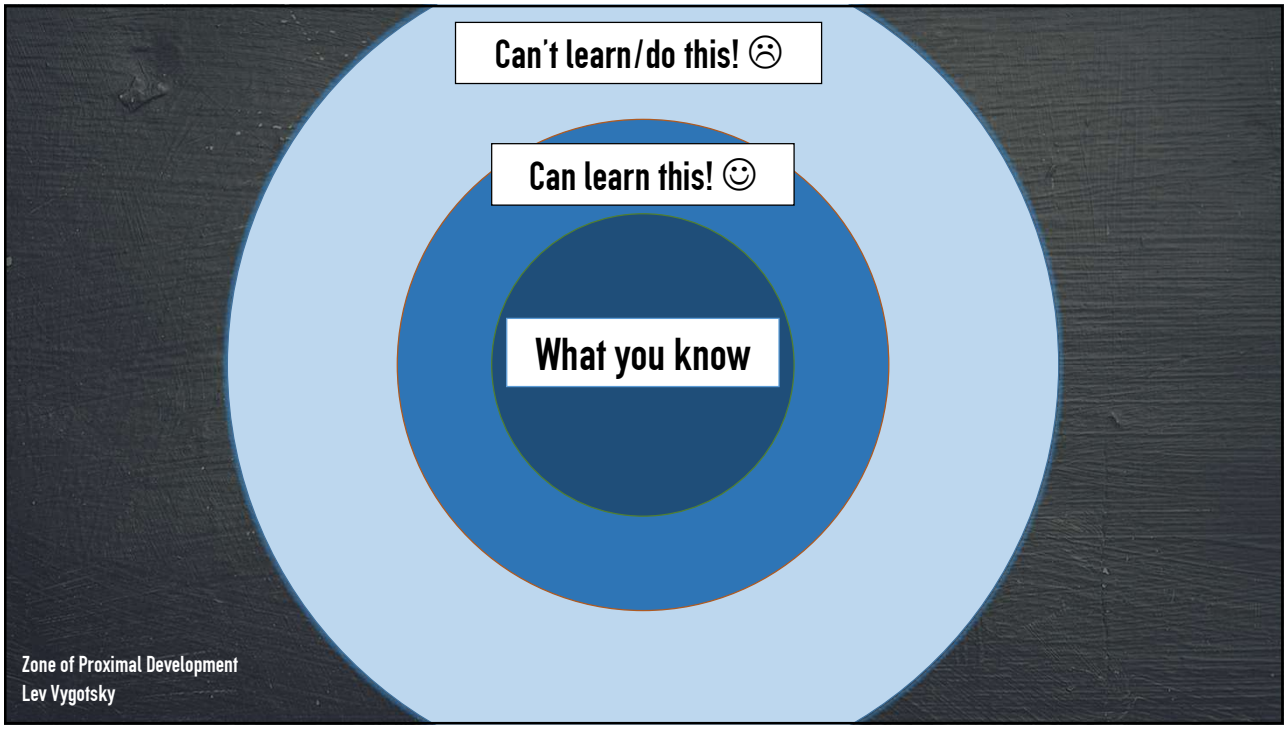
CODING
COACH
Connecting developers with mentors worldwide
FIND A MENTOR
Do Good

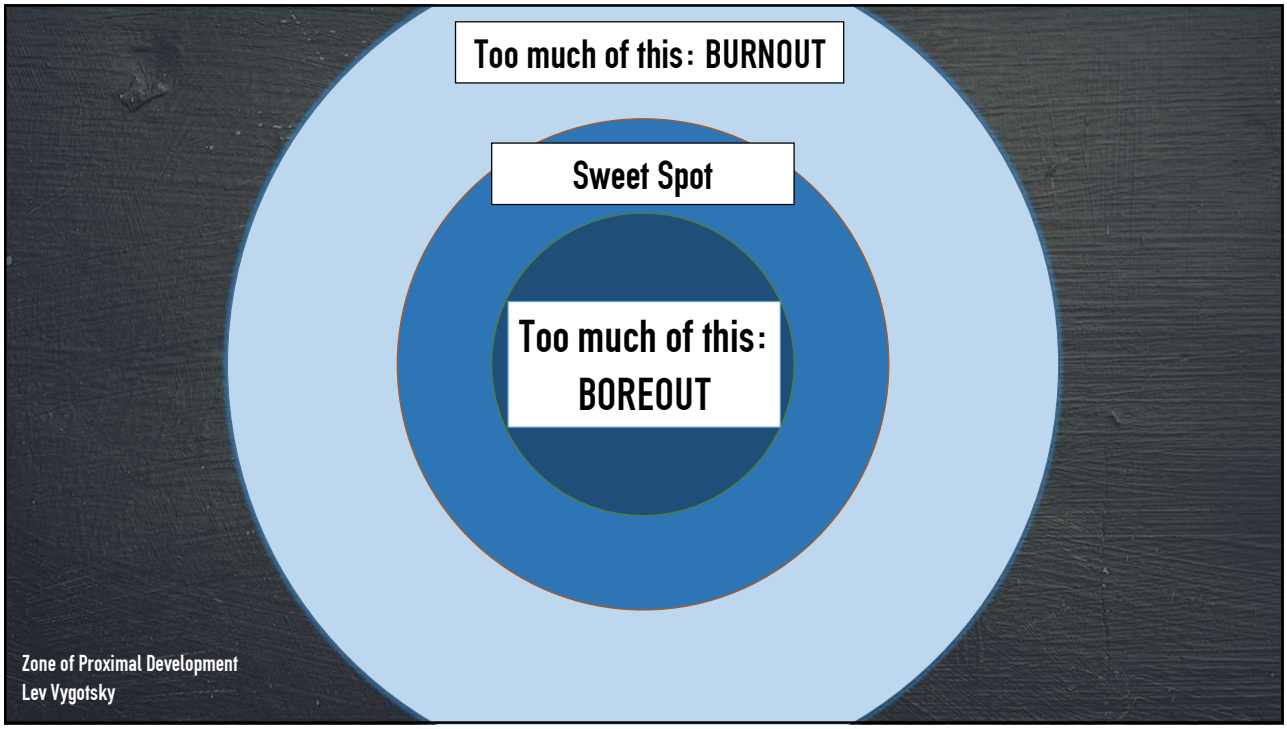

Hystrix Stream: Dashboard
HYSTRIX
DEFEND YOUR APP
Be Yourself



"Who is responsible to update and maintain your knowledge and skills?"

You Are


Can't learn/do this! ☹
Can learn this! ☺
What you know
Zone of Proximal Development
Lev Vygotsky

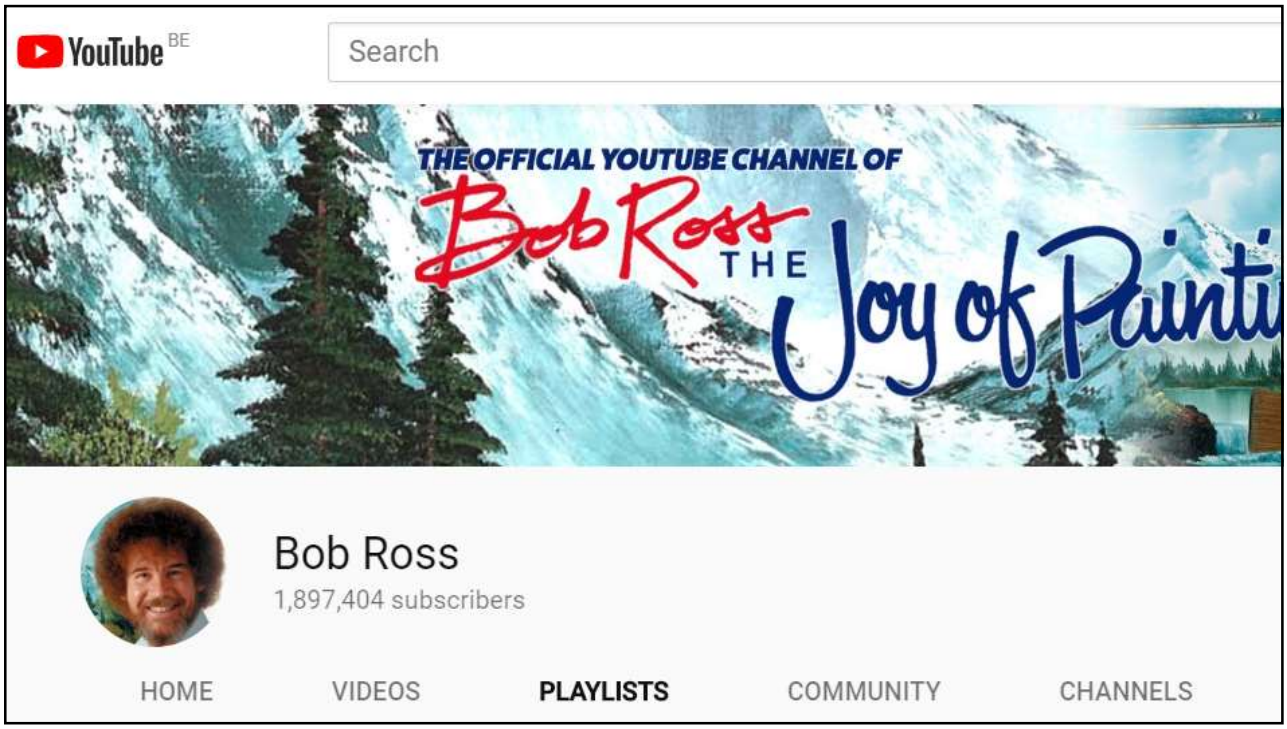

Too much of this: BURNOUT
Sweet Spot
Too much of this: BOREOUT
Zone of Proximal Development
Lev Vygotsky

Learning Through Tinkering

- Finding the right things to learn about;
- Applying what you learned;
- Common mistakes while learning;
- Getting to most out of your new knowledge;

Choose One Topic You've Seen

GO TINKER WITH IT
AND SHARE WHAT YOU LEARNED!


YouTube BE
Search
THE OFFICIAL YOUTUBE CHANNEL OF
Bob Ross
THE
Joy of Painti
Bob Ross
1,897,404 subscribers
HOME
VIDEOS
PLAYLISTS
COMMUNITY
CHANNELS

#DEVOXX