

A Developer's Guide to Managing Attention

A talk by Jiachen Jiang for
CodeMash 2025

How many of you procrastinate?



How many of you struggle to finish things?



How many of you have a hard time prioritizing?





**Lack of attention and focus is not
the problem.**

**The problem is lack of attention
*management.***

In this talk, you will learn about...

The science behind attention - and why we have such a hard time with it.

How our difficulties with attention management translates to software concepts.

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The science behind attention - and why we have such a hard time with it.

How our difficulties with attention management translates to software concepts.

How to improve your attention management by developing & improving your own “software.”

Hi, I'm Jiachen.

I work at Microsoft as a Product Manager.

PRODUCT MANAGER

#partylikeaproductmanager



What my friends think I do



What my mom thinks I do



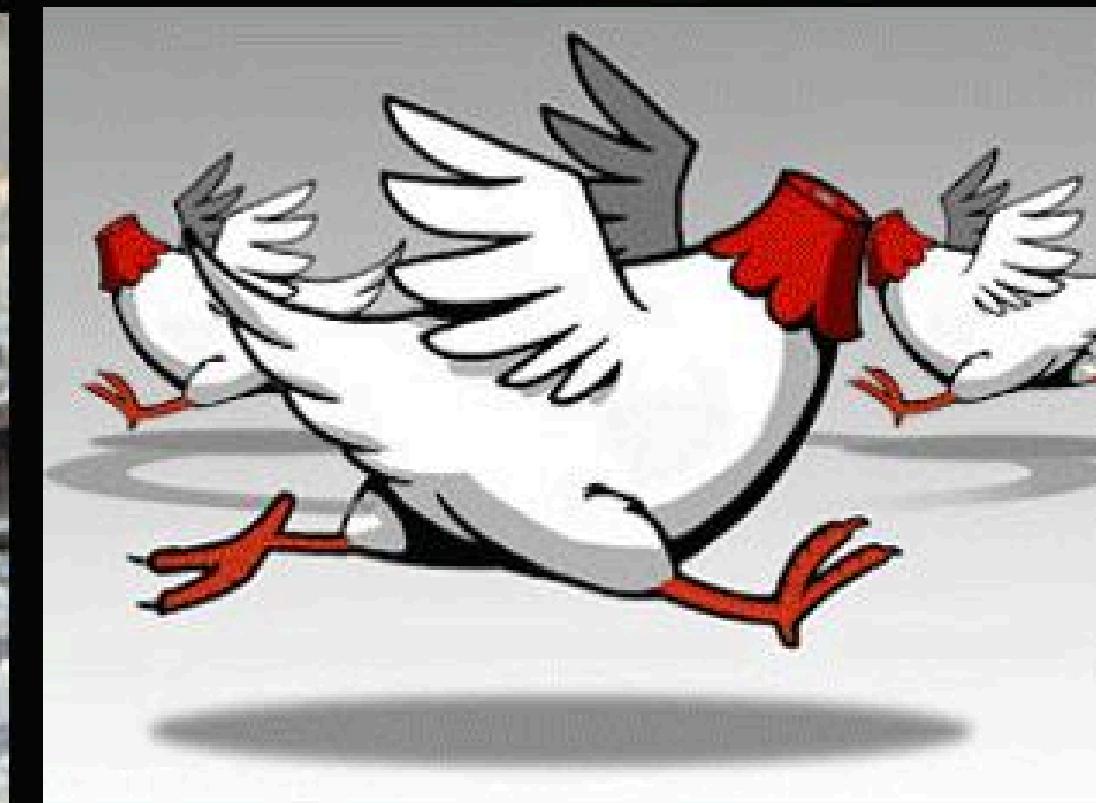
What society thinks I do



What my colleagues think I do



What I think I do



What I actually do

PRODUCT MANAGER

#partylikeaproductmanager



What my friends think I do



What my mom thinks I do



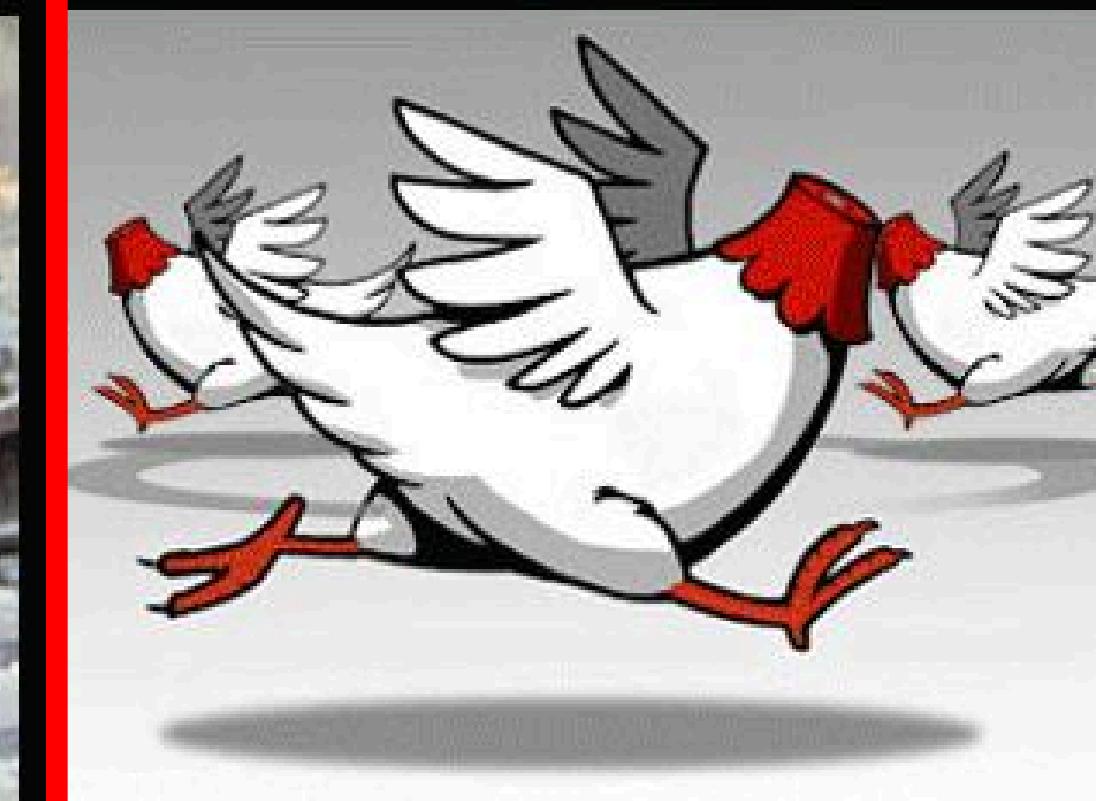
What society thinks I do



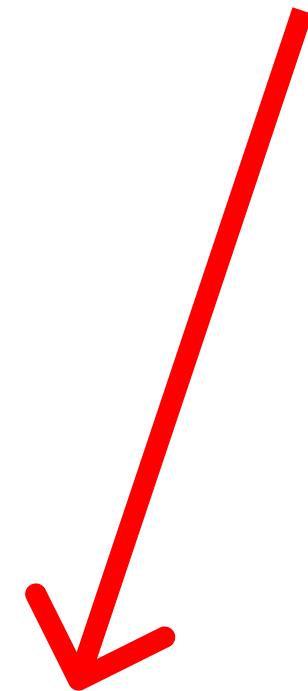
What my colleagues think I do



What I think I do

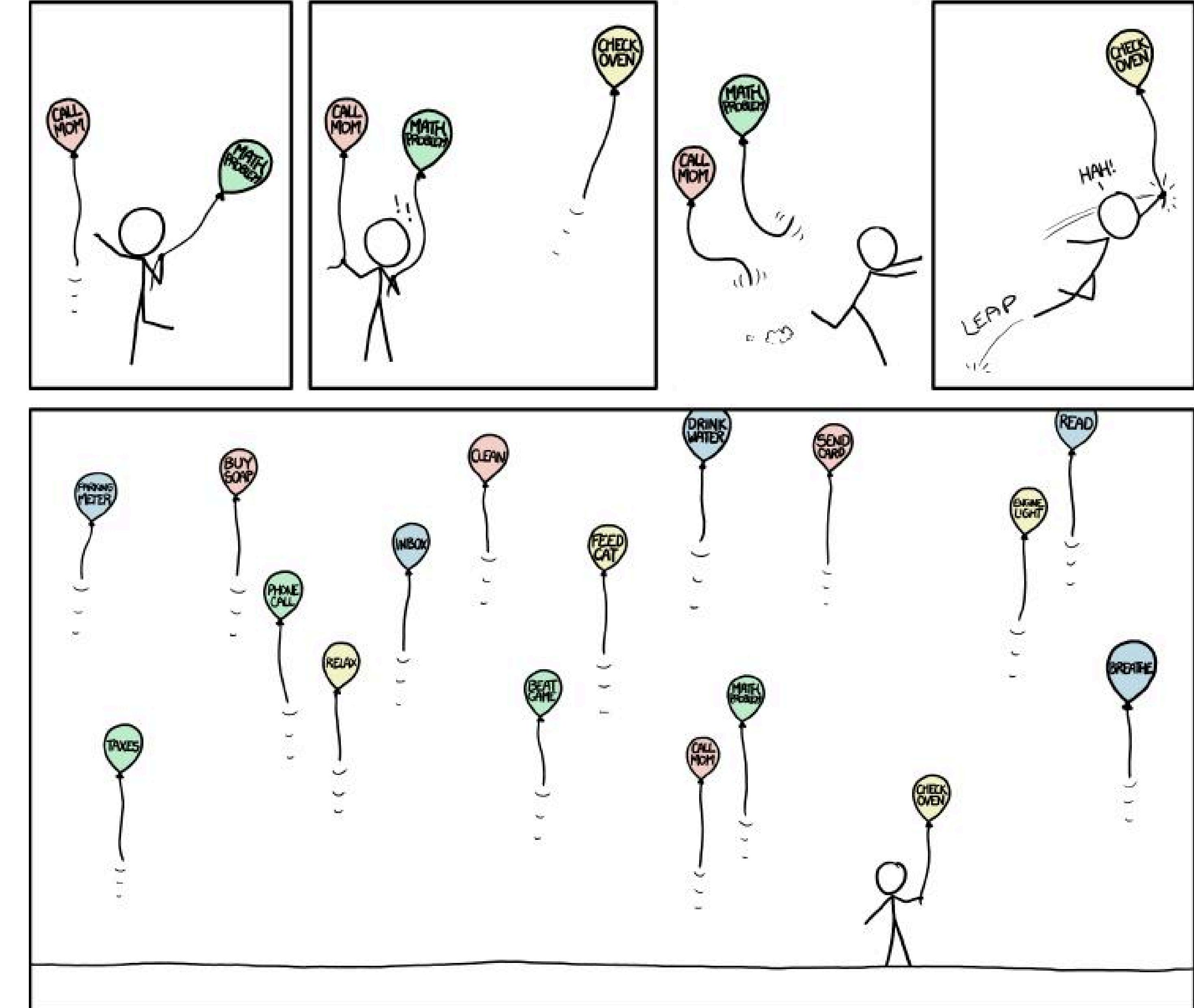


What I actually do



Hi, I'm Jiachen.

I have attention-
deficit
hyperactive
disorder (ADHD.)



My ADHD helps me avoid technical debt.

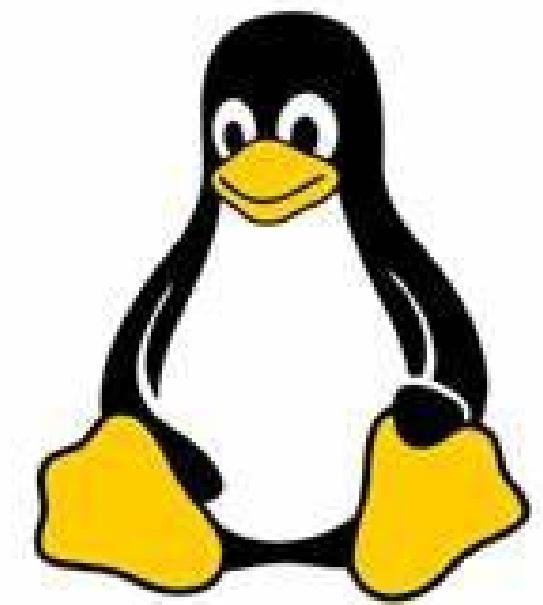
I use a different kind of operating system.

I can do the same things!

I just have to do it differently.



vs





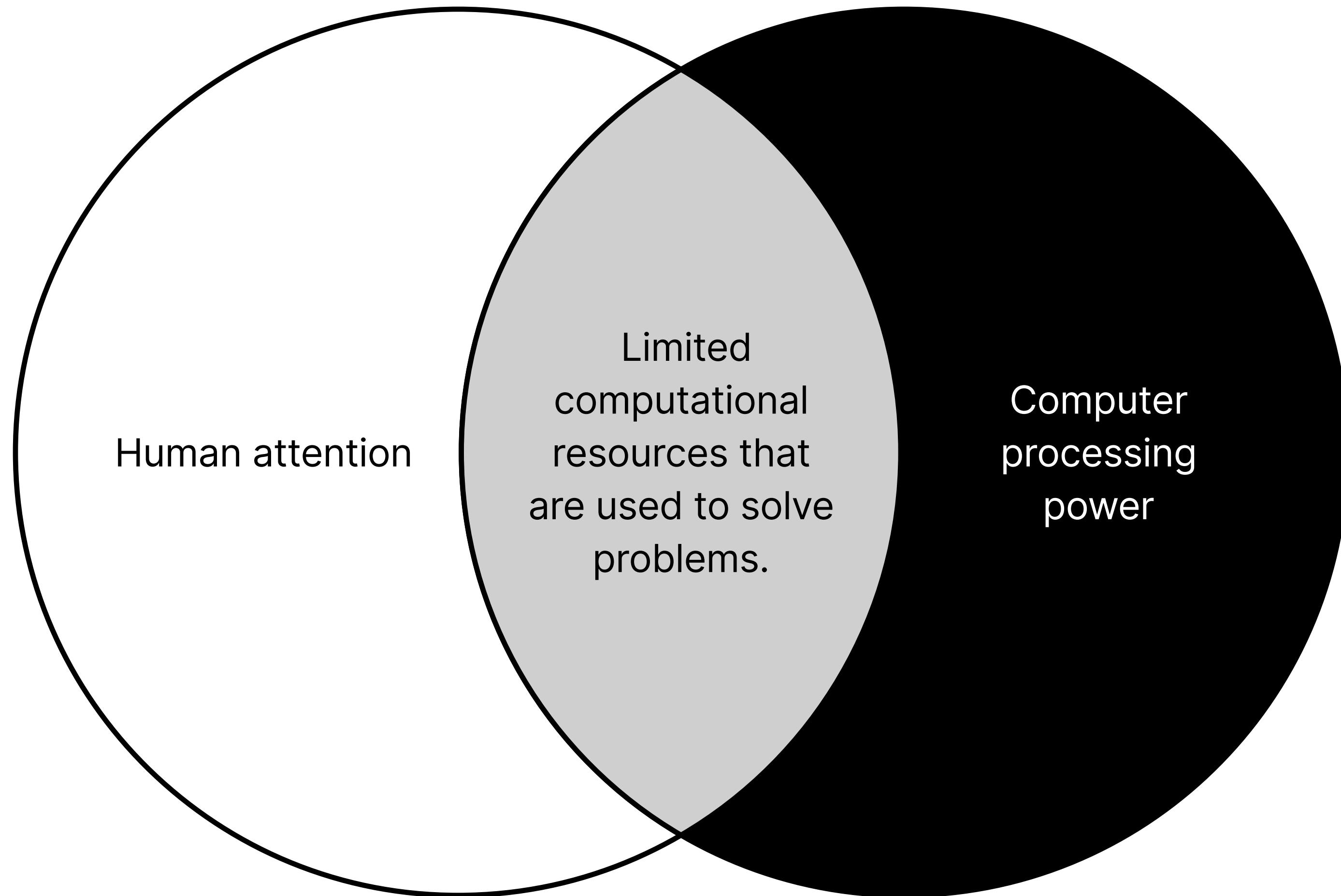
WIKIPEDIA
The Free Encyclopedia

WIKIPEDIA

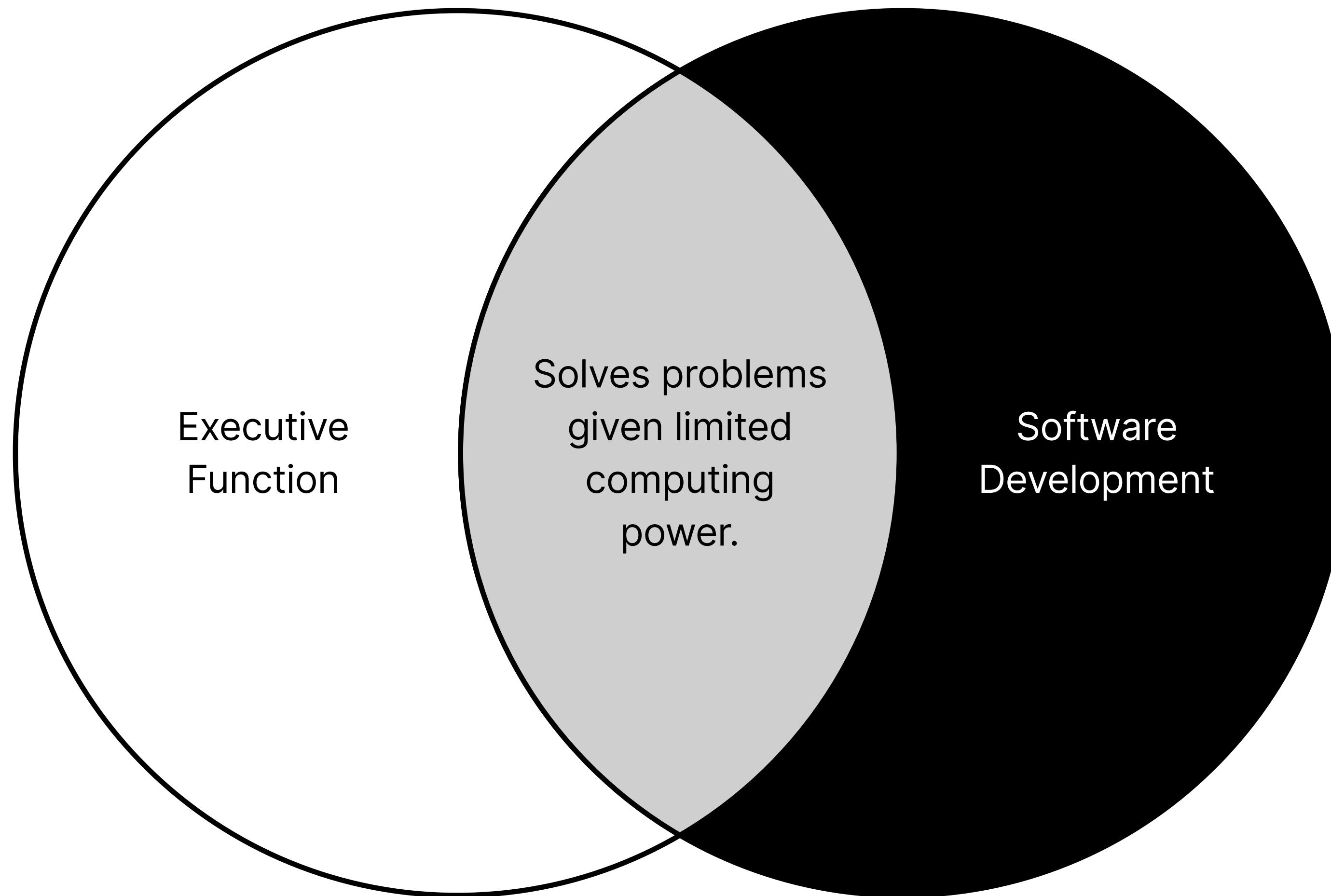
List of operating systems

This is a **list of operating systems**. Computer operating systems can be categorized by technology,

So, what exactly *is* attention?



So, what exactly *is* executive function?



Task Manager

 Type a name, publisher, or PID to search

Processes

Run new task

End task

Eff

Name	Status	50%	56%	0%	0%
		CPU	Memory	Disk	Network
> Docker Desktop (4)		0.6%	122.8 MB	0 MB/s	0 Mbps
> Microsoft Edge (41)		2.4%	2,796.7 MB	0.1 MB/s	0 Mbps
> Microsoft PowerPoint (3)		2.9%	183.9 MB	0 MB/s	0.1 Mbps
> Microsoft Teams (2)		4.7%	62.3 MB	0.1 MB/s	0 Mbps
> Outlook (PWA)		0%	1.3 MB	0 MB/s	0 Mbps
> Outlook (PWA)		0%	1.0 MB	0 MB/s	0 Mbps
> Spotify (8)		2.0%	110.5 MB	0.1 MB/s	0 Mbps
> Task Manager		8.2%	84.3 MB	0.1 MB/s	0 Mbps
<hr/>					
Background processes (115)					
> Alertus Desktop Alert		0%	7.0 MB	0 MB/s	0 Mbps
> Antimalware Core Service		0%	4.0 MB	0 MB/s	0 Mbps
> Antimalware Service Executable		2.6%	295.5 MB	0 MB/s	0 Mbps
> Application Frame Host		0%	7.4 MB	0 MB/s	0 Mbps
> Artificial Intelligence (AI) Host ...		0%	4.1 MB	0 MB/s	0 Mbps
> COM Surrogate		0%	0.7 MB	0 MB/s	0 Mbps



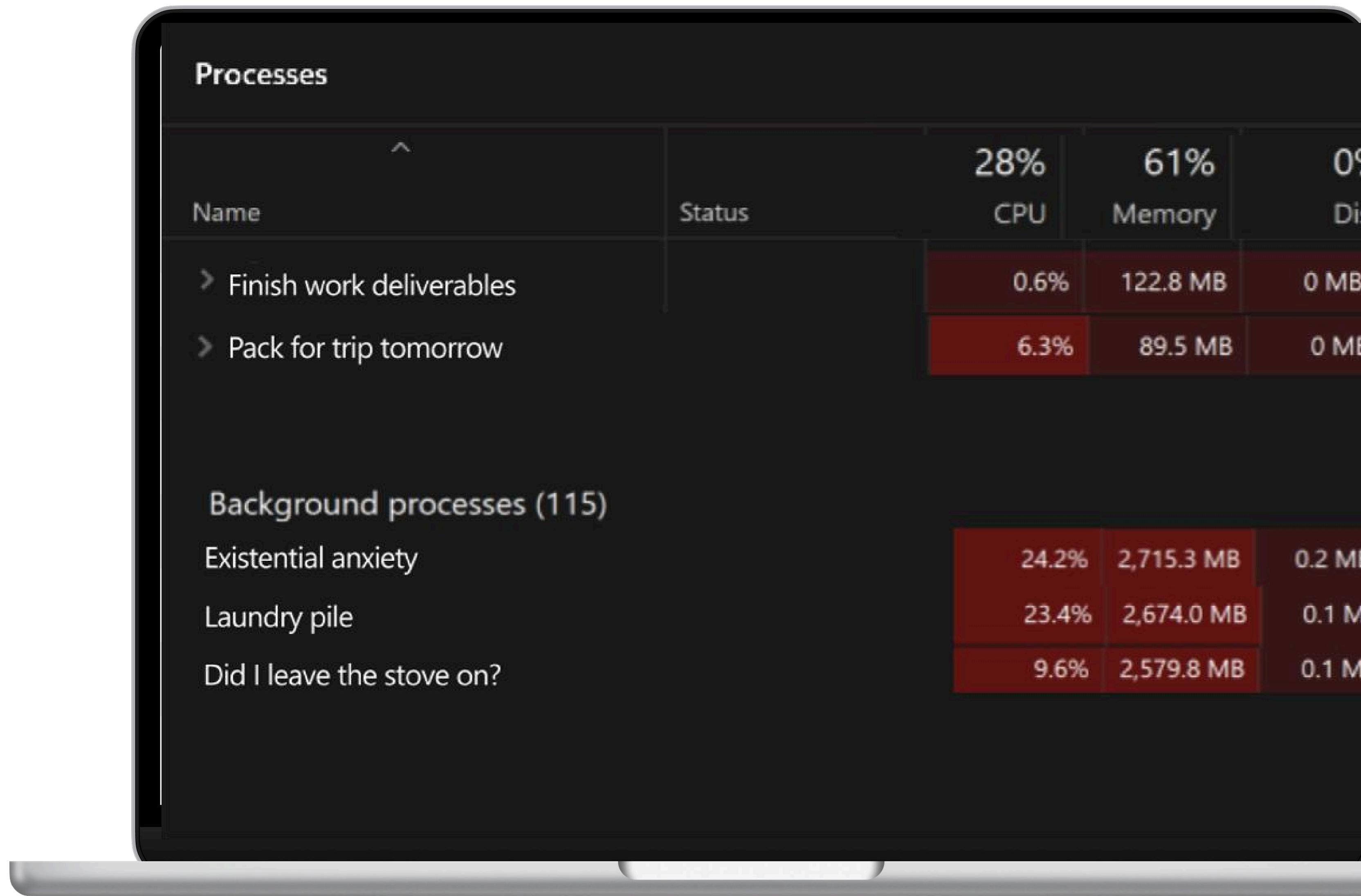
Processes

Name	Status	CPU	Memory	Disk	Network
➤ Finish work deliverables		28%	61%	0%	0%
➤ Pack for trip tomorrow		0.6%	122.8 MB	0 MB/s	0 Mbps

Background processes (115)

Existential anxiety	24.2%	2,715.3 MB	0.2 MB/s	0.3 Mbps
Laundry pile	23.4%	2,674.0 MB	0.1 MB/s	0.1 Mbps
Did I leave the stove on?	9.6%	2,579.8 MB	0.1 MB/s	0.1 Mbps

Question:
How do we
improve our
attention
management?



Answer:
Debug!

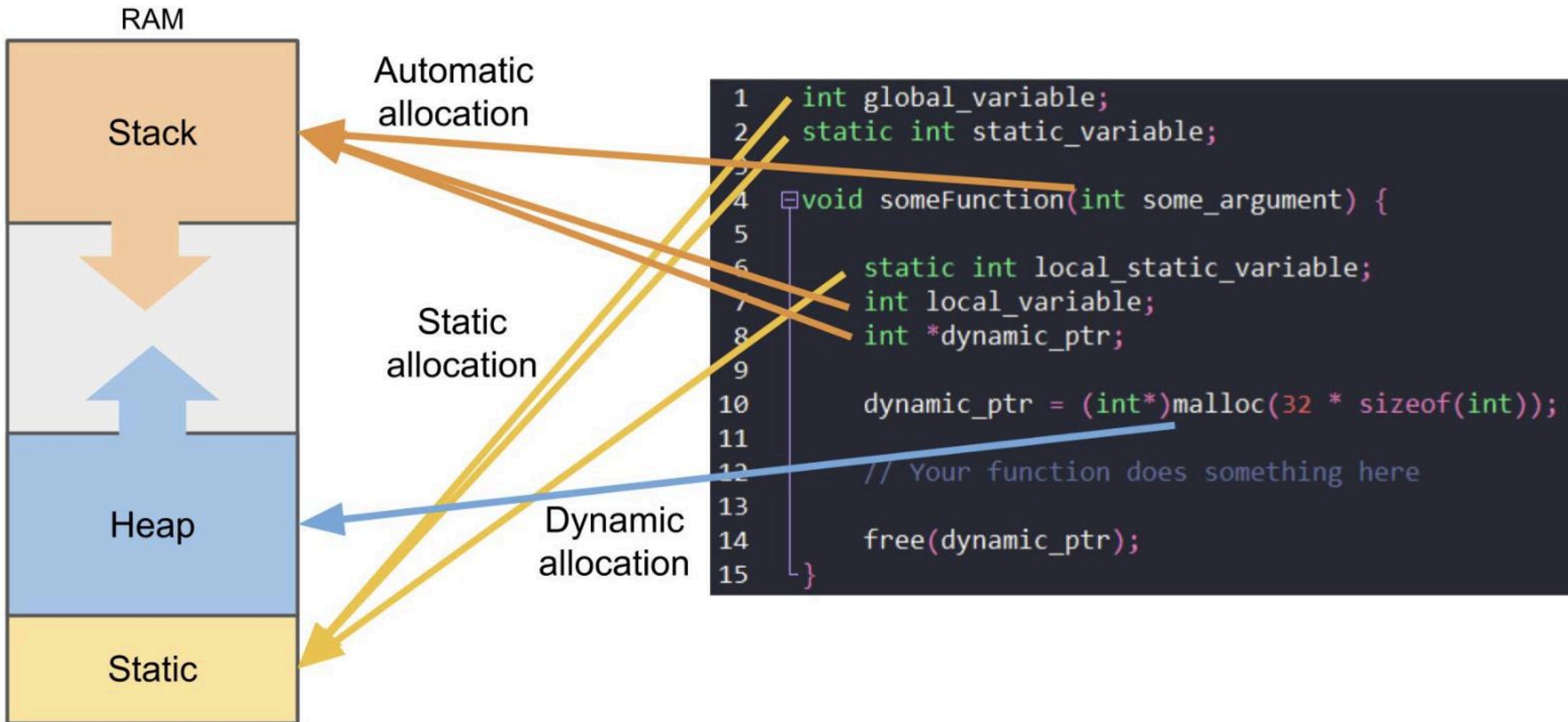


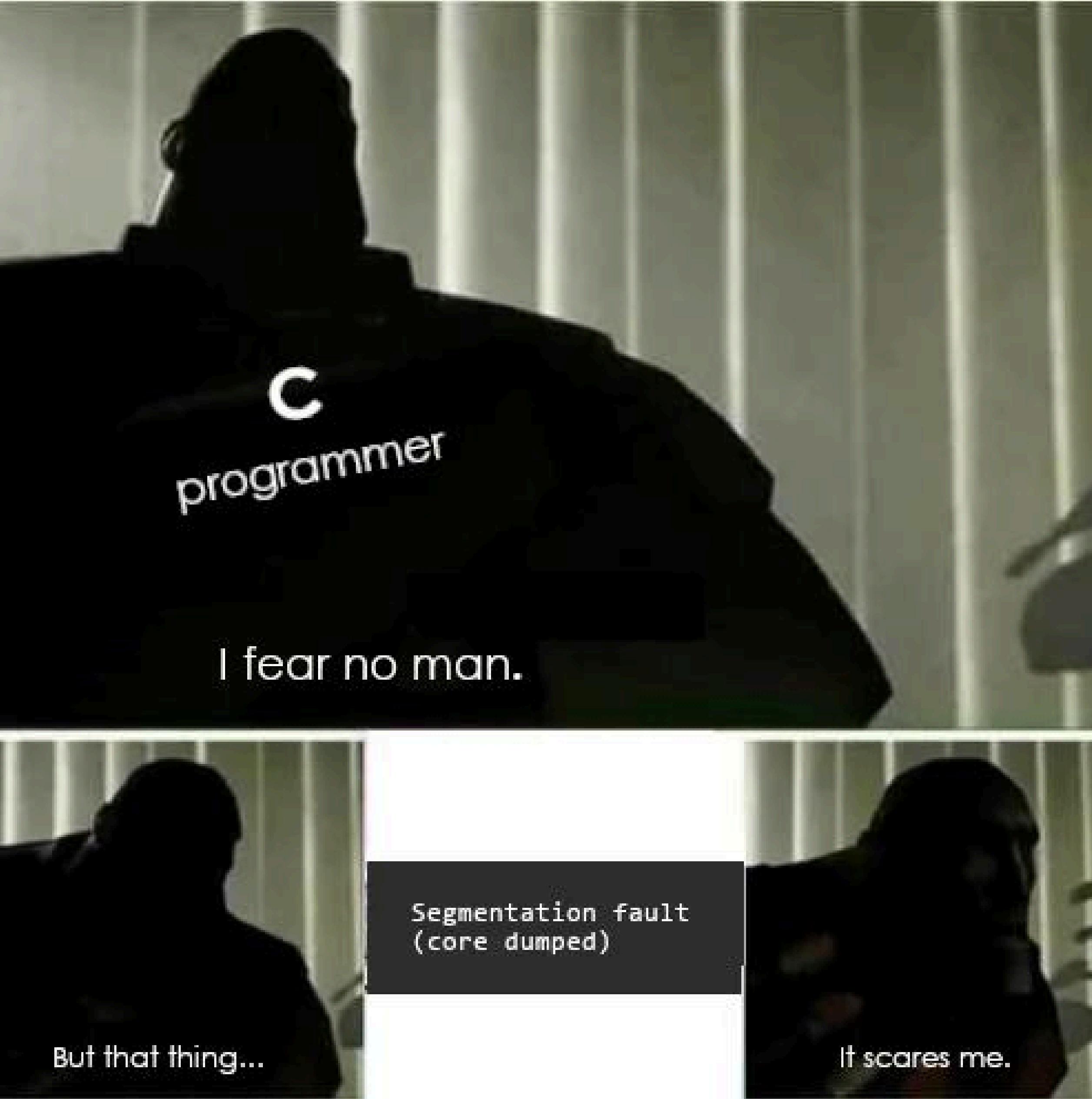
Problem:
How do we do everything we need to do?

Problem:

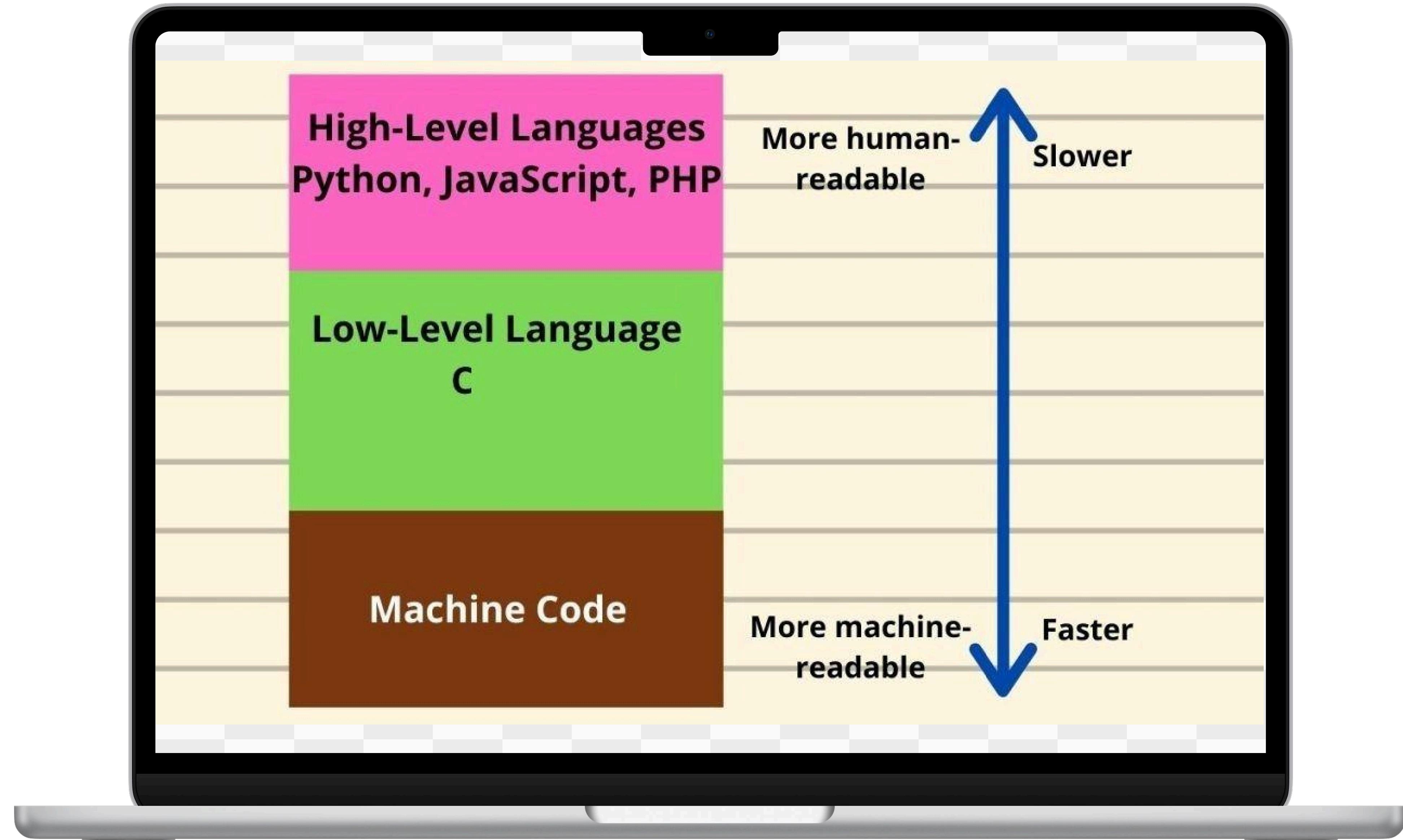
How do we get enough compute to run all
of our necessary processes?

Step 1: Fix our memory management.





When we don't
manage our
memory,
bad things
happen.





Python



C / C++



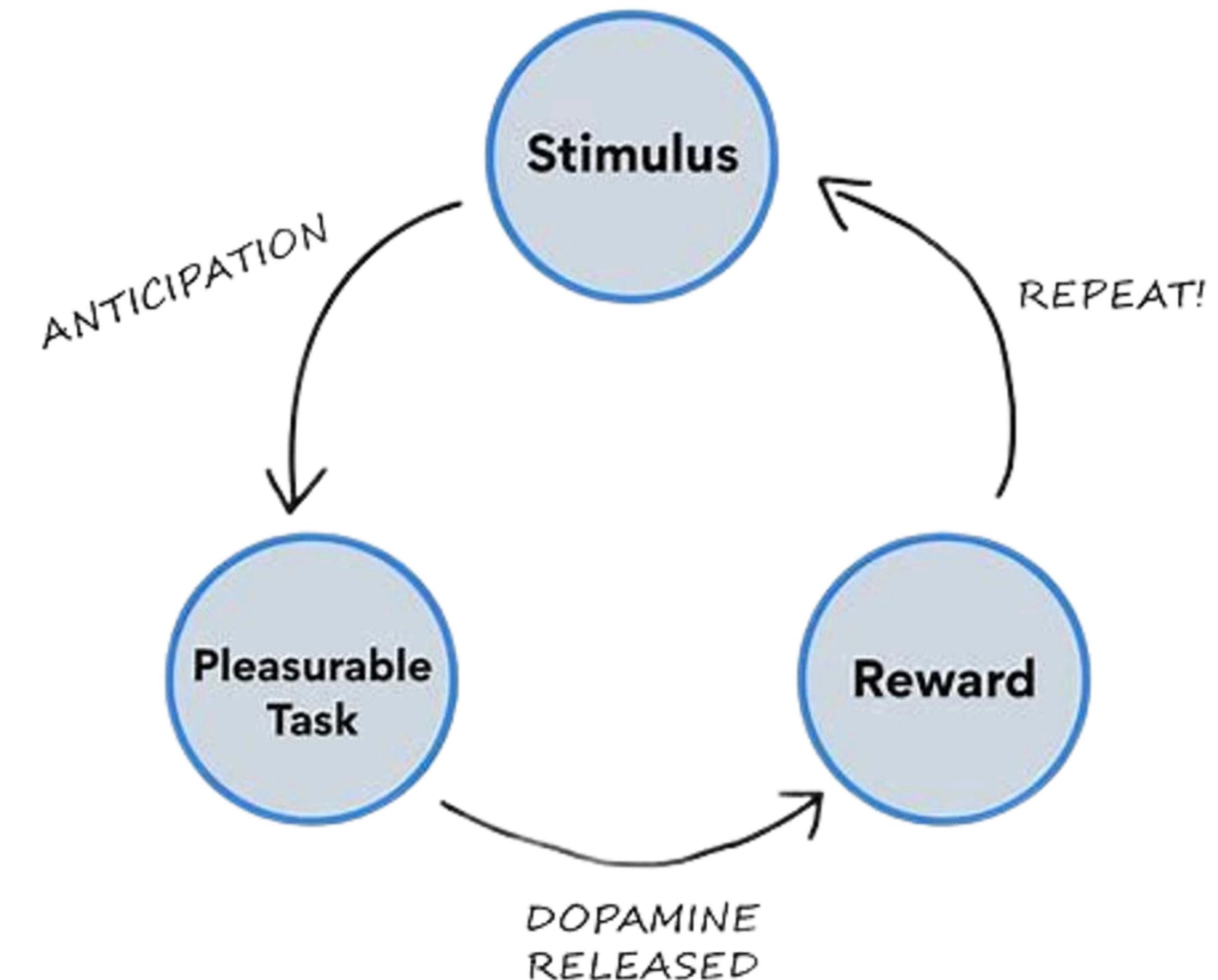
Assembly

Dopamine does double duty in motivating cognitive effort

[Andrew Westbrook](#)¹, [Todd S Braver](#)^{1,2}

Working memory capacity is sharply limited, especially in the domain of cognitive control, involving abstract, flexible, hierarchical rules for behavior selection.

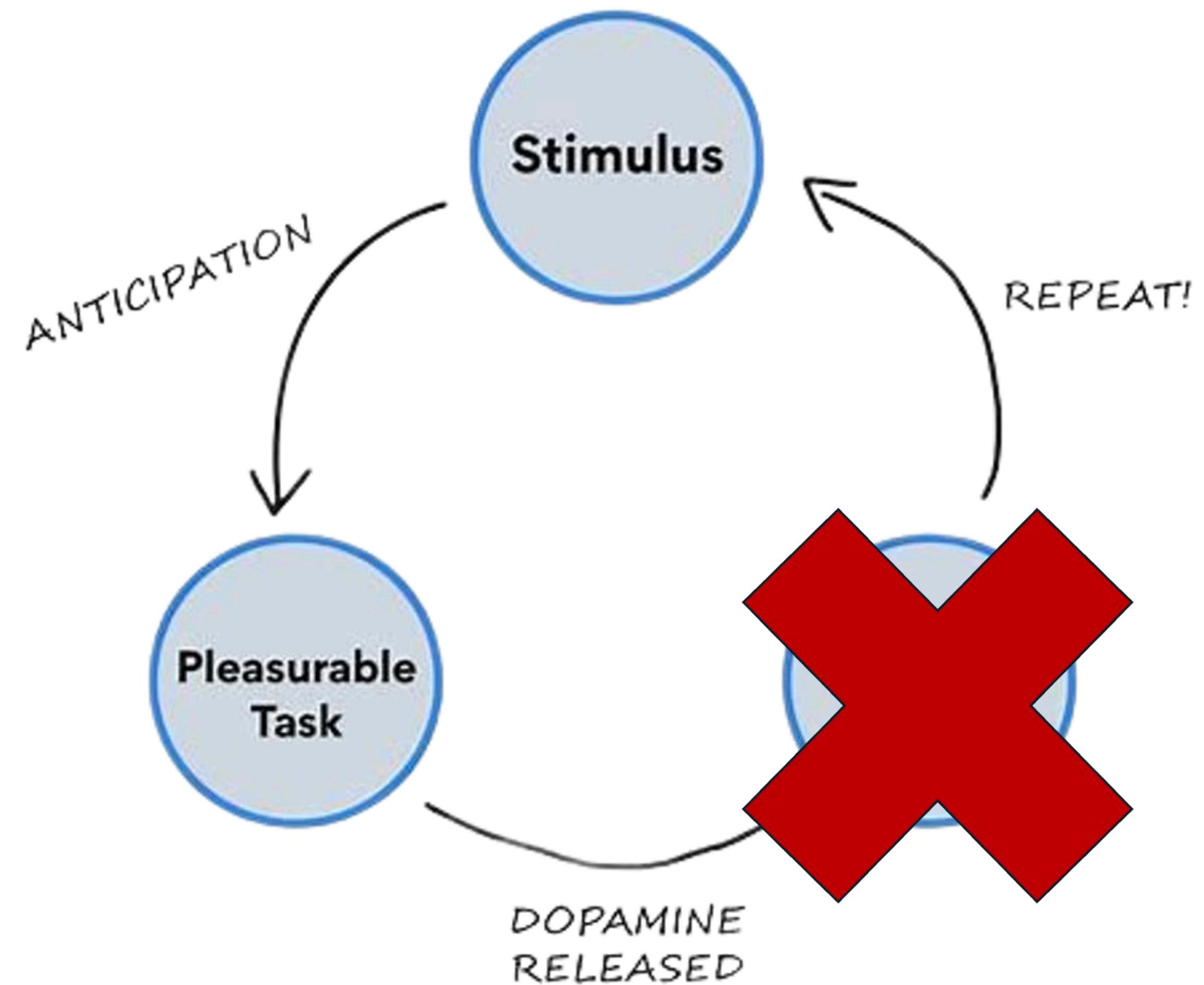
Optimizing working memory allocation is thus critical for optimizing behavior.

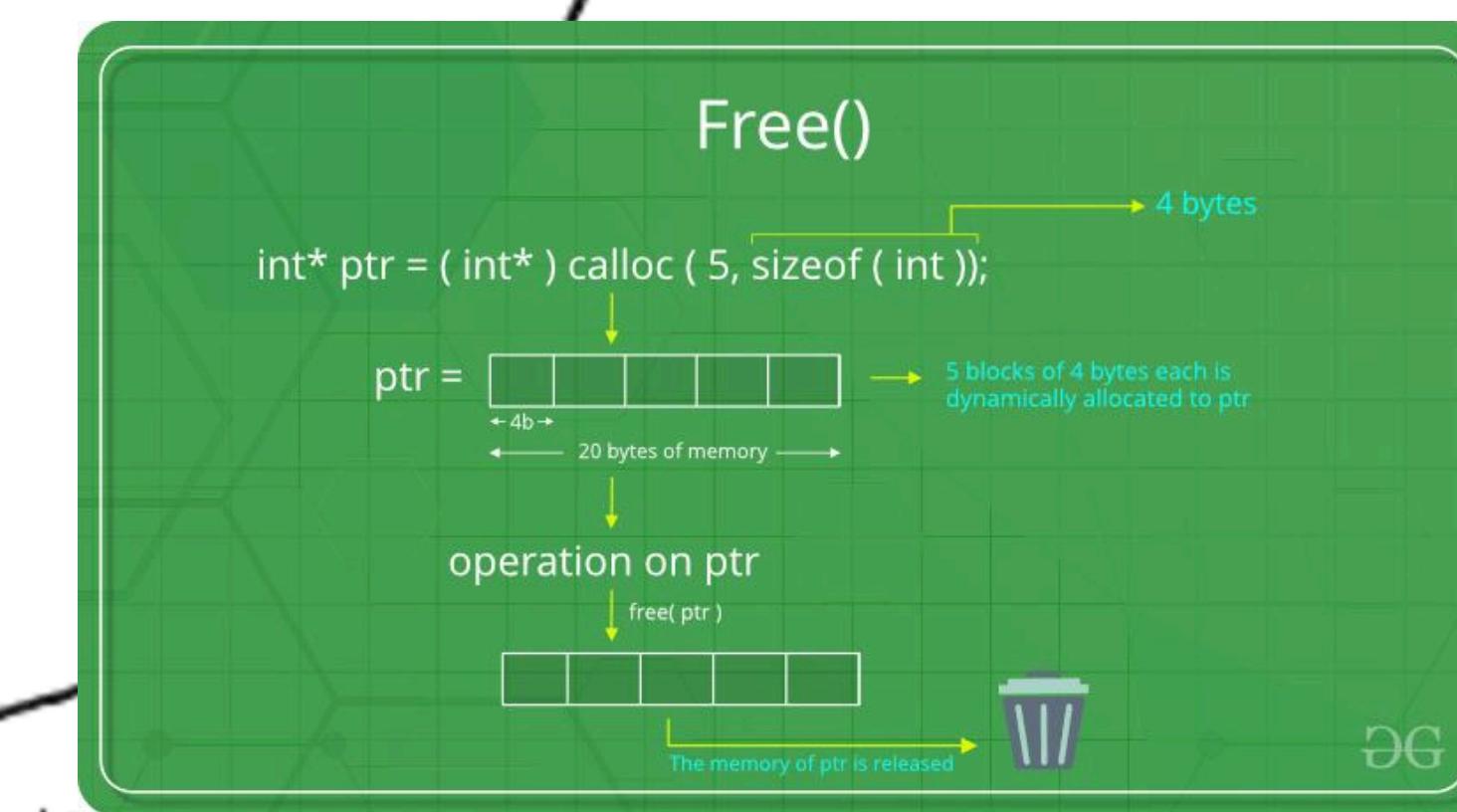
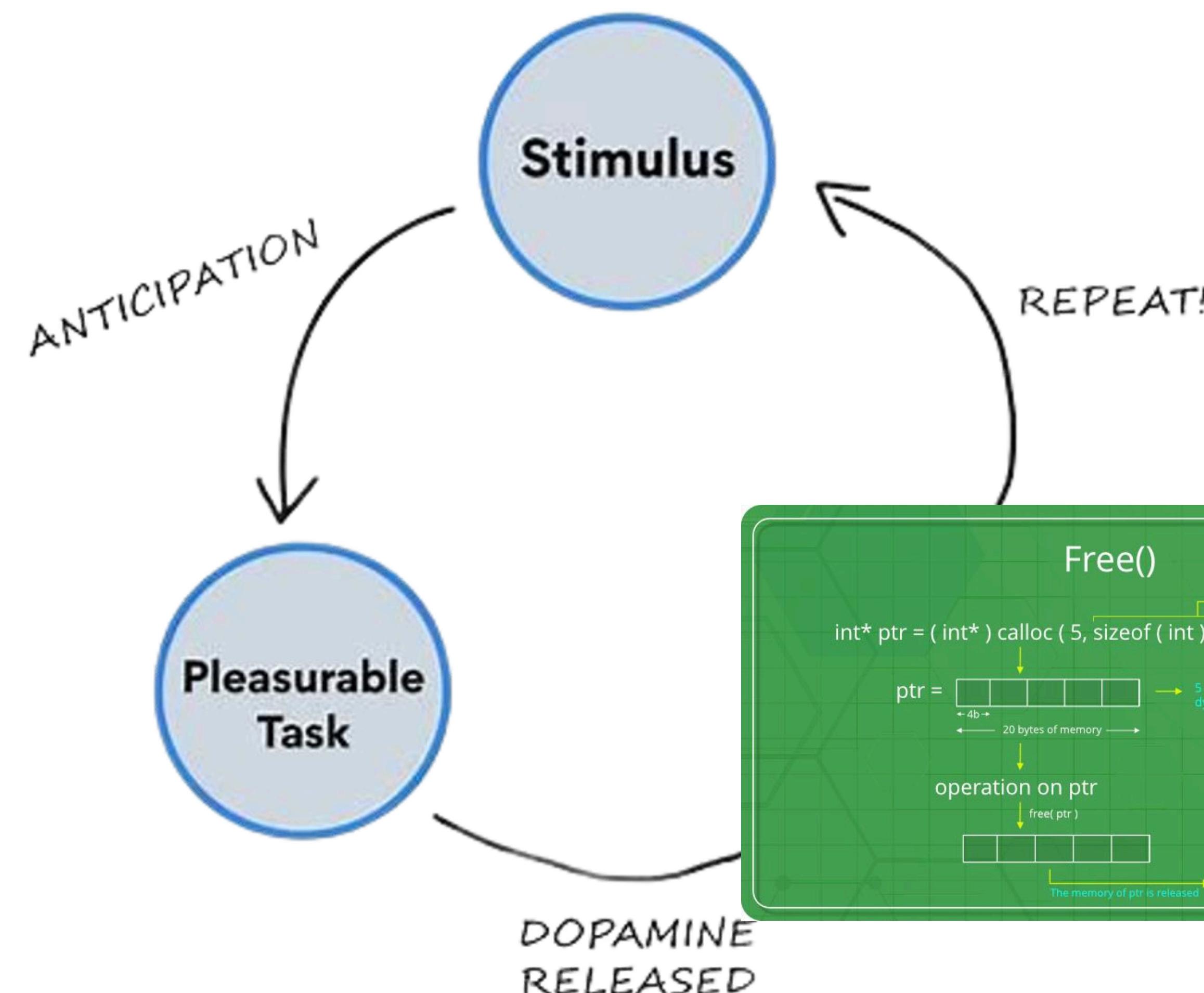


Attention-deficit-hyperactivity disorder and reward deficiency syndrome

Kenneth Blum ^{1,6,7,8,9,10}, Amanda Lih-Chuan Chen ², Eric R Braverman ^{3,9}, David E Comings ⁴, Thomas JH Chen ⁵, Vanessa Arcuri ⁹, Seth H Blum ⁶, Bernard W Downs ^{7,8}, Roger L Waite ⁷, Alison Notaro ⁹, Joel Lubar ¹⁰, Lonna Williams ⁷, Thomas J Pritchard ¹¹, Tomas Palomo ¹², Marlene Oscar-Berman ^{13,✉}

A consensus of the literature suggests that **when there is a dysfunction in the “brain reward cascade,” especially in the dopamine system**, causing a low or hypo-dopaminergic trait, the brain may require dopamine for individuals to avoid unpleasant feelings.





DIY Solution
External package/library

i. Build your own free pointer function.

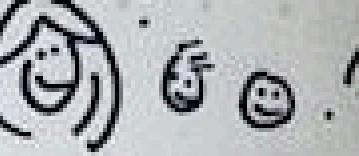
JANUARY 1, WEDNESDAY

11:00A NEW YEAR'S HIKE! APP:

1:00PM LUNCH & PREP COOKOUT 

- PACK SUPPLIES FOR HIKE 

- HOPPIN' JOHNS INGREDIENTS

- RELEASE NEW YOUTUBE VIDEO?  GO!

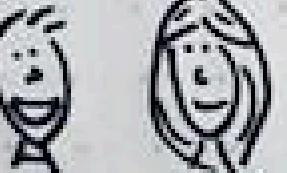
→ BE PRESENT & FOCUSED ON LOVED ONES

JANUARY 2, THURSDAY

→ BACK AT WORK!



JANUARY 3, FRIDAY

10:00A CUSTOMER CALL 

1:00P HAIRCUT 

- REGISTER CANAAN FOR JIU-JITSU CLASS

- UPDATE DATA DASHBOARD 

- SHIP NOTEBOOKS 

- END OF WEEK REVIEW!

JAN 4, SAT

8:30A JIU-JITSU

10:00A FARMER'S

JAN 5, SUNDAY

11:00A CHURCH

1:00P FRIENDLY LUNCH

How to do your first Pomodoro:

Take a longer break
(30 minutes).

8

Repeat 3 times.

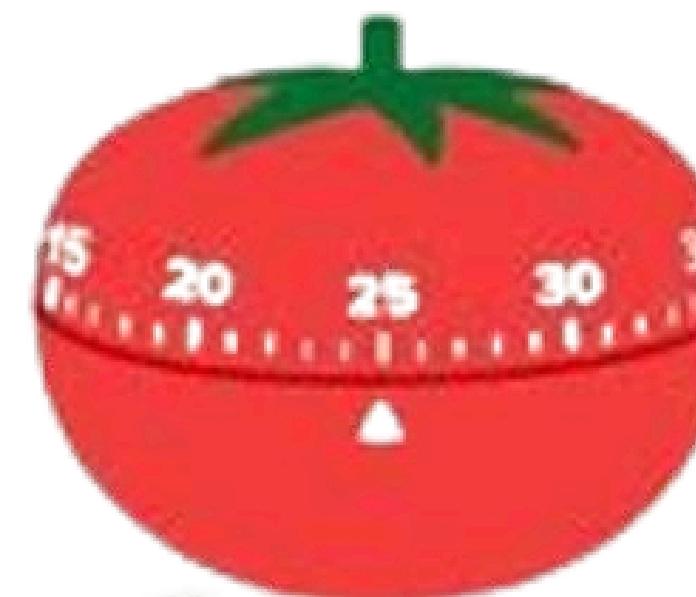
7

Take a 5-minute
break.

6

STOP when the
timer ends.

5



1 Get into an optimal
work space without
distractions.

2 Choose ONE
task to focus on.

3 Set your timer
for 25 minutes.

4 Do your work.

ii. Break up large processes.

iii. Start small.

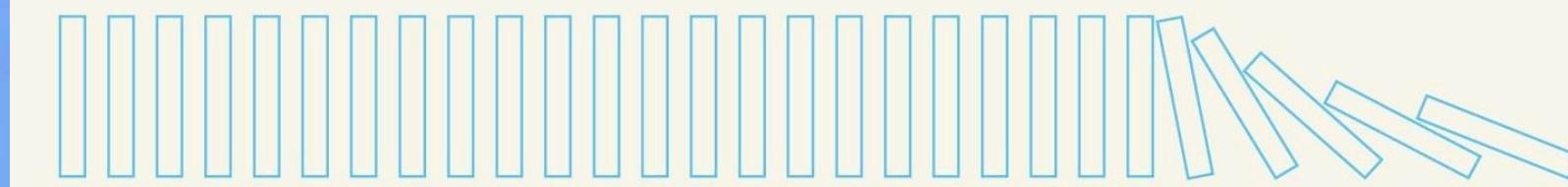


NEW YORK TIMES BESTSELLER



TINY HABITS

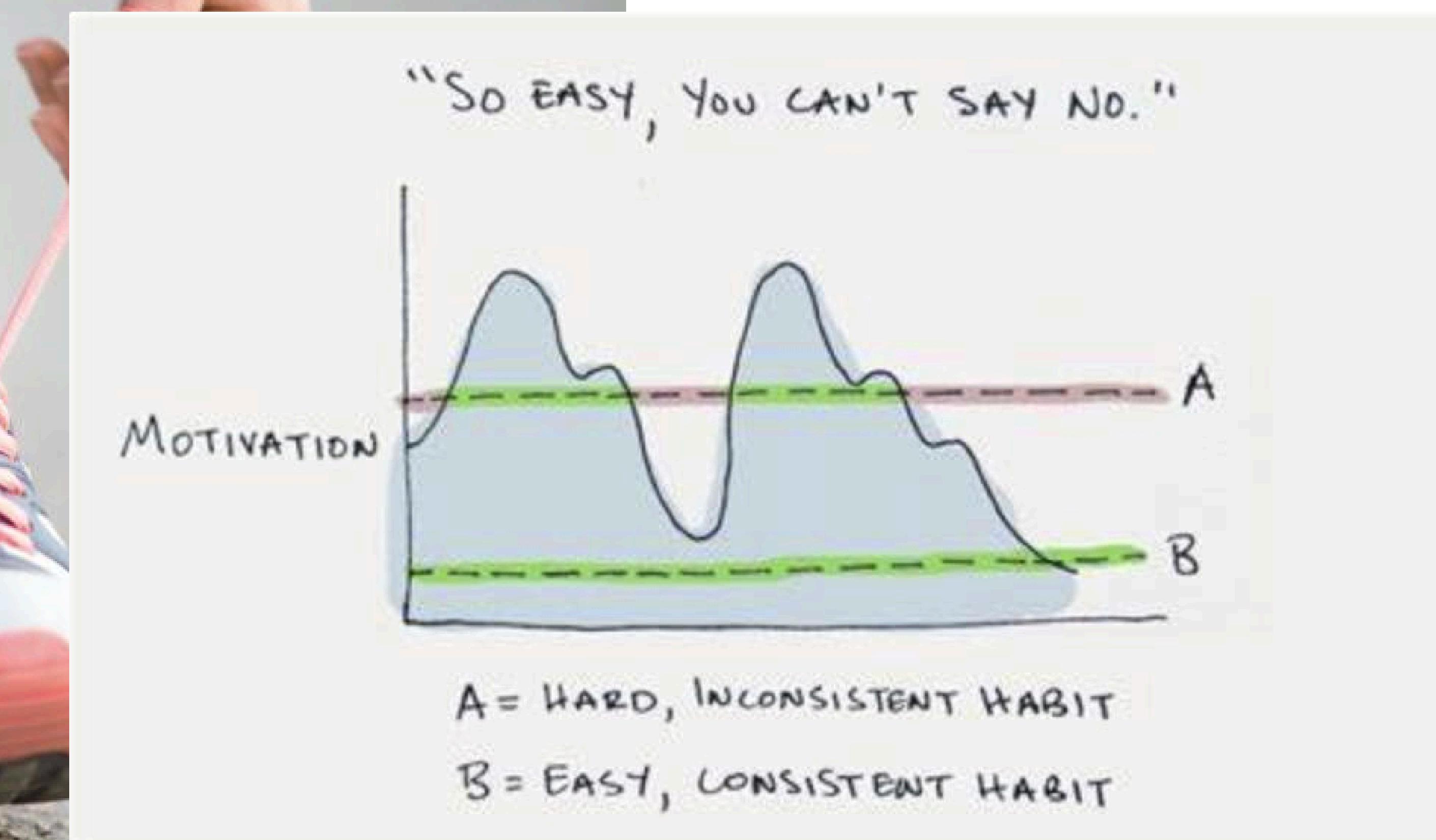
Why starting **small** makes
lasting change **easy**



BJ FOGG PhD

FOUNDER OF THE BEHAVIOR DESIGN LAB AT STANFORD

'A rare diamond: a self-help book that actually helps'
Rory Sutherland, TED star and author of *Alchemy*



Step 2:
Improve our dependency
management.

Step 2: Improve our ~~dependency~~ information management.

“Personal information management (PIM) is the **study and implementation of the activities that people perform in order to acquire or create, store, organize, maintain, retrieve, and use informational items** such as documents (paper-based and digital), web pages, and email messages for everyday use **to complete tasks** (work-related or not) and fulfill a person's various roles (as parent, employee, friend, member of community, etc.)”

i. Add more
memory &
storage.



Use the cloud i.e. external resources.

Personal information management

Article [Talk](#)

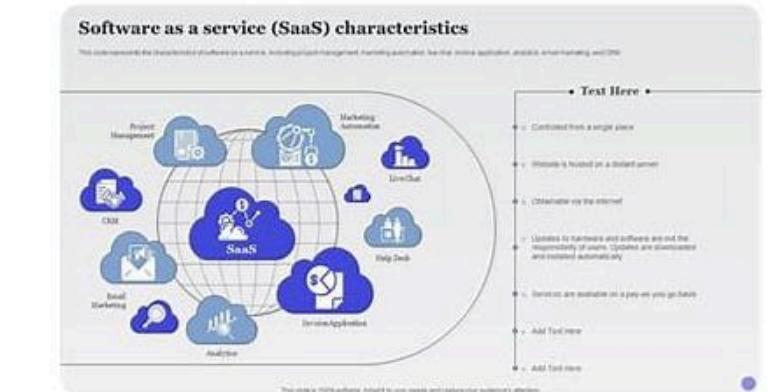
From Wikipedia, the free encyclopedia

One ideal of PIM is that **people should always have the right information in the right place, in the right form, and of sufficient completeness and quality to meet their current need.**

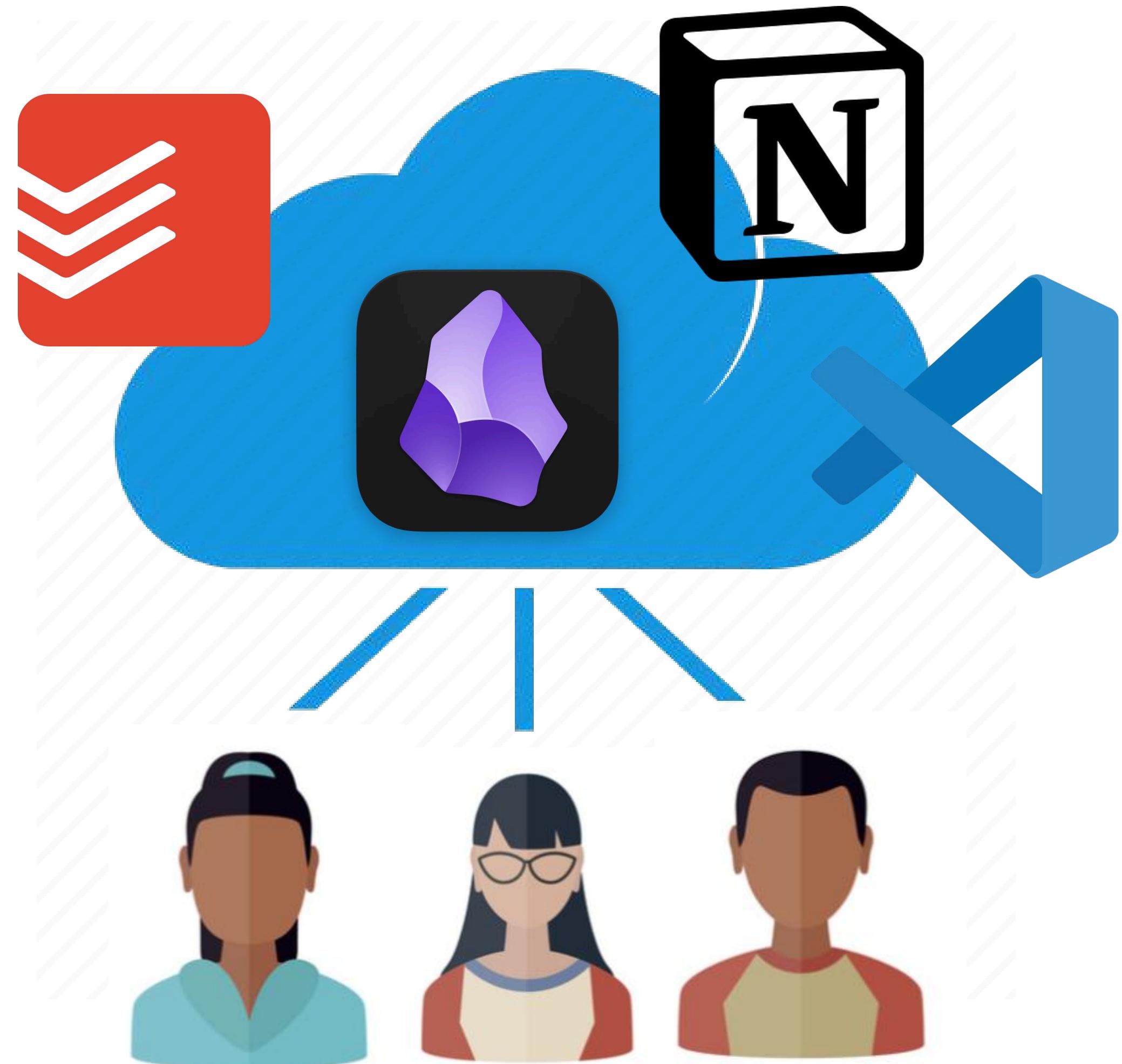
Technologies and tools can help so that people spend less time with time-consuming and error-prone clerical activities of PIM (such as looking for and organising information).

Benefits of connecting to the cloud include [1](#) [2](#) [3](#) :

- More flexibility and reliability
- Increased performance and efficiency
- Lower IT costs
- Improved innovation, allowing organizations to achieve faster time to market and incorporate AI and machine learning use cases into their strategies
- Unlimited storage capacity
- Automated backup/restore of files and data
- Fewer administrative or management hassles



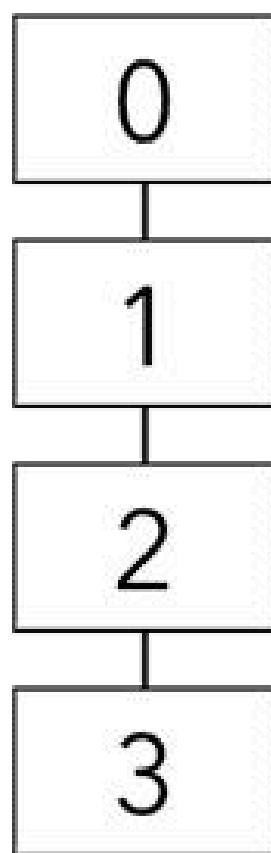
Way cheaper than Azure/AWS.



ii. Optimize how you read, write,
and store data (information.)

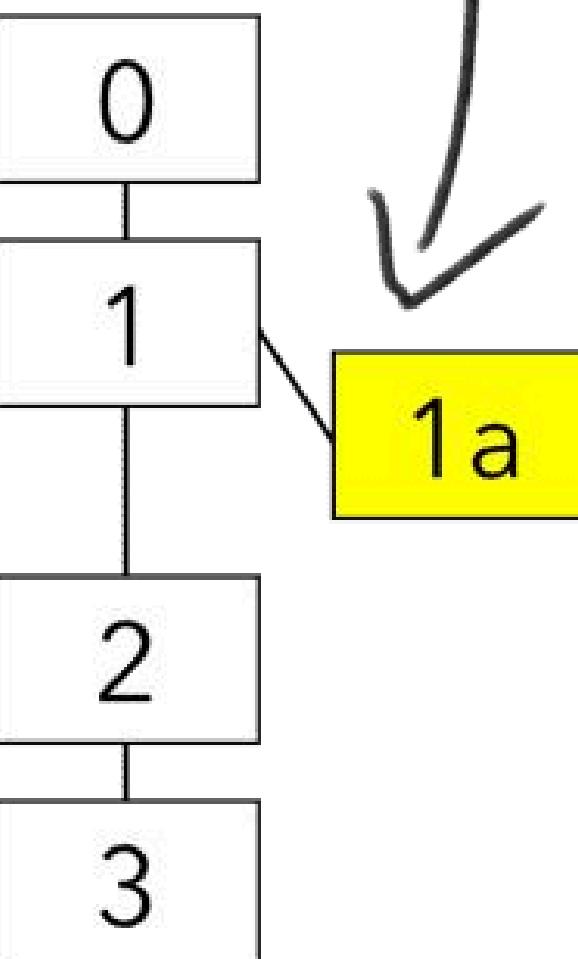
Zettelkasten Method

Step 1



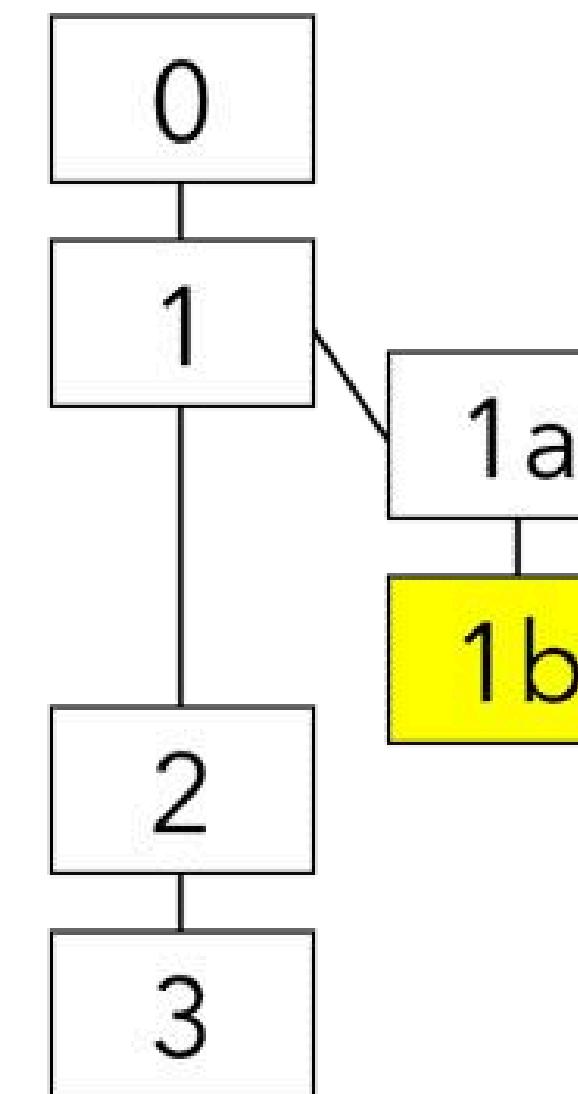
Step 2

Injected Note 1a
between 1 and 2



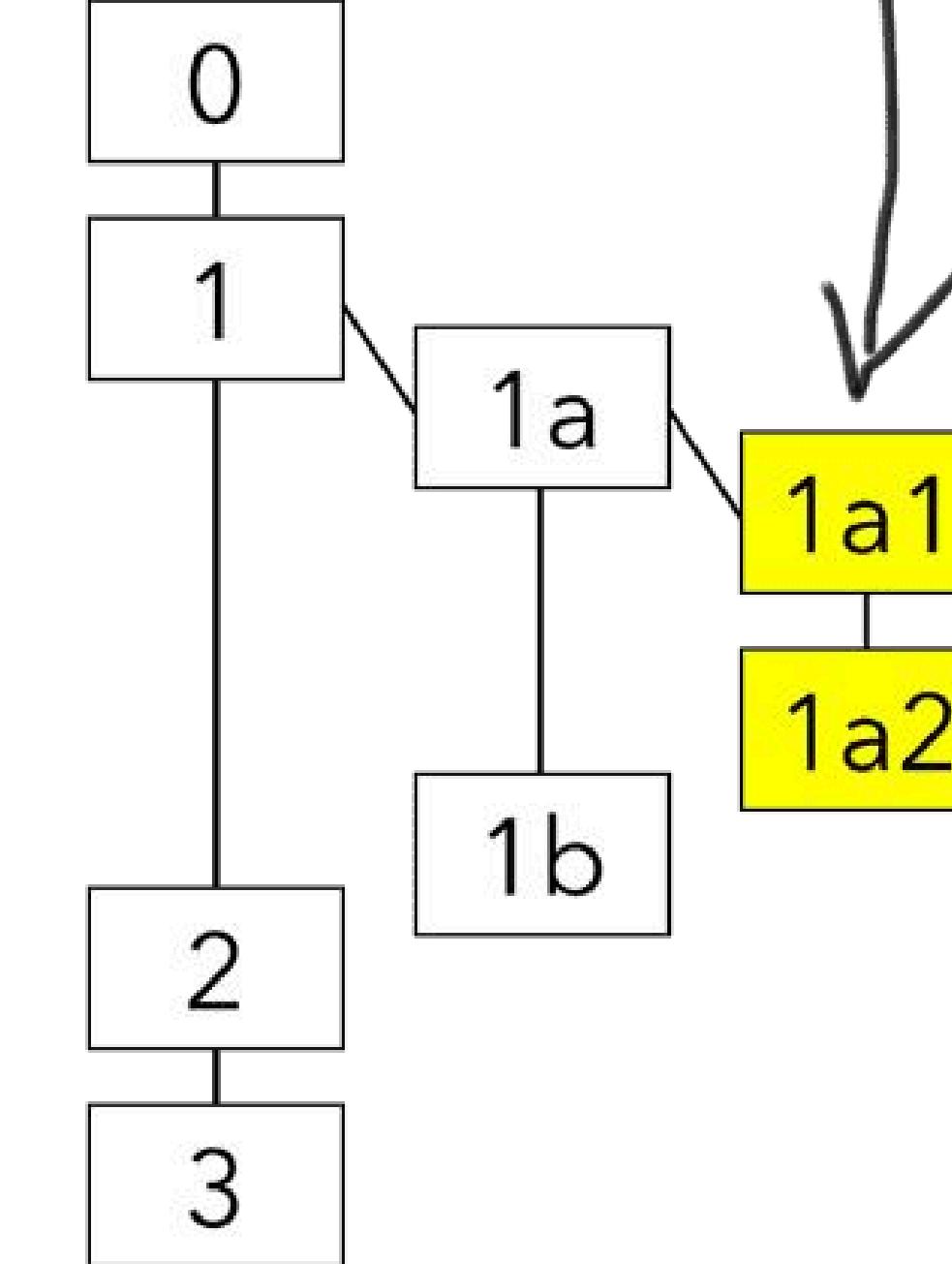
Step 3

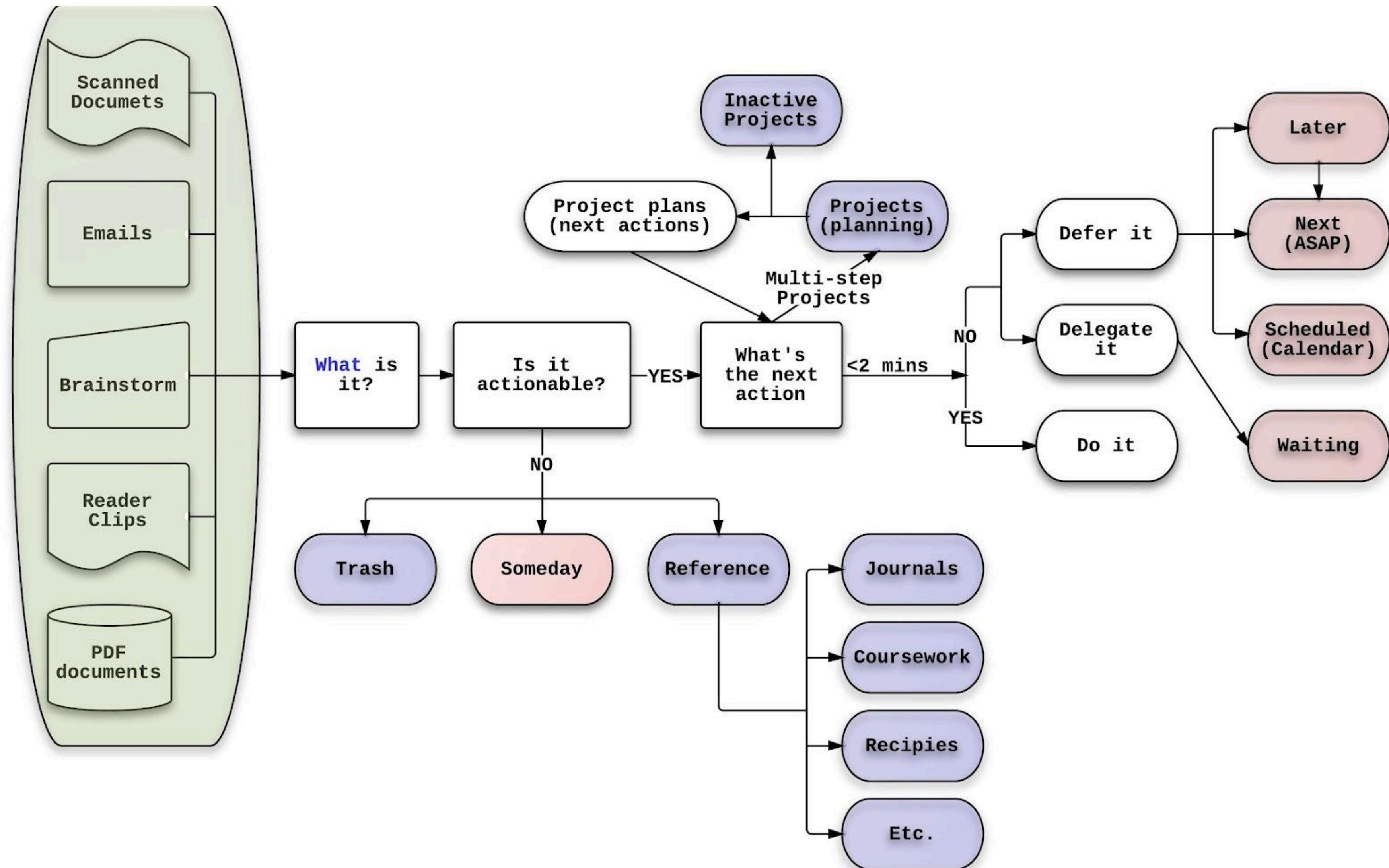
Continued Note
1a with 1b



Step 4

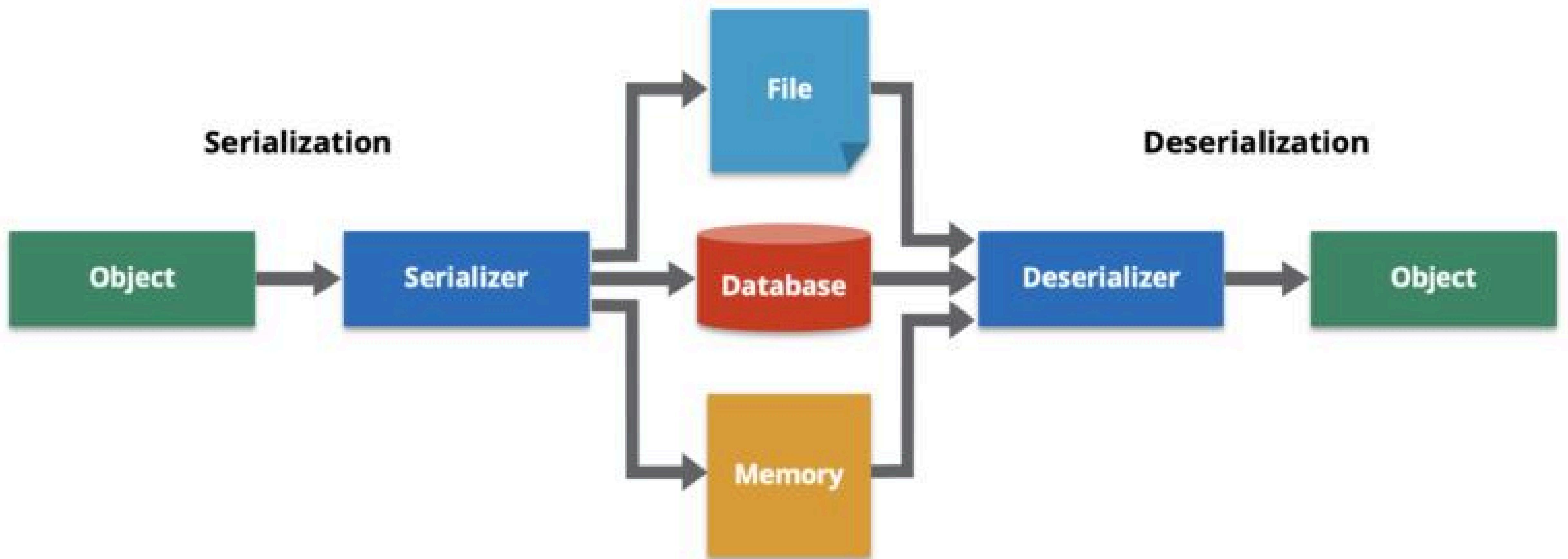
Injected Notes
1a1 and 1a2
between 1a and 1b



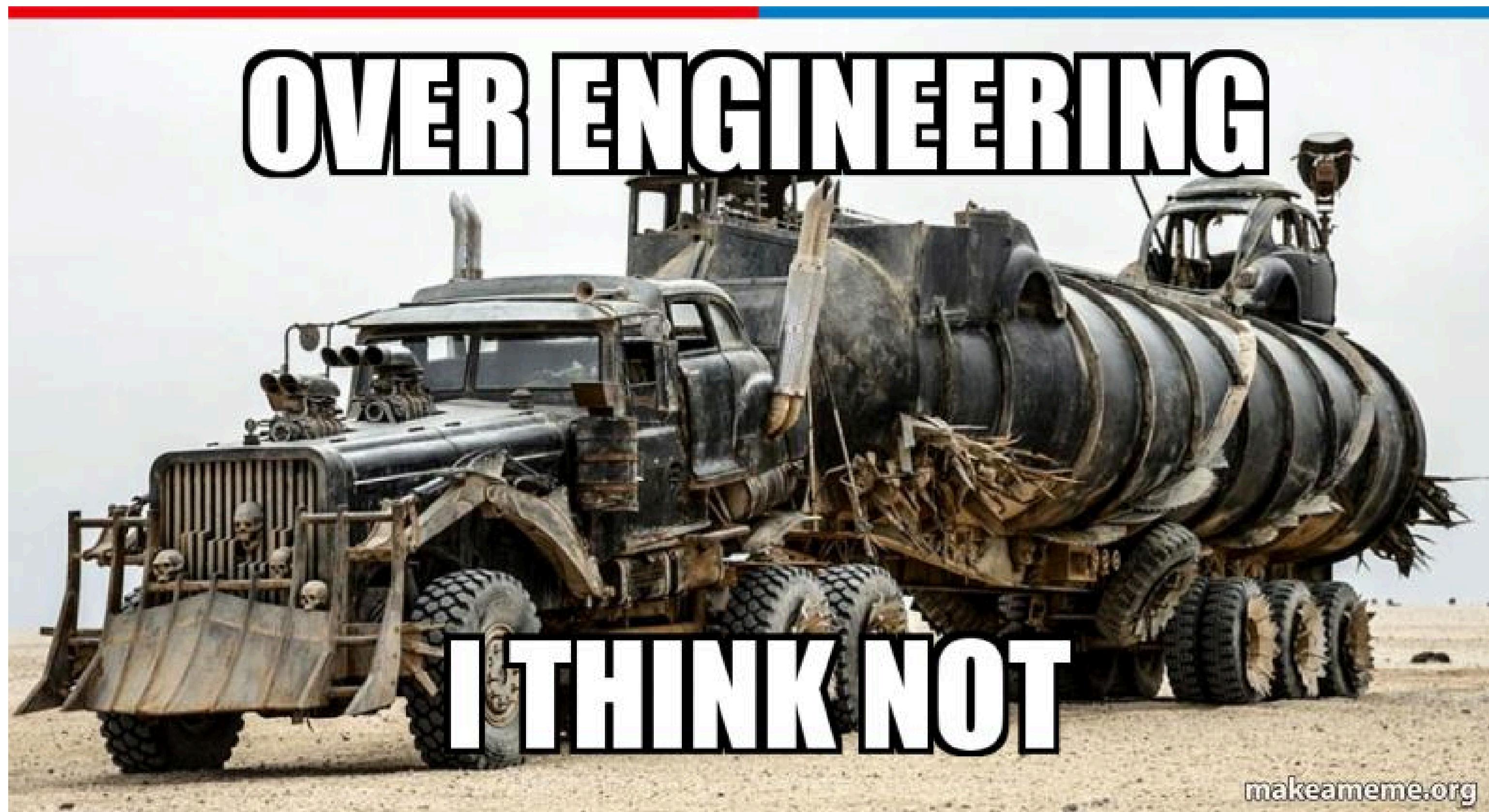


Build your own CI/CD pipeline with GTD

iii. Be able to save things
for later, with high fidelity.



Step 3: Stop overengineering.

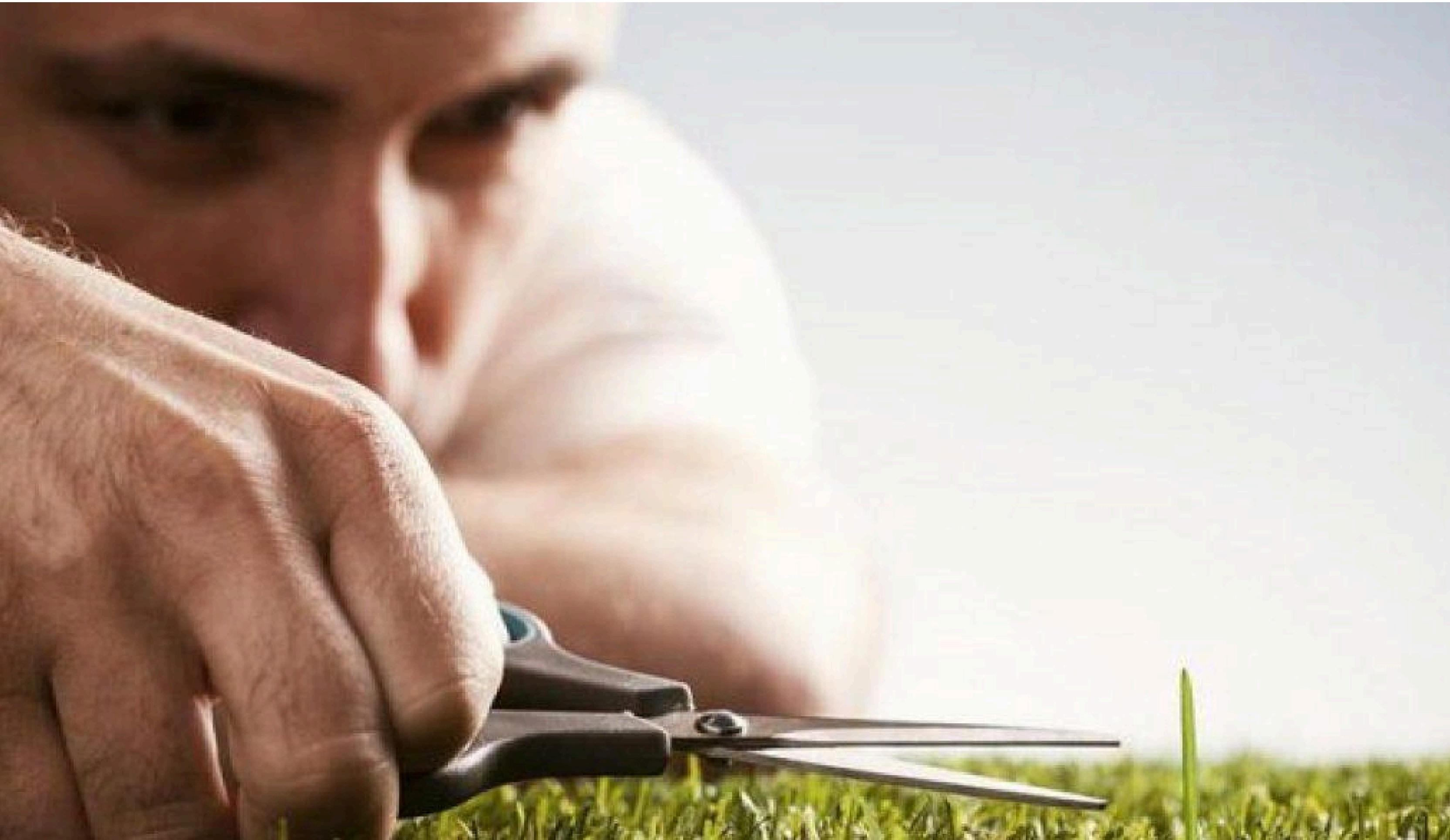


i. Don't beat yourself up with
shame and guilt.

The Wall of Awful



ii. Don't try for perfect.



iii. Don't reinvent the wheel.

The screenshot shows a GitHub repository page for 'best-of-digital-gardens'. At the top, there are links for 'README', 'Code of conduct', and 'CC-BY-SA-4.0 license'. Below the header, the repository name 'best-of-digital-gardens' is displayed in large white text. A trophy icon and the text 'A ranked list of awesome digital gardens. Updated weekly.' are present. A navigation bar below includes 'best-of' (highlighted), 'projects 93', 'contributions', 'welcome', 'Update', and 'passing'. The main content area describes the repository as containing 93 awesome digital gardens with 21K stars, ranked by quality score based on metrics from GitHub and package managers. It encourages contributions via issues and pull requests, and mentions a 'projects.yaml' file. A sidebar at the bottom suggests discovering other best-of lists or creating your own.

README Code of conduct CC-BY-SA-4.0 license

best-of-digital-gardens

🏆 A ranked list of awesome digital gardens. Updated weekly.

best-of projects 93 contributions welcome Update passing

This curated list contains 93 awesome digital gardens that share the source of their content as a git repository with a total of 21K stars grouped into 1 categories. All projects are ranked by a project-quality score, which is calculated based on various metrics automatically collected from GitHub and different package managers. If you like to add or update projects, feel free to open an [issue](#), submit a [pull request](#), or directly edit the [projects.yaml](#). Contributions are very welcome!

Discover other [best-of lists](#) or [create your own](#).

<https://github.com/lzyz-code/best-of-digital-gardens>

The screenshot shows a note-taking interface titled 'Evergreen notes'. The top navigation bar includes 'Andy's working notes' and 'About these notes'. The main content area is titled 'Evergreen notes' and discusses the concept of evergreen notes evolving over time across projects. It contrasts this with transient notes and highlights the value of developing insight through better thinking. Below this, a section on principles for writing evergreen notes is shown, followed by a note about its debt to Zettelkasten.

Andy's working notes About these notes

Evergreen notes

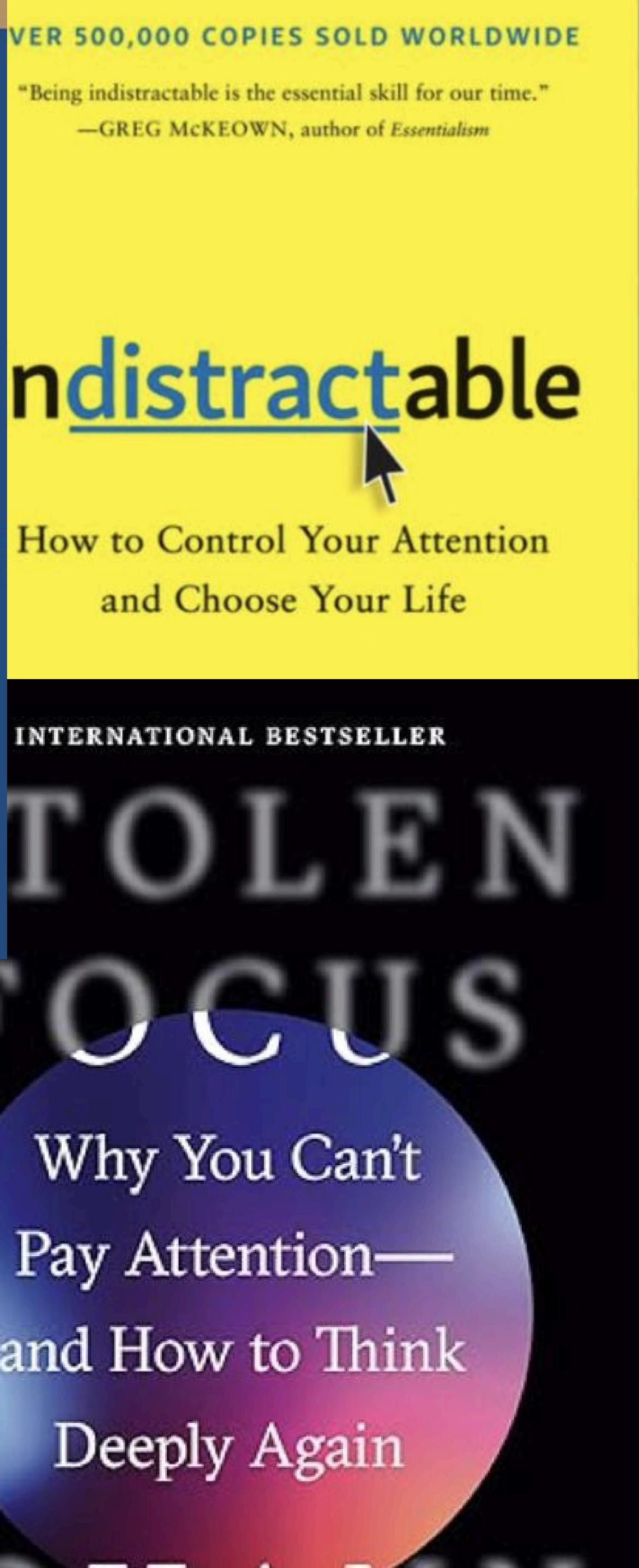
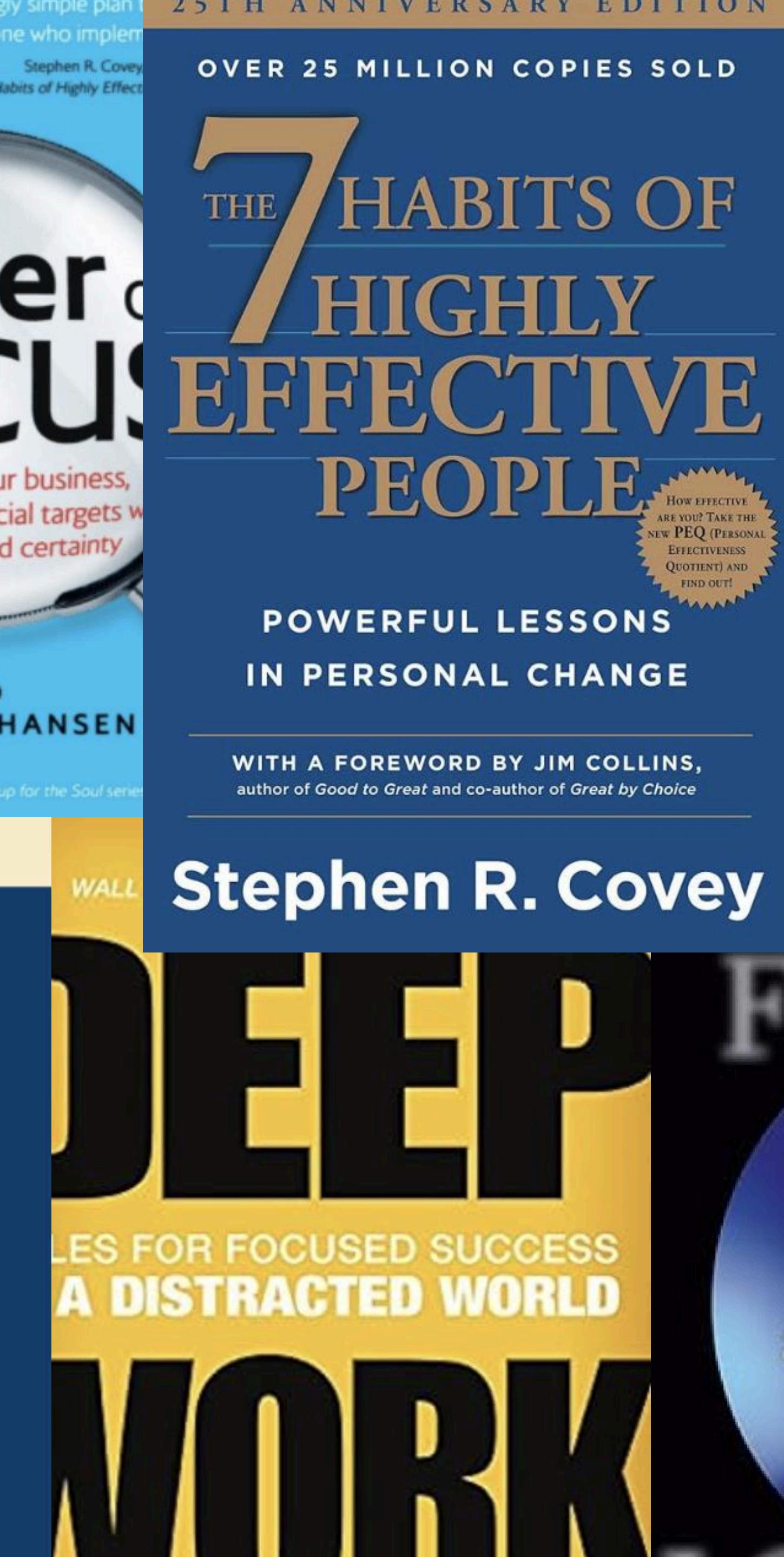
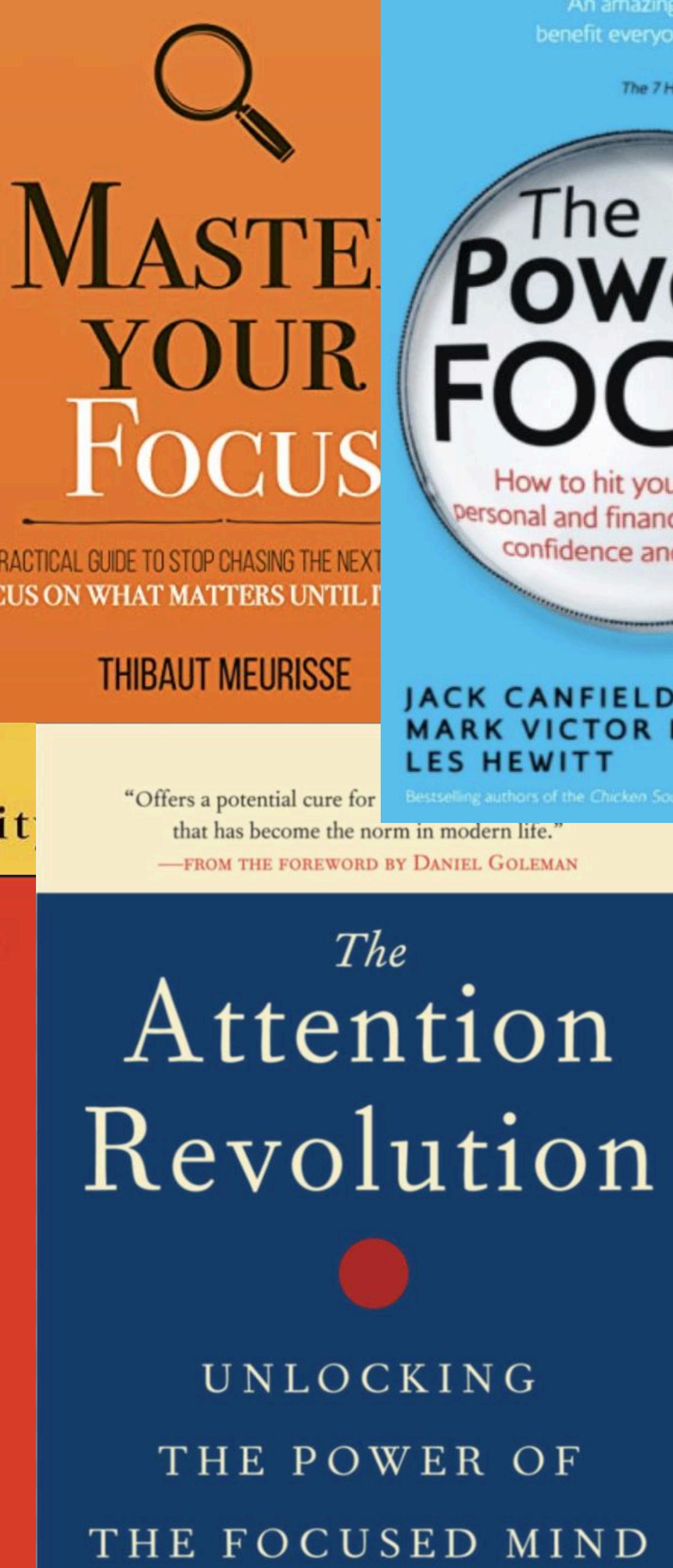
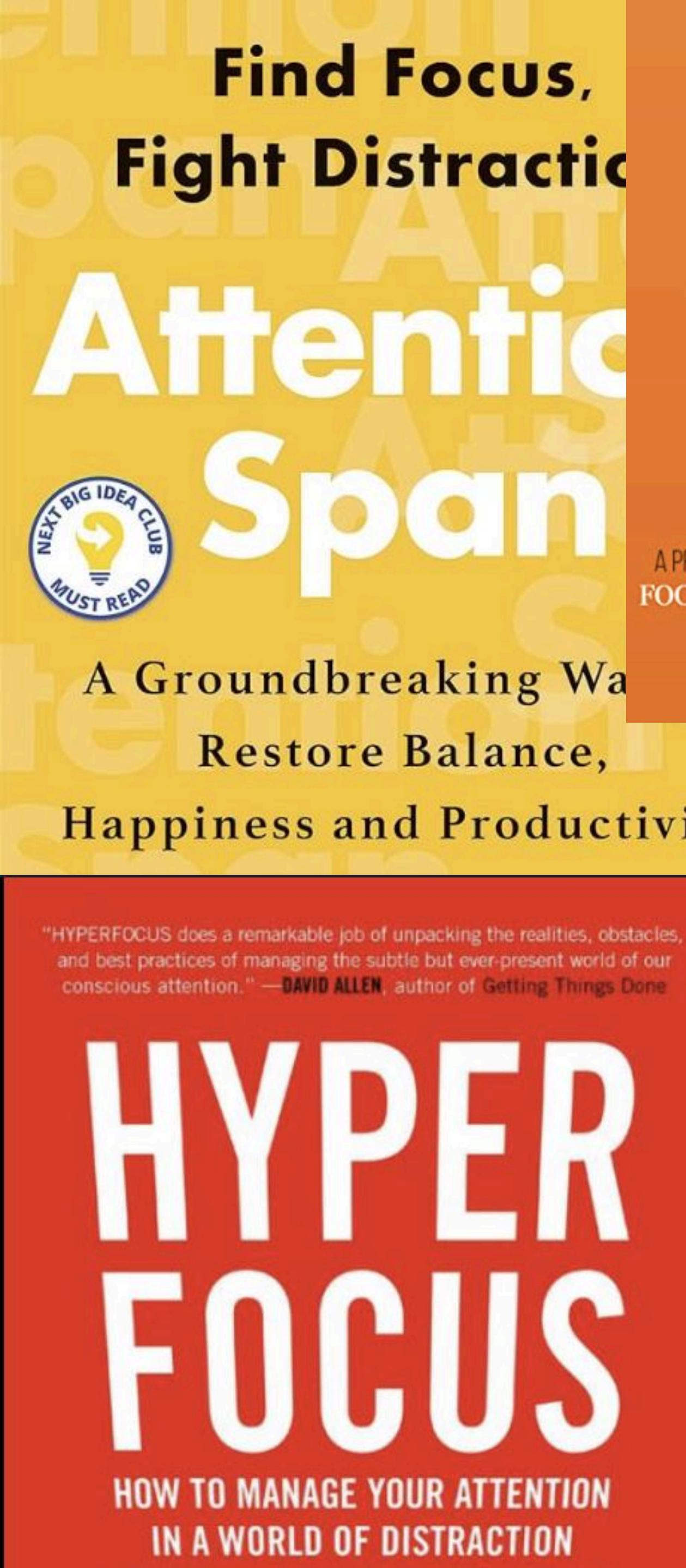
Evergreen notes are written and organized to evolve, contribute, and accumulate over time, across projects. This is an unusual way to think about writing notes: [Most people take only transient notes](#). That's because these practices aren't about writing notes; they're about effectively developing insight: ["Better note-taking" misses the point; what matters is "better thinking"](#). When done well, these notes can be quite valuable: [Evergreen note-writing as fundamental unit of knowledge work](#).

It's hard to write notes that are worth developing over time. These principles help:

- Evergreen notes should be atomic
- Evergreen notes should be concept-oriented
- Evergreen notes should be densely linked
- Prefer associative ontologies to hierarchical taxonomies
- Write notes for yourself by default, disregarding audience

This concept is of course enormously indebted to the notion of a [Zettelkasten](#). See [Similarities and differences between evergreen note-writing and Zettelkasten](#).

Implementing an evergreen note practice



Review

- 1. Increase your working memory by...**
 - a. debugging your memory management.
 - b. breaking up large processes.
 - c. starting small.
- 2. Improve your information management by...**
 - a. adding more storage.
 - b. optimizing your data access.
 - c. saving things for later.
- 3. Don't do too much. Stop...**
 - a. beating yourself up.
 - b. trying to build a perfect system.
 - c. reinventing the wheel.

Thank you!

You can reach out to me at:

- jiachenjiang (Bluesky)
- jiachen.jiang@microsoft.com (E-mail)

Find links and resources from this talk at

<https://linktr.ee/jiachen42>

