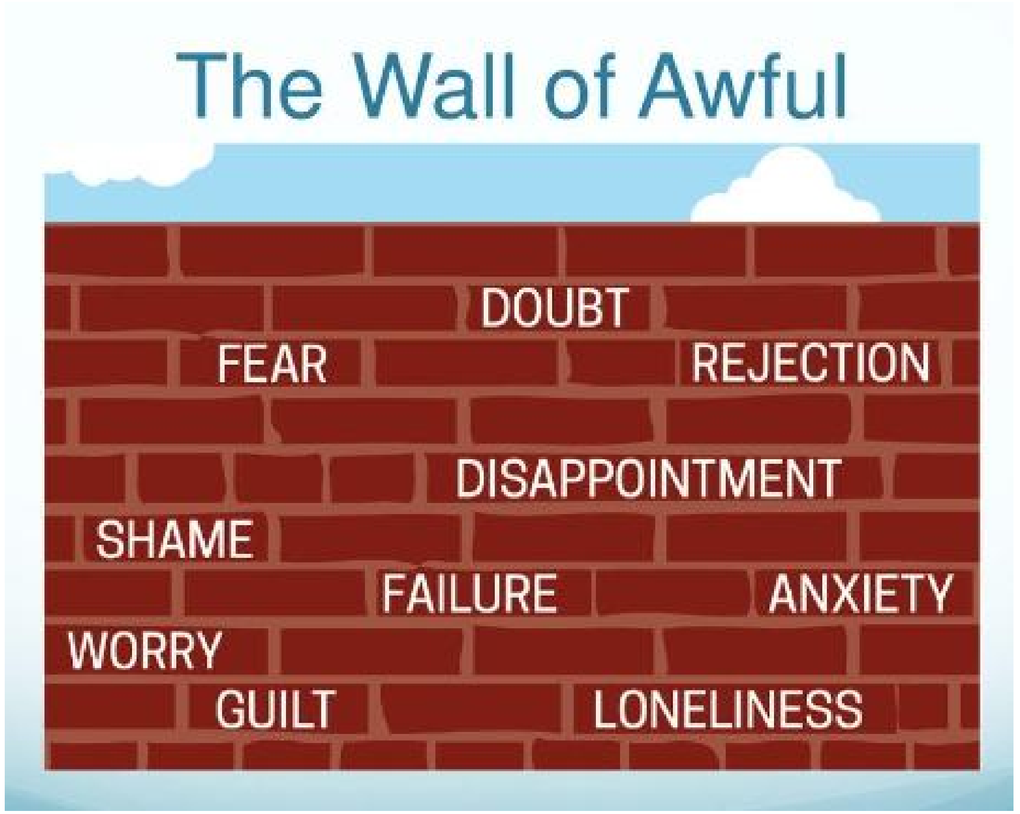
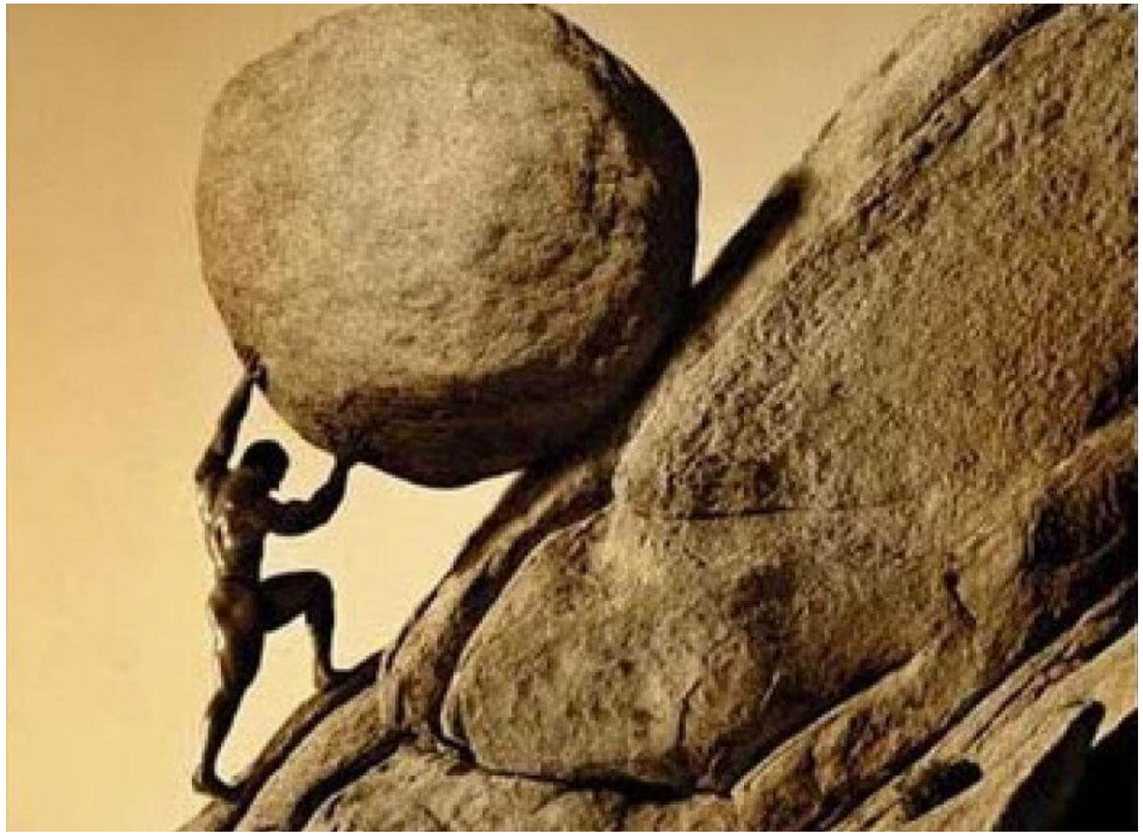
A Developer's Guide to Attention Management

A talk by Jiachen Jiang for
.NET Developer Days 2024 Warsaw

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 is not the problem.

The problem is lack of attention *management*.

DISCLAIMER

This talk will not give you a quickstart to perfect focus. *

*Spoiler Alert: It doesn’t exist.

This talk will not give you a quickstart to perfect focus.

This talk offers documentation to help you debug.

Hi, I’m Jiachen.

I work at Microsoft as a Product Manager.

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That requires focus, organization, and the ability to get things done despite distraction.

Hi, I’m Jiachen.

I work at Microsoft as a Product Manager.

I have clinically diagnosed attention-deficit hyperactive disorder (ADHD.)

Hi, I'm Jiachen.

I work at Microsoft as a Product Manager.

~~I have clinically diagnosed attention-deficit hyperactive disorder (ADHD.)~~

I use a different operating system than most people.

Hi, I’m Jiachen.

I work at Microsoft as a Product Manager.

I use a different operating system than most...

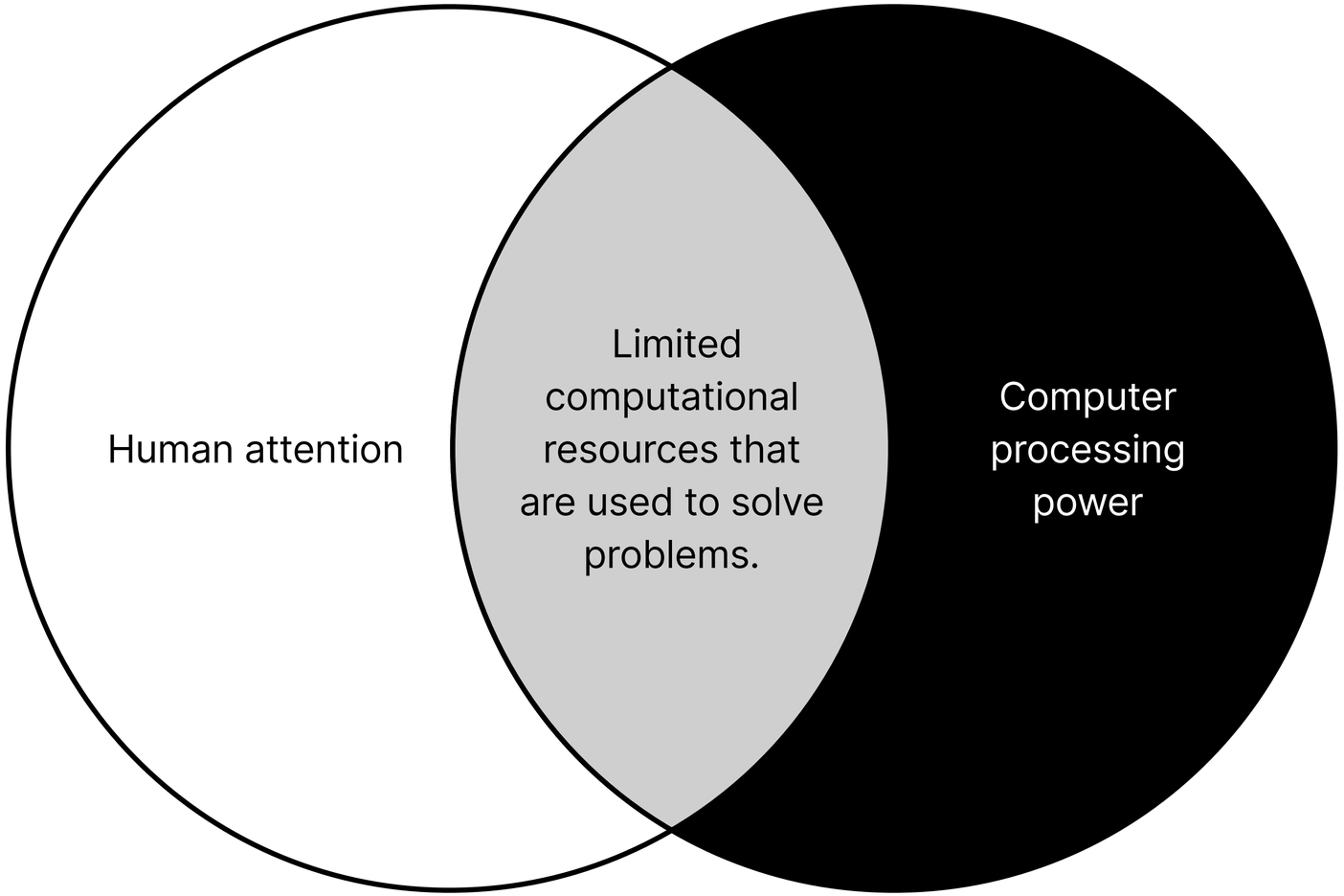
...one that makes me good at my job.

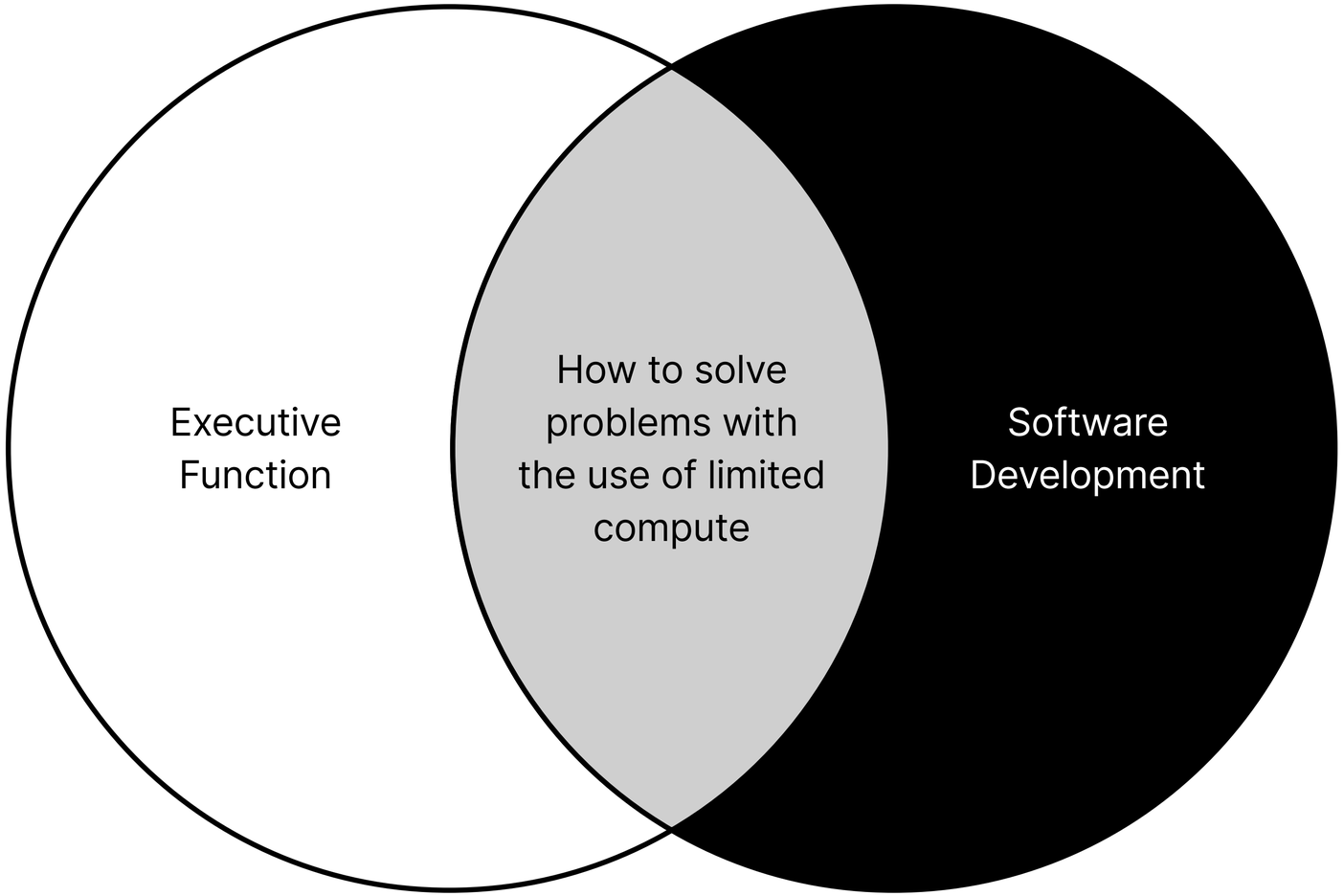
WIKIPEDIA
The Free Encyclopedia

WIKIPEDIA

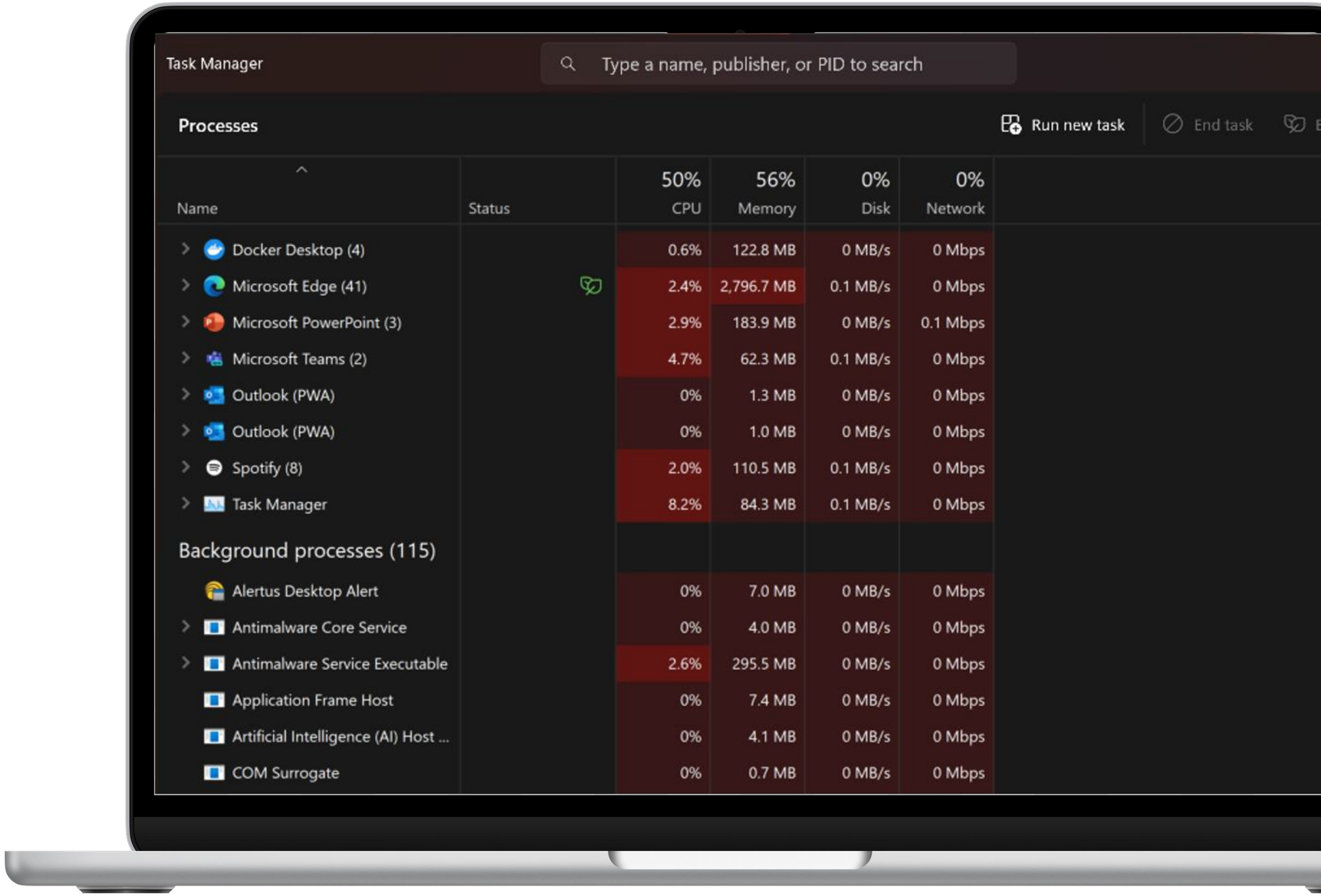
List of operating systems

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


Human attention
Limited computational resources that are used to solve problems.
Computer processing power

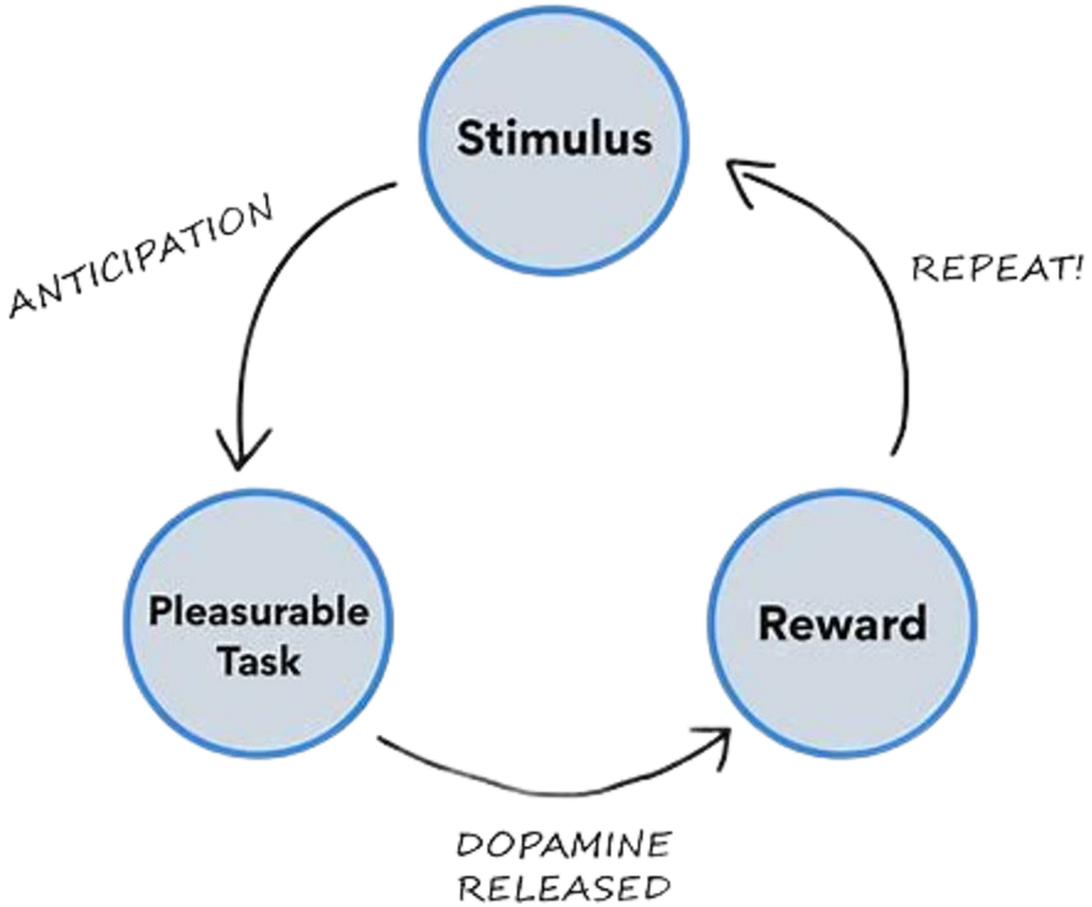

Executive Function
How to solve problems with the use of limited compute
Software Development

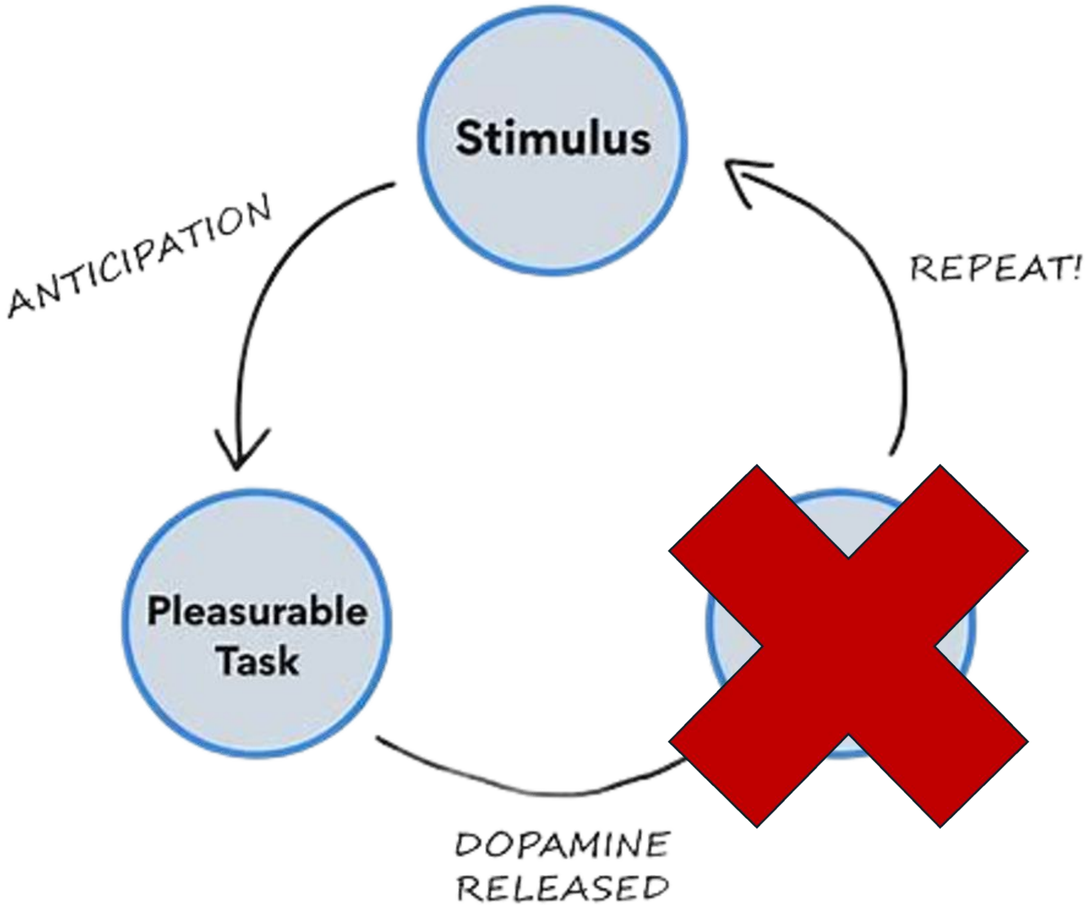
Windows Task Manager: Executive function for computers?



Processes

Name	Status	28% CPU	61% Memory	0% Disk	0% Network
Finish work deliverables		0.6%	122.8 MB	0 MB/s	0 Mbps
Pack for trip tomorrow		6.3%	89.5 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


Stimulus
ANTICIPATION
REPEAT!
Pleasurable Task
Reward
DOPAMINE RELEASED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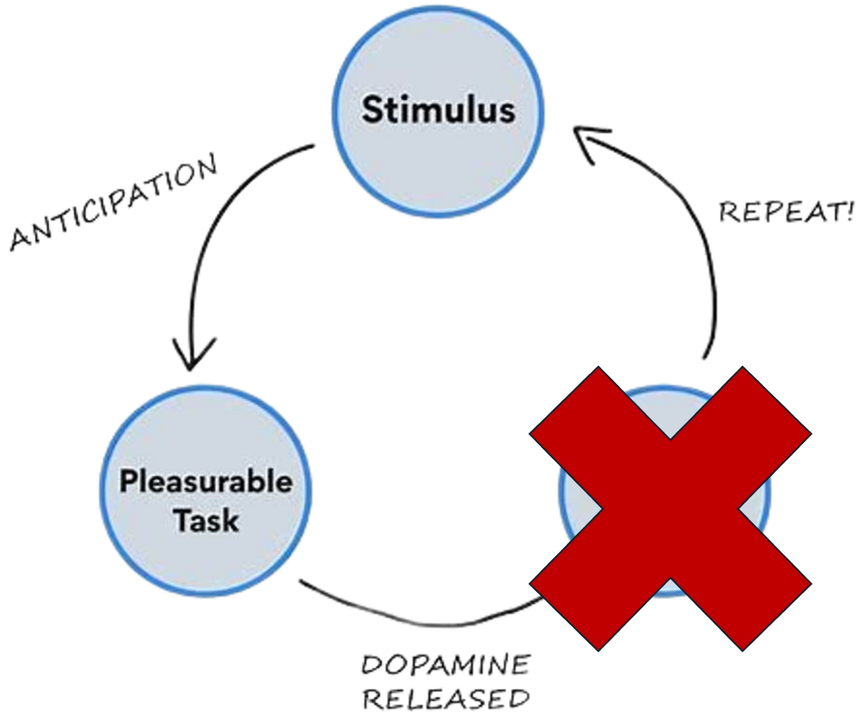
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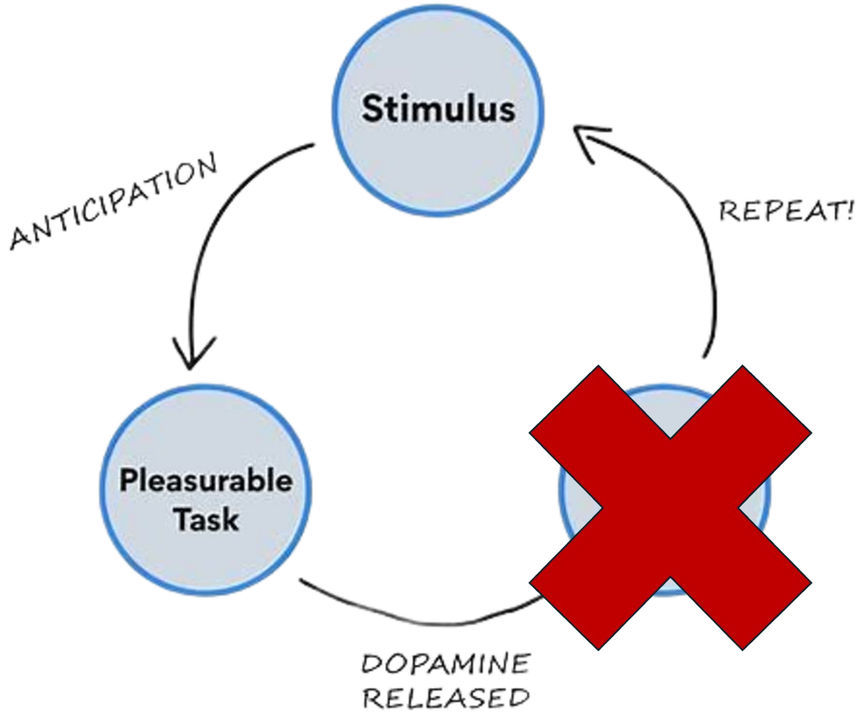


Causes

proper Operation:
- Missing
- Mismatched
- rroneous

mproper Pointer:
- Wild Pointer
- Dangling Pointer
- Wrong Position
- Hardcoded Address
- Forbidden Address

mproper Object:
- Wrong Size Used
- lot Enough Allocated

MDL Operations
- Deallocate
- Reduce
- Reallocate-Reduce

Consequences

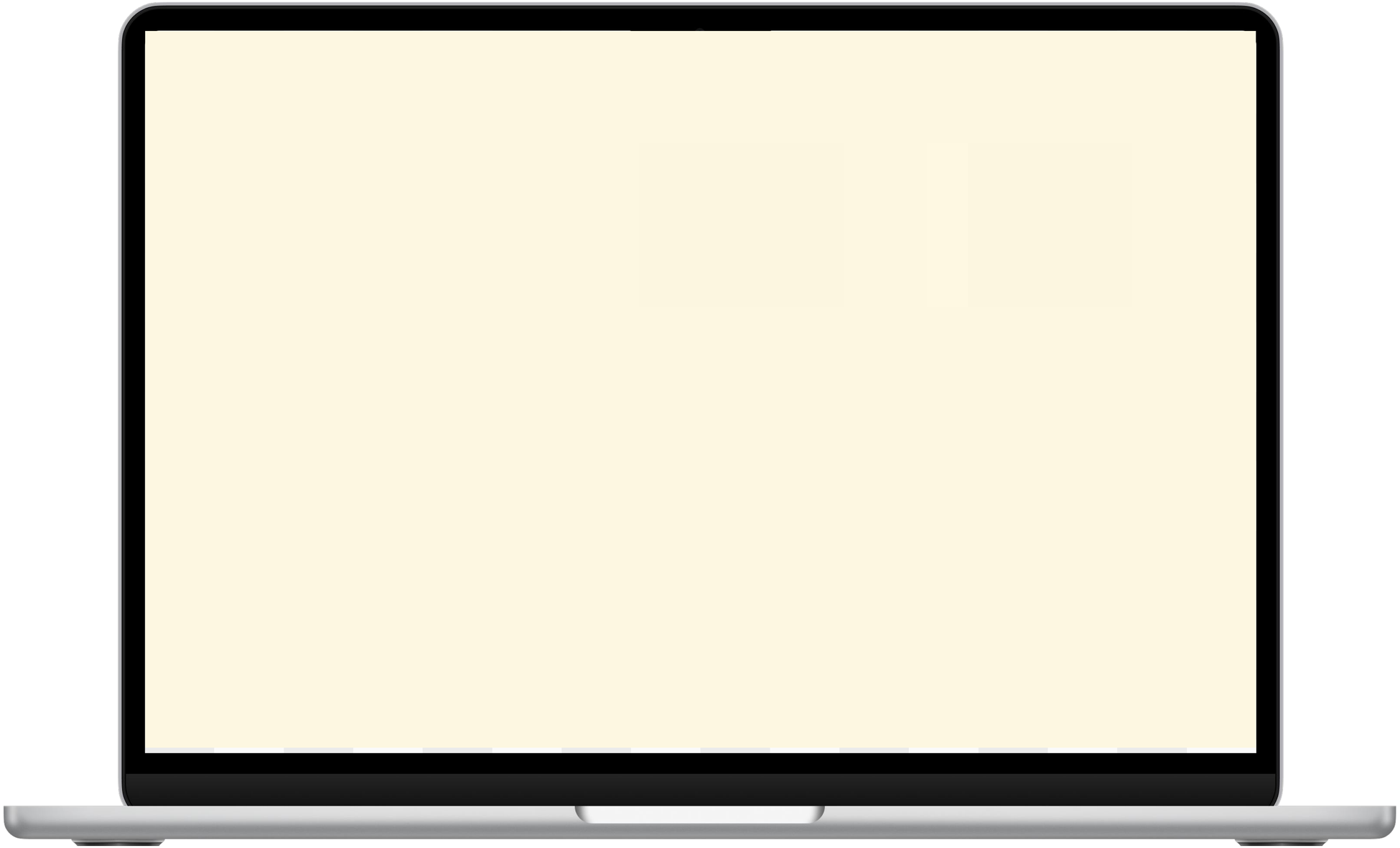
Improper Pointer for Next Operation
- NULL Pointer

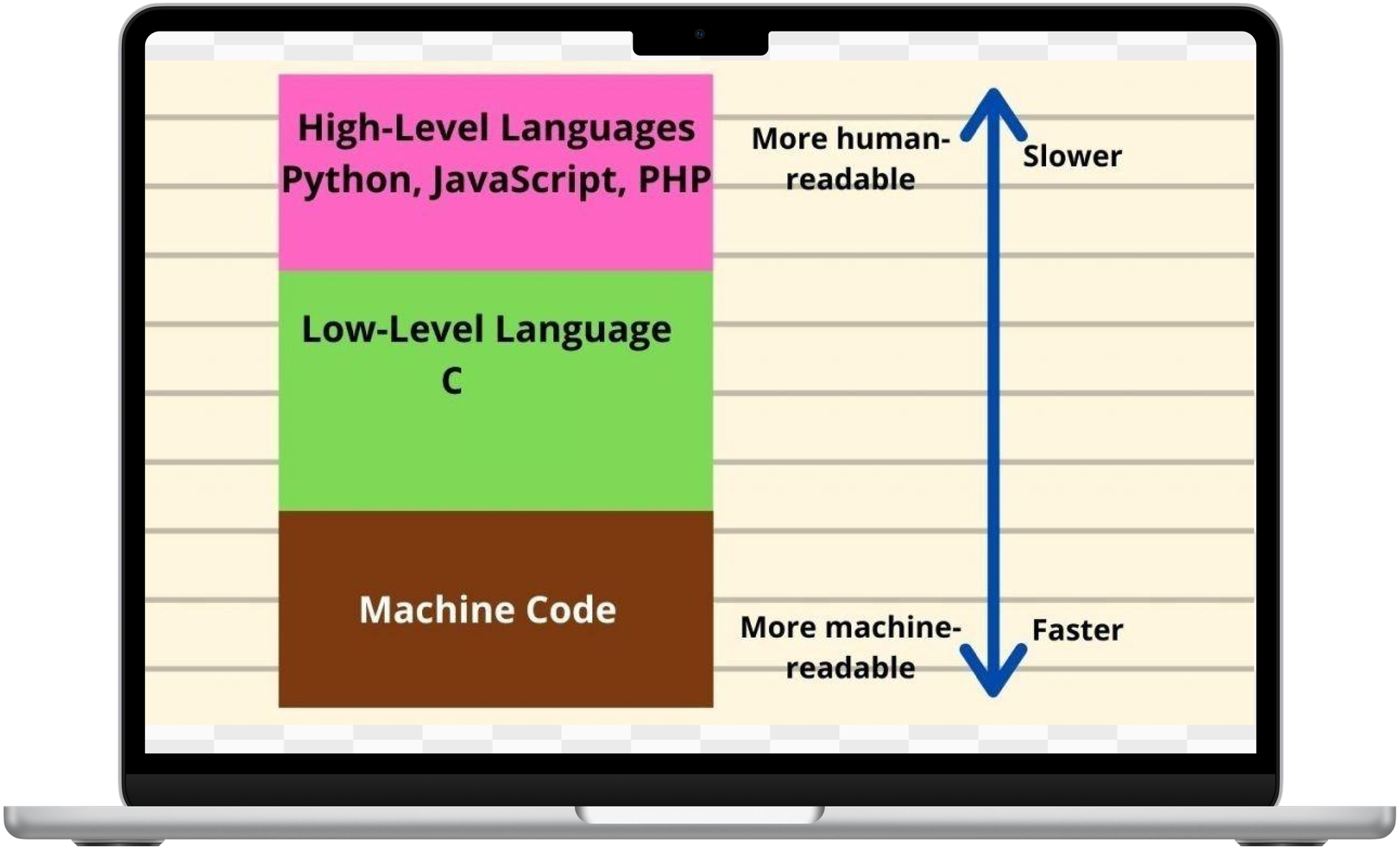
Improper Object for Next Operation
- Not Enough Allocat

Memory Error:
- Memory Leak
- Double Free
- Object Corruption

Attributes

Operation			Object	
:hanism: mplicit :xplicit	**Source Code:** • Codebase • Third Party • Standard Library • Processor	**Execution Space:** • Userland • Kernel • Bare-Metal	**Ownership:** • None • Single • Shared	**Locatio** • Sta • Hea • ...




High-Level Languages
Python, JavaScript, PHP
Low-Level Language
C
Machine Code
More human-readable
Slower
More machine-readable
Faster

You have to code in C... or even Assembly.

Now what?

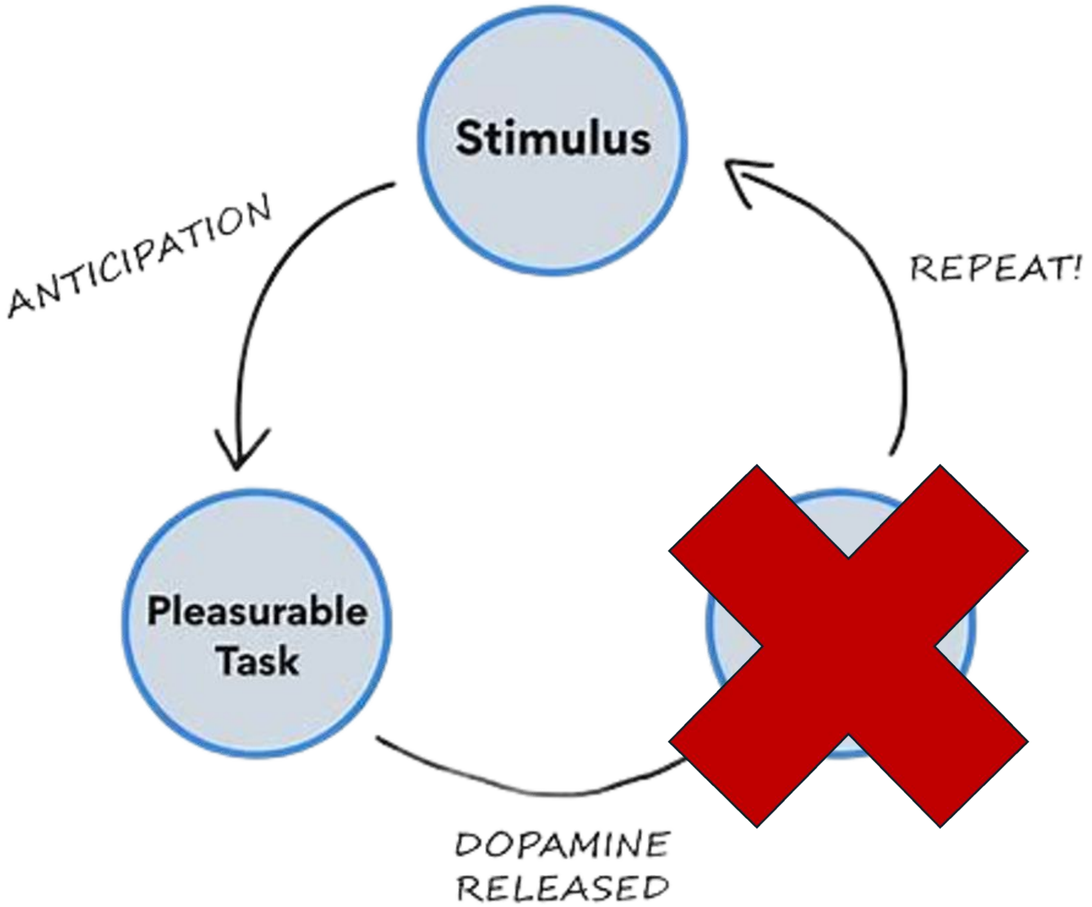
Solution 1:

Read the documentation to unlock the benefits of lower level languages.

Python

C / C++

Assembly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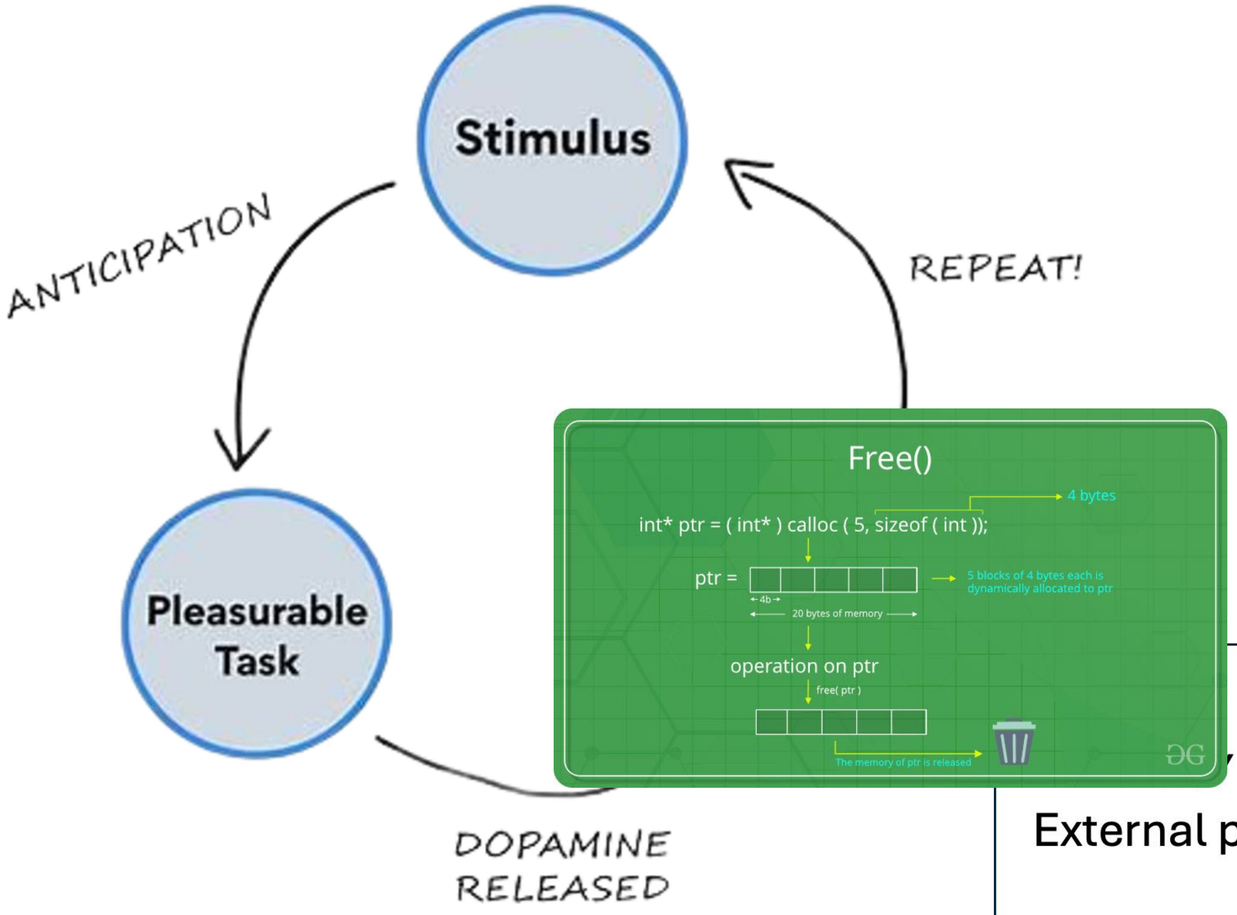


Solution
External package/library

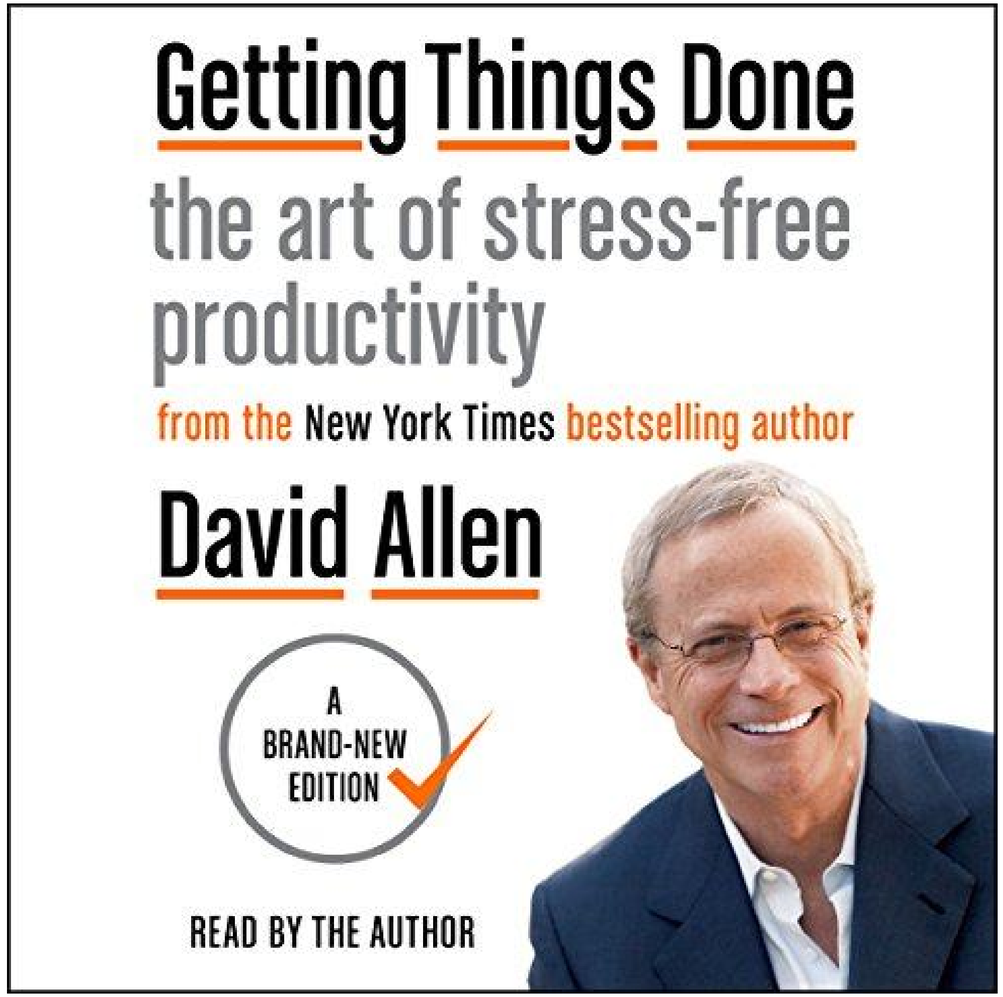
Solution 2:

Build abstractions - or even your own compiler.

Use frameworks and create systems to make difficult tasks easier.

How to do your first Pomodoro:

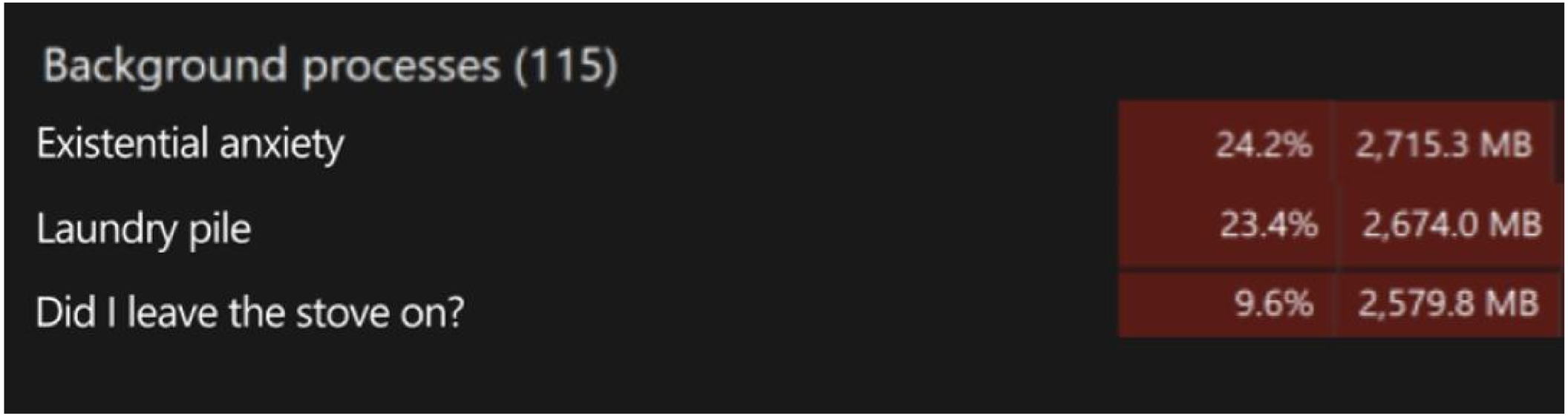
1. Get into an optimal work space without distractions.
2. Choose ONE task to focus on.
3. Set your timer for 25 minutes.
4. Do your work.
5. STOP when the timer ends.
6. Take a 5-minute break.
7. Repeat 3 times.
8. Take a longer break (30 minutes).



Use frameworks and create systems to make difficult tasks easier.

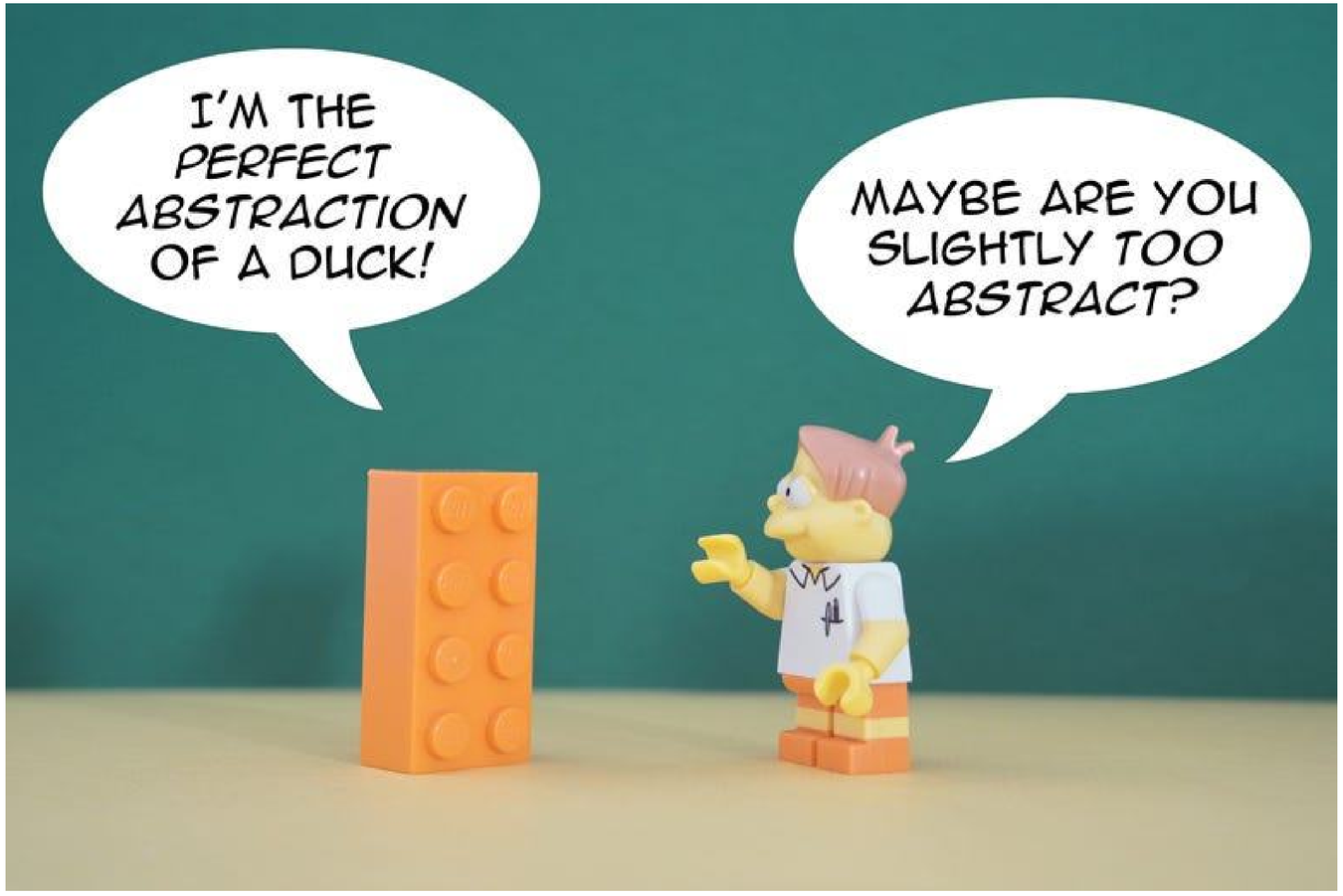
Go beyond software development - become a software architect.

Shame and guilt only leads to software inefficiency and bloat.



Solution Part 1:

Rewrite bad or outdated abstractions.



Solution Part 2:

Uninstall bloatware - especially the “Wall of Awful.”

How do we leverage the benefits of the cloud?

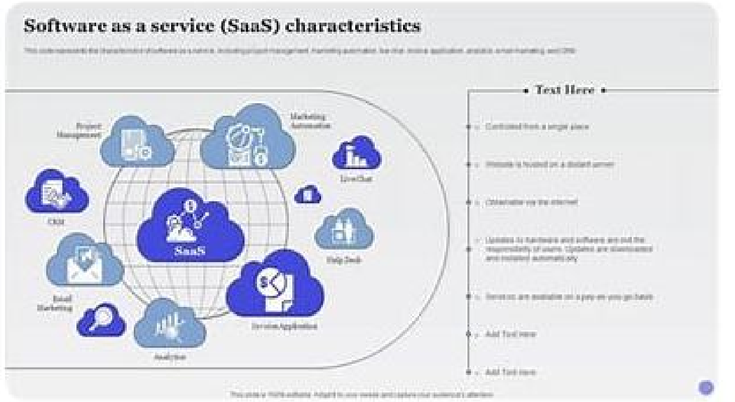
Human brains may directly connect to cloud networks in future

Scientists claim that our brains may someday be able to directly connect to vast cloud-computing networks in real time, allowing us to gain a Matrix-style instant access to the world's knowledge.

Imagine a future technology that would provide instant access to the world's knowledge and artificial intelligence, simply by thinking about a specific topic or question. Communications, education, work, and the world as we know it would be transformed.

Writing in *Frontiers in Neuroscience*, an international collaboration led by researchers at UC Berkeley and the US Institute for Molecular Manufacturing predicts that exponential progress in nanotechnology, nanomedicine, AI, and computation will lead this century to the development of a "Human Brain/Cloud Interface" (B/CI), that connects neurons and synapses in the brain to vast cloud-computing networks in real time.

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

solo
5-Subjects
NoteBook
www.solo.in

Personal information management

Article Talk

From Wikipedia, the free encyclopedia

“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.)”

Personal information management

Article Talk

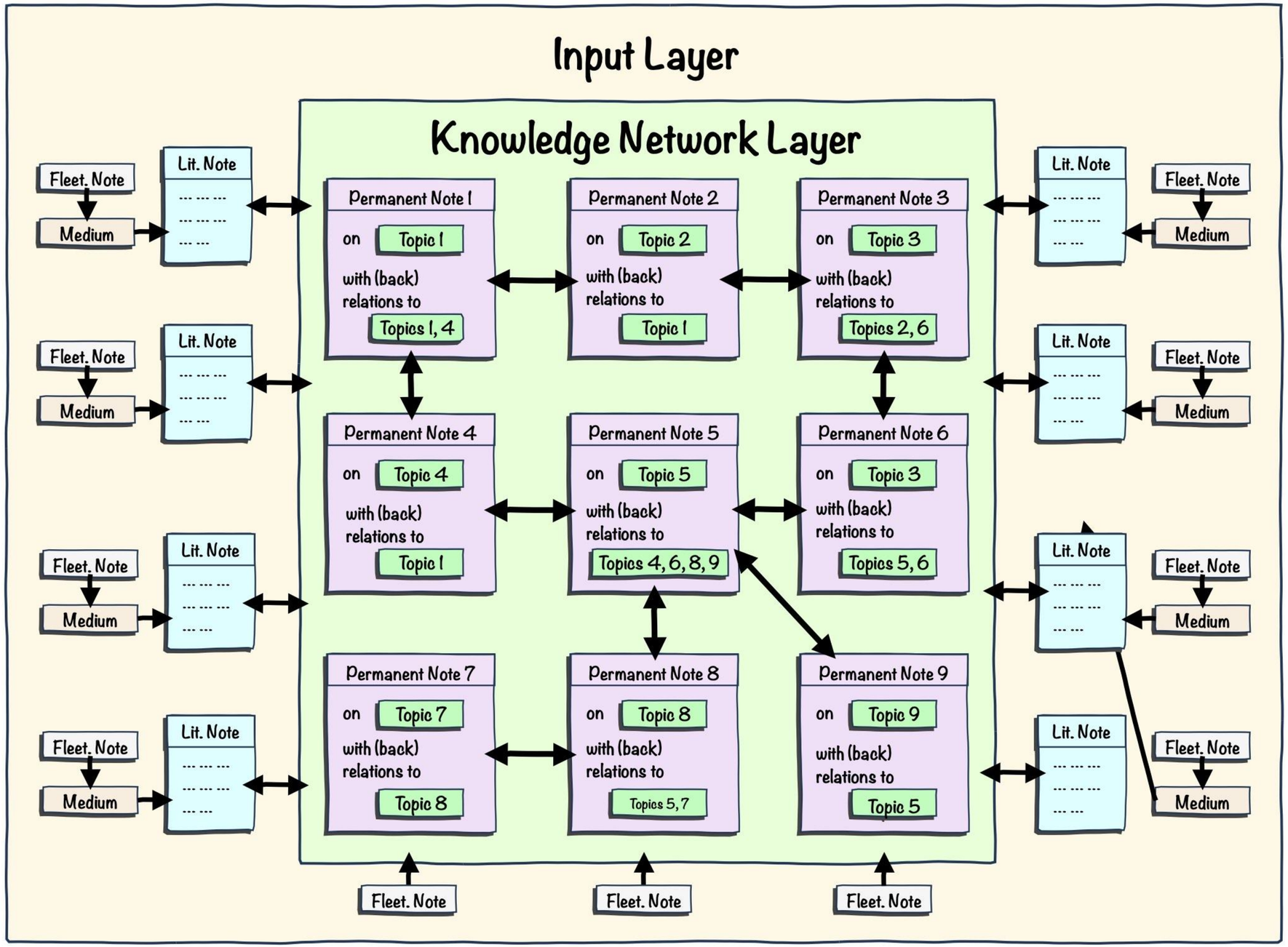
From Wikipedia, the free encyclopedia

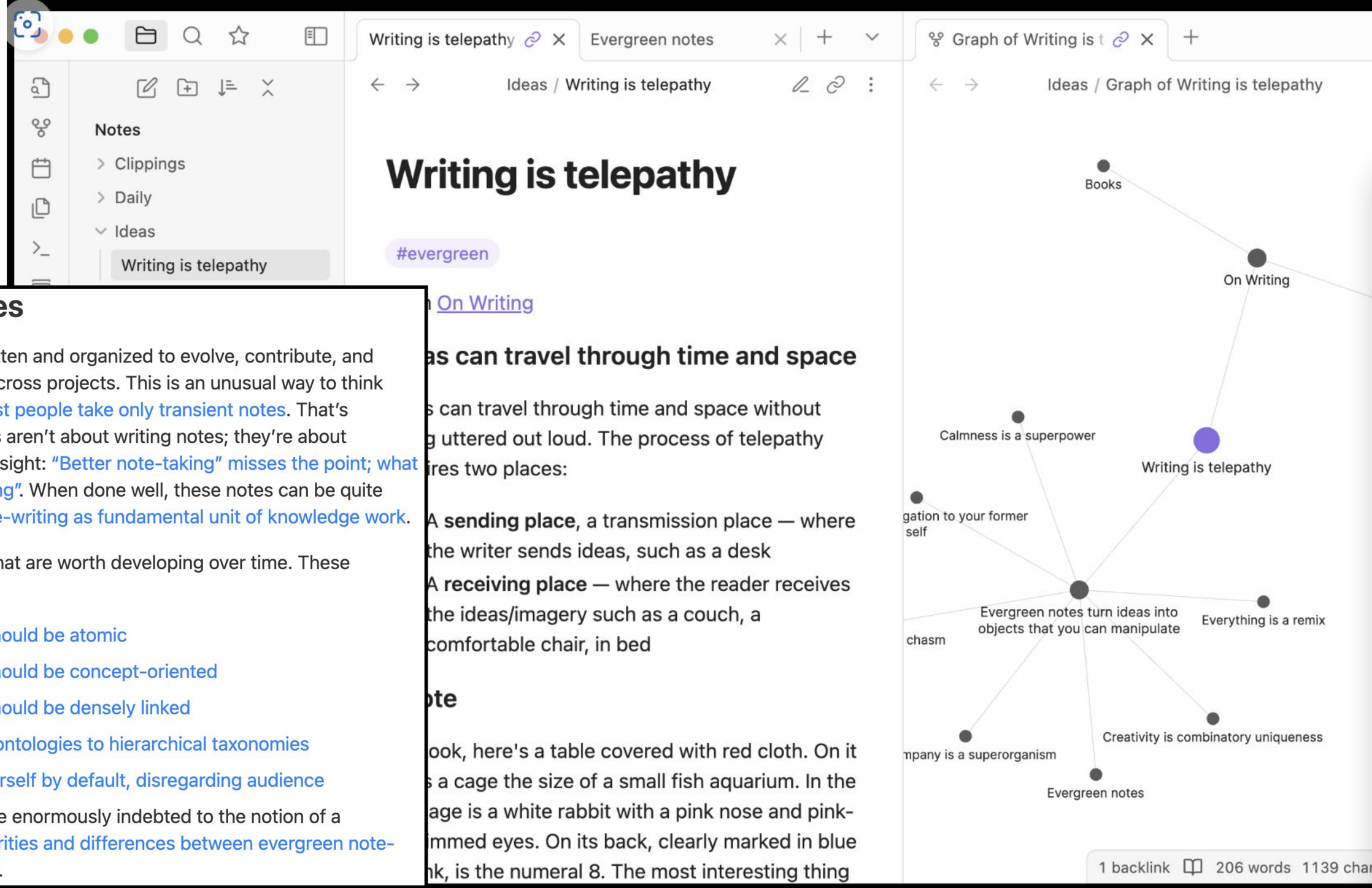
One ideal of PIM is that **people should always have the right information in the right place, in the right form, and of sufficient completeness and quality to meet their current need**.

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).

Personal information management: free DIY cloud computing.

The Input and the Knowledge Network Layer of a Zettelkasten





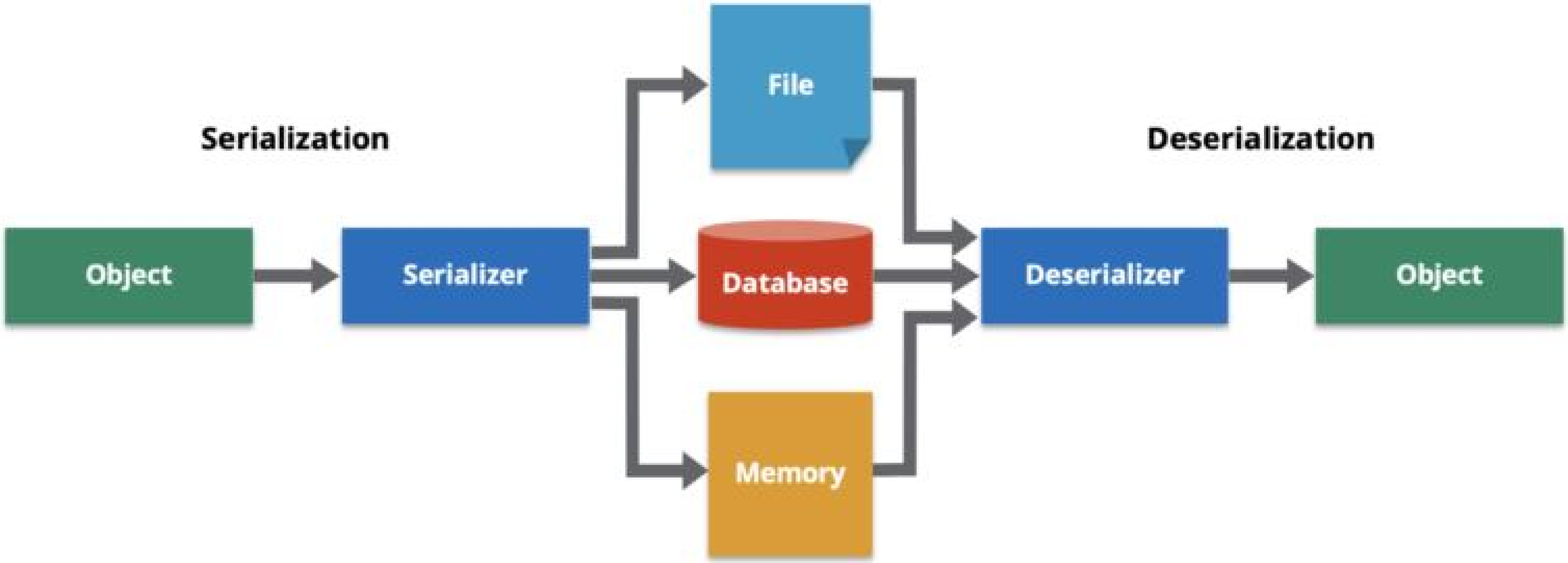
Evergreen notes

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.


Serialization
Deserialization
Object
Serializer
File
Database
Memory
Deserializer
Object

Takeaways

Attention management is a problem of technical limitations.

The solution is not to “just try harder.”

Shame and embarrassment only makes things harder.

Not only does it consumes extra processing power and memory, it doesn’t actually solve the core problem.

Think about systems before individual functions.

Instead of focusing only on the problems right in front of you, invest in designing a better architecture.

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