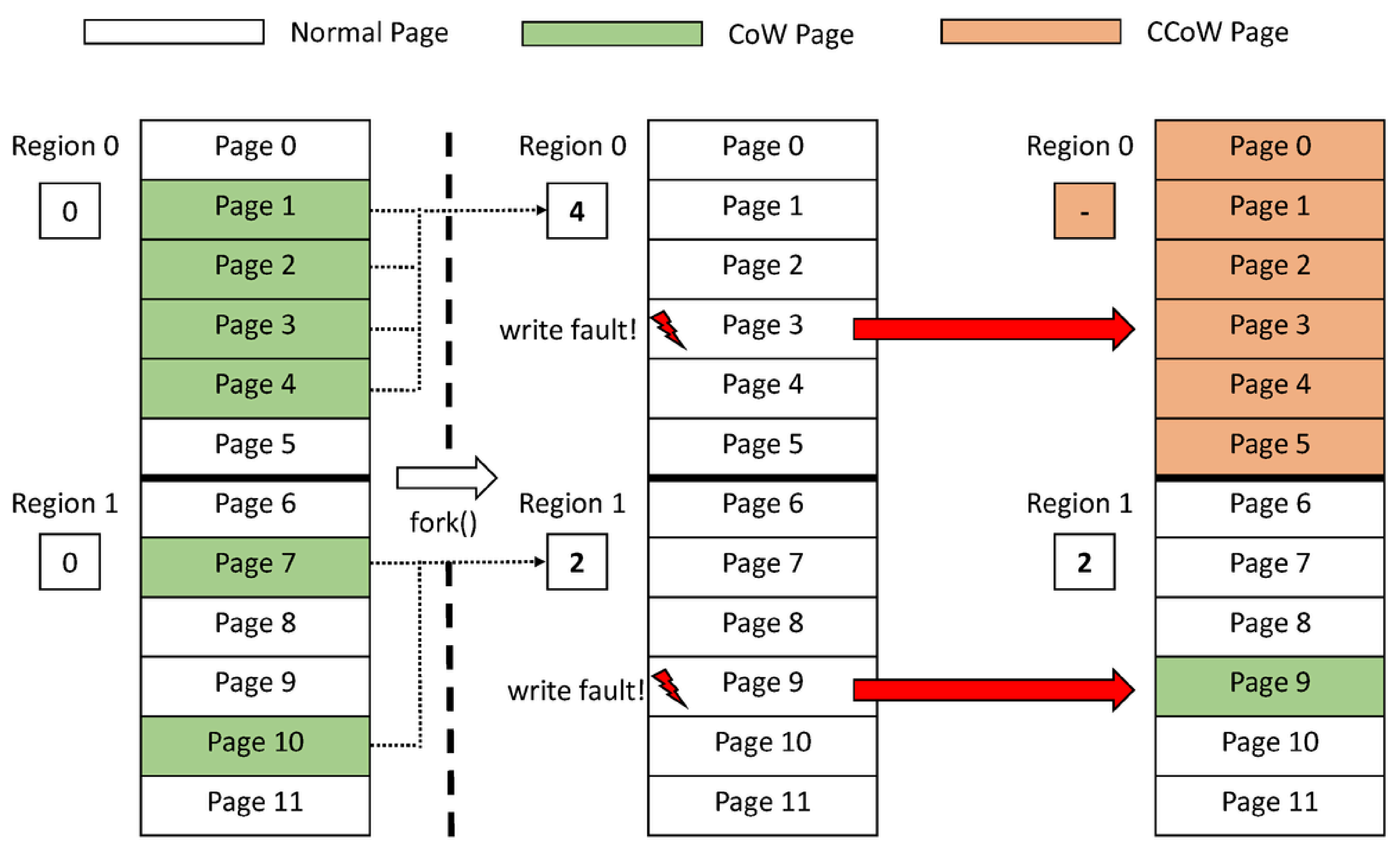
OSN Tutorial-8

Mini-Project 3

LAZY Corp Inc

LAZY Fork



The Situation:

- Current system: Makes full copies of memory pages (So not lazy!)
- What we want: Share pages until absolutely necessary

The Cool Stuff:

- Both processes share same pages initially
- Pages marked as read-only with COW flag
- Only copy when someone tries to write
- RISC-V CPU helps us catch these write attempts

// Common pitfall: Forgetting to handle shared pages during exit

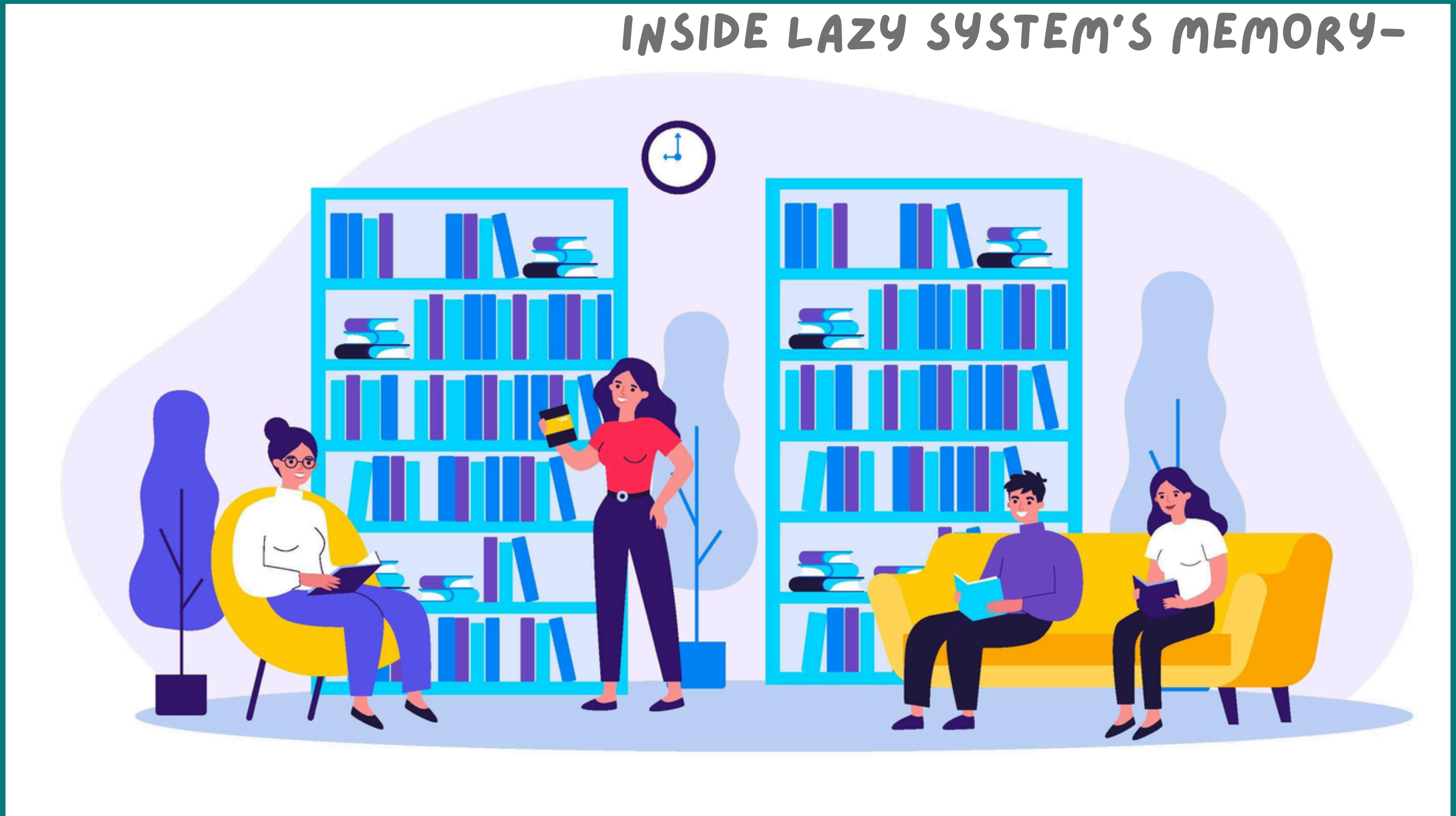
Critical Edge Cases:

- Multiple processes writing to same page simultaneously
- Process exits while others still share its pages
- Page table modifications during COW handling
- Out of memory during page copy
- Recursive page faults

Powered By:

XV6
kernel

LAZY Read-Write



INSIDE LAZY SYSTEM'S MEMORY–

The Challenge:

- Simulate a file manager that handles multiple users
- Keep track of:
  - Who's reading
  - Who's writing
  - Who's getting impatient and leaving

Key Rules:

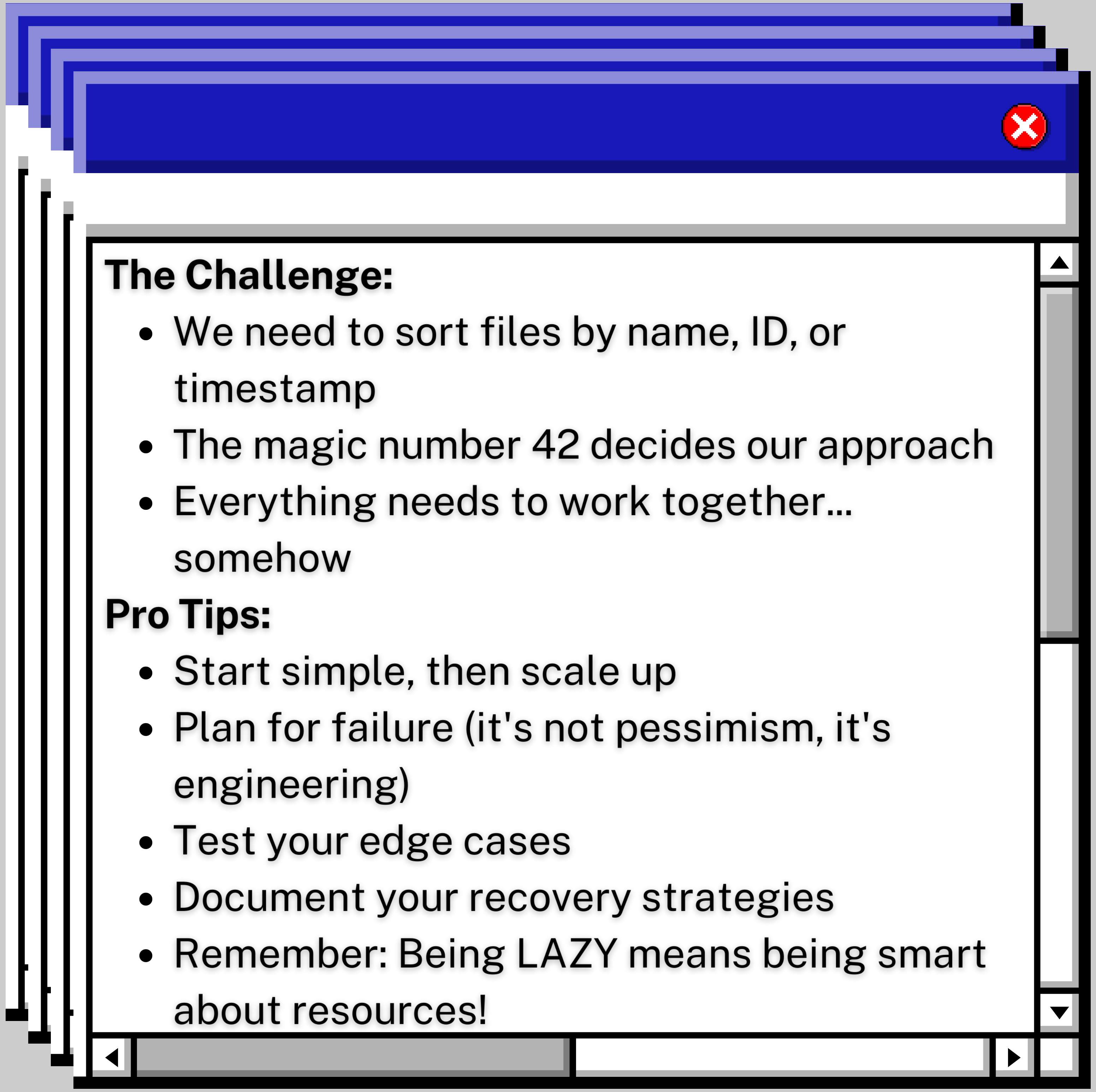
- Reading: Multiple users can read together
- Writing: One writer at a time
- Deleting: Nobody else can touch the file
- Waiting time: Users might peace out if we're too slow!

Critical Edge Cases:

- Request timeout during active operation
- Delete request while operations are pending
- Multiple simultaneous timeouts
- Operation queue overflow
- File state changes during request processing

Useful ->

LAZY Sort ⚠



The Challenge:

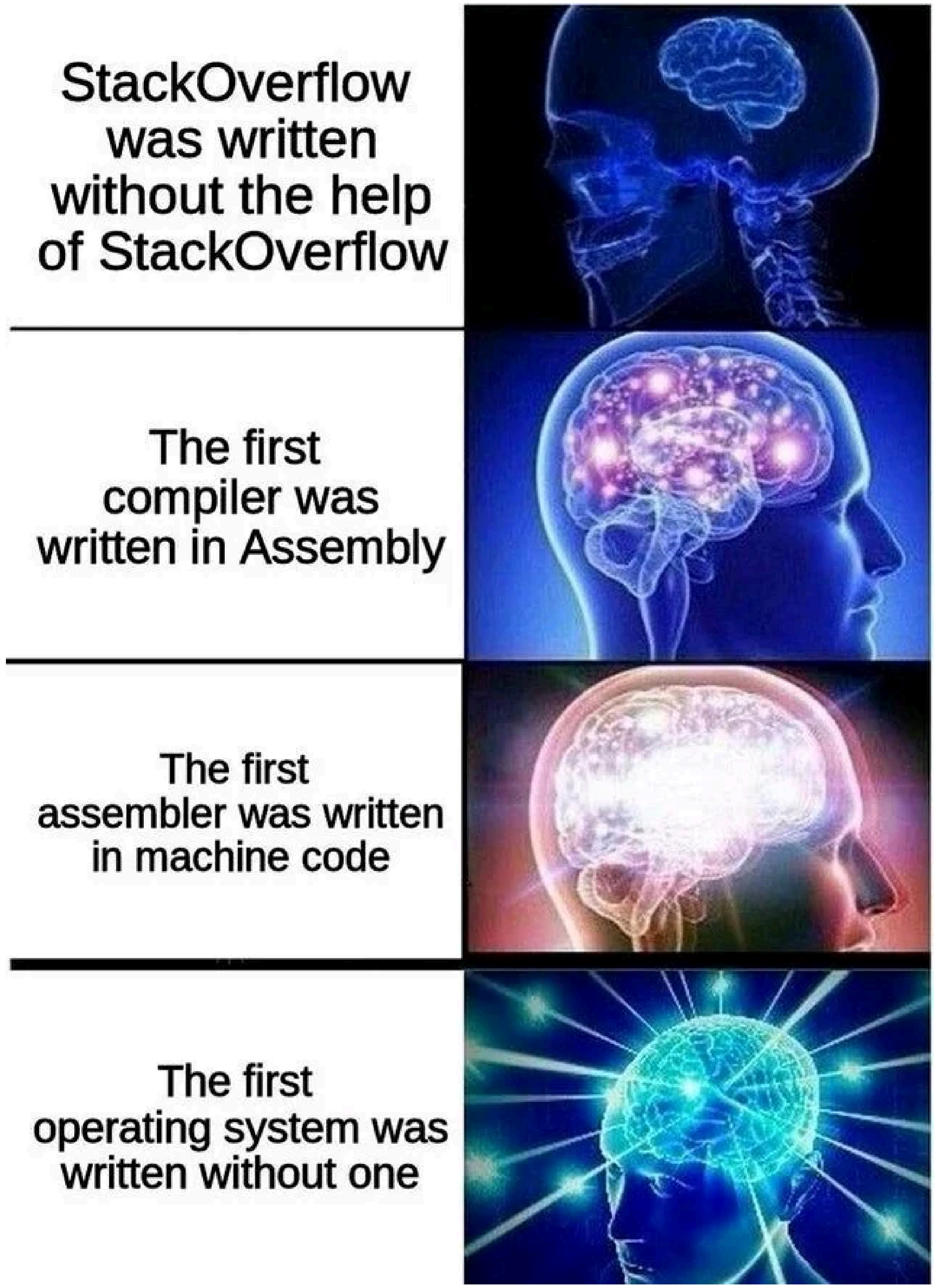
- We need to sort files by name, ID, or timestamp
- The magic number 42 decides our approach
- Everything needs to work together... somehow

Pro Tips:

- Start simple, then scale up
- Plan for failure (it's not pessimism, it's engineering)
- Test your edge cases
- Document your recovery strategies
- Remember: Being LAZY means being smart about resources!

LAZY Corp Inc

"Find Bugs Before They Find You"



StackOverflow was written without the help of StackOverflow

The first compiler was written in Assembly

The first assembler was written in machine code

The first operating system was written without one

LAZY Corp Inc

Any Questions ?