

CSE 390B, Winter 2022

Building Academic Success Through Bottom-Up Computing

# Procrastination, Stress, and Networks

Procrastination Activity, Stress Response Cycle Discussion,  
Introduction to Networks

*If joining virtually, please have your camera turned on if you can!*



# Lecture Outline

- ❖ **Procrastination Activity**
  - **Combatting Procrastination, Surviving Dead Week**
- ❖ **Stress Response Cycle Discussion**
  - **Completing the Stress Response Cycle**
- ❖ **Introduction to Networks**
  - **Connecting our Computer to the Internet**

# Let's Talk Procrastination

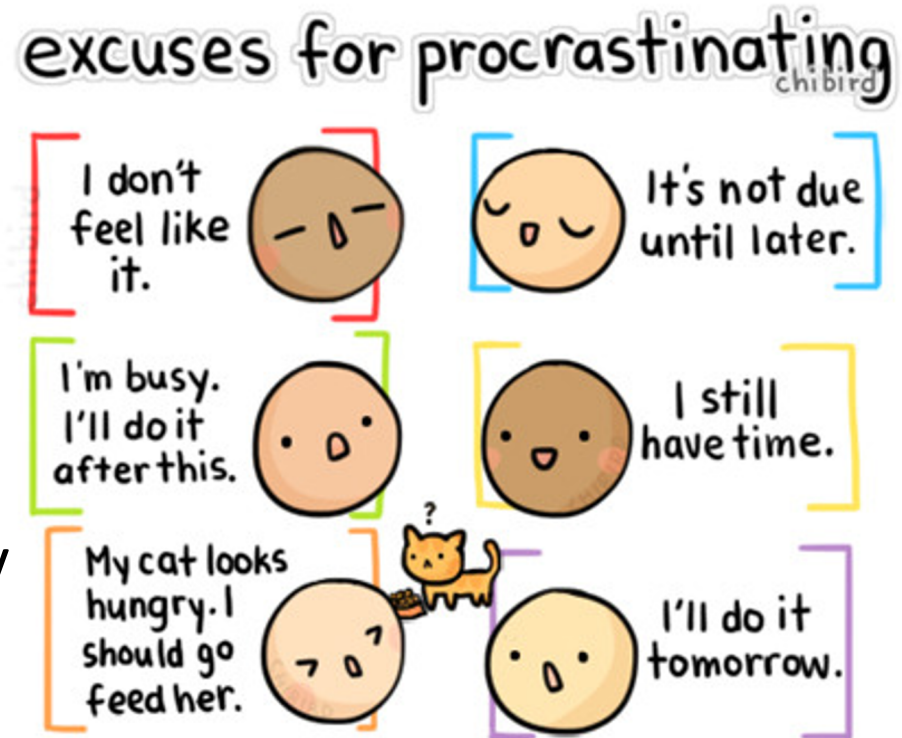
# Let's Talk Procrastination

- ❖ What is procrastination?
  - Procrastination is the act of putting things off or choosing to do something you prefer to do (or might even need to do) instead of the actual project or chore or work you need to be doing now
  - Common challenge for college students, with about 80-95% of students reporting that they procrastinate (Steel, 2003)



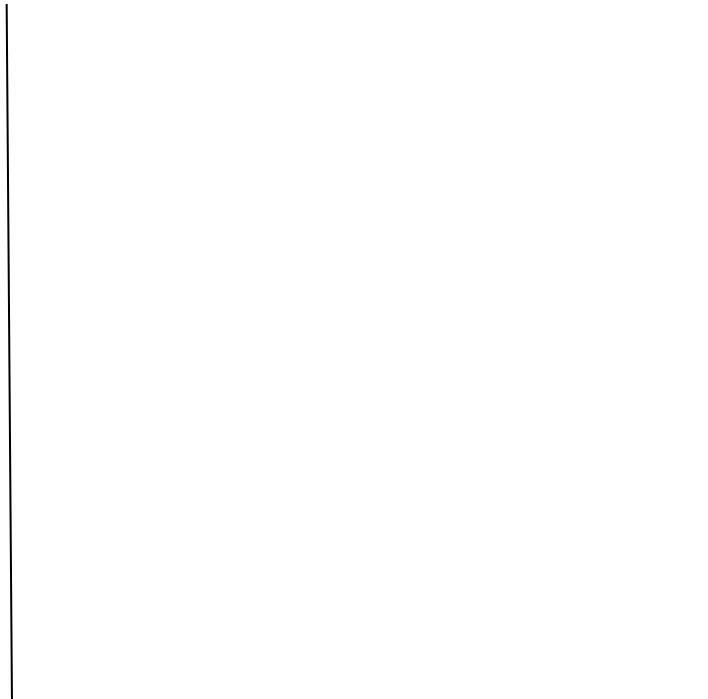
# Combating Procrastination

- ❖ Identifying why we procrastinate and the internal dialogue we have with ourselves
- ❖ Creating a proactive strategy to course-correct when you notice you're putting off what needs to be done



# Grab a piece of paper!

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## AVOIDANCE AREAS

*When you  
procrastinate,  
what do you  
avoid doing?*

*Identify 3 -5 areas*



# Where does procrastination impact you most?

## PERSONAL

- Eating well
- Exercising / Wellness activities
- Getting enough sleep
- Bathing & hygiene
- Health care (i.e. doctor's visit)
- Balancing bank account
- Relaxation & hobbies

## SCHOOL/COLLEGE

- Going to class
- Doing class readings
- Studying for tests/exams
- Doing homework/ assignments
- Writing papers
- Starting long-term projects
- Finding a study group
- Talking to an instructor or TA
- Making an advising appointment

## SHOPPING/HOME/ MAINTENANCE

- Paying bills
- Getting financial aid taken care of (i.e. FAFSA, forms, etc)
- Doing laundry
- Cleaning
- Grocery shopping
- Doing dishes

## SOCIAL/RELATIONSHIPS

- Talking with friends
- Writing email responses
- Socializing
- Calling relatives

## WORK/CAREER

- Going to work
- Applying to internships/jobs
- Preparing a resume
- Studying for interviews

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## AVOIDANCE AREAS

*When you procrastinate, what do you avoid doing?*

*Identify 3 -5 areas*

## PROCRASTINATION BEHAVIORS

*How do you procrastinate?  
In other words, what do you do instead of the work that needs to be done?*

*Identify 3 -5 behaviors*

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## AVOIDANCE AREAS

*When you procrastinate, what do you avoid doing?*

*Identify 3 -5 areas*

## PROCRASTINATION BEHAVIORS

*How do you procrastinate?  
In other words, what do you do instead of the work that needs to be done?*

*Identify 3 -5 behaviors*

## PLANNING FOR SUCCESS

*What can you do to avoid procrastination?  
What action can you take to **refocus** yourself on the task you need to complete?*

*Identify 3 -5 actions*

# Tips for Surviving Dead Week

- ❖ Revisit and reassess your goals each day
  - Break-up into different levels - minimal, solid, reach
- ❖ Have an accountability buddy
  - Study groups or working sessions - whatever you want to call it, having someone who can help you stay motivated, accountable, and avoid procrastination
- ❖ Remember Bloom's Taxonomy!
  - How is your preparation involving higher level thinking skills?
- ❖ Try and stick to a routine
  - Provides normalcy & structure for maintaining sleep and wellness

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# Completing the Stress Response Cycle

- ❖ In Episode 2, the Nagoski sisters talk about 12 evidence-based strategies to deal with the stress itself (vs. the stressors) that could help you complete the stress response cycle and return to a state of safety inside your body
  - Of the 12 strategies discussed in the podcast episode, which one resonated most with you and why?

# Completing the Stress Response Cycle

- ❖ A big part of finding activities that complete your stress response cycle is being able to judge if an activity caused a release feeling for you
  - Can you think of any moments in the past where this release occurred? Can you think of any moments where you were trying to relieve your stress but you didn't feel that release?
- ❖ How can we build these practices into our daily routine without thinking about them as a “chore” we have to do?

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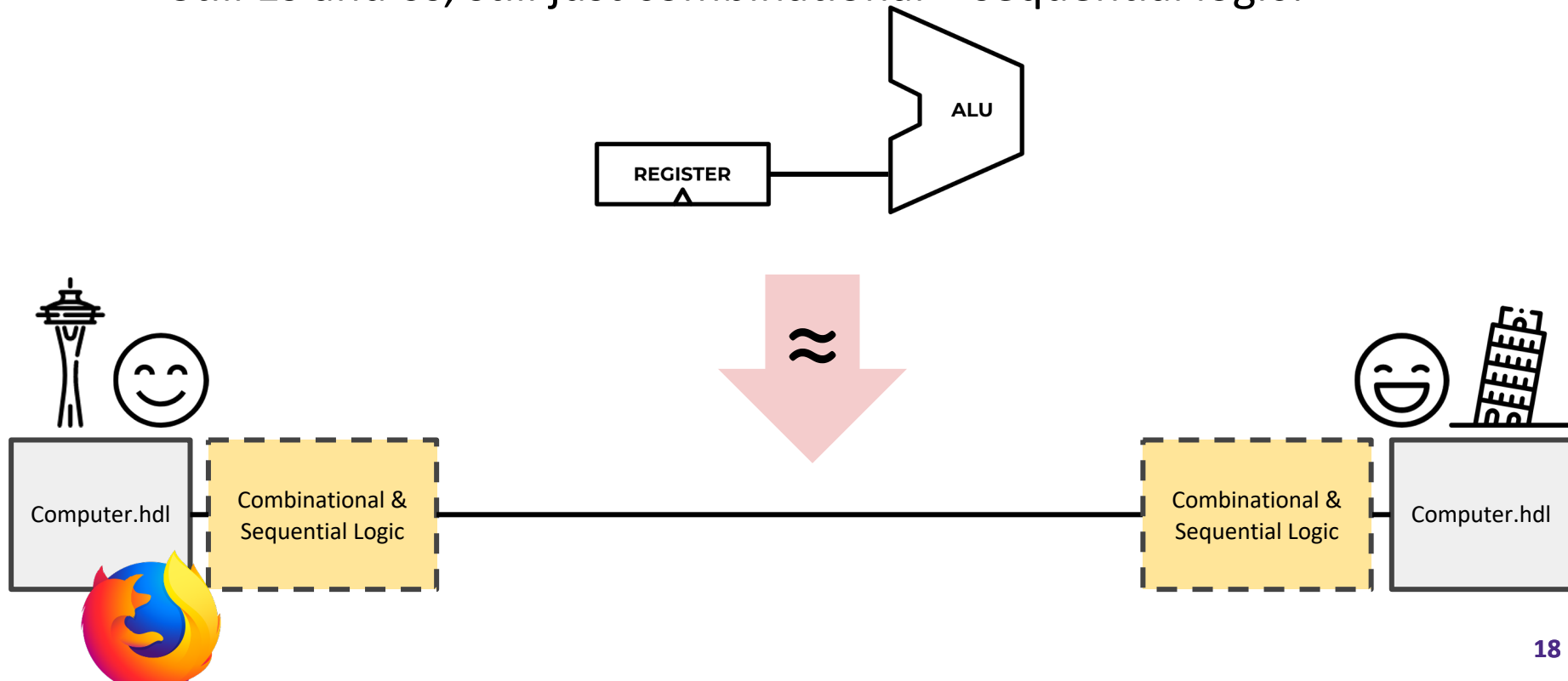


# Intro to Networking

- ❖ We won't go very deep on this topic
  - Take CSE 333 (Systems Programming), CSE 461 (Computer Networks), and CSE 452 (Distributed Systems) to learn more!
  
- ❖ Our focus:
  - Brief intro to what connecting to the internet looks like under the hood
  - What that connection might look like implemented in our computer!

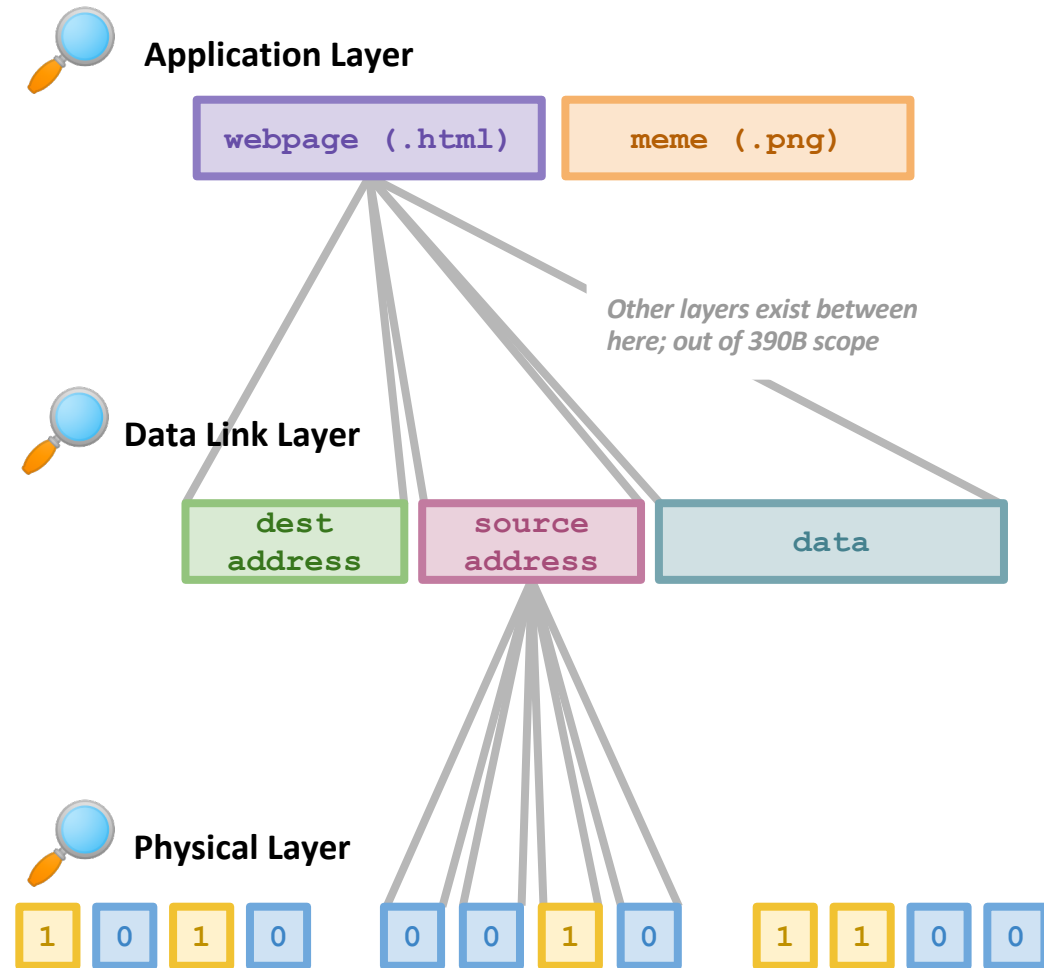
# Really, Really Long Wires

- ❖ At a fundamental level, there's nothing magic about the Internet -- it's the same concepts we used to build our CPU, just with longer wires.
  - Still 1s and 0s, still just combinational + sequential logic!



# Thinking about the Network: Layers

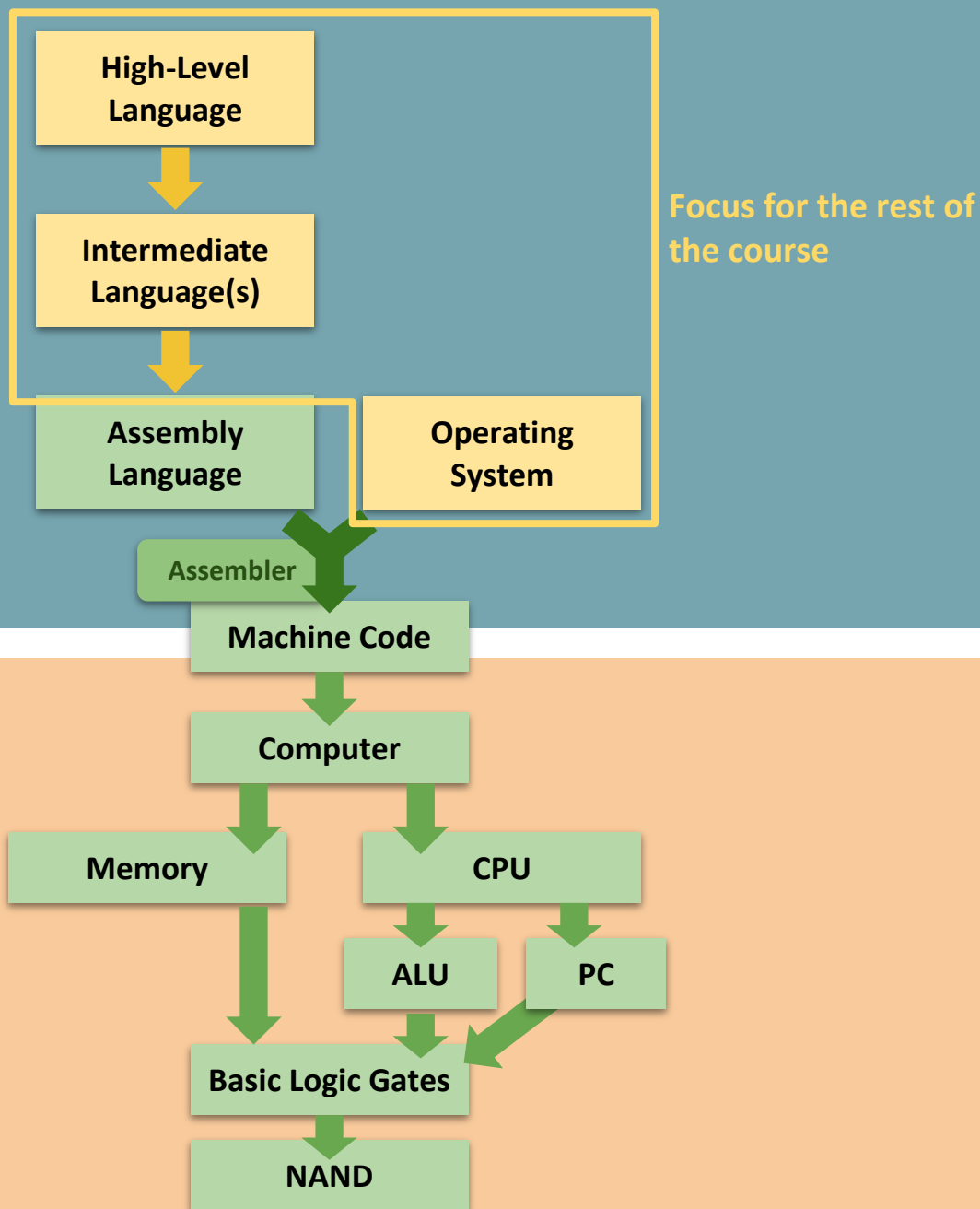
- ❖ To manage the complexity, we think about the network in layers
- ❖ It's all 1's and 0's, but each layer is a different way of "framing" or thinking about those 1's and 0's
  - Each layer zooms out a little more



# Roadmap

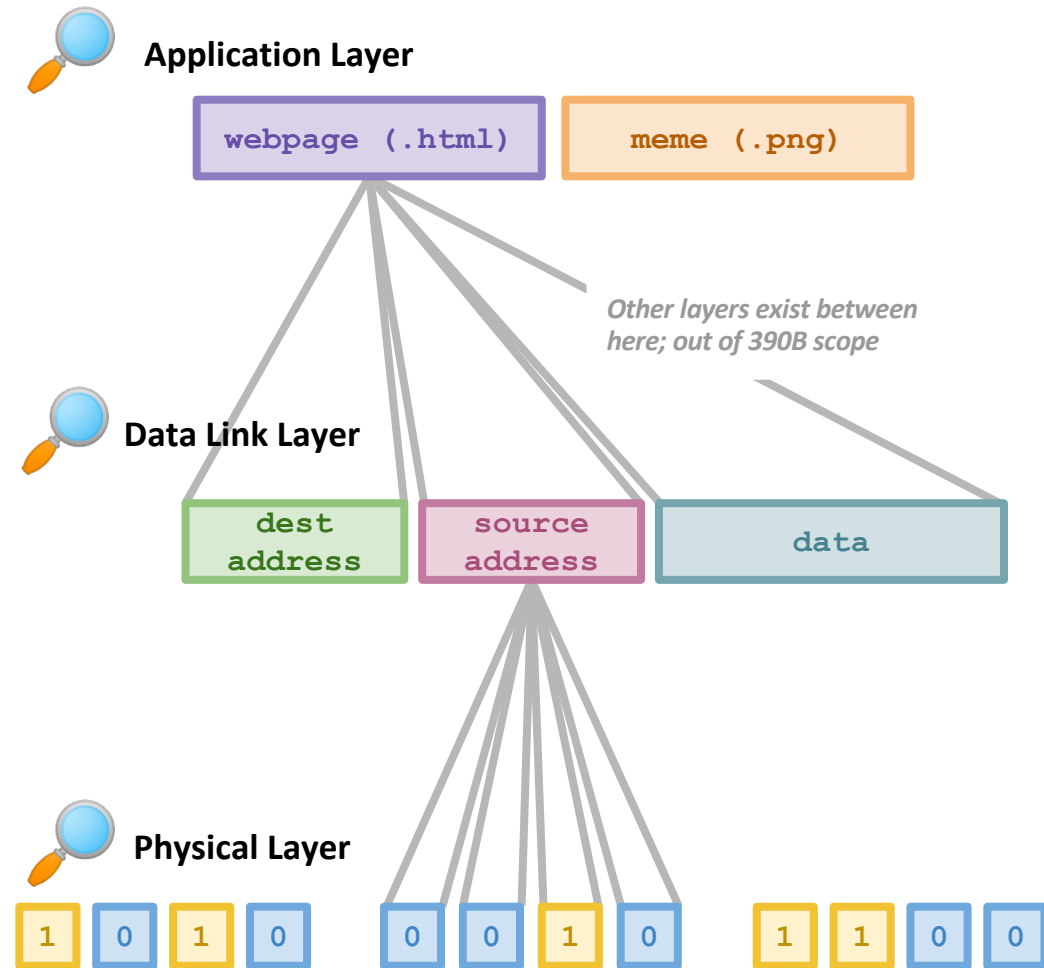
SOFTWARE

HARDWARE



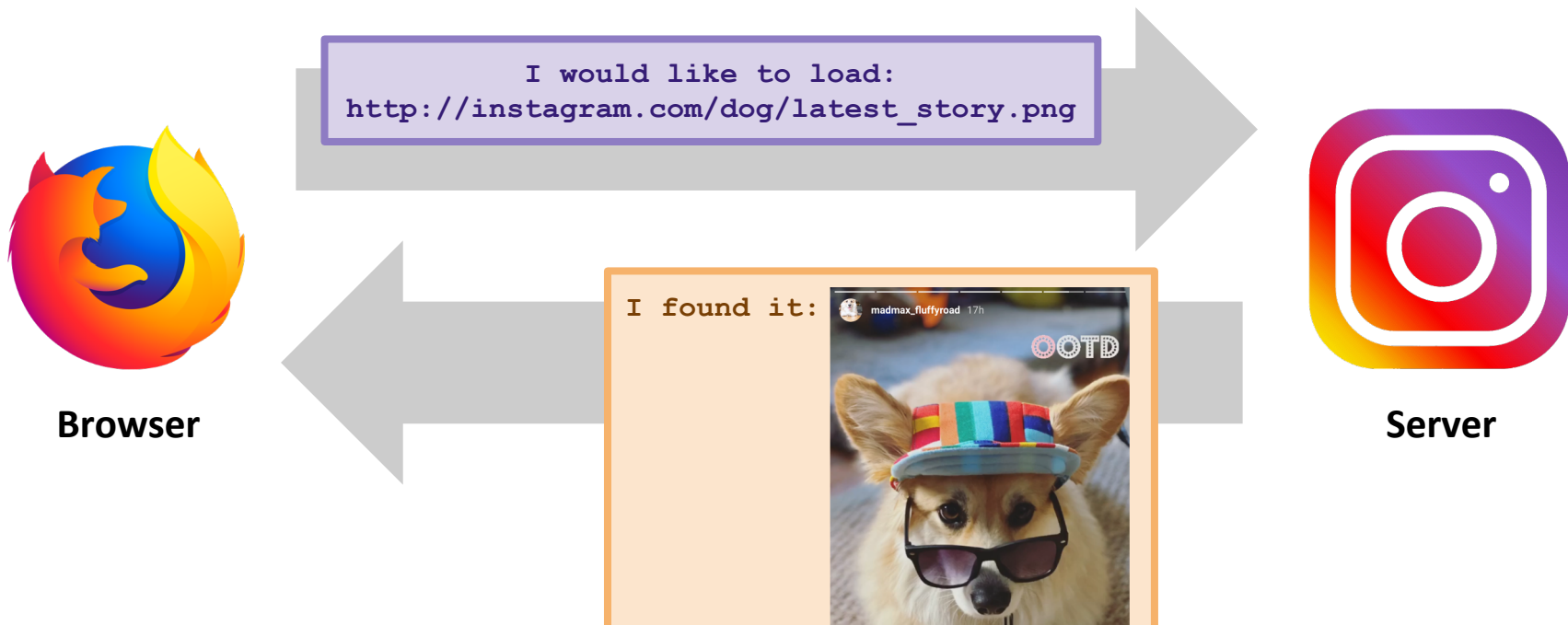
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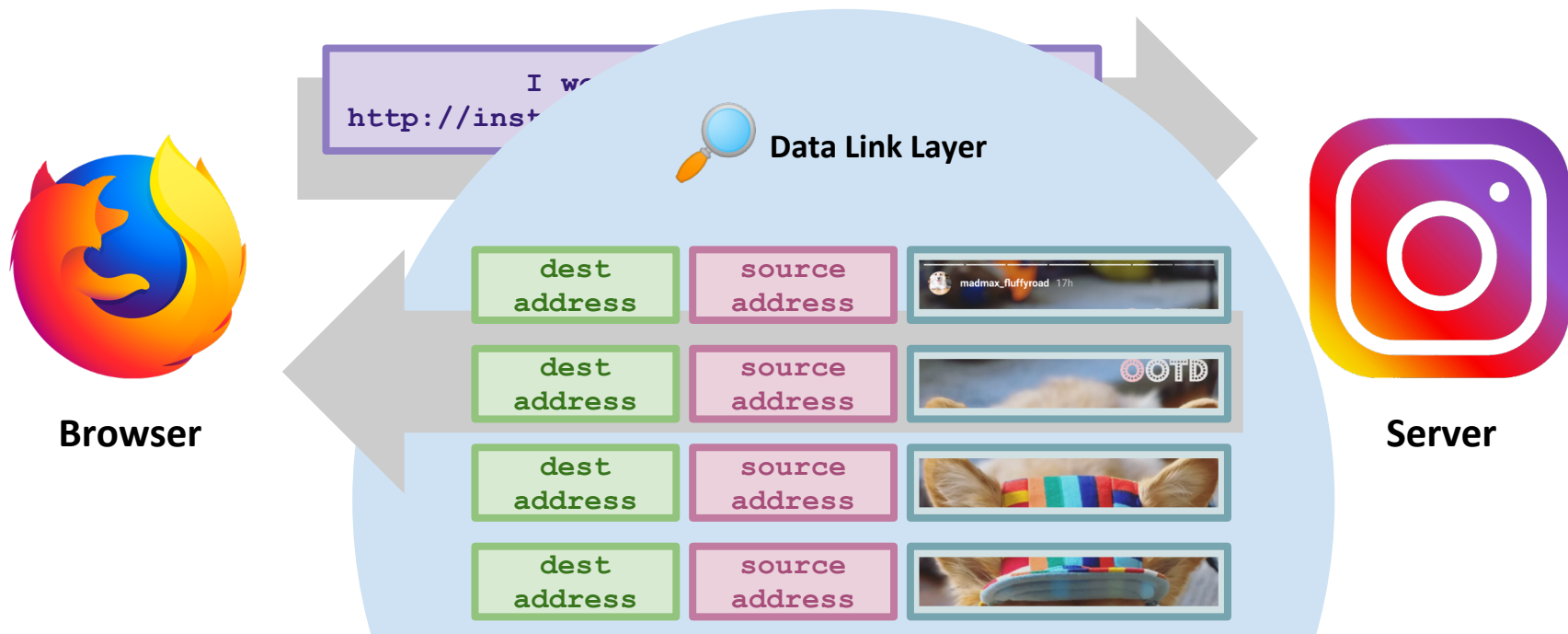
# Application Layer

- ❖ Conceptually the “top” layer: looking at internet traffic as direct communication between applications
- ❖ Common use: HTTP (HyperText Transfer Protocol)
  - Your browser sends an HTTP request to a server
  - The server sends back an HTTP response with data attached



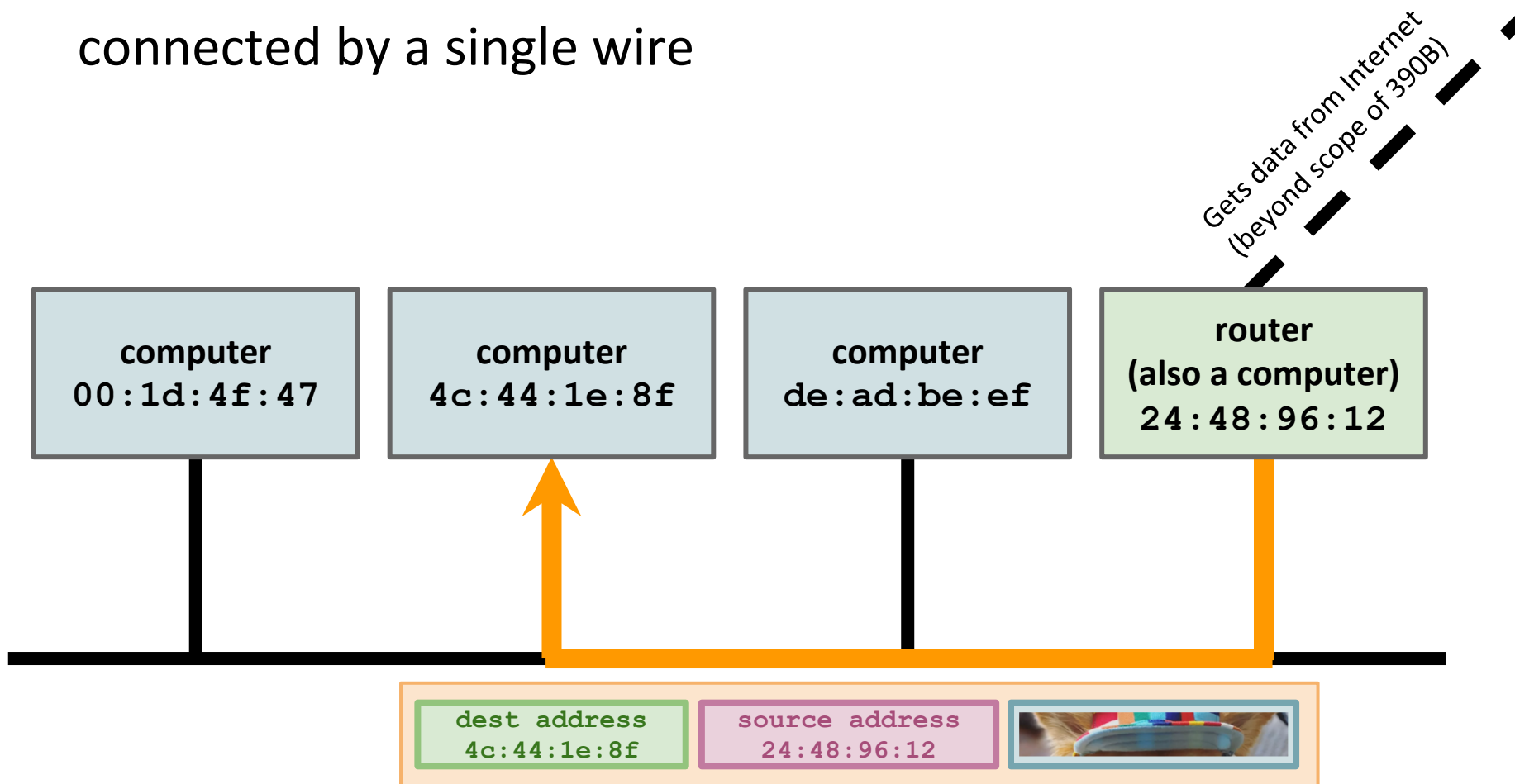
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# Data Link Layer

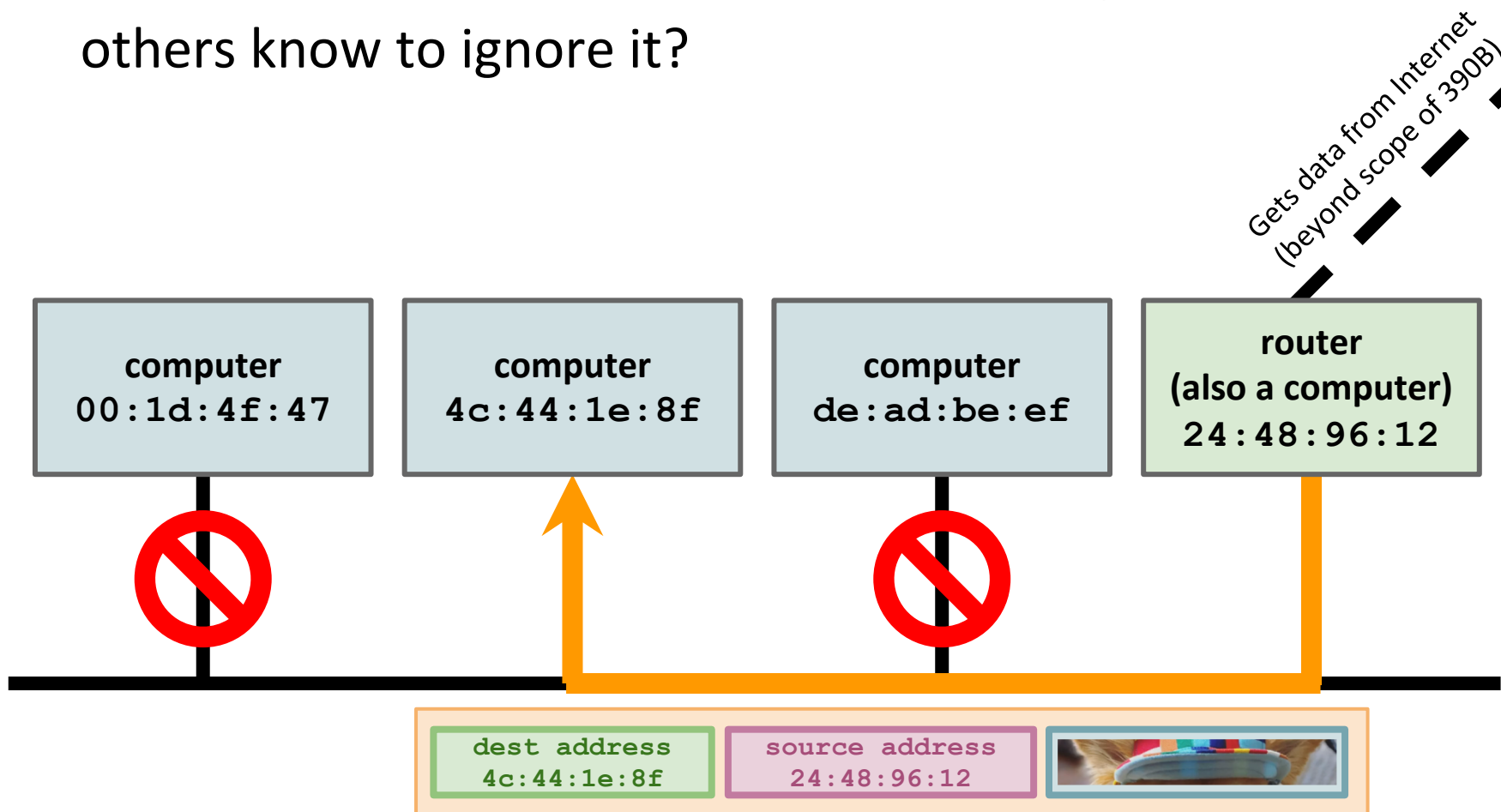
- ❖ A computer network is simply multiple computers connected by a single wire





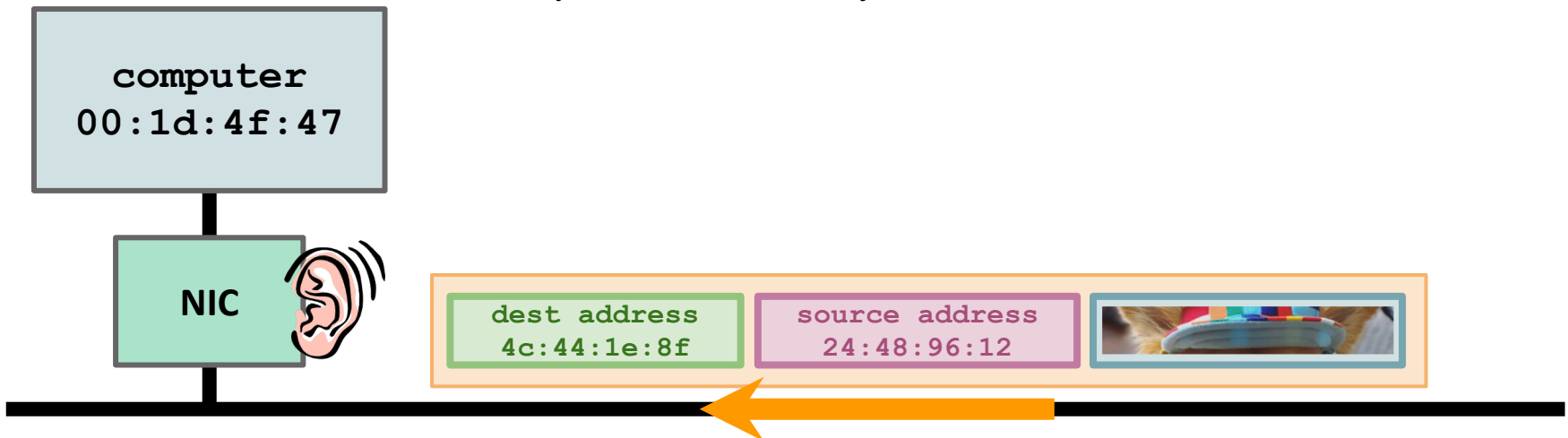
# Data Link Layer

- ❖ But every computer will “hear” the message. How do the others know to ignore it?



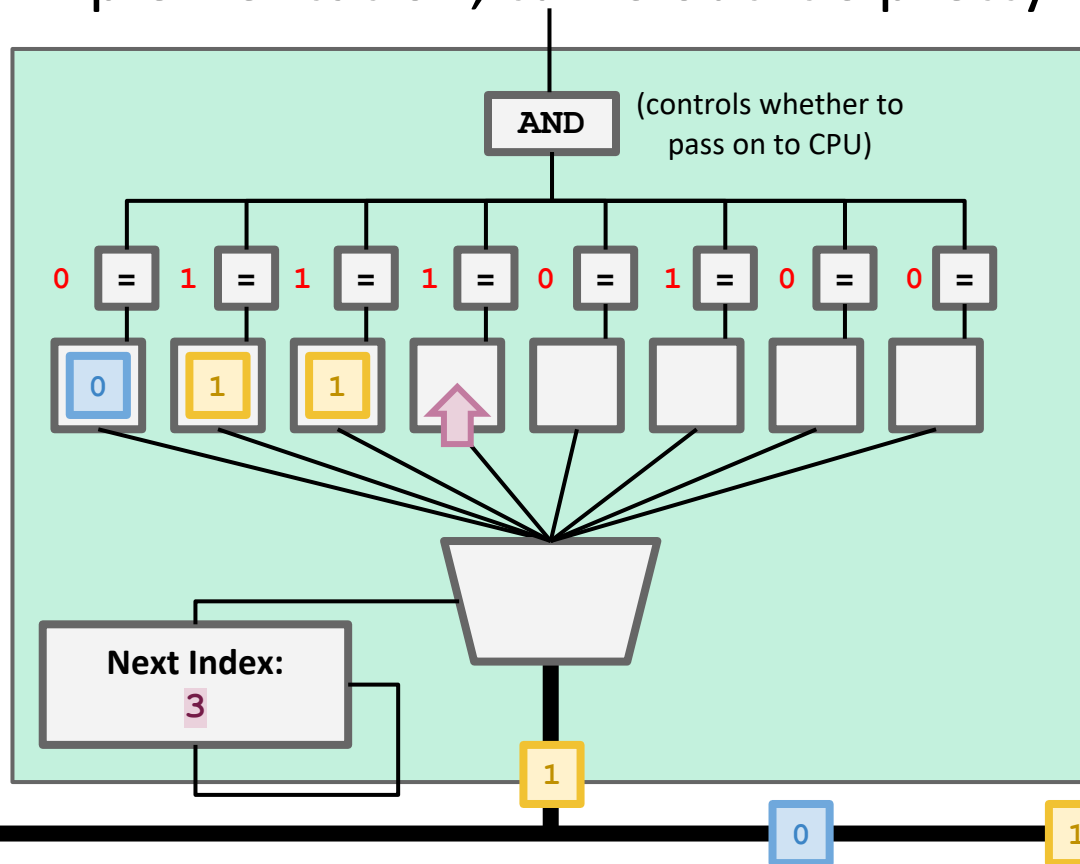
# NIC (Network Interface Card)

- ❖ We don't want the CPU to waste time always listening to the network wire, especially when it's not even the destination computer
- ❖ Solution: the NIC—a new piece of the computer dedicated to dealing with the network wire
  - Listens to the network wire until it hears a dest address, checks if it matches this computer, and only sends to CPU if so



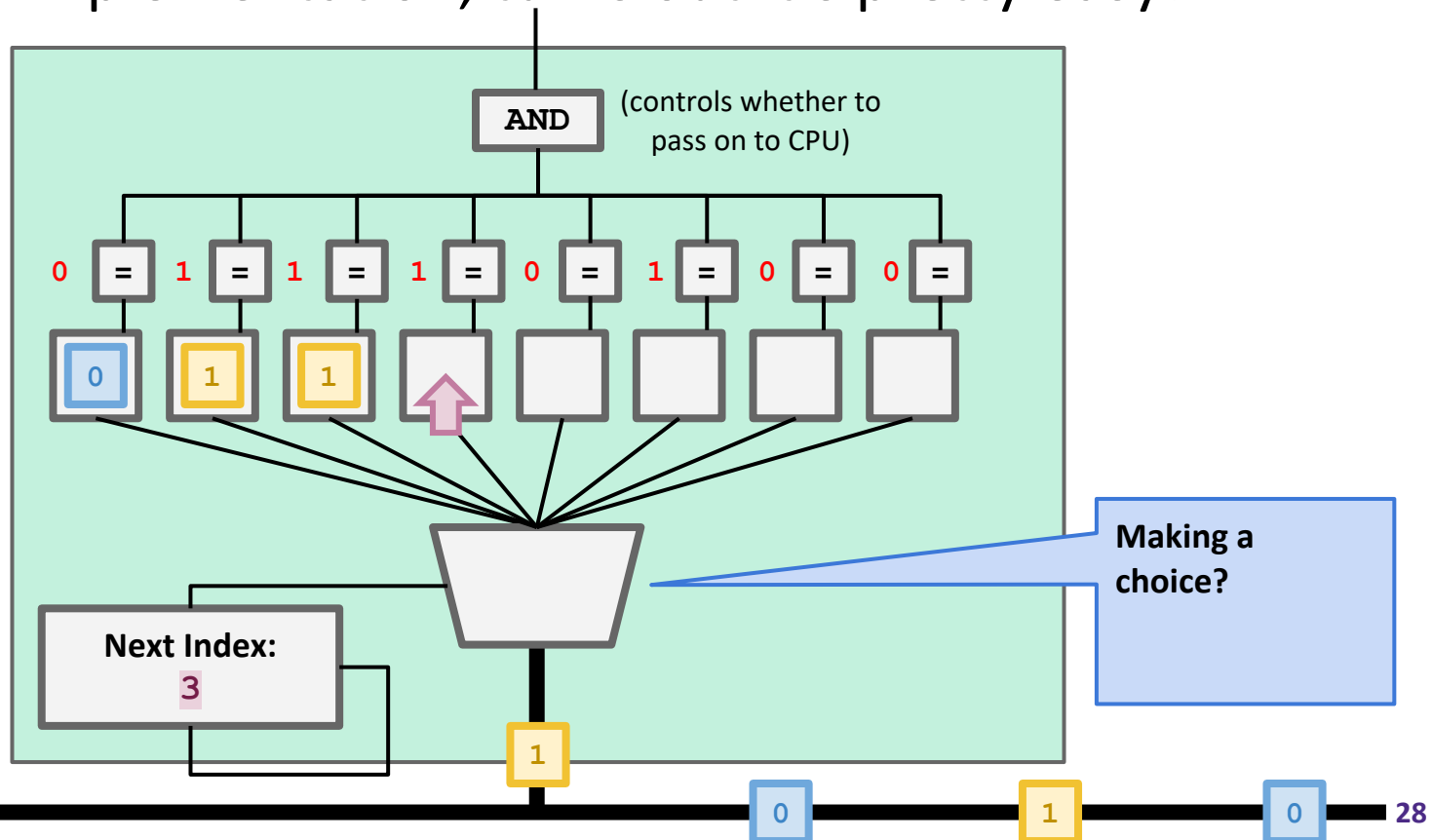
# NIC Implementation in Your Computer

- ❖ Before, would have to accept NIC as “magic”
- ❖ Now, can imagine exactly how to build this chip -- and for a simple implementation, turns out it's pretty easy!



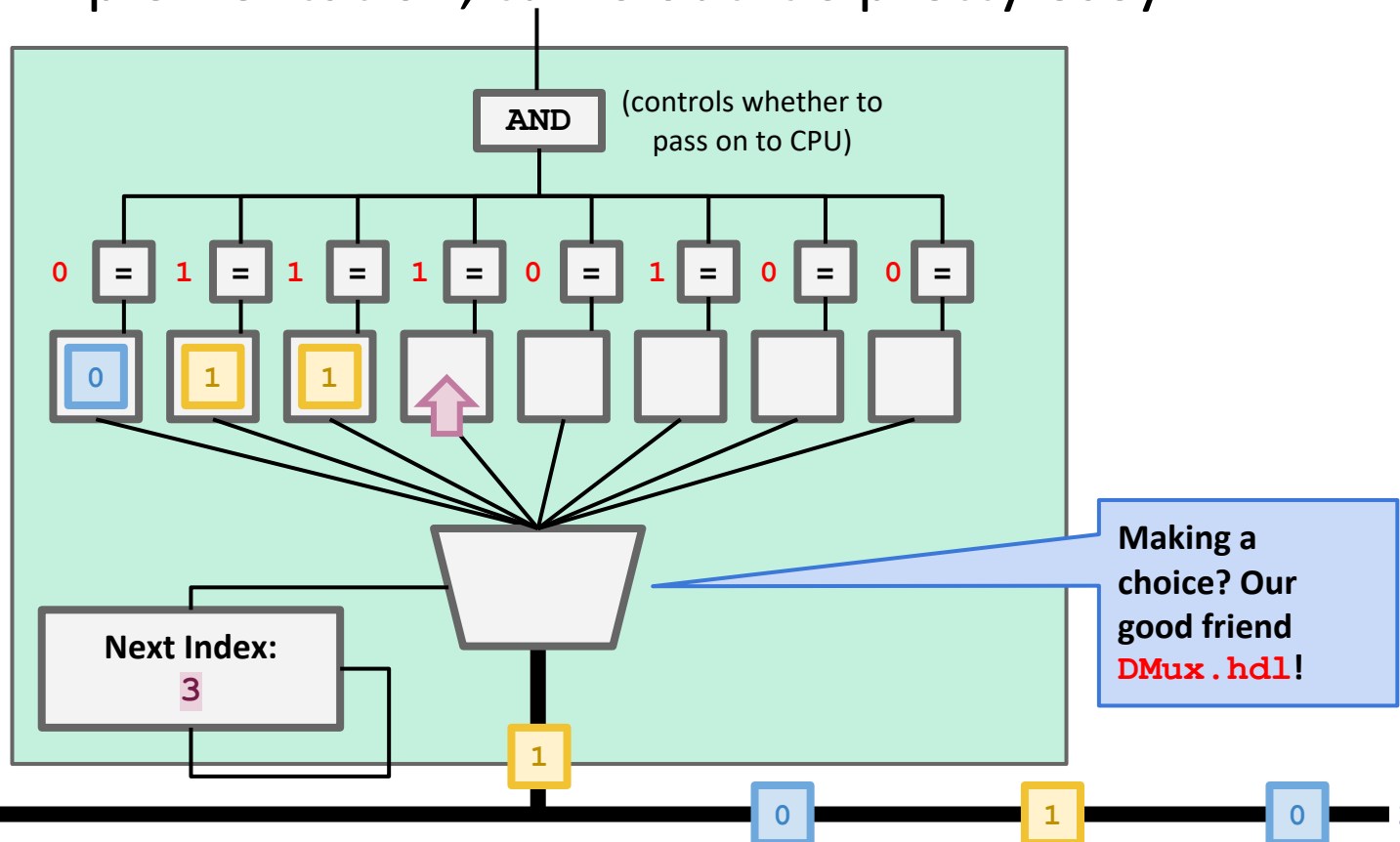
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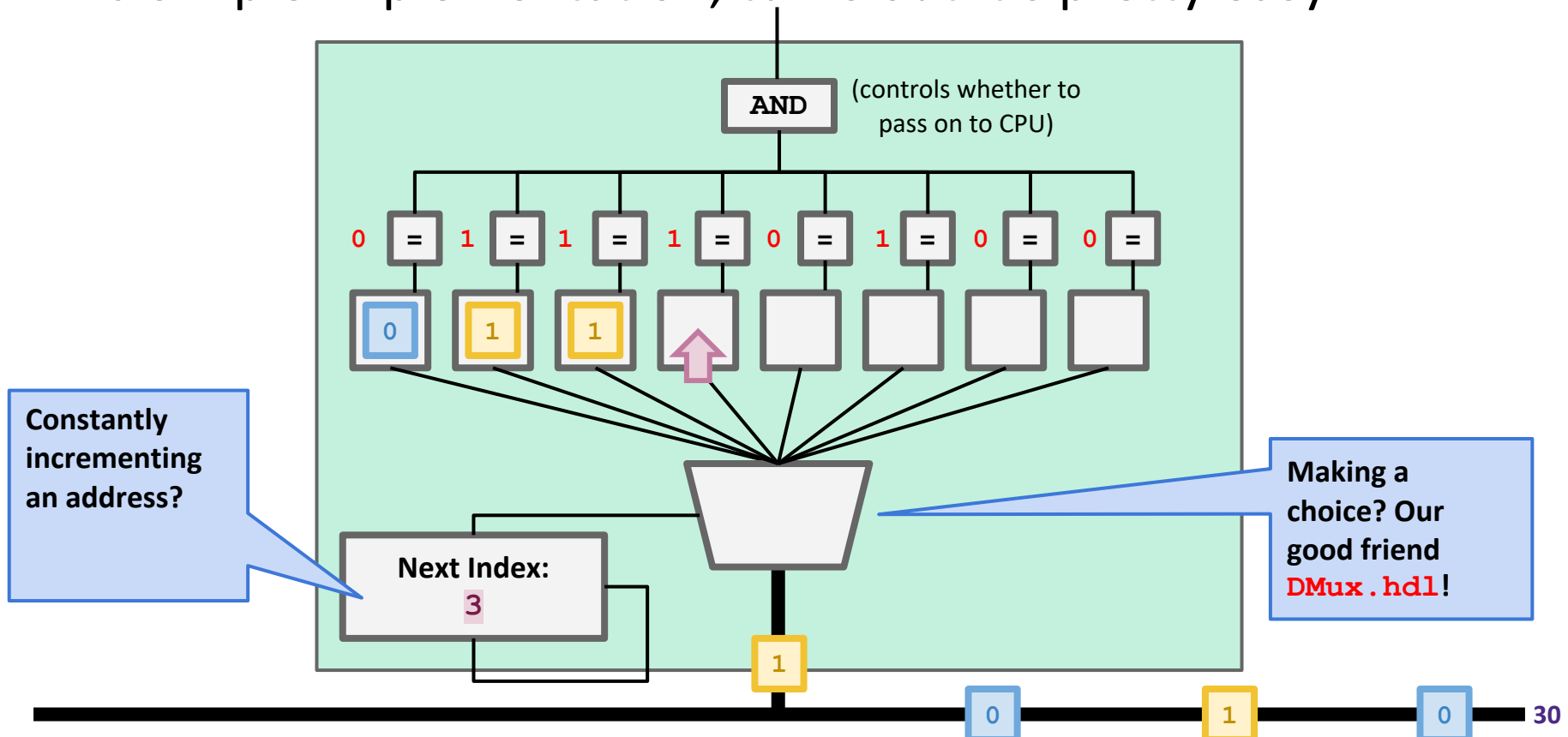
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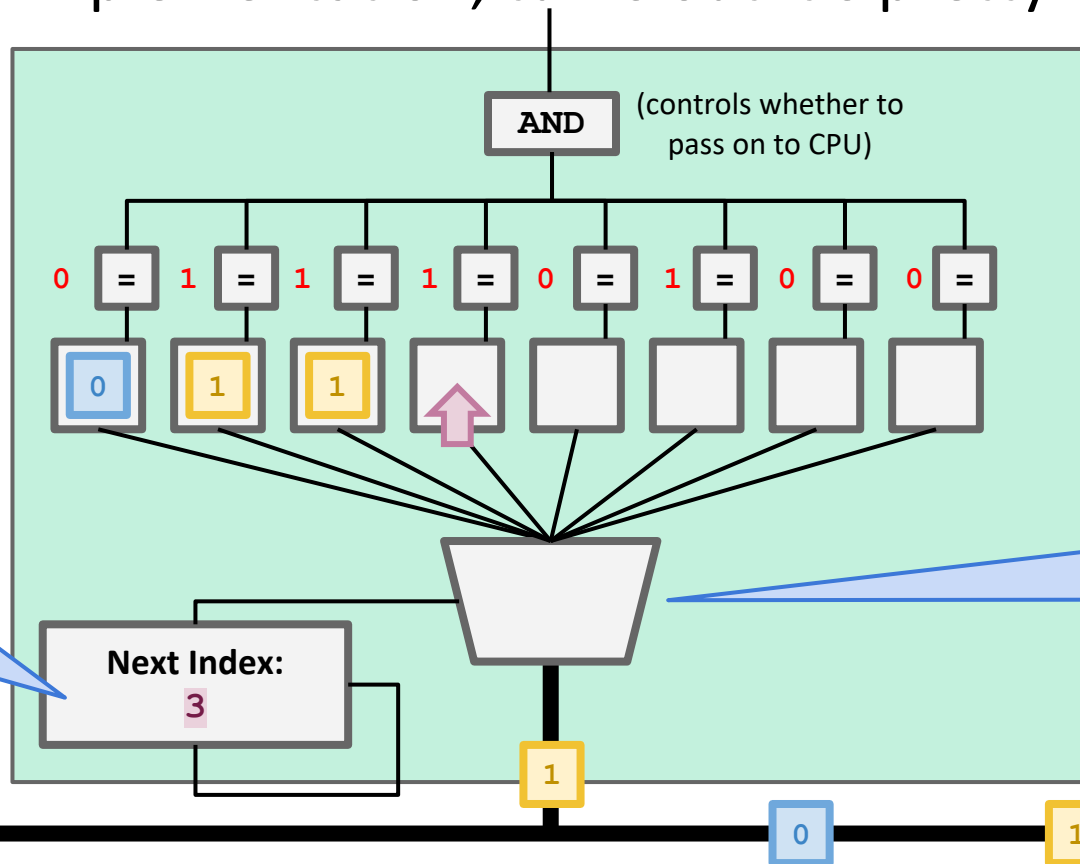
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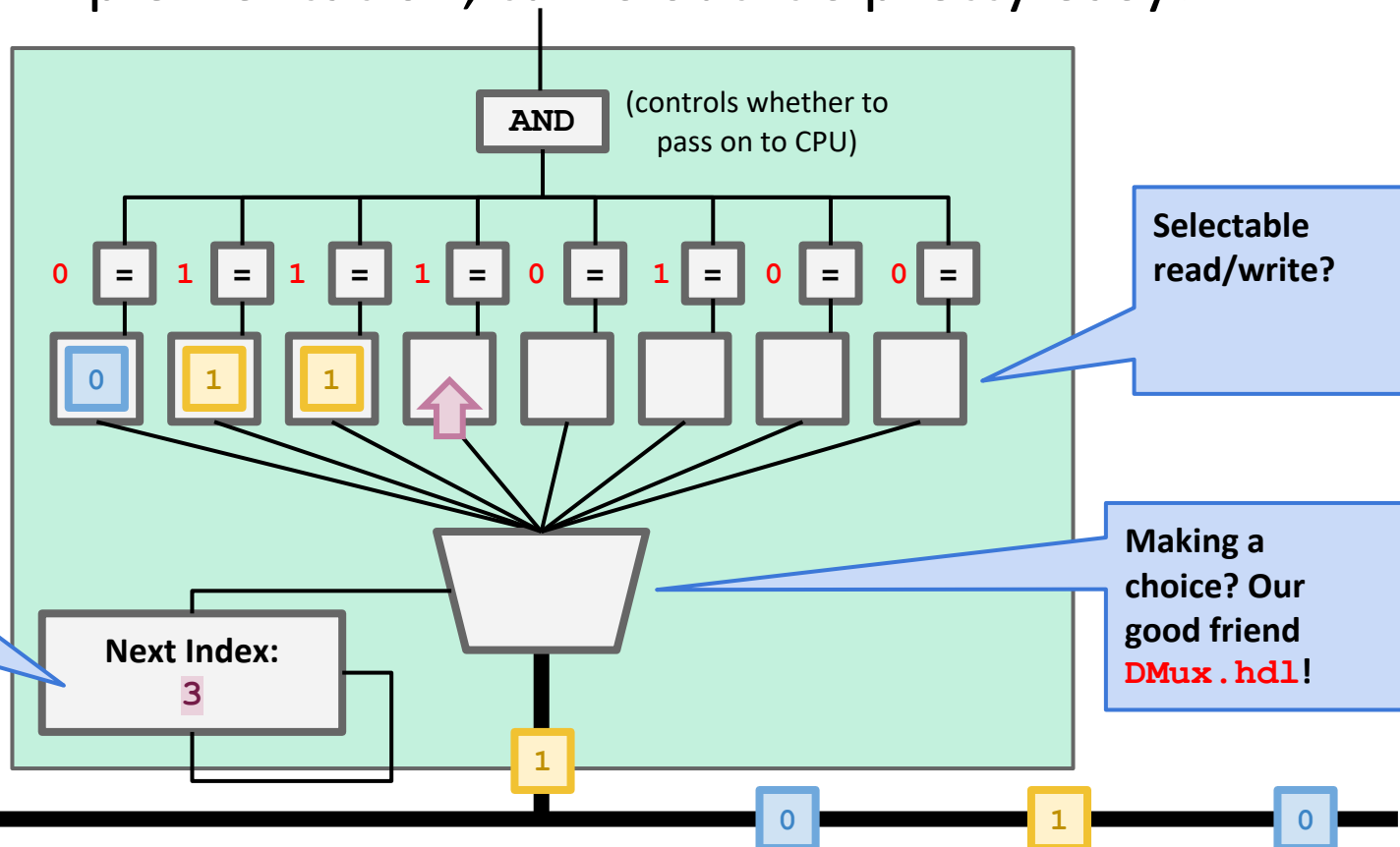


Constantly incrementing an address? Sounds like `PC.hdl!`

Making a choice? Our good friend `DMux.hdl!`

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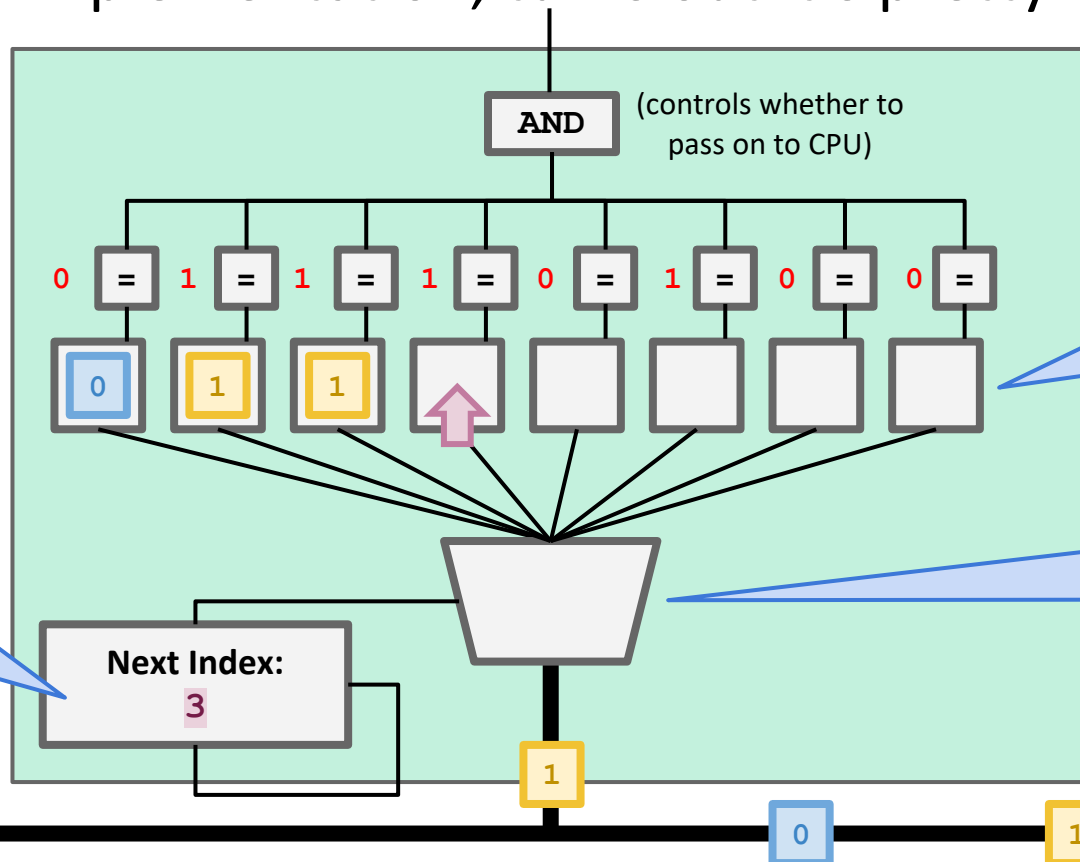
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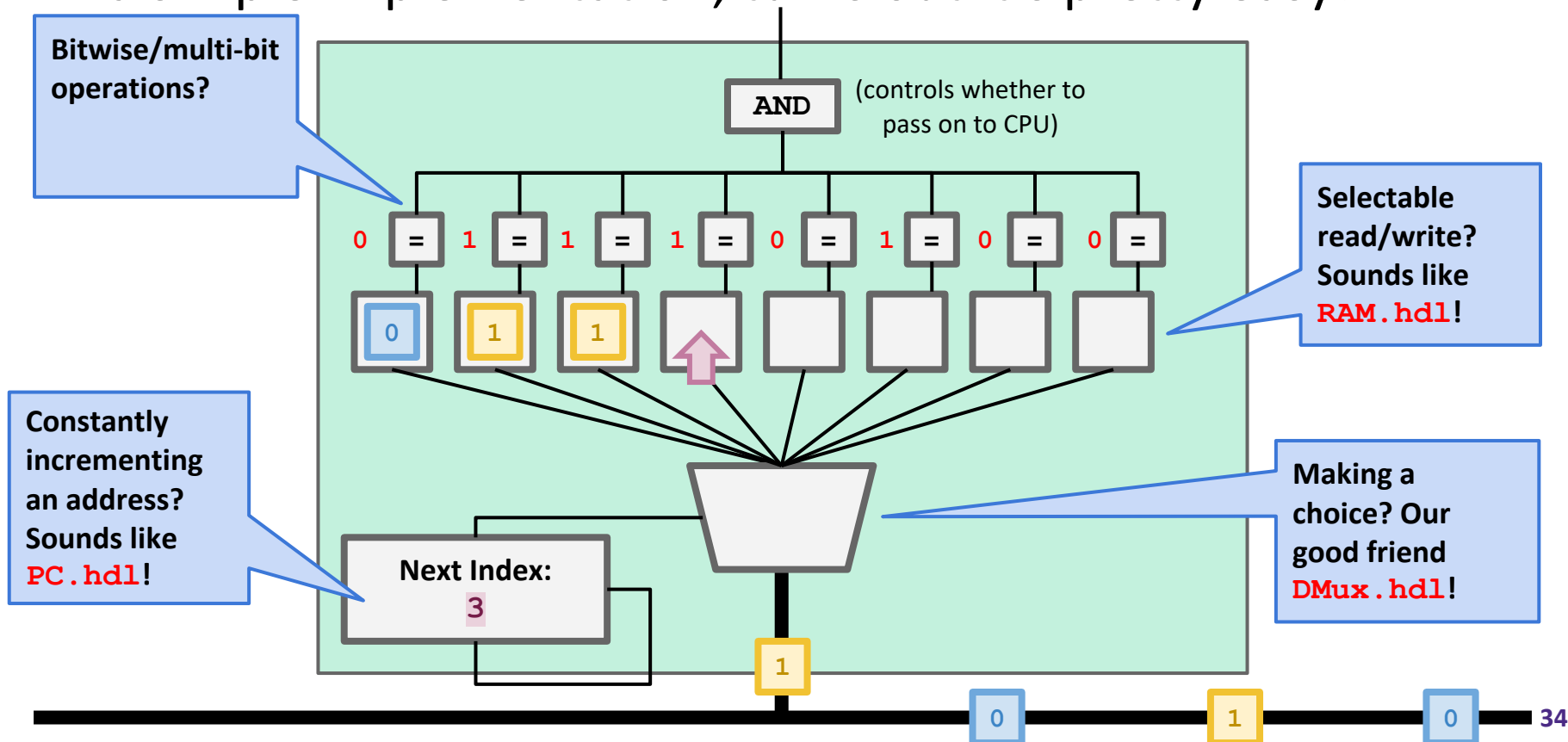
Constantly incrementing an address?  
Sounds like **PC.hdl!**

Selectable read/write?  
Sounds like **RAM.hdl!**

Making a choice? Our good friend **DMux.hdl!**

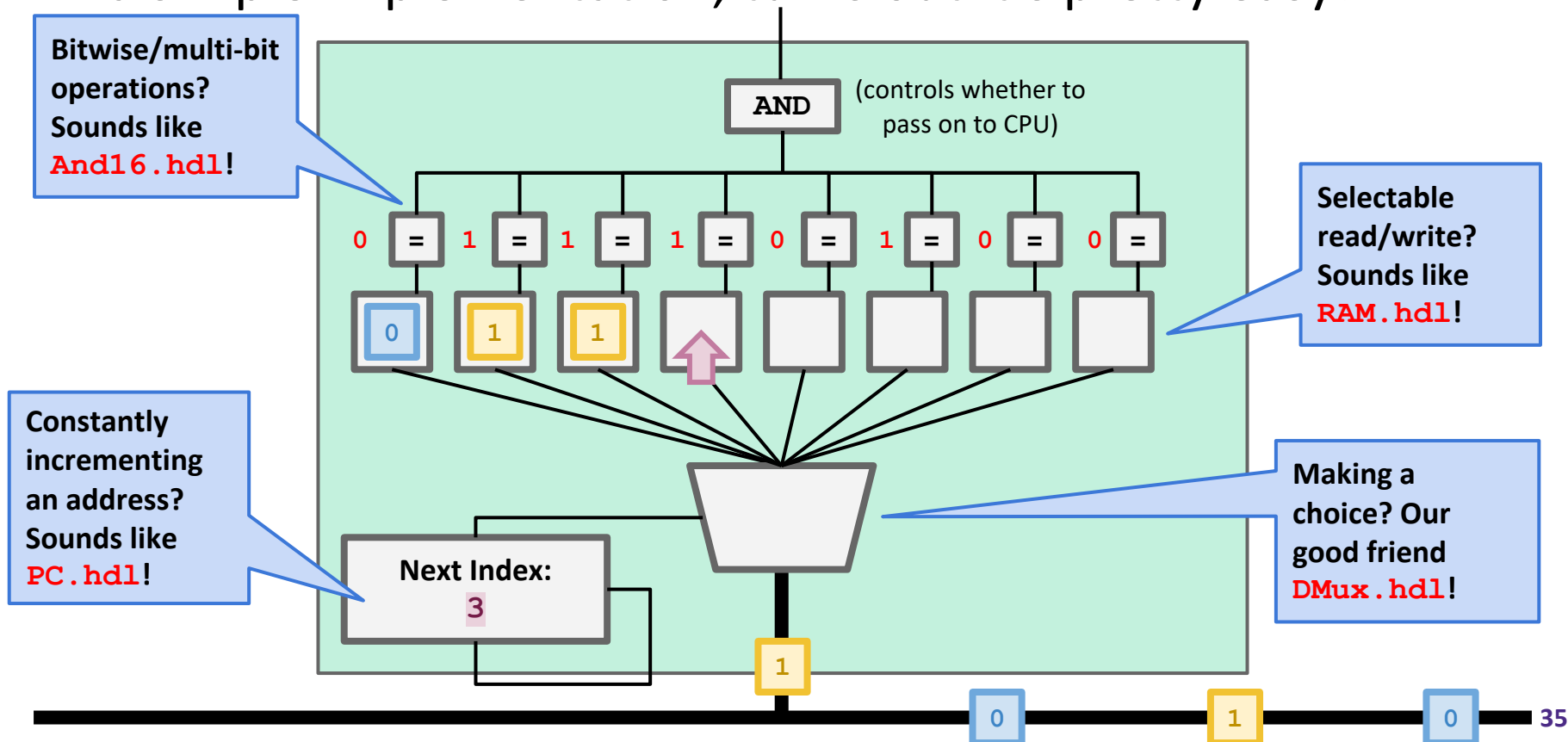
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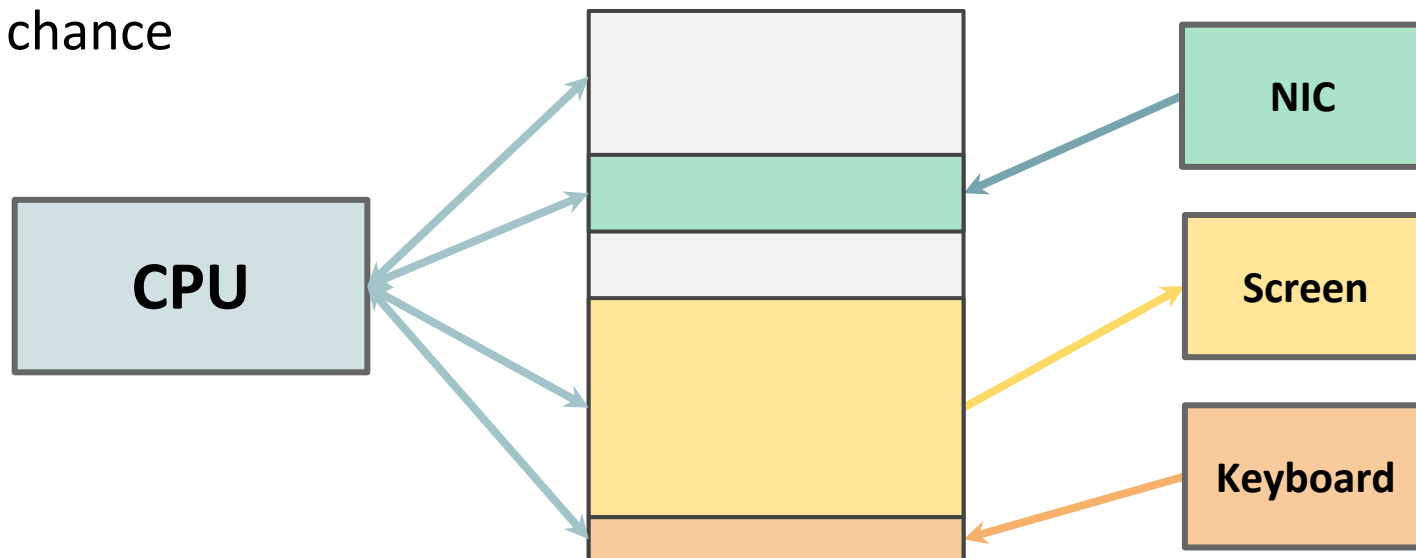
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# Connecting NIC to Memory

- ❖ The keyboard and screen communicated with the CPU via memory maps -- agreed-upon regions of RAM that can be read/written by the hardware of the devices themselves
- ❖ NIC could be no different!
  - Every time the right address is detected, copy the following data into part of RAM where the CPU can retrieve it once it gets a chance



# Takeaways: Networking

- ❖ The network is fundamentally the same hardware we've been looking at
- ❖ Its incredible power comes from scale: How much data and how many computers it connects
  - To manage this complexity, we think of it in layers
- ❖ Interfacing with the network can be done with specialized hardware
  - This frees the CPU from monitoring constantly; can access data only when needed

# Post-Lecture 18 Reminders

## ❖ What's in store for Week 10?

- Final Project Check-in
- Final Week of lectures

## ❖ Reminders

- Project 6 Part II: Professor Meeting Report due tonight (3/3) 11:59pm PST
- Project 7 due next Tuesday (3/8) 11:59pm PST
- Final Project Part I: Project Outline due next Tuesday (3/8) 11:59pm PST
- TAs will be talking to you about your last 1:1 session

## ❖ We're almost at Week 10! Finish strong!