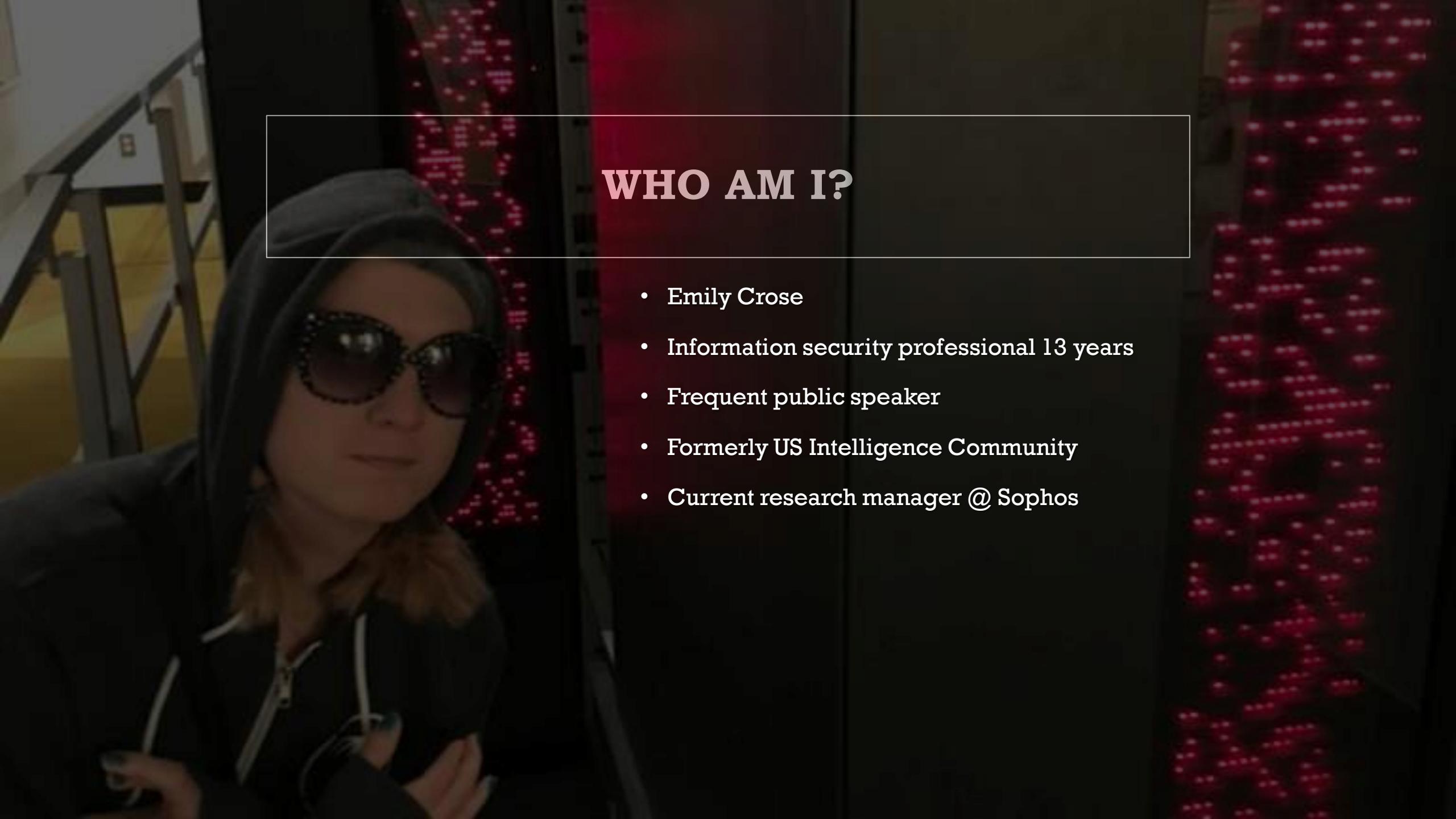


INTRODUCTION TO SOFTWARE BUSINESS PRODUCT MANAGEMENT

Emily Crose

For

Oakland university

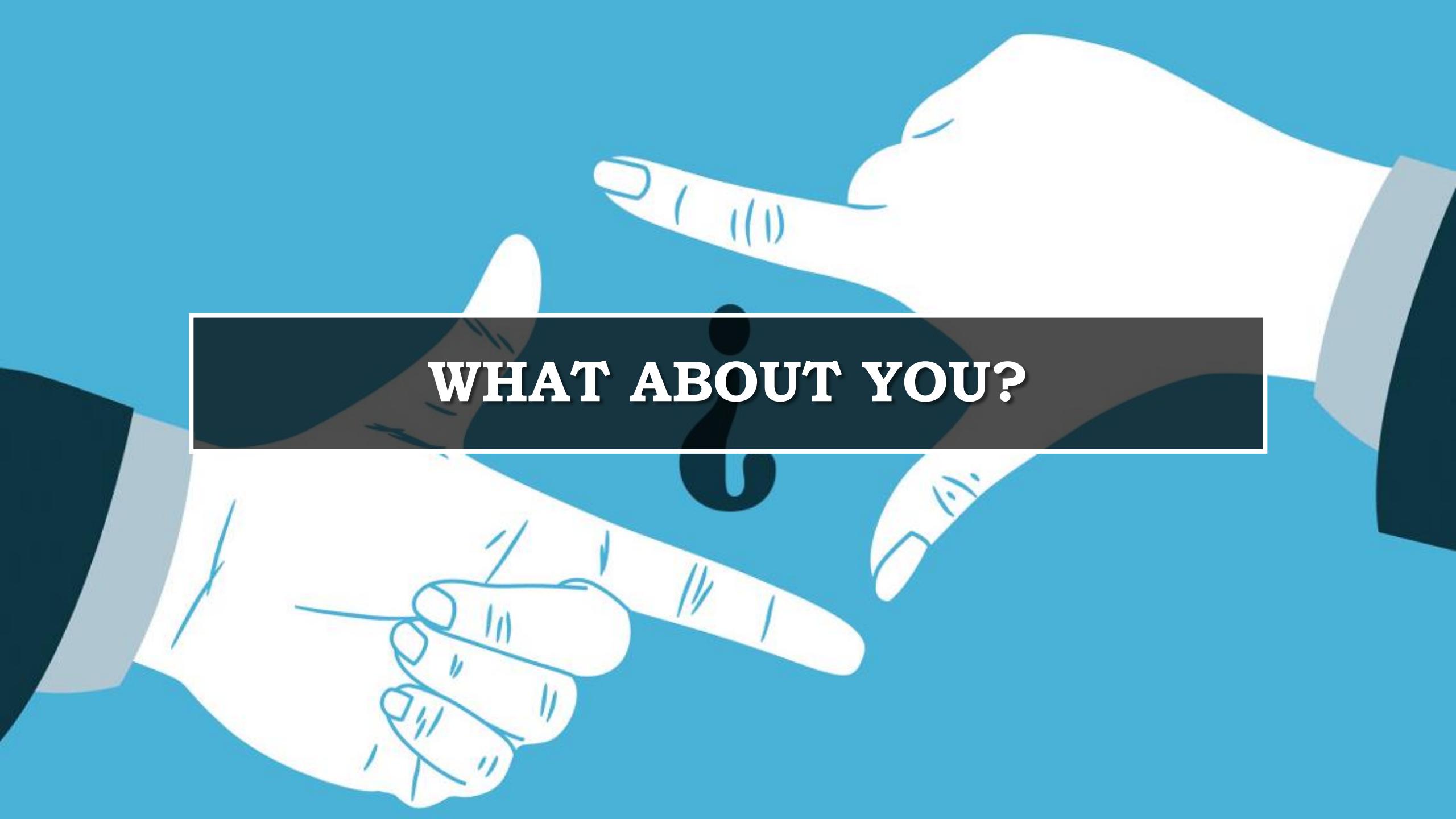


WHO AM I?

- Emily Crose
- Information security professional 13 years
- Frequent public speaker
- Formerly US Intelligence Community
- Current research manager @ Sophos

CONTACT INFO

ecrose@oakland.edu



WHAT ABOUT YOU?

WHEN WE MEET

- Meet three times/week
- 3 hours/day
- 5 weeks
- Tuesdays, Wednesdays & Thursdays
 - 7AM Eastern – 10AM Eastern

TOOLS WE WILL USE

- Moodle
 - Class materials
- Github
 - Code repositories
 - Change management
- Jira
 - ticketing
- Confluence
 - For wikis
- More?



COURSE OVERVIEW

What will we be talking about in this course?

What do you want to learn?

MATERIAL OVERVIEW



**Understanding
modern software**

How it works

How it is maintained



**The Software
Development Life
Cycle (SDLC)**



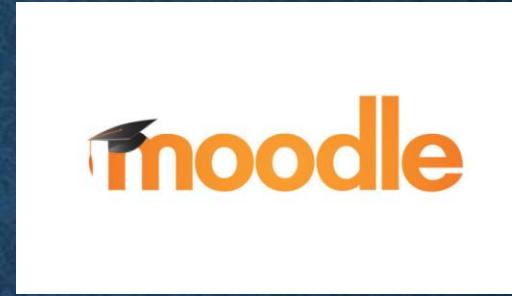
**Tools for managing
software
development**



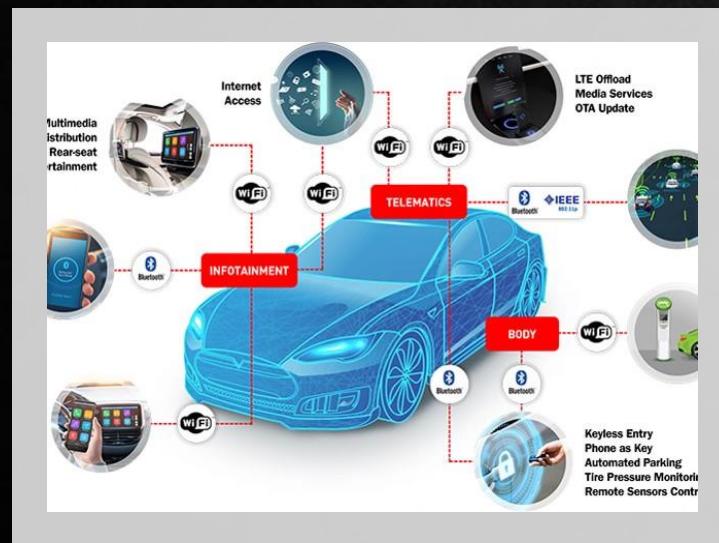
**Management
techniques for
maintaining
codebases**



**Standards that apply
to these topics**

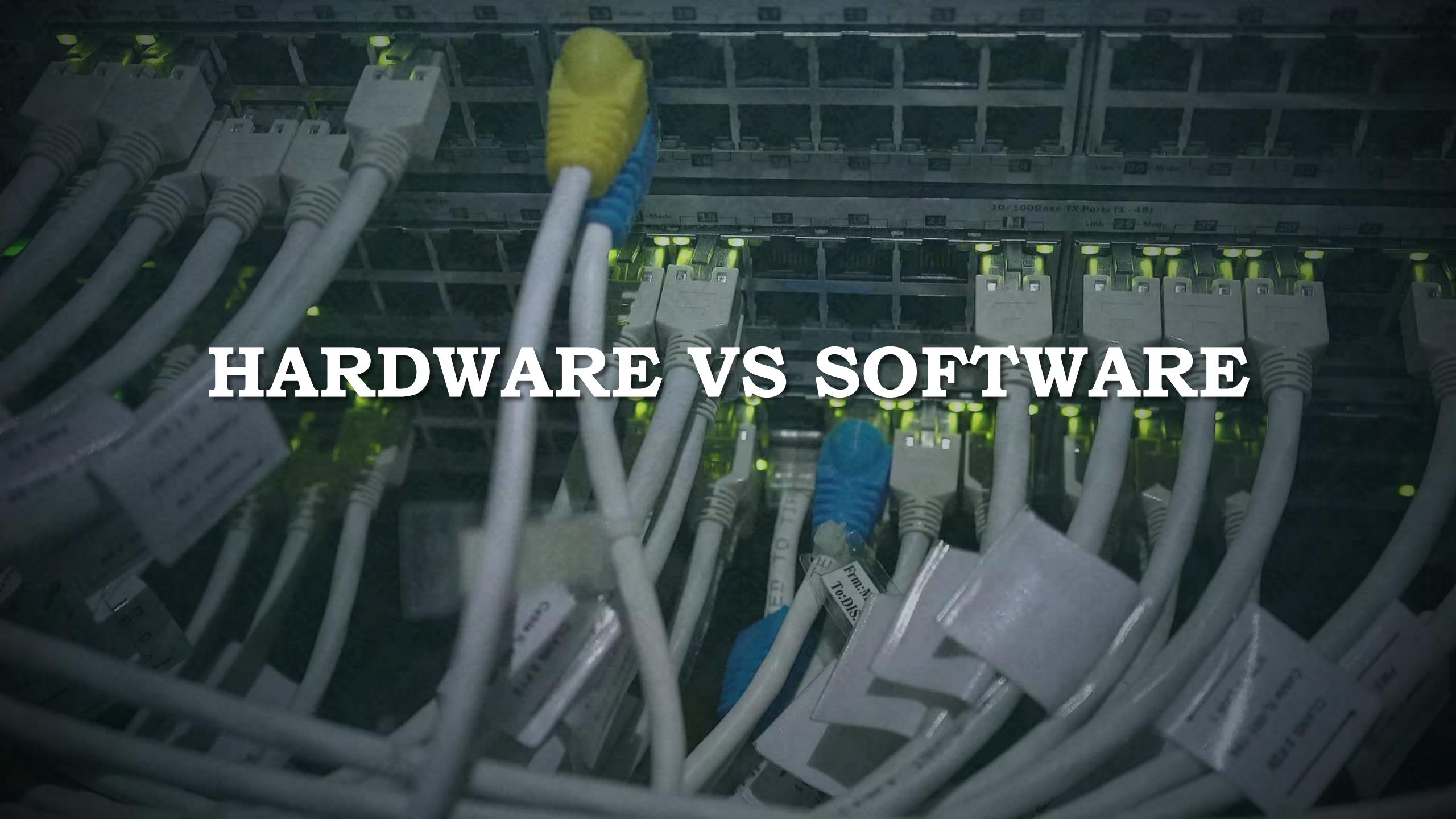


SOFTWARE WE CAN SEE



HIDDEN SOFTWARE

HARDWARE VS SOFTWARE

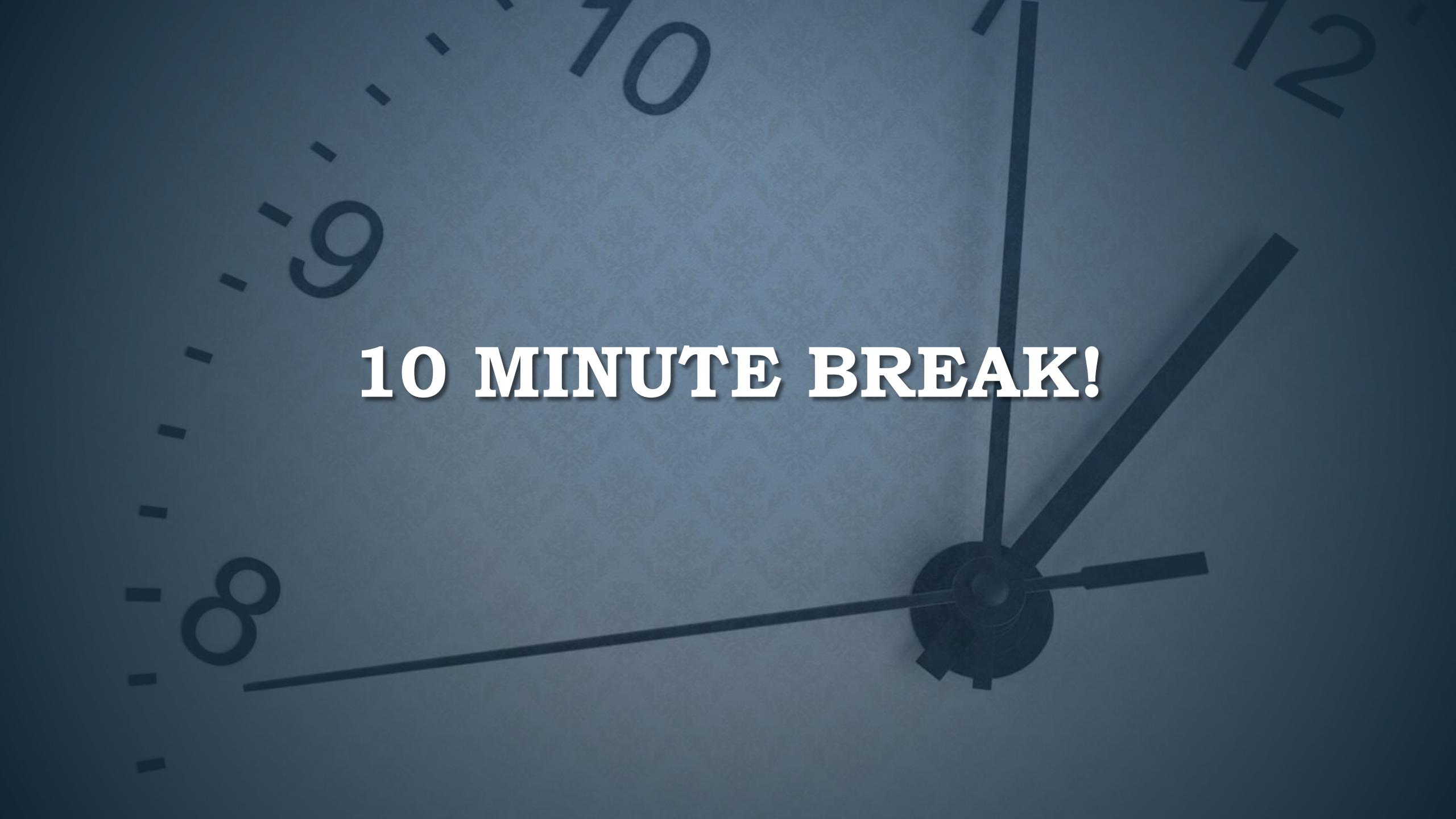


HARDWARE COMPONENTS

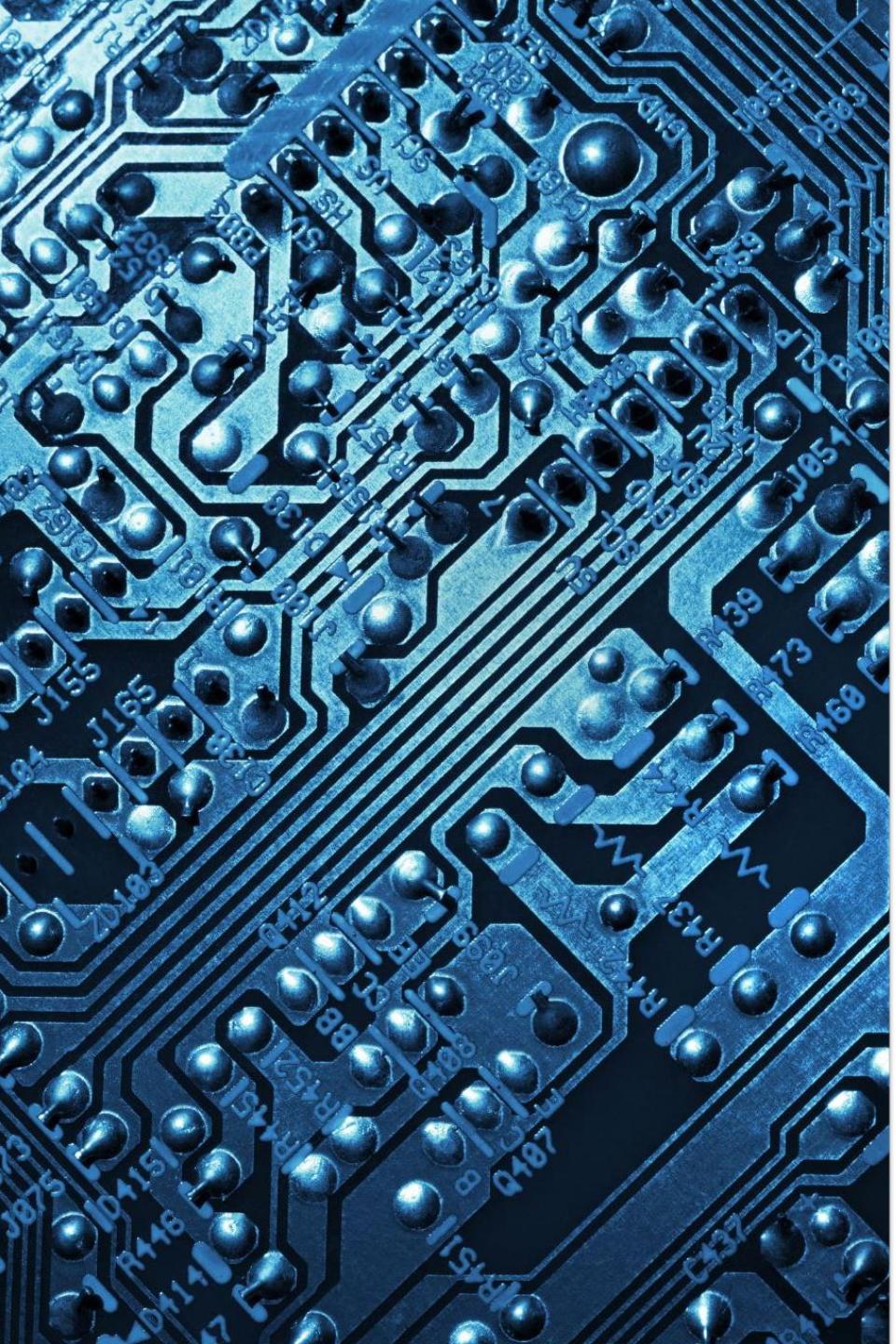
- Central Processing Unit (CPU)
- Graphics Processing Unit (GPU)
- Random Access Memory (RAM)
- I/O devices
 - Keyboard
 - Mouse
 - VR Headset

HARDWARE COMPONENTS CONT'

- Sensors
 - Temperature
 - Pressure
 - gyroscope



10 MINUTE BREAK!



PURPOSE OF HARDWARE

- The physical half of computing (As opposed to logical)
- Does physical calculations
- Produces signals which are interpreted by software

PURPOSE OF SOFTWARE

- Provides interface between hardware and the user
- Software provides a “logical” layer of interpretation

```
mirror_mod = modifier_obj
# set mirror object to mirror
mirror_mod.mirror_object

if operation == "MIRROR_X":
    mirror_mod.use_x = True
    mirror_mod.use_y = False
    mirror_mod.use_z = False
elif operation == "MIRROR_Y":
    mirror_mod.use_x = False
    mirror_mod.use_y = True
    mirror_mod.use_z = False
elif operation == "MIRROR_Z":
    mirror_mod.use_x = False
    mirror_mod.use_y = False
    mirror_mod.use_z = True

# selection at the end - add
# mirror_mod.select= 1
# mirror_ob.select=1
context.scene.objects.active = eval("Selected" + str(modifier))
mirror_ob.select = 0
bpy.context.selected_objects.append(mirror_ob)
data.objects[one.name].select = 1

print("please select exactly one object")
print("press enter to continue")

# --- OPERATOR CLASSES ---
# --- OPERATOR CLASSES ---

@types.Operator:
def execute(self, context):
    if len(context.selected_objects) != 1:
        print("X mirror to the selected object.mirror_mirror_x")
        return {'FINISHED'}
    else:
        print("X")
        return {'FINISHED'}
```



MODERN SOFTWARE

OLD THINGS

- Old languages
 - Javascript
 - C
 - C++
 - Assembly
- Desktop software
- Mainframes?

OPERATING SYSTEMS

Windows

- 10
- 11
- Embedded

Mac OS

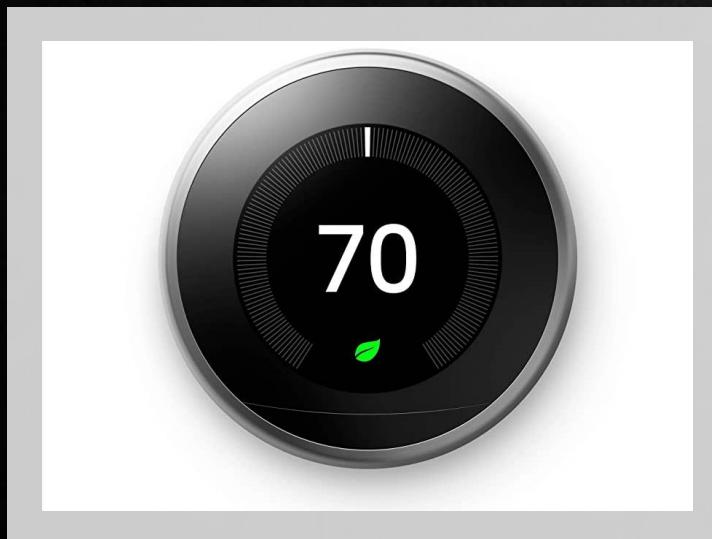
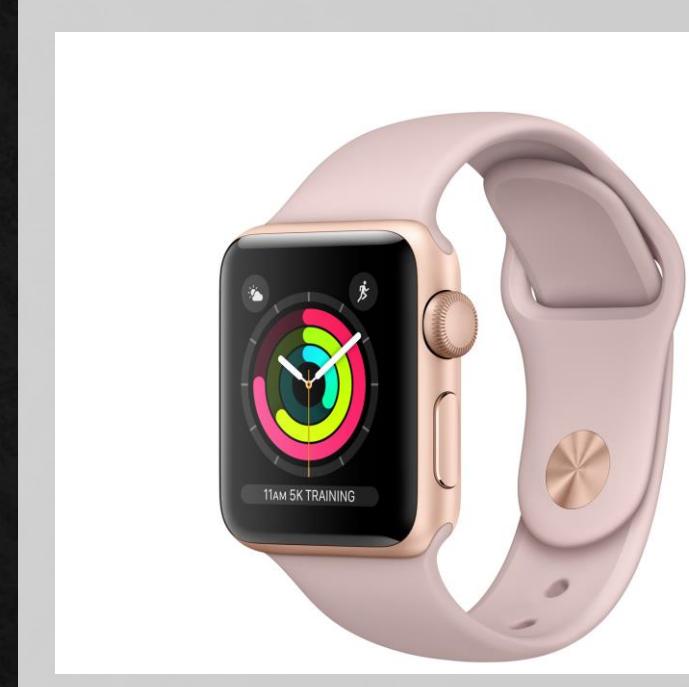
iOS

Linux

- Various flavors

NEW THINGS

- Mobile & IoT
- “THE CLOUD”
- AI programming assistance



WHAT IS MOBILE/IOT?

FACTORY TECH



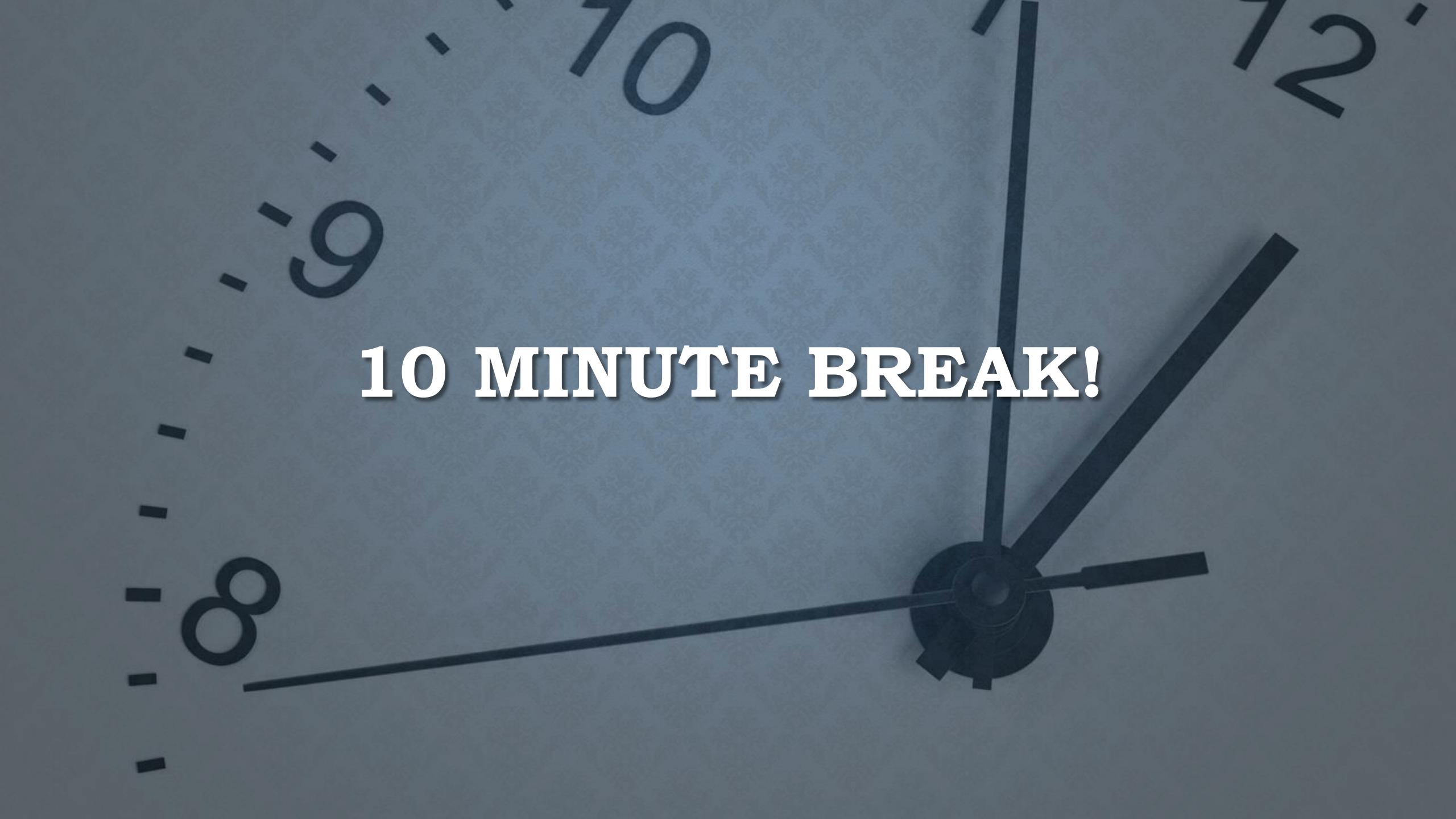
hardware + software!

WHAT IS THE CLOUD?

- Have we seen this before?

POPULAR CLOUD VENDORS

- Azure (Microsoft)
- Amazon Web Services (AWS)
- Google cloud computing
- Resellers



10 MINUTE BREAK!

SOFTWARE SNAFUS

- What can go wrong if we don't get software right?
 - Program crashes
 - System stability compromised
 - Exploitation
 - Network breach
 - Theft of IP/customer data
 - Loss of reputation
 - Risk of injury?





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23-15 EAST 14 SOUTH 3003

MORE & MORE FAILS

- “Spaghetti” code
 - Difficult to add new features
- Poor documentation/code commenting
 - “Legacy” code maintenance

IMPORTANT TERMINOLOGY

HARDWARE TERMINOLOGY

- CPU/processor
 - Architecture
- Server
- Infrastructure

SOFTWARE TERMINOLOGY

- Programming/coding
- Updates vs. Upgrades
- Code commenting
- Parsing
- Execution
- Environment
- Application Programming Interface (API)

SECURITY TERMINOLOGY

- Vulnerability
- Exploit
- Payload



QUESTIONS?

DAY 1 REVIEW

DAY 2 PREVIEW