07

Free Online Course

Web Application Programming 101

Basic

HTML

CSS

JS

Topics

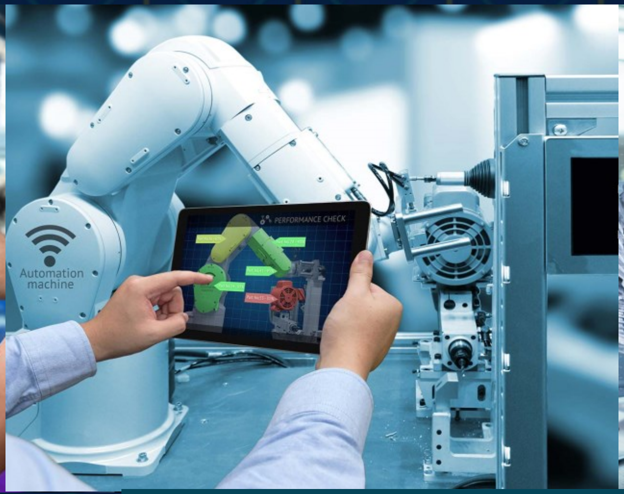
1. Industry 4.0, Virtual Reality, Cyber-Physical System, and Digital Twin

2. VR, CPS and DT DEMOs

3. Virtual World/Machine Interfacing

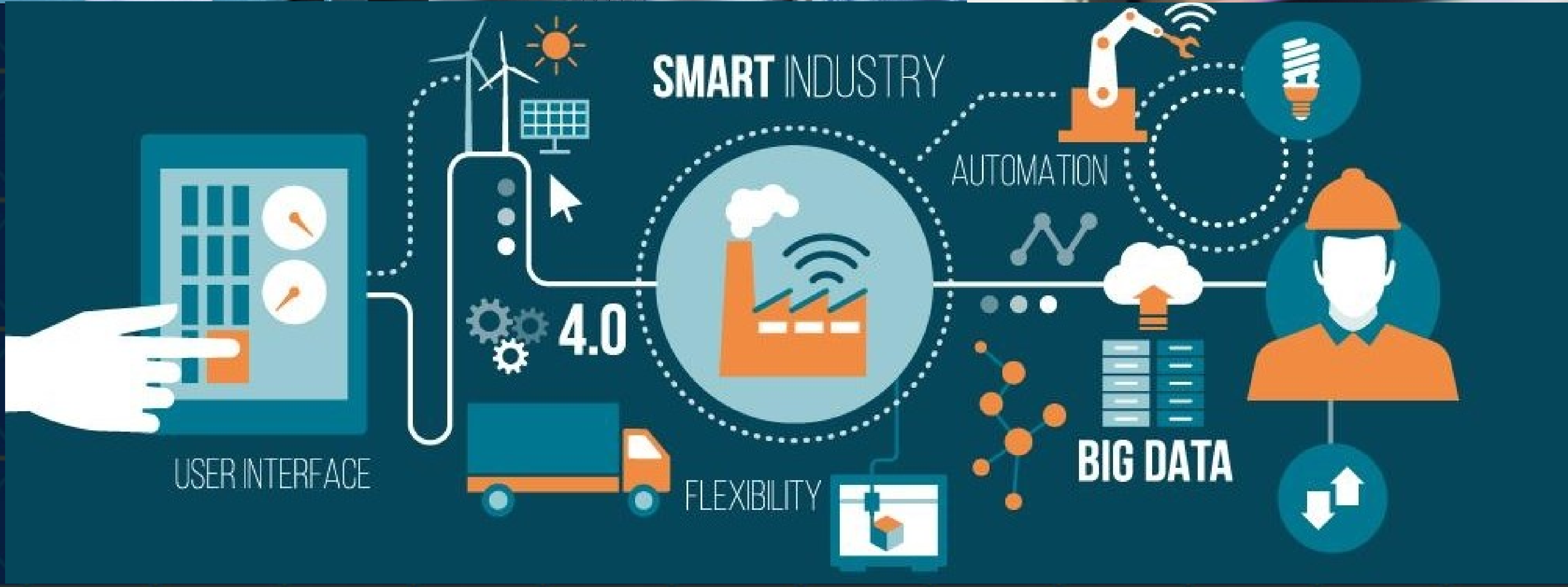
Programming Practice

Industry 4.0


Automation machine
PERFORMANCE CHECK


100%
3D PRINTING COMPLETE
LAYERS


INDUSTRY
4.0


SMART INDUSTRY
AUTOMATION
4.0
USER INTERFACE
FLEXIBILITY
BIG DATA

Industry 4.0

Industrial Revolution

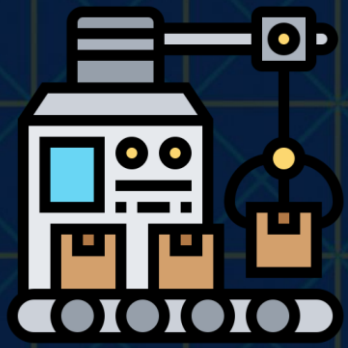
1784
Industry 1.0

Mechanization
Stream power
Weaving loom

1870
Industry 2.0

Electrical energy
Assembly line
Mass production

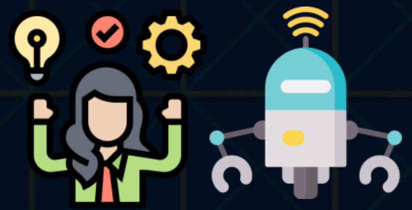
1969
Industry 3.0



Robot & Automation
Digital & Electronic
Microprocessor and Computer

TODAY (YESTERDAY?)
Industry 4.0

Internet-of-Things
Cyber physical systems
Artificial intelligence
New technologies integration

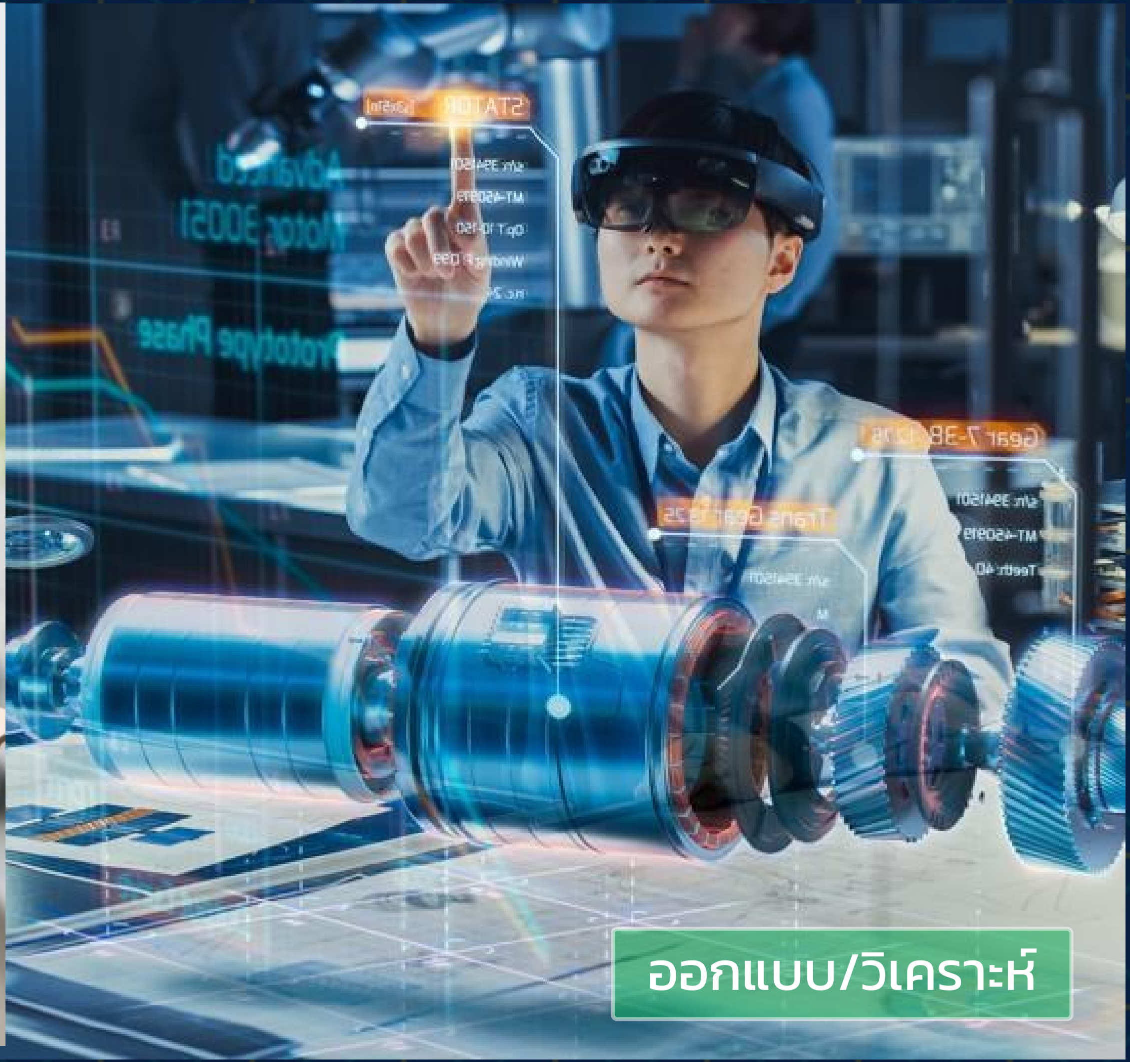


5.0
Human creativity and smart technologies will become a decisive force in 2035.

Virtual Reality (VR)

- Virtual Reality (VR) is an immersive experience also called a computer-simulated reality.
- It refers to computer technologies using reality headsets to generate the realistic sounds, images and other sensations that replicate a real environment or create an imaginary world.
- VR is a way to immerse users in an entirely virtual world.

Virtual Reality (VR)



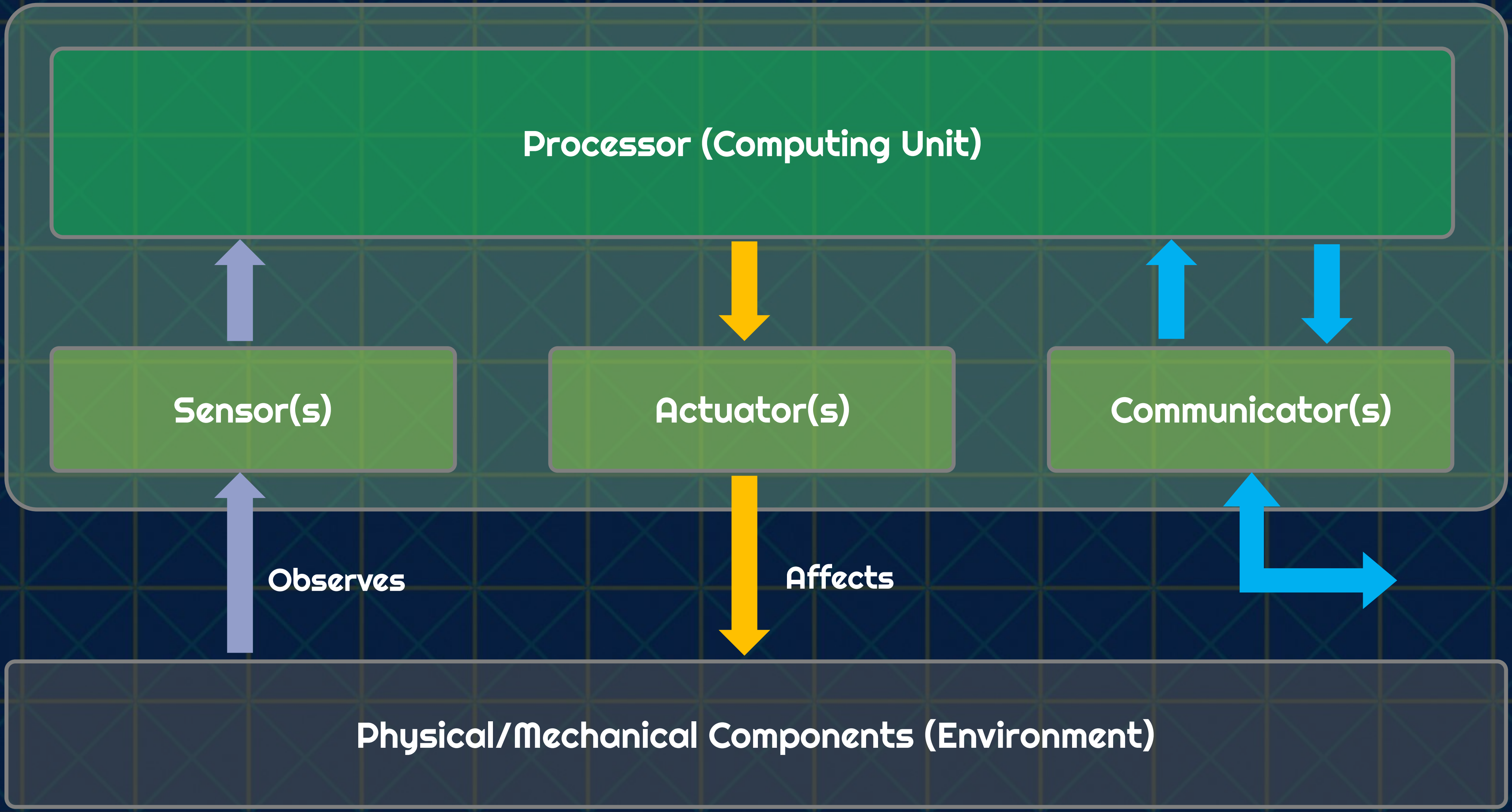
Virtual Reality (VR)

Furniture Showroom

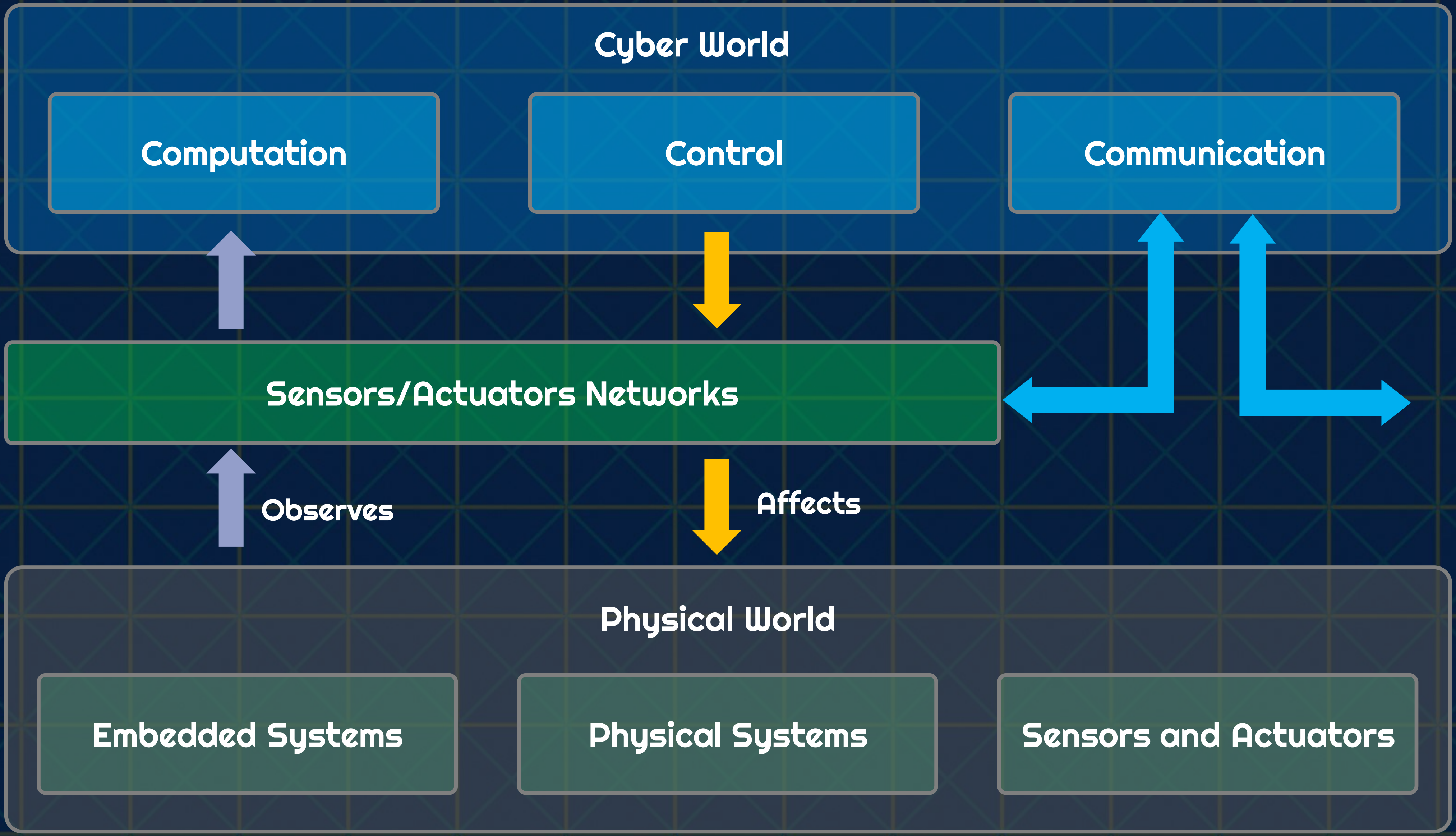
Car Showroom

Augmented Reality (AR)

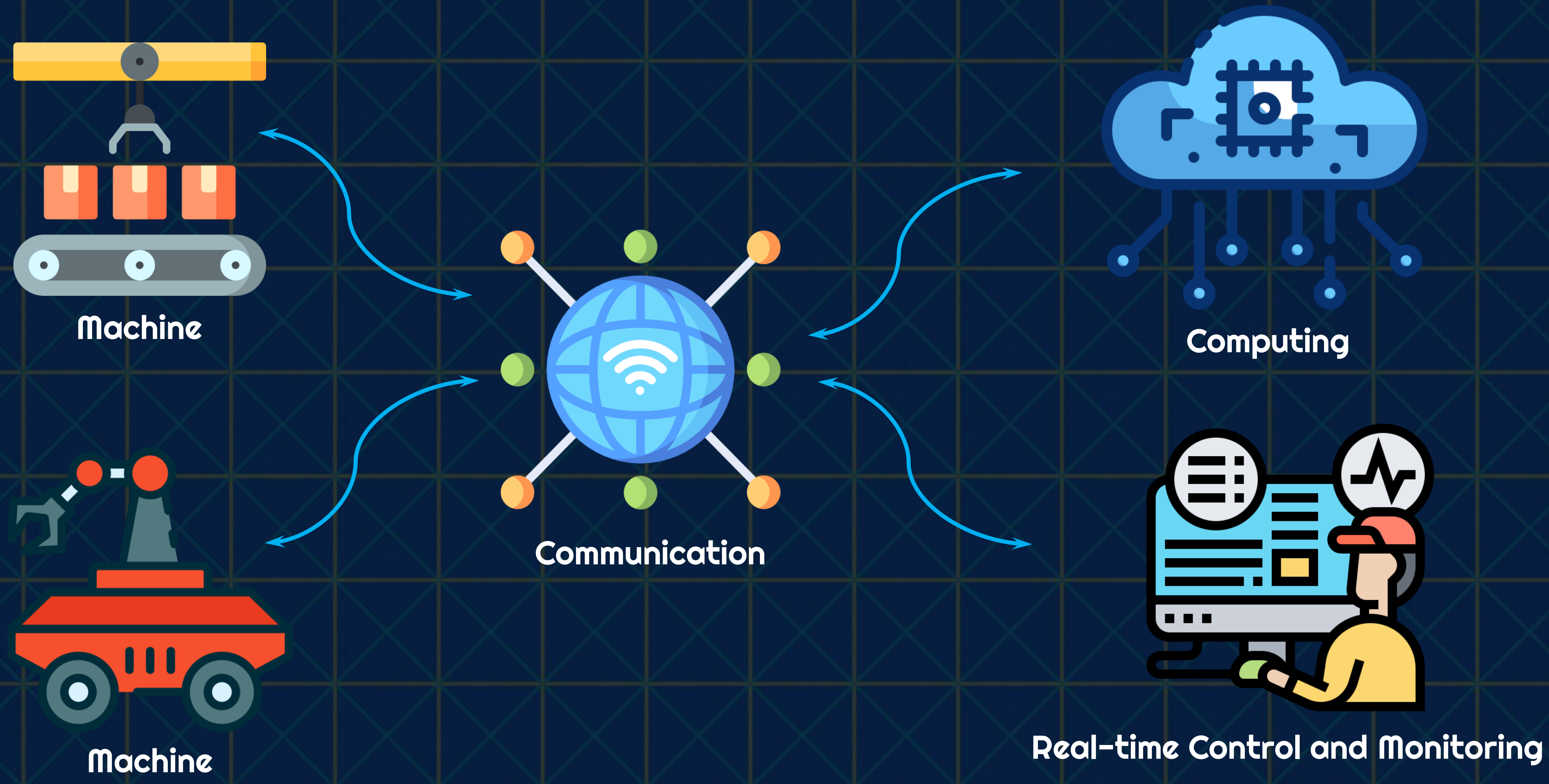
Cyber-Physical System (CPS)



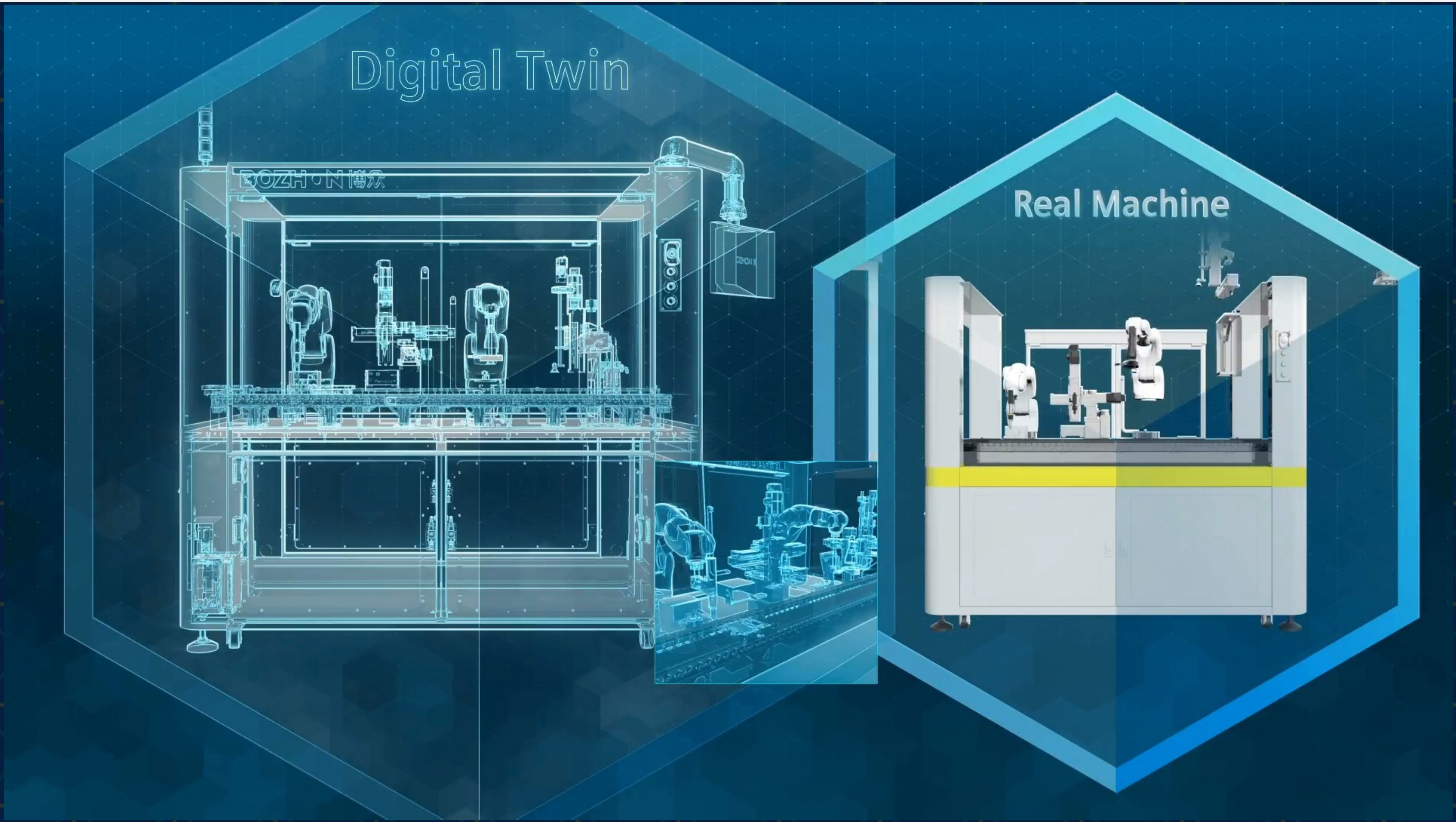
Cyber-Physical System (CPS)



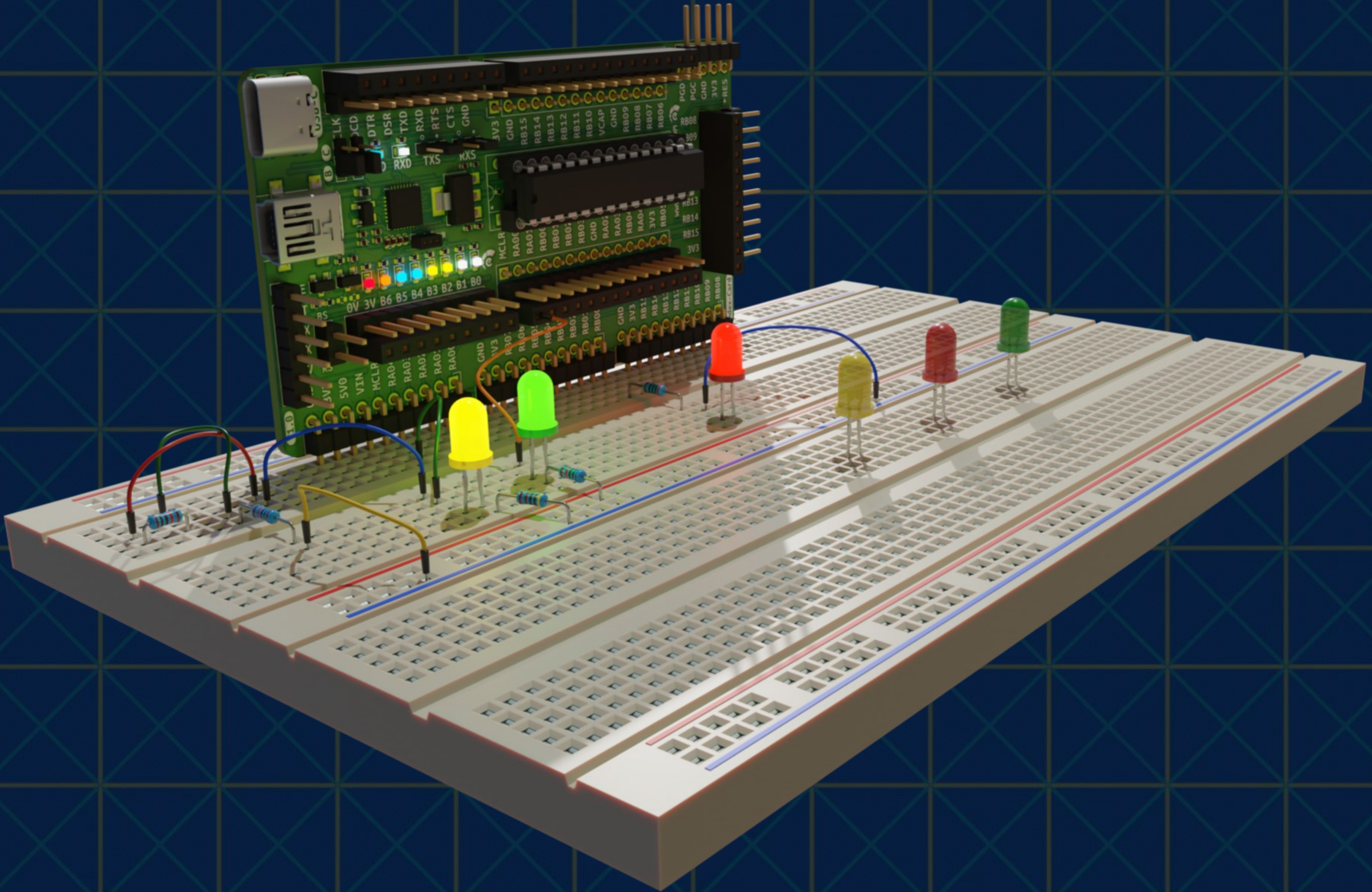
Cyber-Physical System (CPS)



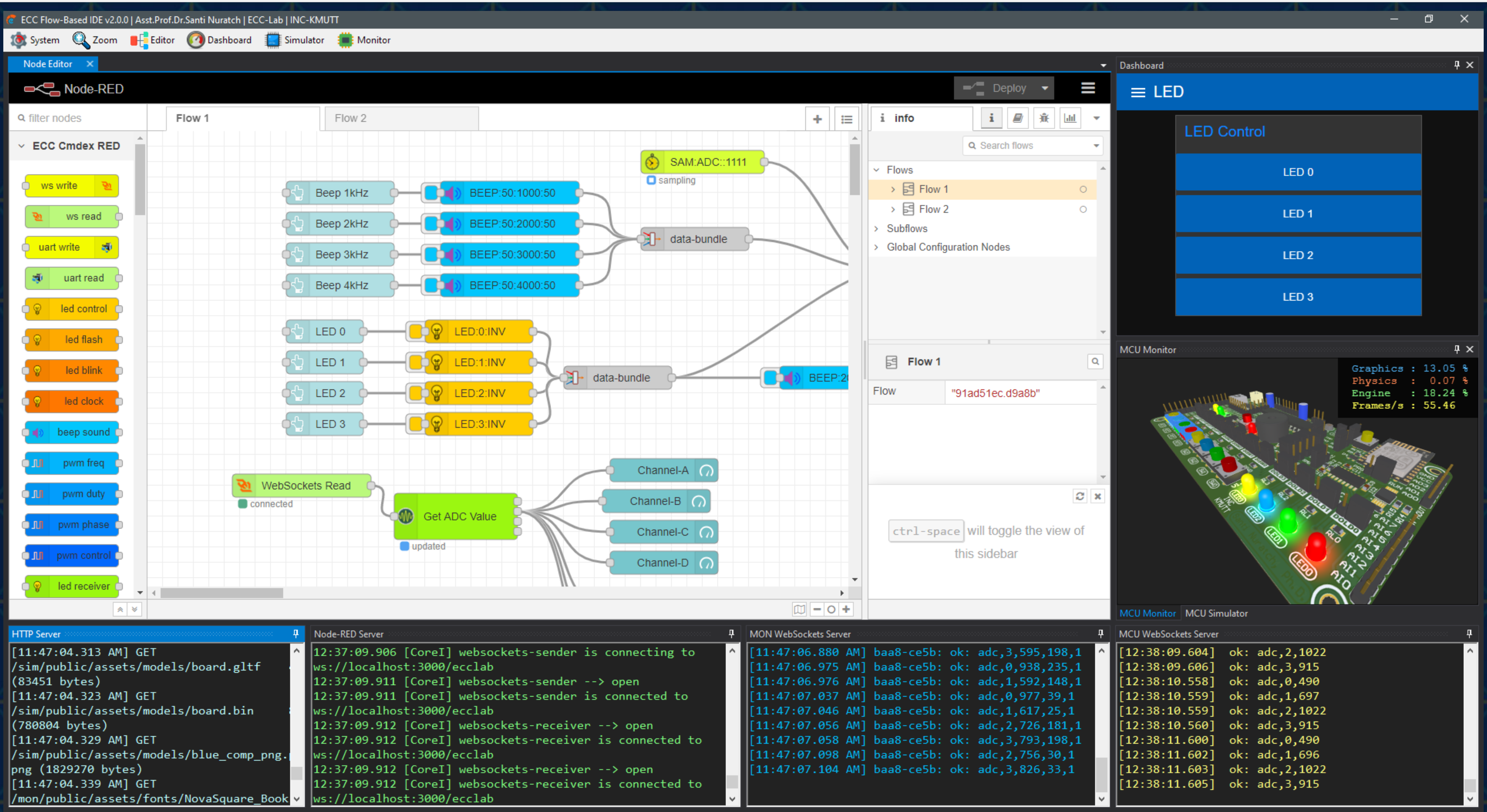
Digital Twin (DT)



Digital Twin (DT) for Electronics and Embedded Systems

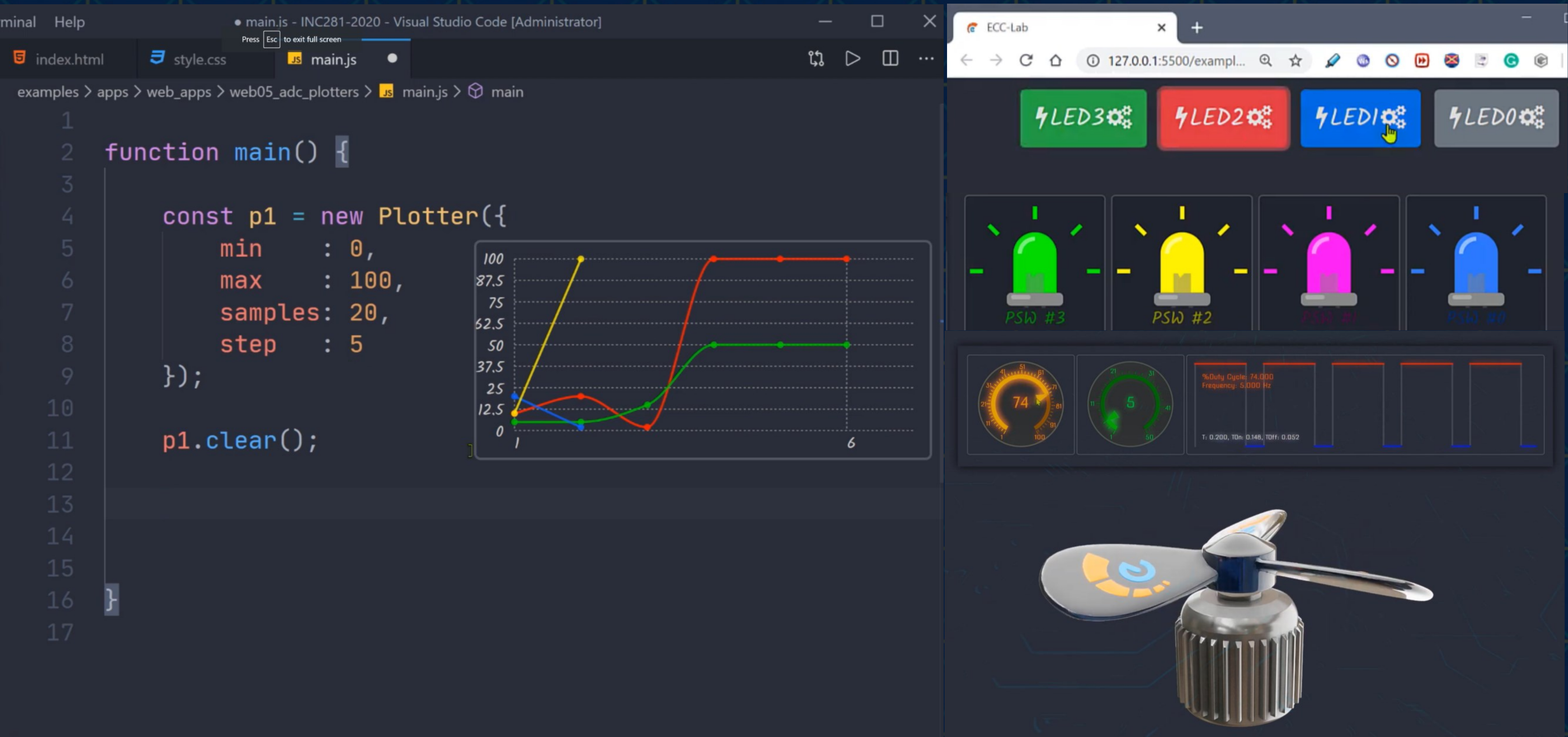


Node-RED and Digital Twin

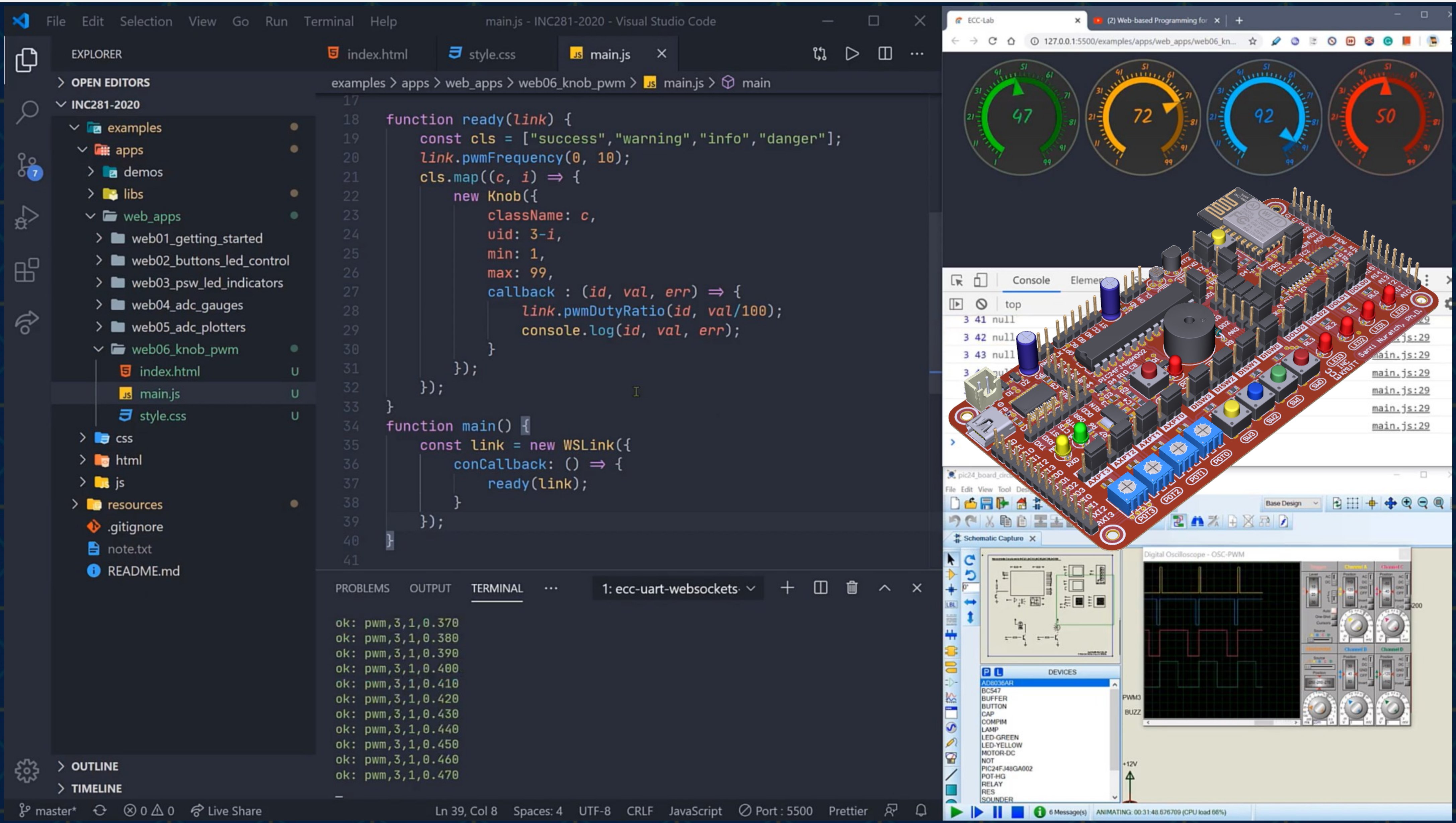


https://www.youtube.com/playlist?list=PLBPFpqyTjzeW4XQpMCFQiOmvrtYeh-2IIH

Web-based For IoT/IIoT



Web Browser and Microcontroller Interfacing



Let's Code