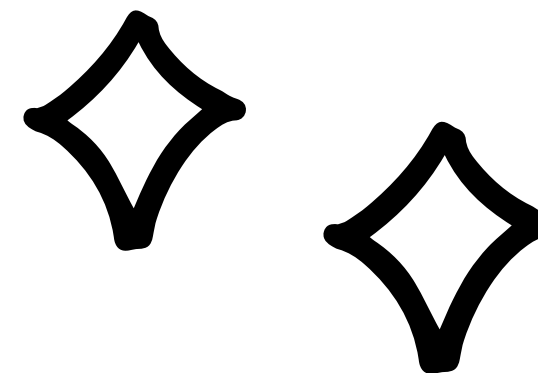
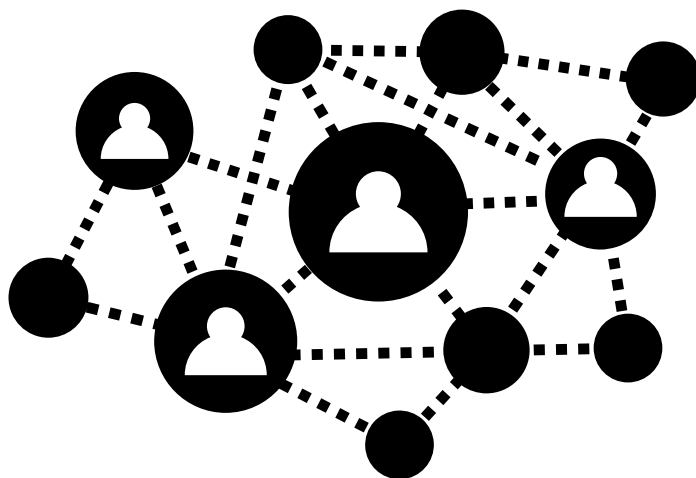


INTRO TO

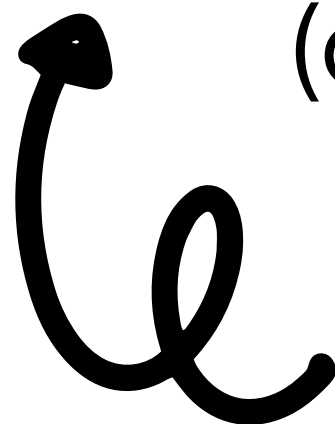
NETWORKING

Proyecto Realizado por Pau Ripoll



WHAT IS A COMPUTER NETWORK?

A collection of interconnected devices,
(computers, servers, routers, and switches) that
are linked together.



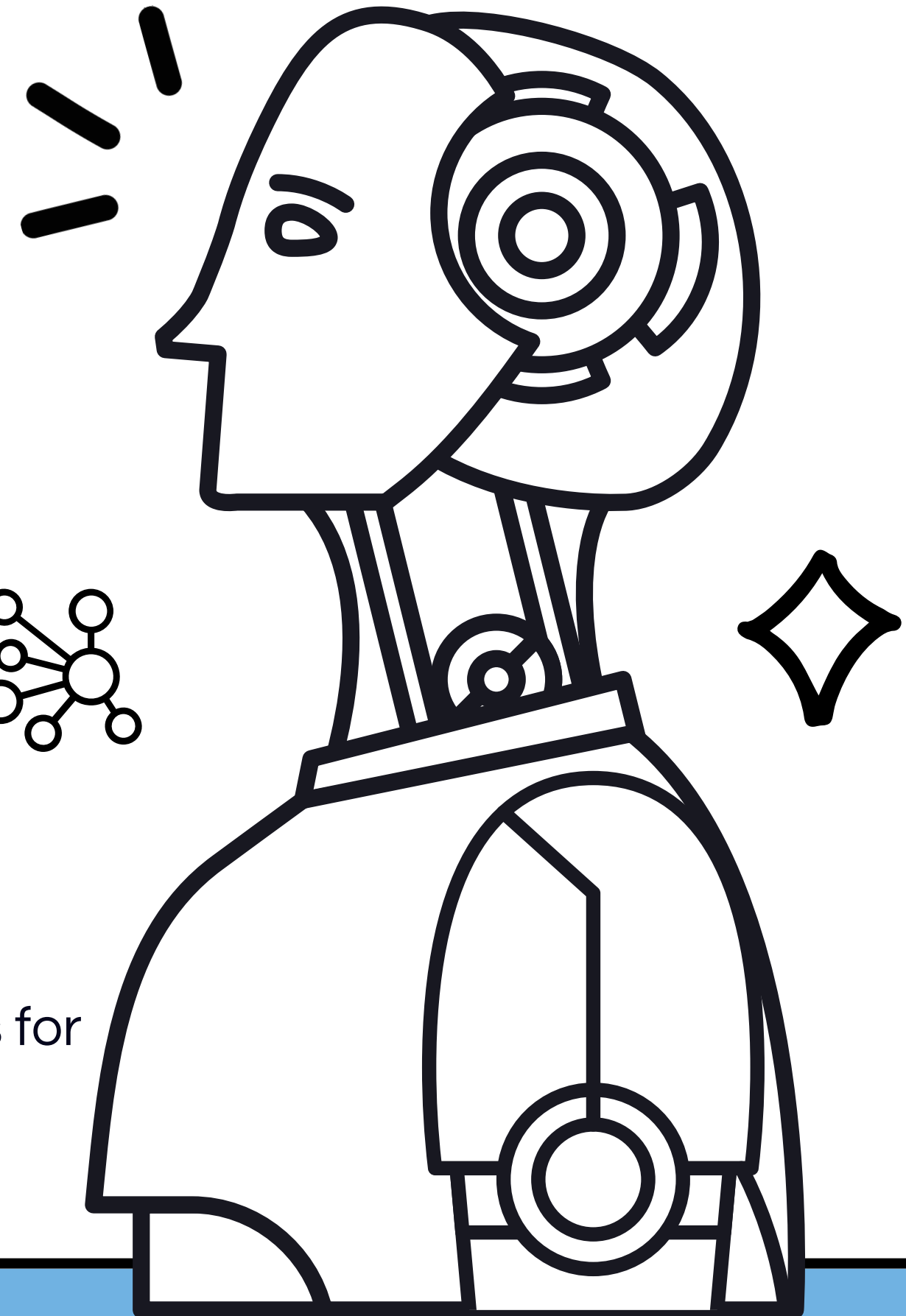
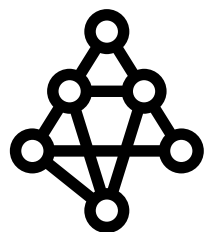
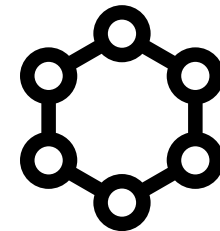
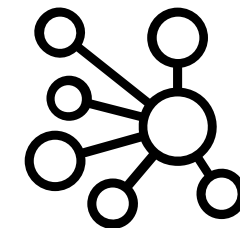
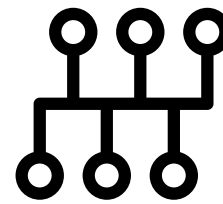
TYPES OF NETWORKS:

- - LAN (Local Area Network): A network in a small area like an office or home.
- - WAN (Wide Area Network): Connects networks over long distances, like the internet.
- - MAN (Metropolitan Area Network): Covers a city or large area, bigger than a LAN, smaller than a WAN.
- - Wireless Networks: Use Wi-Fi or mobile technologies to connect devices without physical cables.



NETWORK TOPOLOGIES

- - Bus: Devices connected in a single line.
- - Star: Devices connected to a central hub or switch.
- - Ring: Devices connected in a circular loop.
- - Mesh: Devices are interconnected with multiple paths for data



NETWORK DEVICES

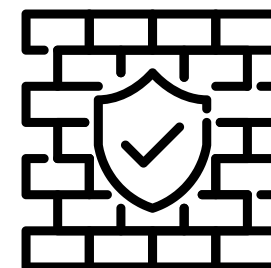
- - Router: Connects different networks and directs data traffic.



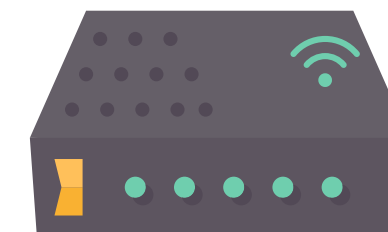
- - Switch: Connects devices within a network.



- - Firewall: Filters traffic and protects the network.

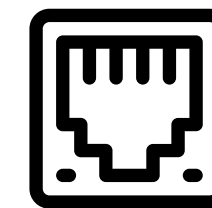
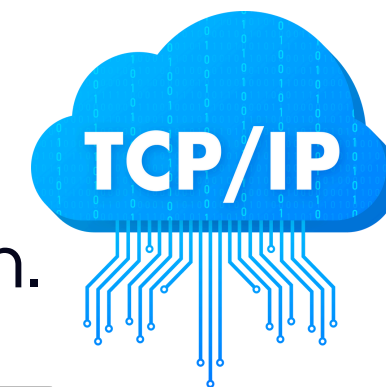


- - Modem: Converts digital and analog signals for internet access



NETWORK PROTOCOLS

- - TCP/IP: The foundation of internet communication.
- - Ethernet: Used for wired connections.
- - Wi-Fi: Wireless networking standard.
- - DNS: Translates domain names into IP addresses.

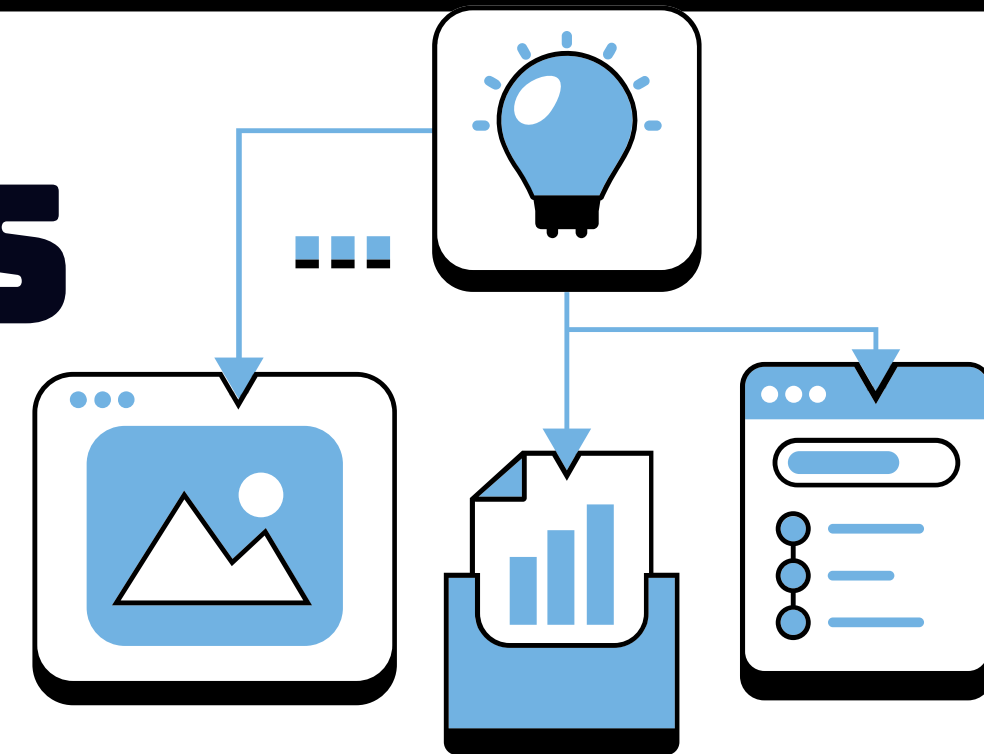


NETWORK SECURITY

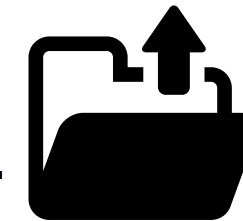
- Authentication: Verifying the identity of users or devices before granting access to the network.
- - Encryption: Encoding data to prevent unauthorized access and ensure secure transmission.
- - Firewalls: Implementing security policies to filter and control network traffic.
- - Intrusion Detection and Prevention Systems (IDPS): Monitoring network traffic for suspicious activity and preventing unauthorized access.



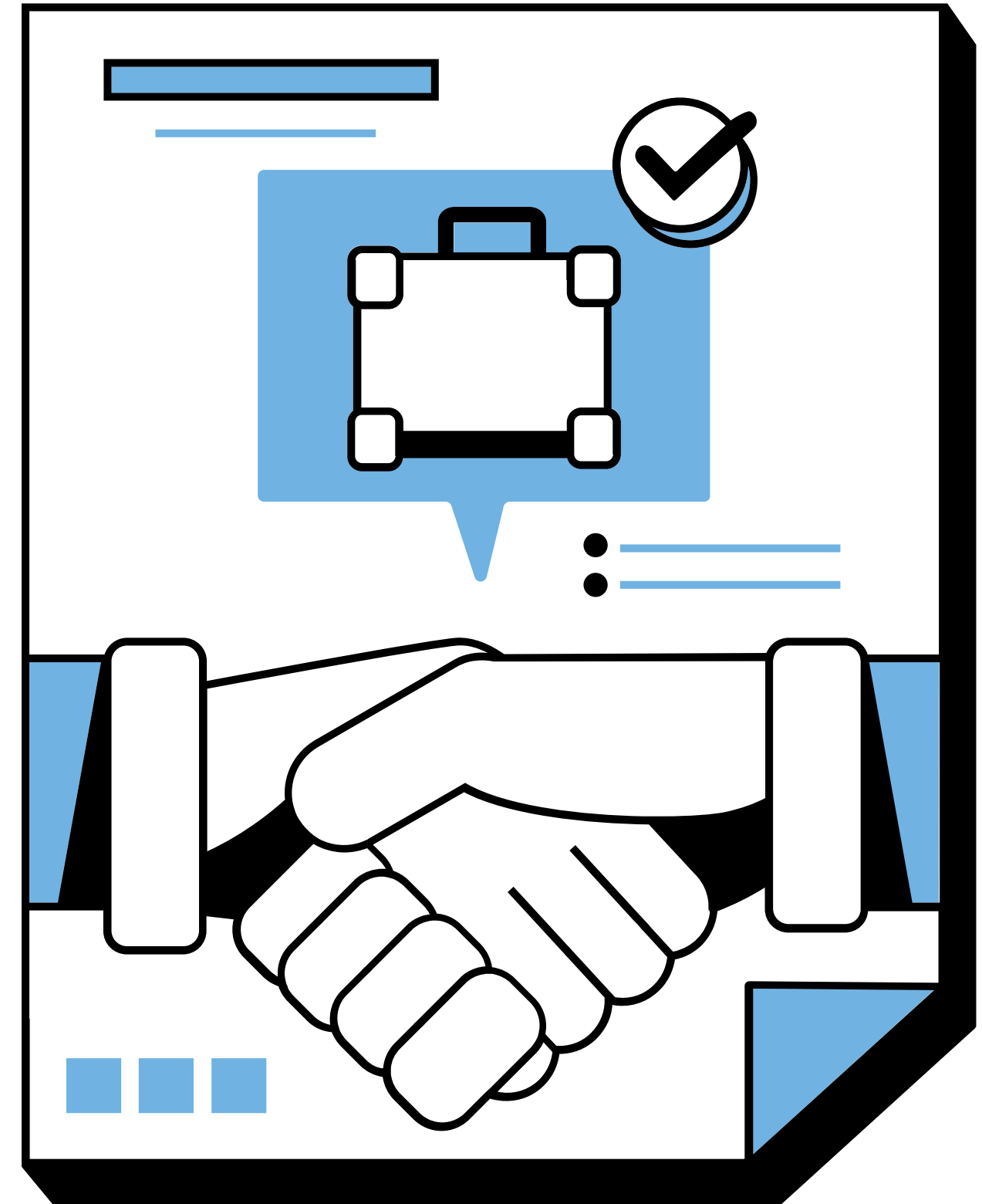
NETWORK SERVICES



- - File Sharing: Allowing users to access and share files across the network.
- - Printing Services: Enabling network-connected printers to be used by multiple users
- . - Email Services: Facilitating the exchange of electronic messages over the network.
- - Web Services: Hosting websites and enabling access to webpages over the internet



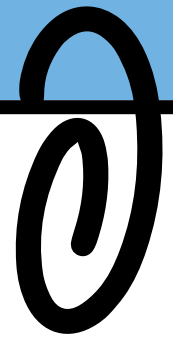
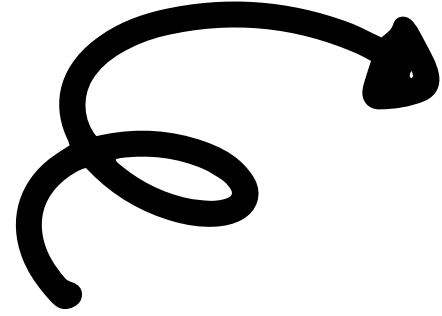
COMMON NETWORK ISSUES & SOLUTIONS



UNABLE TO CONNECT TO THE INTERNET

- Problem: Device shows Wi-Fi signal but won't connect. Solution:
- - Move device closer to the router.
- - Update the network card drivers.
- - Replace hardware if issue persists



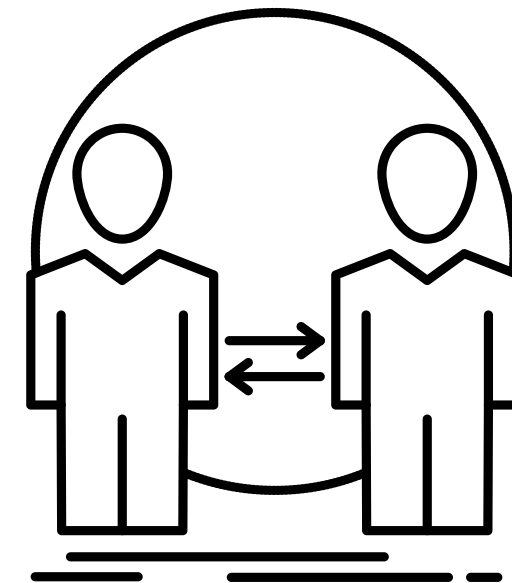


DUPLICATED IP ADDRESS

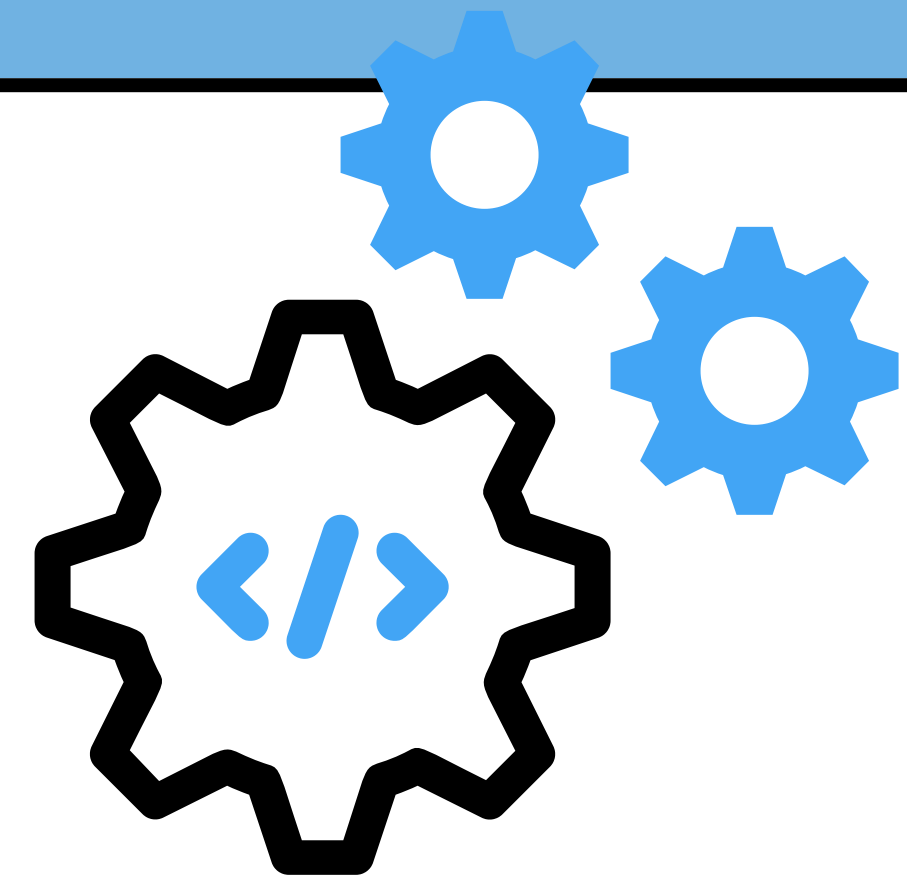
1. Problem: "IP address already in use" error. Causes: Static IP conflicts, DHCP errors, ISP issues.

Solution:

- - For dynamic IP: Use `ipconfig/renew`.
- - For static IP: Manually assign a new IP.
- - On Mac: Use 'Renew DHCP Lease' in network settings.



IP ADDRESS EXHAUSTION



Problem: Device cannot get an IP from the DHCP server. Solution:

- - Check network adapter and ensure DHCP is enabled.
- - Verify VLAN and DHCP server functionality.



THANK

SEE YOU

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