Protocols and Technologies – OSI Stack Exercise

Below is a list of various protocols, technologies, and concepts used in computer networks and IoT systems.

Your task will be to place each item on the correct layer of the OSI model.

List of Protocols and Technologies

- Ethernet (IEEE 802.3)
- Wi-Fi (IEEE 802.11)
- Bluetooth
- MAC Address
- IPv4
- IPv6
- ICMP (Internet Control Message Protocol)
- Routers
- TCP (Transmission Control Protocol)
- UDP (User Datagram Protocol)
- Port Numbers
- NetBIOS
- RPC (Remote Procedure Call)
- PPTP (Point-to-Point Tunneling Protocol)
- SSL/TLS
- ASCII
- JPEG
- MPEG
- HTTP
- HTTPS
- FTP
- SMTP (Simple Mail Transfer Protocol)
- DNS (Domain Name System)
- MQTT (Message Queuing Telemetry Transport)
- CoAP (Constrained Application Protocol)
- UART (Universal Asynchronous Receiver-Transmitter)
- SPI (Serial Peripheral Interface)
- I2C (Inter-Integrated Circuit)
- LoRaWAN
- ARP (Address Resolution Protocol)

- DHCP (Dynamic Host Configuration Protocol)
- Telnet
- SSH (Secure Shell)
- WebSocket
- Fiber Optic Cable
- Ethernet Cable (Cat5e/Cat6)
- Wi-Fi Radio Signal
- Bluetooth Radio Signal
- Network Switch
- Network Hub
- Network Interface Card (NIC)
- NAT (Network Address Translation)
- VPN (Virtual Private Network)
- Firewall

Optional:
You can also think about where to place physical devices like:

- Smartphone
- Smart Home Device (e.g., Smart Plug)
- Laptop
- Industrial Sensor