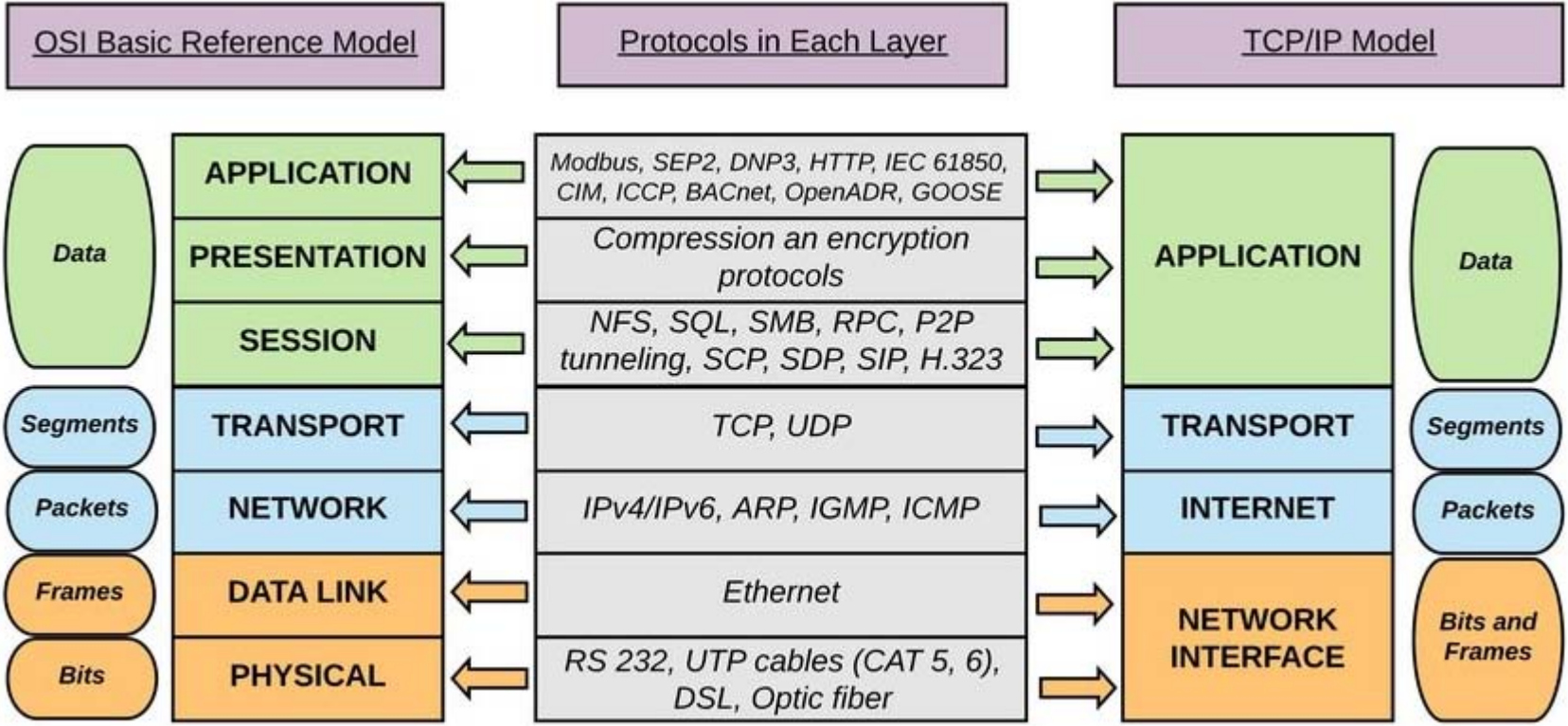
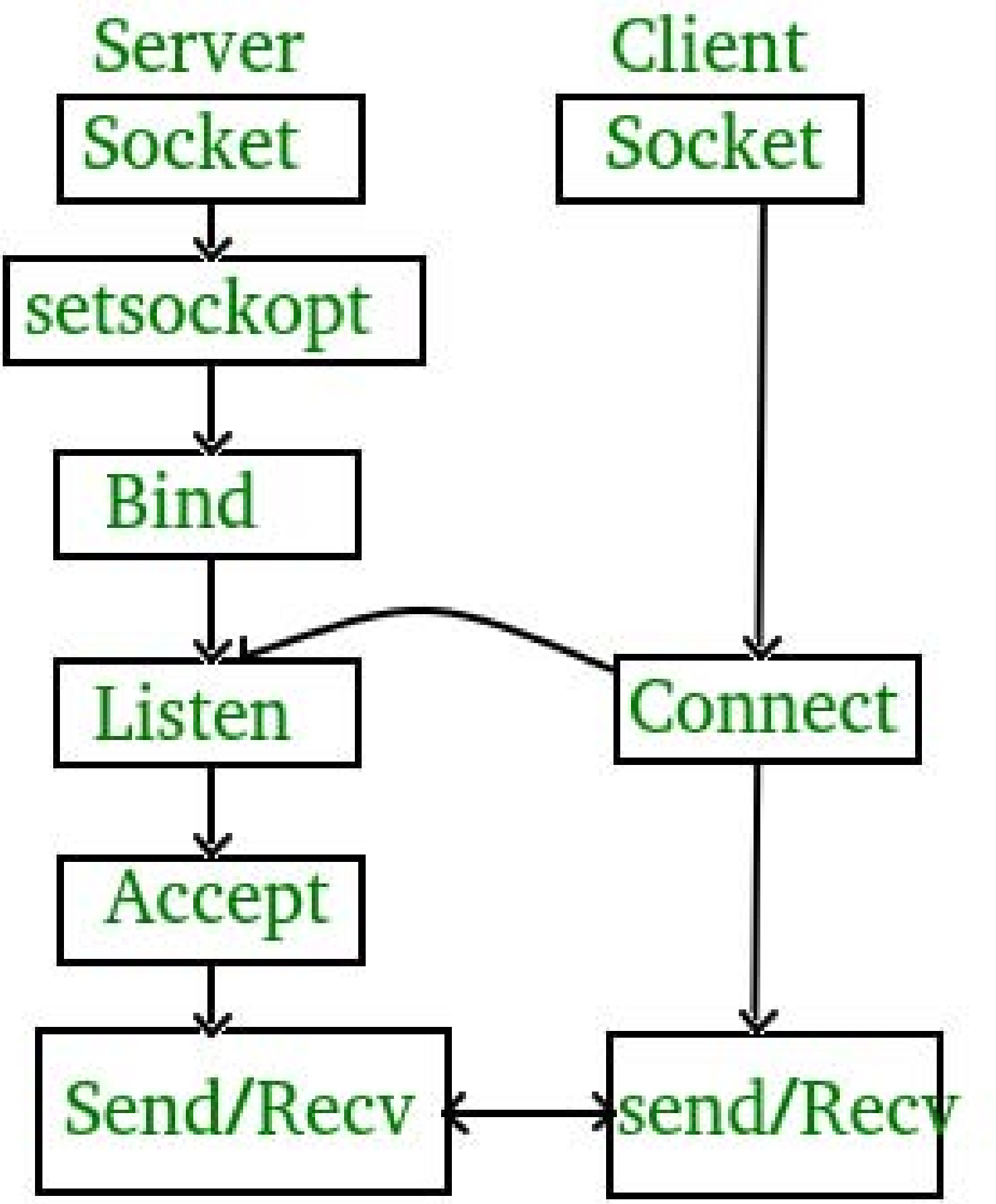

OSI Basic Reference Model
Protocols in Each Layer
TCP/IP Model
Data
APPLICATION
Modbus, SEP2, DNP3, HTTP, IEC 61850, CIM, ICCP, BACnet, OpenADR, GOOSE
PRESENTATION
Compression an encryption protocols
SESSION
NFS, SQL, SMB, RPC, P2P tunneling, SCP, SDP, SIP, H.323
APPLICATION
Data
Segments
TRANSPORT
TCP, UDP
TRANSPORT
Segments
Packets
NETWORK
IPv4/IPv6, ARP, IGMP, ICMP
INTERNET
Packets
Frames
DATA LINK
Ethernet
NETWORK INTERFACE
Bits and Frames
Bits
PHYSICAL
RS 232, UTP cables (CAT 5, 6), DSL, Optic fiber


Server
Client
Socket
Socket
setsockopt
Bind
Listen
Connect
Accept
Send/Recv
send/Recv

```
struct in_addr {
  in_addr_t   s_addr;           /* 32-bit IPv4 address */
                                /* network byte ordered */
};

struct sockaddr_in {
  uint8_t          sin_len;     /* length of structure (16) */
  sa_family_t      sin_family;  /* AF_INET */
  in_port_t        sin_port;    /* 16-bit TCP or UDP port number */
                                /* network byte ordered */
  struct in_addr   sin_addr;    /* 32-bit IPv4 address */
                                /* network byte ordered */
  char             sin_zero[8]; /* unused */
};
```