# Introduction

### Nuts-and-Bolts Description

End systems

connected by network of com links(physical media & radio spectrum) and packet switches

Most common systems used -> router(=network core), link-layer switch(used in access networks)

Packet switch -> highways/roads/intersections (analogy): Cargo is segmented & loaded into fleet of trucks -> transport to other company (header info)  
Connected to Internet through ISP

* Can be multiple forms such as corporate ISP/university/WiFi at airports & gastronomy/ Smartphone: Mobile access

Internet = connecting end systems together -> ISP networks interconnected  
TCP/IP -> protocols control sending and receiving of information within the Internet

### A Service Description

Applications are said to be distributed applications -> don’t run on packet switches in network core anymore -> not concerned with application  
socket interface -> how program in end system is asking internet infrastructure to deliver data to specific destination program   
Internet like postal office, letter can’t be sent without details & specific requirements of postal office  
-> Postal office = internet service

### What is a protocol

A human analogy:  
Figure next to it. Protocols must be held to communicate  
Sometimes no response -> gives up asking  
Sometimes rude/doesn’t understand person=protocols do not interoperate  
Student-teacher model for question-Answer protocol

Network protocols: