**In class activity - Ch.5 (5.1 Intro)**

**Link layer protocol**

* Transfers frame (which contains a datagram) between two physically adjacent nodes
* Frame includes source and destination MAC (Media Access Control) addresses
* Implemented in adaptor/chip/NIC (Network Interface Controller) – ex. Ethernet card
* Implemented in software and hardware
* Has (robust) error detection – see CRC (Cyclic Redundancy Check) in section 5.2

**In class activity - Ch.5 (5.3 Multiple Access Protocol)**

**Communication over shared wire – ex.**

* Shared Ethernet cable
* Shared 802.11 WiFi
* Shared radio frequency satellite

**Three main communication protocols**

1. Channel partitioning – TDMA and FDMA
2. Random access – how to deal with collison?

Ex.

Slotted ALOHA– P(transmission success of a node) = 0.37

ALOHA – P(transmission success of a node) = 0.18

CSMA (Carrier Sense Multiple Access) – listen before transmitting (analogy: do not interrupt other when speaking)

CSMA/CD (Collision Detection) - used in Ethernet

After collision m, wait k\*512bit time before sending a new frame on an empty wire; k is random from {0, 1, 2, 3, … 2^m-1}

1. Taking turns – a ctrl token is passed from one node to the next