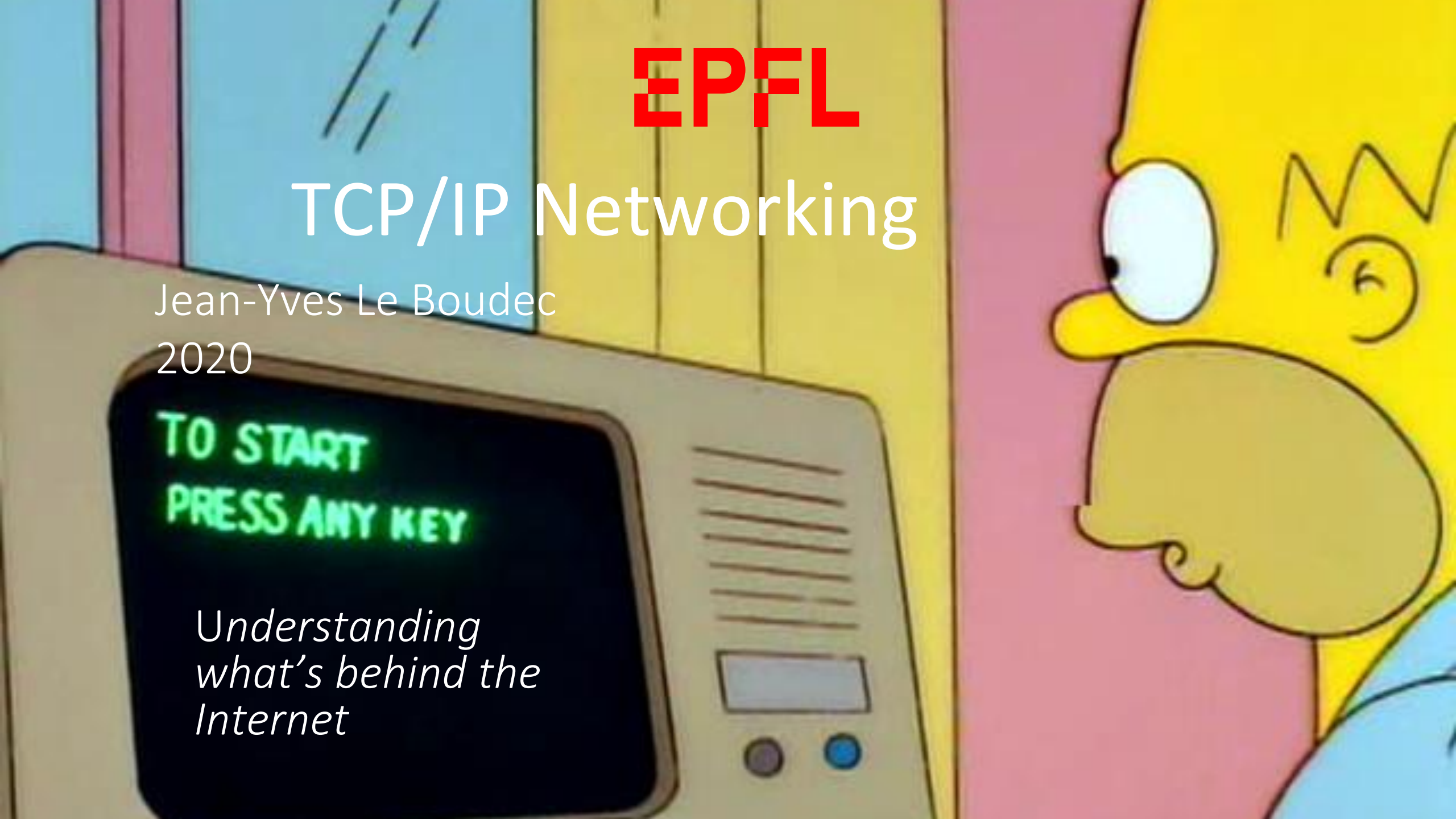
TCP/IP Networking

Jean-Yves Le Boudec

2020



Understanding what's behind the Internet

Your Team

Lecturer: J.-Y. Le Boudec

Teaching Assistants

- Marguerite Delcourt
- Dr Alaeddine El Fawal (head TA)
- Ehsan Mohammadpour
- Dr Stephan Plassart
- Hossein Tabatabaee

Whom is this course for ?

Master students in electricity, communication systems and computer science, all branches of engineering

Requirements

- Experience with using one programming language
- No prior knowledge of TCP/IP is required
- We will practice with computers in a virtual environment – expect to spend time on your computer

The RAKE philosophy

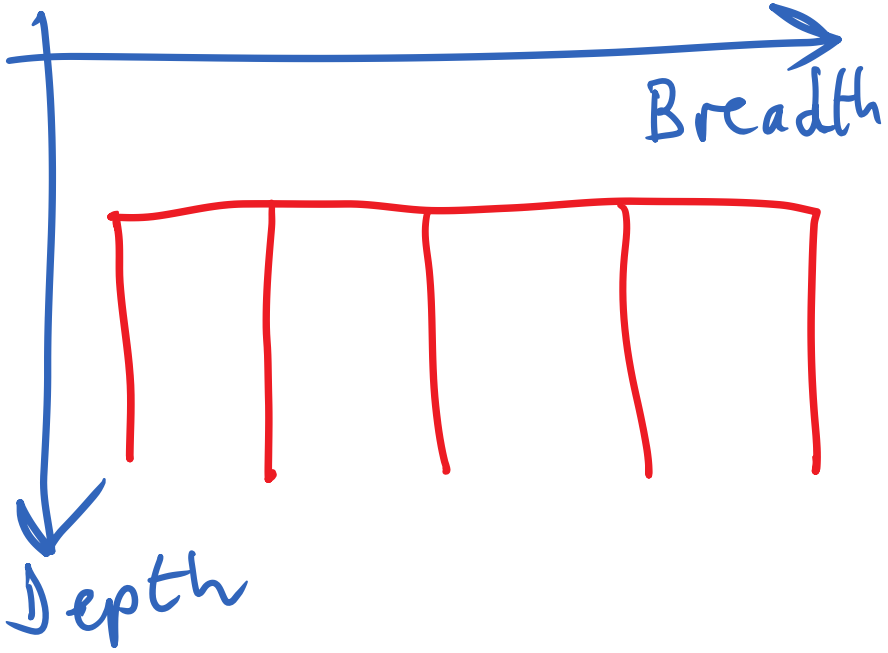
Viewpoint 1 :« I want this course to teach me all the details of all networking protocols »

Viewpoint 2: « TCP/IP is a mountain of details, I will learn when and if the need arises »

We will use the RAKE philosophy

-Depth by a few carefully selected labs

-Breadth by systematic concepts



What, Why, How

I will try and teach you to always ask first

Why was this stuff invented, what problem is it solving ?

What is it doing?

before asking:

How does it do its job ?

The why and what are short.

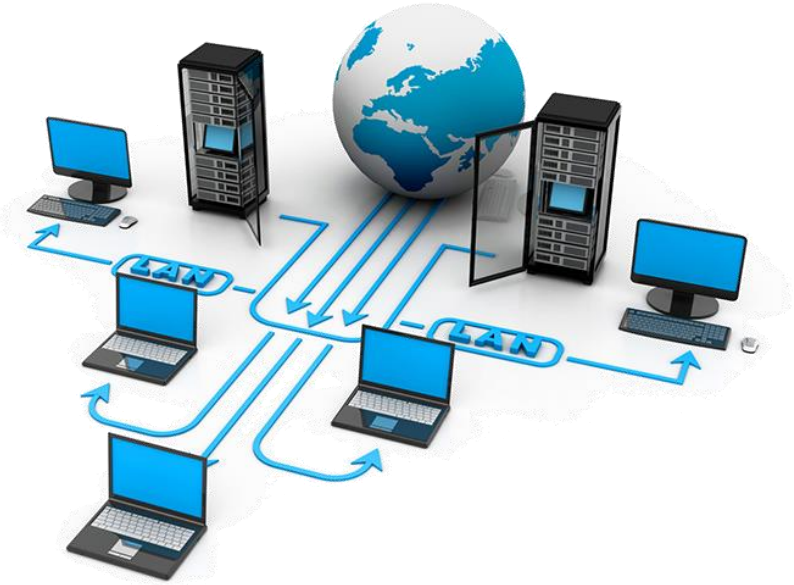
The how is long but can often be guessed once you understand the why and what.

Wikipedia is good at how, often less good at what and why

Labs

- 7 labs in total (2 weeks each, except last is 1 week),
- mandatory and graded
- can be done entirely in your machine – no need for physical presence at EPFL -- requires 7GB of HD
- you can work in pair: only one report for two
- some labs have a bonus research exercise, NOT mandatory but interesting if you have time and motivation

- All info on Moodle



Quizzes

One online Quiz (moodle) every week

Take it after attending lecture and before doing lab

Mandatory but not graded

Must take quiz n before taking quiz $n + 1$

Must be up to date in your quizzes before submitting lab

Enforced by Moodle

Your work every week

Attend lecture (Thursday 12:15-14:00 CM2 or zoom, or later on youtube)

Take the online quiz (moodle)

Advance / Complete lab

Lab Sessions with TAs

INF1/INF2 Friday 11-13 and zoom
INM202 Friday 13-15 and zoom
Moodle forum is attended by TAs all week long
during working hours

All info is on Moodle

Please go to speakup.info or start speakup app
Join room number 60845
Say in which case you are

A. Computer Science
B. Communication Systems
C. Data Science
D. Electrical Engineering, Smart Grid
E. Electrical Engineering, other orientation
F. Mechanical Engineering
G. Maths
H. Other Section

Please use speakup ethically

– don’t abuse anonymity

Final Exam

One final exam in exam session

See last years exams on moodle

Closed book, no electronic equipment

The “exam booklet” (available on moodle) is allowed – we print it for you.

Grading

Theory Grade T = final exam

Lab grade

L_i = grade at lab i in scaled 1-6

$L_{avg} = \frac{L_0 + \cdots + L_5 + 0.5L_6}{6.5}$ (lab6 counts as ½ lab)

RE_{avg} = average of all bonuses (max bonus = 0.5 on scale 1-6)

$L = \min(6, L_{avg} + RE_{avg})$

Final grade

Final grade $G = \text{round}\left(\frac{T+L}{2}\right)$ where round is to the nearest quarter-integer.

All grades except G are non-rounded.