

PS5 - FT

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SI3- POLYTECH NICE-SOPHIA





LAST COURSE AT POLYTECH!

(recruiting 4th interns next year ...)

G Hash Code - Google's Coding X +

https://codingcompetitions.withgoogle.com/hashcode

hash code About Schedule Hubs Rules Archive FAQ See more competitions Sign in

PREVIOUS EPISODES

Interested in participating in Hash Code 2019?

Fill out the form and we'll notify you when registration is open. To ease the wait, check out our past competitions and practice problems, and consider [organizing a hub](#) so teams in your area can compete side-by-side. Are you up for the challenge?

Express interest

hash code 2

A close-up photograph of a person's torso. They are wearing a bright yellow-green safety vest over a dark long-sleeved shirt. A thick, horizontal red strap is secured across their chest with two metal buckles. A white rectangular sign is pinned to the vest, featuring the word "RÉVOLUTION" in large, bold, black, sans-serif capital letters.

RÉVOLUTION

Societal Context





Student Strikes

OBJECTIVES

- ▶ Work on a societal issue
- ▶ Work with legacy data
- ▶ Use computer science to simulate real life situations
- ▶ Deliver as fast as possible





APB IS DEAD

LONG LIVE PARCOURSUP

Universités : les blocages touchent une dizaine d'établissements

Contre la réforme de l'accès aux études supérieures, la faculté de Lettres de Sorbonne Université, de même que Paris VIII, Nantes, Nice et Tours font désormais partie de la dizaine d'universités (sur soixante-dix) touchées par un blocus.



 **REBELLYON.info**
SITE COLLABORATIF D'INFOS ALTERNATIVES

INFOS LOCALES ► **ÉDUCATION - PARTAGE DES SAVOIRS**

Contre Parcoursup et la réforme du bac : grève et manifestation vendredi 7 décembre



Meanwhile at the Ministry

WE GIVE YOU. . . .

DATASETS, TO ASSESS YOUR PROPOSITIONS

TINY (10)

SMALL (100)

NORMAL (1K)

BIG (10K)

HUGE (100K)

ENORMOUS (1M)

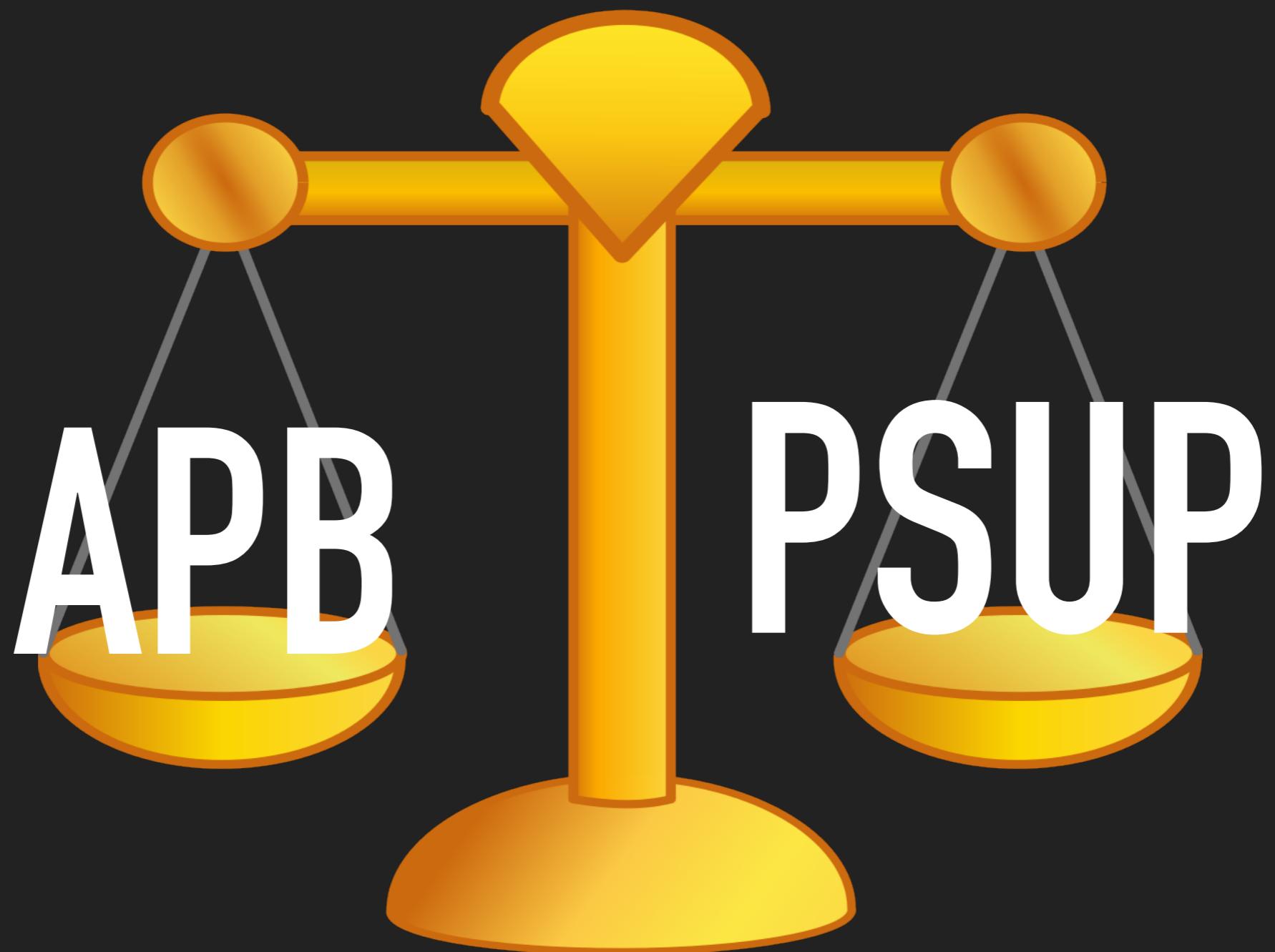


OUR INTERNAL EXPERT

3.7 secs to compute

78 secs to parse, compute, output

Plan B



APB

- ▶ Stable-Marriage problem
 - ▶ Students express wish-lists
 - ▶ Schools express rankings
- ▶ Students are paired with schools, according to:
 - ▶ Stability
 - ▶ Coverage

PLAN B: STUDENT-FIRST

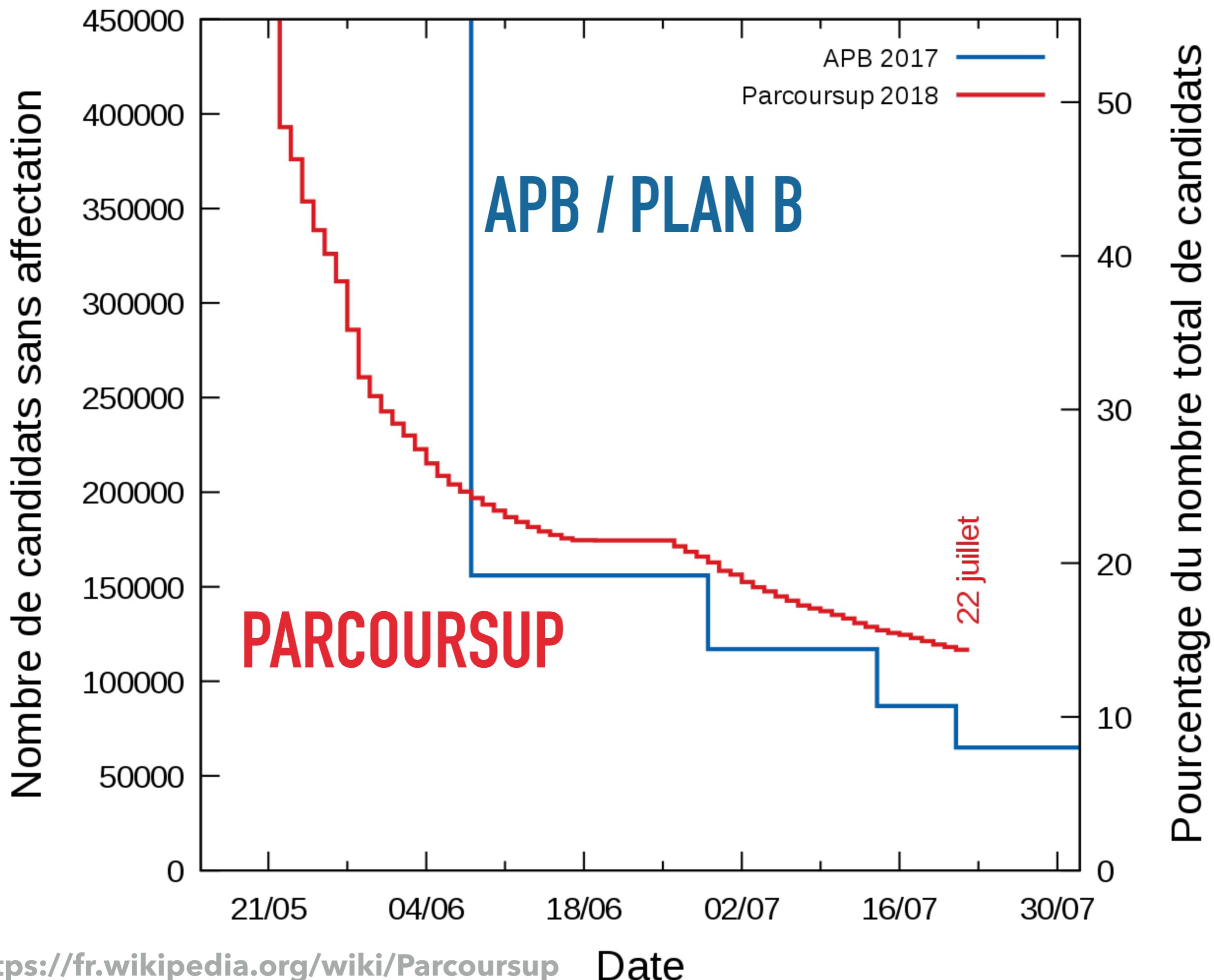
- ▶ Adaptation of the Stable-Marriage problem
 - ▶ Students express wish-lists
 - ▶ Schools express rankings
- ▶ What are the differences?
 - ▶ Students always get their first choice if possible
 - ▶ School ranking only used when demand > capacity

PARCOURSUP

- ▶ Totally different approach
 - ▶ Students express UNORDERED wish-lists
 - ▶ Schools express rankings
- ▶ Old wine in a new bottle?
 - ▶ Students answers in an ongoing way
 - ▶ Discrete time simulation

STUDENT & SCHOOLS PROFILES

- ▶ Stakeholders have \neq profiles
 - ▶ Students: Caution, Curious, Stubborn, ...
 - ▶ Schools: Elite, Overbooking, ...
- ▶ Express simulations by composing these profiles
 - ▶ 20% of stubborn + 40% of curious + ...
 - ▶ 33% of stubborn + 15% of curious + ...



PEDAGOGICAL OBJECTIVES

- ▶ Programming-in-the-small
- ▶ Scientific approach
- ▶ Experimental protocols
- ▶ Deliver as fast as possible
- ▶ AND ...
 - ▶ Do not forget what you learned
 - ▶ Software Engineering!!



A photograph of a group of people sitting in a dark room, looking up at a glowing sign. The sign is a tall, rectangular structure with a yellow lamp at the top. The words "MAGIC NIGHT" are written on it. In front of the sign, the words "ALGO RITHMS" are displayed in large, blue, sans-serif letters. Below the sign, the word "YOU" is also displayed in large, blue, sans-serif letters.

ALGO
RITHMS

YOU

SOFT. ENG. RULE OF THREE

► Readability

► Readability

► READABILITY!!

```
def GS(pc, sp, places):
    assignement = [None] * len(pc)
    lefts = [0] * len(pc)
    fills = [list() for _ in range(len(sp))]
    guys = set(range(len(pc)))
    passe = 1

    while guys:
        print(passe, len(guys), file=sys.stderr)
        new_guys = set()
        for c in guys:
            if lefts[c] < len(pc[c]):
                fills[pc[c][lefts[c]]].append(c)
                assignement[c] = pc[c][lefts[c]]
                lefts[c] += 1
        for e in range(len(sp)):
            if len(fills[e]) > places[e]:
                srt = sorted(fills[e], key=sp[e].get)
                fills[e] = srt[:places[e]]
                for k in range(places[e], len(srt)):
                    assignement[srt[k]] = None
                    new_guys.add(srt[k])
        guys = new_guys
        passe += 1

    return assignement
```

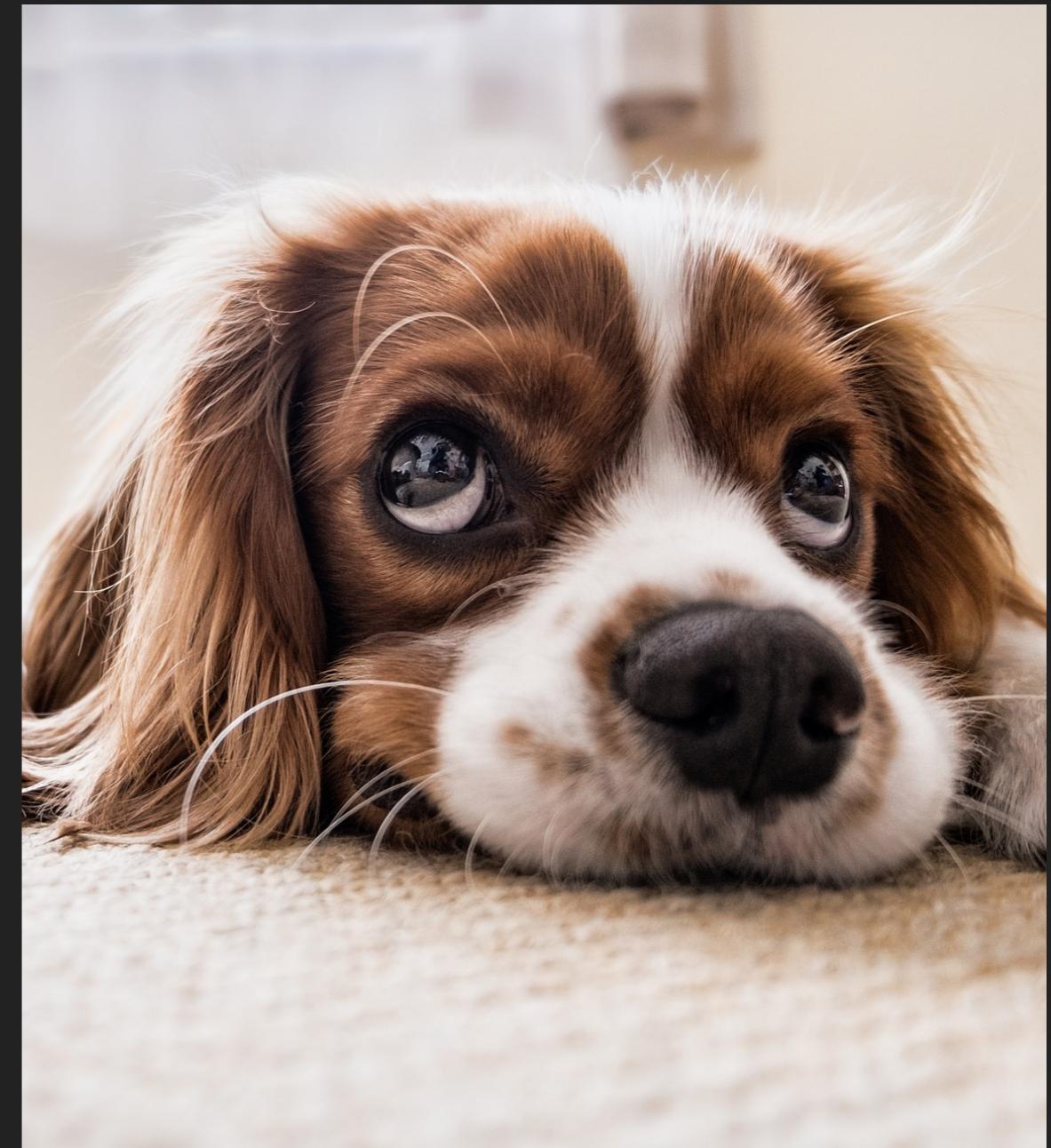
PLANNING

- ▶ Monday:
 - ▶ 7PM: APB is working
- ▶ Tuesday
 - ▶ 7PM: PlanB is working
- ▶ Thursday:
 - ▶ 8AM-11:59AM: Demo!
- ▶ Sunday: Final delivery
 - ▶ (can be done earlier)



FACILITATION

- ▶ Monday:
 - ▶ PM: Office Hours
- ▶ Tuesday:
 - ▶ 08-10 + PM: Office Hours
- ▶ Wednesday
 - ▶ Meetings with groups
- ▶ Thursday: Office Hours (AM)
- ▶ Friday: Office Hours (PM)



Sujet-du-Projet/README.md at + GitHub, Inc. [US] | https://github.com/PNS-PS5-1819/Sujet-du-Projet/blob/master/README.md

Branch: master Sujet-du-Projet / README.md Find file Copy path

mosser sujet quasi final 54df470 12 hours ago

2 contributors

97 lines (65 sloc) 3.59 KB Raw Blame History

Semester Final Project

- Timeframe: 17/12/2018 → 23/12/2018
- Staff:
 - Benjamin Benni: facilitation, software engineering.
 - Sébastien Mosser: facilitation, software engineering.
 - Christophe Papazian: algorithmic

Pedagogical Objectives

1. Integrate the team in a real project; work with legacy artefacts that are not under your control;
2. Improve *programming-in-the-small* skills;
3. Work as fast as possible;
4. Discover continuous integration;
5. Use computer science and software engineering to answer a societal question.

HTTPS://GITHUB.COM/PNS-PS5-1819/SUJET-DU-PROJET