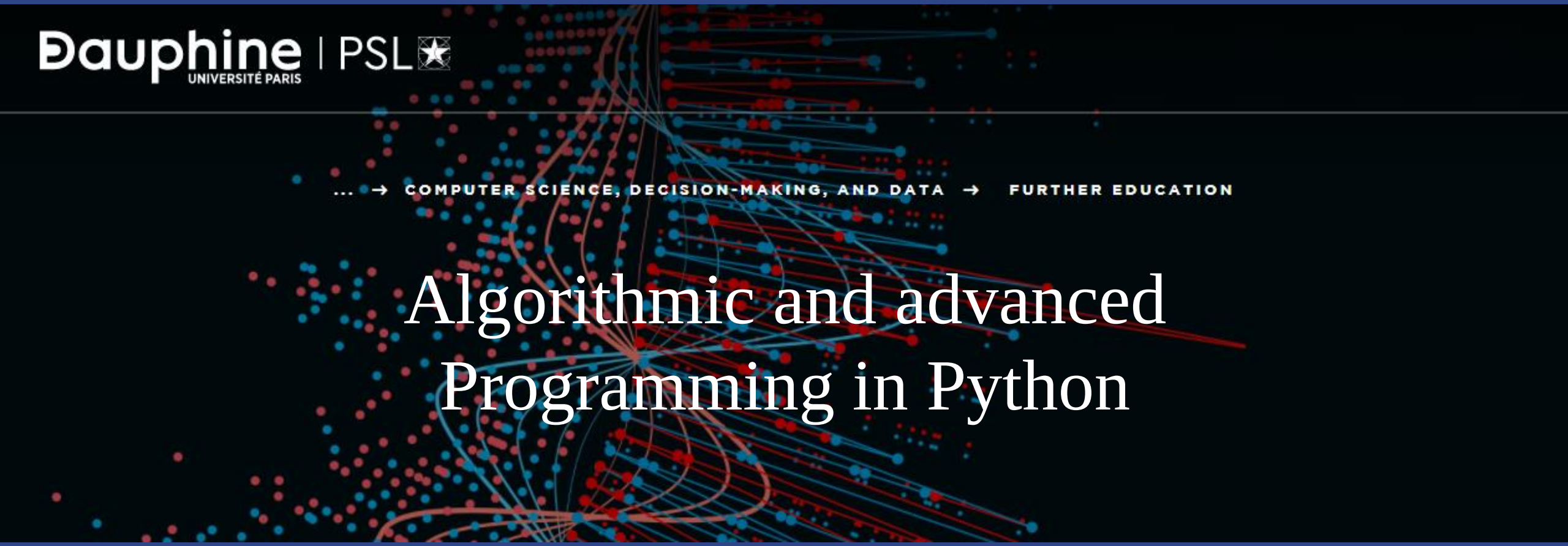

Algorithmic and advanced Programming in Python

Final project instructions

Reminder of the objective of this course

- People often learn about data structures out of context
- But in this course you will learn foundational concepts by building a real application with python and Flask

- To learn the ins and outs of the essential data structure, experiencing in practice has proved to be a much more powerful way to learn data structures

- The mid term evaluation is precisely to start playing with the data structure

Instructions for the presentation

- Check your group on the google sheet
- https://docs.google.com/spreadsheets/d/1zGRyi8vDB0-88_wBJ0grygla9gAl8jNewzGXC1_hI-A/edit?usp=sharing

Project Exam: Algorithmic and advanced Programming in Python

Group	Student 1	Student 2	Mid Term	Hour	Final presentation	Hour
1	Ellington Kirby	Louis Kurdyk	21 Nov	10h30	7 Dec	13h45
2	Echalih Salma	Zohrabyan Maro	21 Nov	10h45	7 Dec	14h00
3	Chloé Desbles	Clara Gard	21 Nov	11h00	7 Dec	14h15
4	Amrani-Hanchi Lina	Benmoussa Dina	21 Nov	11h15	7 Dec	14h30
5	Bennani Nada	Ellouze Farah	21 Nov	11h30	7 Dec	14h45
6	Besnier Matthias	Calvet Hugo	23 Nov	13h45	7 Dec	15h00
7	Gervreau Augustin	Leroy Amélie	23 Nov	14h00	5 Dec	10h30
8	Disa Nilsson	Johannes Steinbrenner	23 Nov	14h15	5 Dec	10h45
9	Klich Nourelhouda	Tragha Marwan	23 Nov	14h30	5 Dec	11h00
10	Boujanoui Yasmine	Soulami Salma	23 Nov	14h45	5 Dec	11h15
11	Mehdi Inane		23 Nov	15h00	5 Dec	11h30

Instructions for preparing the final presentation

- The goal of this project is to **recreate twitter** and play with data structure

- Represent the mid term project with the following presentation:
  - 5 minutes to demo the website
  - 5 minutes to present your code structure and the two data structure questions below

Demo of the website (same as mid term)

- Show the loggin, register functionality
- Show the post tweet
- Show the who follows you functionality
- Show the like button

Discuss data structure used in your website

- Explain how you data structure for
  - Storing user informations
  - Connextion between users

- Present a function to provide all the tweets that contain a given word

Data structure and algorithm question 1

- In mid term, most of you suggested to use a hash map to get an email from a user name. Let us do the same for mapping name to user_id (as interger). Hence, we will have

```
name_to_id_mapping = {
            'name_1':  id_1,
            'name...':   id_..,
            'name_n':  id_n,
}
```

- Let us assume we represent the fact that user i follows user j by a pair (i,j). Likewise, if user j follows user i, we will store another pair (j,i). Assume that we have stored follows relationships in a list as follows

follow_relationship = [(i,j), ….. (k,l), …]

1.a) Provide an efficient algorithm to report symmetric relationships, that is the list of integers such that both pairs (i,j) and pair (j,i) exist in the follow_relationship. Explain your datastructure choice

1.b) using the name_to_id_mapping dictionary, infer the names of twitter users that have a symmetric follow relationship

Representation of follows relationship question 2

- Discuss a data structure to store follow relationships such that you can quickly provide the person that follows someone that follows you.

Instructions for the presentation

- Slide Presentation should last 10 minutes:
  - 5 minutes to demo the website
  - 5 minutes to discuss data structure
- Leave 5 minutes for Questions and answers
- Your instructor will warn you after 10 and 13 minutes

- **Post us after the presentation within a day your code and presetation in moodle**

Some tips and advices

- **Do not start at the last minute!**
- If you have technical problems, liaise with the rest of the class and let us know who managed to help you!
- Work as a group and not individually!
- **Test, test and test** before the presentation that everything runs well on your computer to avoid blank presentation in the due day!