Where you stand

Goals

- Learn python
- Make cool stuff with python (publish?)

Are you comfortable with:

- Terminal (ubuntu)
- python
- git

If so, you will be part of the **Produt** group, otherwise, you are now part of the **Learning** group.

We'll first start by determining these groups ?

Organizing

- Today, Ilyass will present for the **Learning** group, next meeting, someone else from the **Product** group will
  - **Learning** group will have goals to accomplish during each session
  - Up to all members of **Product** group can be tasked with helping/showing/guiding members of **Learning** group if asked by the session presenter
  - When programming or doing exercises, **Learning** members will program **in pair** using **the same workstation** and switch every 12 minutes (**pair programming**)

Goals: python shell, integers, operators, strings

Who will be presenter for the following session (if and for loops, scripting and functions) ?

Learning

1. **Linux**
2. **Terminal**
3. **python**
4. **git** : version control system

Requirements ?

- Focus to quickly move on to **Product group**
- **Product group** members will support you all the time
- Practice **python** outside of the #pythonclub

Why learn python ?

Life is short, you need python.

Bruce Eckel, ANSI C++ Comitee member, author of «Thinking in C++» and «Thinking in Java»

The goal of a modern education is to nurture a person to adulthood, someone who is capable of solving the tough problems of tomorrow. However, in schools we are taught to memorize and regurgitate. Most students don’t come close to an exploratory, iterative, problem solving education.

Michele Pratusevich, and in my day job I am a research engineer

Empowering yourself ...

State of reproducibility in *damage mechanics* ? https://arxiv.org/abs/1803.07622

Table 1
Analysis of the data obtained from the 187 sent e-mails to the first author of the top-eleven cited papers from 2000 to 2016.

Year	Bounces		Reply		No Reply		Minutes	Lost	Confidential	Reference	Others	Available
2000	7	*63.64%*	3	*27.27%*	1	*9.09%*	1440	1		1		1
2001	7	*63.64%*	0	*0%*	4	*36.36%*						
2002	3	*27.27%*	3	*27.27%*	5	*45.45%*				1	1	1
2003	3	*27.27%*	0	*0%*	8	*72.73%*				1	1	
2004	3	*27.27%*	4	*36.36%*	4	*36.36%*		1		1	1	1
2005	1	*9.09%*	1	*9.09%*	9	*81.82%*	120					
2006	2	*18.18%*	2	*18.18%*	7	*63.64%*	10					1
2007	0	*0%*	2	*18.18%*	9	*81.82%*		1		1	1	
2008	3	*27.27%*	2	*18.18%*	6	*54.55%*	130					2
2009	2	*18.18%*	2	*18.18%*	7	*63.64%*		1				
2010	2	*18.18%*	5	*45.45%*	4	*36.36%*	150			2	1	1
2011	5	*45.45%*	2	*18.18%*	4	*36.36%*	10					
2012	1	*9.09%*	1	*9.09%*	9	*81.82%*	1			1	2	1
2013	2	*18.18%*	4	*36.36%*	5	*45.45%*	60					
2014	1	*9.09%*	4	*36.36%*	6	*54.55%*	30		1	1	1	1
2015	0	*0%*	0	*0%*	11	*100%*						
2016	0	*0%*	2	*18.18%*	9	*81.82%*						2
Total	42	*22.46%*	37	*19.79%*	108	*57.75%*	1951	4	1	9	8	11

Long term availability of raw experimental data in experimental fracture mechanics, Patrick Diehl, Ilyass Tabiai, Felix W. Baumann, Daniel Therriault, Martin Levesque

... thanks to python

python was used to:

- Retrieve top 11 papers per year for a specific request as Bibtex file
- Parse Bibtex files to extract `Author Name`, `Publication Year`, `Publication Title` for each publication
- Automatically generate mail with `Author Name`, `Publication Year`, `Publication Title`
- Automatically send 189 e-mails to different e-mail addresses

https://github.com/OpenDataExpMechanics/Survey/tree/1.0
http://www.openexpmechanics.science/

- Accepted without review by editor

Learning group 101: python

- Download/Install Virtual Box and Ubuntu: https://goo.gl/VgdEMx

Two persons per computer, switch every 12 minutes: http://www.intervaltimer.com/

- When you are logged in Ubuntu, open FireFox:
  - Download these slides: https://github.com/pythonclubmtl/meetings
  - Open https://github.com/pythonclubmtl/learning_python3 and go through:
    - `001-installing-python3.md`
    - `002-using-pythonshell.md`
    - `003-strings-and-integers.md`
- **(M)** Then, go through: https://www.practicepython.org/exercise/2014/01/29/01-character-input.html
- **(M)** Then this one: https://www.practicepython.org/exercise/2014/02/05/02-odd-or-even.html
- **(O)** Next is: https://www.practicepython.org/exercise/2014/03/05/05-list-overlap.html

Product group: proposal

Requirements

- A project which could lead to something *published* at some point, or which helps us build tools that could be used to publish something
- A project which involves python and maybe some Machine Learning
- Project requires several modules which would force us toward Object Oriented Programming (classes) and collaboration (git)

Proposal : Scientific publication recommendations

- Generate a classifier from a specific bitex file using abstract or full text (tokenizing, TF-IDF, MultinomialNB *(?)*)
- Retrieve latest publications from Elsevier/ArXiv/Core/... APIs
- Run them through the classifier and determine if user will be interested by publication or not

Product group: organizing

Tools acquired

- Ability to interact with publishers/repositories' APIs
- Recommendation through ML
- Bibtex parsing tool
- Usage of git for collaboration and versioning

Tasks/Teams

1. API team
2. Bib parser team
3. Tokenization/MultinomialNB team

Learning group

- A **different** member (or several) of the product team will be responsible for the learning team for each session (you can also update repos https://github.com/pythonclubmtl)