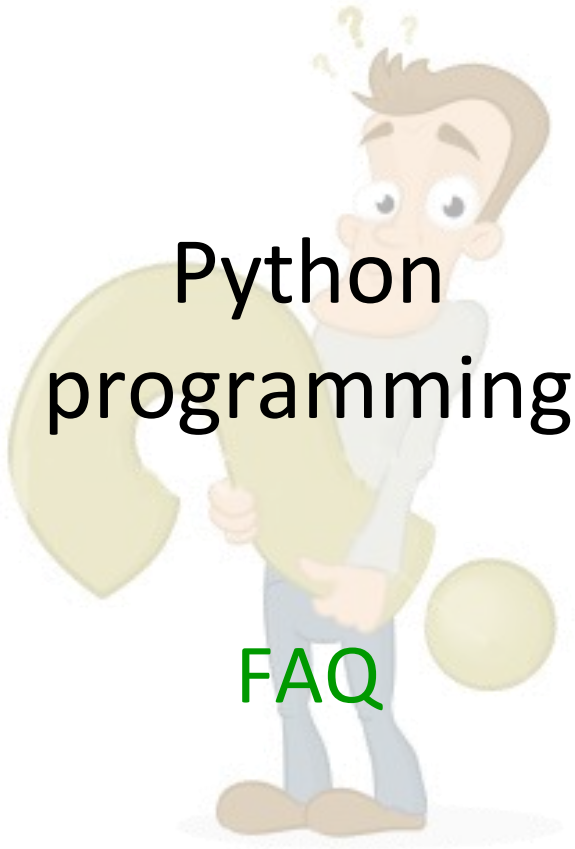
Ghent University
Faculty of Sciences



# Python programming

## FAQ

Prof. Dr. Peter Dawyndt

peter.dawyndt@ugent.be

@dawyndt

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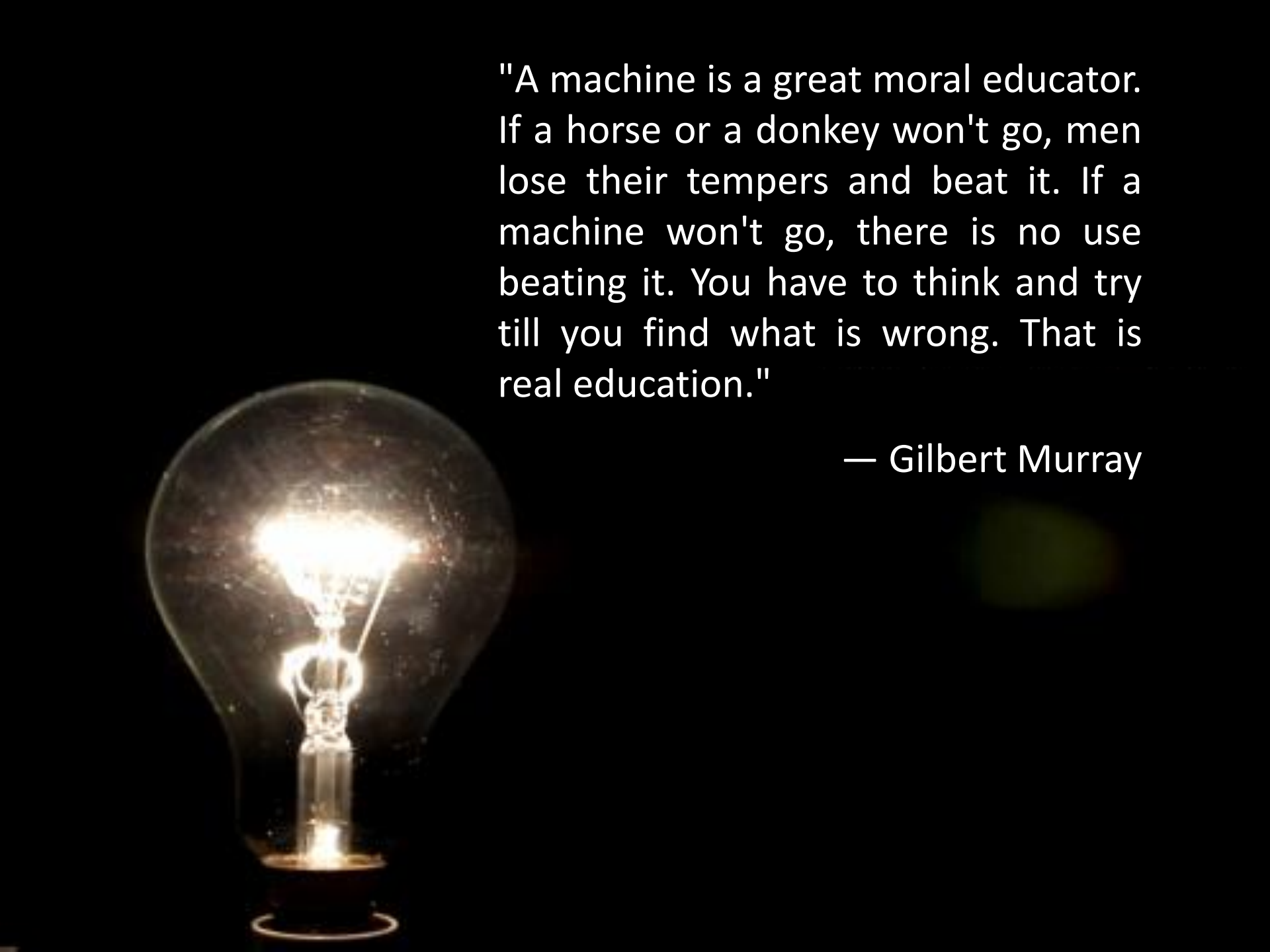
"A machine is a great moral educator. If a horse or a donkey won't go, men lose their tempers and beat it. If a machine won't go, there is no use beating it. You have to think and try till you find what is wrong. That is real education."
— Gilbert Murray

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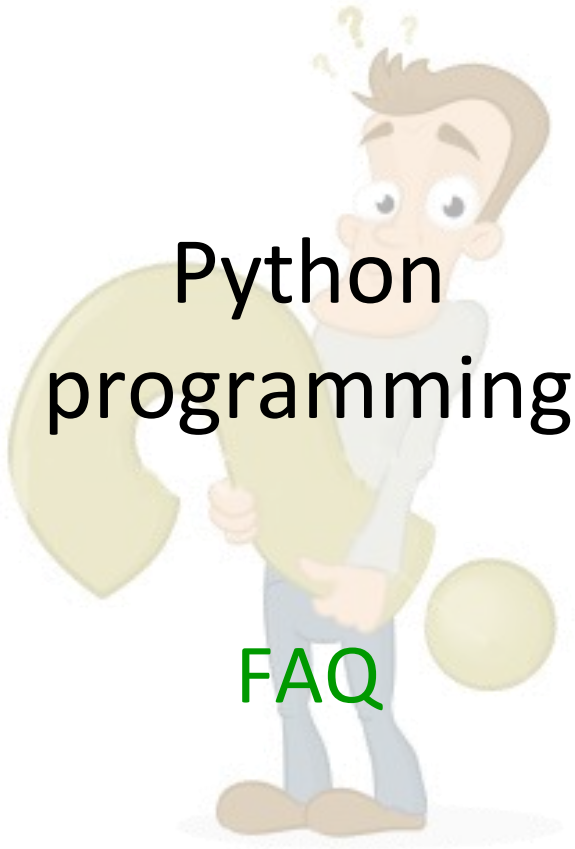

# Python programming

## FAQ

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Ooooh! The last bug!

# Sum of two integers

integer_sum.py

```
# ask for two integers
m = int(input('Give an integer: '))
n = int(input('Give another integer: '))

# print the sum of both integer
print(m + n)
```

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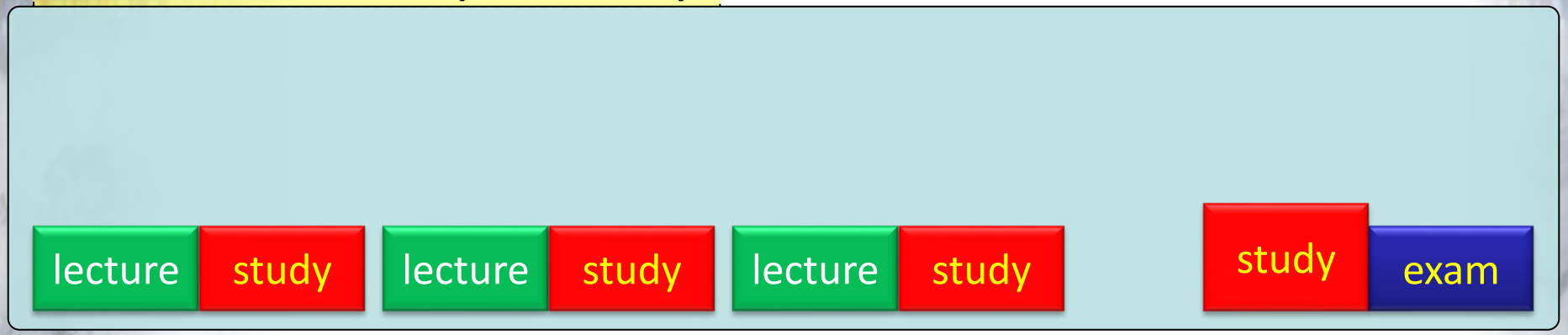
# The flipped classroom

**traditional classroom (ideal world)**

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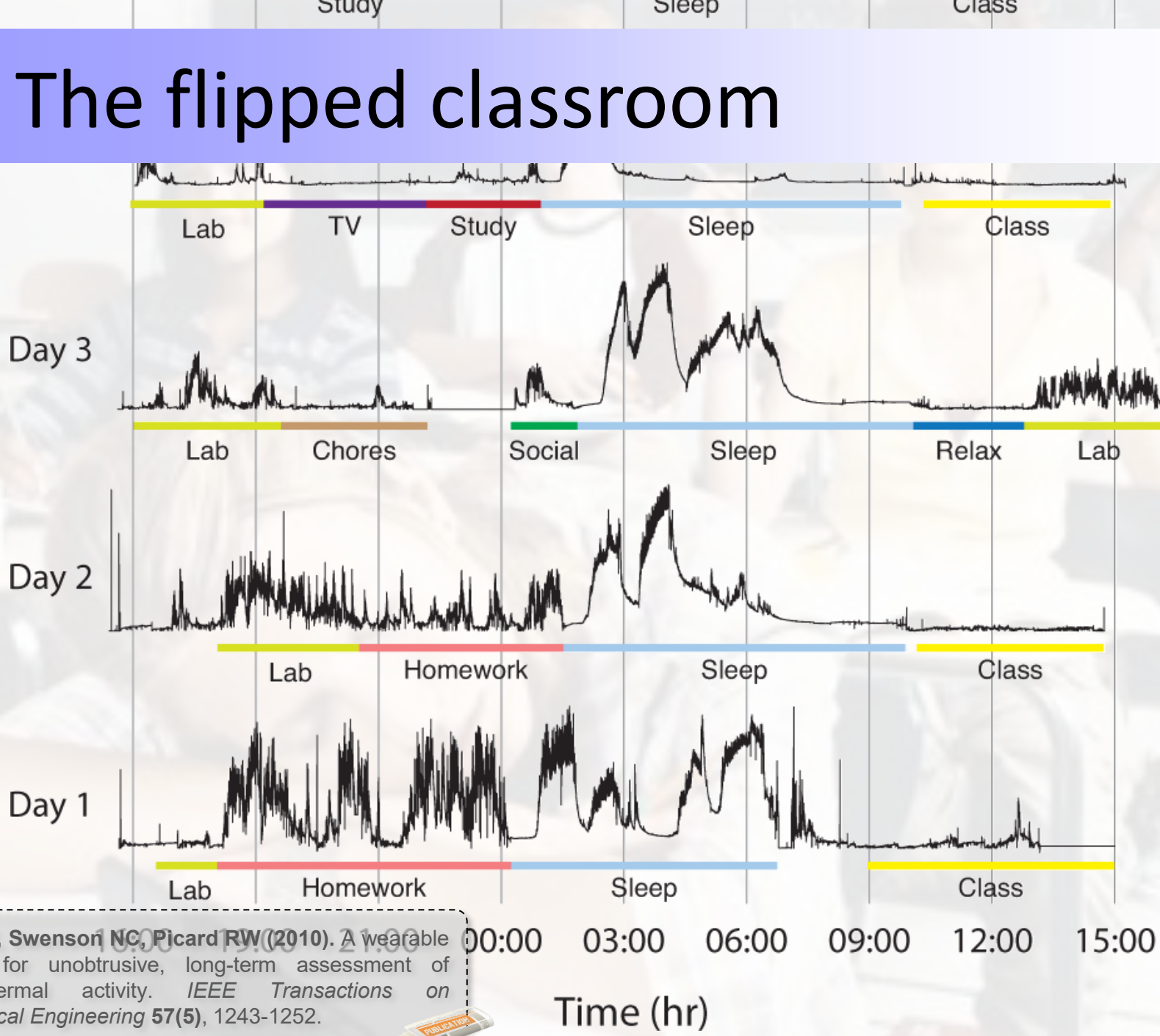
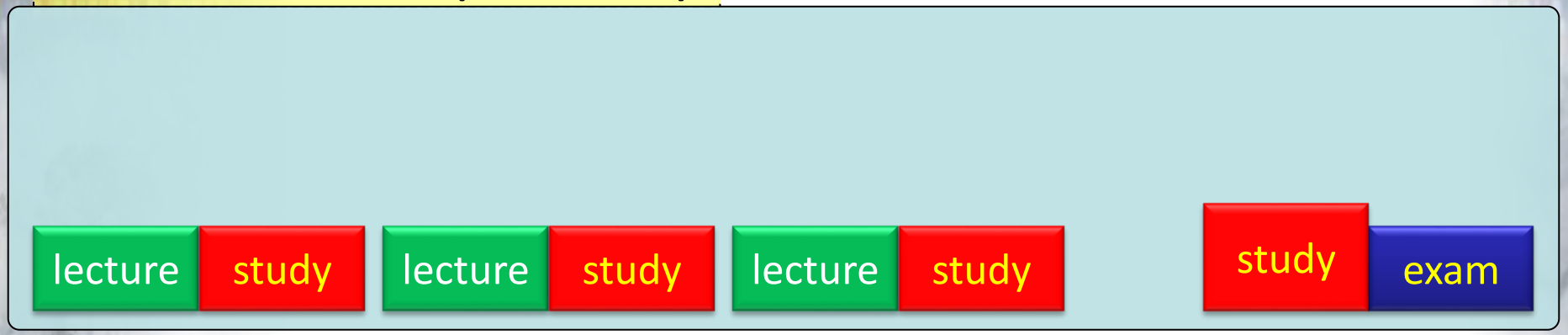
# The flipped classroom




**Poh MZ, Swenson NC, Picard RW (2010).** A wearable sensor for unobtrusive, long-term assessment of electrodermal activity. *IEEE Transactions on Biomedical Engineering* **57(5)**, 1243-1252.

# The flipped classroom

**traditional classroom (ideal world)**

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# The flipped classroom

**traditional classroom (real world)**

lecture | lecture | lecture | study | exam

**flipped classroom**

study | lecture | study | lecture | study | lecture

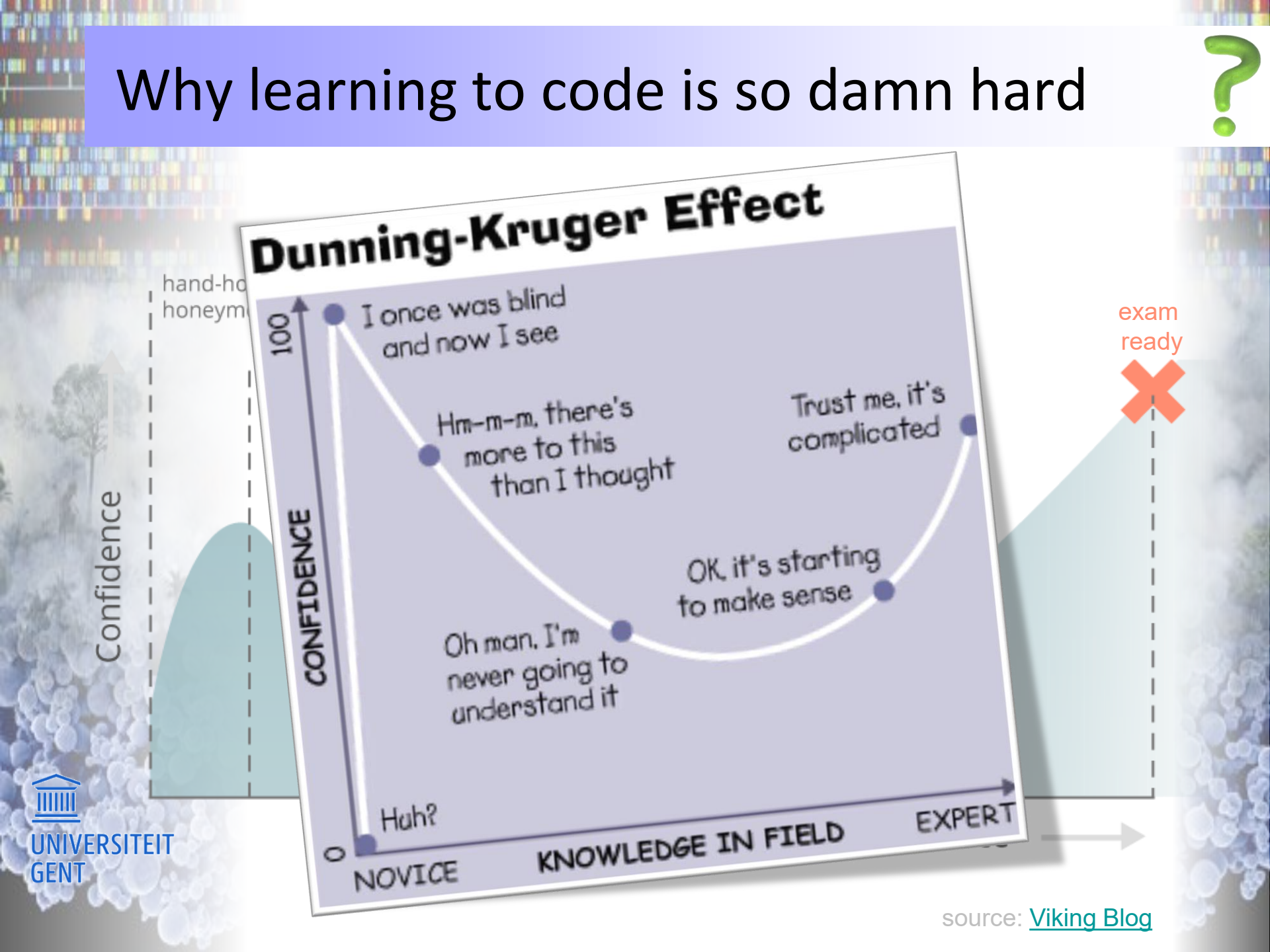
study | exam

# Feedback impediment

- course: programming and algorithms (Python)
  - 10 problem series
  - 60 problems
  - 483 students
  - 66 495 submitted solutions
  - 73.4% problems solved correctly on average
  - 9 878 833 source code lines
  - 287 513 007 source code characters

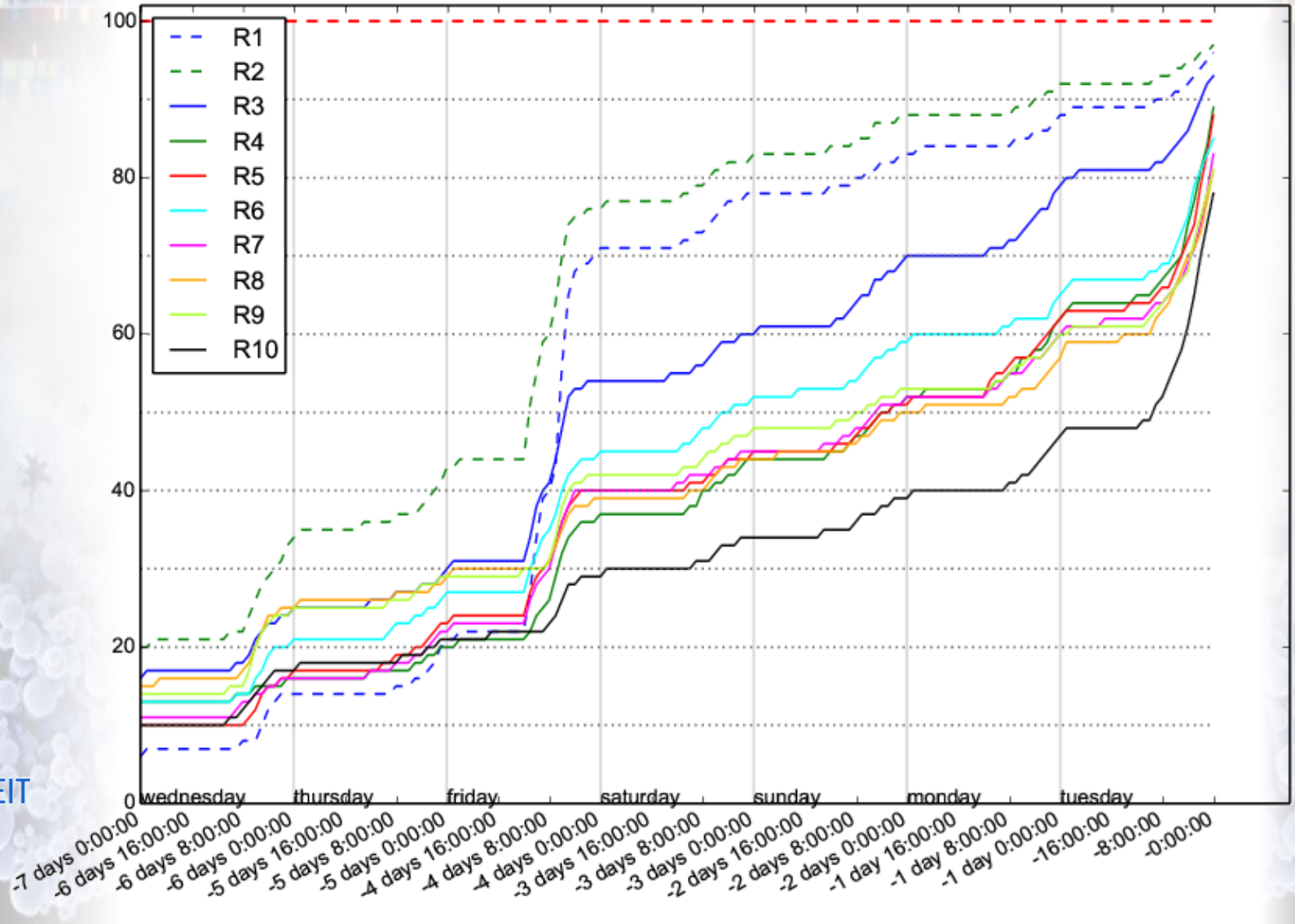
# What mindset do you have ?

# Why learning to code is so damn hard




source: Viking Blog

# Active learning

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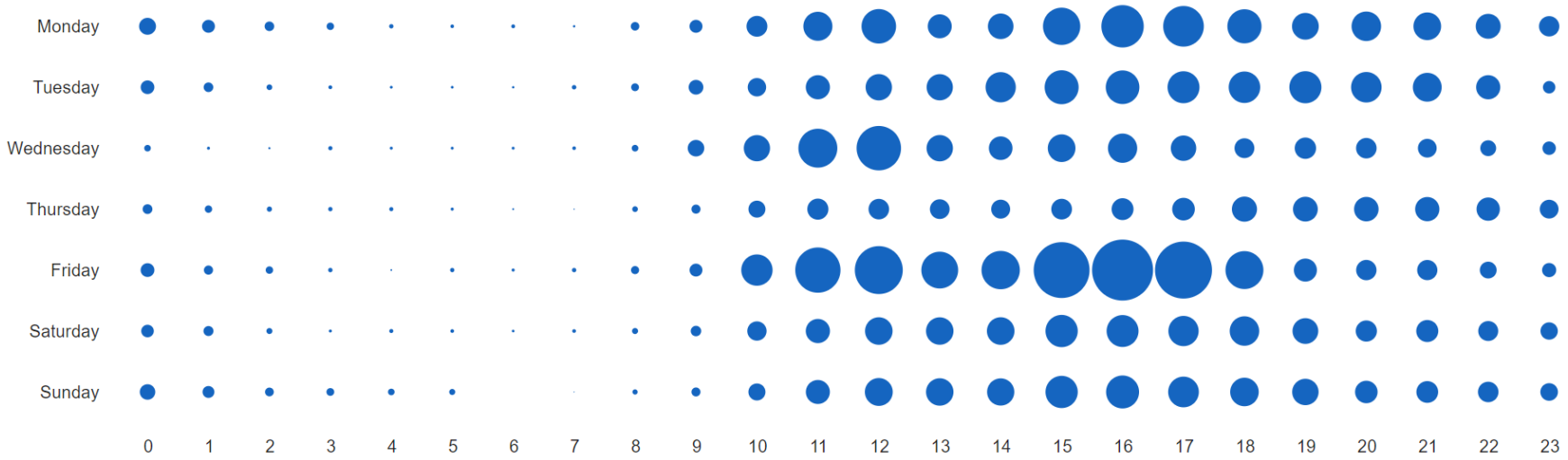
# Active learning

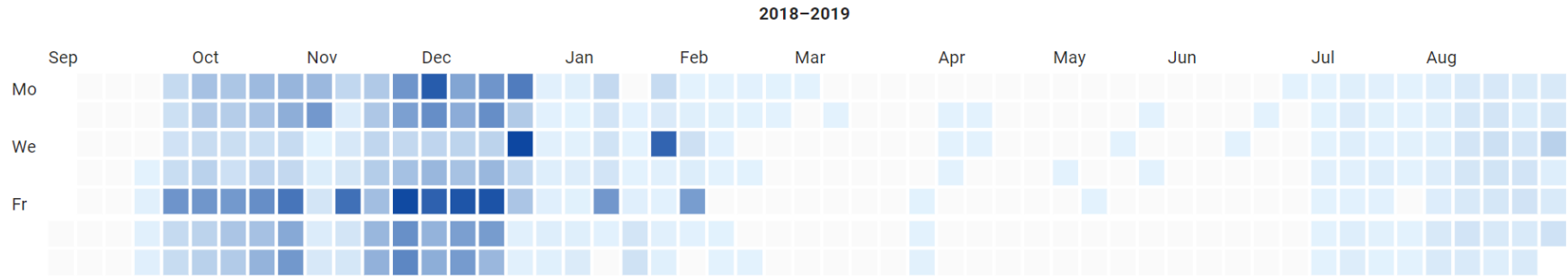
## Punchcard

This graph shows you on which moment in the week submissions have taken place.




## Heatmap

This graph shows you on which days most submissions took place.



# Active learning

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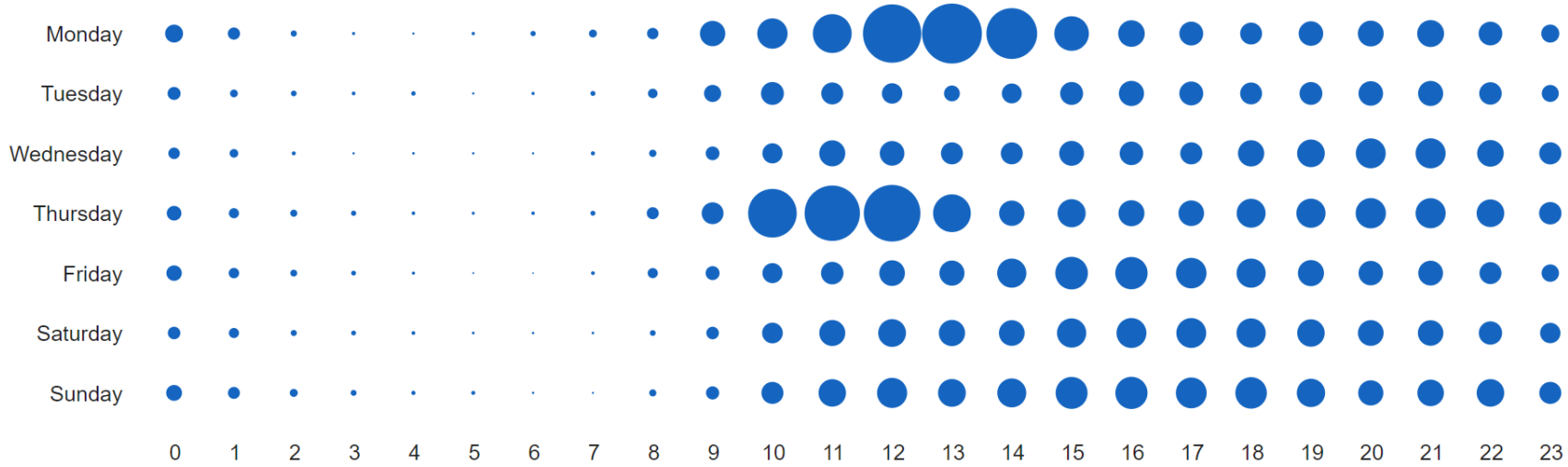


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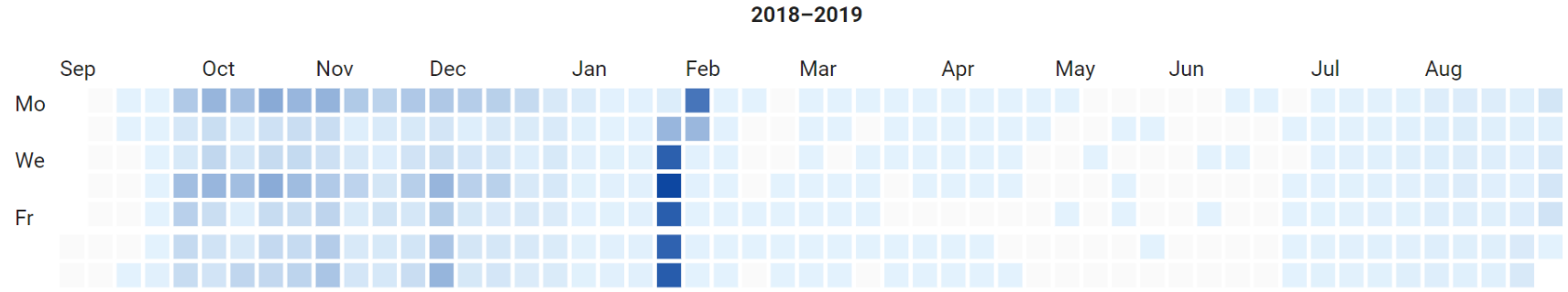
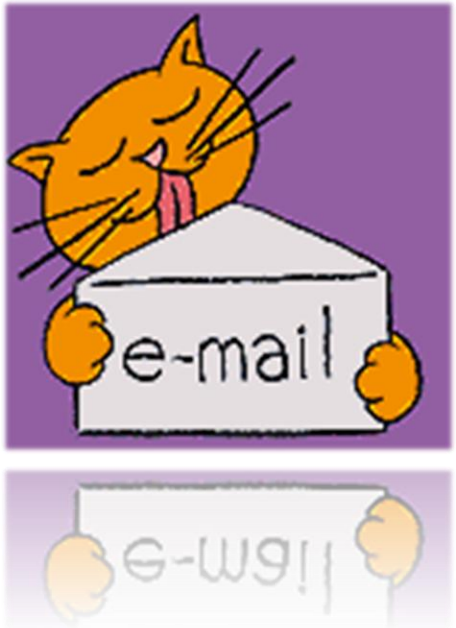


# Examination mark

- end-of-term evaluation ("exam")
  - 3 questions
  - each question has same weight
  - total weight: 16/20 of examination mark
- continuous assessment
  - 10 series of mandatory exercises
  - 2 mid-term evaluations
  - weight: 4/20 of examination mark

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# What do we need to know?

- in theory
  - all topics covered during lectures
  - all skills needed to solve exercises that are similar to the ones covered during the hands-on sessions
- in practice
  - reference book "The Practice of Computing using Python"
  - chapters 0-14

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# Exam contract

- entirely open book/open Internet
- information sources allowed during exam:
  - reference book " The Practice of Computing using Python"
  - (printed/electronic) slides from lectures
  - solutions to exercises (hard copy, USB, Pythia, …)
  - tutorials, summaries, … (online or hard copy)
- strict time limit for the exam (3¾ hours)
  - students are more fluent in Python programming will be able to solve a larger part of the exercises and this obtain a better mark

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# Tips & tricks

- don't be trapped by the "open book exam" concept
  - does not mean you don't need to "know" anything
  - avoid losing time in searching for information that can be considered "common knowledge"

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# Exam contract

- Internet access allowed
  - access to Pythia, Athena (Eclipse/PyDev), Minerva, Google, ...
  - all traffic is logged !!
- communication with third parties is NOT allowed
  - oral
  - cell phone
  - paper
  - electronic channels
    - chat, email, forum, Facebook, Twitter, ...
- use of AI-based tools is NOT allowed

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# Exam contract

- exam questions are completely in line with exercises made during the hands-on sessions
- NO oral explanation with the solutions submitted during the exam, in contrast to end-semester evaluation
  - pure "written" exam
  - exam guardians not necessarily have Python skills
  - strong advice: document your solutions
    - ~~on paper~~
    - using embedded comments in electronic files

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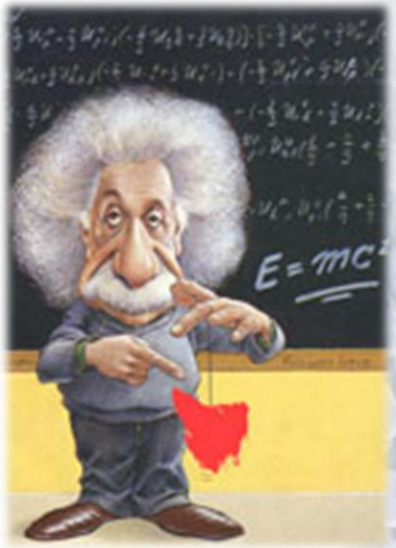
# Goals

practice > theory

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# Tips & tricks

- ID yourself
  - fill up personal information on answer form (name, study program, date, ...)
  - make student card visible for in-class check
- store intermediate versions of solutions
  - use version numbers
  - make sure you know which is the latest version
  - also submit intermediate versions
- use comments in source code
  - gives additional information (metadata) to the person evaluating you submitted solution

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# Keyboards


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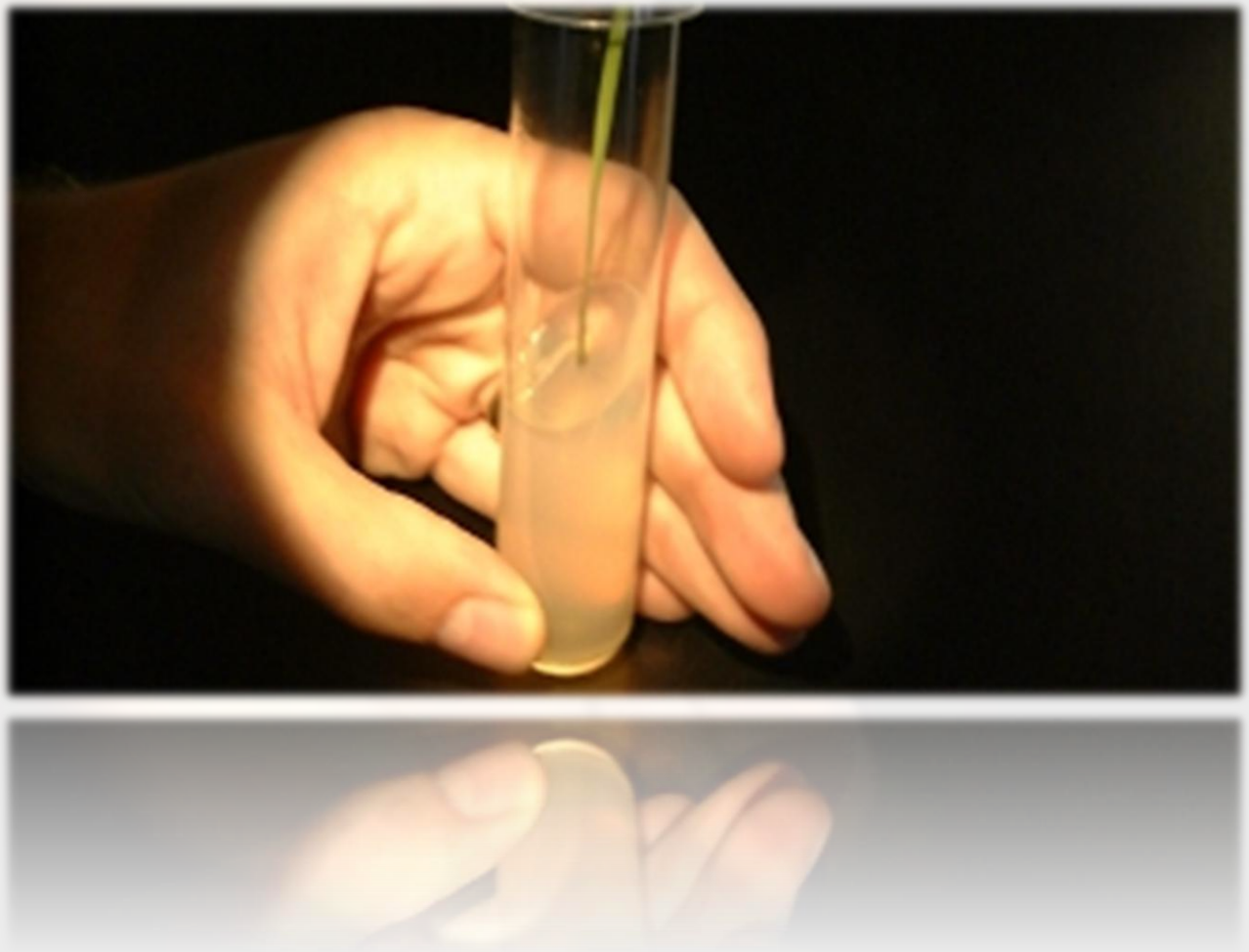
# Osmuthalluthexium



# Quilts

`Quilt(2, 2, '//++')`

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`Quilt(2, 2, '-\\||')`

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=

`Quilt(2, 4, '//-\\++||')`

| | | | |
|---|---|---|---|
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| + | + | \| | \| |

`Quilt(4, 2, '+\\+\\-|-/')`

| | |
|---|---|
| + | \ |
| + | \ |
| - | \| |
| - | / |

turn

# Questions or remarks

- all questions about exercises or the exam can be addressed via Dodona Q&A module or via Ufora forum during coming weeks
- only email lecturer for personal matter

- good luck during the exam period,
  take care of yourself and all your loved ones,
  and *may the source be with you* ...

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# The End


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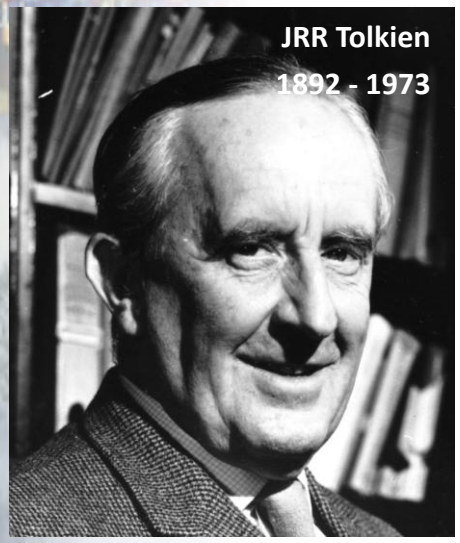
# The sky is the limit…




"It's a job that's never started
that takes the longest to finish."

— JRR Tolkien

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