

The London Python Code Dojo



An Education in Developer Education

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The London Python Code Dojo is a community organised monthly meeting of Pythonistas. This non-technical talk explains what we get up to. My aim: to encourage you to organise a dojo.

About Me:

- Musician (tuba, piano, organ, theory & composition)
- Teacher (mainly teenagers but also pre-school to adult)
- Philosophy of Education (concept of creativity)
- Writer (O'Reilly book coming soon)
- Developer (Python for 3 years, .NET before)
- Currently at Fluidinfo (world changing start-up) :-)

Agenda:

- What is a Dojo? (Official vs London definition)
- Why participate in a Dojo? (What's in it for me?)
- What is a good Dojo? (Attendee / Organiser)
- Conclusion: Some personal observations.

I re-wrote some of this talk as a practical response to the “diversity” and “genius” keynotes. A “dojo” is one way to address the vision/challenges these talks mention.

What is a dojo? (official definition)

Dojo is a martial arts term. It's a place where you go to practice. I feel uncomfortable about this but the name has stuck. Perhaps we should call it a "Code-do" or "Py-do"..? ("do" means place)



Invented here



OpenStreetMap

The Free Wiki World Map

Started by French dudes in Paris around December 2004

**“Acquiring coding skills
should be a continuous
process...”**

<http://codingdojo.org/>

Very simple philosophy. Improving existing skills is also important.

**Assumption: A good
developer is always
learning and re-evaluating
in order to improve.**

I hope we can all agree with this..?



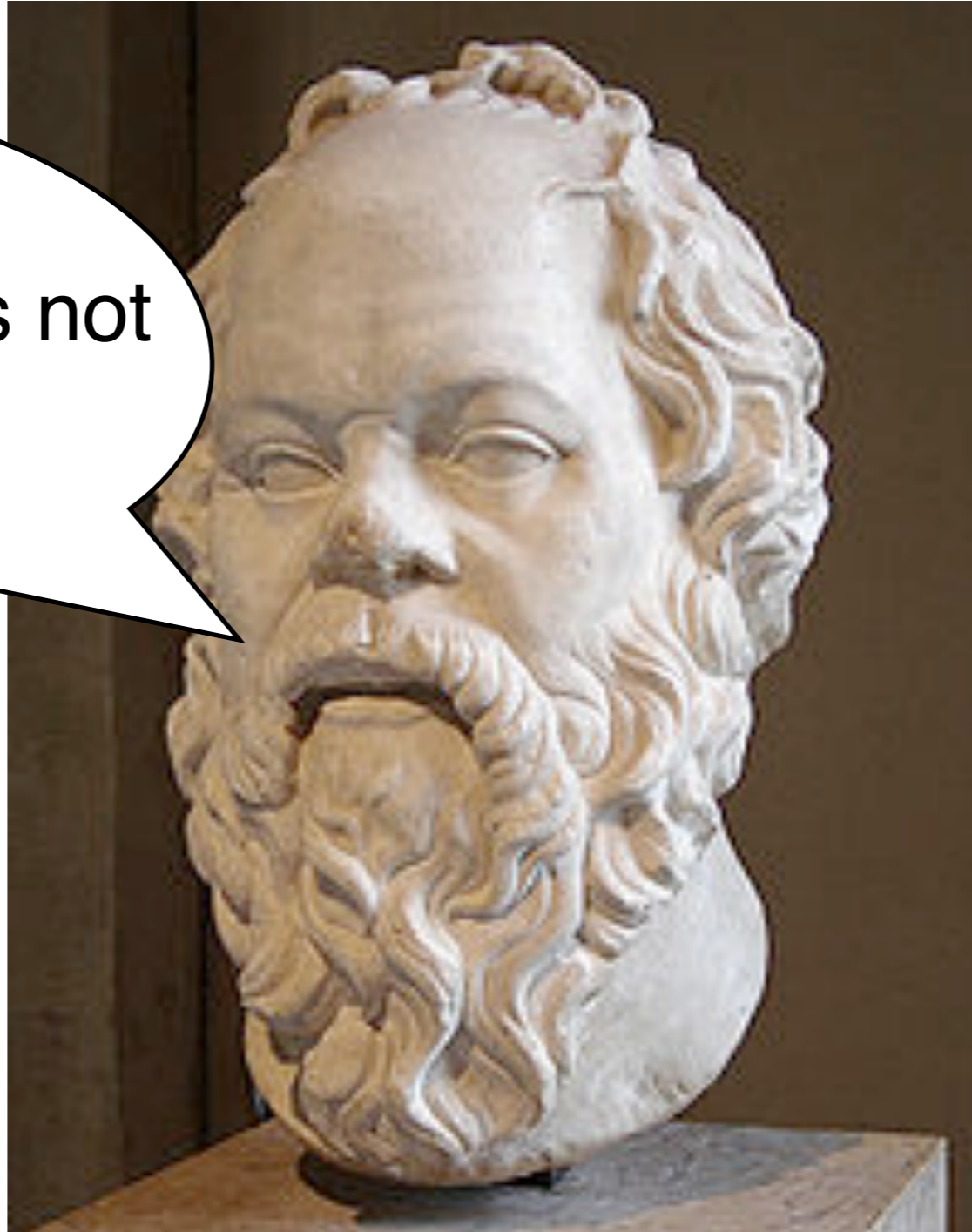
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**Code Dojo =
Deliberate Practice**

To improve one needs to practice...

These are old ideas...

The unexamined life is not worth living.

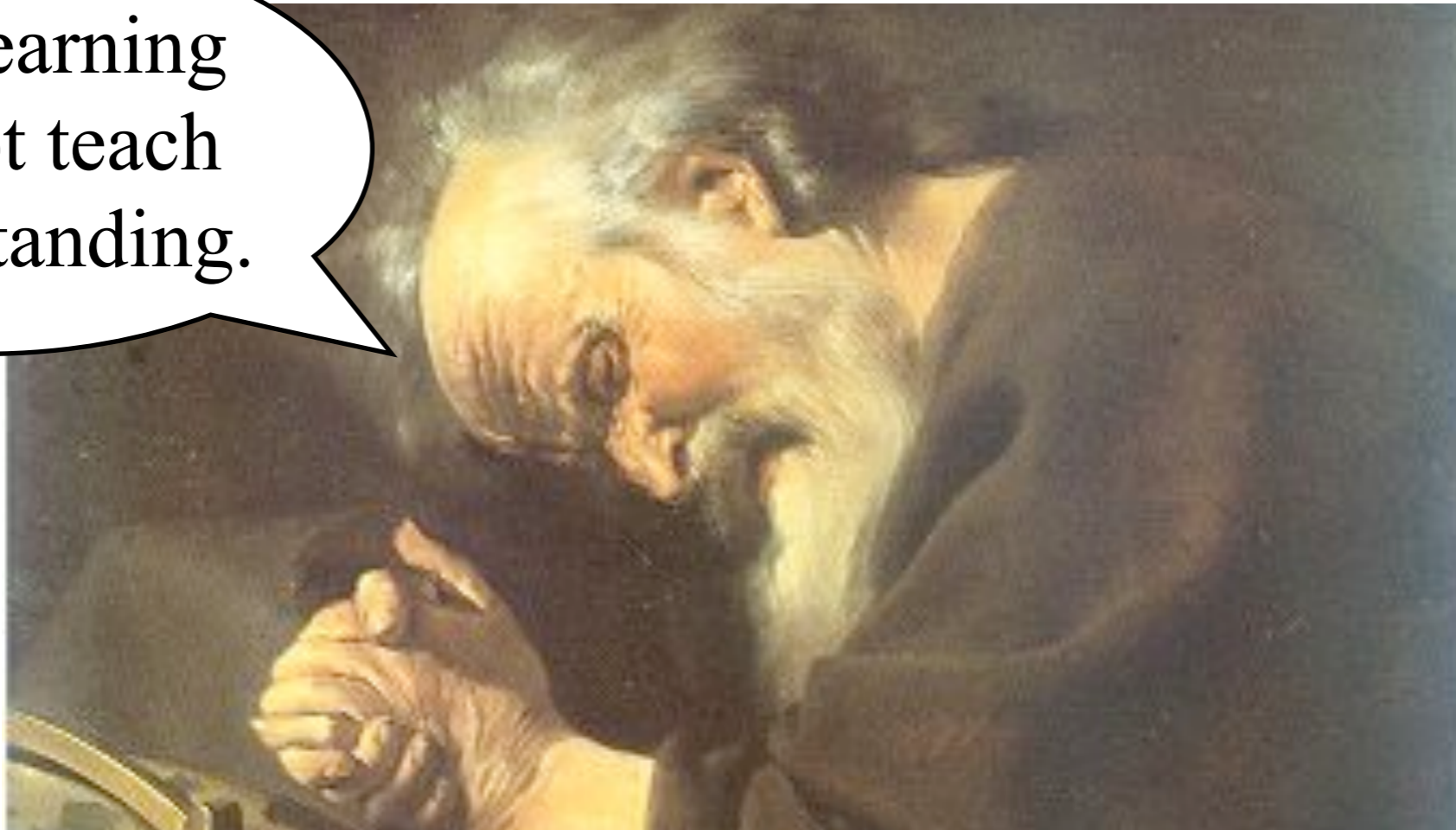


http://en.wikiquote.org/wiki/File:Socrates_Louvre.jpg

Socrates (469-399 BCE)

The father of Western philosophy... (2500 years ago) i.e. it's good to be in a continuous process of examination and re-examination.

Much learning
does not teach
understanding.

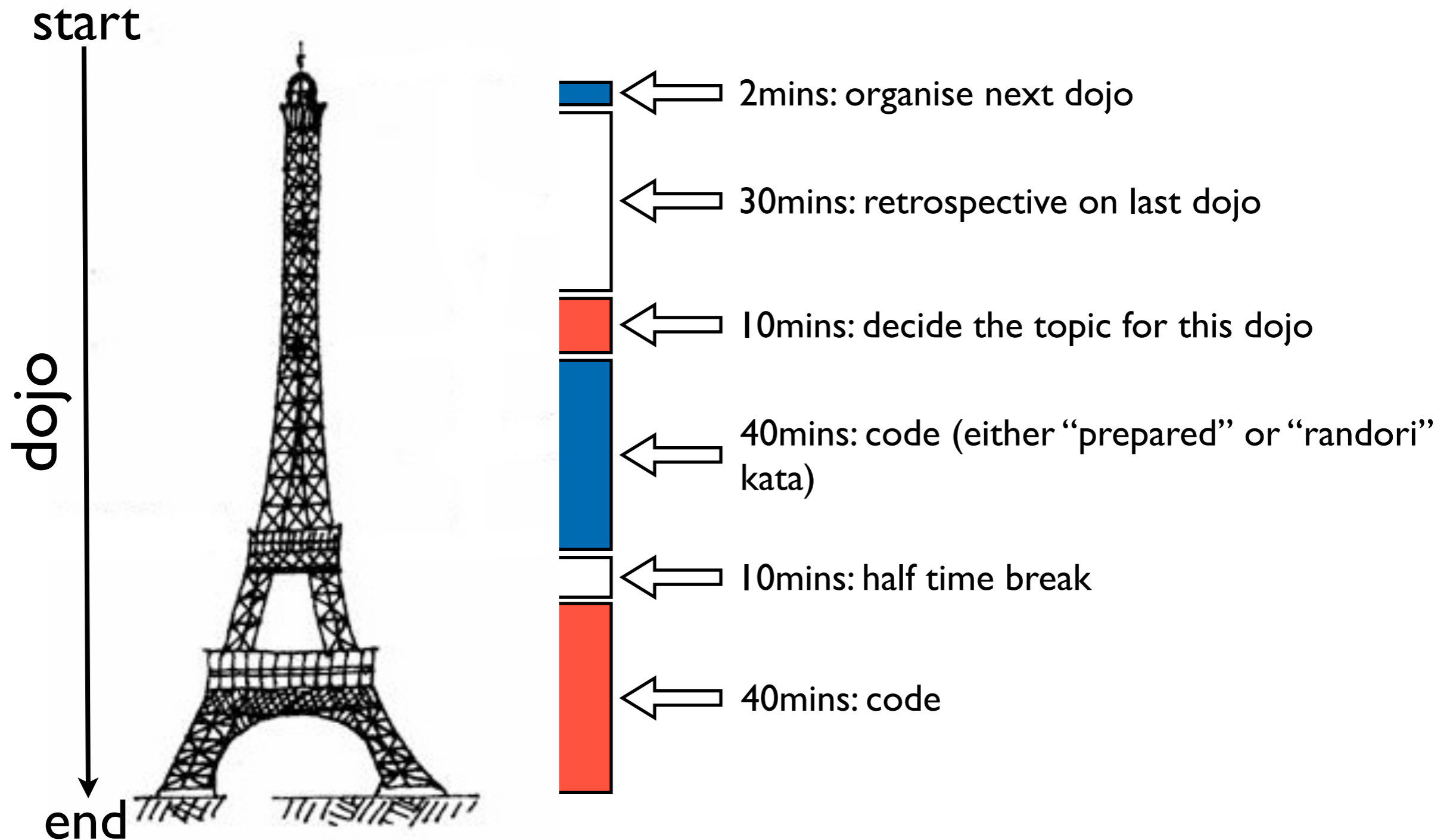


http://en.wikiquote.org/wiki/File:Heraclitus,_Johannes_Moreelse.jpg

Heraclitus (c.535 - 475 BCE)

The original grumpy old man of ancient Greek philosophy... in other words... don't just read the book. Go *do* something... practice!

Parisian Dojo Rules



(not to scale)

What happens at a dojo? codingdojo.org sets out detailed rules for timing and conduct... The interesting tasks are the two 40 minute “Kata”.



<http://www.flickr.com/photos/renfield/351557228/>

Kata..?

Kata is another borrowed martial arts term meaning “forms”. They’re pre-specified / choreographed steps to be practiced again and again. Improves muscle memory.

Allegro

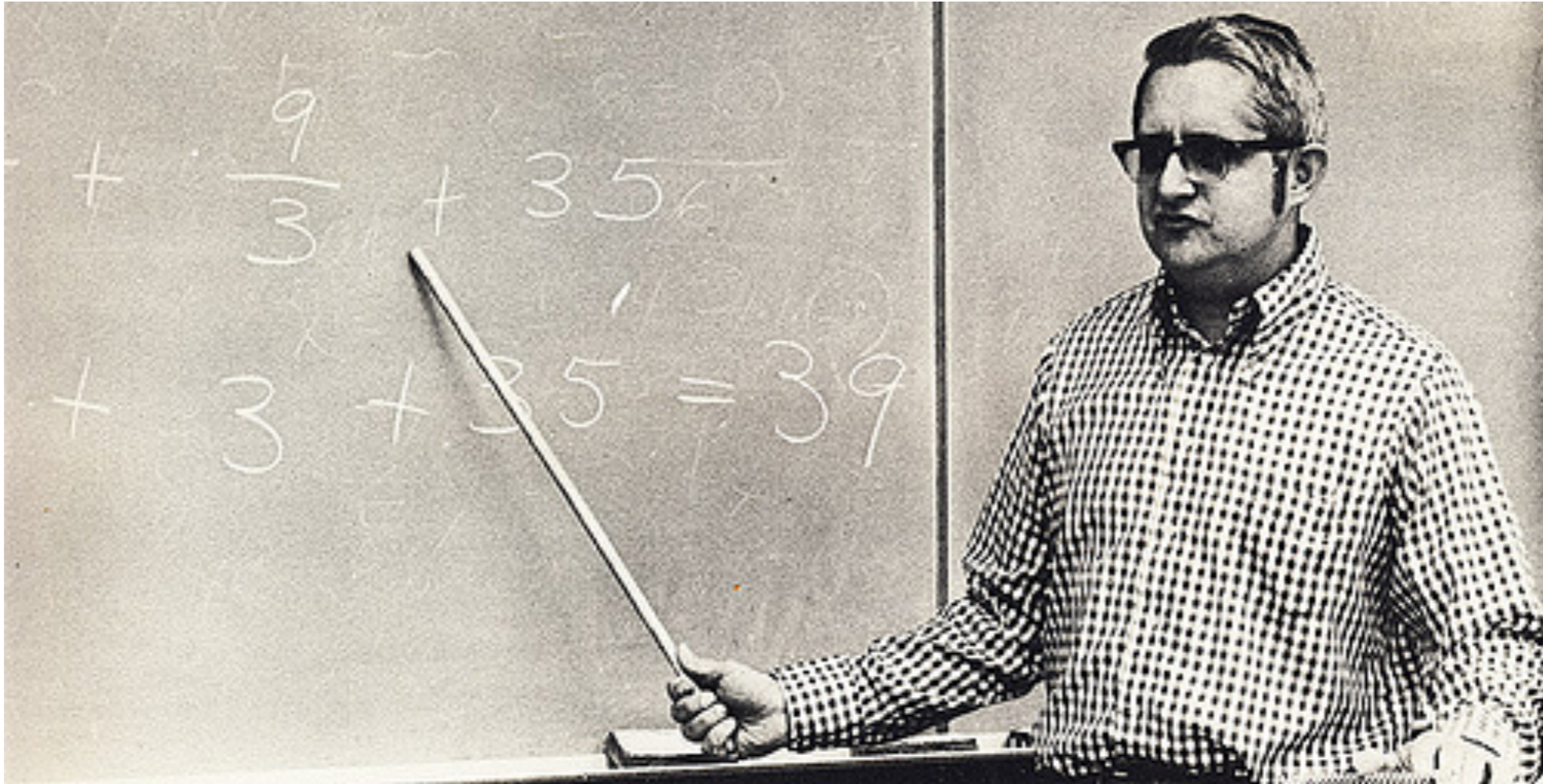
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Like scales or etude that musicians practice. Graded in difficulty & focus on particular “aspects”. Practice correctly: reflect aiming for autonomy. Code-dojo kata = code problems.

Prepared Kata



<http://www.flickr.com/photos/foundphotoslj/466713478/>

- A presenter shows how to solve the problem using TDD and BabySteps™
- Each step must make sense to everyone present
- Only interrupt if you don't understand what's going on

Two mechanisms for doing Kata in a dojo: Prepared and Randori. ^^^ Not a photo from the dojo... :-)

Randori Kata



- Public pair programming using TDD
- Each pair has a time slot
- At the end the pilot returns to the audience, the co-pilot becomes the new pilot and a new co-pilot volunteers from the audience

Randori means “chaos taking” (freestyle). Audience can’t interrupt, only co-pilot (ask questions, offer advice). Pilot gives a running commentary of thought process. (A dojo photo!)



What is a dojo? (London definition)

Arose from a conversation in a Python pub meet-up. I was explaining music “masterclasses”. Jonathan Hartley responded with an explanation of the code dojo. We organised a meeting...

**We didn't know what we
were doing and didn't
stick to the rules!**

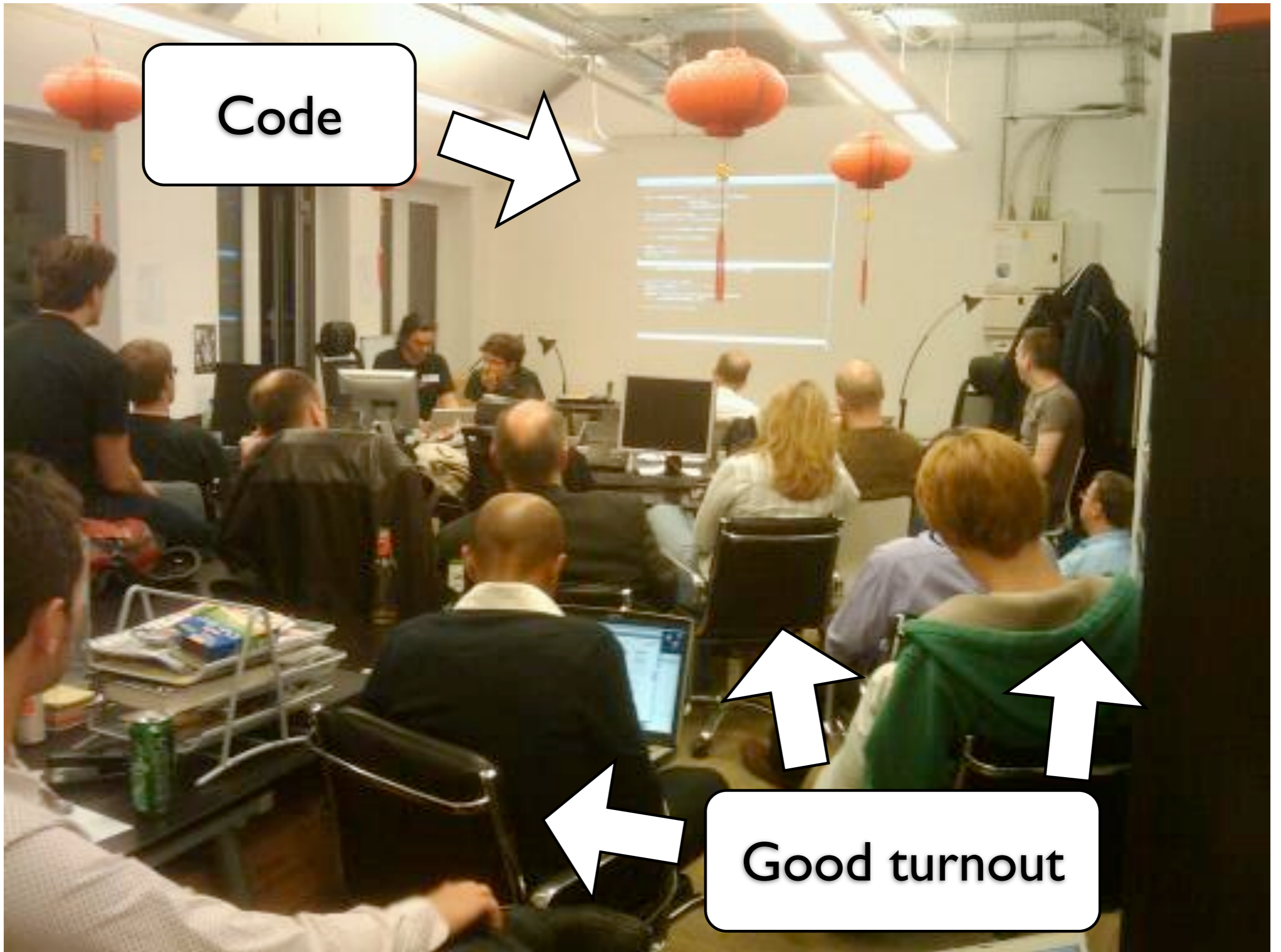
We really did try hard at the start.

Geeks actually socialising!



Coding fuel

Mistake #1: We started the evening with pizza and beer. This didn't set the scene for calm and thoughtful coding.



Code

Good turnout

About 25 people turned up. We chose to work using a Randori kata. The rule for a time slot was 10 minutes or a passing unit test for each pair. This worked quite well... (but)

We only had Emacs or Vim available...



...and didn't have a standard keyboard.

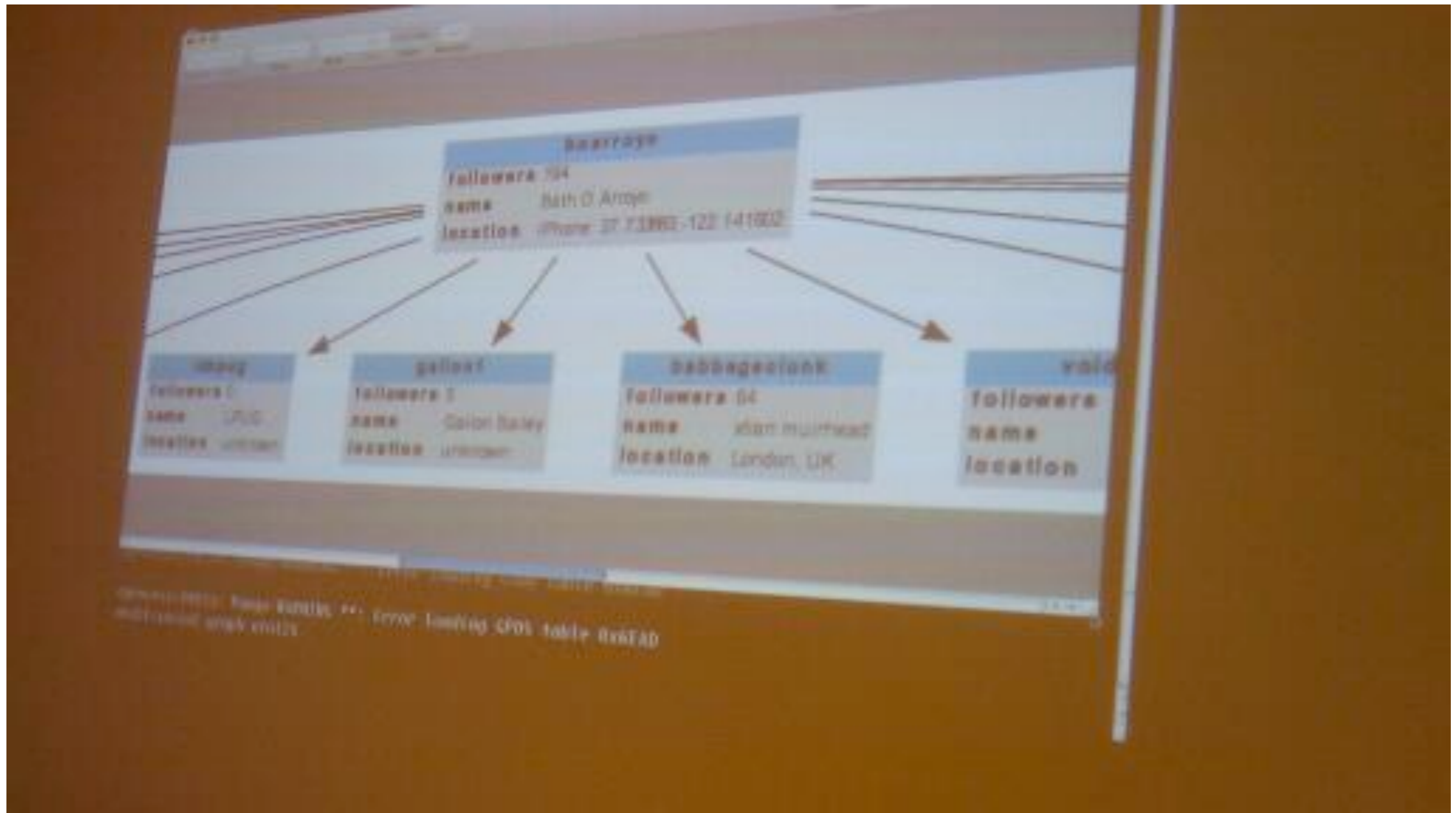


The Twitter based kata sucked (too complex) :-)



Only 6-7 people got a chance to pilot.

Several more mistakes... Things we should have thought of in advance... :-)



We got it to work!

The task was to display a graph of a user's followers on Twitter.

**Other stuff that wasn't
supposed to happen...**

- Spontaneous applause for working code
- Audience participation
- Lots of discussion & debate
- A generally noisy time



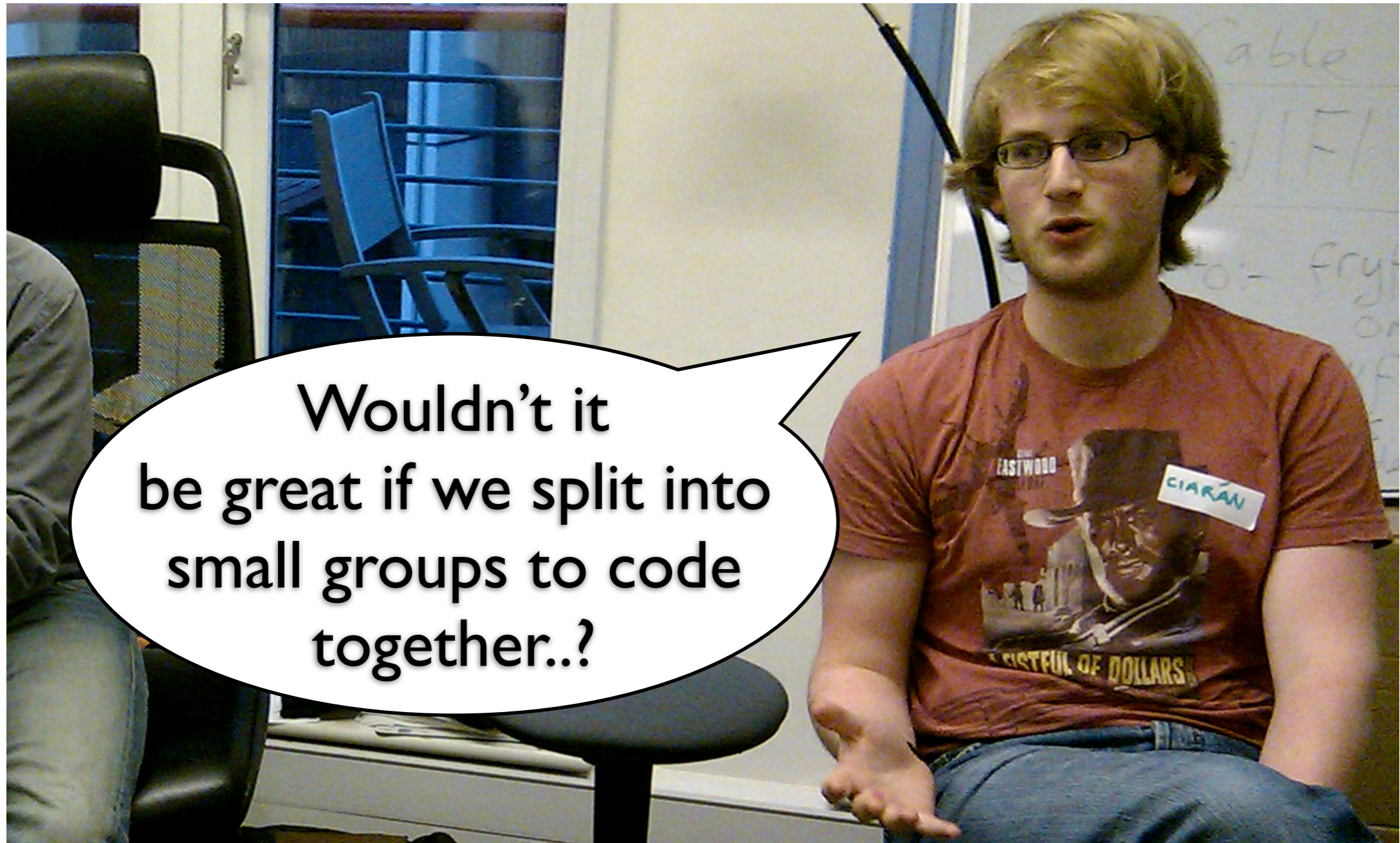
(actually, that was good stuff)

In the discussion at the end we thought interaction was a positive aspect of the evening (photo of Gautier's dojo beer bottle art). We continued doing Randori based dojo until...



Dave's great idea...

Dave had a great idea. He wanted to *practice*.



Ciarán's great idea...

Lightning struck twice... Ciaran had a good idea too. Didn't like it that only 6-7 people coded. Also, some attendees didn't want to code in front of everyone but were happy in small groups.

Two new dojo formats!

ZOMG! Epic win!



#1 Show and Tell Dojo

Rene (PyGame core dev) setting up a no-holes barred, everything-but-the-kitchen-sink demo of PyGame... (if you ever meet Rene, ask him how he deploys websites).

**More like a seminar
than presentation.**

We encourage attendees to interrupt, ask questions, debate, code along, point out problems and generally don't just sit there...



Participation expected



#2 Team Dojo

These evenings are generally very energetic, fun yet concentrated in nature. It's social coding in the raw.



A bit like the classic TV programme “The Great Egg Race” or Scrapheap challenge... teams complete a pre-defined task (with Python).

Dojo tasks,

- 1) Pygame (no website).
- 2) Roman Numeral Calculator.
- 3) O X - tic-tac-toe.
- 4) Pig Latin Translator
- 5) Game of life.
- 6) Minesweeper
- 7) Text → LCD
- 8) Mandelbrot
- 9) Battleships.

**Suggest
then
vote
on a
topic**

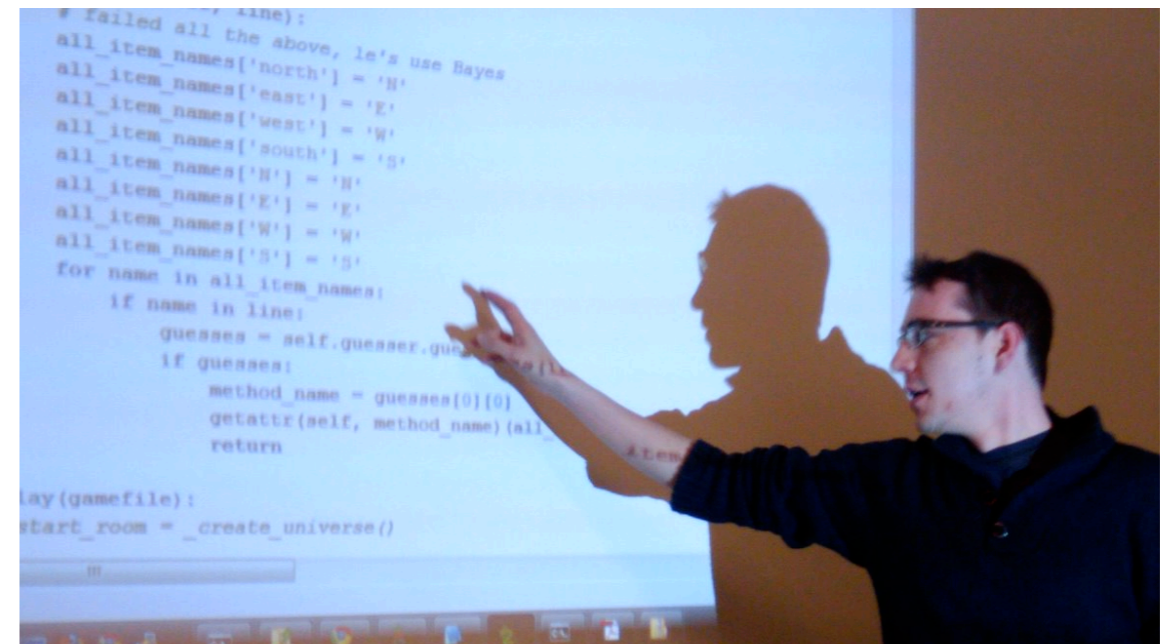
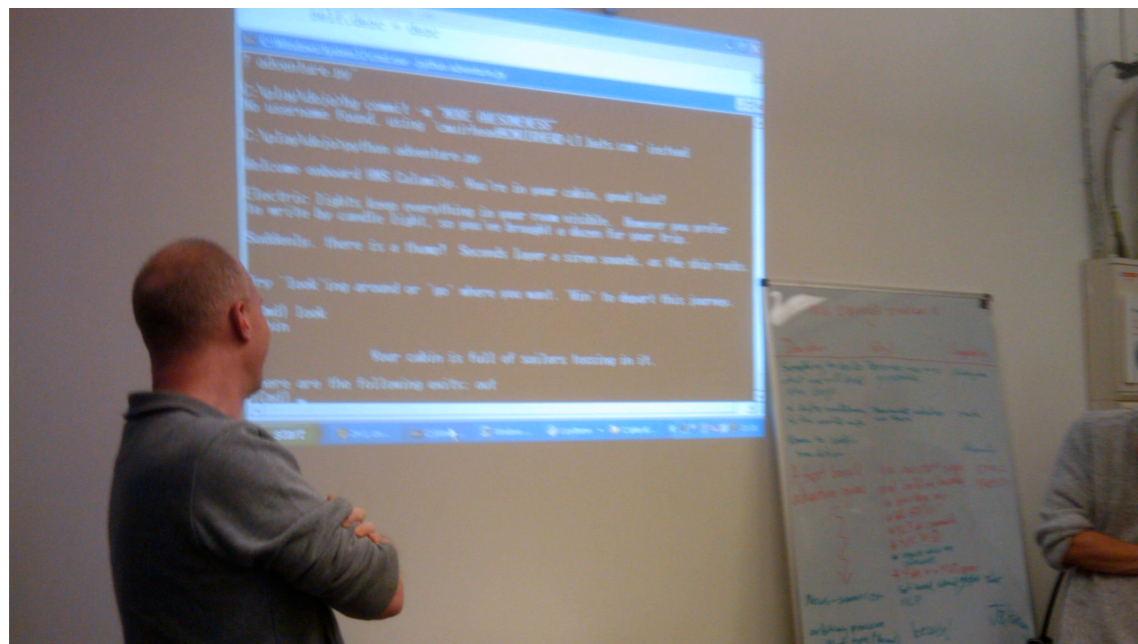
Task ideas written on the board during the pizza and beer bit at the start. We then vote and split into teams.



Teams do the same task

This takes about 1.5 hours.

```
200     if item.fixed:
201         print item.fixed
202         return
203     del self.player.location.items[item.name]
204     self.player.items[item.name] = item
205     print "Taken", item.name
206 else:
207     print "You can't see", target
208
209 def do_take(self, target):
210     return self.do_get(target)
211
212 def do_drop(self, target):
213     item = find_item(self.player.items, target)
214     if item:
215         del self.player.items[item.name]
216         self.player.location.items[item.name] = item
217         print "Dropped", item.name
218     else:
219         print "You don't have", target
220
221 def do_inventory(self, target):
222     print self.player.inventory()
```



Show, tell, review & questions

Usually the best part of the evening (for me). Often the task is solved in interesting ways *you* might not have imagined. Presenting, explaining code & design is a good thing to practice.

Why participate in a Dojo?

How does attending a dojo relate to our assumption that a good developer is always learning and re-evaluating themselves in order to improve?

- Learn by doing (practice)
- Fail safely with sympathy
- Teach one another
- Explain yourself to peers
- Explore each other's solutions
- Build a community

Educational benefits of taking part in a Dojo are pretty obvious. You get to practice! Not the original dojo format. We “forked” the concept, stole the ideas we liked & adapted it.



Nerd bait

Nerds

The pizza and beer = important means of community building and getting people relaxed. Share “war” stories, demo stuff and generally have a good time.



**It's just like IRC but
you're actually IRL!**

Attendees ability/experience differs vastly. Social = non-skill based means of welcoming new members and getting to know your peers.

**What is a good Dojo?
(Attendee's perspective)**



It is FUN...

It's easier to learn when you're having a good time.



...to solve problems...

Attendees get to go on an evil mad scientist trip...



**...in a place where it is
safe to make mistakes...**

Celebrate failure! Important point: THIS IS JUST WHAT MUSICIAN'S DO IN A REHEARSAL. You fail here so you don't fail when it really matters.

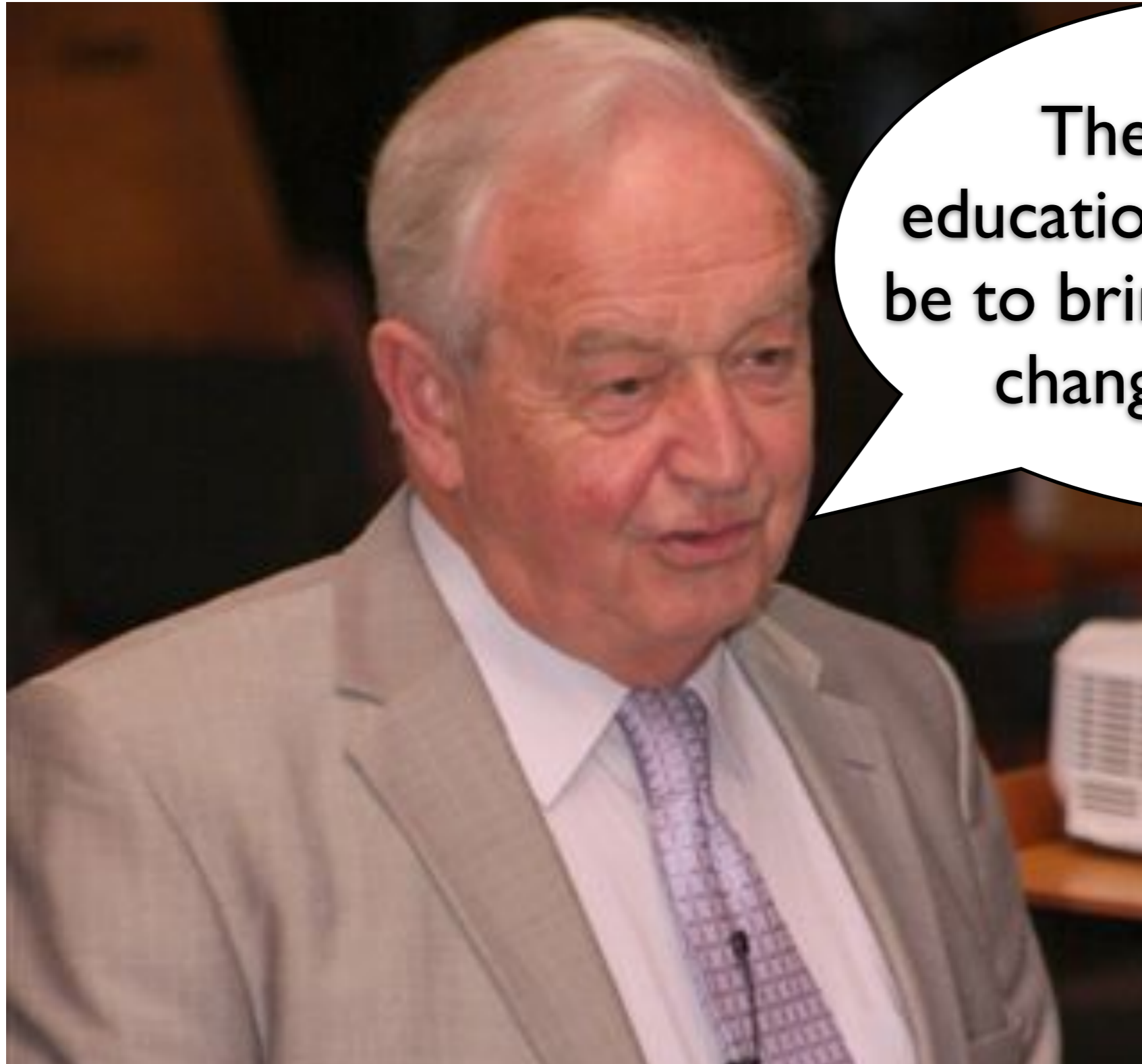


**...and you're encouraged to show
& tell what you're up to.**

Get feedback from the other attendees. Be open: analyse, appraise, report and support. TEACH! These are all good virtues/skills for a developer to cultivate.

What is a good Dojo? (Organiser's perspective)

I'm often mis-identified as the "organiser". Actually, the group organises itself. I'm interested in education & I'm reminded of something a former professor of mine once said in a lecture...



The effect of any educational activity should be to bring about a positive change in learners.

Keith Swanwick

Emeritus Professor: Music Education (London University)

(Paraphrased)



**This is a spade!
(obvious, right?)**

<http://www.flickr.com/photos/imcountingufoz/5602273537>

Surely, all learning situations have positive outcomes..? They'll be fun, interesting, life changing, etc... (every teacher wants to be like Robin Williams in "Dead Poet's Society").



Really..?

Actually: NO. Often learning situations are boring, annoying, frustrating or just plain *wrong*. You might be distracted, worried and/or compelled (rather than inspired).

How can you tell it's
going well..?

HINT: if you see something like the previous photo then it's going wrong. What is the essence of a dojo going right..? I'd suggest something like...

- There is a positive aim
- Something is happening to achieve this aim
- It is possible to measure if the aim has been met (there is feedback)

This can be generalised to any sort of learning situation (and other things too) and at both the group and individual level.

- We decide on a problem
- We work collaboratively in groups to solve the problem
- We show and tell what we did and ask for critique and suggestions

This is how I'd express it as a group based dojo.

Conclusion:
Some personal observations.

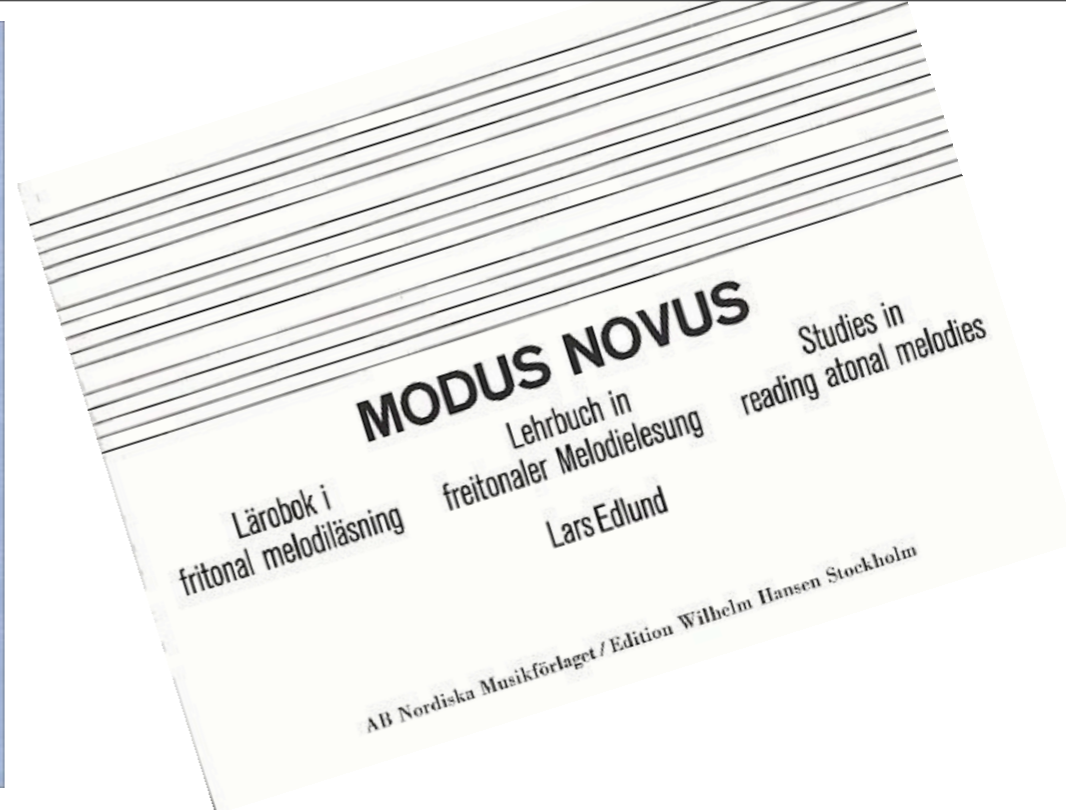
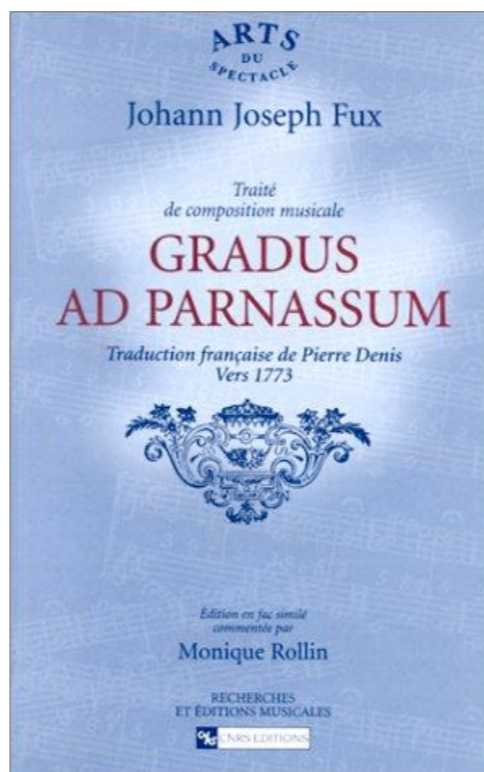
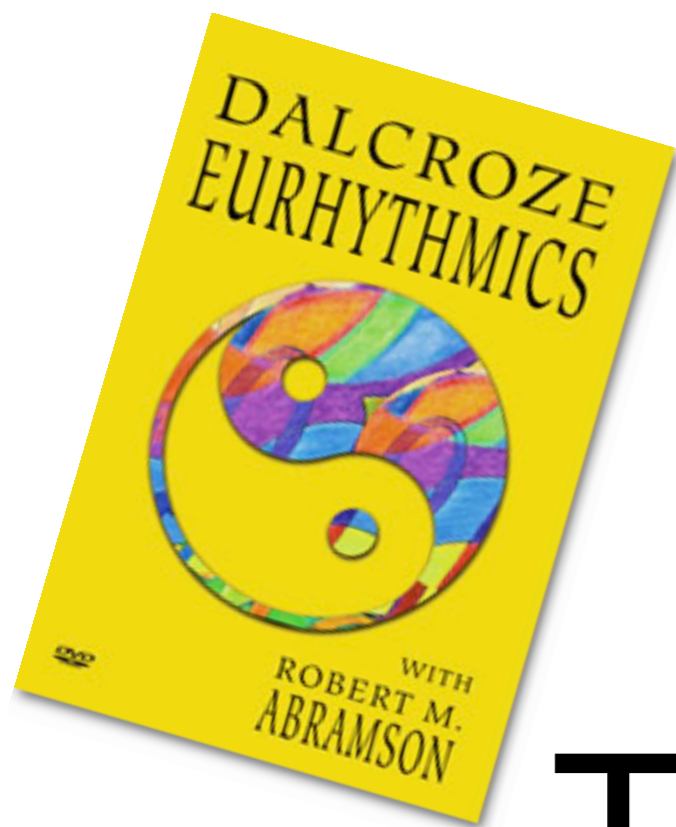
I assume everyone wants to be a better developer. One way to do this is attend a dojo... but this is just one means to an end.



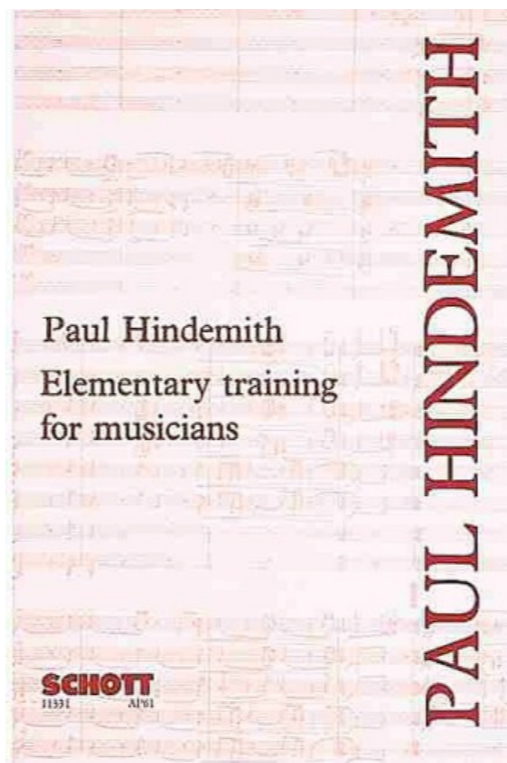
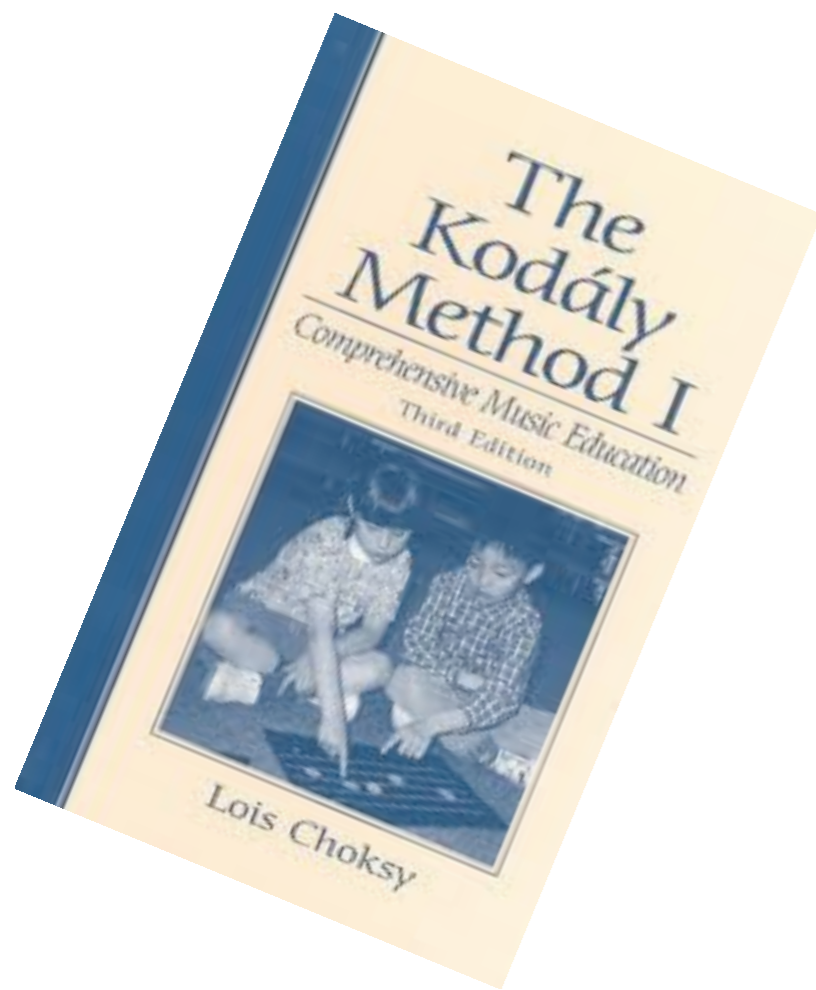
mmMMmm...
backwards talk
rubbish do I

How to be a
~~Jedi~~ Hacker

People who want to improve are often looking for teachers – but beware of people who offer themselves as gurus, who promote a “system” or offer pithy aphorisms.



This is common
in music



We have 500 years of examples in music education to draw upon. Methods and systems have always existed, been developed, built upon and can definitely be useful but...



THE SUZUKI METHOD

It doesn't work for everyone

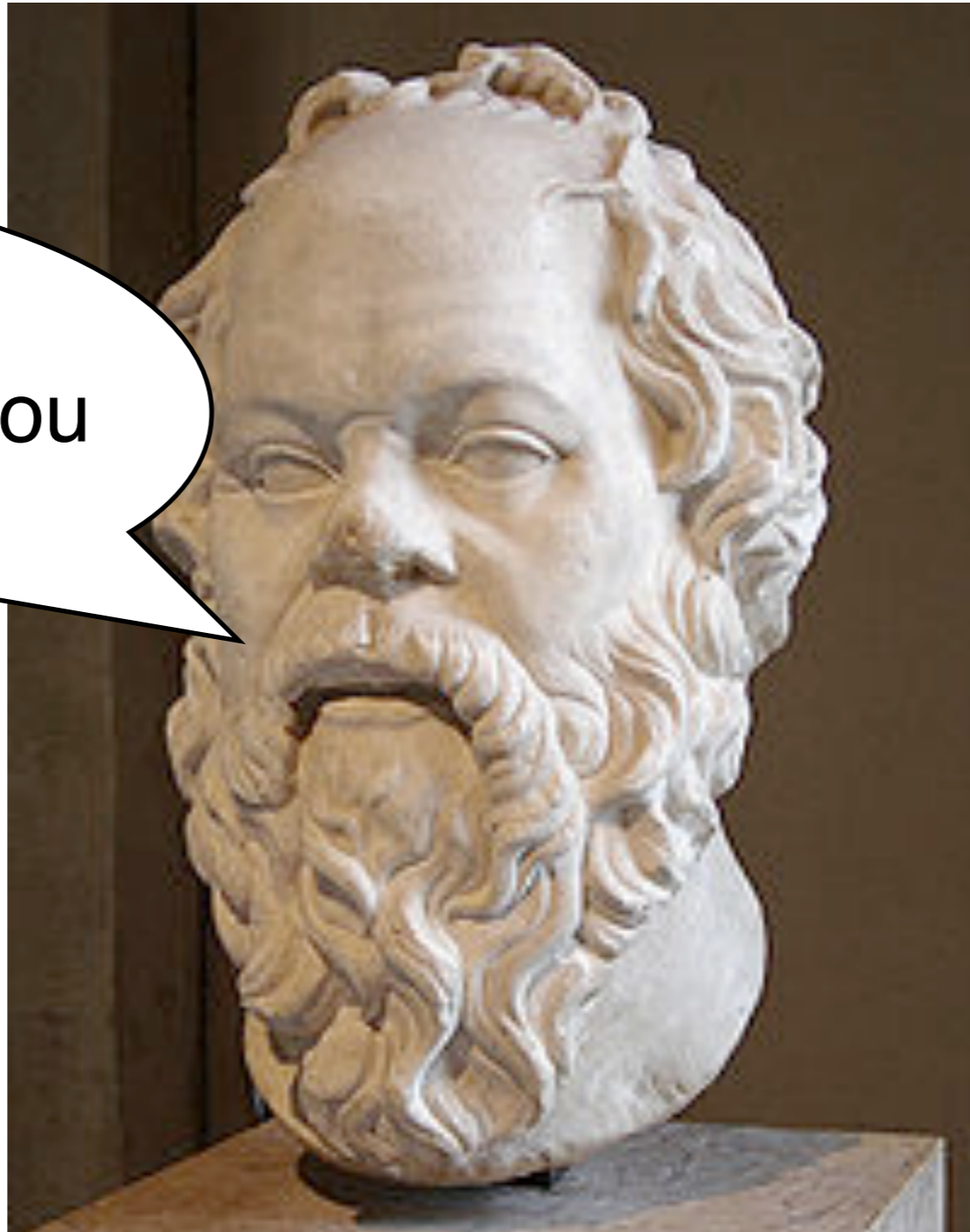
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...they can safely be ignored if something else works for you. In the very worst cases they can do serious damage (limit autonomy since they can be straightjackets).



Try not to be impressed/follow people offering “systems” & “methodologies”. Be cynical: ask questions (like we do in the dojo). Learn to practice learning! Yeah, that’s a pithy aphorism. ;-)

The only real
wisdom is knowing you
know nothing.



http://en.wikiquote.org/wiki/File:Socrates_Louvre.jpg

Socrates (469-399 BCE)

I'm with Socrates... don't just blindly follow what other people say, make up your own mind. Cultivate autonomy (an important concept within Philosophy of Education).



**If you're ever in London
come along and say hi!**

I advertise it on the Python-UK mailing list. I'll eventually get round to doing a website. The 30 tickets usually sell out in about 6 hours of the first announcement (but email me anyway).



Questions..?

Binary beer bottles :-) A question for you: Are you going to organise a dojo..? Is it clear what you have to do..? What's stopping you..? Fork the concept and run with it!