## Learning by contributing to Open-Source Software

stephane.ducasse@inria.fr https://github.com/pharo-project/pharo



z. zidane

### Practiced football?



z. zidane

### Practiced football? Yes



z. zidane



r. federer

### Practiced tennis?



r. federer

### Practiced tennis? Yes



r. federer



k. buniatishvili

### Practiced Piano?



k. buniatishvili

### Practiced Piano? Yes



k. buniatishvili

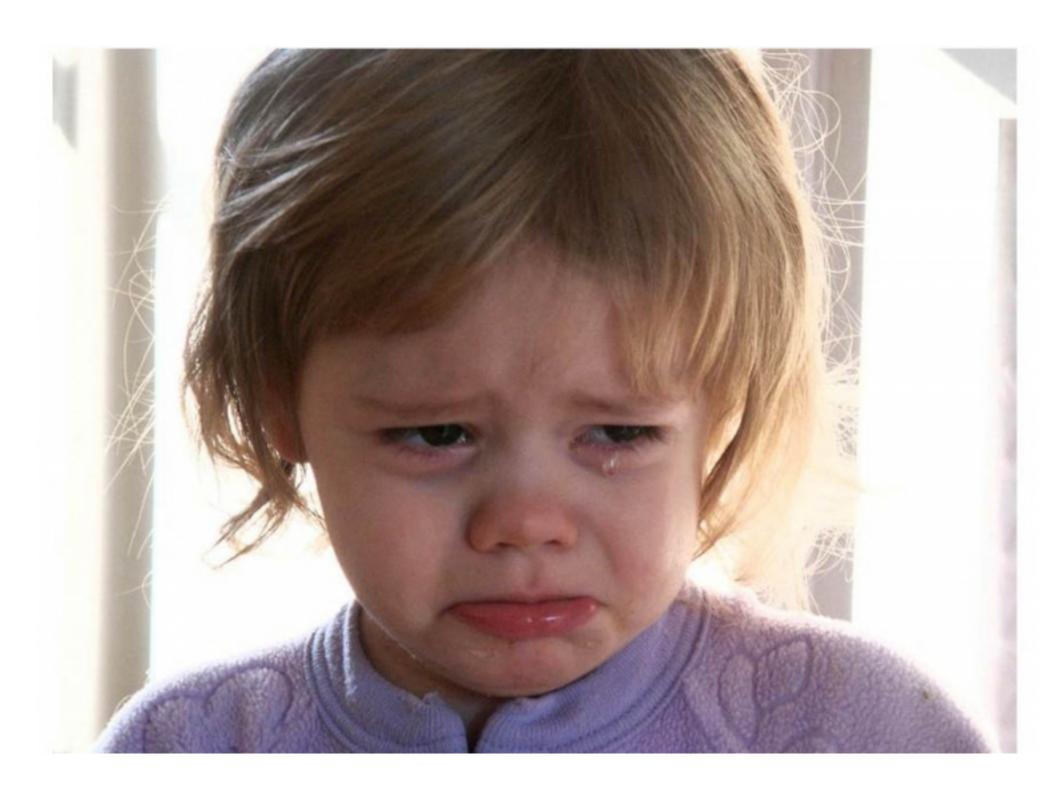
## Did you see the pattern?

### How to practice software skills?

### How to practice software skills?

- Program (but how to get feedback) code reviews are precious but difficult to get
- Code katas (always fun)
- Participate to sprints Pair program
- Participate to open-source

#### But I'm a noob





#### Wait wait wait...

#### We are all noobs!



## The solution is just some clicks away...

## Take any opportunity to read code

## Take any opportunity to contribute

#### APIECE OF CAKE



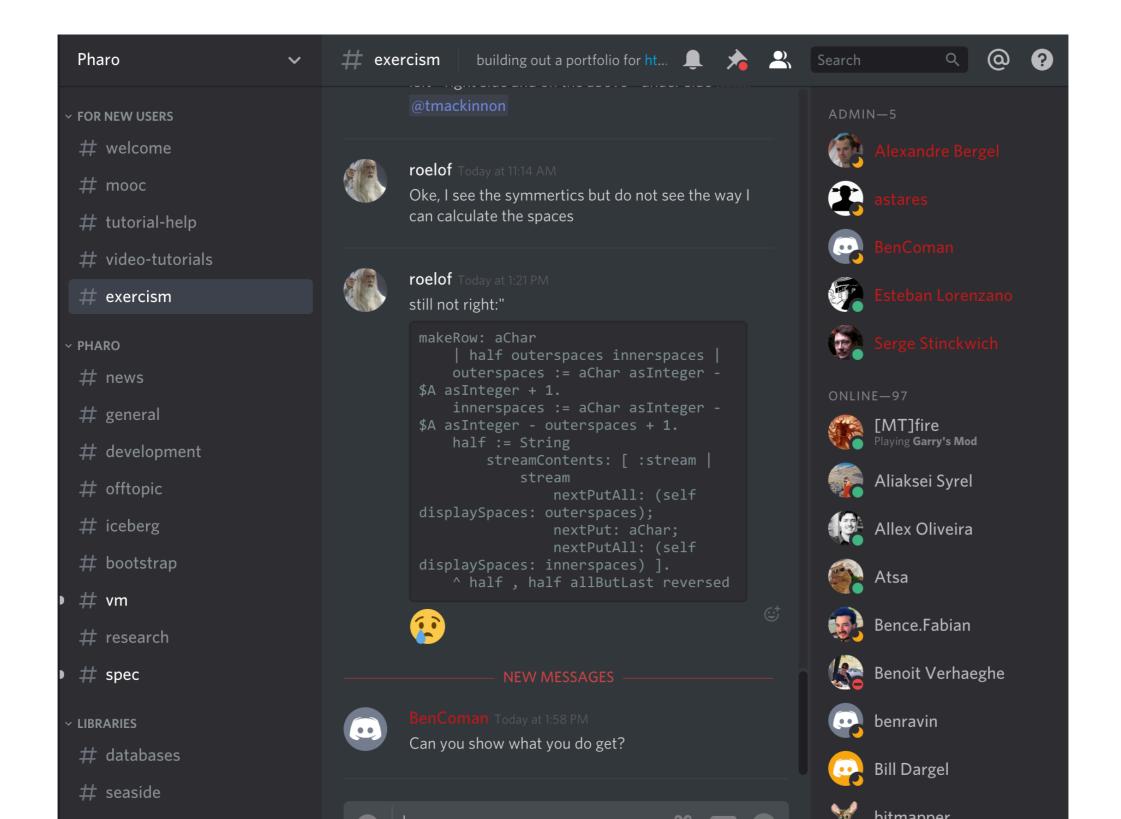
#### Possible contributions

- Read/answer newbie questions
- Participate to the wiki
- Review bug entry description
- Review bug fixes
- Write tests for bug entries
- Improve test coverage
- Improve comments

#### Newbie Questions

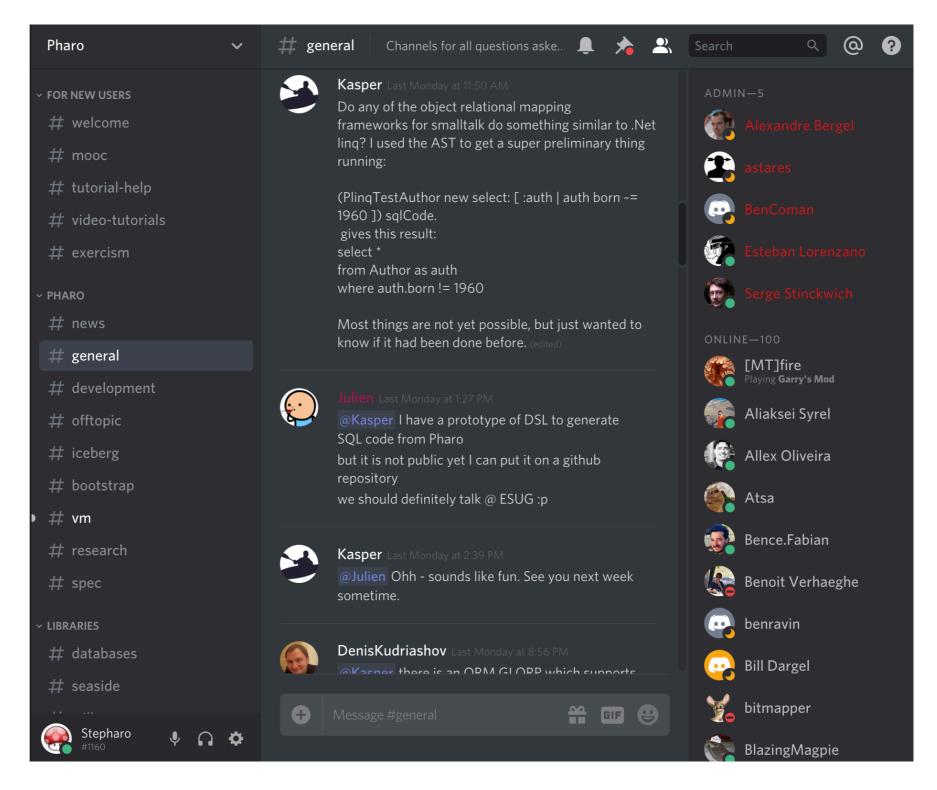
- I learned a lot answering them:)
- When I did not know I looked for the answers
- Try and learn

#### Read discord



#### Answer questions

- On discord
- Mailing-list



## Take any opportunity to contribute

## [ how did we meet with Marcus D.?]

## [ we reviewed squeak bug issues ]

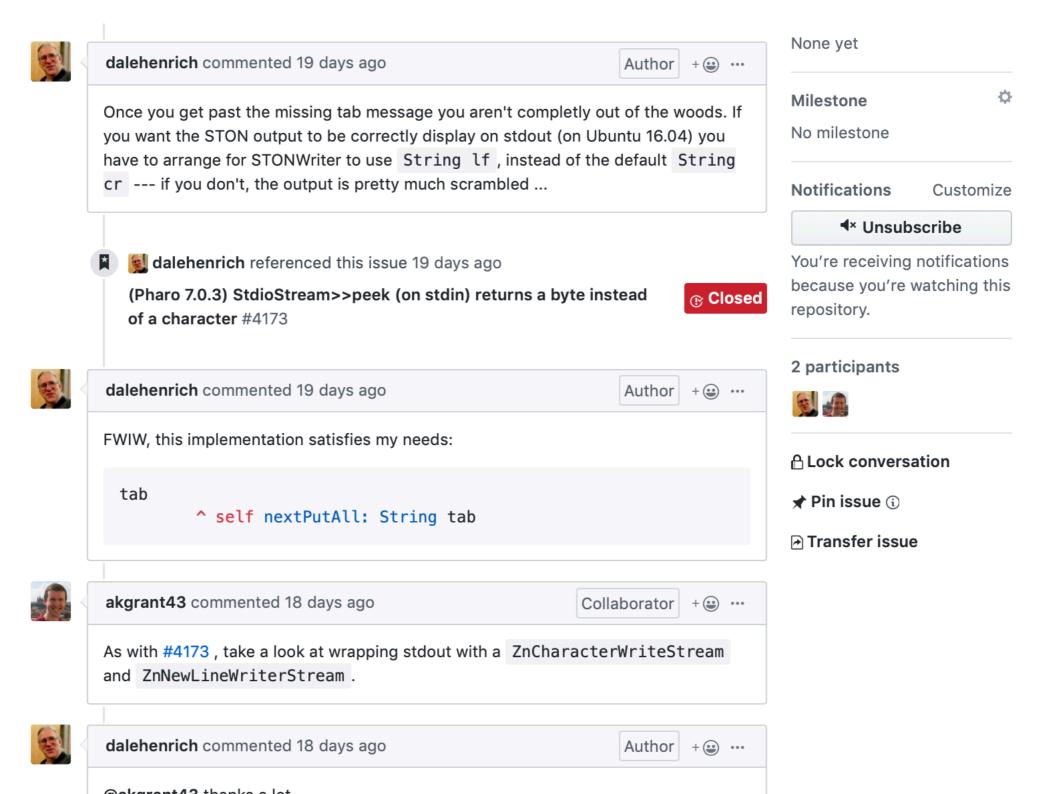
#### Bug issue contribution

- Can you understand it?
  - else ask for precision
- Can you repeat the problem mentioned?
  - report it. This is a valuable information

#### Bug issue contribution

- Write a test to show the problem?
- If the contributor provides a test, is it sounds?

### Join/read bug issue discussion



# What if you do not know? What if you do not understand?

## Easy! Drop it and pick the next one

#### Read tests to learn

- Tests are cool to learn
- Tests can be improved, so you can improve them

#### Improve test coverage

- It is often easier to write tests than the code:)
- Grab an object and inspect it
- Turn this in a test

#### Add executable comments

```
allRangesOfSubstring: aSubstring
   "'Ab cd ef Ab cd' allRangesOfSubstring: 'cd' >>> {(4 to: 5). (13 to: 14)}"
   "'Ab cd ef Ab cd' allRangesOfSubstring: 'zz' >>> #()"
   ^ Array streamContents: [:s | | start subSize |
      start := 1.
      subSize := aSubstring size.
      [start isZero]
         whileFalse: [ start := self findString: aSubstring startingAt: start.
            start > 0
               ifTrue: [s nextPut: (start to: start + subSize - 1).
                  start := start + subSize]]]
```

#### [Free side effect]



When you contribute to open-source you improve your visibility

#### [Remember]

Every thing you do today has an impact on your tomorrow!

#### [Personal note]

- My objective is to read (and understand) all Pharo source code:)
- So I take any opportunity to read code
- I even read closed issues

# Do not miss a great opportunity to grow your knowledge

Join and invent the future