

Test-Driven Development

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Outline

- TDD (Test-Driven Development)
- An example of TDD
- Rethinking it

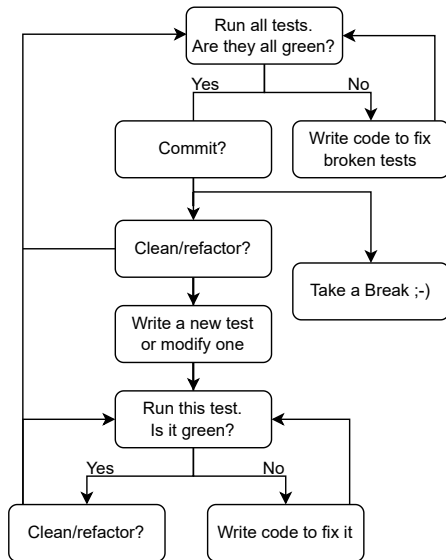


Write tests first

- Write test **first!** Yes, yes, yes
- "Whenever you are tempted to type something into a print statement or a debugger expression, **write it as a test instead**" - Martin Fowler



TDD is about the flow



TDD: Write your test

- Imagine we just created the class Counter
- Write a test about setting and getting a counter value

```
CounterTest >> testCount  
  | c |  
  c := Counter new.  
  c count: 10.  
  self assert: c count equals: 10
```



TDD: Run your test!

- It is red (the test produces an error)
 - This is normal since we did not define the methods `count` and `count`:
- So far so good!
- If it is already green this is a bonus but maybe your test is not good
- Work until your test gets green!



TDD: Rerun **★all★** the tests

- **Rerun all your tests!** (side effects, ...)
- Fix the broken tests
 - Either a test is now **wrong**
 - Or you broke something else
 - In both cases, you should fix them



TDD: When all the tests are green

- Commit and take a break ;-)
- Then, it is a good time to
 - **Clean** and **refactor** your code if necessary
 - and then, rerun **all** the tests



Why writing test first?

- You specify **what** you want to get in tests (executable specification)
- You think **how you build/assemble** to get the fonctionnality
- You are your first client: strengthen your APIs
- You get a **clear** context
- You can debug on the spot



Conclusion

- TDD is powerful
 - Solid code base
 - Fewer regressions
 - Cleaner API
- Do not miss the next lecture on XTDD
- XTDD = **TDD on steroids**, it is gorgeous!



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