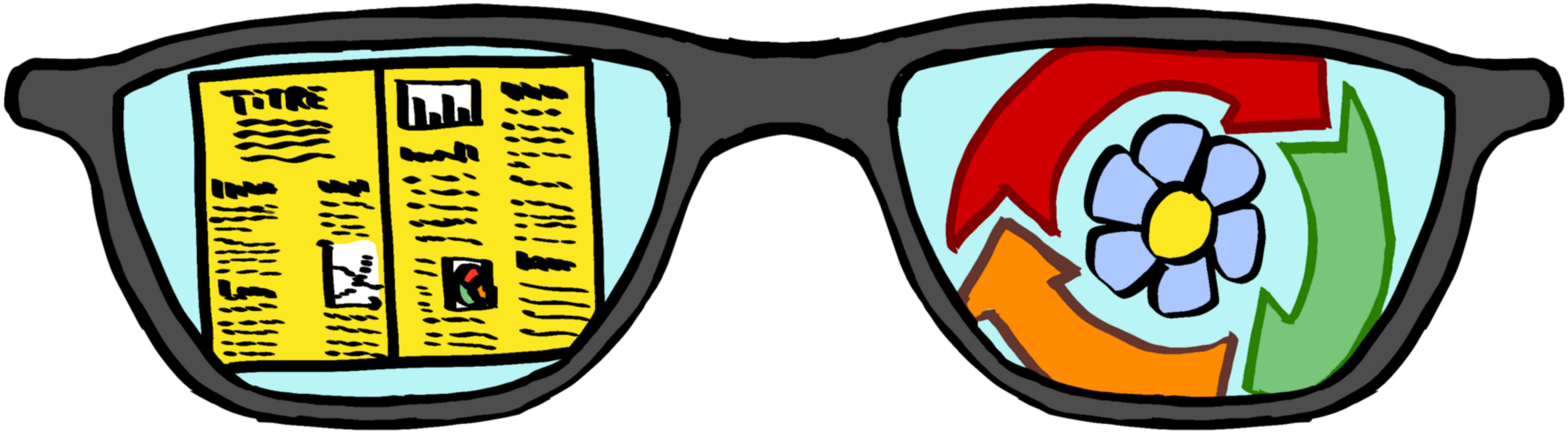

# INTRO

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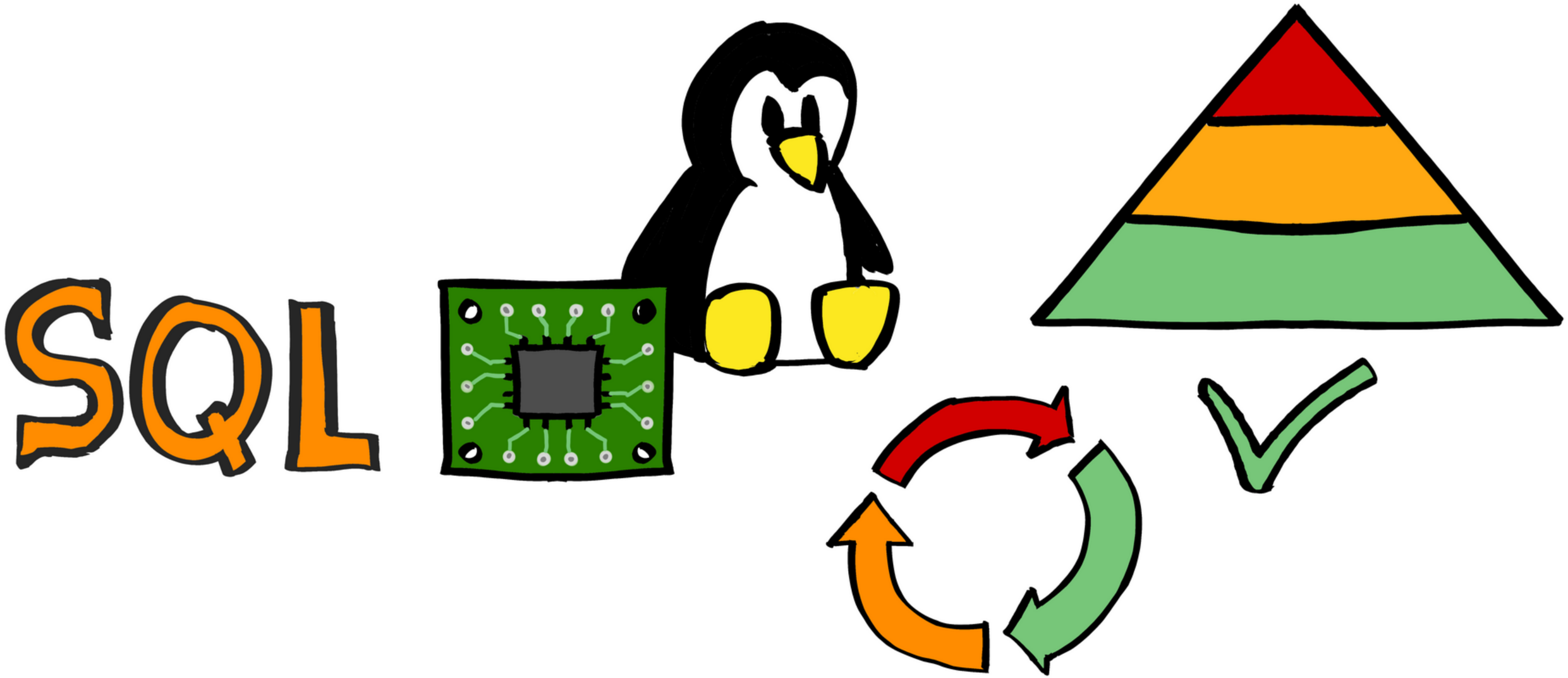
    'name': VICTOR LAMBRET
    'age': 0x25
    'job': SW DEVELOPER
    'company': SOGILIS
}
```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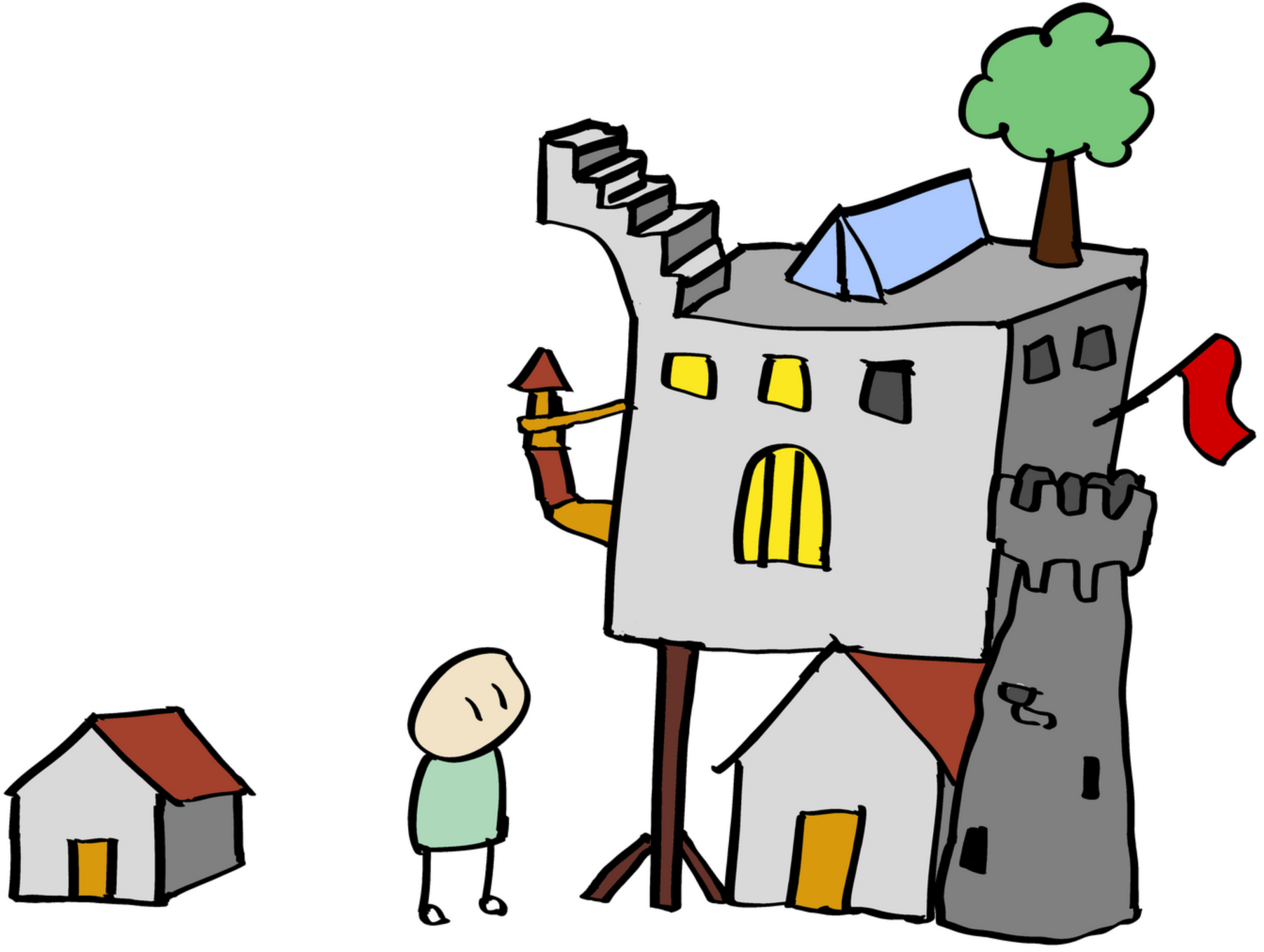
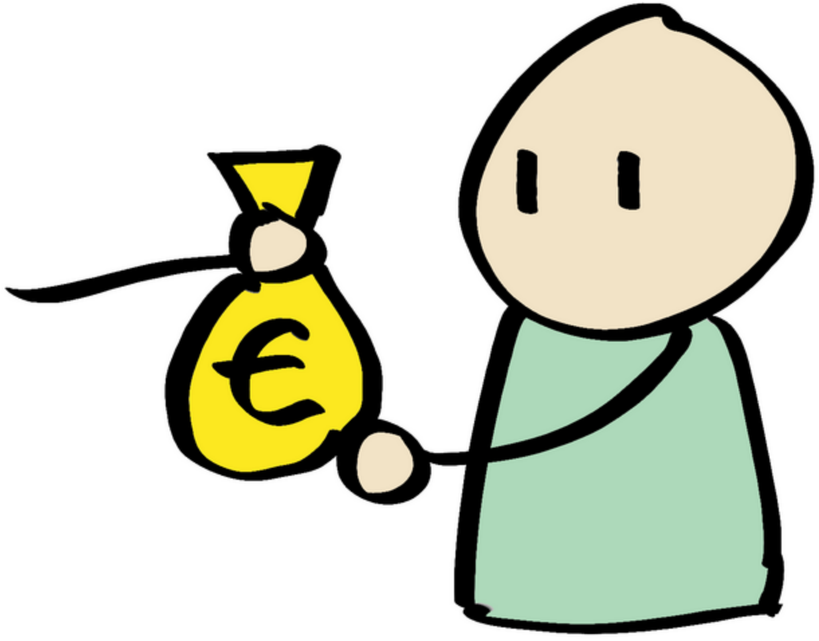
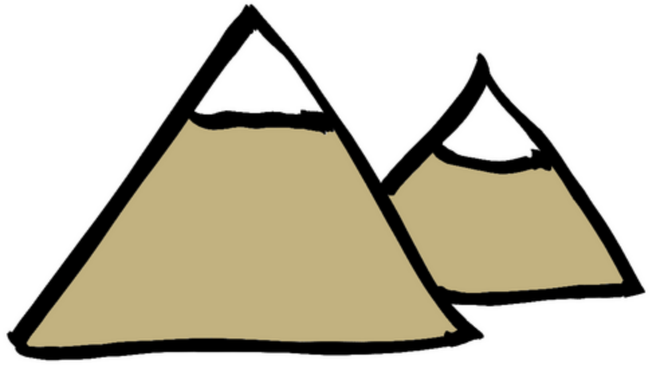
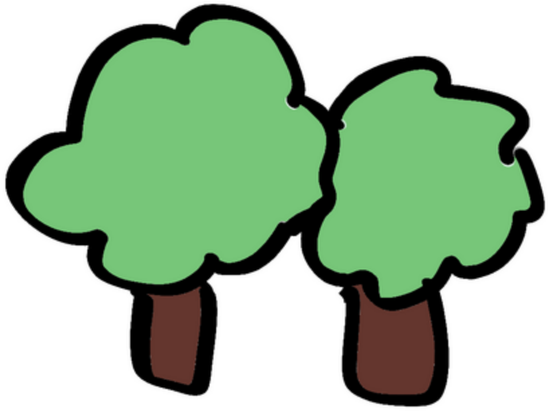
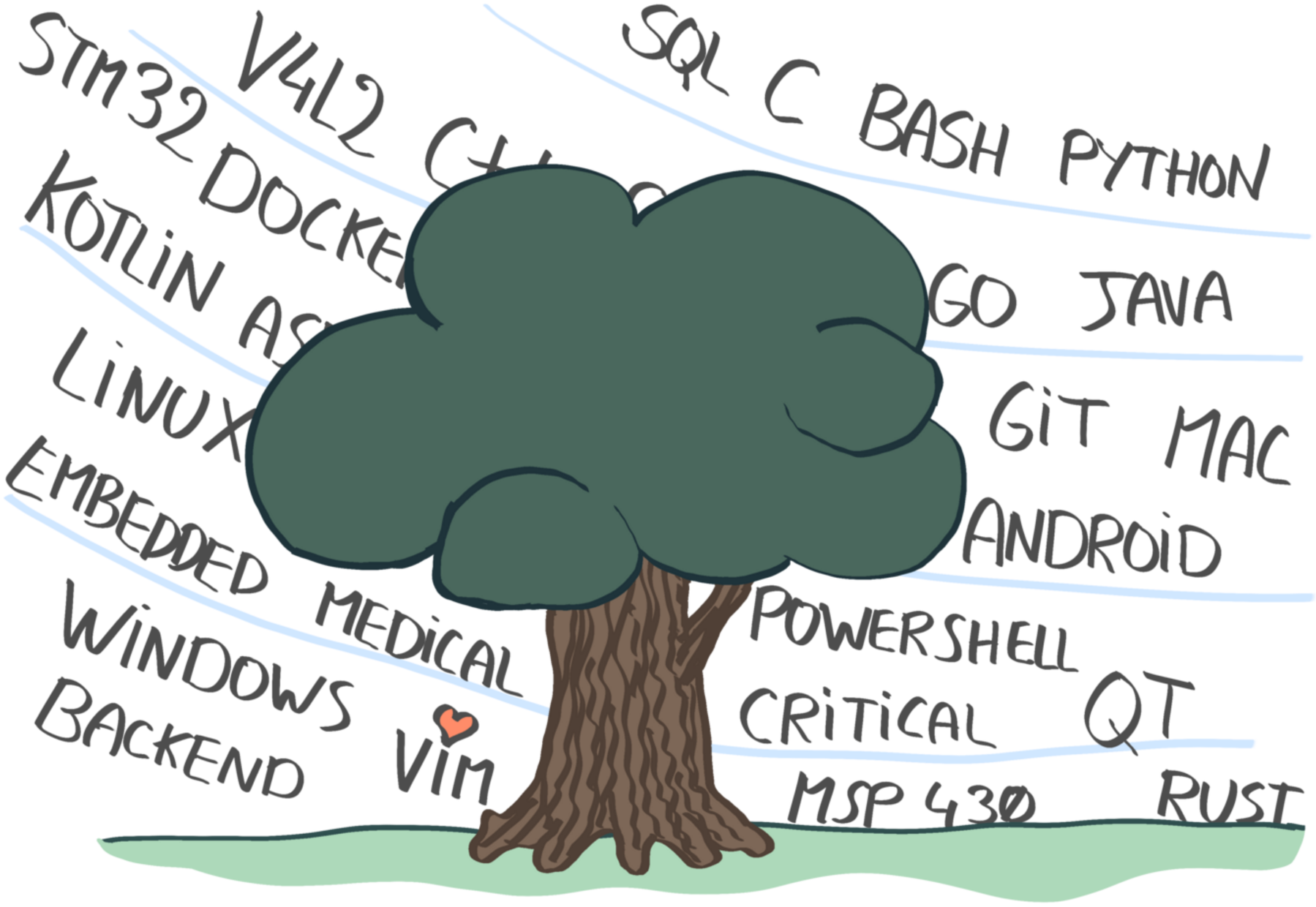
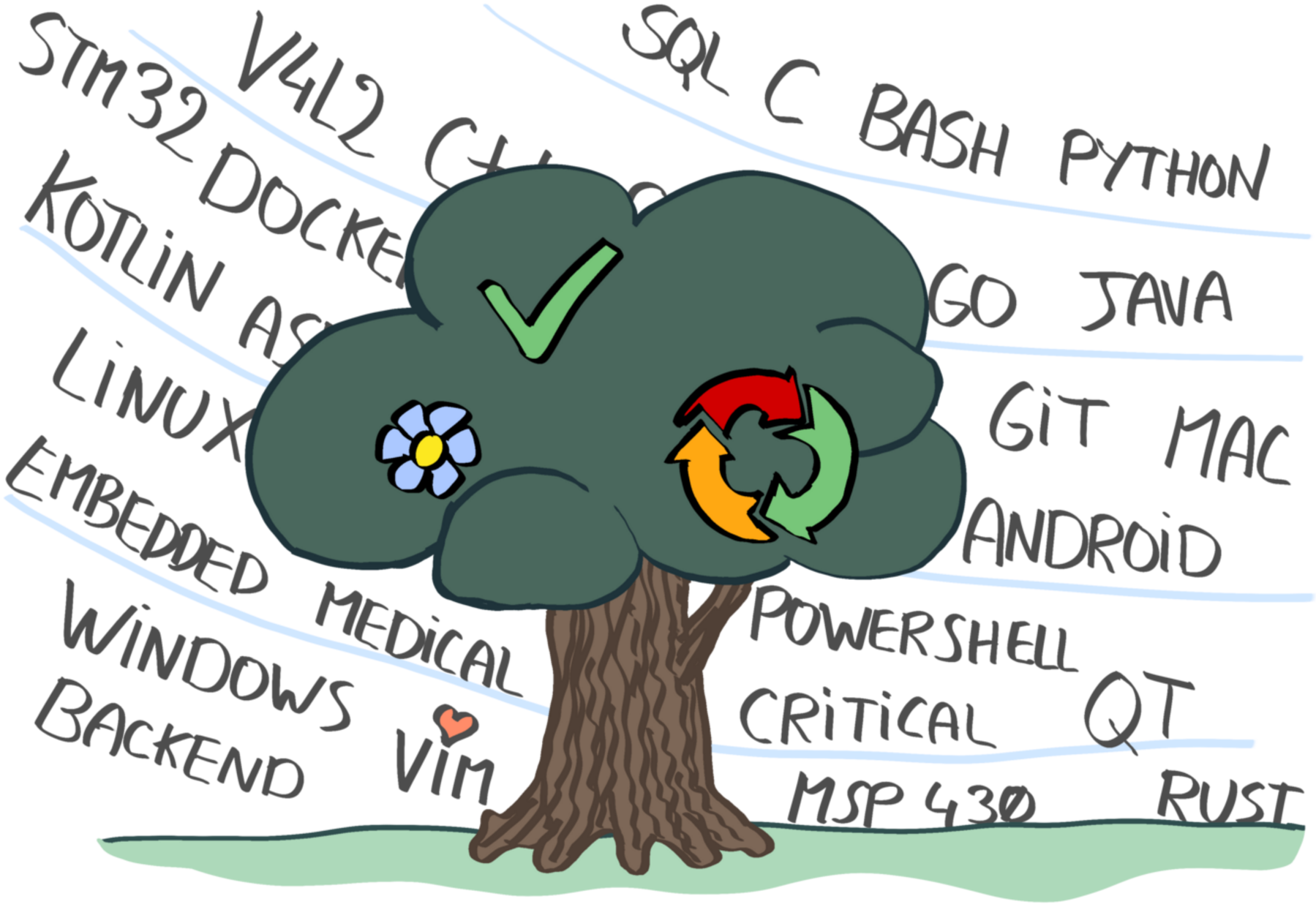




V4L2
SQL
C
BASH
PYTHON
STM32
DOCKER
GO
JAVA
KOTLIN
LINUX
GIT
MAC
ANDROID
EMBEDDED
MEDICAL
POWERSHELL
WINDOWS
CRITICAL
QT
BACKEND
VIM
MSP 430
RUST


V4L2
SQL
C
BASH
PYTHON
STM32
DOCKER
KOTLIN
GO
JAVA
LINUX
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MEDICAL
ANDROID
POWERSHELL
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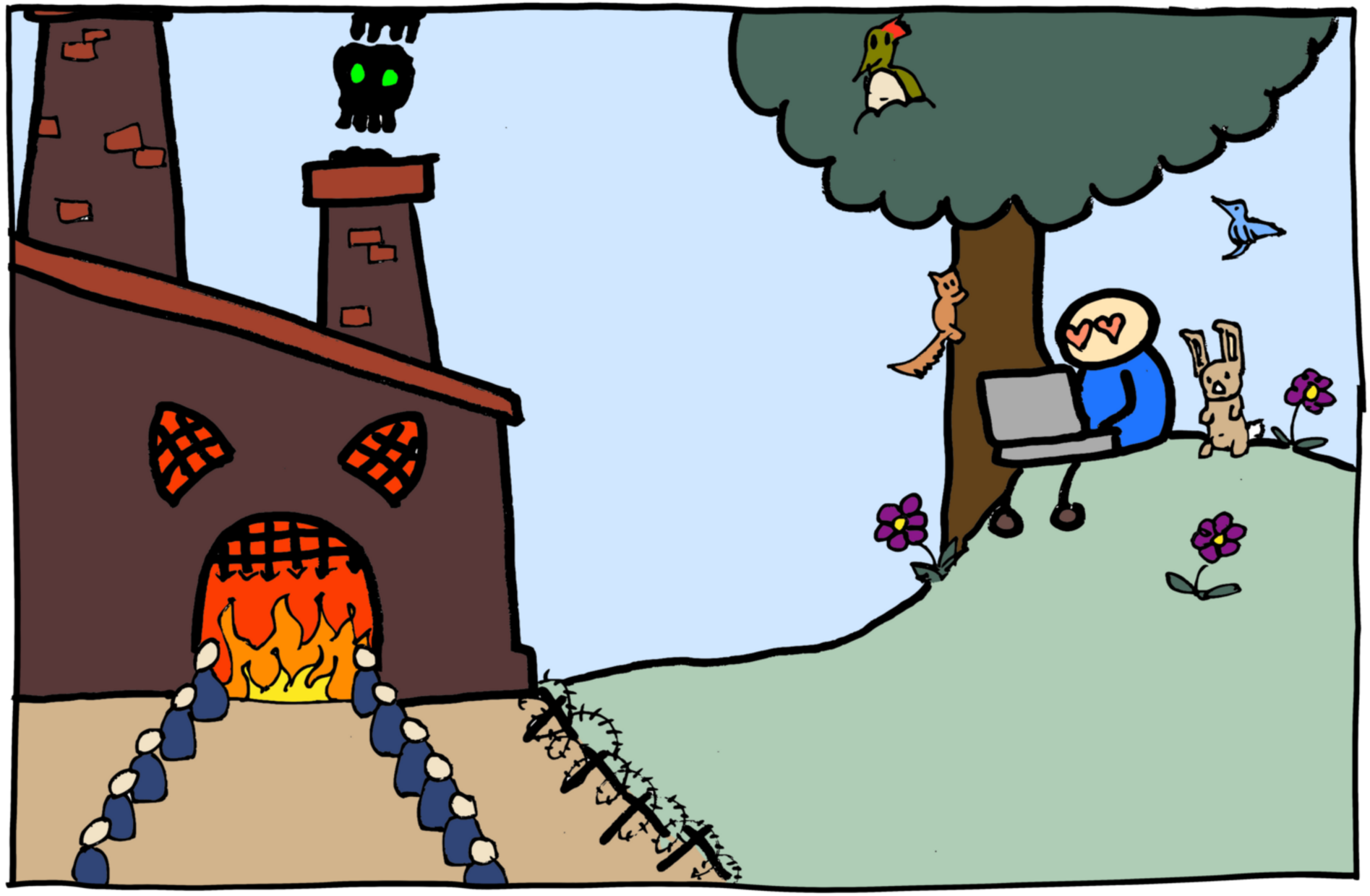
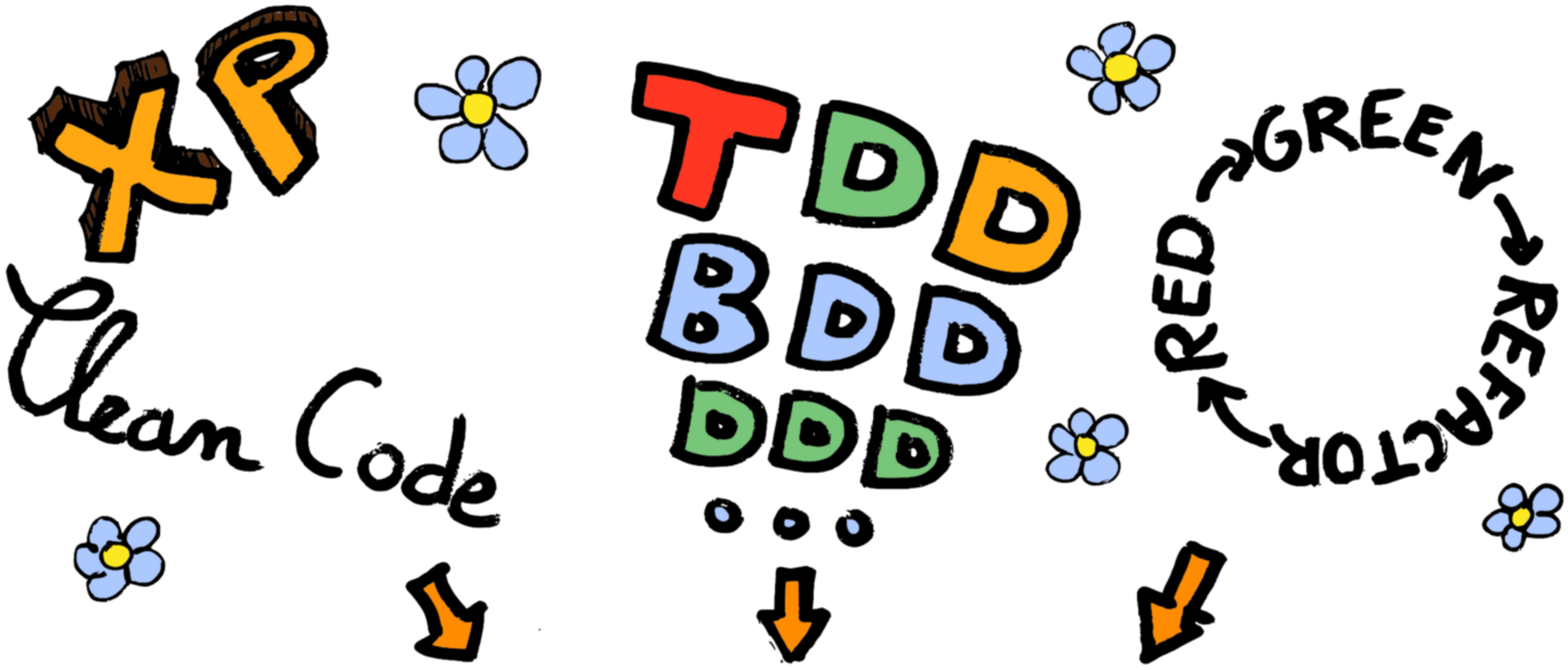
CRITICAL
QT
BACKEND
VIM
MSP 430
RUST






# ARTISANAT LOGICIEL

XP

Clean Code

TDD

BDD

DDD

...

RED → GREEN → REFACTOR

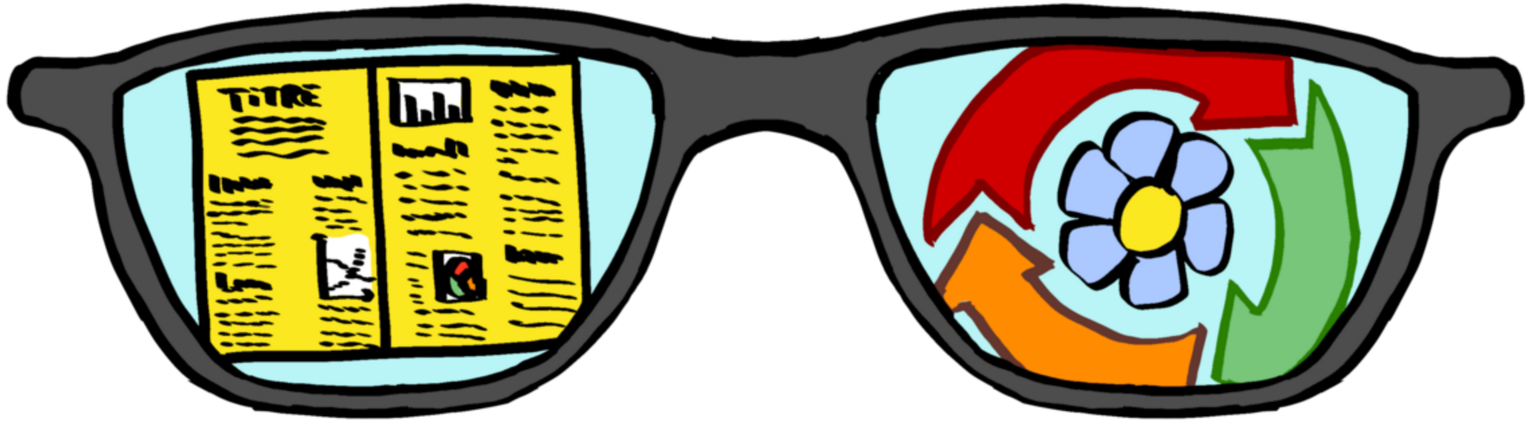
# ARTISANAT LOGICIEL

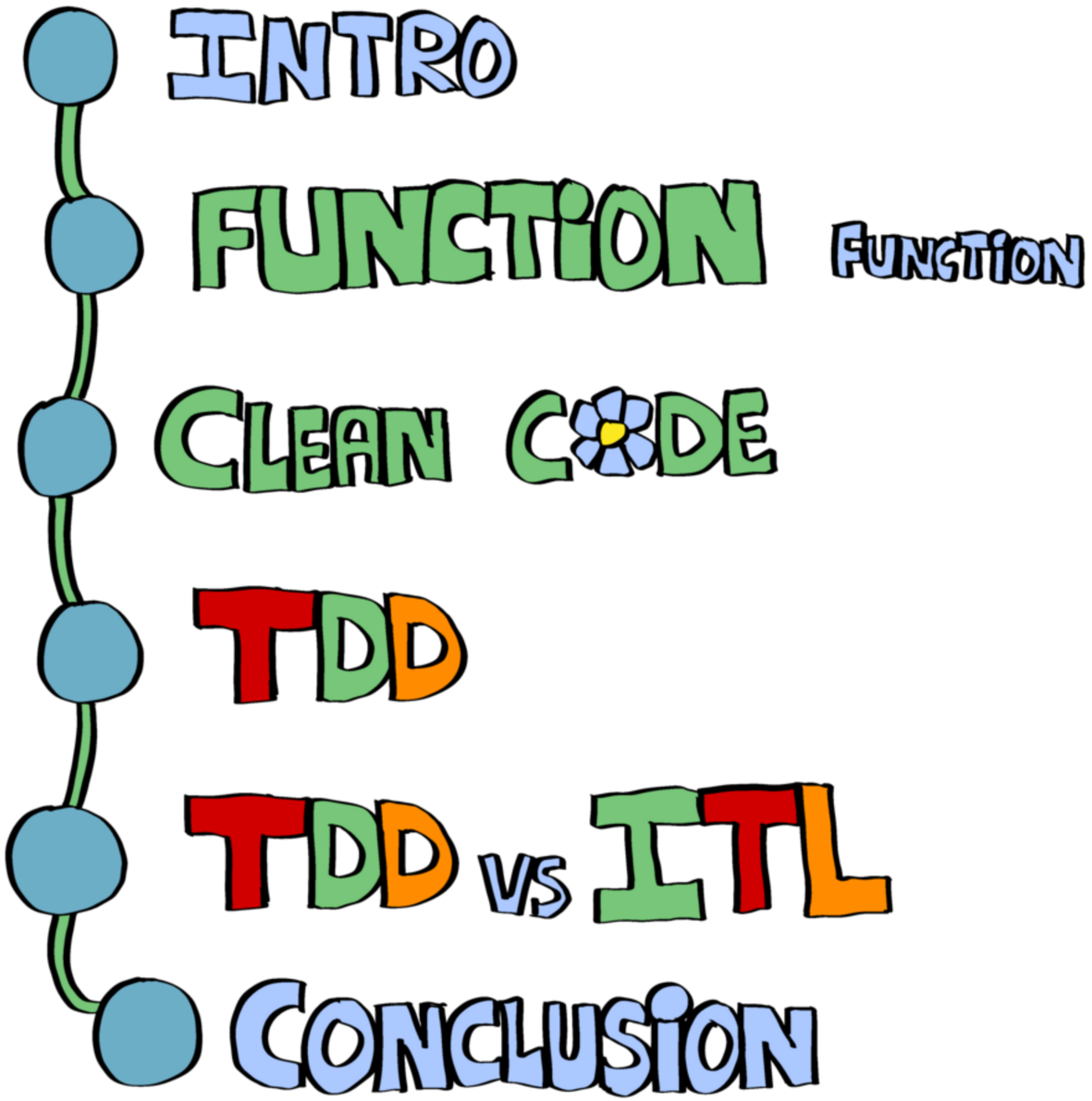
ARTISANAT LOGICIEL

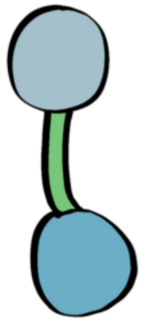
UN [illegible] ZÉTÉTIQUE

LE TDD

SANS COMMENCER PAR LES TESTS ?




INTRO
FUNCTION
FUNCTION
CLEAN CODE
TDD
TDD VS ITL
CONCLUSION



# INTRO

# FUNCTION

FUNCTION

# CLEAN CODE : TAILLE DES FONCTIONS

> *The first rule of functions is that they should be small. The second rule of functions is that they should be smaller than that.*

# CLEAN CODE : TAILLE DES FONCTIONS

*Every function in this program was just two, or three, or four lines long. Each was transparently obvious. Each told a story. And each led you to the next in a compelling order. That's how short your functions should be !*

# CLEAN CODE : TAILLE DES FONCTIONS

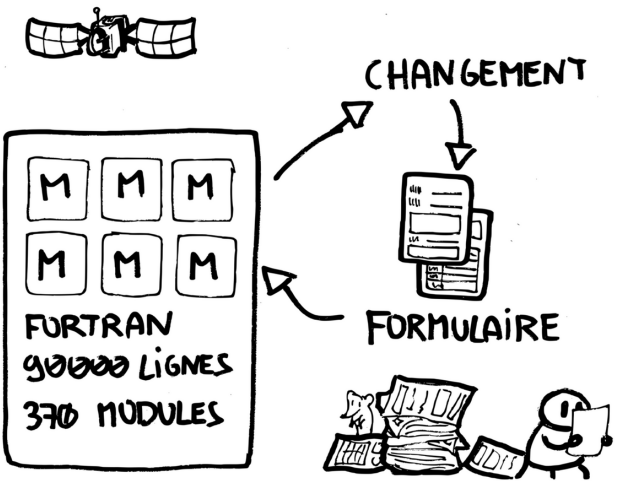
> *This is not an assertion that I can justify. I can't provide any references to research that shows that very small functions are better*

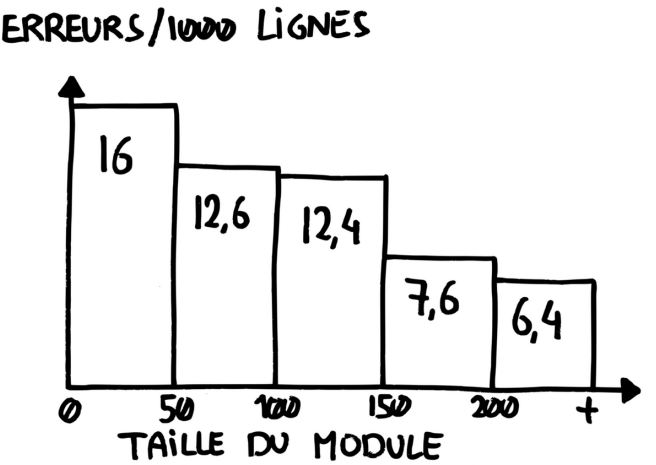
Pas de références ? Aucun soucis, c'est une telle évidence qu'on va trouver facilement :-)

# SOFTWARE ERRORS AND COMPLEXITY: AN EMPIRICAL INVESTIGATION

BASILI, V. AND PERRICONE, B.

1983


CHANGEMENT
M M M
M M M
FORTRAN
90000 LIGNES
370 MODULES
FORMULAIRE


ERREURS/1000 LIGNES
16
12,6
12,4
7,6
6,4
0
50
100
150
200
+
TAILLE DU MODULE

# CONCLUSION

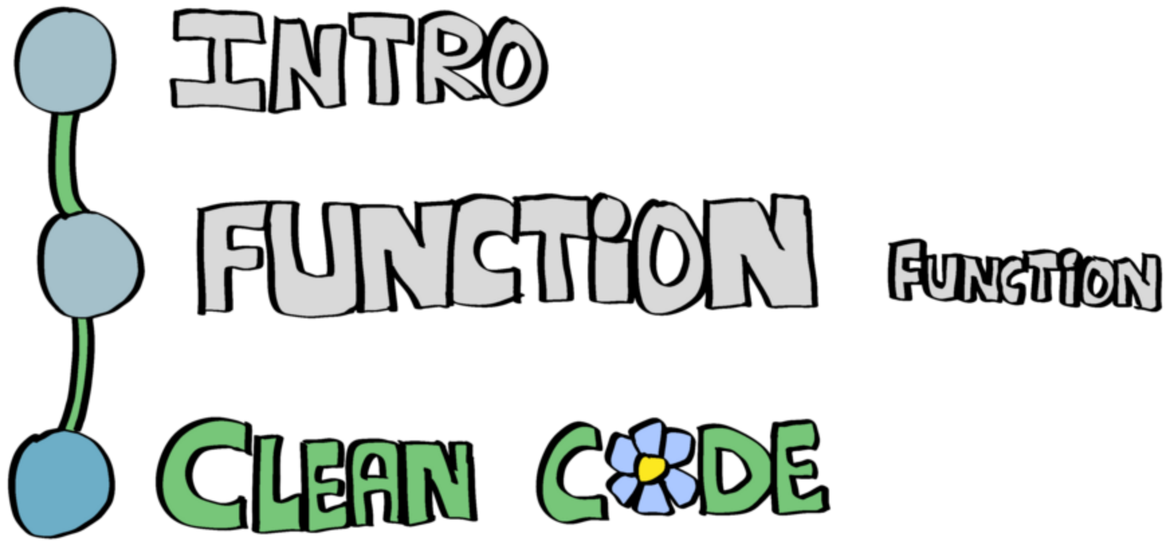
*One surprising result was that module size did not account for error proneness. In fact, it was quite the contrary […]. This result implies we are not yet ready to put artificial limits on module size and complexity.*

# MINCE ALORS !

Les résultats ne sont pas ceux attendus !

Mais c’est une vielle étude. Maintenant, dans le contexte de Clean Code ça marche forcément !

C’est une telle évidence qu’on va trouver facilement :-)


INTRO
FUNCTION
FUNCTION
CLEAN CODE

**Effects of Clean Code on Understandability**

Henning Grimeland Koller

Master's Thesis Spring 2016

https://www.duo.uio.no/bitstream/handle/10852/51127/

(Pas de revue par les pairs mais plus détaillé.
Publication scientifique similaire disponible ensuite)

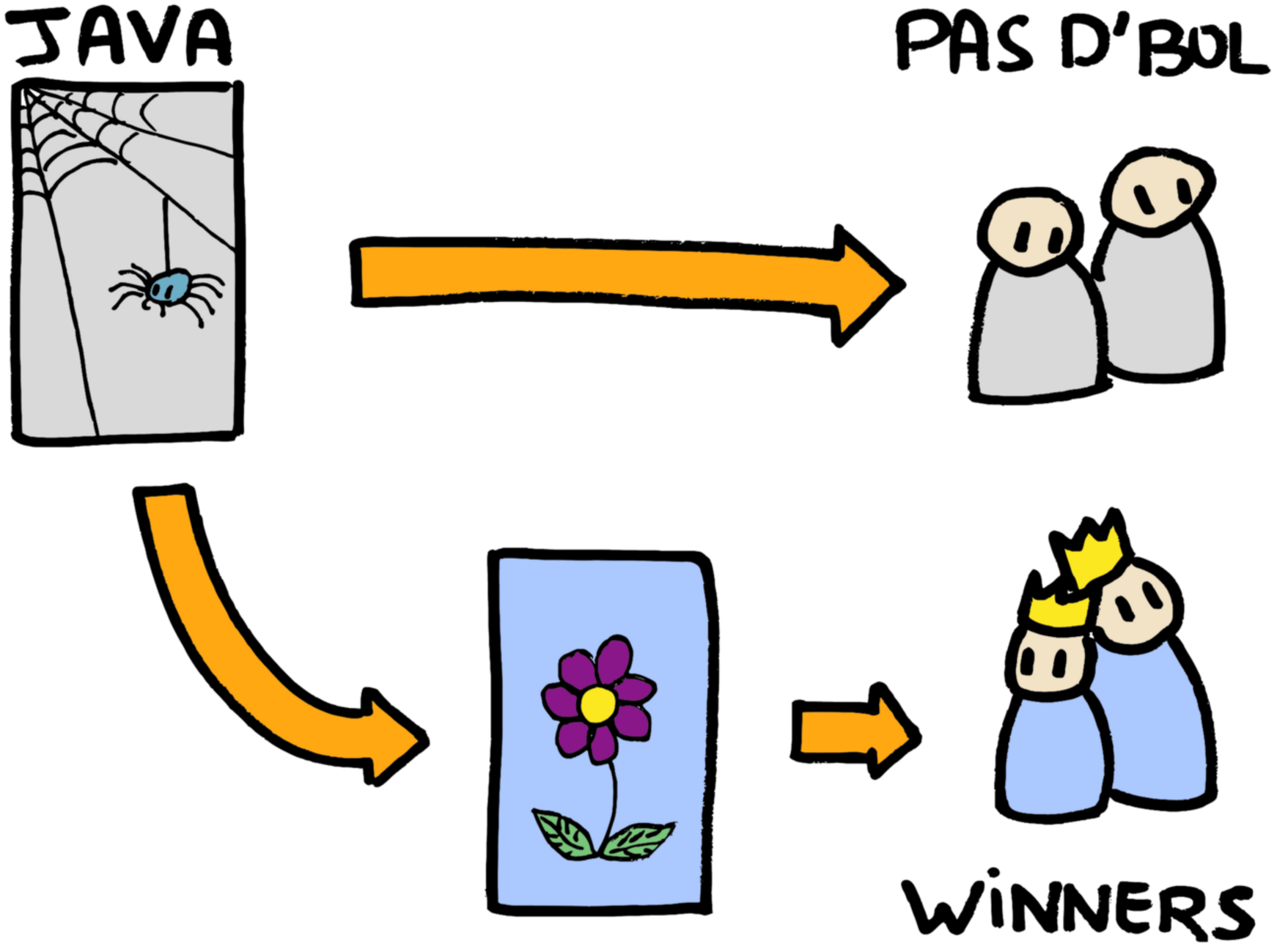

JAVA
PAS D'BOL
WINNERS

Figure 5.11: Second Run of the Experiment: Time used by participants on assignment 1

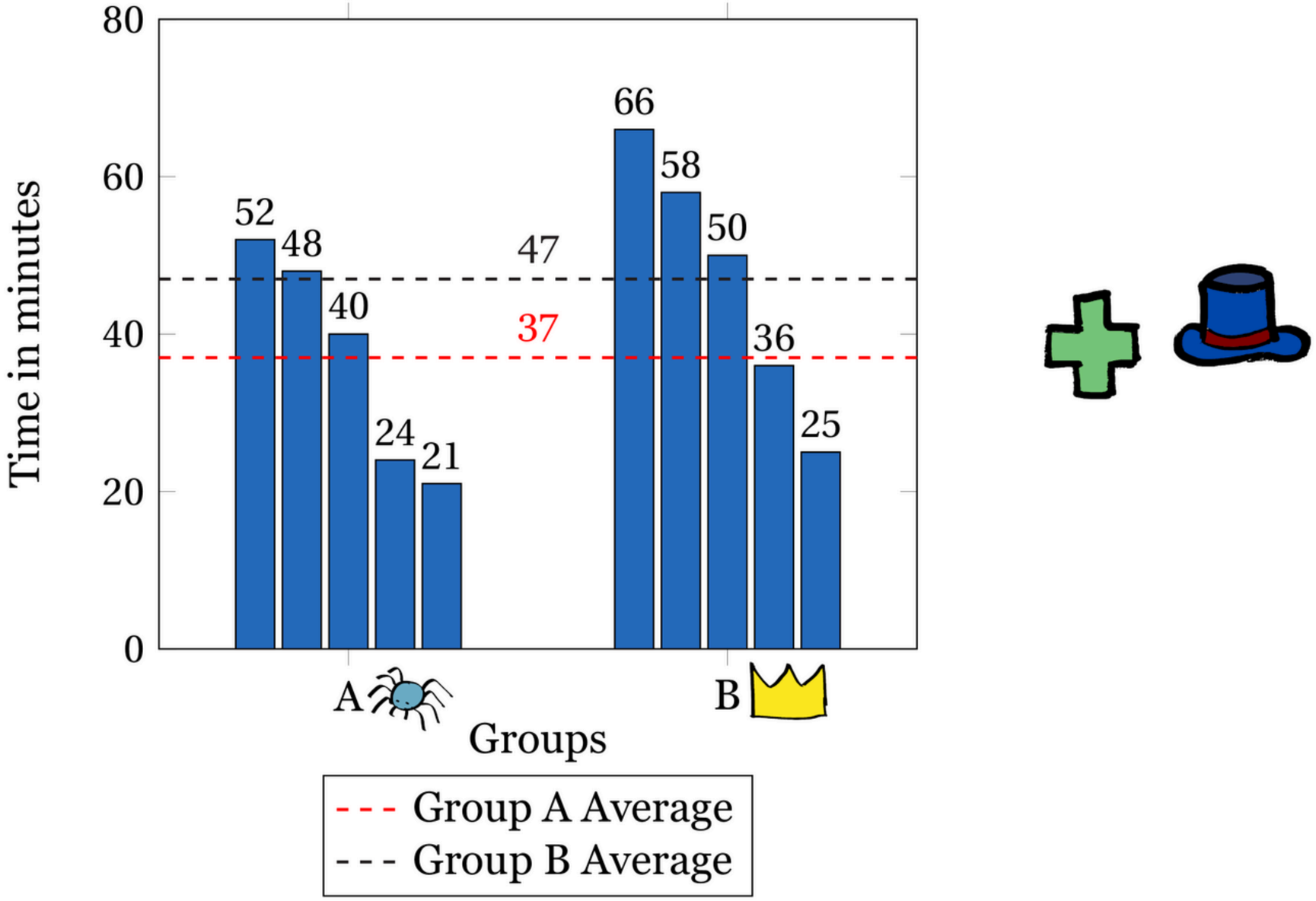
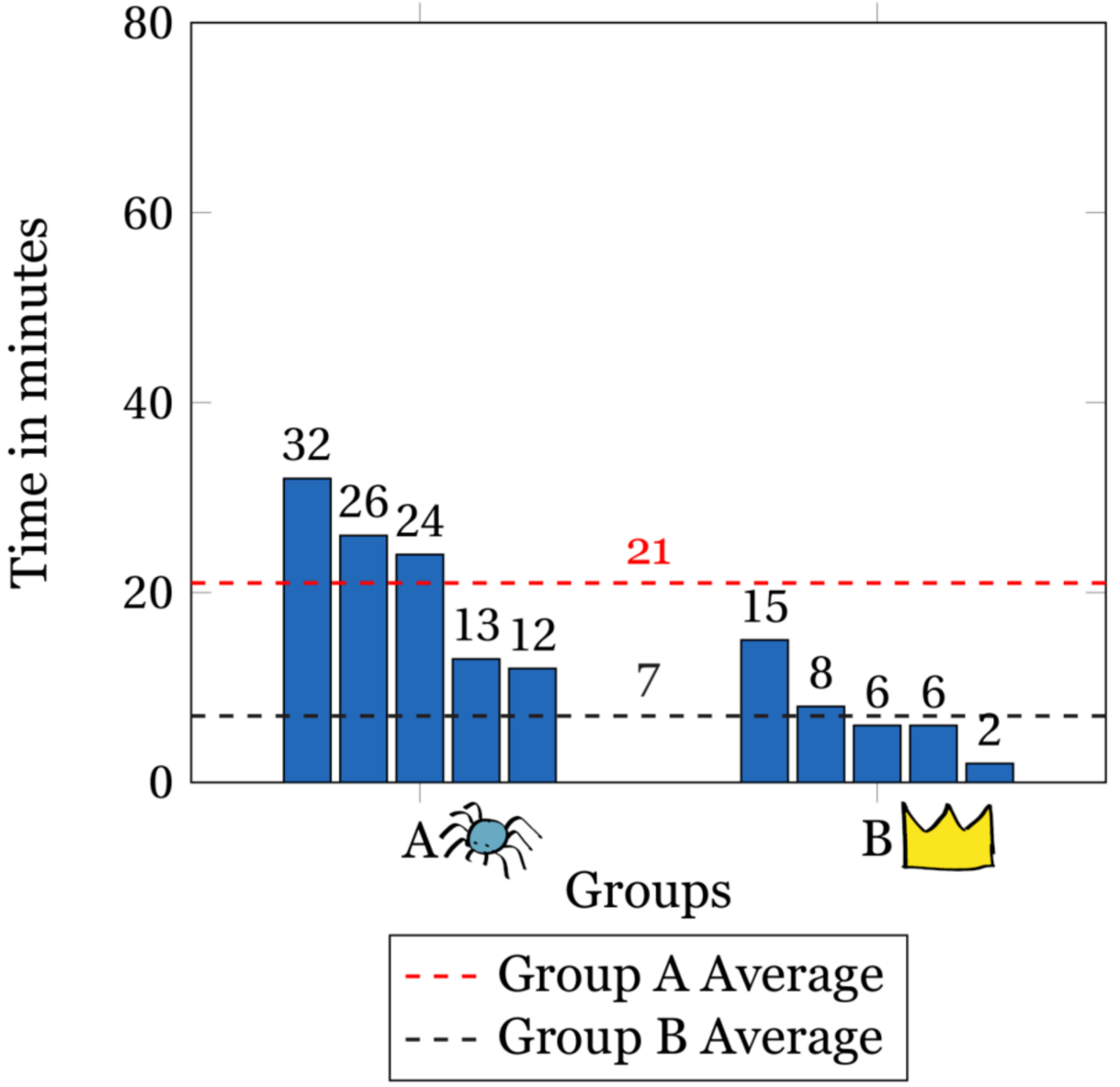


Figure 5.12: Second Run of the Experiment: Time used by participants on assignment 2



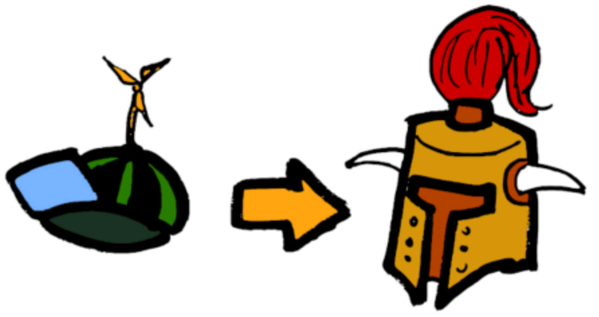
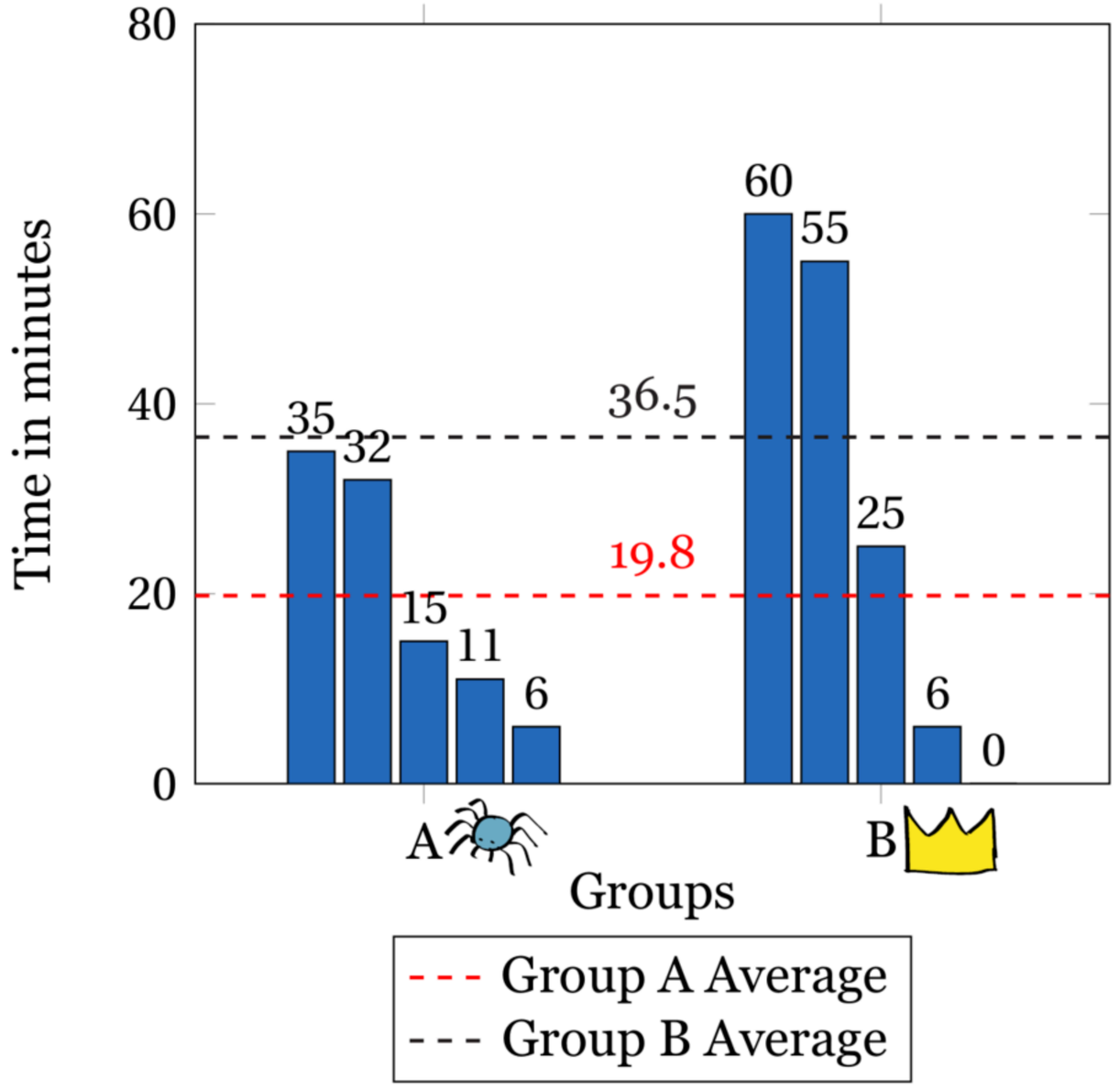



Figure 5.13: Second Run of the Experiment: Time used by participants on assignment 3



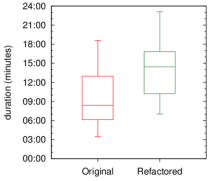

# CONCLUSION

*Despite our expectations, the results from the experiment show that we were wrong […] there seems to be no immediate benefit of Clean Code in form of understandability.*

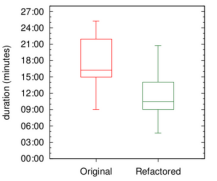
# OLD HABITS DIE HARD: WHY REFACTORING FOR UNDERSTANDABILITY DOES NOT GIVE IMMEDIATE BENEFITS

AMMERLAAN, ERIK AND VENINGA, WIM AND ZAIDMAN, ANDY

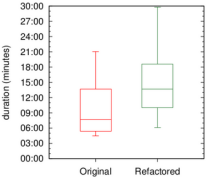
2015



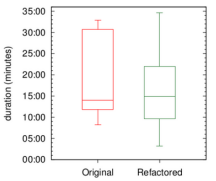

(a) RejectionNotifier (S)



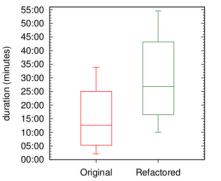

(b) PurchaseOrderTools (S)




(c) ContractProlongation (S)




(d) FinancialEntryTools (M)



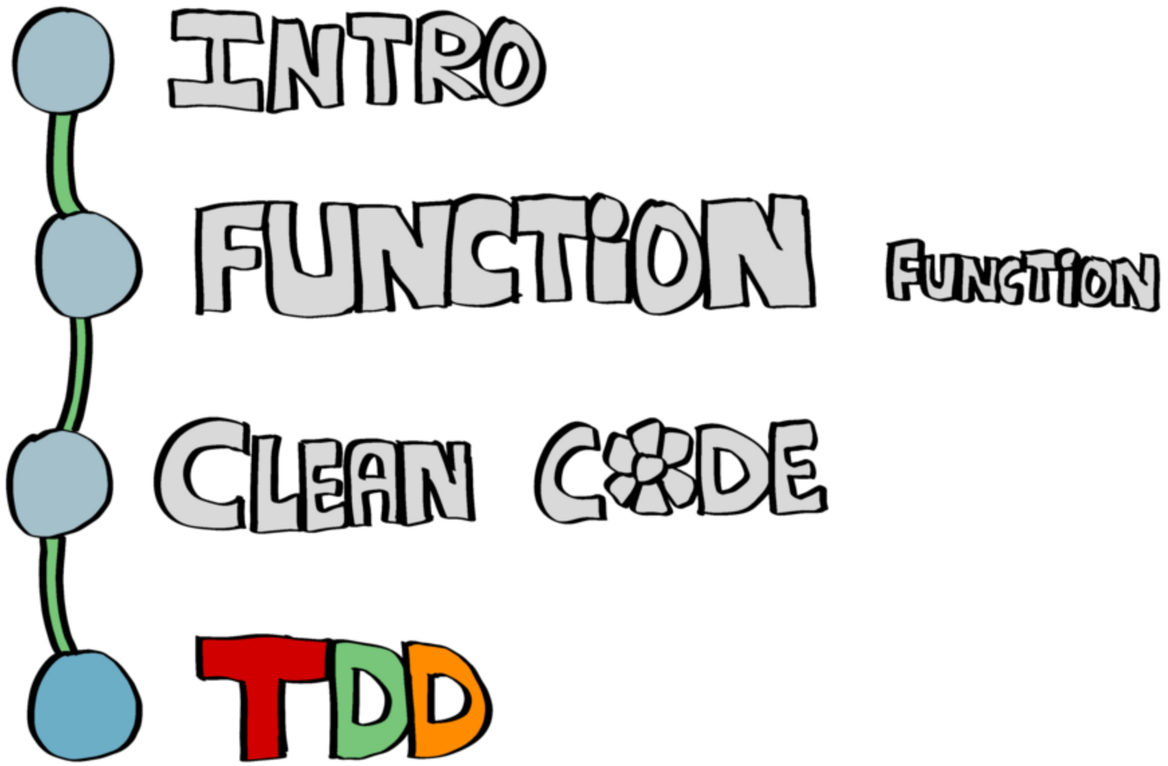

(e) ERDomain (L)

# MINCE ALORS !

Les résultats ne sont pas ceux attendus !

Il faut se faire une raison : cette "évidence" n’en est pas une

La réalité est plus compliquée que ça :)


INTRO
FUNCTION
FUNCTION
CLEAN CODE
TDD

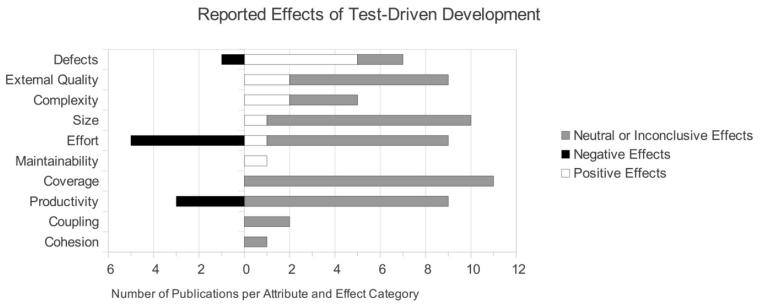
# ÉVALUATION DU TEST DRIVEN DEVELOPMENT

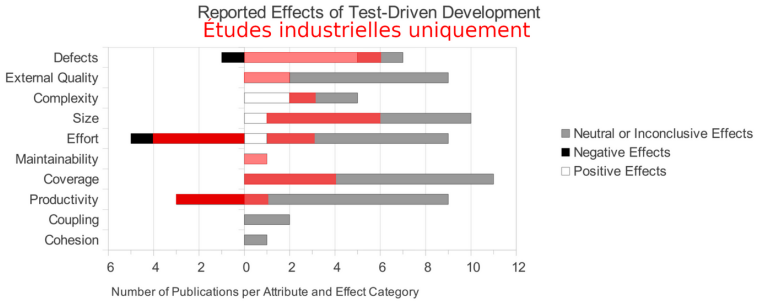
Vu les résultats précédents, que vais-je découvrir sur un sujet complexe ?

# EFFECTS OF TEST-DRIVEN DEVELOPMENT: A COMPARATIVE ANALYSIS OF EMPIRICAL STUDIES

MAKINEN, SIMO AND M NCH, J RGEN

2014

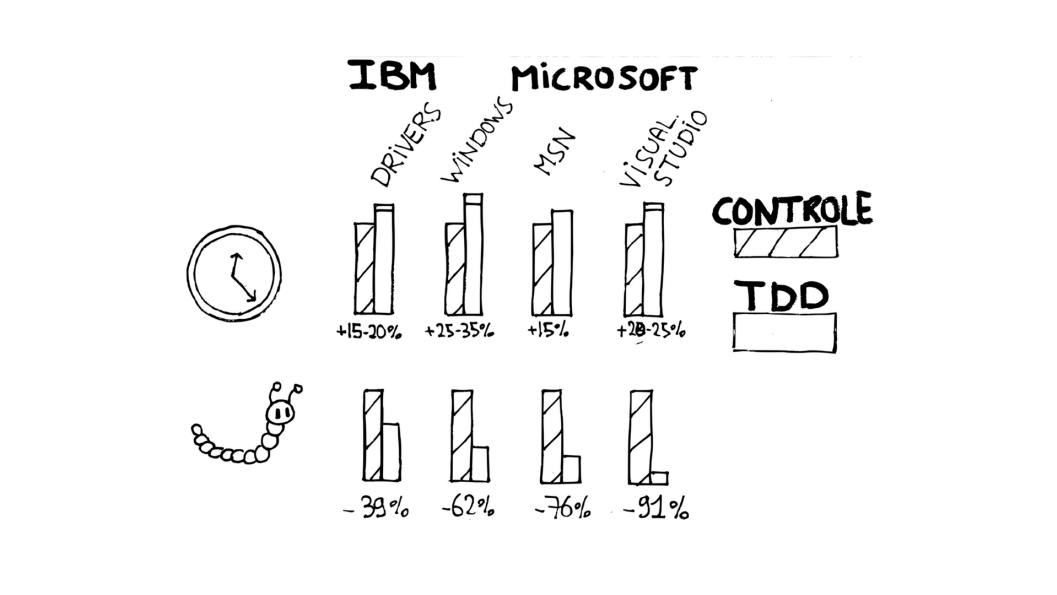

Reported Effects of Test-Driven Development
Defects
External Quality
Complexity
Size
Effort
Maintainability
Coverage
Productivity
Coupling
Cohesion
6
4
2
0
2
4
6
8
10
12
Number of Publications per Attribute and Effect Category
Neutral or Inconclusive Effects
Negative Effects
Positive Effects

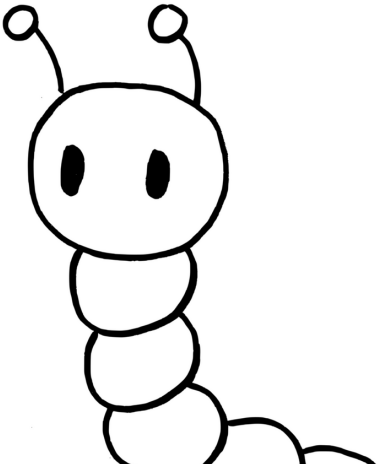

Reported Effects of Test-Driven Development
Etudes industrielles uniquement
Defects
External Quality
Complexity
Size
Effort
Maintainability
Coverage
Productivity
Coupling
Cohesion
6
4
2
0
2
4
6
8
10
12
Number of Publications per Attribute and Effect Category
Neutral or Inconclusive Effects
Negative Effects
Positive Effects

# REALIZING QUALITY IMPROVEMENT THROUGH TEST DRIVEN DEVELOPMENT: RESULTS AND EXPERIENCES OF FOUR INDUSTRIAL TEAMS

NAGAPPAN, NACHIAPPAN AND MAXIMILIEN, E. AND BHAT, THIRUMALESH AND WILLIAMS, LAURIE

2008

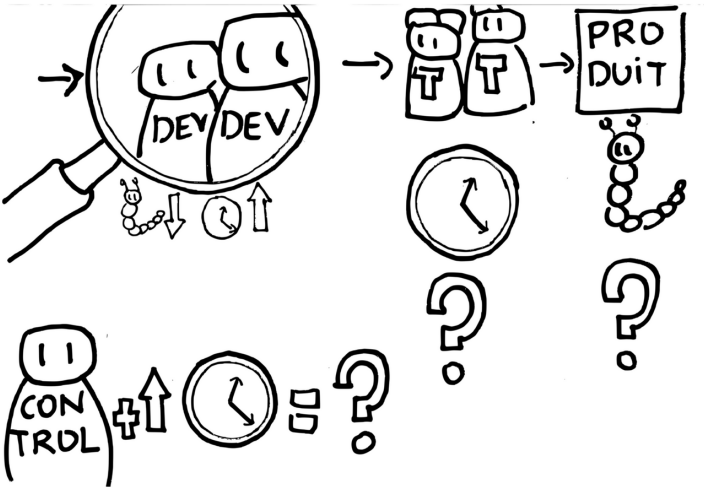

IBM
MICROSOFT
DRIVERS
WINDOWS
MSN
VISUAL STUDIO
CONTROLE
TDD
+15-20%
+25-35%
+15%
+20-25%
-39%
-62%
-76%
-91%

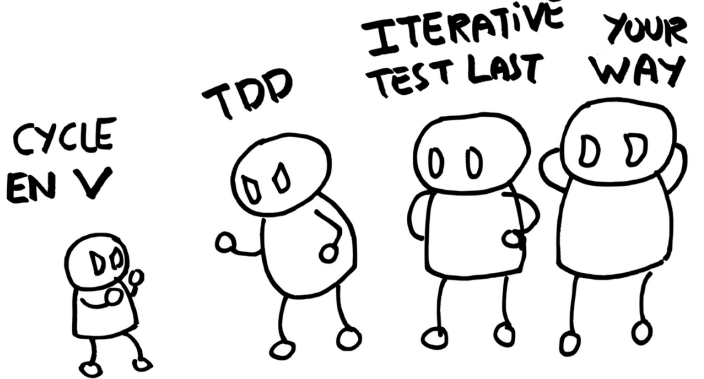


# CONCLUSION

L’étude en question ne porte pas de conclusion sur l’efficacité de la pratique du TDD. Elle ouvre de nouvelles pistes pour continuer l’évaluation.

Pourquoi ?

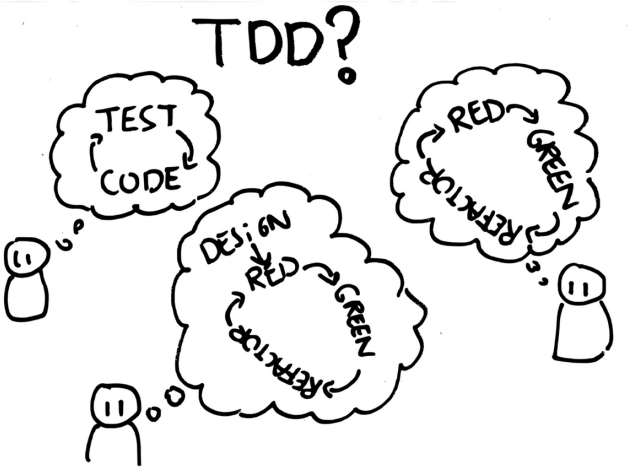

DEV
DEV
PRO
DUIT
CON
TROL


CYCLE EN V
TDD
ITERATIVE TEST LAST
YOUR WAY

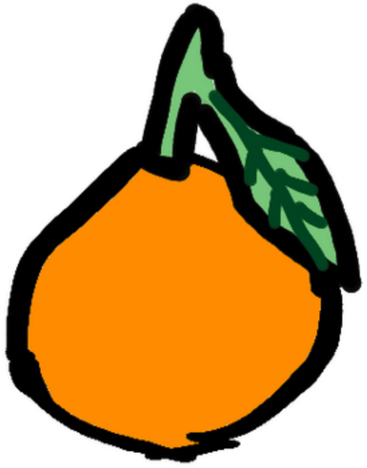
# WHY RESEARCH ON TEST-DRIVEN DEVELOPMENT IS INCONCLUSIVE?

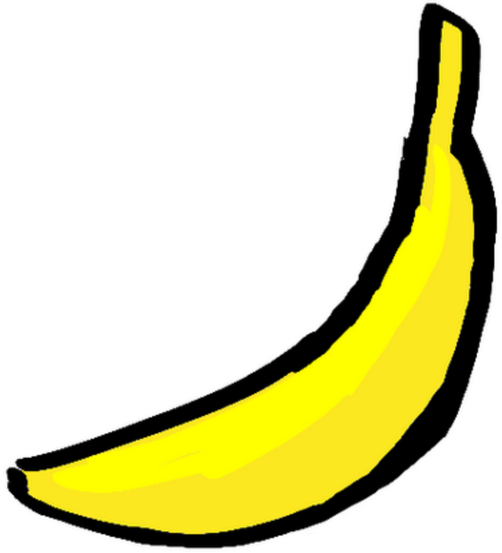
GHAFARI, MOHAMMAD AND GROSS, TIMM AND FUCCI, DAVIDE AND FELDERER, MICHAEL

2020


TDD?
TEST
CODE
DESIGN
RED
GREEN
REFACTOR
RED
GREEN
REFACTOR

# ETAT DE L'ART



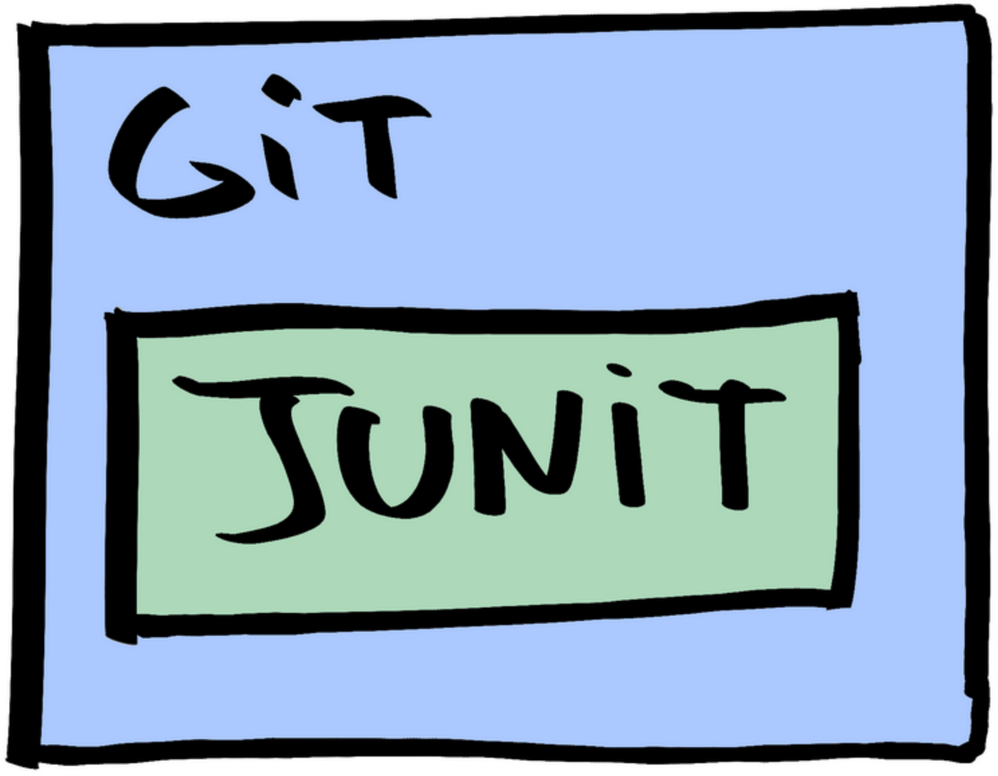


# ANALYZING THE EFFECTS OF TEST DRIVEN DEVELOPMENT IN GITHUB

BORLE, NEIL AND FEGHHI, MEYSAM AND STROULIA, ELENI AND GREINER, RUSS AND HINDLE, ABRAM

2018

256 572




1954

TDD

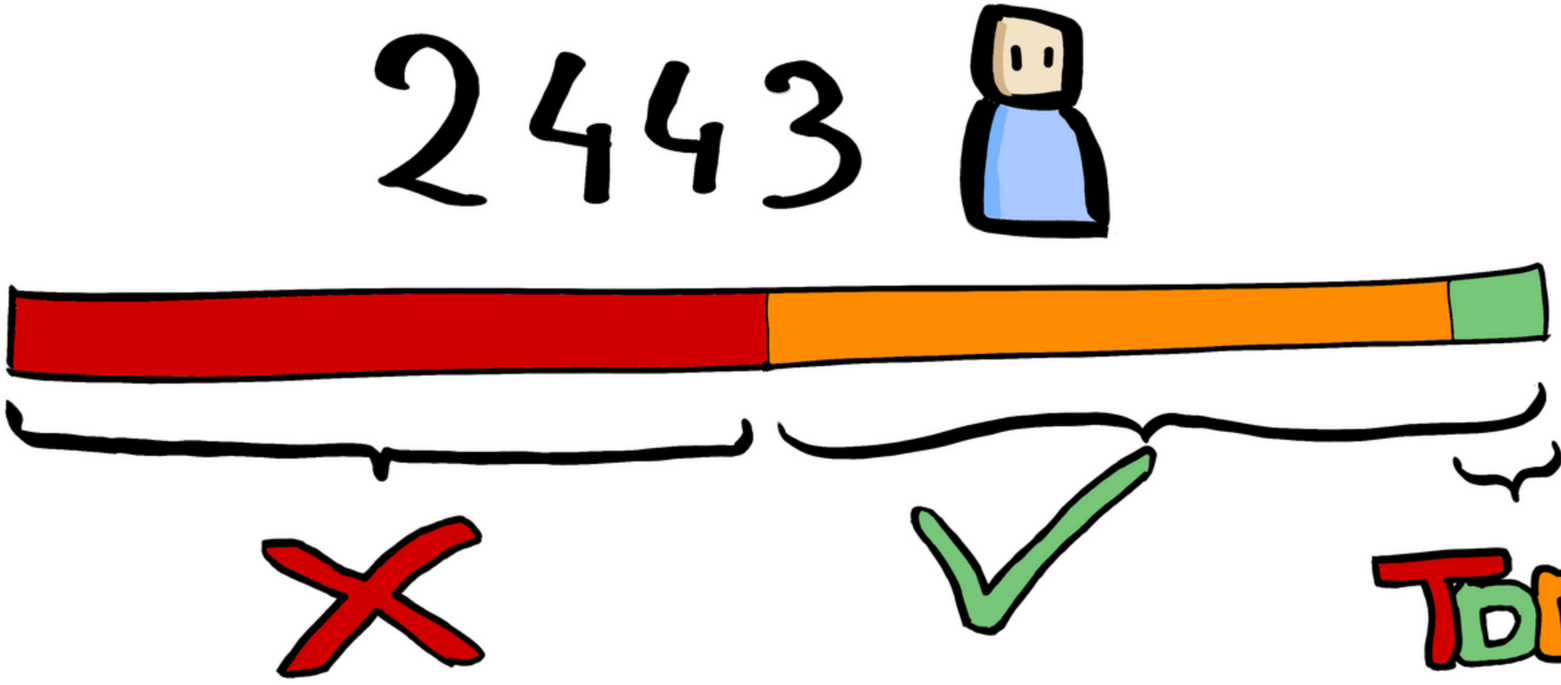
0,8 %

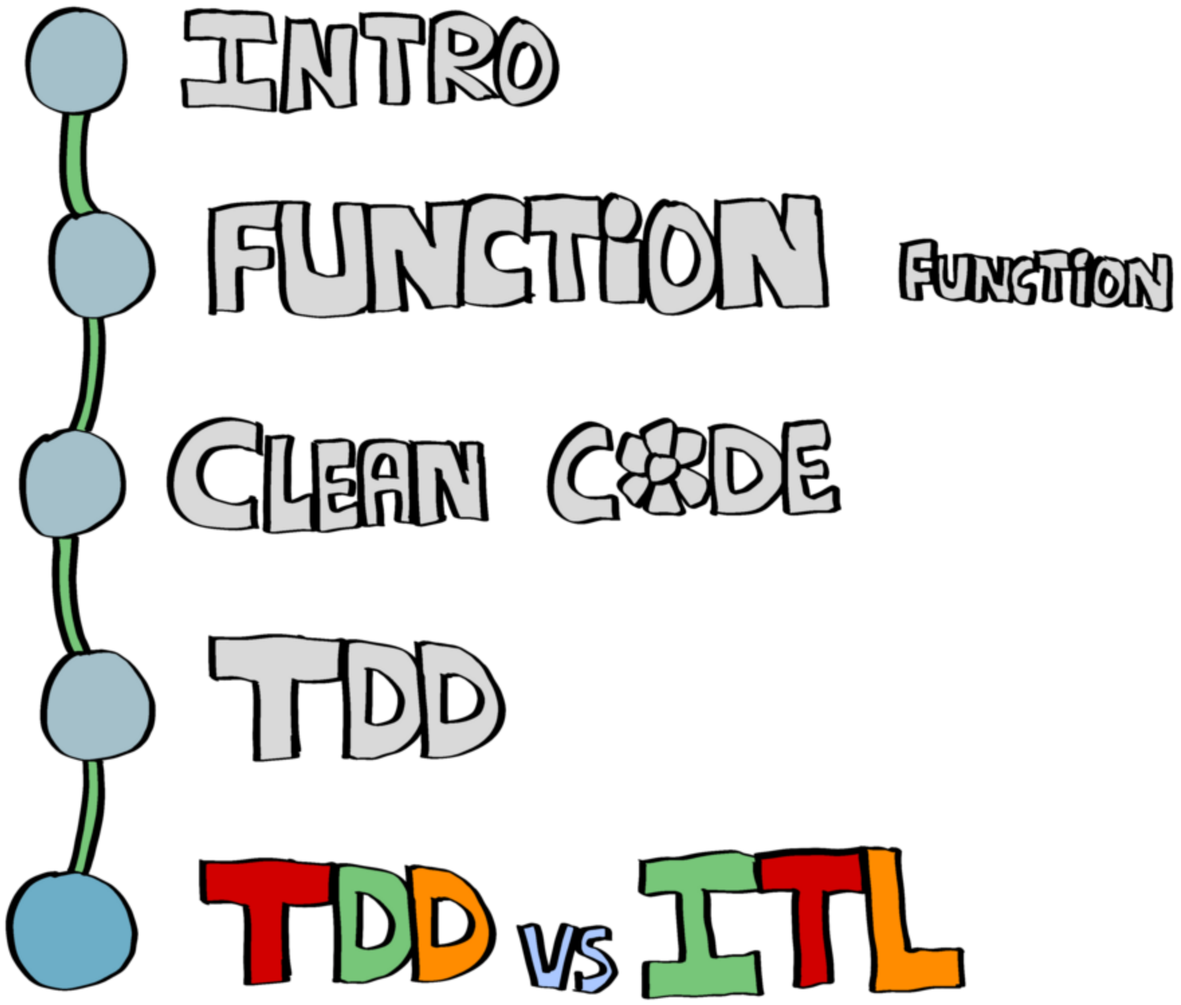
# DEVELOPER TESTING IN THE IDE: PATTERNS, BELIEFS, AND BEHAVIOR

BELLER, MORITZ AND GOUSIOS, GEORGIOS AND PANICHELLA, ANNIBALE AND PROKSCH, SEBASTIAN AND AMANN, SVEN AND ZAIDMAN, ANDY

2017

# QUI FAIT DU TDD ?



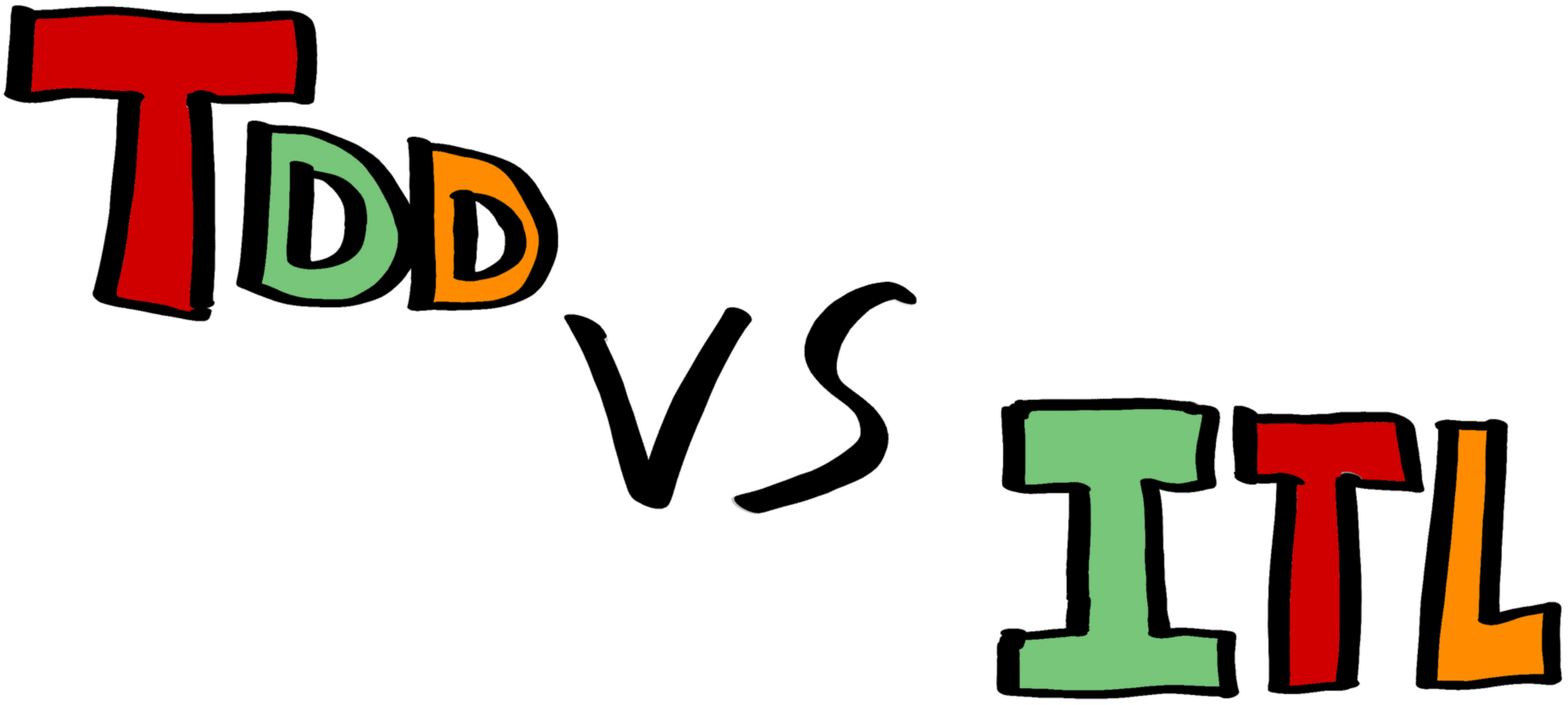

INTRO
FUNCTION
FUNCTION
CLEAN CODE
TDD
TDD VS ITL

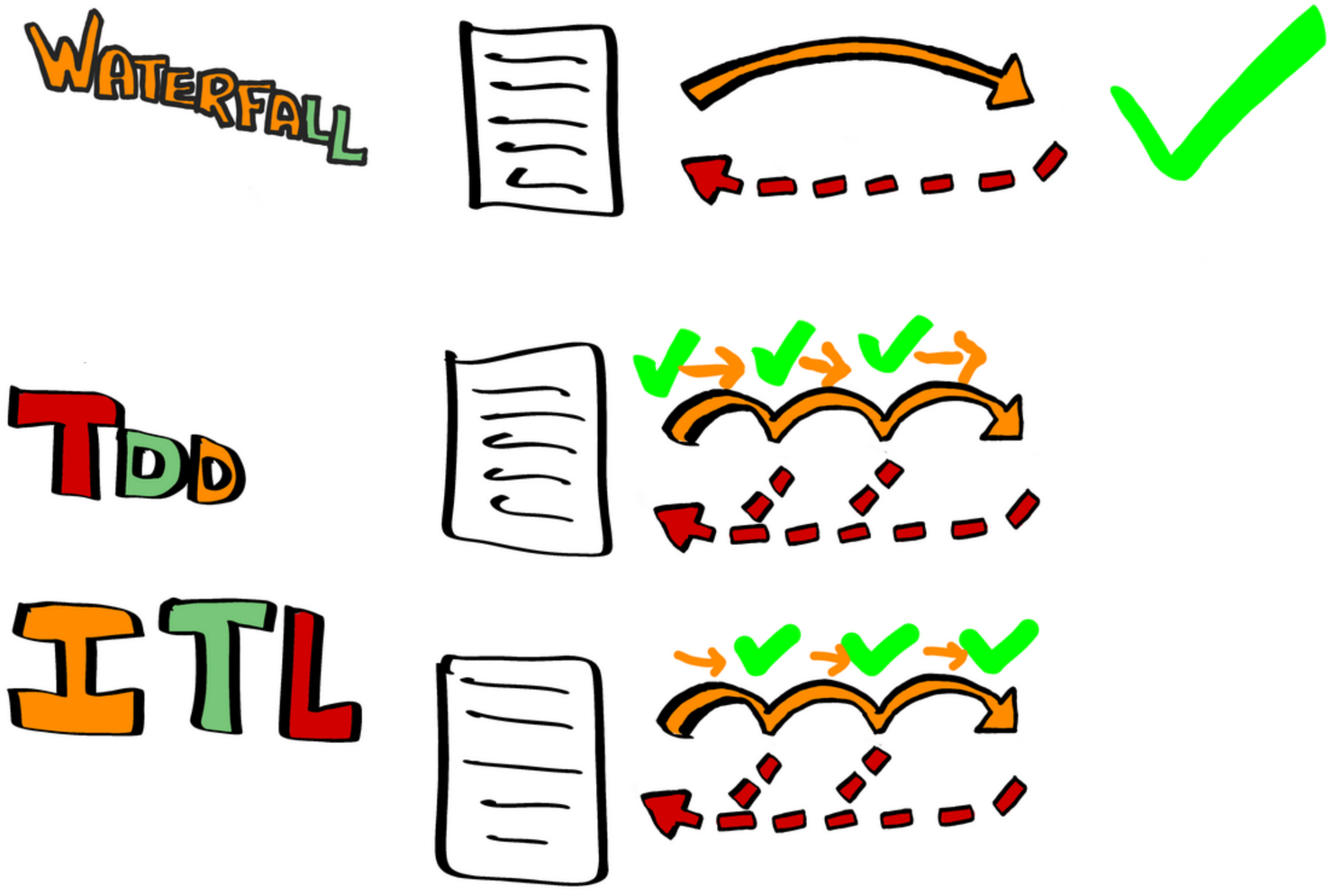
# A FAMILY OF EXPERIMENTS ON TDD

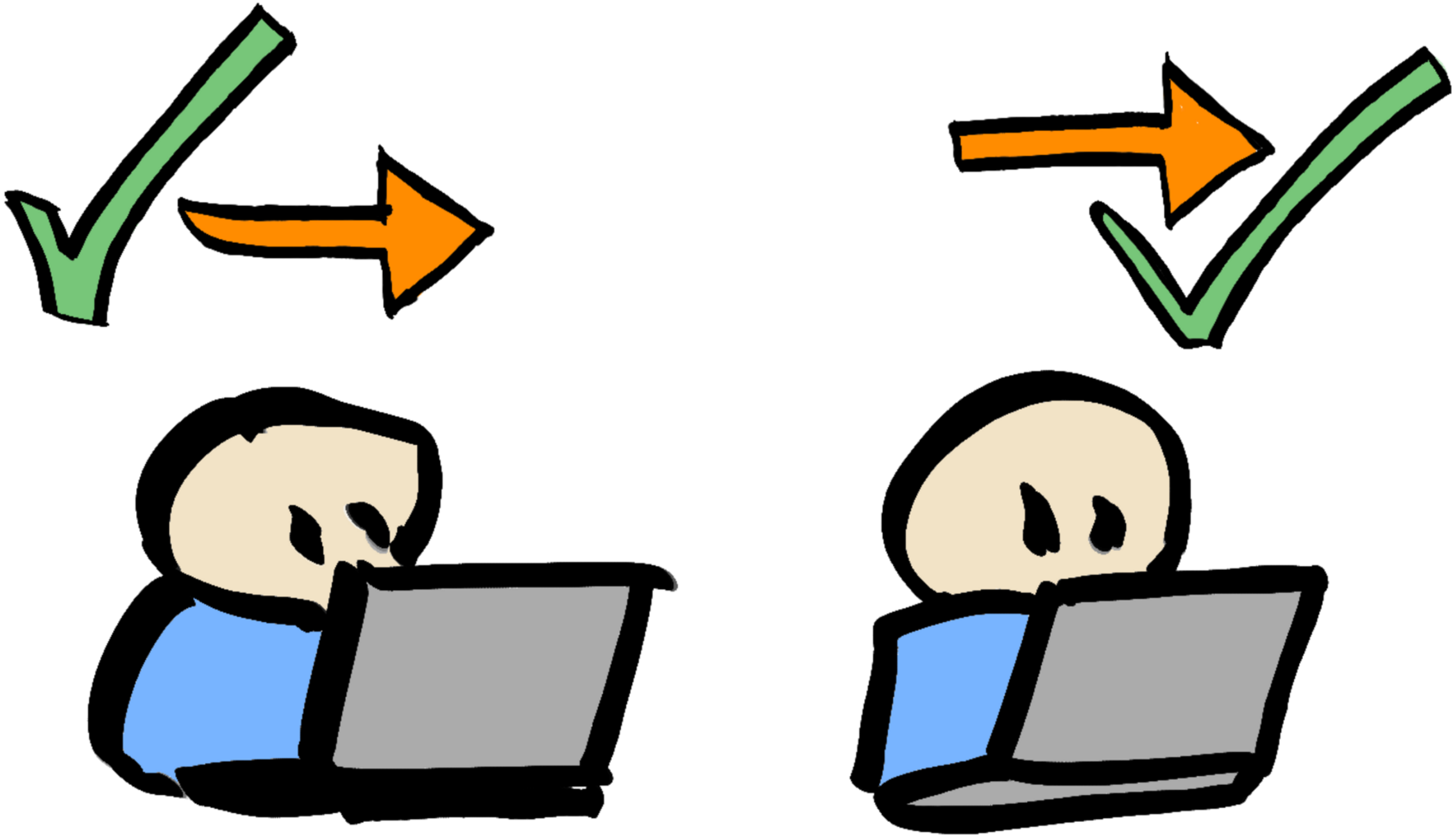
# A FAMILY OF EXPERIMENTS ON TEST-DRIVEN DEVELOPMENT

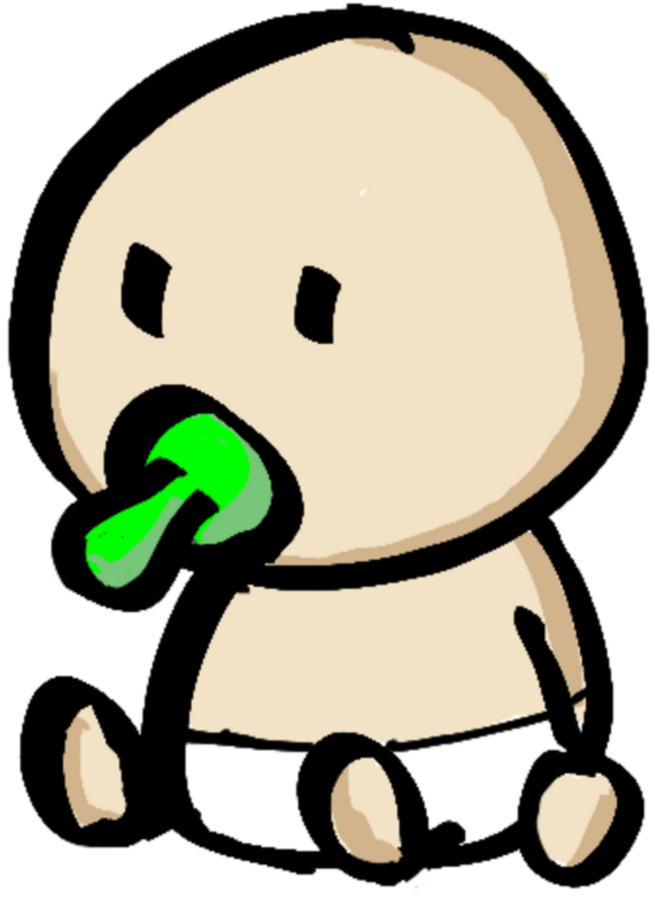
SANTOS, VEGAS, DIESTE TUB O, UYAGUARI, TOSUN, FUCCI, TURHAN, SCANNIELLO, ROMANO, KARAC, KUHRMANN, MANDI , RAMA , PFAHL, ENGBLOM, KYYKKA, RUNGI, PALOMEQUE, SPISAK, JURISTO, NATALIA

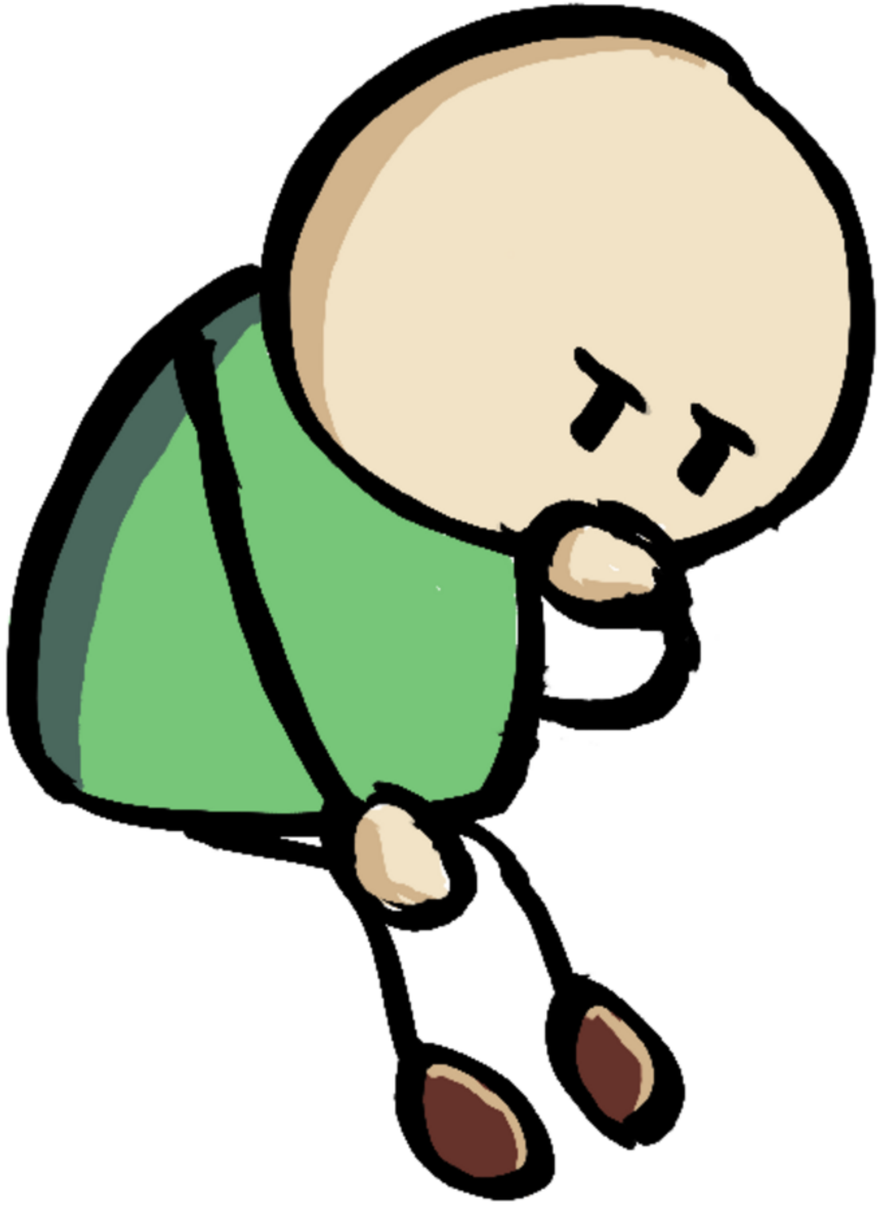
2021


TDD
VS
ITL

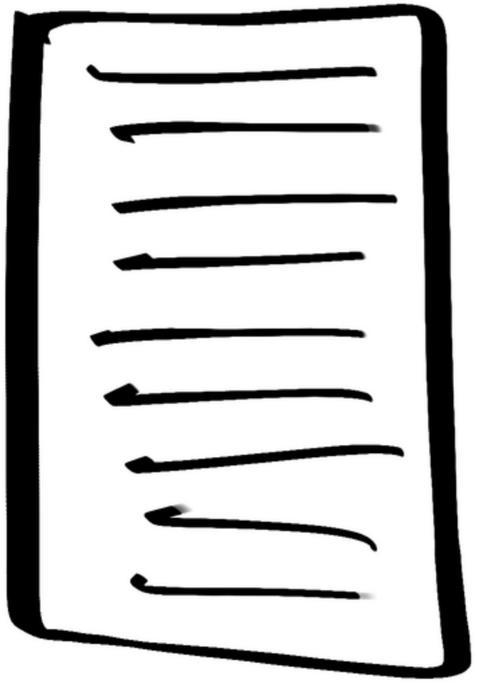

WATERFALL
TDD
ITL
ITERATIVE TEST LAST

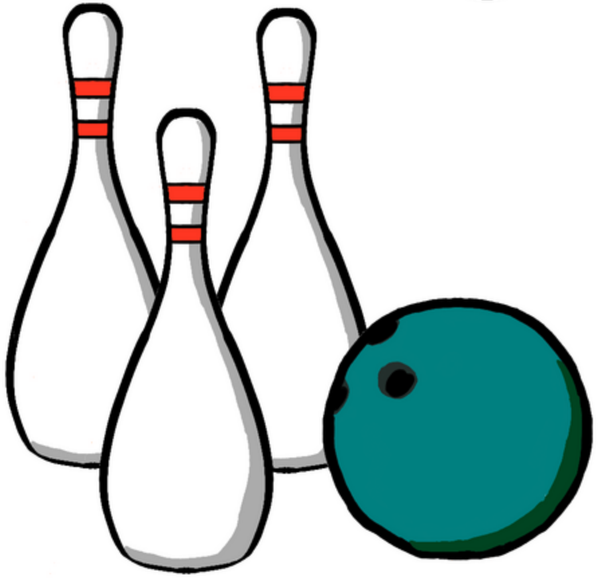






# Bowling Kata





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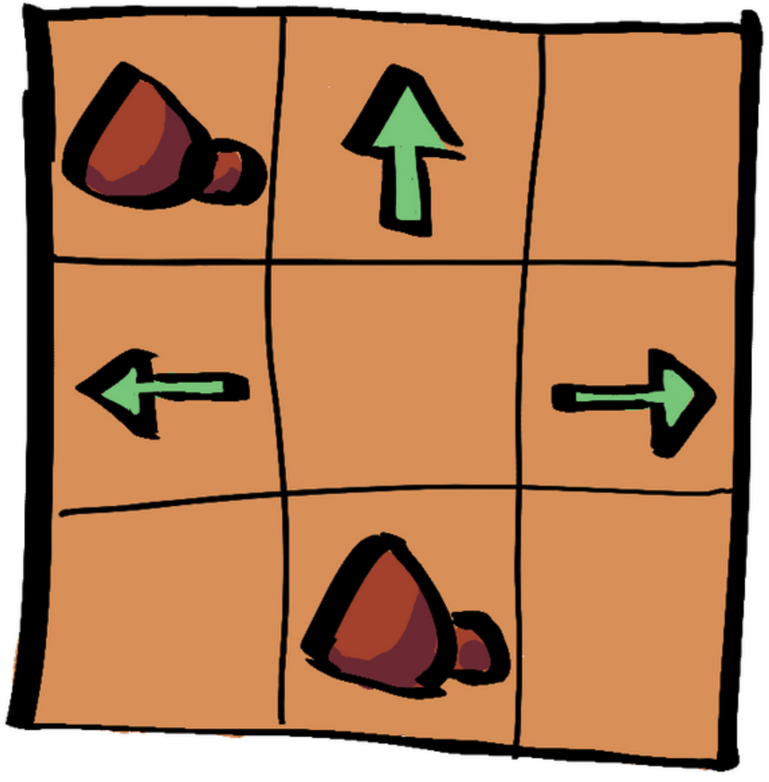
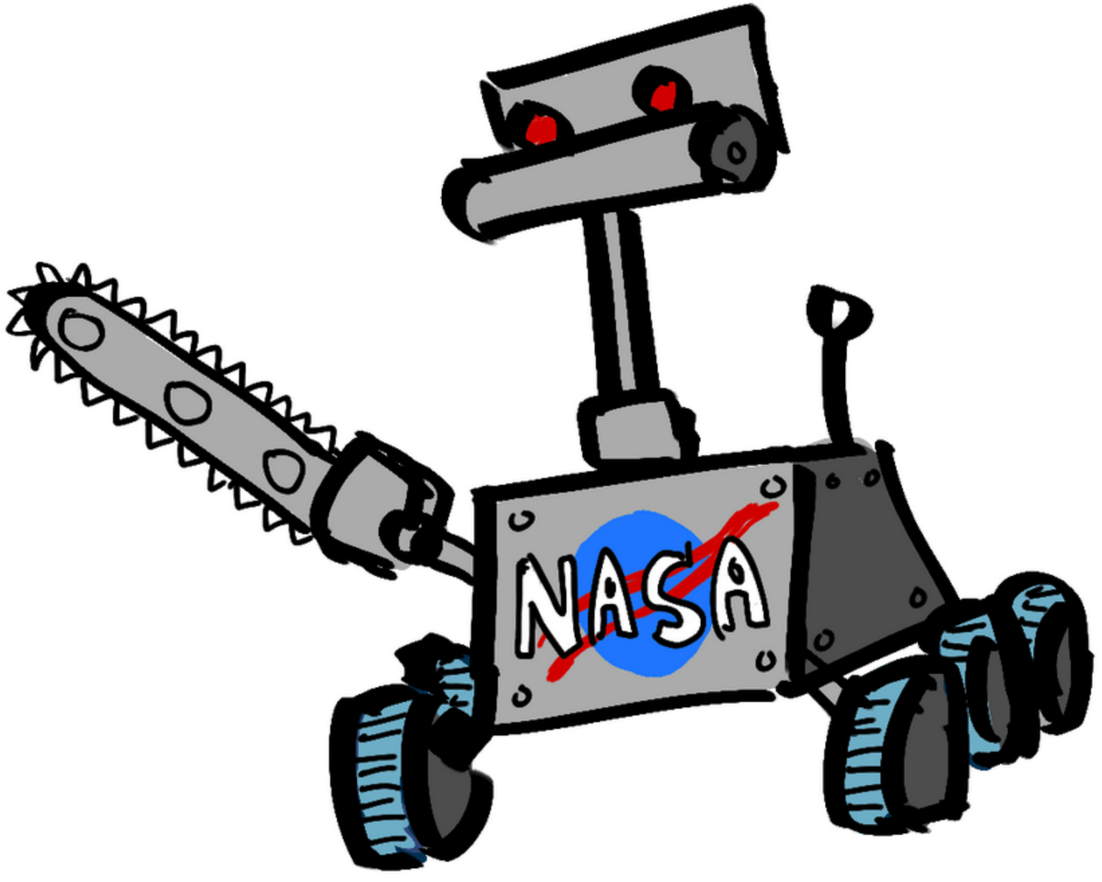




# QUALITÉ

☒ INTERNE 

☑ EXTERNE 

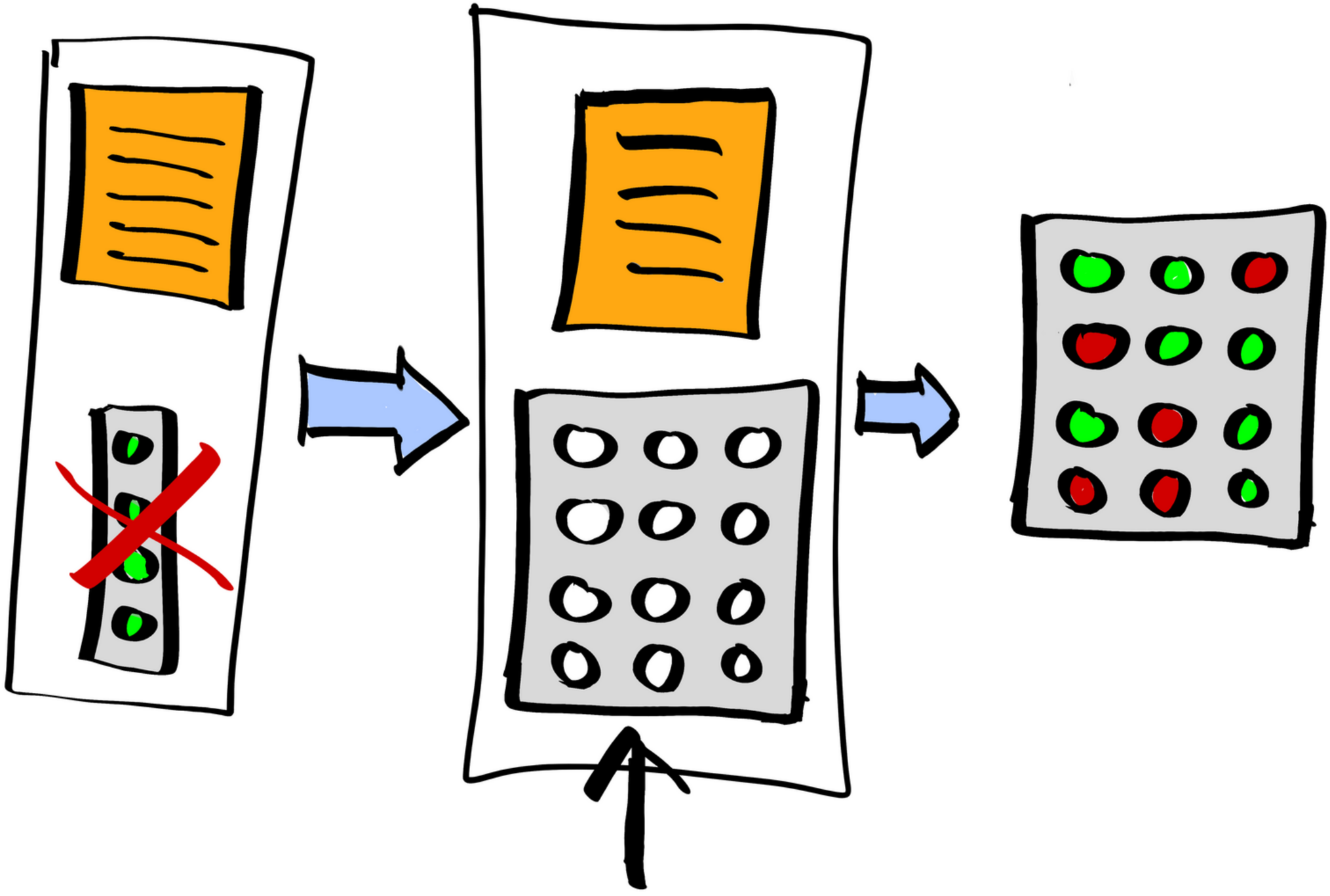


**Fig. 4** Forest plot: TDD vs. ITL mean effects.

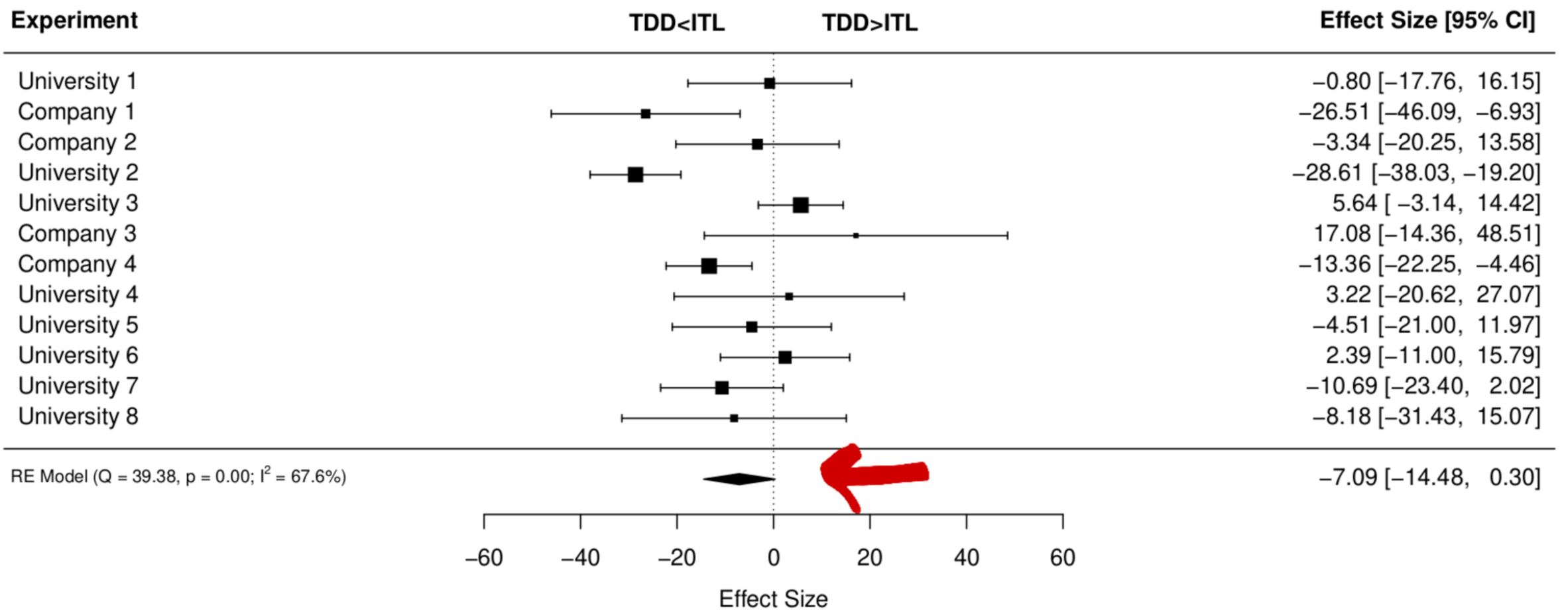


**Table 9** Marginal means for quality: task by treatment.

| Task | Treatment | Estimate |
|---|---|---|
| MR | ITL | 29.36 |
| | TDD | 24.95 |
| BSK | ITL | 49.22 |
| | TDD | 46.46 |

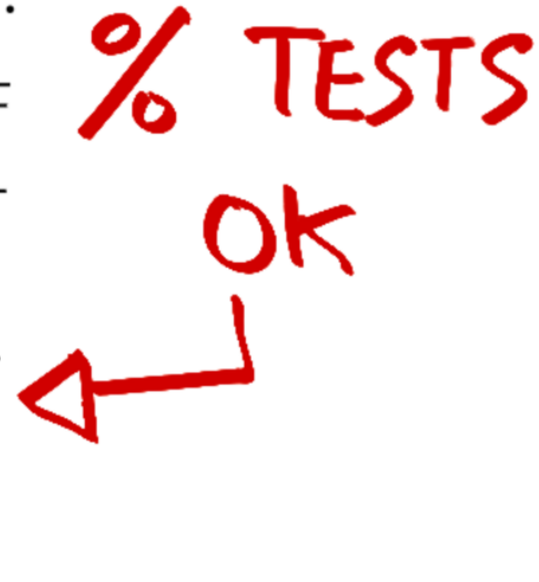


**Table 13** Marginal means for quality: programming environment by treatment.

| Treatment | Group | Estimate |
|---|---|---|
| ITL | Java | 43.83 |
| | C#/C++ | 41.25 |
| TDD | Java | 35.77 |
| | C#/C++ | 37.55 |

**Fig. 5** Forest plot: students vs. professionals

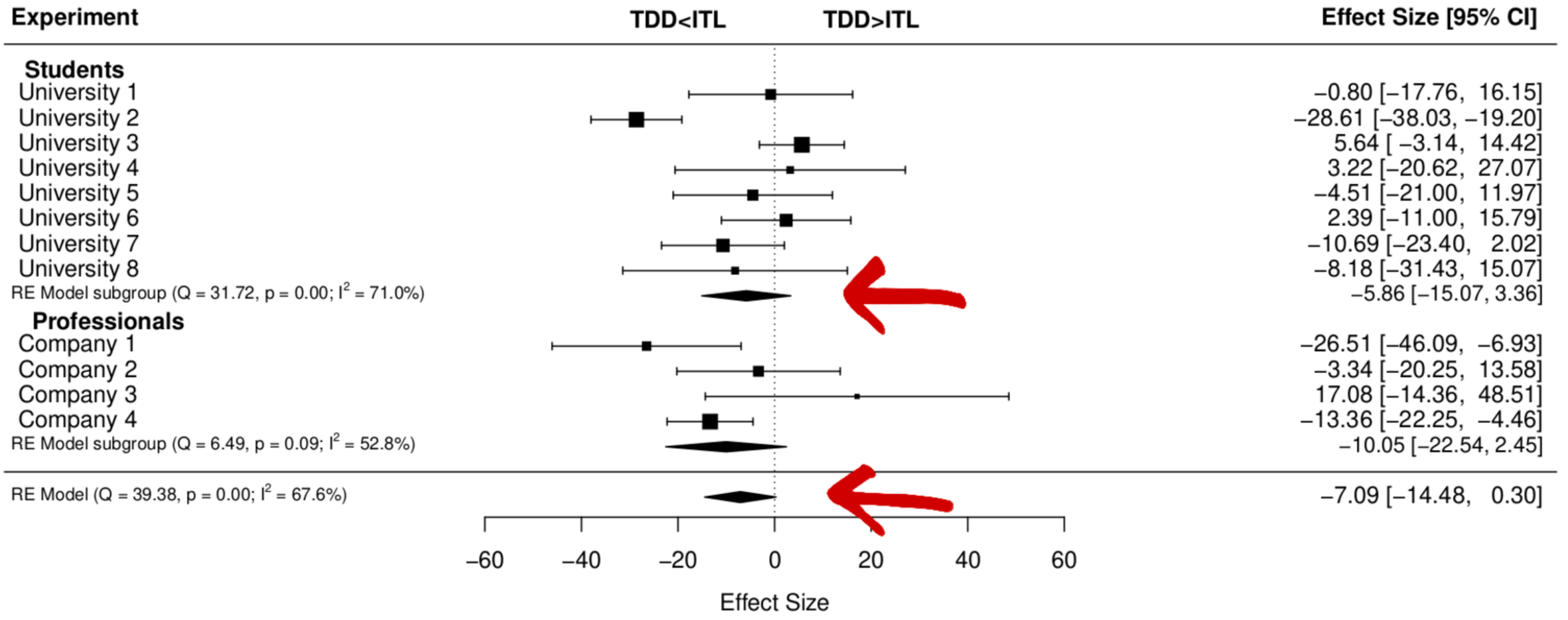


**Table 11** Marginal means for quality: participant type by treatment.

| Treatment | Group | Estimate |
|---|---|---|
| ITL | Students | 40.47 |
| | Professionals | 49.53 |
| TDD | Students | 35.61 |
| | Professionals | 38.26 |

**Fig. 10** Profile plot: mean difference in quality (TDD-ITL) for professionals per experience level in Questionnaire 2.

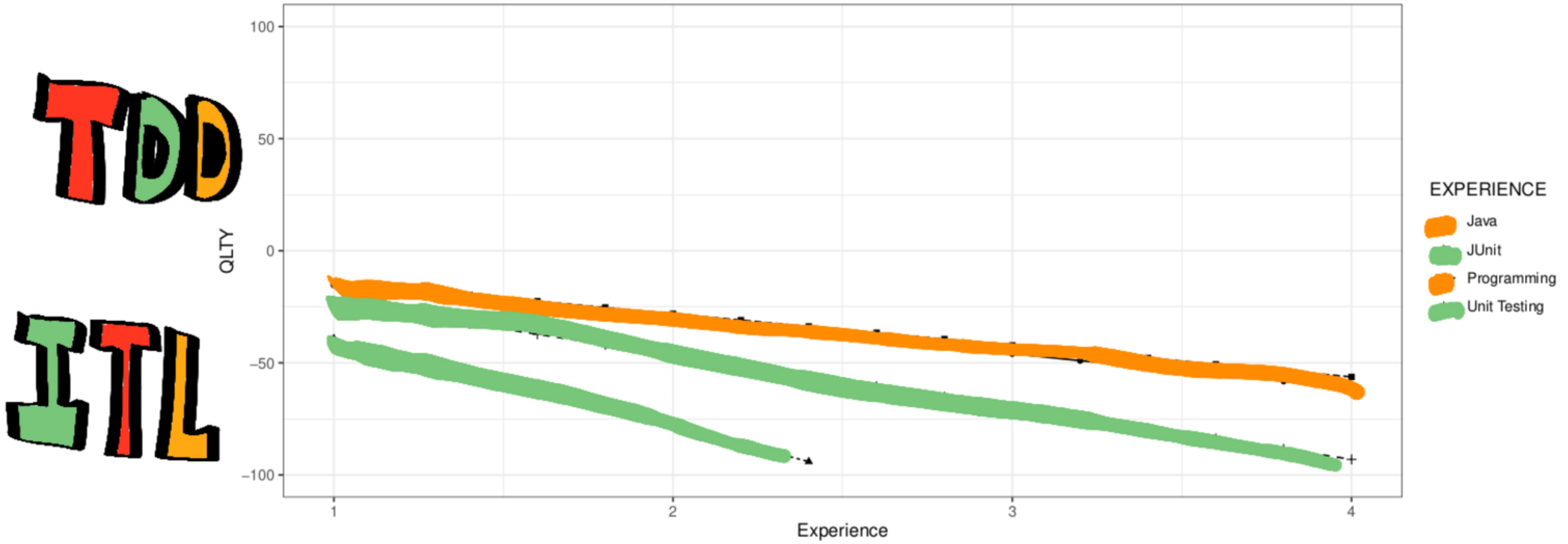
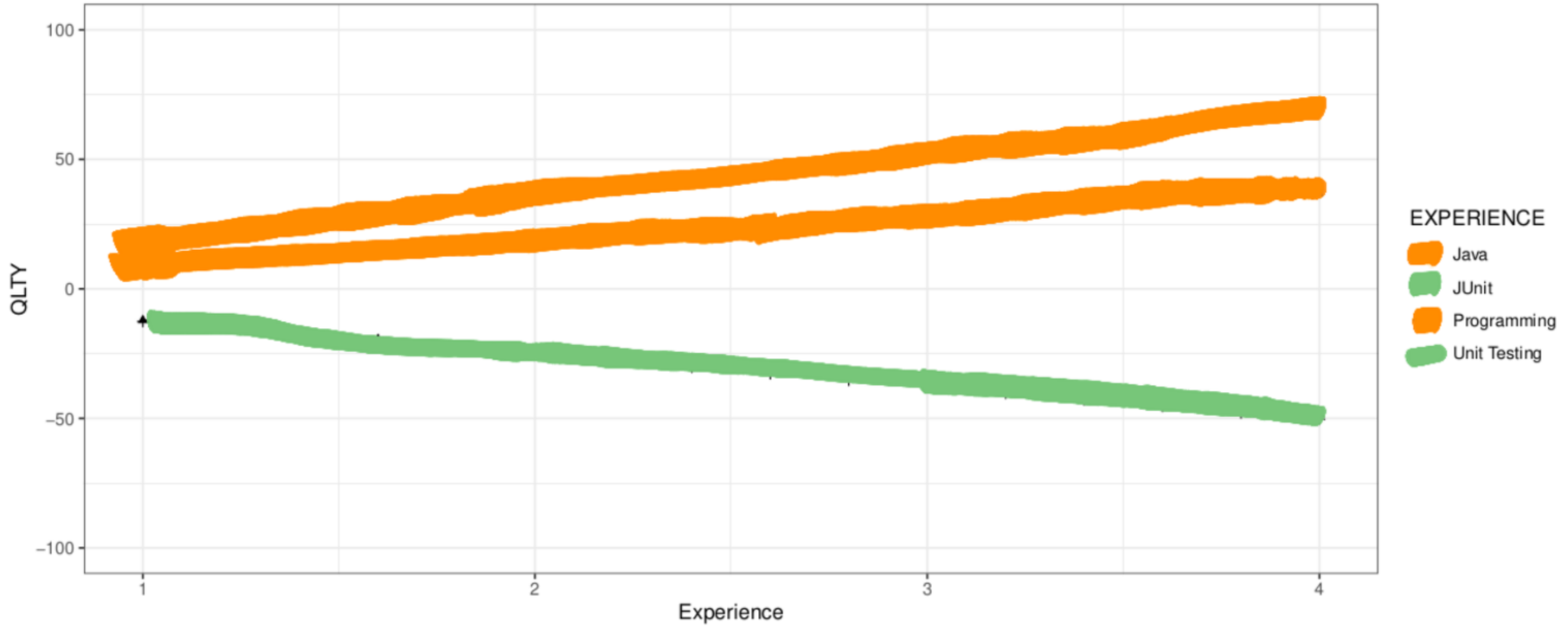
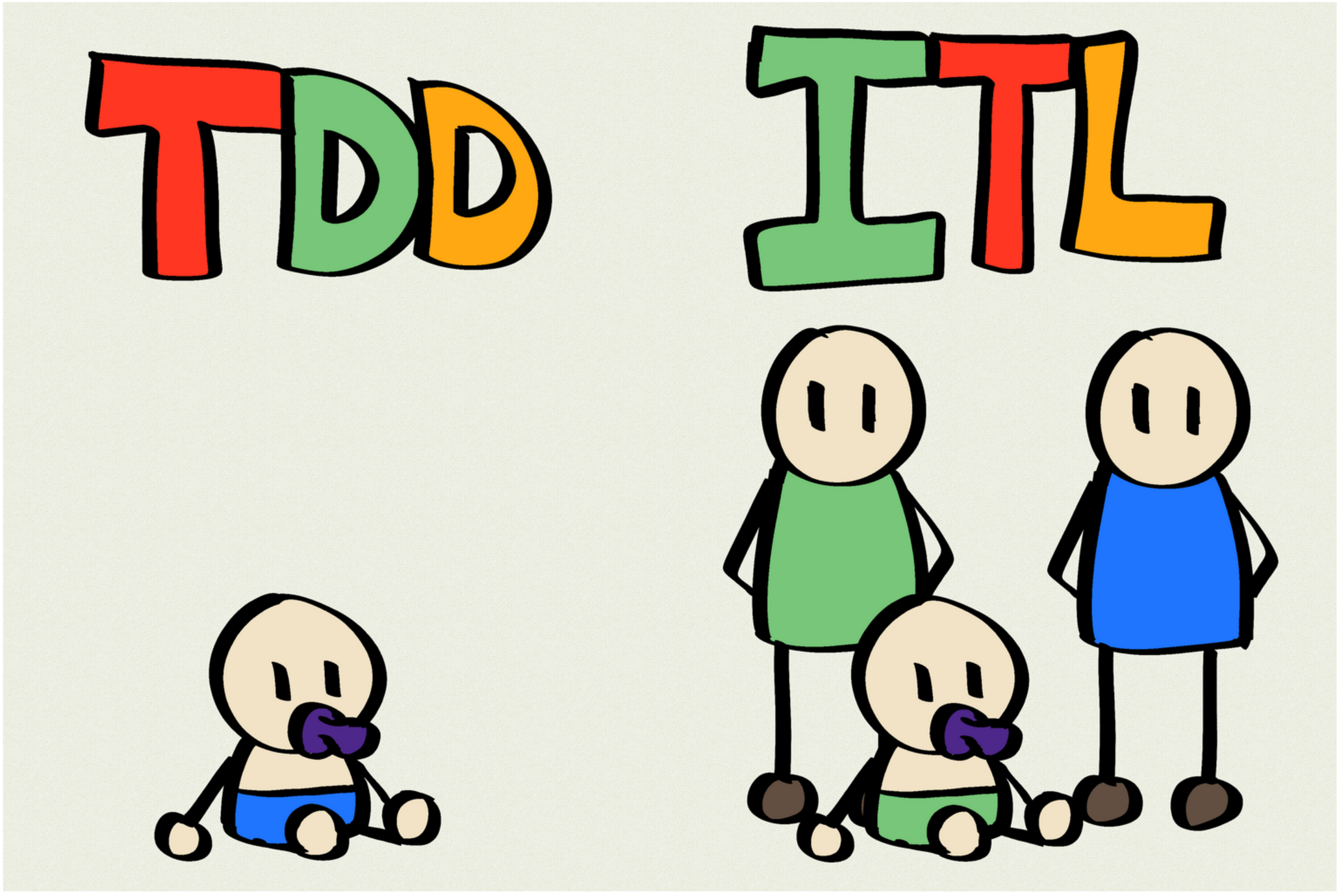


**Fig. 11** Profile plot: mean difference in quality (TDD-ITL) for students per experience level in Questionnaire 1.




TDD
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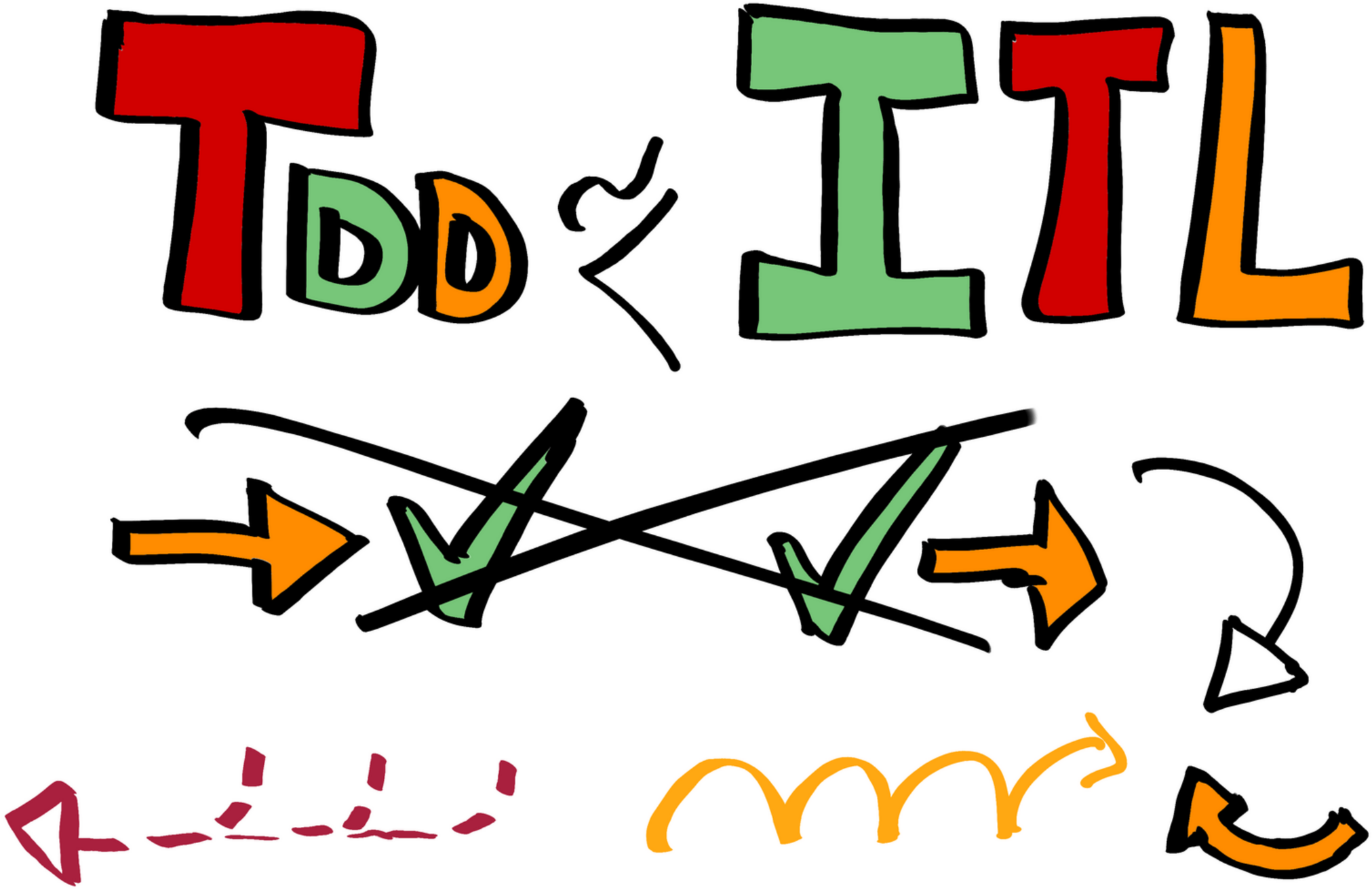
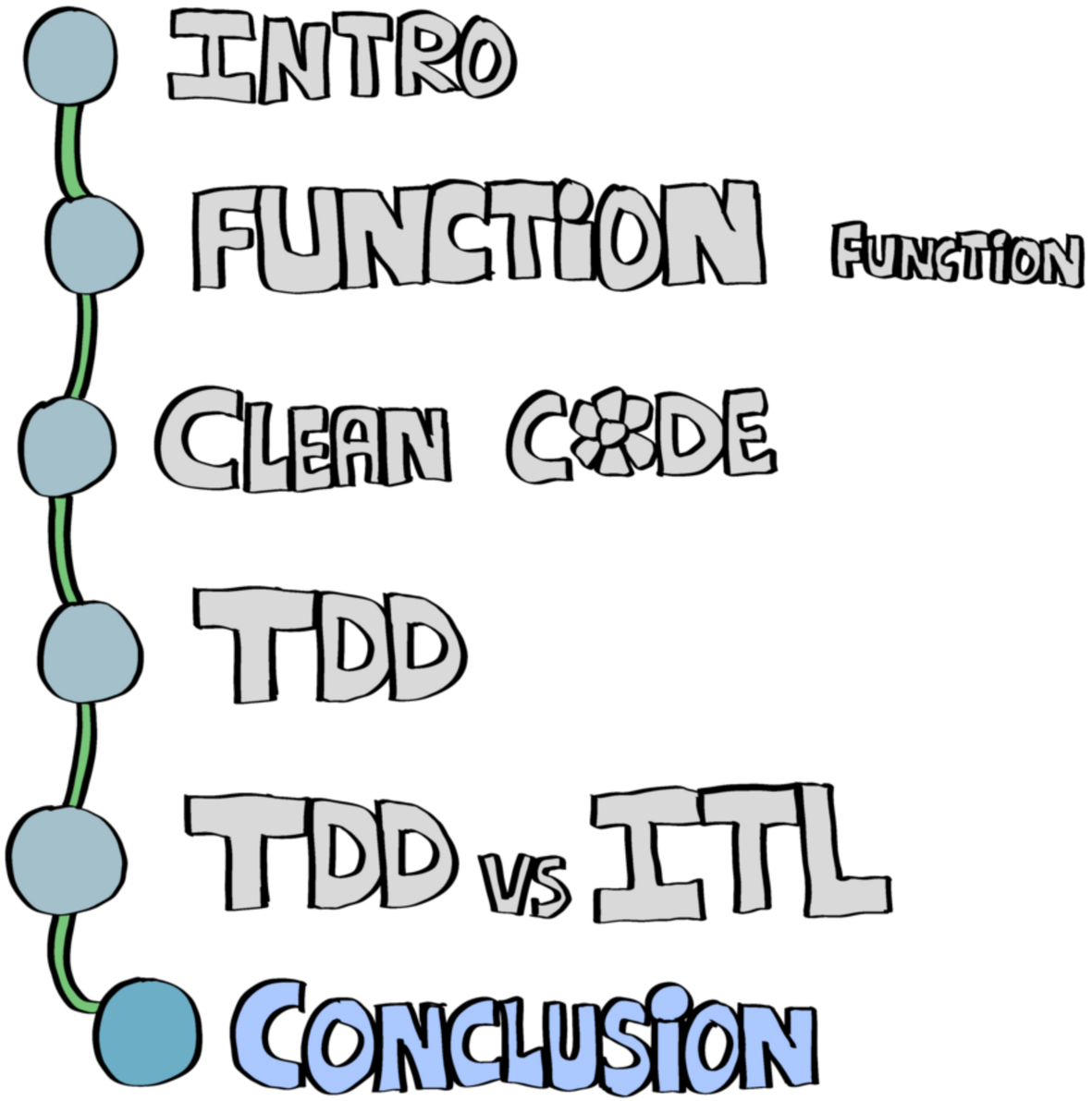
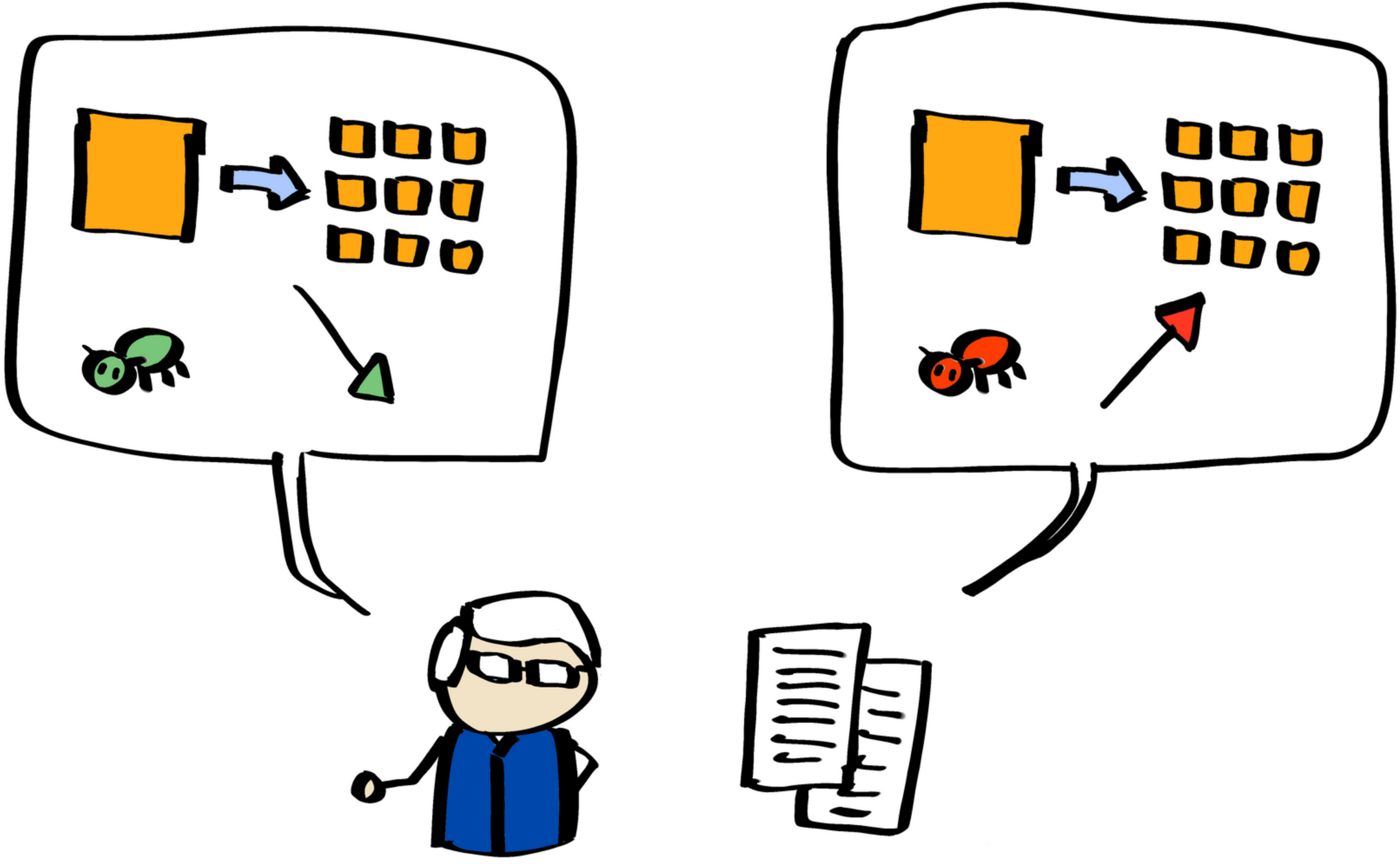
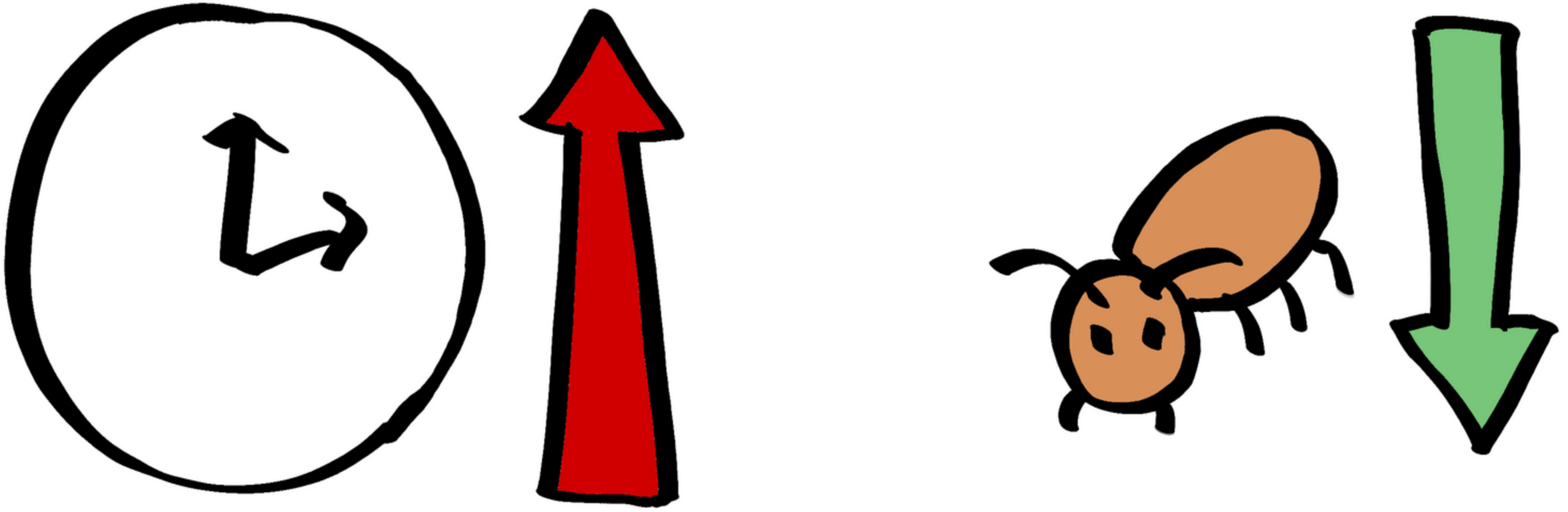

TDD
ITL


INTRO
FUNCTION
FUNCTION
CLEAN CODE
TDD
TDD VS ITL
CONCLUSION

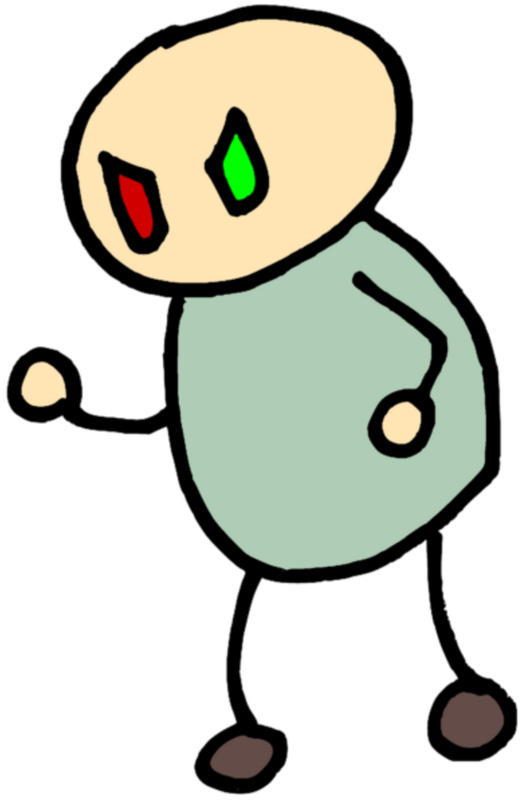


# TDD

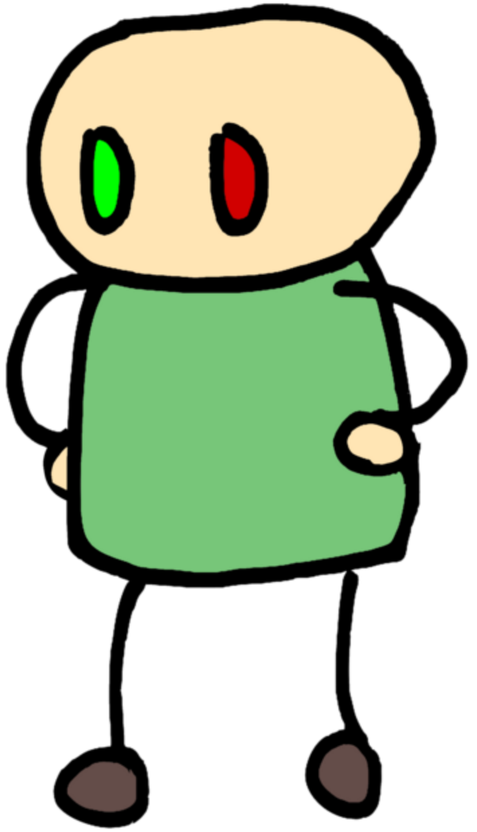


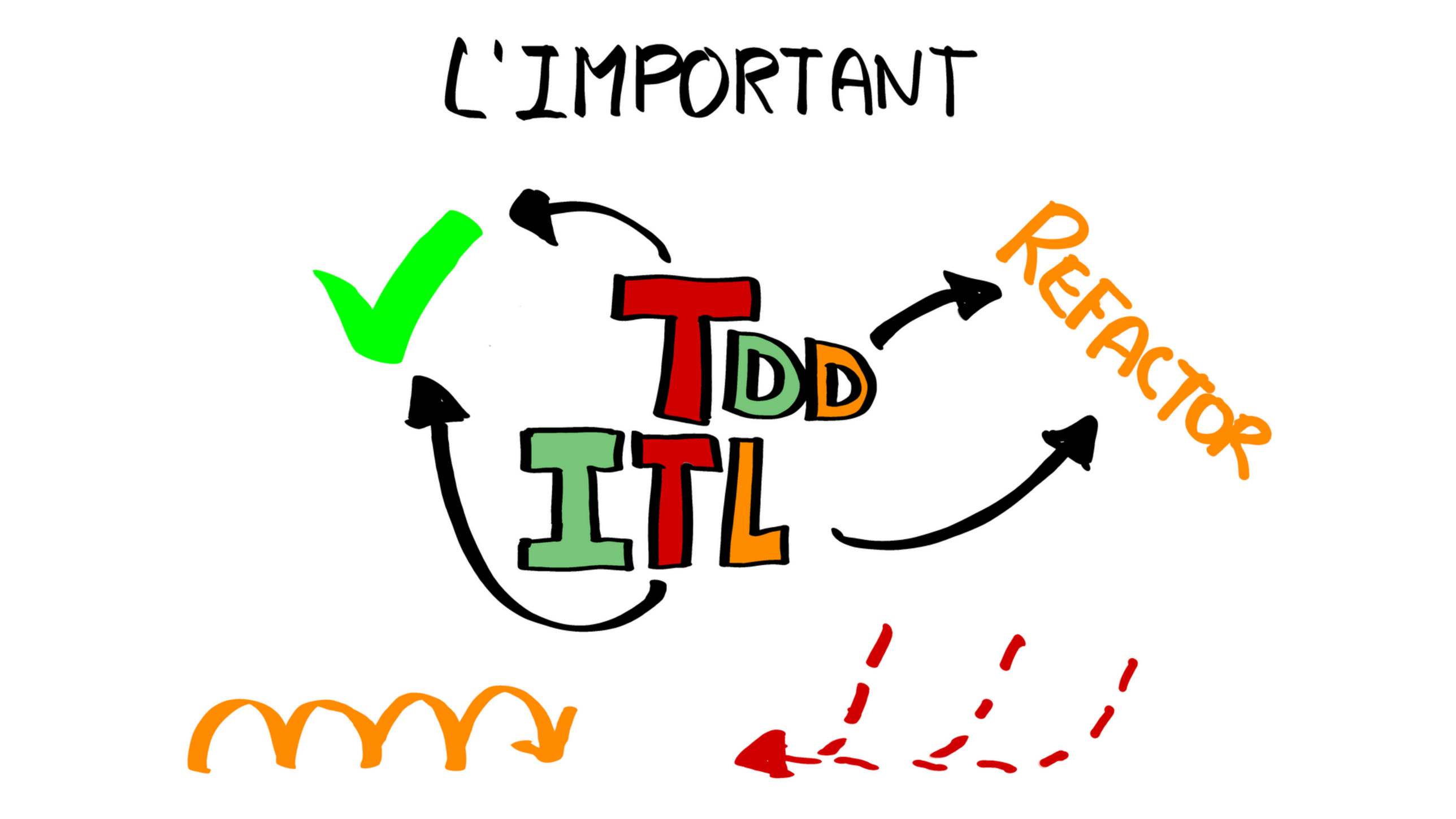
CYCLE EN V

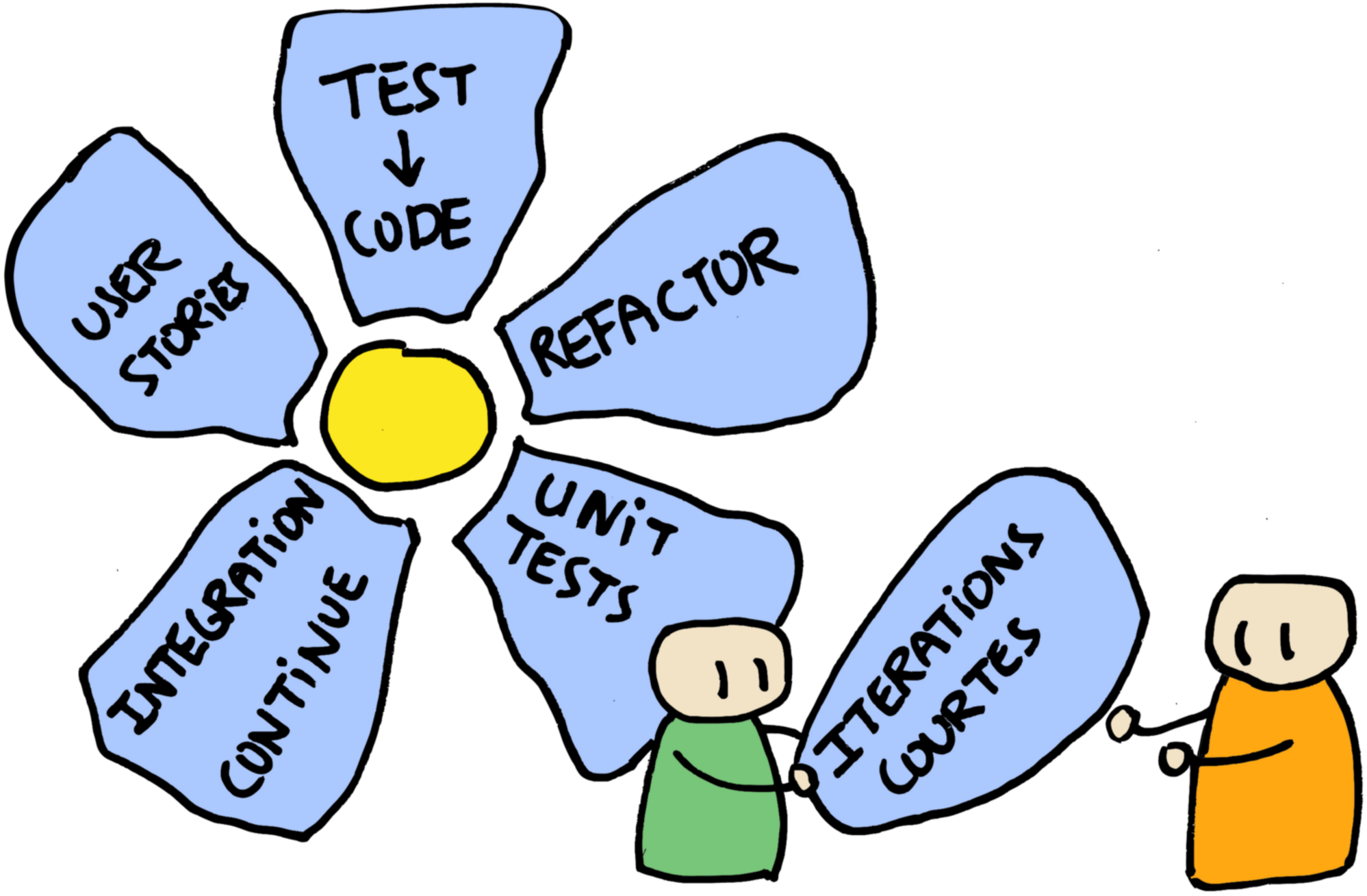
TDD



ITERATIVE TEST LAST

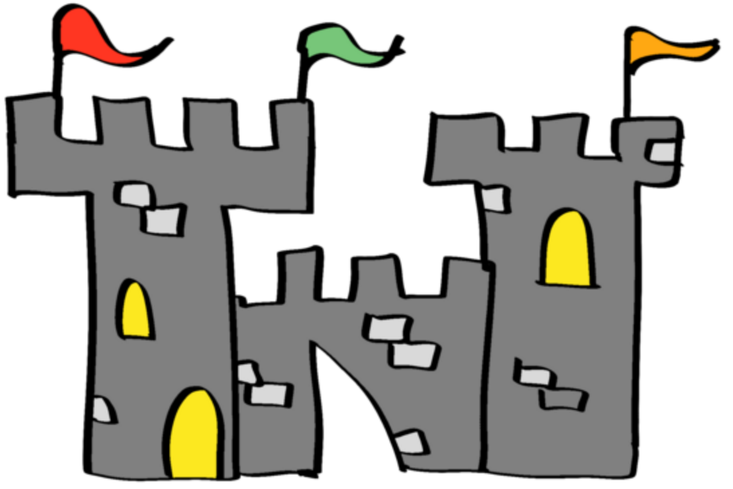



L'IMPORTANT
TDD
ITL
REFACTOR


TEST
↓
CODE
USER STORIES
REFACTOR
INTEGRATION CONTINUE
UNIT TESTS
ITERATIONS COURTES

# MERCI !

L'ORGA DE



MES SOURCES

## Gold











## Bronze




## Partenaires

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