

Objective Calisthenics?

- Tarald Spønnich



Calisthenics (kælis'θɛnɪks)

A collection of exercises to focus on maintainability, readability, testability, and comprehensibility of your code.



Why?

Easier to:

- Read
- Test
- Maintain

Object Calisthenics rules

1. Only one level of indentation per method
2. Don't use the ELSE keyword
3. Wrap all primitives and strings
4. First class collections (wrap all collections)
5. Only one dot per line `dog.Body.Tail.Wag() => dog.ExpressHappiness()`
6. No abbreviations
7. Keep all entities small
[10 files per package, 50 lines per class, 5 lines per method, 2 arguments per method]
8. No classes with more than two instance variables
9. No public getters/setters/properties
10. All classes must have state

Why?

“Code is read more than it is written” - unknown (Mahatma Gandhi?)

Only one level of indentation per method

```
indendation_correct.py > ...  
1 class Board(object):  
2     def __init__(self, data):  
3         self.buffer = ""  
4         self.collect_rows(data)  
5  
6     def collect_rows(self, data):  
7         for i in range(10):  
8             self.collect_row(data[i])  
9  
10    def collect_row(self, row):  
11        for j in range(10):  
12            self.buffer += row[j]
```

Only one level of indentation per method

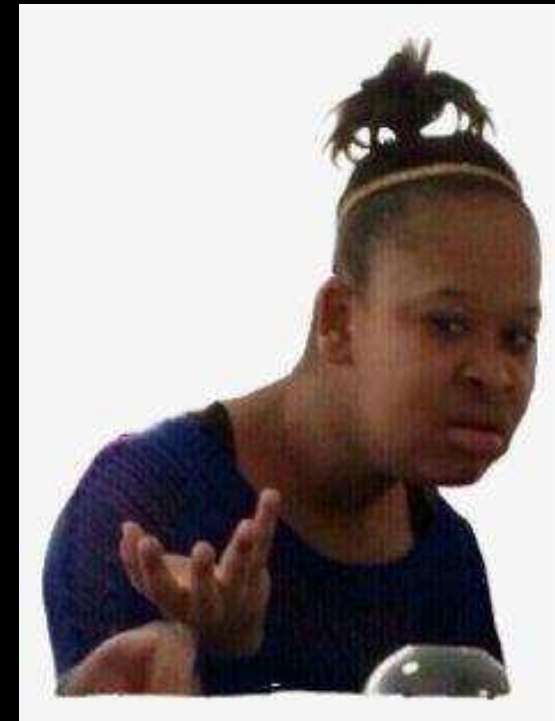
Benefits:

- Single responsibility
- Better naming
- Shorter methods

Do NOT use the else word

- Avoid complex conditional structures
- Promotes the use of polymorphism

```
float Amount;  
float calculateClaim;  
if(vehicleClass=='A')  
    Amount = 0.7 * distanceTravel;  
else if(vehicleClass=='a')  
    Amount = 0.7 * distanceTravel;  
else if(vehicleClass=='B')  
    Amount = 0.6 * distanceTravel;  
else if(vehicleClass=='b')  
    Amount = 0.6 * distanceTravel;  
else if(vehicleClass=='C')  
    Amount = 0.5 * distanceTravel;  
else if(vehicleClass=='c')  
    Amount = 0.5 * distanceTravel;  
else if(vehicleClass=='D')  
    Amount = 0.45 * distanceTravel;  
else if(vehicleClass=='d')  
    Amount = 0.45 * distanceTravel;
```



Wrap primitive types

```
wrap_primitive_wrong.py > ...  
1 class Validator(object):  
2     def check_presentation_date(self, year, month, day):  
3         pass  
4 validator = Validator()  
5 validator.check_presentation_date(2020, 4, 5)  
6 # 4. of may or 5. of april?
```

```
wrap_primitive_correct.py > ...  
1 class Validator(object):  
2     def check_presentation_date(self, year: Year, month: Month, day: Day) -> bool:  
3         pass  
4  
5 validator = Validator()  
6 validator.check_presentation_date([Year(2020), Month(4), Day(5)])
```

Wrap primitive types

Benefits:

- Express intent through types
- Attracts similar behaviour

Only one dot per line

```
dog.Body.Tail.Wag() => dog.ExpressHappiness()
```

- Easier to use
- Tell don't ask

Don't Abbreviate

- Why do we abbreviate?
- Split and extract

 **abbreviation**
/əbriːviˈeɪʃ(ə)n/
noun
a shortened form of a word or phrase.
"SKU is the abbreviation for Stock Keeping Unit"

```
abbreviate.py > ...
1  def check_wat_and_check_if_cof_and_strt():
2      #check watt?
3      #check coffin?
4      #strt ??????
5      pass
6
7  #vs
8
9  def make_coffee():
10     check_water()
11     check_coffee()
12     start()
```

Keep entities small:

- Single responsibility
- Easier to read and reuse

No classes with more than two instance variables:

- High cohesion
- Fewer dependencies

Test Driven Development

What have I learned?

- Commit often
- Red – Green – Blue
- Objective calisthenics?

Thank you!

Thanks to Alcor Academy for a great learning experience!

Sources:

Paweł Lewtak (Lecture (Code Europe Spring 2017))

Alcor Academy (Lecture (Object Calisthenics))

Contact info:

Tarald Sponnich

Email: tsp09k@gmail.com

Github: <https://github.com/Tarald93>

LinkedIn: <https://www.linkedin.com/in/tarald-sponnich-088491143/>

Images:

https://www.pngitem.com/middle/JTbTmJ_wtf-meme-png-fuck-you-mean-face-transparent/

<https://me.me/i/float-amount-float-calculateclaim-if-vehicleclassa-amount-0-7-0aa443b20b2b46ba85674b471967a6c3>

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