Best Practices

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Disclarimer!

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Introduction

Overall

Coding

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Summary

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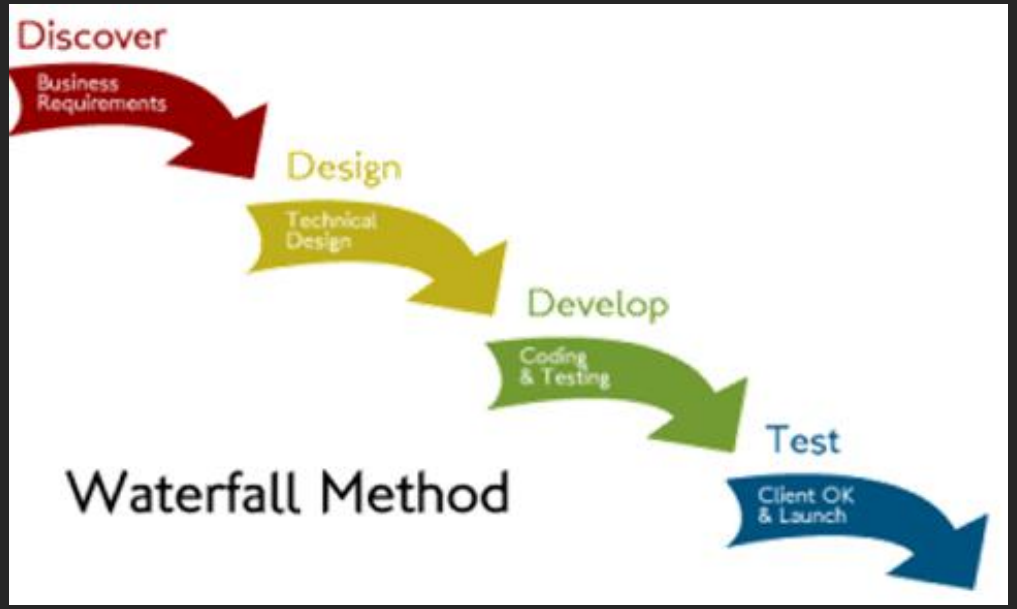
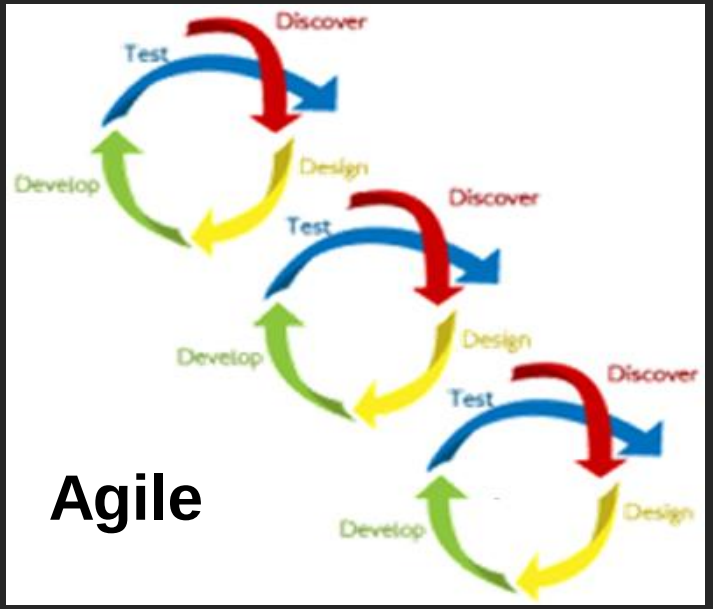
Overall: Be Agile





Overall : Use the most suitable tooling

1. Planning
2. Development
   - ✓ Workbench (IDE)
   - ✓ Programming Language
   - ✓ Framework vs. Library
   - ✓ Database
3. Team engagement
4. Documentation
5. Time / Schedule management
6. TODO / Task management

Overall: Have a planning habit

- Have at least 2 sessions

1. Focus / Category
   - ✓ List top level things first
   - ✓ Keep them a few (optimally <=5)
2. Details
   - ✓ Be very precise
   - ✓ What is the concrete deliverable of each?
   - ✓ Required resources & Expected challanges

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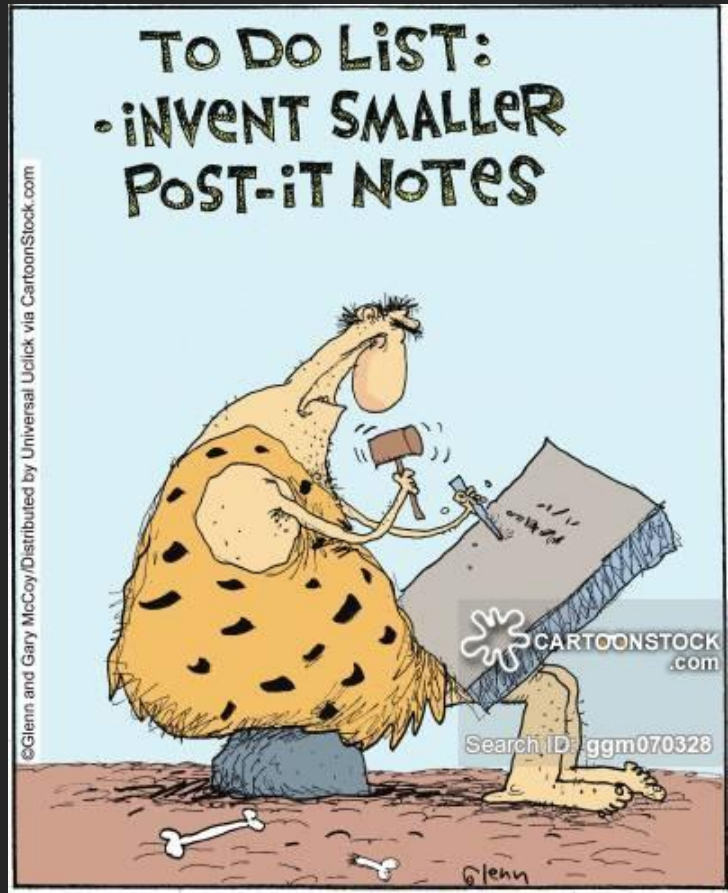
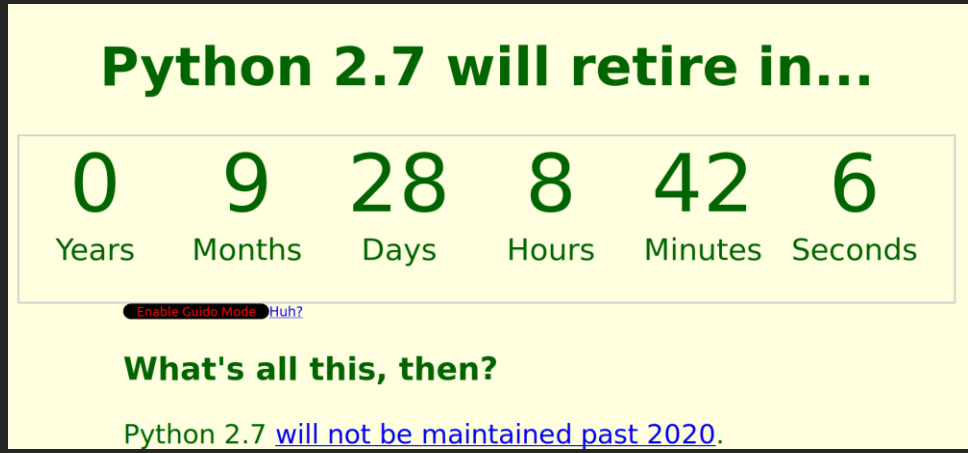
Coding: Use a modern IDE

- Subjective reasons
  - I have always used X, I am comfortable with it
  - It's what the cool kids are using
  - Tool of choice of the company / group
- Objective reasons
  - Natural fit for the problem at hand
  - Support of best practices
  - Assistance to the developer
  - License



Coding: update your language version

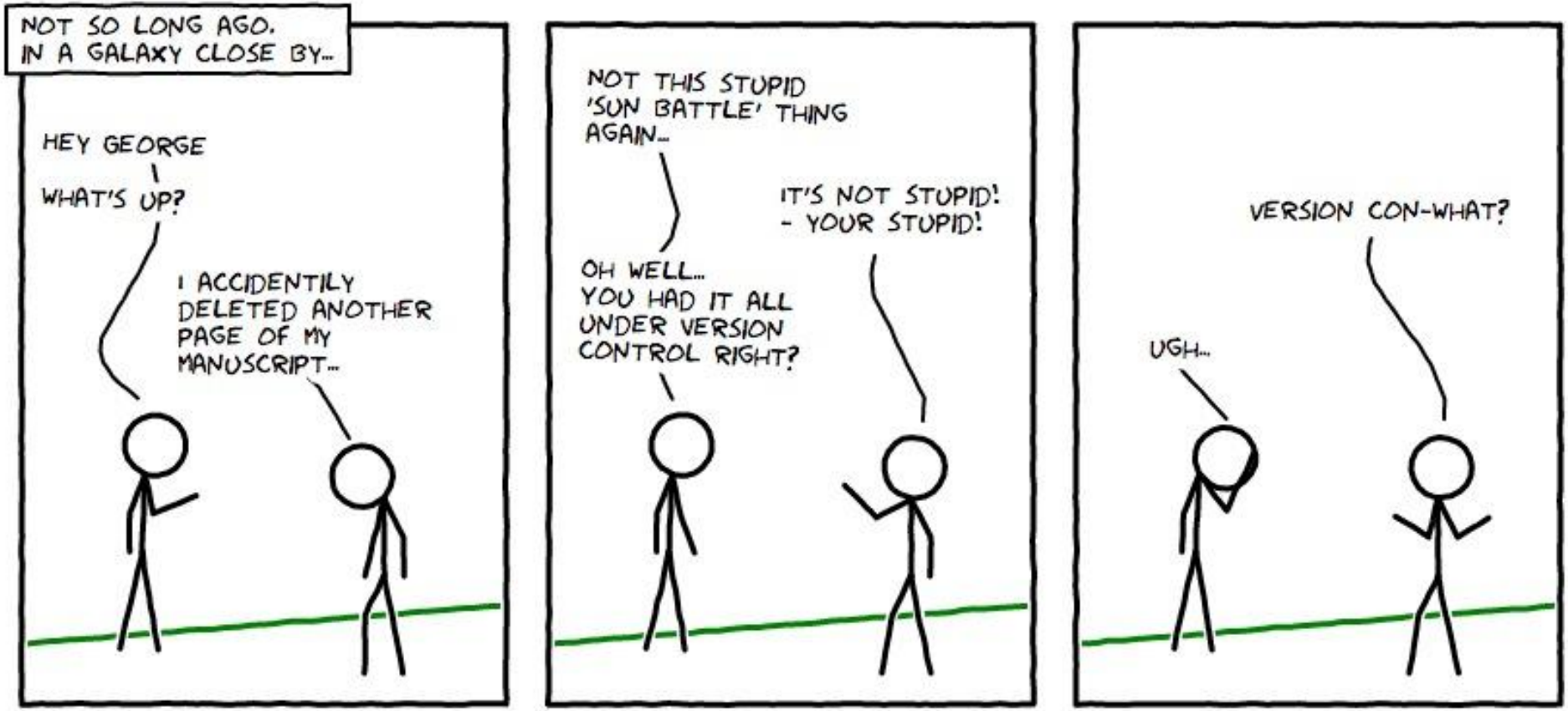
- Python >= 3.5
  - Duck typing
- Javascript => Typescript
- Java >= 8
  - Functional programming



https://pythonclock.org/

https://learntocodewith.me/programming/python/python-2-vs-python-3/
https://www.graycelltech.com/why-typescript/
http://blog.codelv.com/2018/04/python-27-vs-36-in-2018.html

Coding: Use version control



Coding: Keep just enough design / documentation

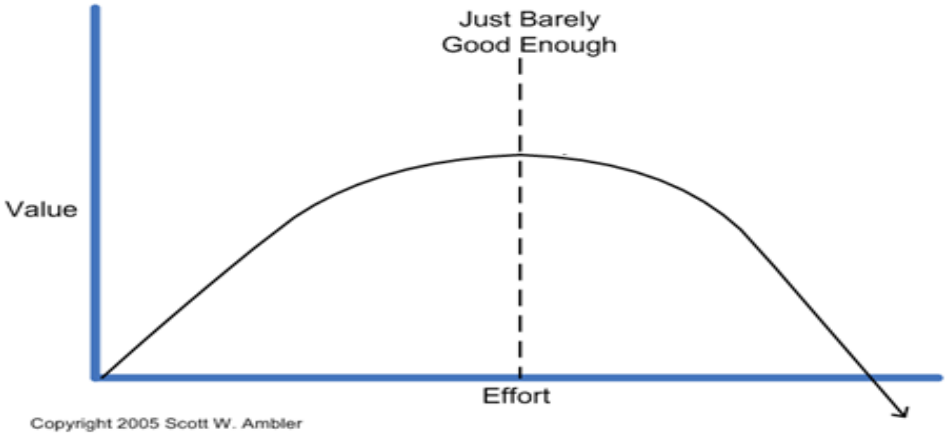


Fig 1. Ideal Curve

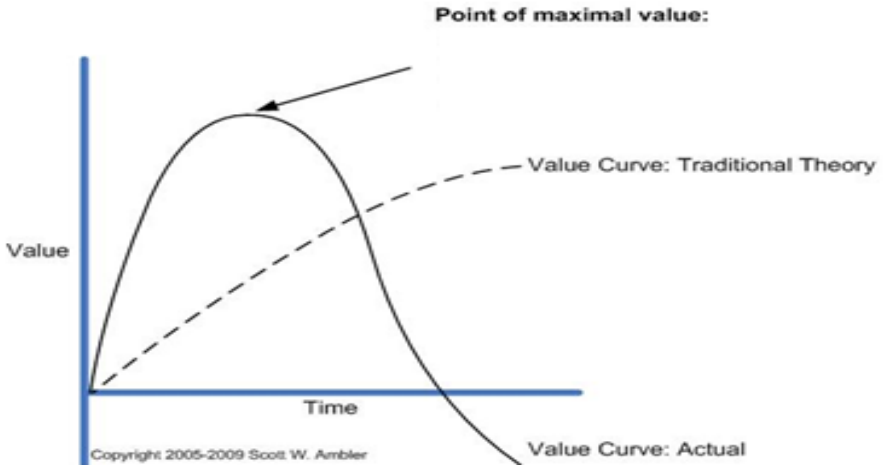


Fig 2. A more realistic plot

http://agilemodeling.com/essays/barelyGoodEnough.html

Coding: consistency (control logic example)

```
if c1:
        work1t
        if c2:
                work2t
                if c3:
                        work3t
                else:
                        work3f
        else:
                work2f
else:
        work1f
```

(3 if, 3 else, 12 lines)

```
if ! c1:
        work1f
        return
work1t

if ! c2:
        work2f
        return
work2t

if ! c3:
        work3f
        return
work3t
```

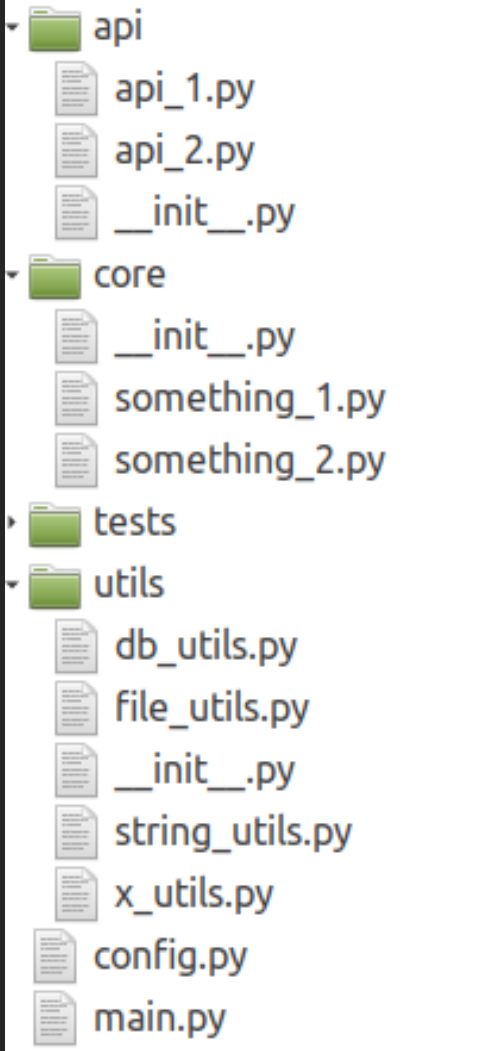
(3 not if, 3 return,12 lines)

```
if c1:
        work1t

        if ! c2:
                work2f
        else:
                work2t

                if c3:
                        work3t
                else:
                        work3f
else:
        work1f
```

(2 if,1 not if, 3 else, 12 lines)

Coding: modularize

- DRY : Do not Repeat Yourself
- SRP : Single Responsibility Principle
  - Responsibility = Reason for change
- OCP : Open Closed Principle
  - Open for extension, Closed for modification



Coding: have empathy !

- Try not to:
  - Re-invent the wheel
  - Leave a mess
  - Over-engineer
- Try to:
  - Use sensible names
  - Keep things modularized
  - Keep things understandable

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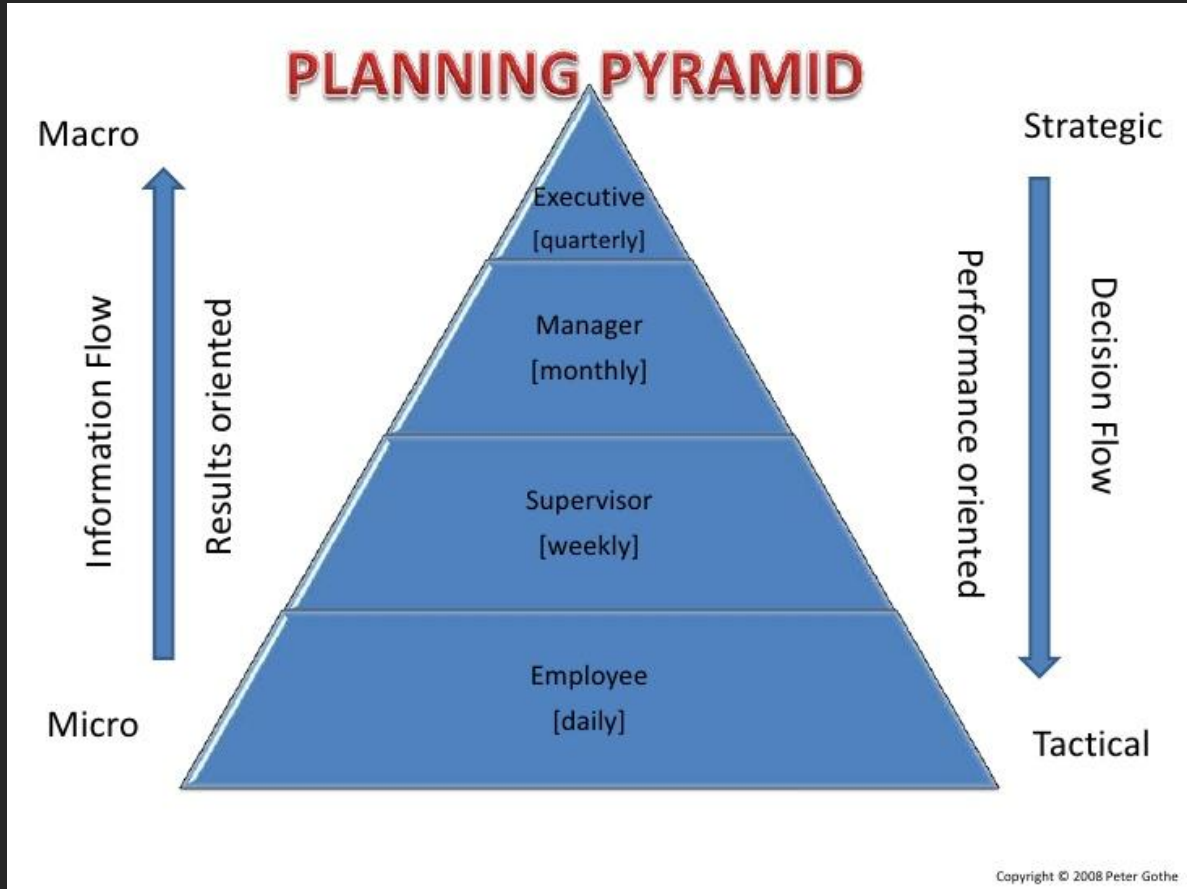
Collaboration: use your collaboration tool wisely!

- A collaboration tool is not
  - A traditional project management system
  - A documentation tool
- Boards
  - Specific purpose
  - State based columns/lists
- Cards
  - Simple & precise
  - Only one assignee per card
  - Checklist for verification
- Continuously reflect on tool usage

Collaboration: optimize information flow

Strategy should flow from top to bottom

Information should flow bottom to top



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