S.O.L.I.D. Python

aleasoluciones

Alea Soluciones
Bifer Team

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@apa42
@nestorsalceda

Usual OO Systems

Rigid

Fragile

Immobile

Viscous

Why S.O.L.I.D. principles?

To create easy to **maintain** OO systems

Improve **reusability**

Easy **testing**

For creating

Clean Code

It's all about money

S.O.L.I.D

SRP - Single responsibility principle

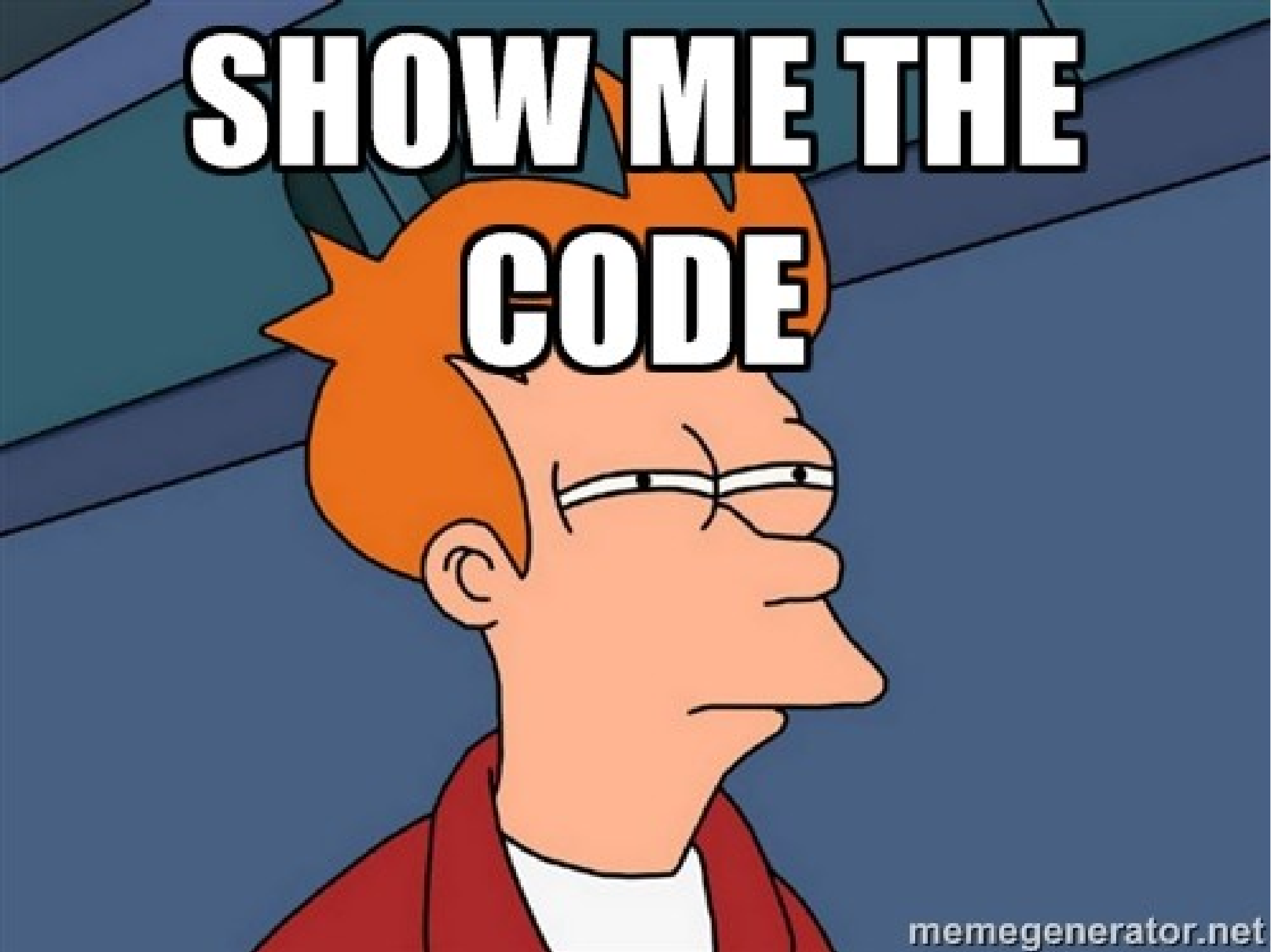
DIP - Dependency inversion principle

OCP - Open/closed principle

LSP - Liskov substitution principle

ISP - Interface segregation principle

Principles
Not Rules


SHOW ME THE
CODE
memegenerator.net

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Car wash service
  car wash job
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3 examples ran in 0.0178 seconds
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class CarWashService(object):

    def __init__(self, sms_sender):
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        self.sms_sender = sms_sender

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        car, customer = self.persistence[service_id]
        self.sms_sender.send(mobile_phone=customer.mobile_phone,
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Single Responsibility Principle

Just because you *can* doesn't mean you *should*.

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    def services_by_customer(self, customer):
        return self.repository.find_by_customer(customer)
```

Dependency Inversion Principle

Would you solder a lamp directly
to the electrical wiring in a wall?

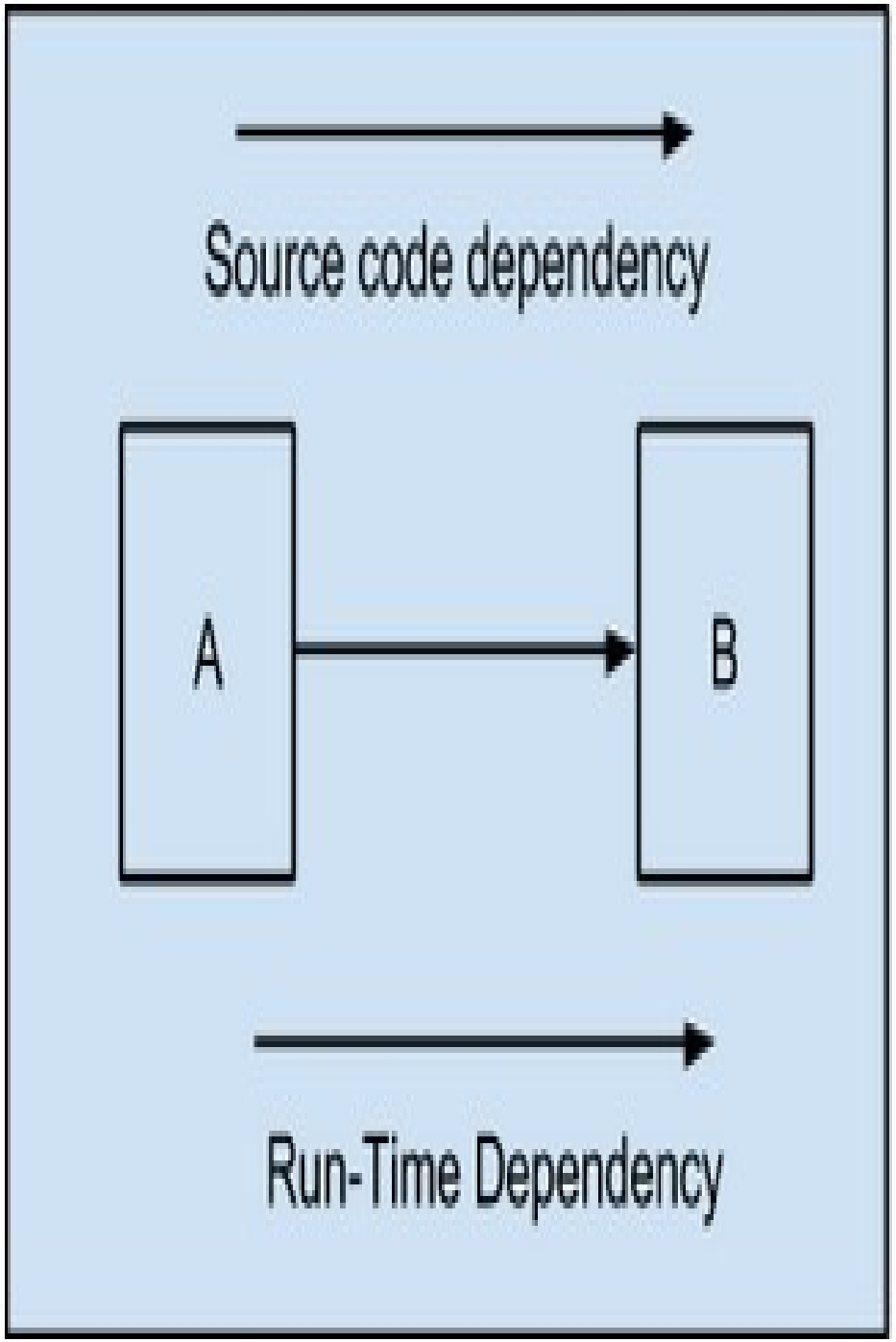
Depend upon Abstractions. Do not depend upon concretion

Compilation / Startup time dependency

from <package> import module

Runtime dependency

```
self.collaborator.message()
```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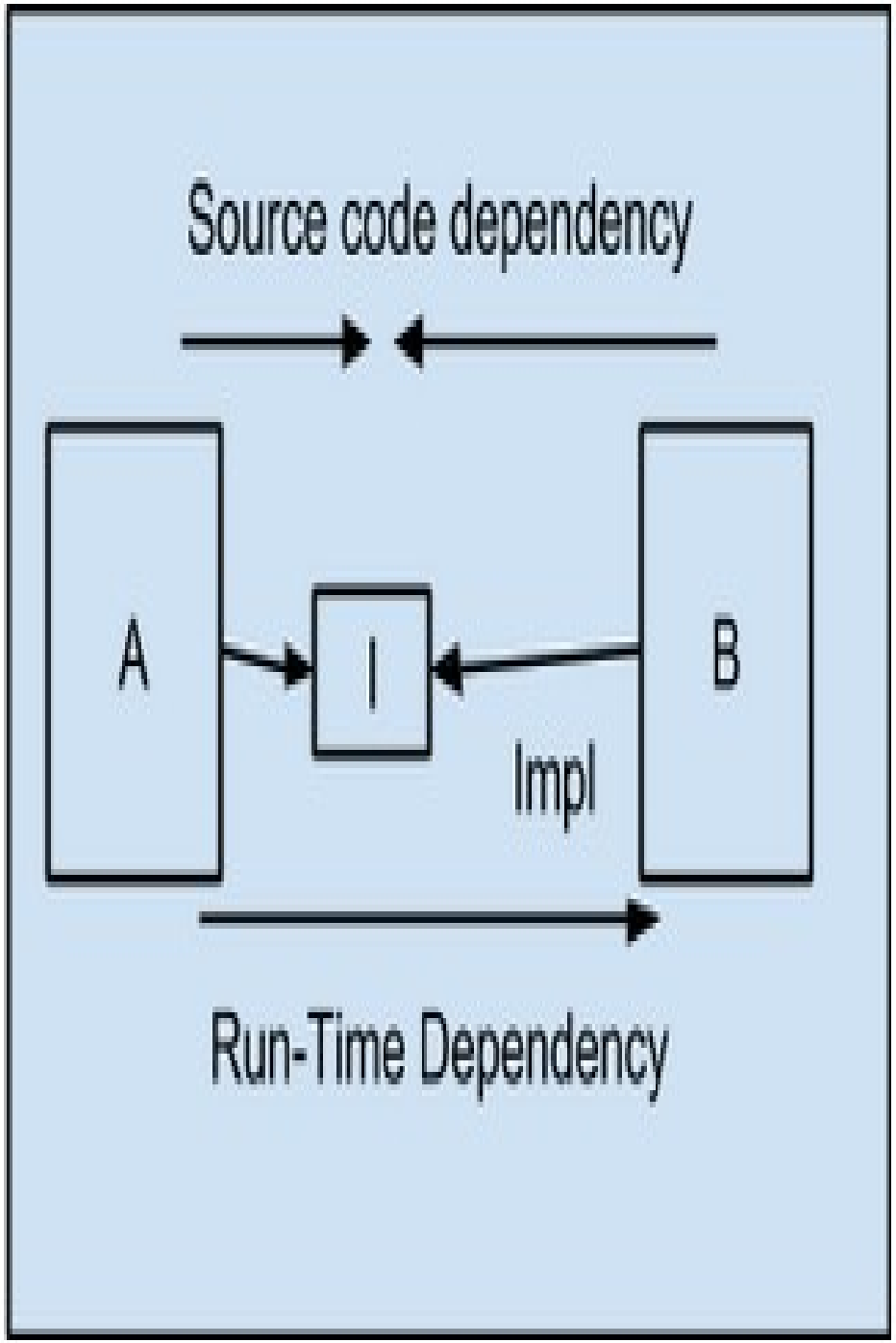
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Global State Problem
Implicit dependency problem
Concrete API

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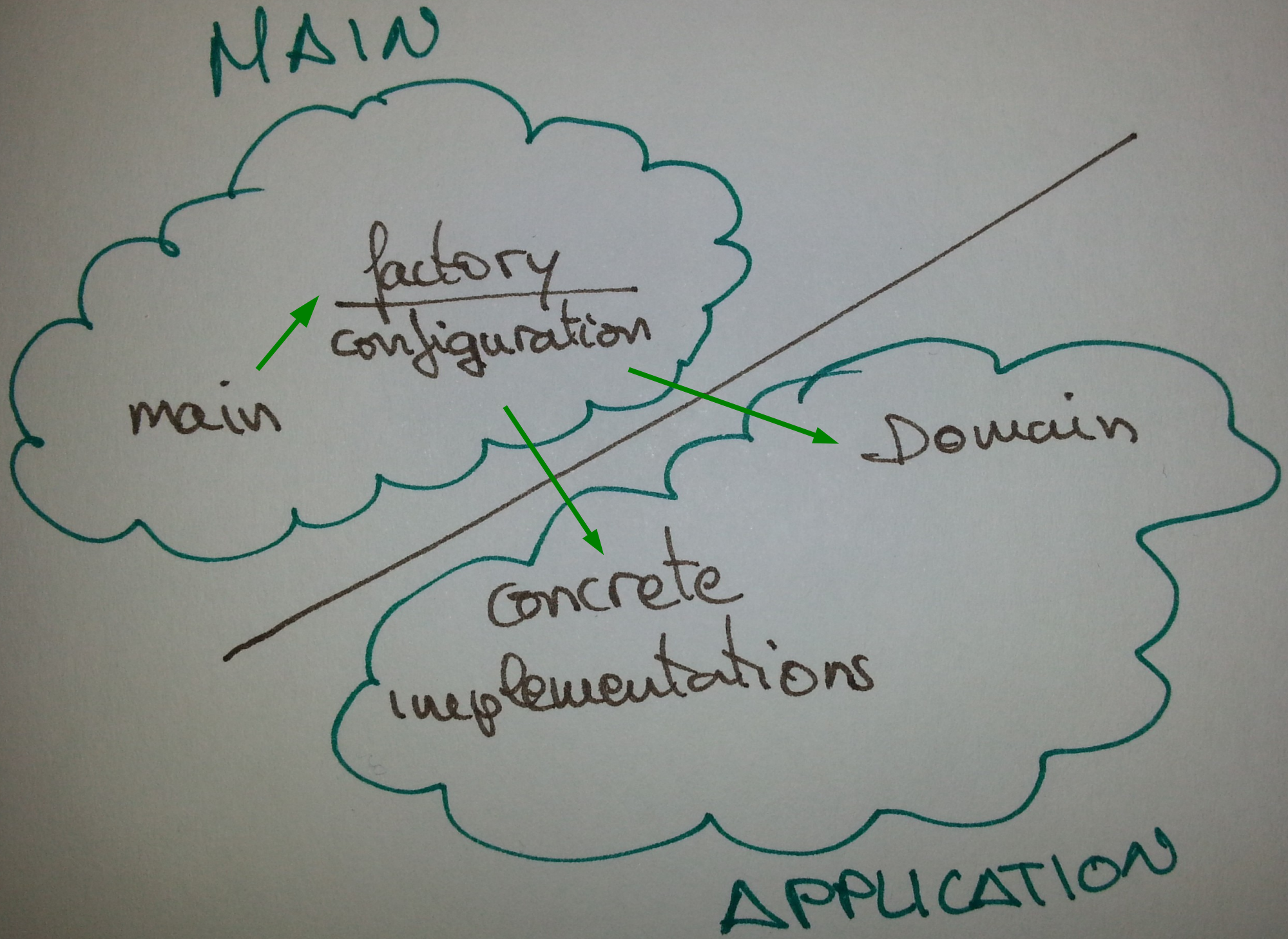
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def console_log_notifier():
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def car_wash_service():
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```python
import factory
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def main():
    service = factory.car_wash_service()
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Open-Closed Principle

Open-chest surgery isn't needed when putting on a coat.

```python
class IJobRepository():

    def put(self, job):
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class InMemoryJobRepository(IJobRepository):

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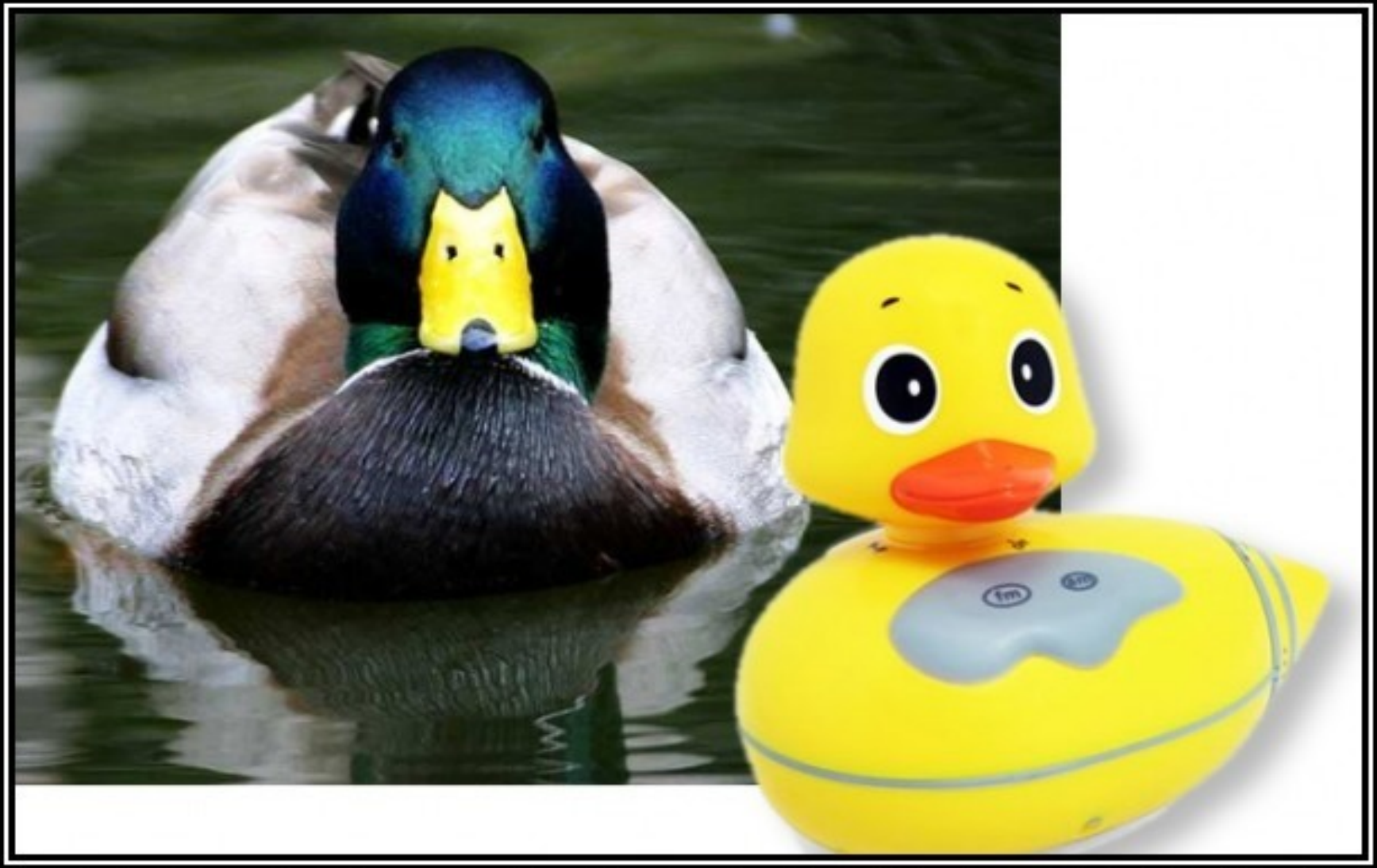

LISKOV SUBSTITUTION PRINCIPLE

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Liskov Substitution principle violation

Python don't force type inheritance
For API implementation
(So, for reuse code, prefer Composition)

Derived types must be completely substitutable for their base types

Interface Segregation Principle

You want me to plug this in *where?*

It isn't so important

A narrow interface is a better interface

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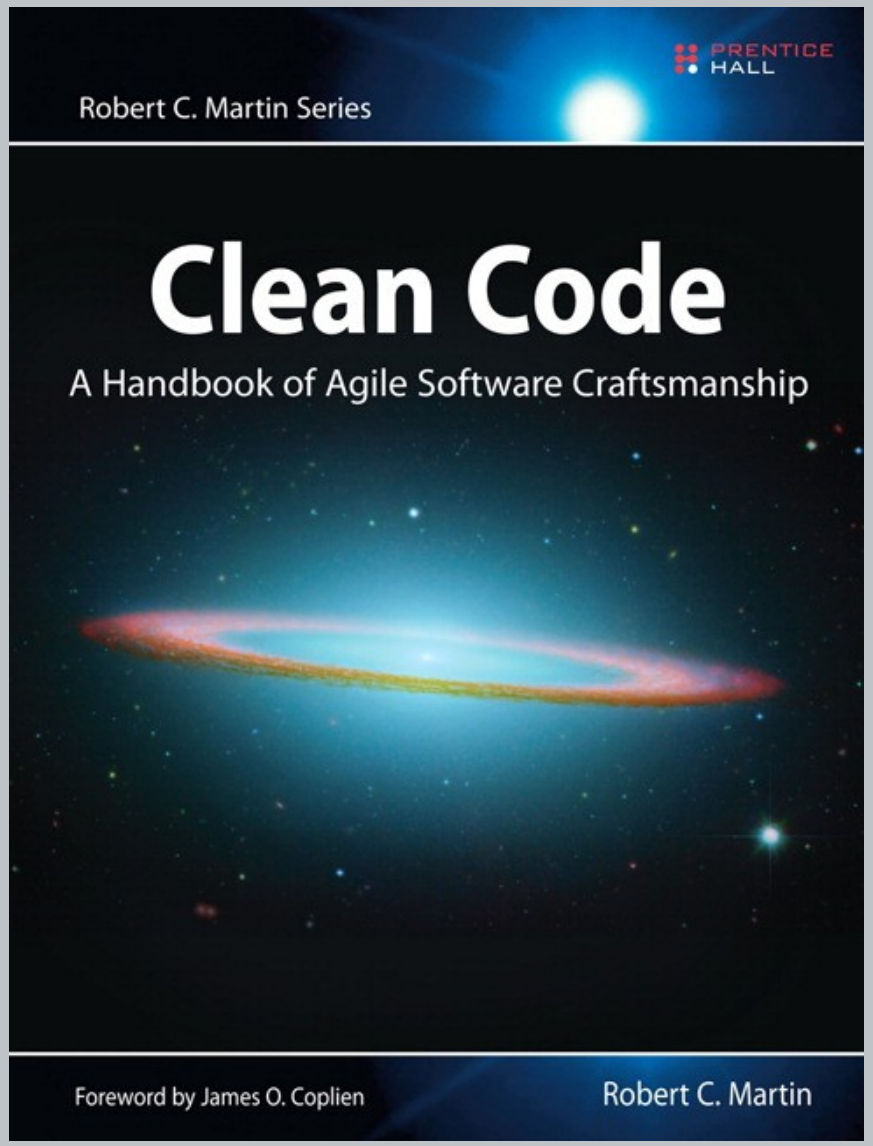
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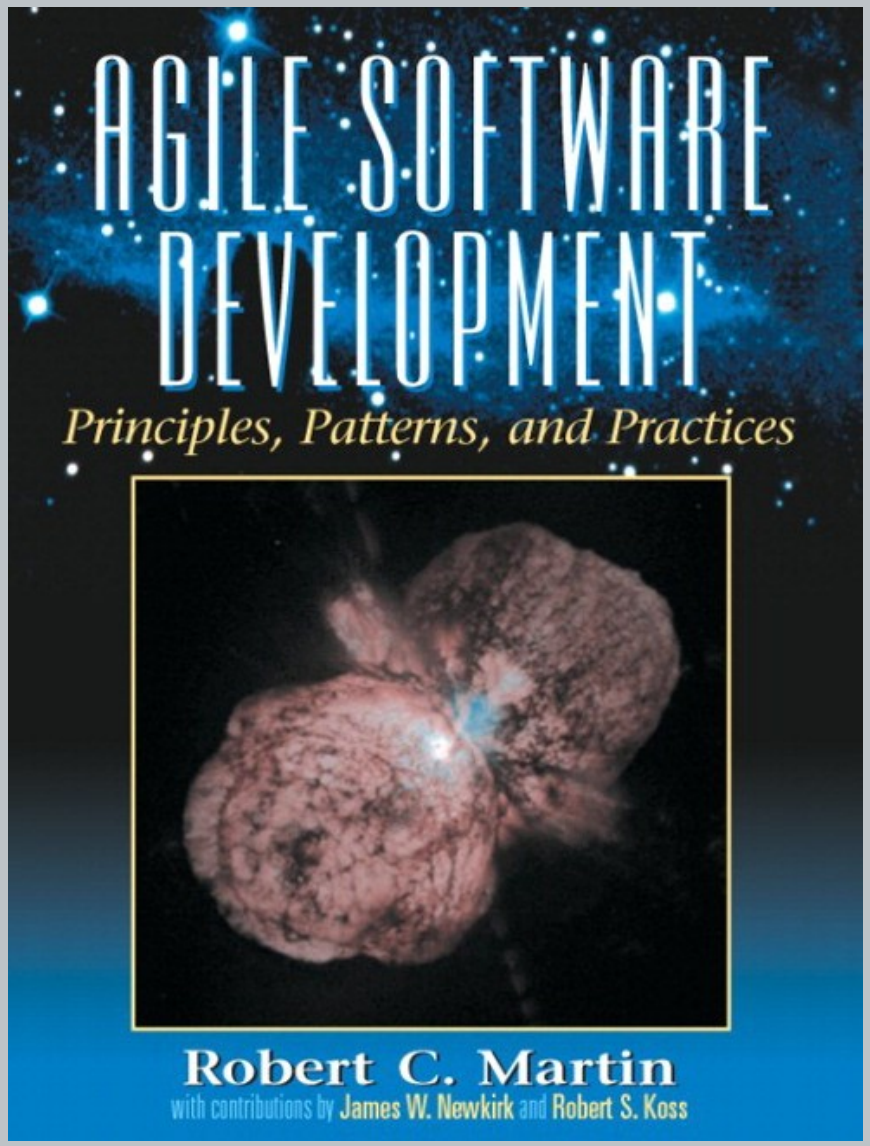
AGILE SOFTWARE DEVELOPMENT
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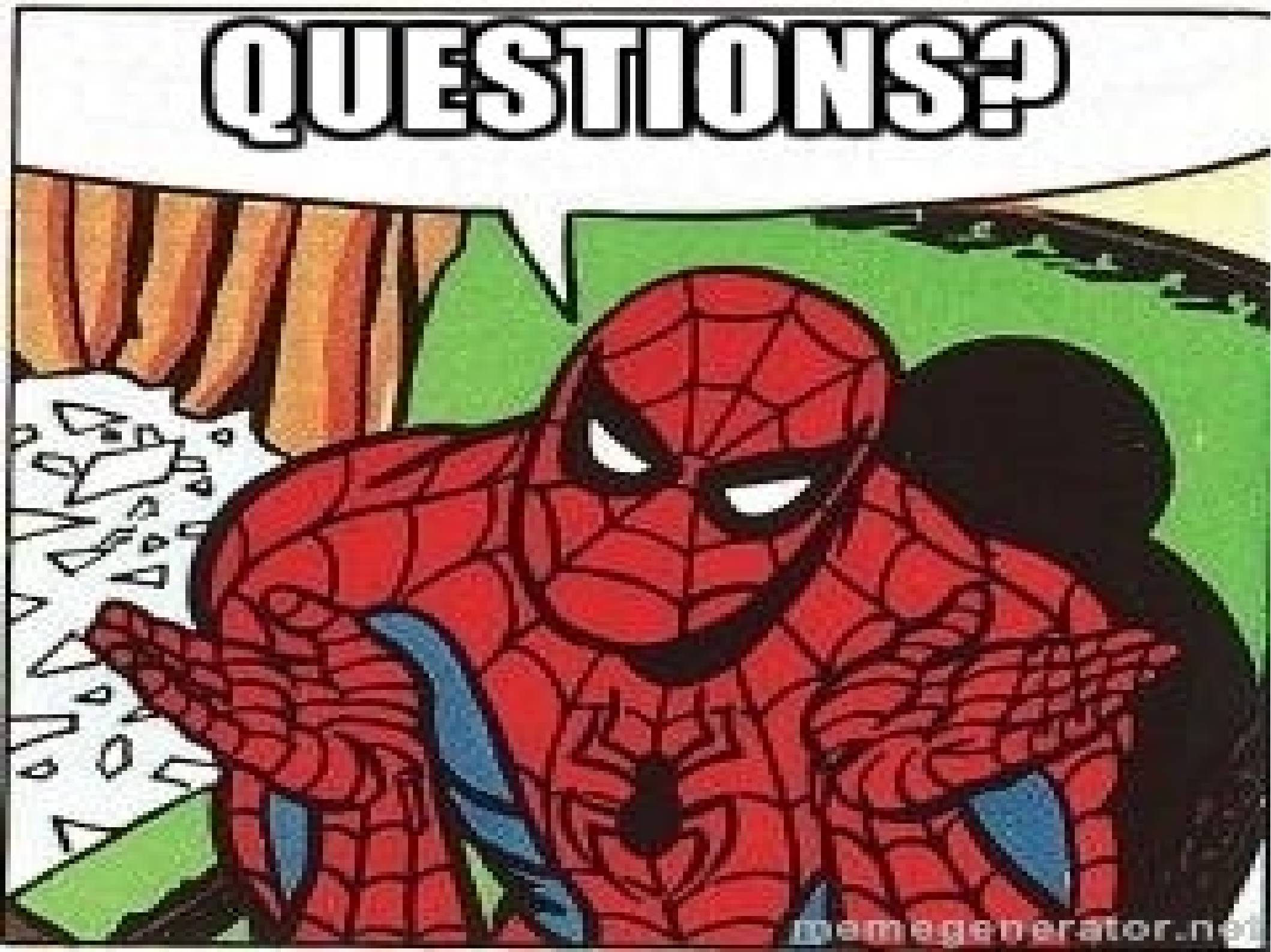
Robert C. Martin
with contributions by James W. Newkirk and Robert S. Koss


QUESTIONS?
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Thanks !!!

@eferro

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S.O.L.I.D. Python

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Alea Soluciones
Bifer Team

Hacemos producto
Telecomunicaciones
Sistemas + Software
Extreme Programming
Aportamos valor

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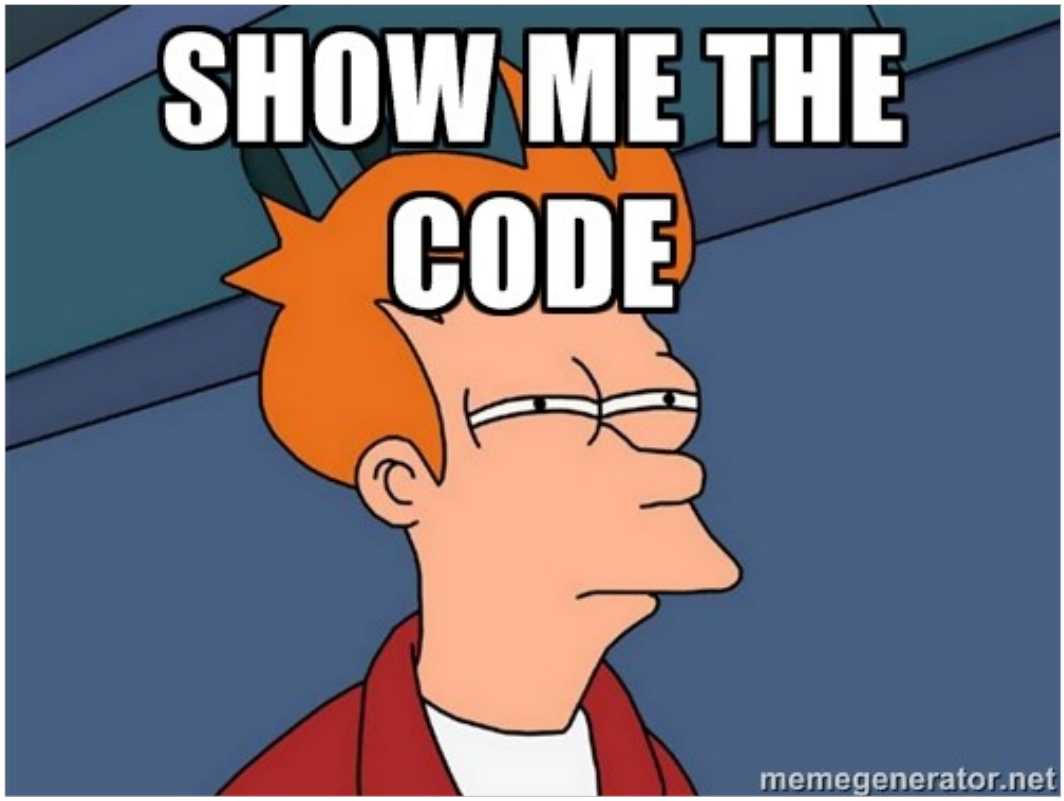
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            text='Car %{car.plate} whased'.format(car=car))
```

Un módulo o una función debe tener una y solo una responsabilidad, o lo que es lo mismo, debe tener una y solo una razón para cambiar.

Más de una responsabilidad hace que el código sea dificil de leer, de testear y mantener. Es decir, hace que el código sea menos flexible, más rígido, mucho más resistente al cambio.

¿Y qué es una responsabilidad?

Se trata de la audiencia de un determinado módulo o función, actores que reclaman cambios al software. Las responsabilidades son básicamente familias de funciones que cumplen las necesidades de dichos actores.

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Some refactors / versions later

```python
class CarWashService(object):

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        self.repository.put(job)
        return job

    def wash_completed(self, service_id):
        car_wash_job = self.repository.find_by_id(service_id)
        self.notifier.job_completed(car_wash_job)

    def services_by_customer(self, customer):
        return self.repository.find_by_customer(customer)
```

Una clase no debe tener más que una razón para cambiar

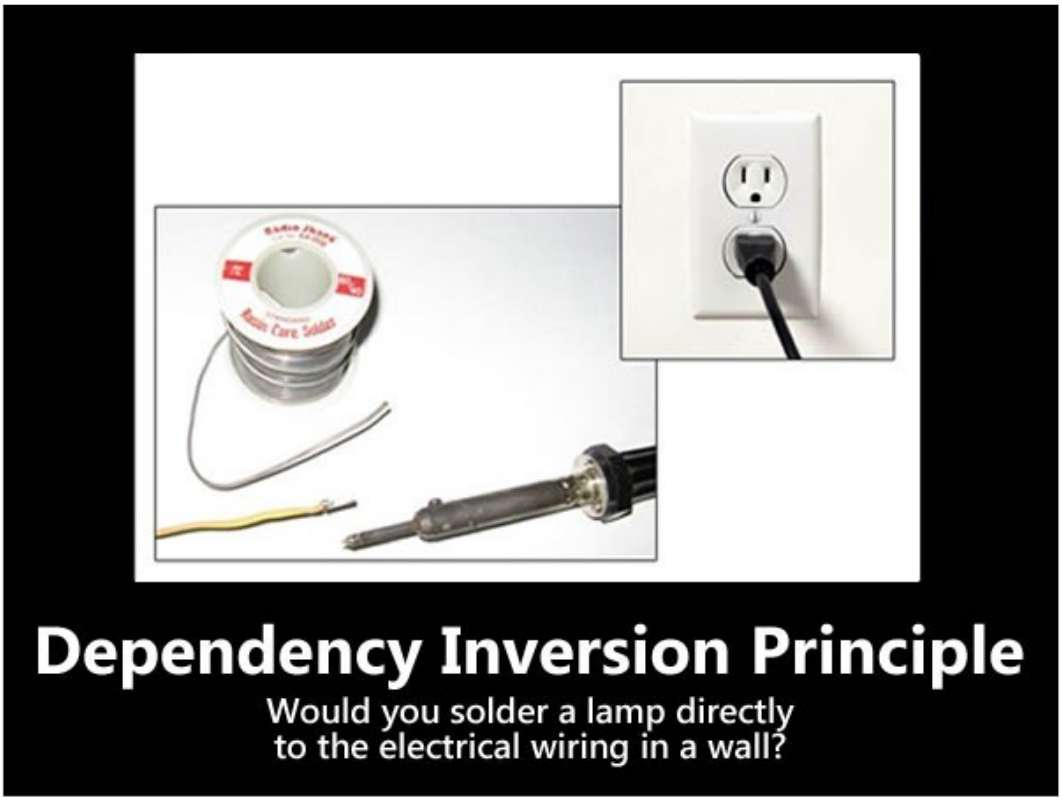
Responsabilidad / Razón para cambiar

Responsabilidad / Role en la aplicación

Reusar una clase y su contexto
Si tiene varias responsabilidades tiene un contexto muy complejo

Cohesión: Qué tan fuertemente relacionadas y enfocadas están las distintas responsabilidades de un módulo.

Acoplatmiento: El grado en el cual cada módulo de un programa depende de cada uno de los otros módulos



Este ejemplo me gustó mucho cuando lo ví!!

Ejemplo: Tiempos Viejunos: Cuando estaban CGA, VGA, SuperVGA, etc…
Ejemplo: Tiempos Viejunos: Al imprimir=> driver para una impresora específica

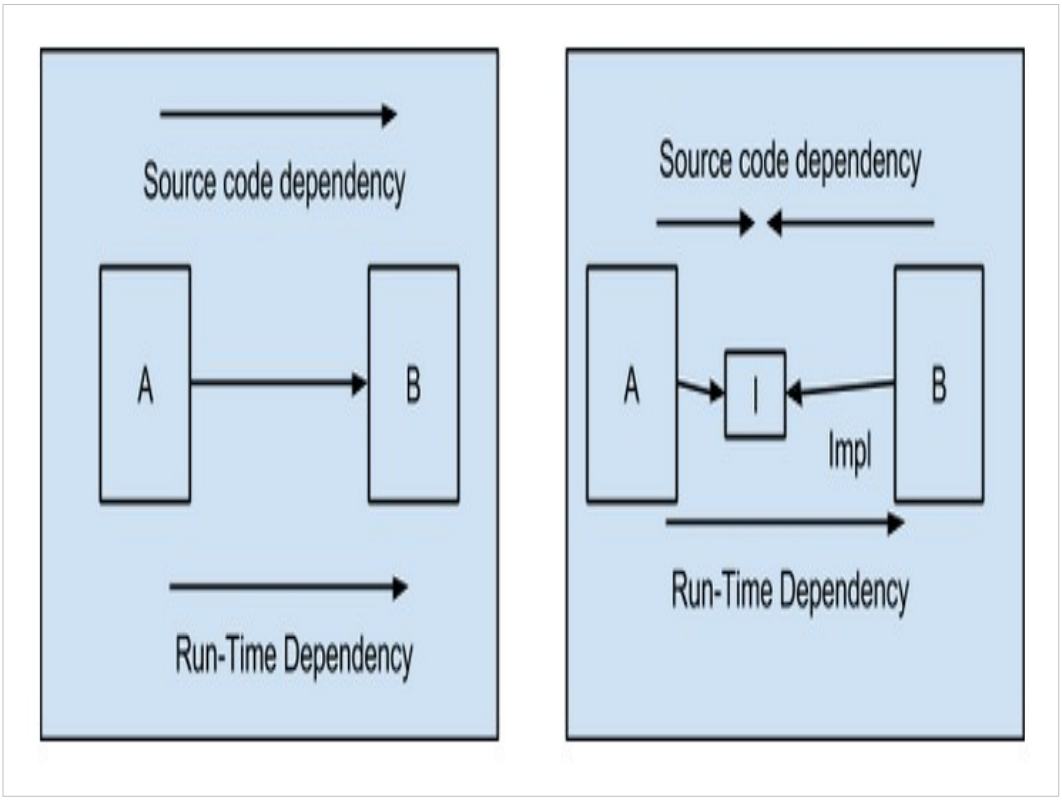
Depend upon Abstractions. Do not depend upon concretion

Compilation / Startup time dependency

from <package> import module

Runtime dependency

self.collaborator.message()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Implicit dependency problem
Concrete API

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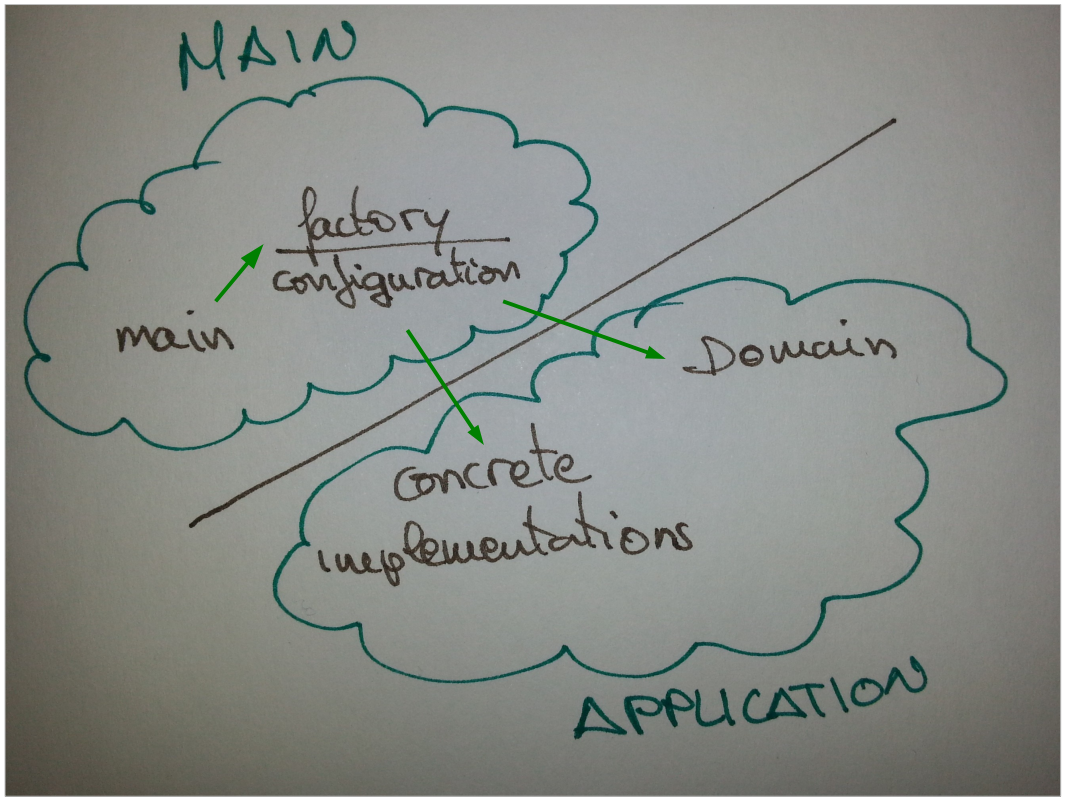
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Open-chest surgery isn’t needed when putting on a coat.

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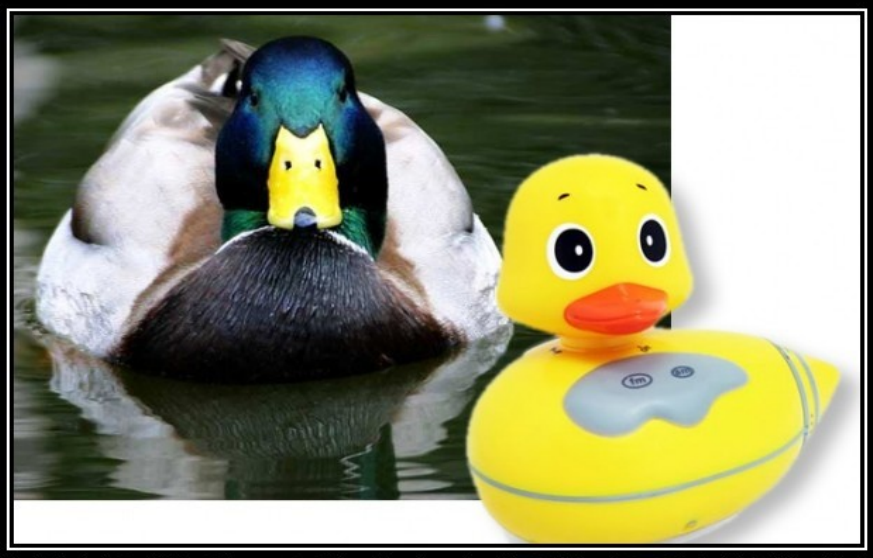

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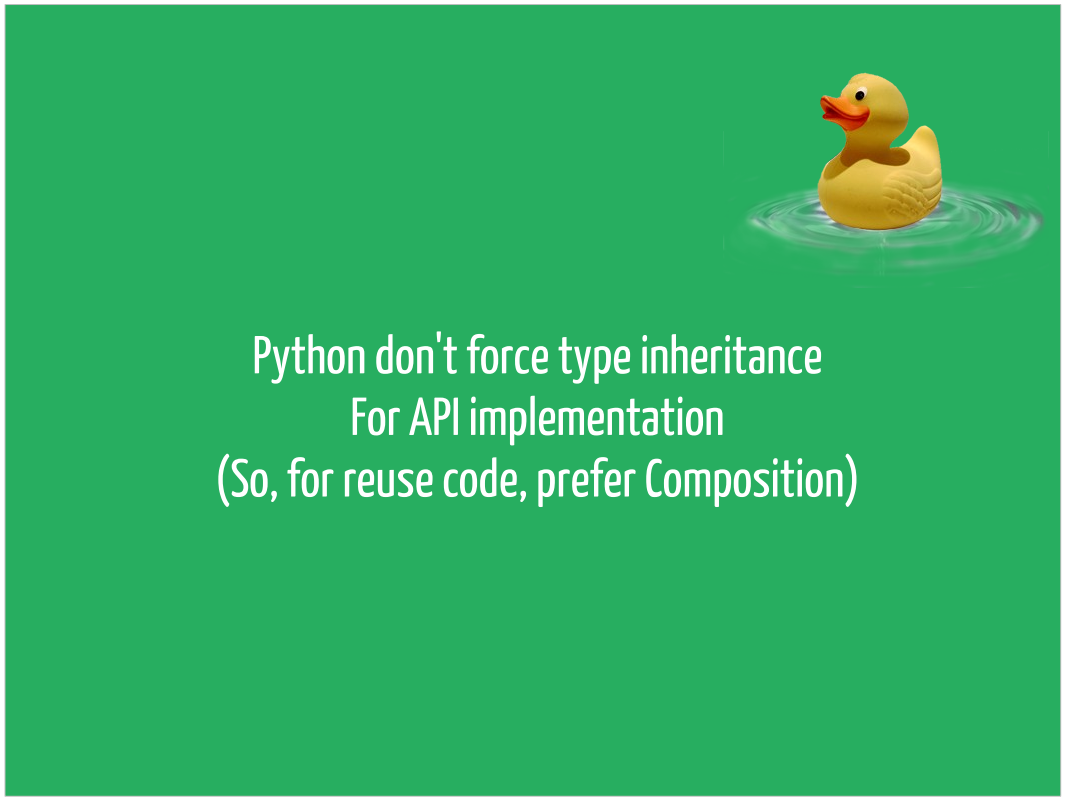
Liskov Substitution principle violation



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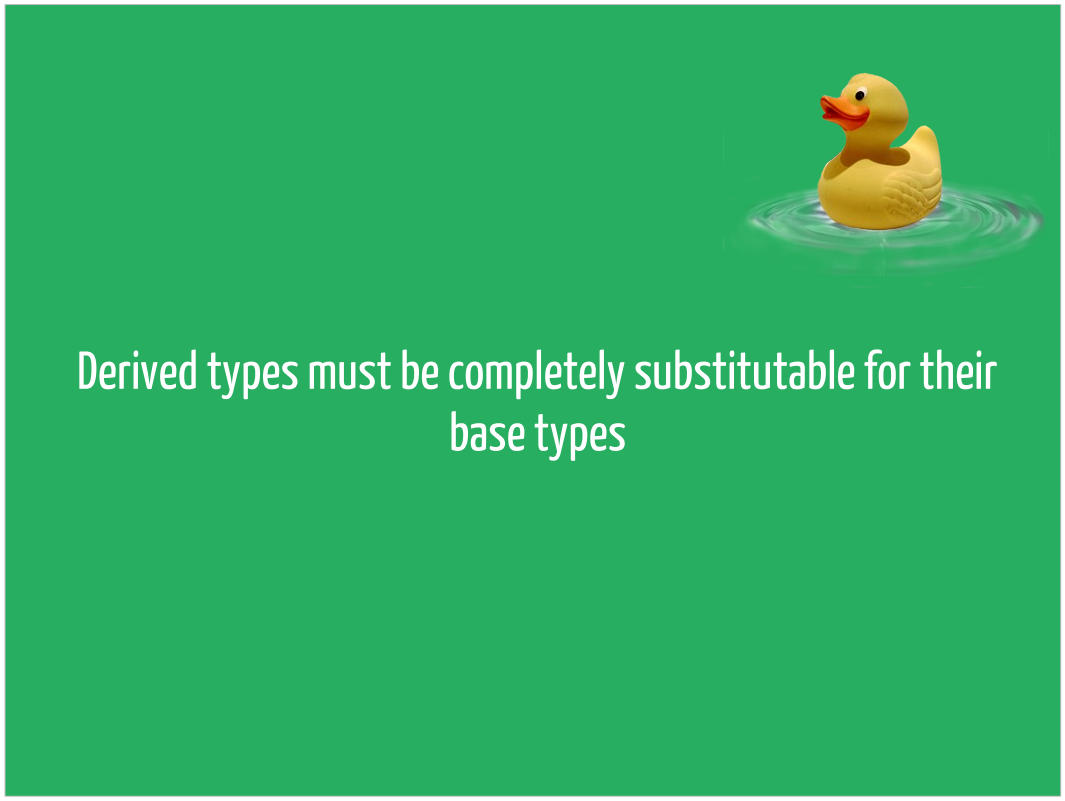

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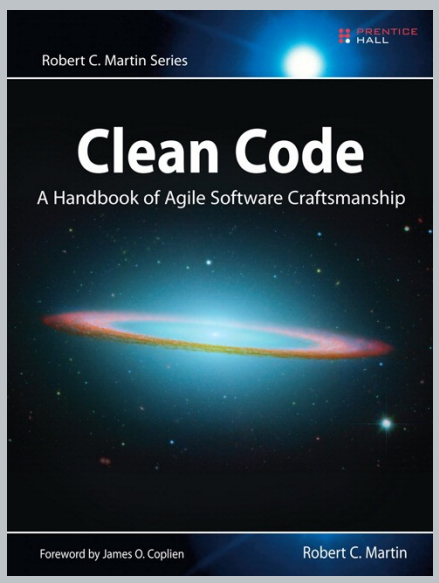
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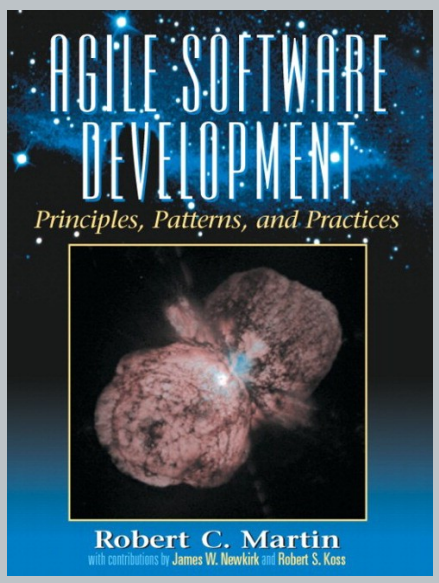
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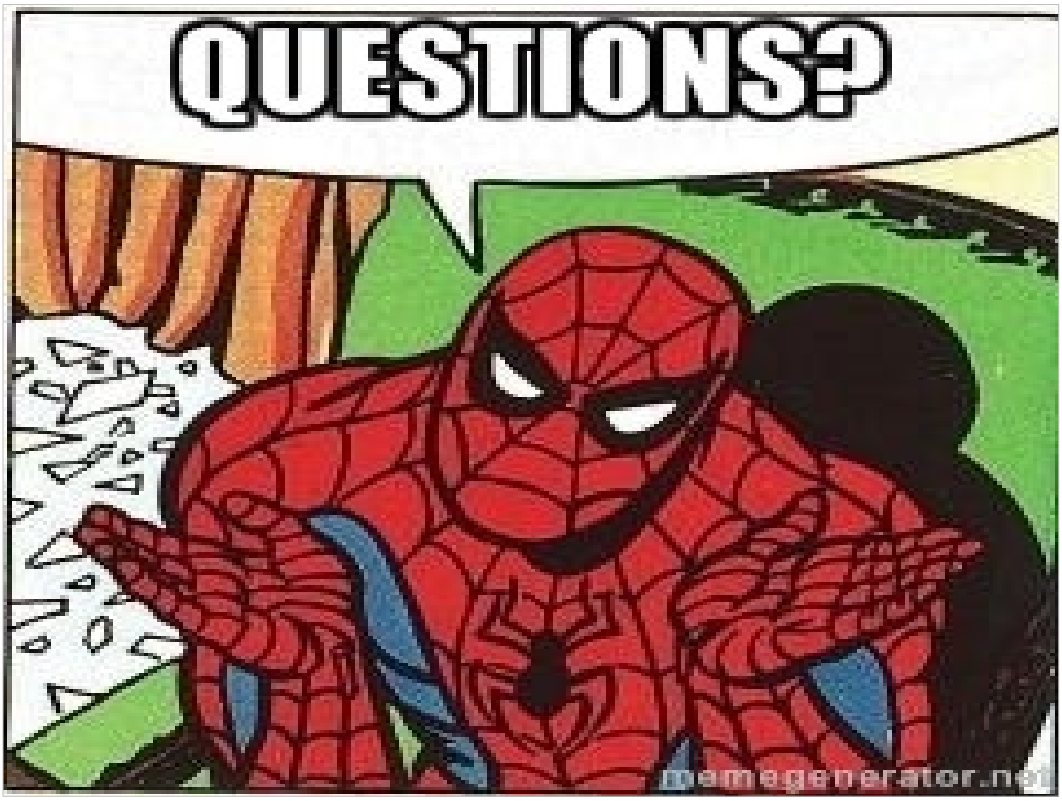
Robert C. Martin
with contributions by James W. Newkirk and Robert S. Koss


QUESTIONS?
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Desksurfings
Nos gusta hablar de estas cosas