



DOTGO 2019

# HOW DO YOU STRUCTURE YOUR APPS?

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# MAINTAINABILITY







HEXAGONAL ARCHITECTURE

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**PORTS & ADAPTERS**



Ivar Jacobson

*Boundary-Controller-Entity  
(BCE) Architecture*

1992



Alistair Cockburn

*Hexagonal (Ports &  
Adapters) Architecture*

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Jeffrey Palermo

*Onion Architecture*

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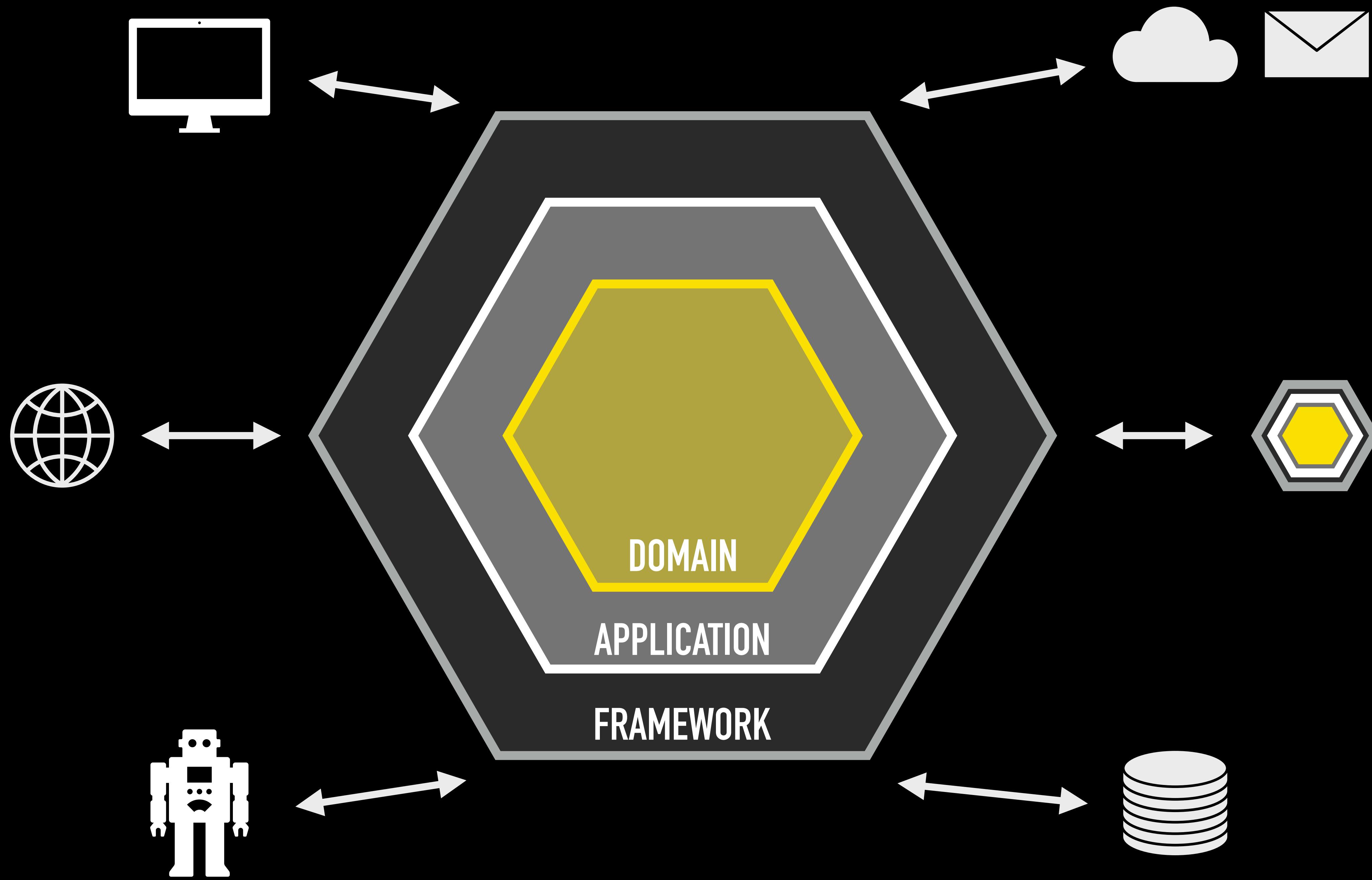
Robert C. Martin

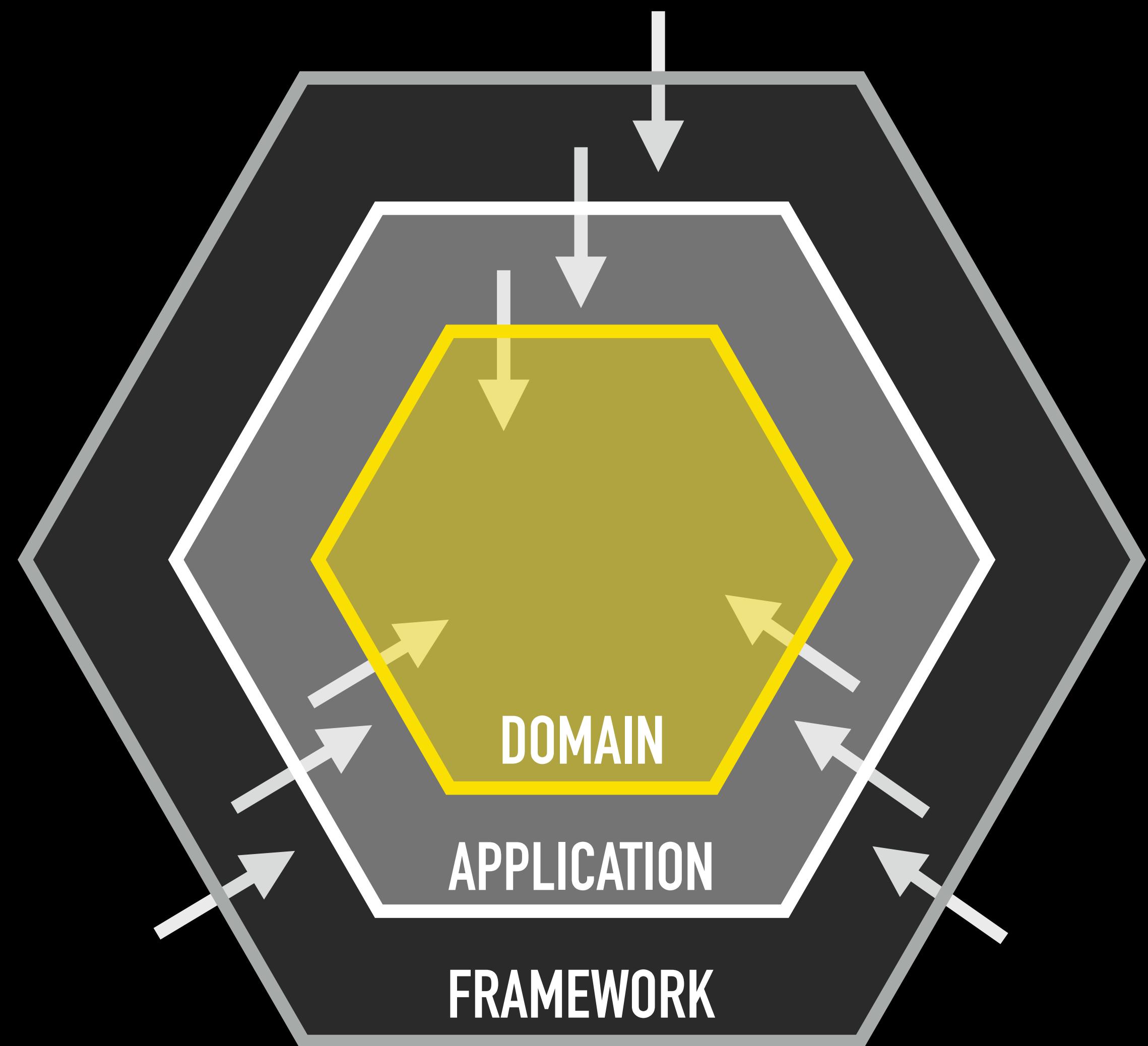
*Screaming Architecture  
Clean Architecture*

2011+



**ARCHITECTURE**





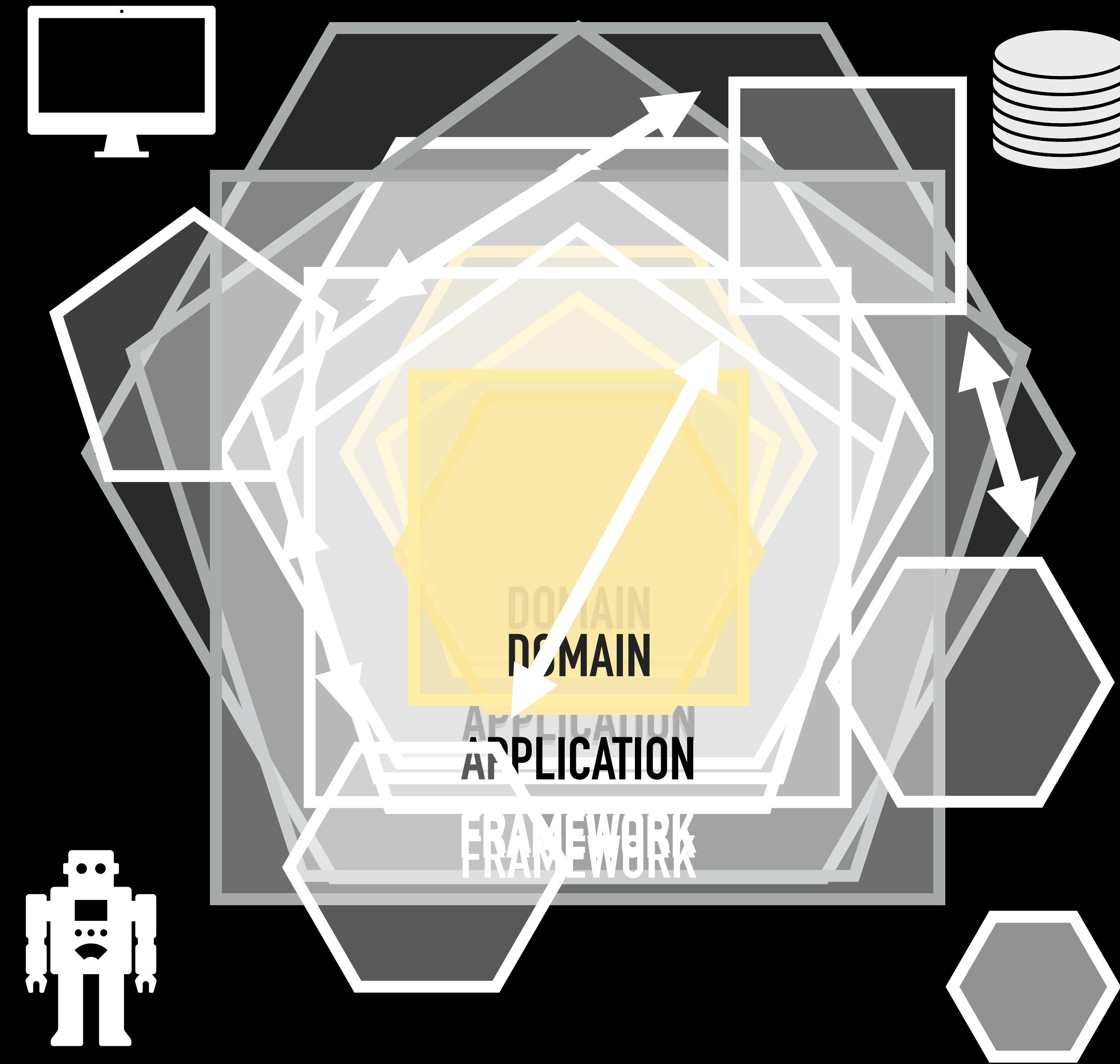
Dependencies **only point inwards**.

TRADITIONALLY, EACH OBJECT IS RESPONSIBLE FOR OBTAINING ITS OWN REFERENCES TO THE OBJECTS IT COLLABORATES WITH (ITS DEPENDENCIES).

Craig Walls, Spring in Action

**WHEN APPLYING DI, THE OBJECTS ARE GIVEN THEIR  
DEPENDENCIES AT CREATION TIME BY SOME EXTERNAL  
ENTITY THAT COORDINATES EACH OBJECT IN THE SYSTEM.**

Craig Walls, Spring in Action





A close-up photograph of a stack of black hard drives and a black cable with a USB-C connector, resting on a light-colored wooden surface.

# PUTTING IT ALL TOGETHER

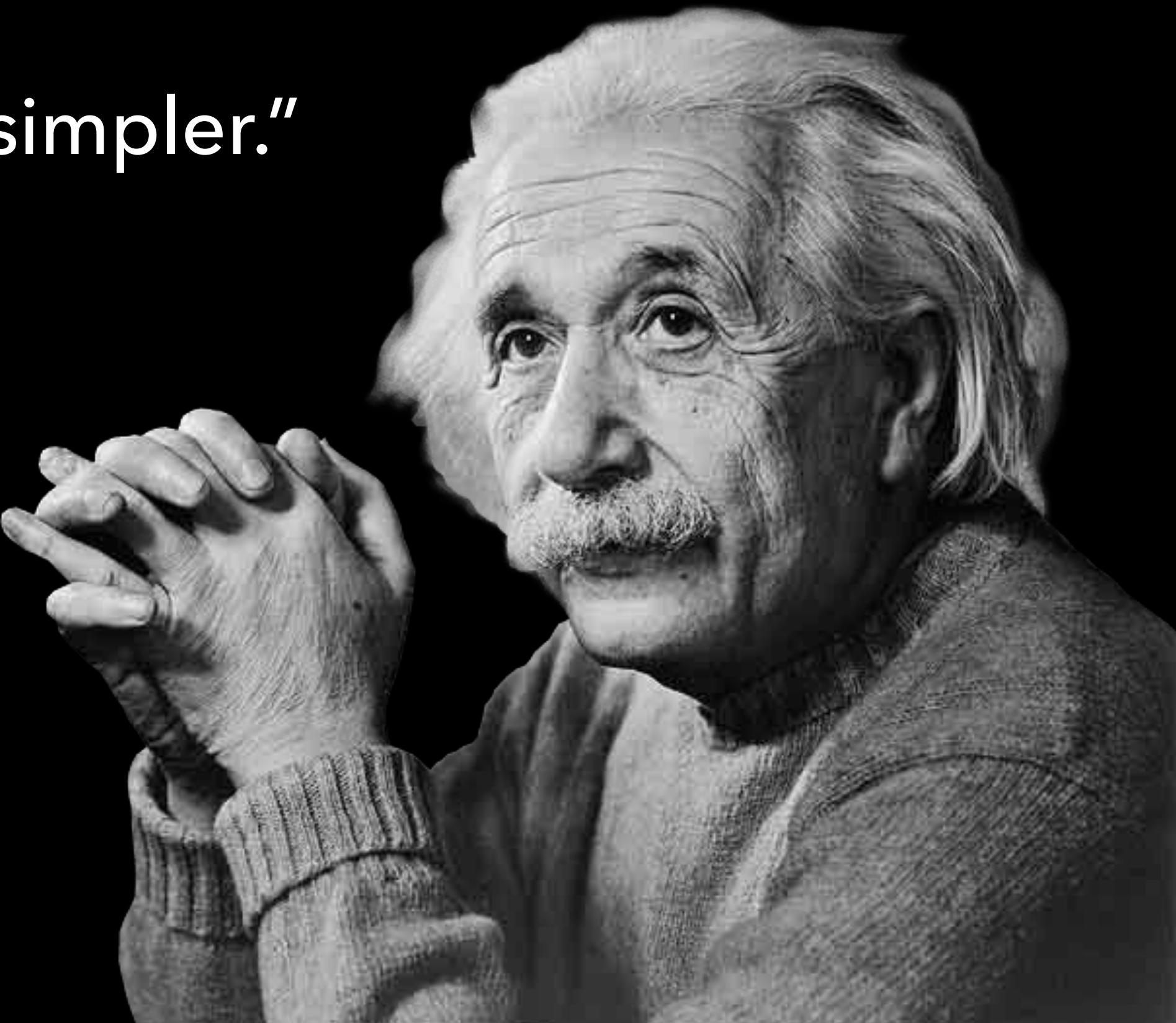
# MAINTAINABLE

- ▶ Consistent.
- ▶ Easy to understand, navigate and reason about.
- ▶ Easy to change, loosely-coupled.
- ▶ Easy to test.
- ▶ Structure reflects design, design reflects how things work.

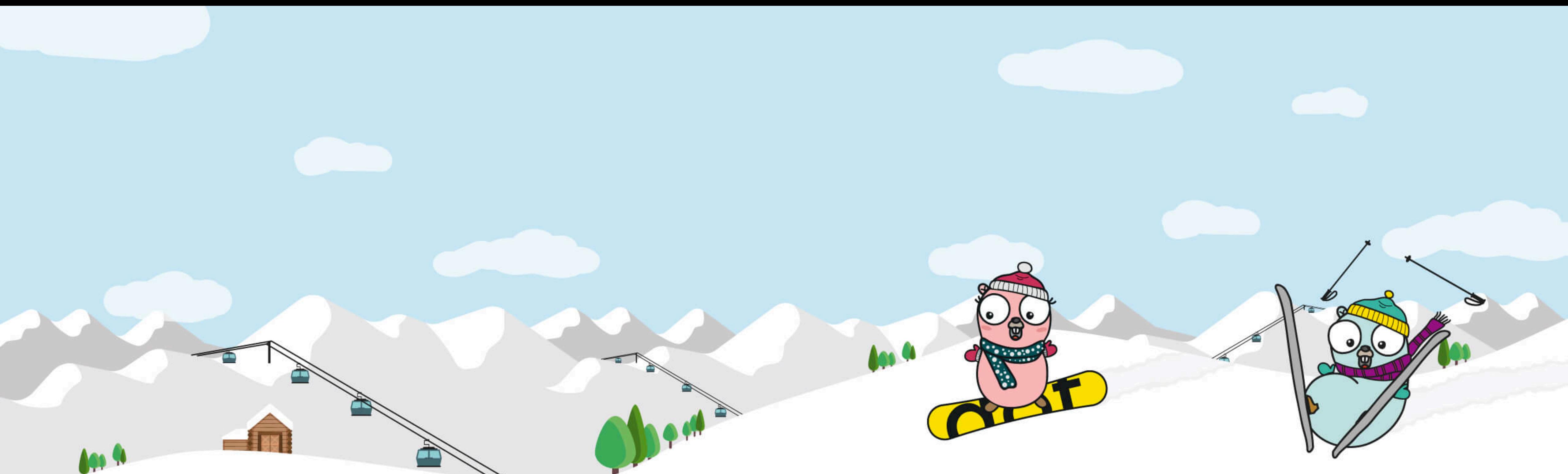
BE LIKE WATER



"As simple as possible, but no simpler."



# THANK YOU!



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