



# GoCode

We learn by doing, by falling down, and  
by picking ourselves back up

[HTTP://GOCODENOW.COM](http://gocodenow.com)



## Agenda

**1) Coupling/Dependencies**

**2) Design Patterns +  
Relations Diagrams**

**3) Tips on OOP**



## OOP Definitions

**Coupling:** How dependent two objects are to each other

**Dependencies:** If class A uses class B, A is dependent on B (class dependency)

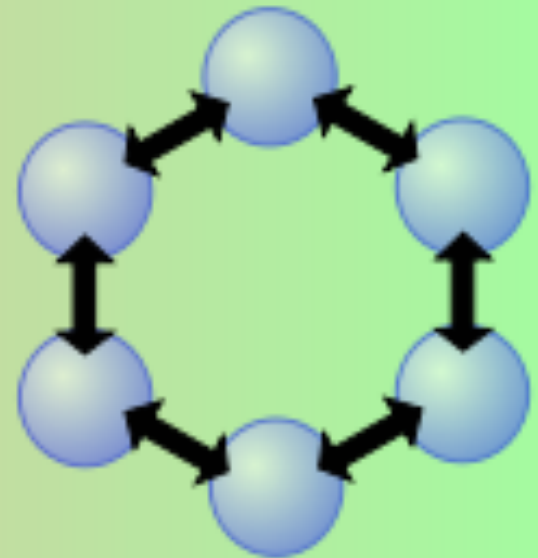
**Loose coupling:** No/few dependencies

**Tight coupling:** Many dependencies



Tight

More interdependency  
More coordination  
More information flow

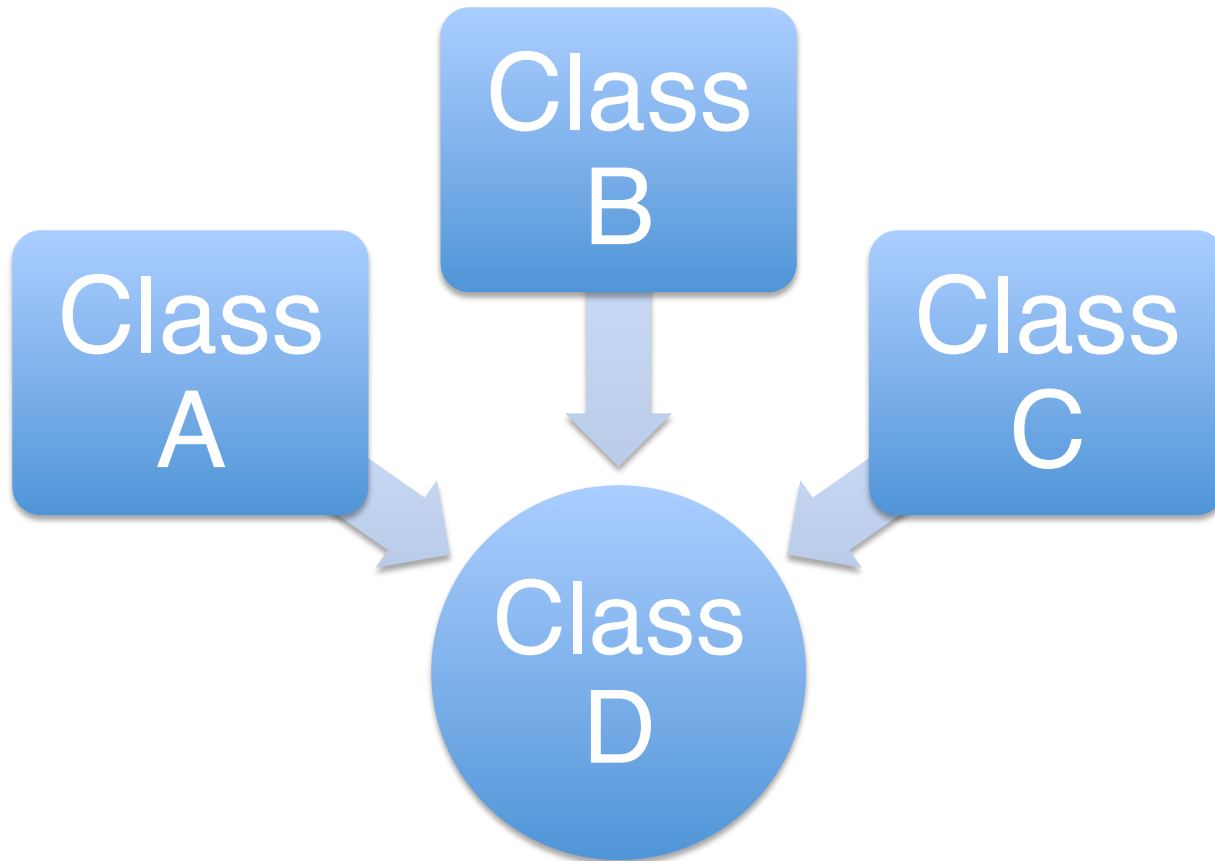


Loose

Less interdependency  
Less coordination  
Less information flow



# Drawing Relations Diagrams





# Design Patterns in OOP

**Design pattern – A commonly used structure on how objects interact with each other**

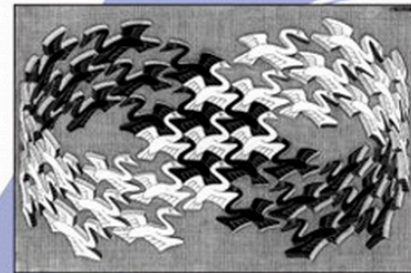
**E.g.**

- i) Interfaces**
- ii) Model-View-Controller**
- iii) Façade**
- iv) Observer**
- v) Adapter**
- iv) Blah**

## Design Patterns

Elements of Reusable  
Object-Oriented Software

Erich Gamma  
Richard Helm  
Ralph Johnson  
John Vlissides



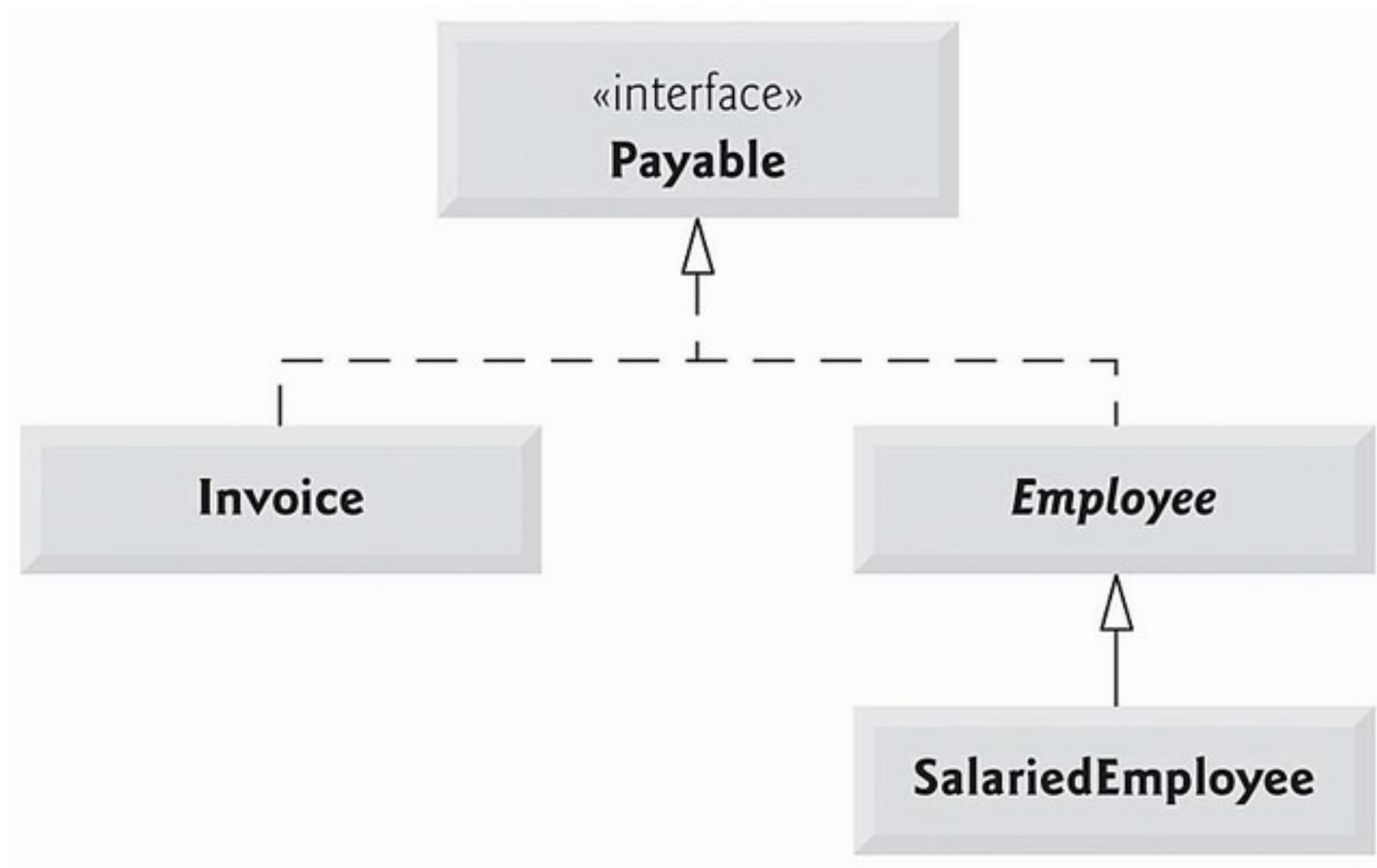
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Foreword by Grady Booch

[https://www.youtube.com/  
watch?v=0vJJIVBVTfg](https://www.youtube.com/watch?v=0vJJIVBVTfg)



# Interfaces







## Some Tips on OOP

**Single Responsibility Principle:** Each object should be responsible for one thing

**Separation of Concerns:** A software system must be decomposed into small parts that overlap as little as possible. Code re-use is good.

**Code Smell:** Use your intuition – if the code you're writing seems really complicated, it's probably bad... It smells bad...

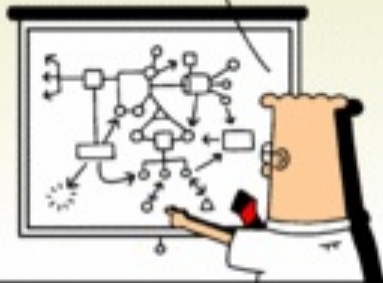
**Stay DRY:** Don't repeat yourself



## **Summary**

- 1) When objects depend on lots of other objects, code can get complicated...**
- 2) In general, aim for loose coupling and lots of code re-use, but some coupling is unavoidable**
- 3) Use your intuition, take a step back**
- 4) Learn basic patterns and definitions**

OUR PROJECT PLAN  
IS SO COMPLICATED  
THAT FAILURE IS  
ASSURED.



Dilbert.com DilbertCartoonist@gmail.com

BUT COMPLEXITY IS  
TOO ABSTRACT FOR  
YOU TO MANAGE, SO  
INSTEAD YOU WILL  
SPRAY MY ENERGY  
INTO THE VORTEX  
OF FAILURE.



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GO.



I NEED YOU TO  
FINISH IT SIX  
WEEKS SOONER  
FOR A TRADE  
SHOW.



# K.I.S.S.

Keep It Simple, Stupid!