

# DI Why?

## Getting a Grip on Dependency Injection

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# What Is Dependency Injection?

- Dependency Injection is a software design pattern that allows a choice of component to be made at run-time rather than compile time.

Wikipedia 2012

# What Is Dependency Injection?

- Dependency injection is a software design pattern that allows the removal of hard-coded dependencies and makes it possible to change them, whether at run-time or compile-time.

Wikipedia 2013

# What Is Dependency Injection?

- Dependency injection is a software design pattern that implements inversion of control and allows a program design to follow the dependency inversion principle. The term was coined by Martin Fowler.

Wikipedia 2014

# What Is Dependency Injection?

- In software engineering, dependency injection is a software design pattern that implements inversion of control for software libraries, where the caller delegates to an external framework the control flow of discovering and importing a service or software module. Dependency injection allows a program design to follow the dependency inversion principle where modules are loosely coupled. With dependency injection, the client part of a program which uses a module or service doesn't need to know all its details, and typically the module can be replaced by another one of similar characteristics without altering the client.

Wikipedia 2015

# What Is Dependency Injection?

- In software engineering, dependency injection is a software design pattern that implements inversion of control for resolving dependencies. A dependency is an object that can be used (a service). An injection is the passing of a dependency to a dependent object (a client) that would use it. The service is made part of the client's state.[1] Passing the service to the client, rather than allowing a client to build or find the service, is the fundamental requirement of the pattern.

Wikipedia 2016

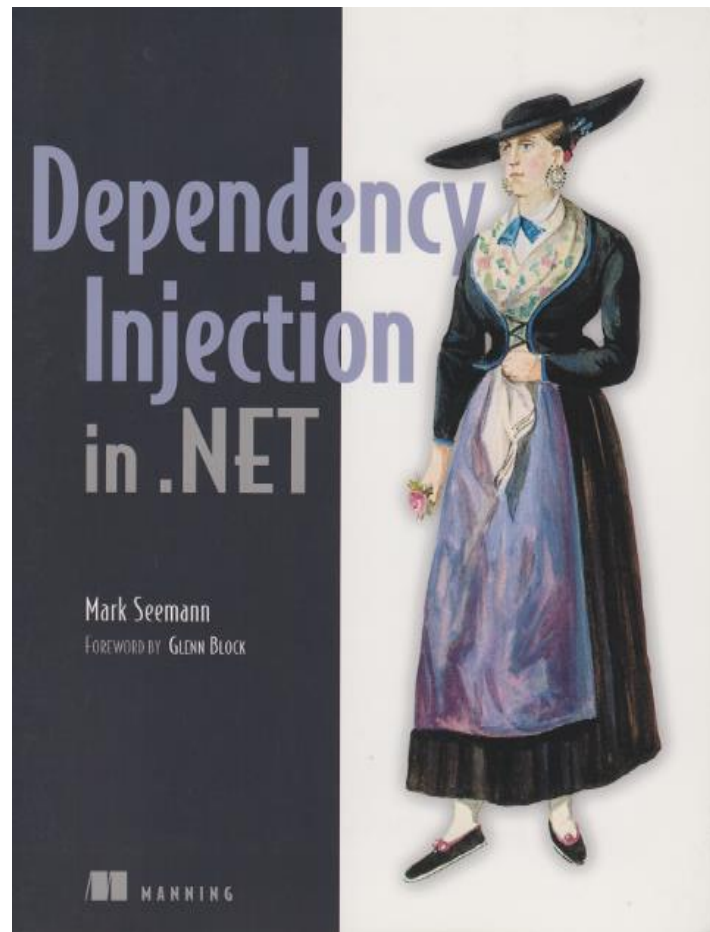
# What Is Dependency Injection?

- Dependency Injection is a set of software design principles and patterns that enable us to develop loosely coupled code.

Mark Seemann

# Dependency Injection in .NET

- Mark Seemann





# Primary Benefits

- Extensibility\*
  - Late Binding
  - Parallel Development
  - Maintainability
  - Testability\*
- 
- Adherence to S.O.L.I.D. Design Principles.

\*Topics we'll touch on today

# Dependency Injection Concepts

- DI Design Patterns
  - Constructor Injection\*
  - Property Injection\*
  - Method Injection
  - Ambient Context
  - Service Locator
- Object Composition\*
- DI Containers
  - Unity
  - Castle Windsor
  - Ninject\*
  - Autofac
  - StructureMap
  - Spring .NET

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# Application Layers

## View

- MainWindow

## View Model

- MainWindowViewModel

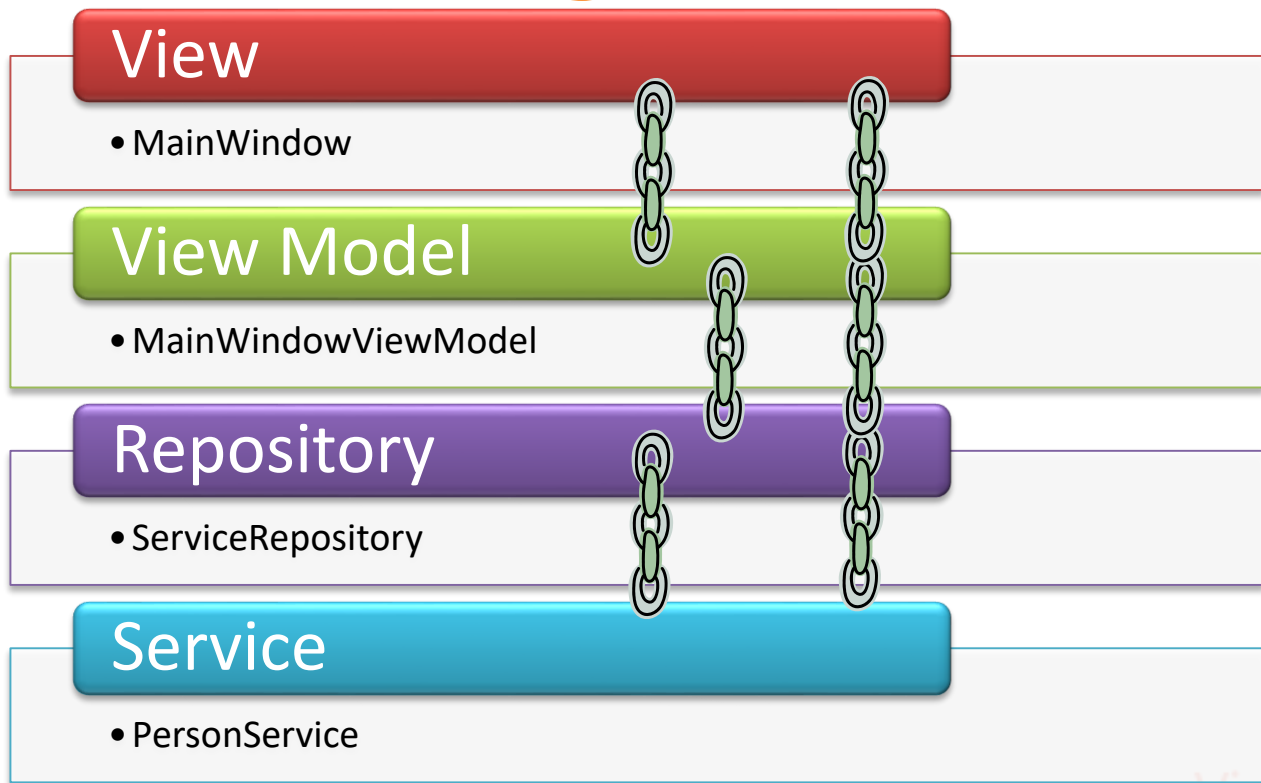
## Repository

- ServiceRepository

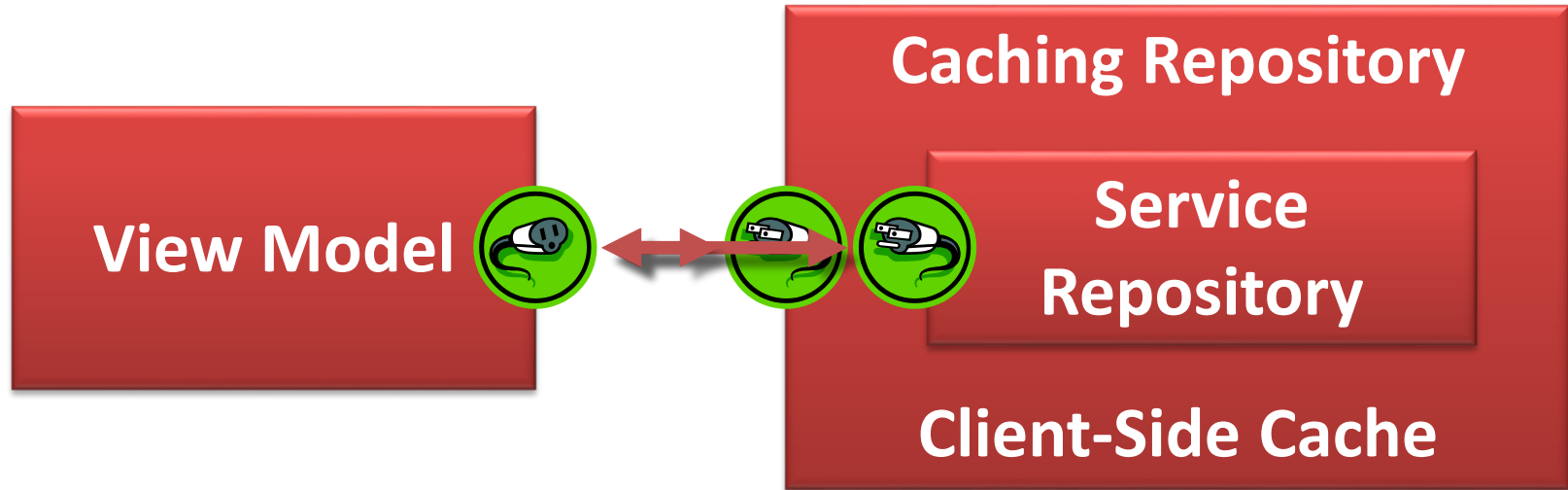
## Service

- PersonService

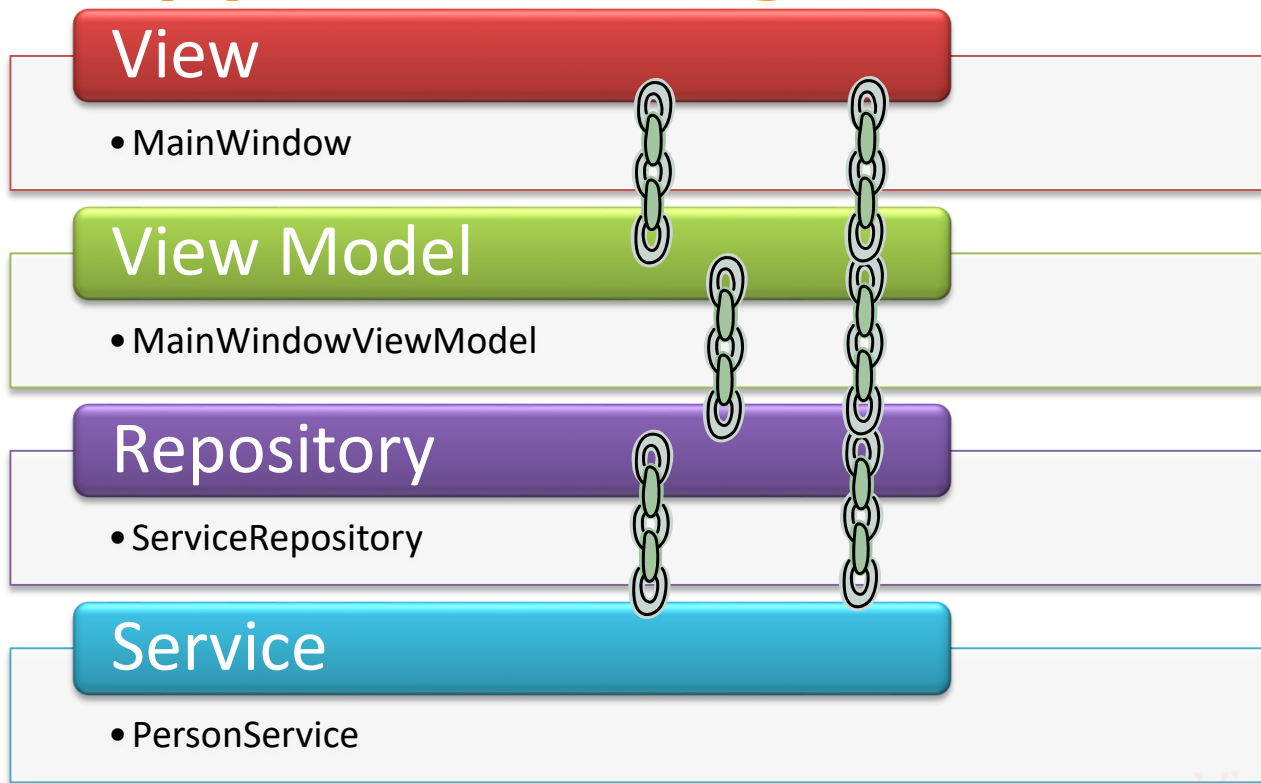
# Tight Coupling



# Creating a Caching Repository



# Loose(r) Coupling



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# Thank You!

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- Please submit an evaluation (paper or mobile app)