

Robert Haken

software architect, HAVIT, s.r.o.

haken@havit.cz, @RobertHaken

Microsoft MVP: Development, MCT, MCSD

ASP.NET Core Dependency Injection & Unit Testing

ASP.NET Core - MVC6 Controller
IEmailSender Dependency Injection demo

OCHUTNÁVKA



Dependency Injection

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

Mark Seeman



Dependency Injection Benefits

loosely coupled code =>

- Late-binding
- Extensibility
- Parallel Development
- Maintainability
- Testability



Price Resolver - Dependency Injection, Unit-Testing

DEMO



"Good" Unit Test

- automated + repeatable
- fully isolated
- consistent in its results
- runs quickly
- full control of the unit under test (all dependencies)
- relevant tomorrow
- easy to implement
- able to run it at the push of a button
- if fails => easy to detect what was expected



Dependency Injection Containers

- Object Composition
- Object Lifetime
- Interception

- Code-based / XML-based configuration
 - Auto-wiring, convention-based configuration, ...



ASP.NET Core DI "Container" - Register

- Startup.cs
 - `Configure[Env]Services(IServiceCollection services)`
- API - Lifestyles
 - `services.AddTransient<TAbstraction, TImplementation>()`
 - `services.AddScoped<TAbstraction, TImplementation>()`
 - `services.AddSingleton<TAbstraction, TImplementation>()`
 - `services.AddSingleton<TAbstraction>(instance)`
 - plus factory-method verze



ASP.NET Core DI - LifeStyles

DEMO



ASP.NET Core DI "Container" - Injection

Controllers

- constructor injection
- Action - method injection [FromServices]

Views

- property injection @inject TService PropertyName

Models

- property injection [FromServices]

Startup: Configure()

- method injection



ASP.NET Core DI "Container" - Injection II.

Middleware

- constructor injection
- method injection `Invoke(...)`

Filters

- "attribute" injection [`ServiceFilter(typeof(...))`]
- "attribute" injection [`TypeFilter(typeof(...))`]

Other

- constructor injection



Q & A

