

**Day 2: SOLID principles, OOP with C#,**

<b>Q&amp;A</b>	<b>15 minutes</b>
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<b>OOP / Components in C#</b>		<b>195 minutes</b>	
<i>Module</i>	<i>Topics</i>	<i>Duration</i>	<i>Elapsed time</i>
Overview	Module overviews	5m	20m
Principles of OOP	Abstraction Encapsulation Inheritance Polymorphism	20m	40m
Implementing OOP with C#	Abstracting classes Encapsulating data and functionality Reuse through inheritance Making polymorphic objects	25m	65m
Exercises	<ul style="list-style-type: none"> <li>Patterns of Implementing OOP with C#</li> </ul>	25m	90m
Break		15m	105m
Exercises	<ul style="list-style-type: none"> <li>Building good objects in C#</li> </ul>	45m	150m
Break		60m	210m

<b>Clean and SOLID with C# and Ninject</b>		<b>150 minutes</b>	
<i>Module</i>	<i>Topics</i>	<i>Duration</i>	<i>Elapsed time</i>
Intro to Clean Code as a basis for SOLID	Examination of code examples demonstrating unclean code And refactoring to cleaner code	30m	240m
Intro to SOLID	Why SOLID? What is SOLID? Concepts of SOLID	10m	250m
Single Responsibility Principle	What is meant by single responsibility? Refactoring to SRP	15m	265m
Open closed principles	Reused abstraction principles Start with concrete behaviors Abstract as commonality emerges Open for extensibility, closed for modification Favor composition over inheritance Decoration for extension points Factories	15m	280m
Break		15m	295m
Liskov substitution principle	What is the liskov principle? Creating substitutable components Refactoring from inheritance to interfaces Problems with LSP	15m	310m

Interface segregation principle	Don't force clients to depend on methods they don't use Role interfaces over header interfaces Add features, but not remove Using ISP to solve LSP problems Refactoring with ISP	15m	325m
Break	Break	5m	330m
Module intro	What is IoC and DI? Why use IoC and DI? How do IoC and DI differ, and how do they complement each other?	5m	335m
Inversion of Control	Basics of Interface inversion	5m	340m
Dependency injection	Constructor Injection Setter Injection Interface Injection	5m	345m
IoC containers	What is an IoC Container? Registration Resolving Dependencies	5m	350m
IoC with Ninject	Overview on Ninject Setting up Ninject Registering types Using the Ninject container	5m	355m
Exercises / break	<ul style="list-style-type: none"> <li>Implementing our SOLID code with Ninject</li> </ul>	5m	360m