Implementing Encapsulation Patterns with Entity Framework

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Module Overview

- Implementing a Generic Repository
- Alternates to Generic DbSet.Find
- Adding Eager Loading to the Repository
- Dependency Injection & Inversion of Control
- Implementing DI & IOC in the Sample App
- Beyond CRUD: Customized Encapsulation
- Implementing the Customized Class
- Debugging from Controller to Data Layer

Implementing Generic Repositories

Non-Tracking Alternates to a Generic DbSet.Find

Patterns for Implementing Generic Find

.Find	AsNoTracking & Interface	Dynamic => & Pattern
+ Convenient	+ Efficient	+ Efficient
+ Figures out key prop	+ Readable code	- Less readable
- Possible performance hit	- Types must follow interface	

Adding Eager Loading to the Generic Repository

Benefiting from Dependency Injection and Inversion of Control

Dependency Injection
Inversion of Control

IoC Container Rule

If a constructor in this system needs a MyContext,

inject a new MyContext instance

Repository

```
public MyRepo(MyContext context) {  }
```

```
[TestMethod]
public void WontEngageIoCContainer {
  var repo=new MyRepo(new MyContext());
  repo.DoSomething();
  Assert.IsTrue(somethingOrOther);
}
```

IoC Container Rule

If a constructor in this system needs a MyContext,

inject a new MyContext instance

Also: Need MyRepo? Inject new MyRepo

Repository

```
public MyRepo(MyContext context) {  }
```

Controller

```
public class CustomersController : Controller {
  MyRepo _repo;
  public CustomersController(MyRepo repo){
    _repo=repo;
  }
  public ActionResult Index {
    return MyView(_repo.GetSomeStuff());
  }
}
```

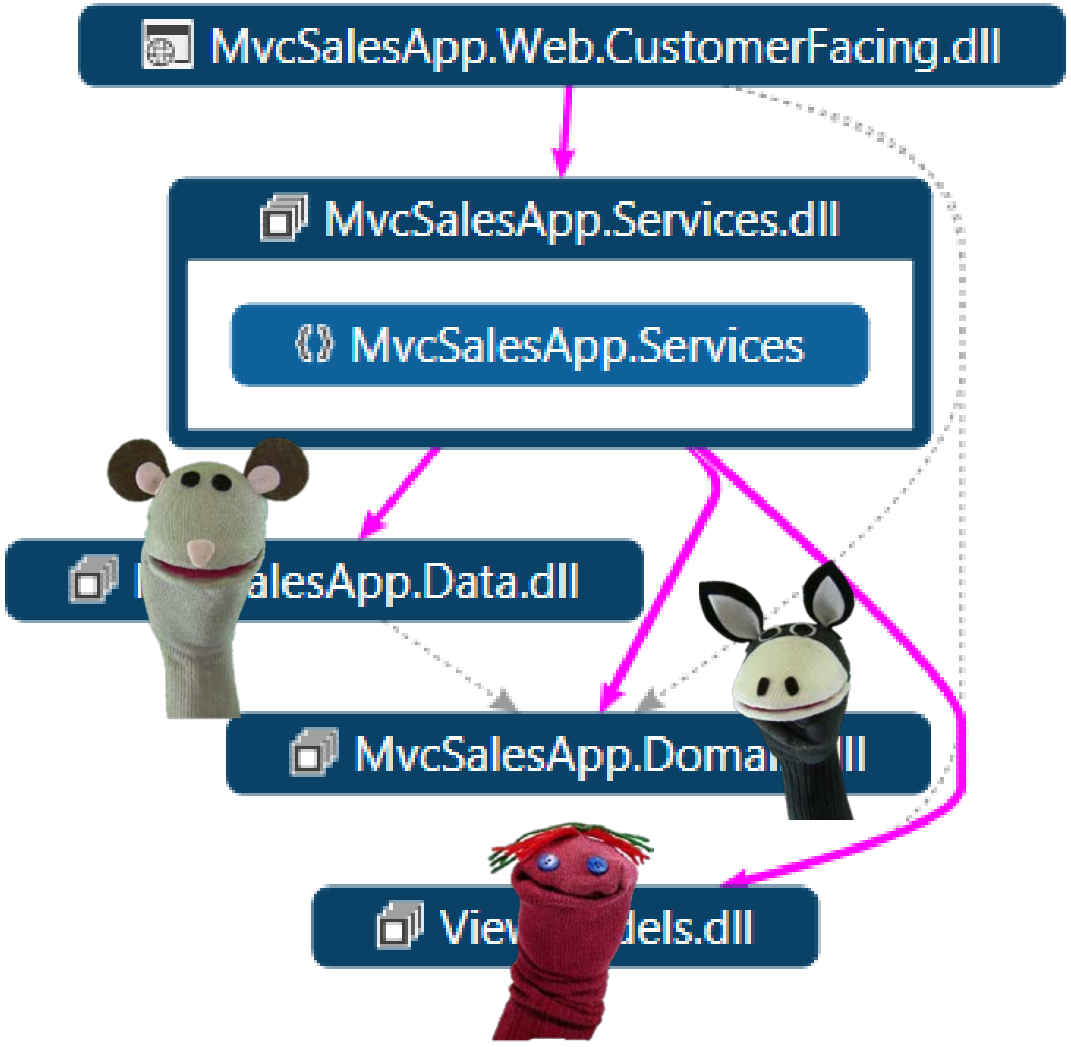
Implementing an IoC Container in the App

Explicit Methods for the Shopping Cart

Persistence Tasks

1) Create a new cart
   Create new line item with cart id
2) Retrieve cart using viewer's cookie
3) Create new line item with cart id

Services to Coordinate Activity



Controller to Service to Data Class: A Quick Walkthrough

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Resources

Helpful Pluralsight Courses

- EF6 Ninja Edition: What's New in EF6 bit.ly/PS-EF6
- SOLID Principles of Object Oriented Design bit.ly/1PhN6ny

Stackoverflow: Expression.Lambda question bit.ly/SO8315819

Refactoring an ASP.NET 5/EF6 Project & Dependency Injection bit.ly/1S6MvuG

ASP.NET Core Documentation on Dependency Injection bit.ly/21nqw8w

Structuremap structuremap.github.io

StructureMap.MVC5 github.com/webadvanced/Structuremap.MVC5

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