Isolating Code

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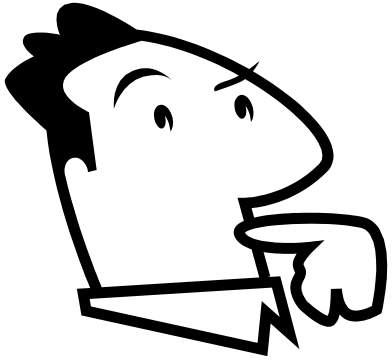

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see what you can learn

Isolation Techniques

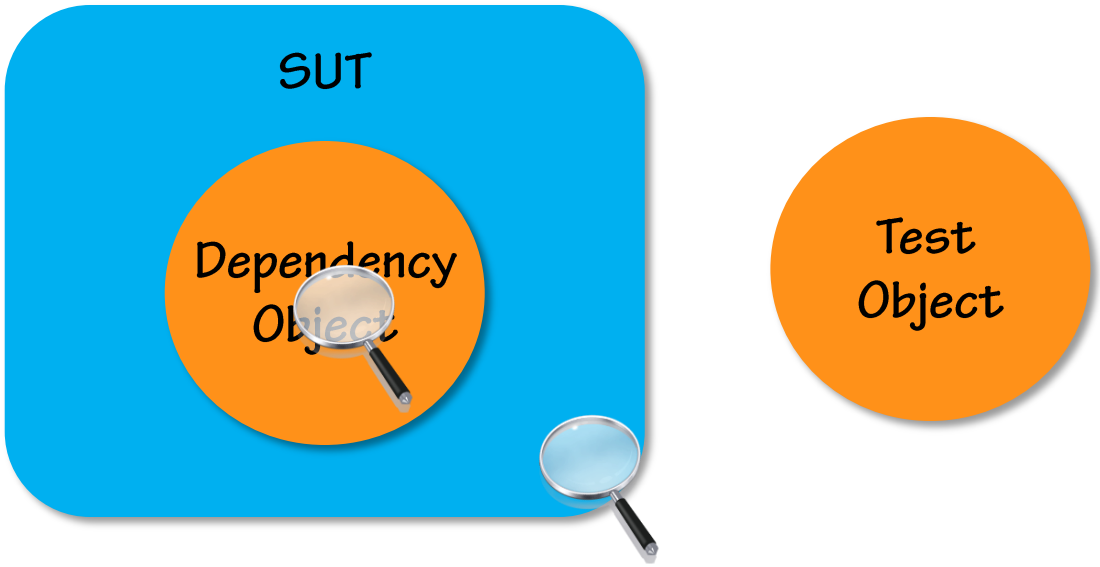
Test Doubles

Isolation by Example

Isolating Code

Isolation Techniques

Test Method



Faking Out the SUT

The Test

1. **Create test-specific objects**

2. **Create the SUT**
   Provide needed test substitution objects

3. **Invoke operation on the SUT**
   Provide needed test substitution objects

4. **Check results of SUT invocation**
   On the SUT
   On the test substitution objects

Isolating Code

Test Doubles

Dummy

```
var order = new Order();
order.AddLineItem(12, 1);
order.AddLineItem.Add(21, 3);
Assert.AreEqual(2, order.NumLineItems);
```

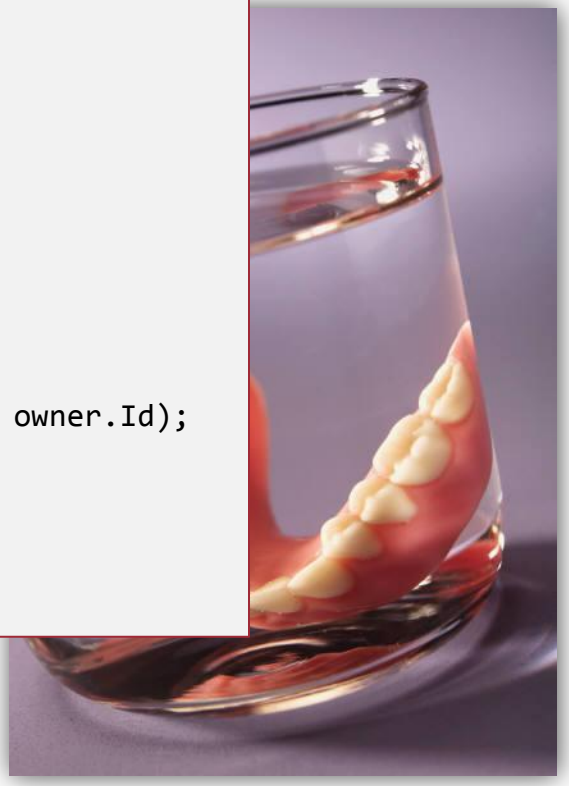
```
var person = new Person();
person.First = “Homer”;
person.Last = “Simpson”;
Assert.IsNotNull(person.FullName);
```

Stub

```
public class StubRepo : IOwnerRepository
{
    public IOwner FindById(int id){}

    public IOwner Save(IOwner owner)
    {
        return new Owner();
    }

    public void Delete(IOwner owner){}
}
```

Fake

```
public class FakeRepo : IOwnerRepository
{
    IList<IOwner> _owners = new List<IOwner>();
    int _idCounter = 0;

    public IOwner Save(IOwner owner)
    {
        owner.Id = _idCounter++;
        _owners.Add(owner);
        return owner;
    }

    public void Delete(IOwner owner)
    {
        var ownerToDelete = _owners.FirstOrDefault(o => o.Id == owner.Id);
        _owners.Remove(ownerToDelete);
    }
}
```



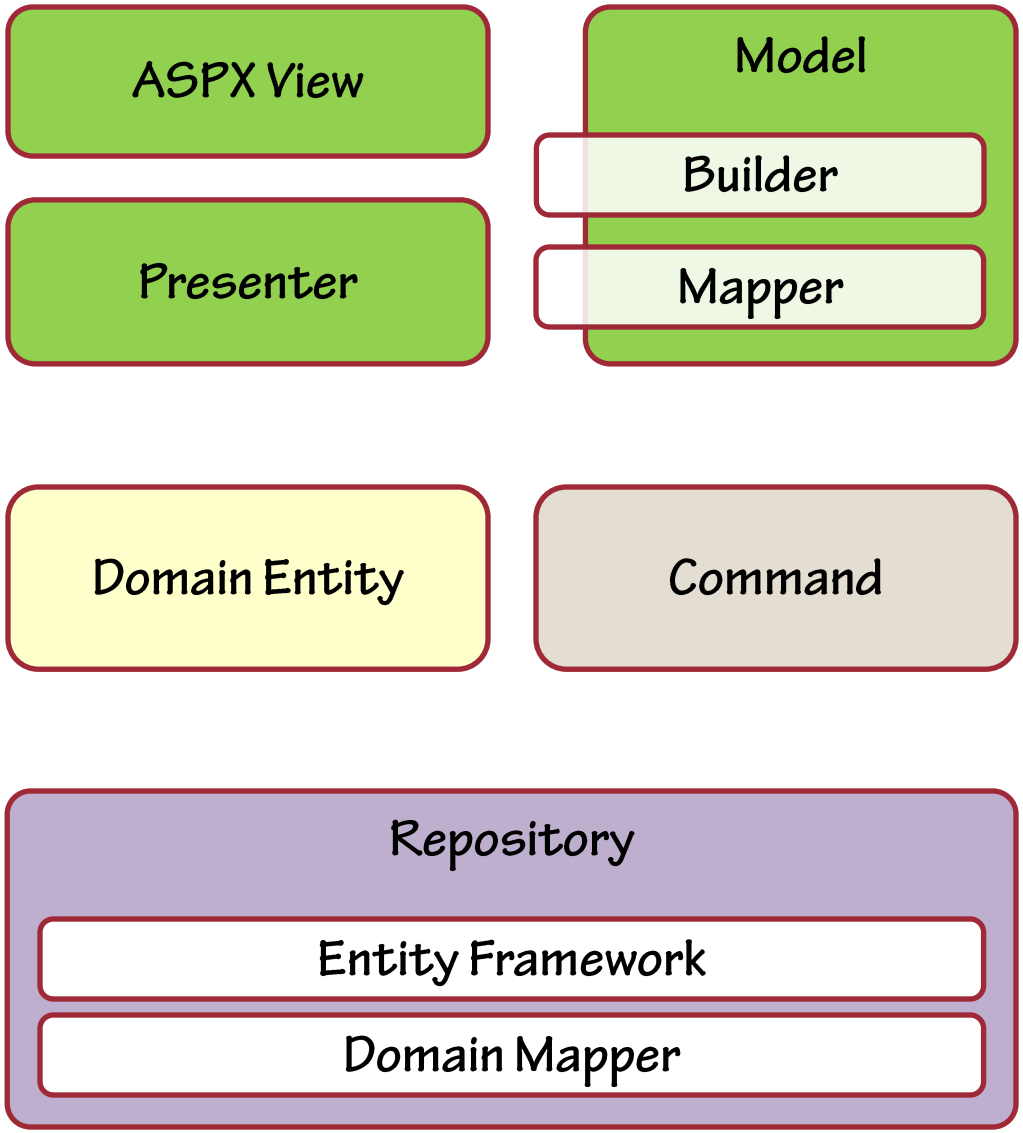
Spy

```
public class SpyDefaultView : IDefaultView
{
    public SpyDefaultView()
    {
        ShowWasCalled = false;
    }

    public void Show(DefaultVM model)
    {
        ShowWasCalled = true;
    }

    public void ShowError(string error){}

    public void Redirect(string url){}

    public bool ShowWasCalled { get; set; }
}
```

```
Assert.IsTrue(spy.ShowWasCalled);
```

Mock

- TypeMock
- RhinoMock
- MOQ


ASPX View
Model
Builder
Presenter
Mapper
Domain Entity
Command
Repository
Entity Framework
Domain Mapper

Isolation Techniques

Test Doubles

Isolation by Example

Dummy
Stub
Fake
Spy
Mock

References

- **Exploring The Continuum Of Test Doubles**
  link.pluralsight.com/cx3u7p

- **xunitpatterns.com**