Express Yourself!

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“You’ll never know less than you know right now”

– *Kent Beck*

https://www.flickr.com/photos/quinnanya/5906875015

Sarah Mei
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14 May

The inebriation test reminds me that everything in my code should provide information, _beyond_ the semantics of what it does.

Sarah Mei
@sarahmei

Follow

Variable names should indicate intent. Structure should make the possible execution paths obvious, & the likely ones even _more_ obvious.

2:50 AM - 14 May 2016

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```
private string _getLocalDbInstanceNameFromServerString(string databaseServer, bool startLocalDbInstanceIfNotRunning)
{
    if (IsSqlLocalDb) // Support for Sql Server LocalDB connections, denoted by the data source string, ie "(localdb)\MyInstanceName". Retrieves the Named Pipes connection string, necessary for our logic
    {
        if (!databaseServer.Contains(@"\"))
            throw new SqlConnectionException(this, "Cannot lookup info on Sql Server LocalDB. The string '" + databaseServer + "' does not contain an instance name.");

        var sqlLocalDbCmdPath = _getSqlLocalDbLocation();
        if (sqlLocalDbCmdPath == null)
            throw new SqlConnectionException(this, "Cannot connect to local instance because the SqlLocalDB utility could not be found. To fix this, please install SQL Server Data Tools from microsoft.c

        var instanceInfo = CommandExecutor.ExecReturnOutput(sqlLocalDbCmdPath, "info " + InstanceName);

        if (!instanceInfo.Contains("\nState:              "))
            throw new SqlConnectionException(this, "Cannot connect to Sql Server LocalDB: " + instanceInfo);

        if (!instanceInfo.Contains(LocalDbStateRunning))
        {
            if (startLocalDbInstanceIfNotRunning)
            {
                Log.Warn("The instance '" + databaseServer + "' is not running, will attempt to start. Additional info: \n" + instanceInfo);

                var startOutput = CommandExecutor.ExecReturnOutput(sqlLocalDbCmdPath, "start " + InstanceName);
                instanceInfo = CommandExecutor.ExecReturnOutput(sqlLocalDbCmdPath, "info " + InstanceName);

                if (!instanceInfo.Contains(LocalDbStateRunning))
                    throw new SqlConnectionException(this, "Could not start the Sql Server LocalDB instance '" + databaseServer + "': " + startOutput);
            }
            else
            {
                throw new SqlConnectionException(this, "Cannot connect to Sql Server LocalDB. The instance '" + databaseServer + "' is not running. Additional info: \n" + instanceInfo);
            }
        }

        var namedPipesPos = instanceInfo.IndexOf(LocalDbNamedPipes.Label);
        if (namedPipesPos == -1)
            throw new SqlConnectionException(this, "Cannot connect to Sql Server LocalDB. Cannot locate Named Pipes identifier in instance '" + databaseServer + "': " + instanceInfo);

        var namedPipesValuePos = namedPipesPos + LocalDbNamedPipes.Label.Length;
        var namedPipesEndPos = instanceInfo.IndexOf("\n", namedPipesValuePos);
        var namedPipesString = namedPipesEndPos == -1 ? instanceInfo.Substring(namedPipesValuePos) : instanceInfo.Substring(namedPipesValuePos, namedPipesEndPos - namedPipesValuePos);
        return namedPipesString.Trim();
    }
    return databaseServer;
}
```

The Four Rules of Simple Design

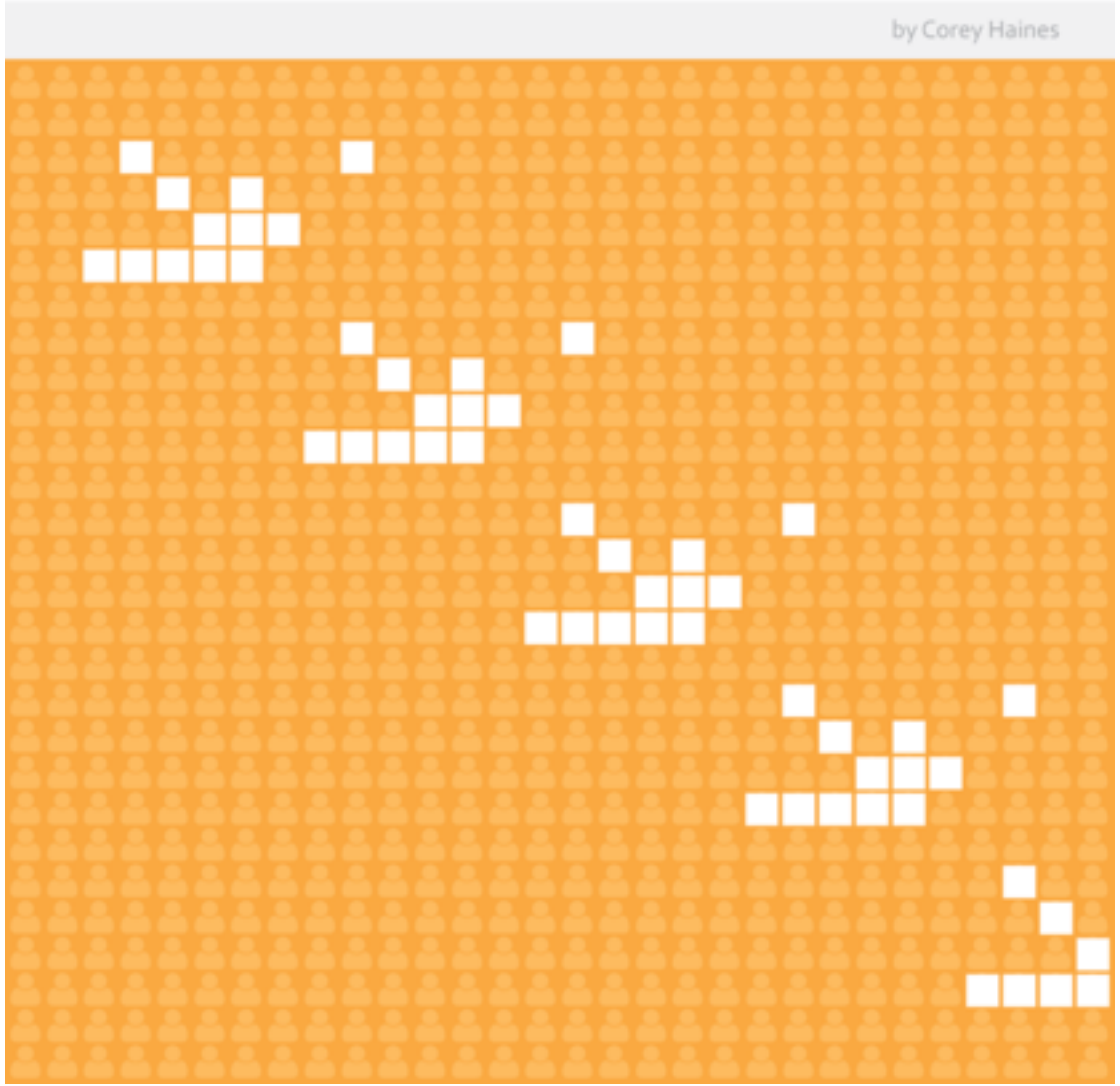
1. Tests Pass
2. Expresses Intent
3. No Duplication (DRY)
4. Small

UNDERSTANDING THE

4 RULES OF SIMPLE DESIGN

And other lessons from watching 1000's of pairs work on Conway's Game of Life

by Corey Haines



Improving your tests

Test names should influence your API design

Root out subtle duplication

Test names influence API design

```
public void A_New_Carriage_Is_Empty()
{
    Assert.That(new Carriage().IsEmpty() == true);
    Assert.That(new Carriage().Passengers.Count == 0);
}

public void A_Seat_Can_Be_Assigned()
{
    var carriage = new Carriage();
    carriage.AssignSeat(34);
    Assert.That(carriage.IsSeatAssigned(34) == true);
    Assert.That(carriage.AssignedSeats == 1);
}
public void After_Assigning_A_Seat_The_Carriage_Is_Not_Empty()
{
    var carriage = new Carriage();

    carriage.AssignSeat(34);

    Assert.That(carriage.IsEmpty() == false);
}
```

Root out subtle duplication

```
public void A_Seat_Can_Be_Assigned()
{
    var carriage = new Carriage();
    var seat = Seat.Number(34);
    carriage.AssignSeat(34);
    carriage.Assign(seat);
    Assert.That(carriage.IsSeatAssigned(34) == true);
}   Assert.That(carriage.IsAssigned(seat) == true);
}
```

Improving your objects

Avoid procedural polymorphism

Invert composition to break inheritance

Avoid procedural polymorphism

```
public class EmptyCarriage : Carriage
{
    public override bool IsAcceptingReservations()
    {
        return IsOpenForBookings();
    }
}

public class Carriage
{
    public virtual bool IsAcceptingReservations()
    {
        if (IsEmpty)
            return IsOpenForBookings();
        return HasSpacesRemaining();
    }
}
```

Anti-IF Campaign

HOME | GET STARTED | JOIN THE CAMPAIGN | EXPERIENCES | ABOUT

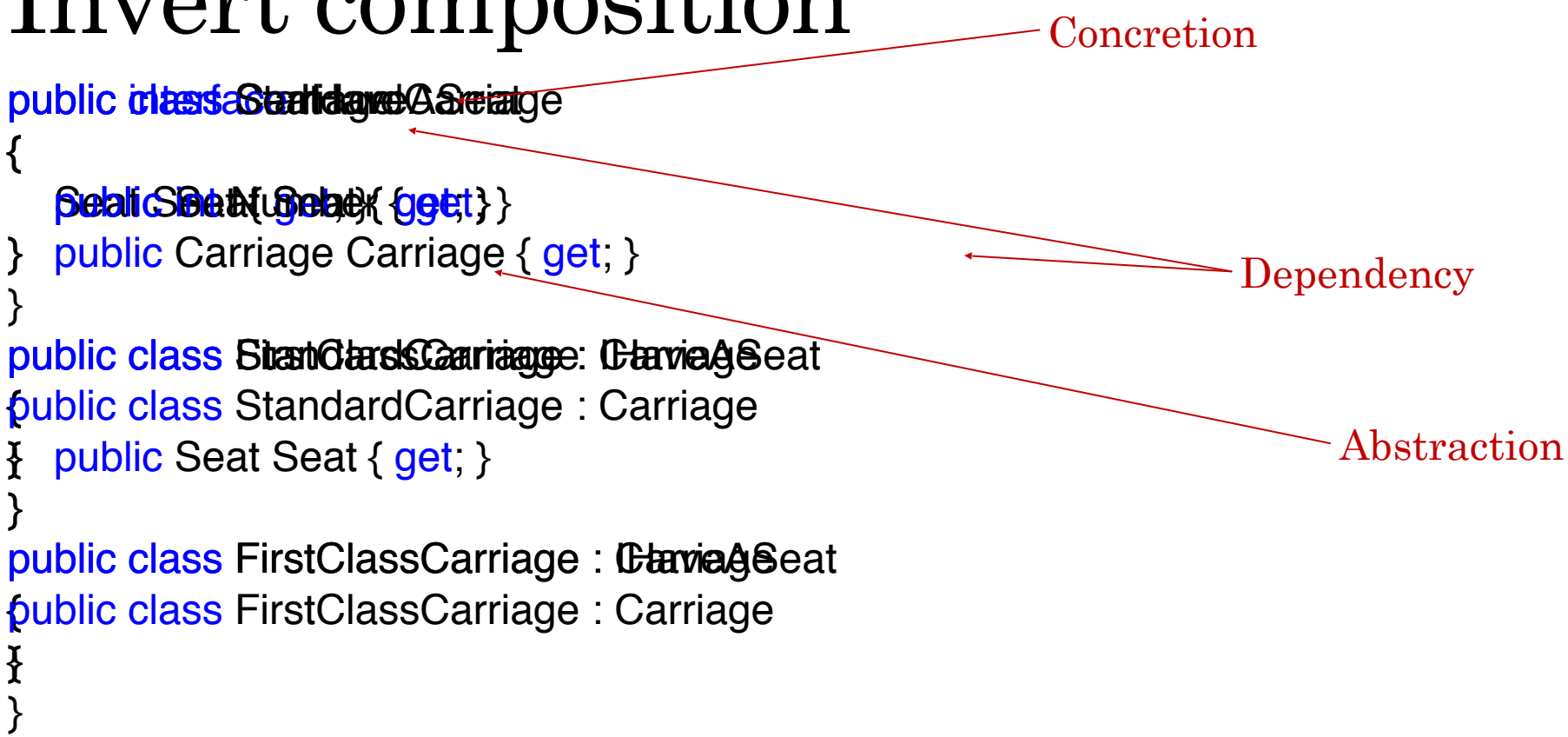
Less IFs, more power.

Have you ever wondered how IFs impact on your code? Avoid dangerous IFs and use Objects to build a code that is flexible, changeable and easily testable, and will help avoid a lot of headaches and weekends spent debugging! Share how to write effective code the easy way!

The goal of the Anti-IF Campaign is to raise awareness of the effective use of software design principles and practices, by first of all removing bad, dangerous IFs.

```
//Bond class
double calculateValue() {
      if(_type == BTP)  {
return calculateBTPValue();
} else if (_type == BOT) {
return calcalateBOTValue();}
else {
return calculateEUBValue();
}
}
```

Invert composition



Sandi Metz
@sandimetz

Follow

Don't write code that guesses the future, arrange code so you can adapt to the future when it arrives.

5:59 PM - 5 Mar 2014

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