OCI | WE ARE SOFTWARE ENGINEERS.

# I've seen Grails code you wouldn't believe...

Iván López @ilopmar

OCI | WE ARE SOFTWARE ENGINEERS.

# I've seen Grails code you wouldn't believe...

## ...Or how to properly write maintainable Grails applications

**Iván López @ilopmar**

# Hello!

## I am Iván López (@ilopmar)

OCI WE ARE SOFTWARE ENGINEERS.

Groovy MADRID
Groovy Users Group

GRAILS

Greach
the Groovy spanish conf

*THIS IS A TRUE STORY.*

*The events depicted in this talk took place in “some projects” in 2017.*

*At the request of the survivors, the names have been changed.*

*Out of respect for the dead, the rest has been told exactly as it occurred.*

# Great examples

(Please don't do this)

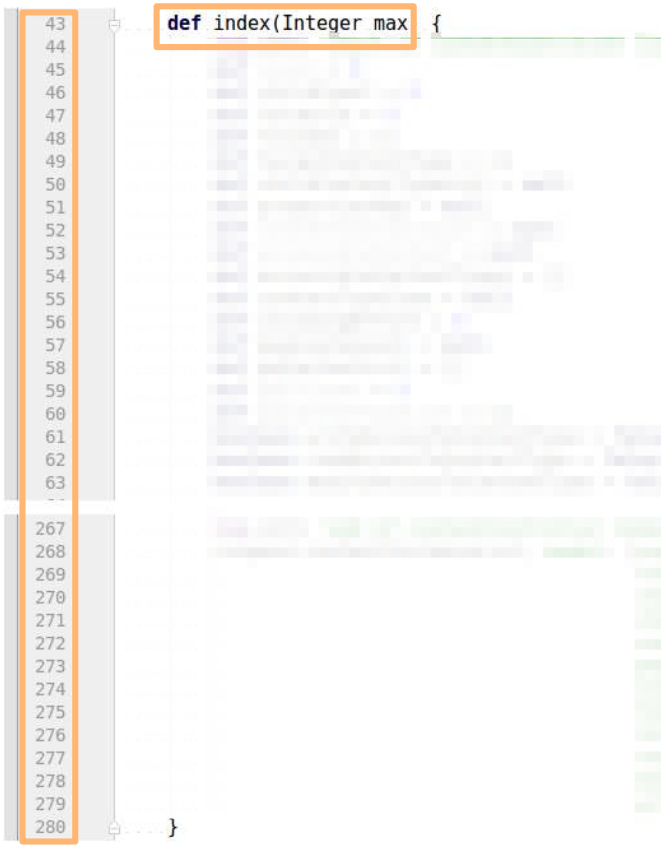
# The larger a class, the better

# The larger a class, the better

# The larger a method, the better

# The larger a method, the better

238 lines




Some stats...

- 41 if / 16 else
- Up to 5 nested ifs
- 19 service calls
- 12 dynamic finders
- 87 access to “params”
- 0 tests

# The larger a *setup* method in a test, the better

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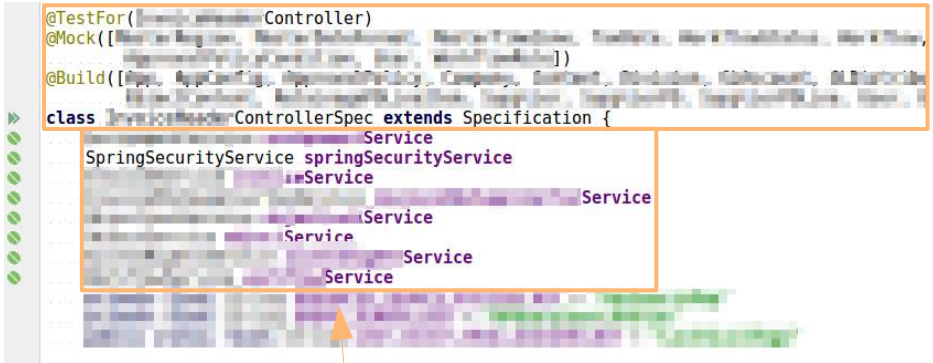
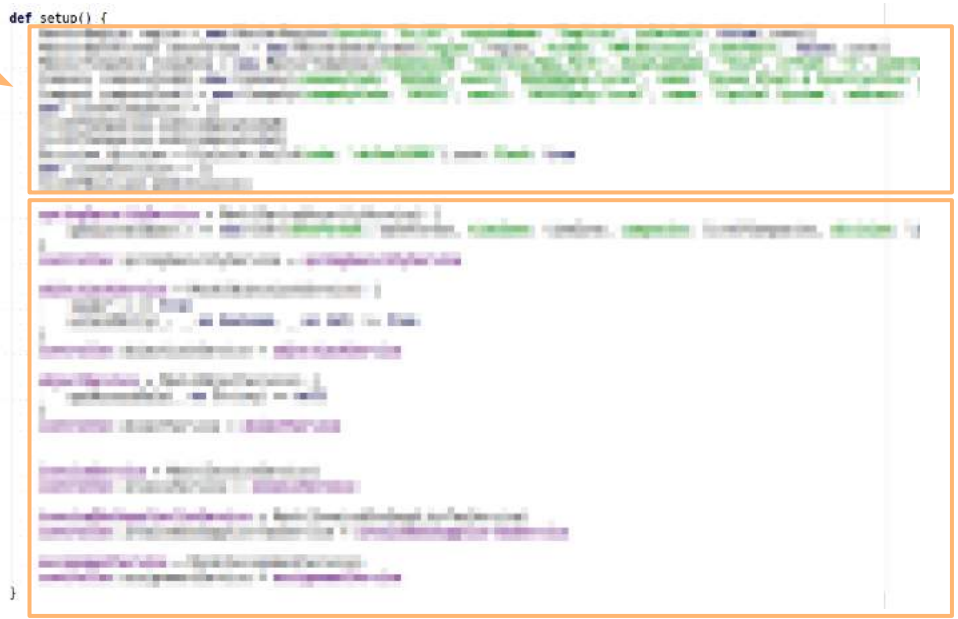
Test for controller




Injecting services
in a unit test?

# The larger a *setup* method in a test, the better

Creating shared data




Mocking dependencies the same way for all the tests!

# The larger a *setup* method in a test, the better


All same data and mocks
shared among 129 tests

## How to detect it?

- You can't test it (or too complicated)
- IDE is slow
- Big setup methods because of lots of dependencies

## How do we fix it?

- Small classes (it's free write more classes)
- Small methods
- Small (or non-existent) shared test code

## Why does it matter?

- To write clean and maintainable code
- Be able to test the code

# Because copy-paste is always the fastest way...

```
static constraints = {
    code unique: true, nullable: false
    name nullable: false, validator: { val -> if (val?.length() > 255) ["default.invalid.max.size.message", 255] }
    email email: false, nullable: true, size: 1..255
    address nullable: true, validator: { val -> if (val?.length() > 500) ["default.invalid.max.size.message", 500] }
    city nullable: true, validator: { val -> if (val?.length() > 255) ["default.invalid.max.size.message", 255] }
    state nullable: true, validator: { val -> if (val?.length() > 255) ["default.invalid.max.size.message", 255] }
    zipCode nullable: true
    phone nullable: true
    bU nullable: true, validator: { val -> if (val?.length() > 1000) ["default.invalid.max.size.message", 1000] }
    vStyle nullable: true, maxSize: 128
    origin nullable: true, maxSize: 128
    defaultgl nullable: true
    currencyCode nullable: true
}
```

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```
static constraints = {
    code unique: true, nullable: false
    name nullable: false, validator: { val -> if (val?.length() > 255) ["default.invalid.max.size.message", 255] }
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    address nullable: true, validator: { val -> if (val?.length() > 500) ["default.invalid.max.size.message", 500] }
    city nullable: true, validator: { val -> if (val?.length() > 255) ["default.invalid.max.size.message", 255] }
    state nullable: true, validator: { val -> if (val?.length() > 255) ["default.invalid.max.size.message", 255] }
    zipCode nullable: true
    phone nullable: true
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    defaultgl nullable: true
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}
```

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    zipCode nullable: true
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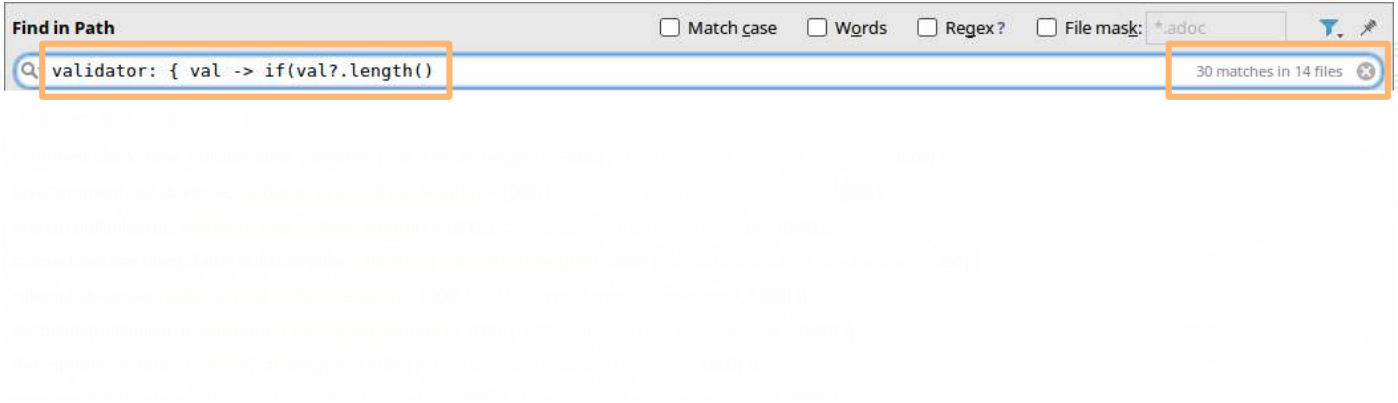
    vStyle nullable: true, maxSize: 128
    origin nullable: true, maxSize: 128
    defaultgl nullable: true
    currencyCode nullable: true
}
```

# Because copy-paste is always the fastest way...

```
static constraints = {
}
```



# Because copy-paste is always the fastest way...

```groovy
class CustomValidations {

    protected static final String INVALID_MAX_SIZE_MESSAGE = "default.invalid.max.size.message"

    static def validateLength(Integer maxLength) {
        return { val, obj ->
            if (val?.length() > maxLength) {
                return [INVALID_MAX_SIZE_MESSAGE, maxLength]
            } else {
                true
            }
        }
    }
}
```

```groovy
static constraints = {
    code unique: true, nullable: false
    name nullable: false, validator: CustomValidations.validateLength(255)
    email email: false, nullable: true, size: 1..255
    address nullable: true, validator: CustomValidations.validateLength(500)
    city nullable: true, validator: CustomValidations.validateLength(255)
    state nullable: true, validator: CustomValidations.validateLength(255)
    zipCode nullable: true
    phone nullable: true
    bU nullable: true, validator: CustomValidations.validateLength(1000)
    vStyle nullable: true, maxSize: 128
    origin nullable: true, maxSize: 128
    defaultgl nullable: true
    currencyCode nullable: true
}
```

# Because copy-paste is always the fastest way...

```
class CustomValidations {

    protected static final String INVALID_MAX_SIZE_MESSAGE = "default.invalid.max.size.message"

    static def validateLength(Integer maxLength) {
        return { val, obj ->
            if (val?.length() > maxLength) {
                return [INVALID_MAX_SIZE_MESSAGE, maxLength]
            } else {
                true
            }
        }
    }
}
```

```
static constraints = {
    code unique: true, nullable: false
    name nullable: false, validator: CustomValidations.validateLength(255)
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    address nullable: true, validator: CustomValidations.validateLength(500)
    city nullable: true, validator: CustomValidations.validateLength(255)
    state nullable: true, validator: CustomValidations.validateLength(255)
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        }
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```

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    city nullable: true, validator: CustomValidations.validateLength(255)
    state nullable: true, validator: CustomValidations.validateLength(255)
    zipCode nullable: true
    phone nullable: true
    bU nullable: true, validator: CustomValidations.validateLength(1000)
    vStyle nullable: true, maxSize: 128
    origin nullable: true, maxSize: 128
    defaultgl nullable: true
    currencyCode nullable: true
}
```

## How to detect it?

- Lot of duplicated code

## How do we fix it?

- Don't repeat yourself (DRY)
- If you copy-paste +2 times → extract, refactor & reuse

## Why does it matter?

- Only need to change code in one place
- Reuse the code

# Use def everywhere because #yolo

```
def createUserWithActionPermissions(final itemInstance, final currentParams, final currentUser) {
    def actionList = null
    def actionPermissionError = null
    def actionPermissionList = null
    def userInstance = null
    def errorInstance = null
    def exceptionInstance = null
    def statusList = null
    final customParams = this.buildUserParams((BookType) itemInstance, currentParams, currentUser)
    ...
    ...
}
```

# Use def everywhere because #yolo

What about the returned type?

Everything final but without type

```
def createUserWithActionPermissions(final itemInstance, final currentParams, final currentUser) {
    def actionList = null
    def actionPermissionError = null
    def actionPermissionList = null
    def userInstance = null
    def errorInstance = null
    def exceptionInstance = null
    def statusList = null
    final customParams = this.buildUserParams((BookType) itemInstance, currentParams, currentUser)
    ...
    ...
}
```

A bunch of variables
without type

## How to detect it?

- Code-reviews

## How do we fix it?

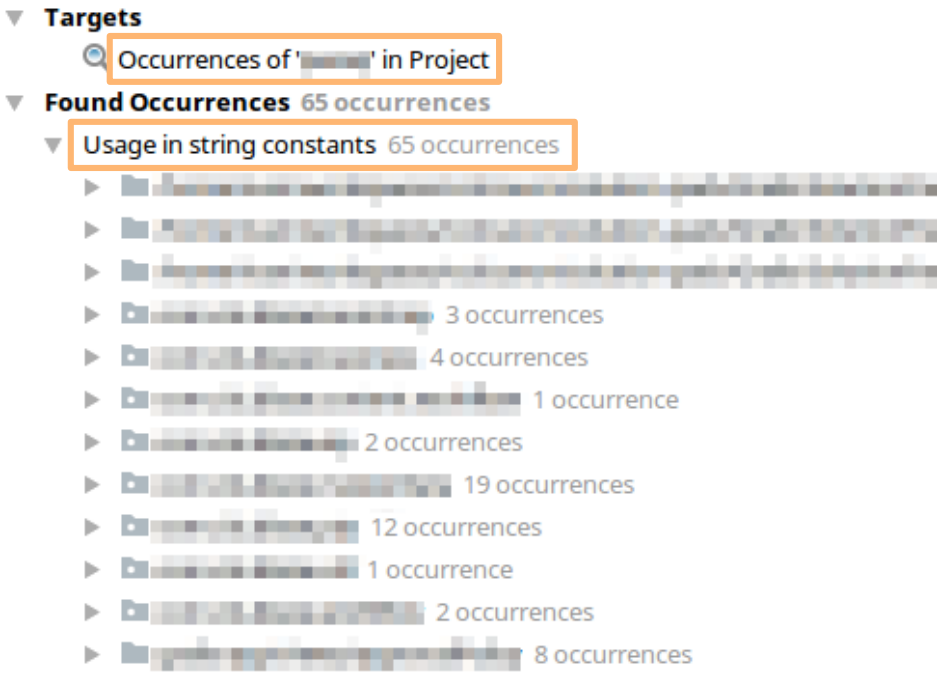
- Always write your methods signatures as in Java
- If the type is not obvious, write it

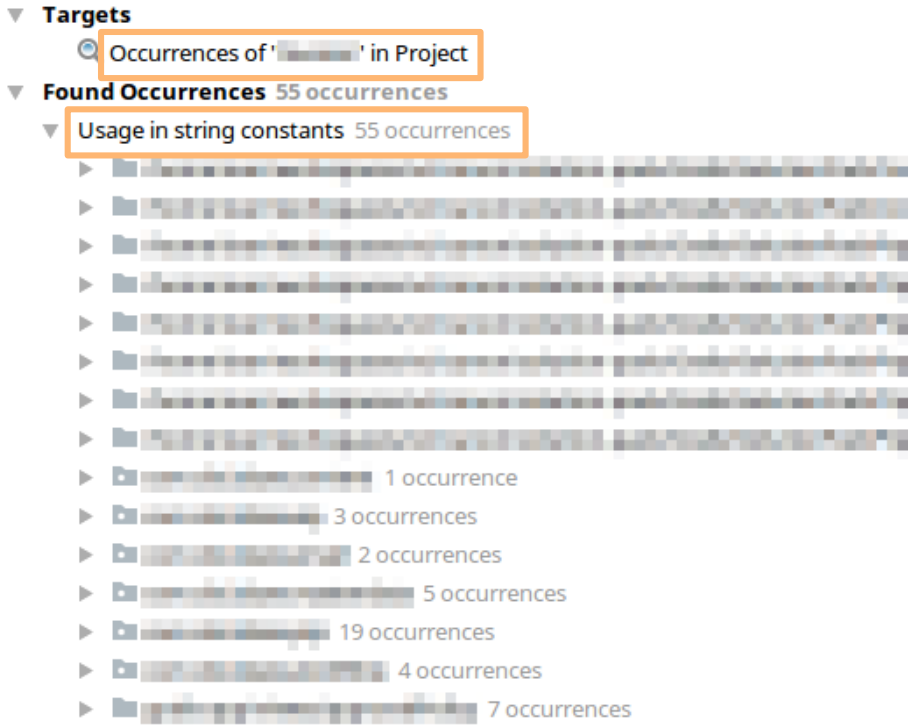
## Why does it matter?

- Be able to read the code
- Help IDE to help us: auto-completion, refactors, searchs,...
- Help future you (and your team) to read the code

# Use String everywhere

# Use String everywhere



## How to detect it?

- Code-reviews
- Codenarc

## How do we fix it?

- Use Enum/Constants
- Hide behavior inside enum (static methods)

## Why does it matter?

- Find usages of the constants
- Refactor the code

# Use GORM everywhere...

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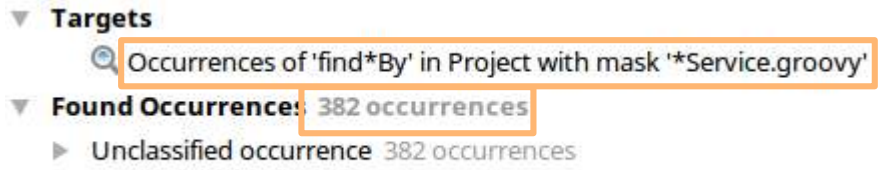
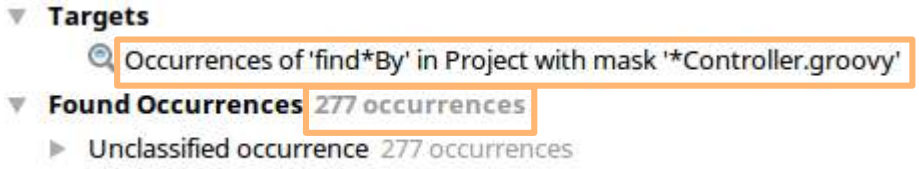
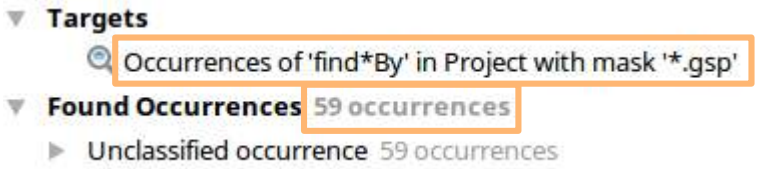


# Use GORM everywhere...

# Use GORM everywhere...


## How to detect it?

- Code-reviews

## How do we fix it?

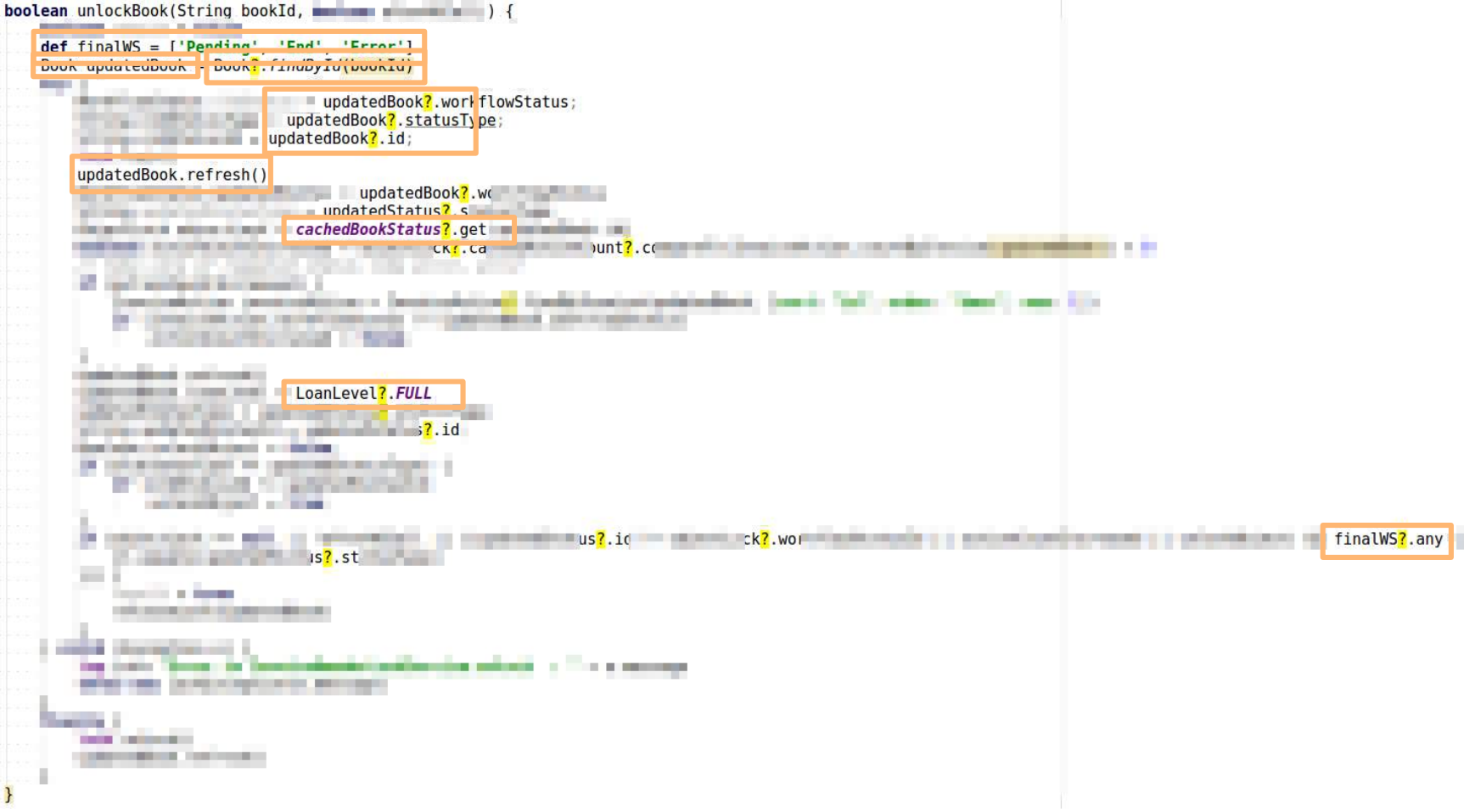
- Create new layer RepositoryService, GormService,...
- Only access db from this layer

## Why does it matter?

- Decouple from the persistence
- Integration tests vs Unit tests

# Life is to short for NullPointerException...

# Life is to short for NullPointerException...



## How to detect it?

- Code-reviews
- Codenarc (UnnecessarySafeNavigationOperator Rule)

## How do we fix it?

- Only use '?' when values **really** can be null
- Think twice before using it

## Why does it matter?

- Easy to read/maintain code

# Pass params to Services, mutate and return

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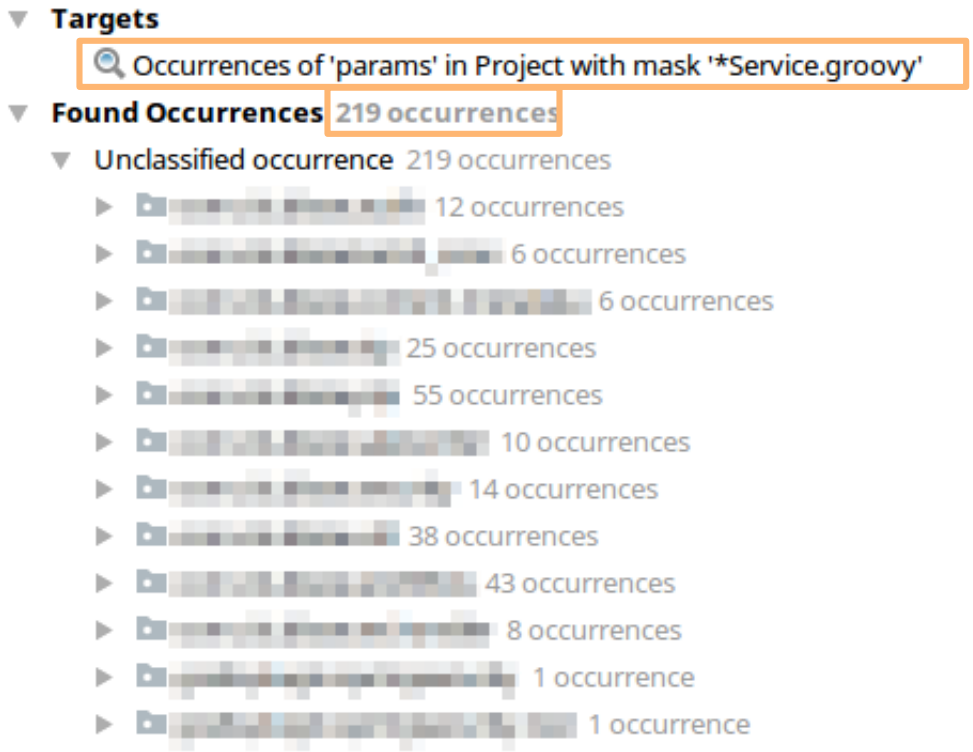

## How to detect it?

- Code-reviews

## How do we fix it?

- Just don't do it
- Use types, static inner classes, @Builder

## Why does it matter?

- Params belongs to Controllers layer
- Decouple Controllers from Services

# Who needs Command Objects? params FTW!

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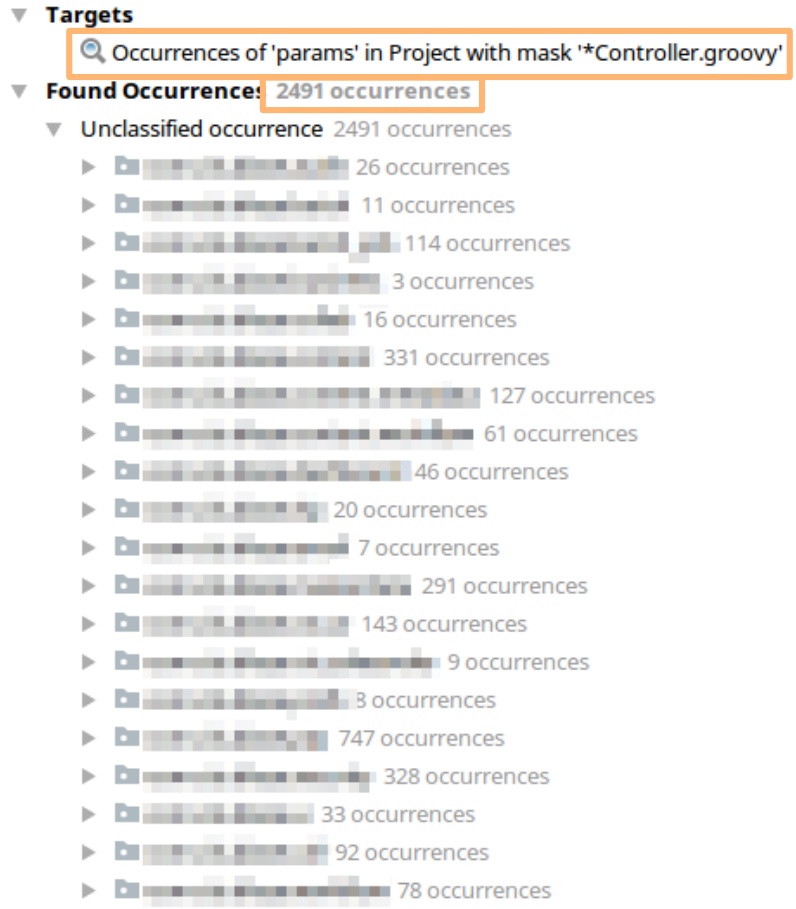

# Who needs Command Objects? params FTW!

```
def updateVehicle() {
    params.dateFormat = currentUser.dateFormat.format
    params.wheels = params.wheelsRadio?.equals("user") ? params.wheels?.equals("null") ? null : params.wheels : null
    params.wheelsGroup = params.wheelsRadio?.equals("group") ? params.wheelsGroup.equals("null") ? null : params.wheelsGroup : null
    params.buildStatus = BuildStatus.findById(uiStatus)?.workflowStatus

    VehicleCommand vehicleCommand = new VehicleCommand()
    bindData(vehicleCommand, params)
    vehicleCommand.description = params.description
    vehicleCommand.category = params.category
    vehicleCommand.messageSource = messageSource

    VehicleDetailCommand vehicleDetailCommand = new VehicleDetailCommand()
    bindData(vehicleDetailCommand, params)
    vehicleDetailCommand.messageSource = messageSource

    vehicleService.updateVehicle(vehicleInstance, params, vehicleCommand, vehicleDetailCommand)
}
```

# Who needs Command Objects? params FTW!

```
def updateVehicle() {
    [redacted]

    params.dateFormat = currentUser.dateFormat.format
    params.wheels = params.wheelsRadio?.equals("user") ? params.wheels?.equals("null") ? null : params.wheels : null
    params.wheelsGroup = params.wheelsRadio?.equals("group") ? params.wheelsGroup.equals("null") ? null : params.wheelsGroup : null
    params.buildStatus = BuildStatus.findById(uiStatus)?.workflowStatus

    VehicleCommand vehicleCommand = new VehicleCommand()
    bindData(vehicleCommand, params)
    vehicleCommand.description = params.description
    vehicleCommand.category = params.category
    vehicleCommand.messageSource = messageSource

    VehicleDetailCommand vehicleDetailCommand = new VehicleDetailCommand()
    bindData(vehicleDetailCommand, params)
    vehicleDetailCommand.messageSource = messageSource

    vehicleService.updateVehicle(vehicleInstance, params, vehicleCommand, vehicleDetailCommand)

    [redacted]
}
```

Modifying params

Use COs the wrong way

Pass params and COs to service

## How to detect it?

- Code-reviews

## How do we fix it?

- Always use Command Objects
- Never use/modify “params”

## Why does it matter?

- Know exactly the expected params
- Test data binding and params transformations

# Who needs Services if we have @Transactional Controllers?

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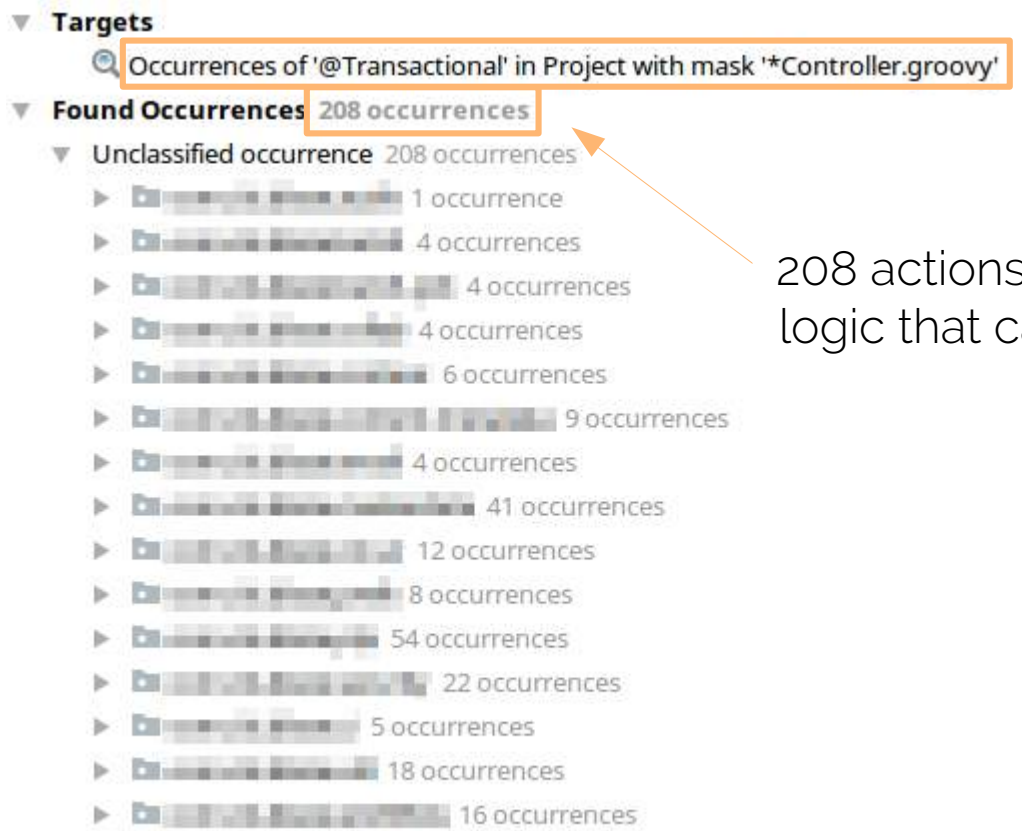



208 actions with business logic that can't be reused

## How to detect it?

- Code-reviews
- Codenarc

## How do we fix it?

- Put business logic on services
- If you need to add @Transactional in controller → Move to service

## Why does it matter?

- Reuse business logic if it's in Services
- HTTP Layer ≠ Business Logic

# Tests are for people who write bugs...

```
/* This is not used yet, should be fine but no tests */
def doStuff(final BookType bookTypeInstance, final Map incomingParams) {
    def results = [:]
```

# Tests are for people who write bugs...

```
/* This is not used yet, should be fine but no tests */
def doStuff(final BookType bookTypeInstance, final Map incomingParams) {
    def results = [:]
```

## How to detect it?

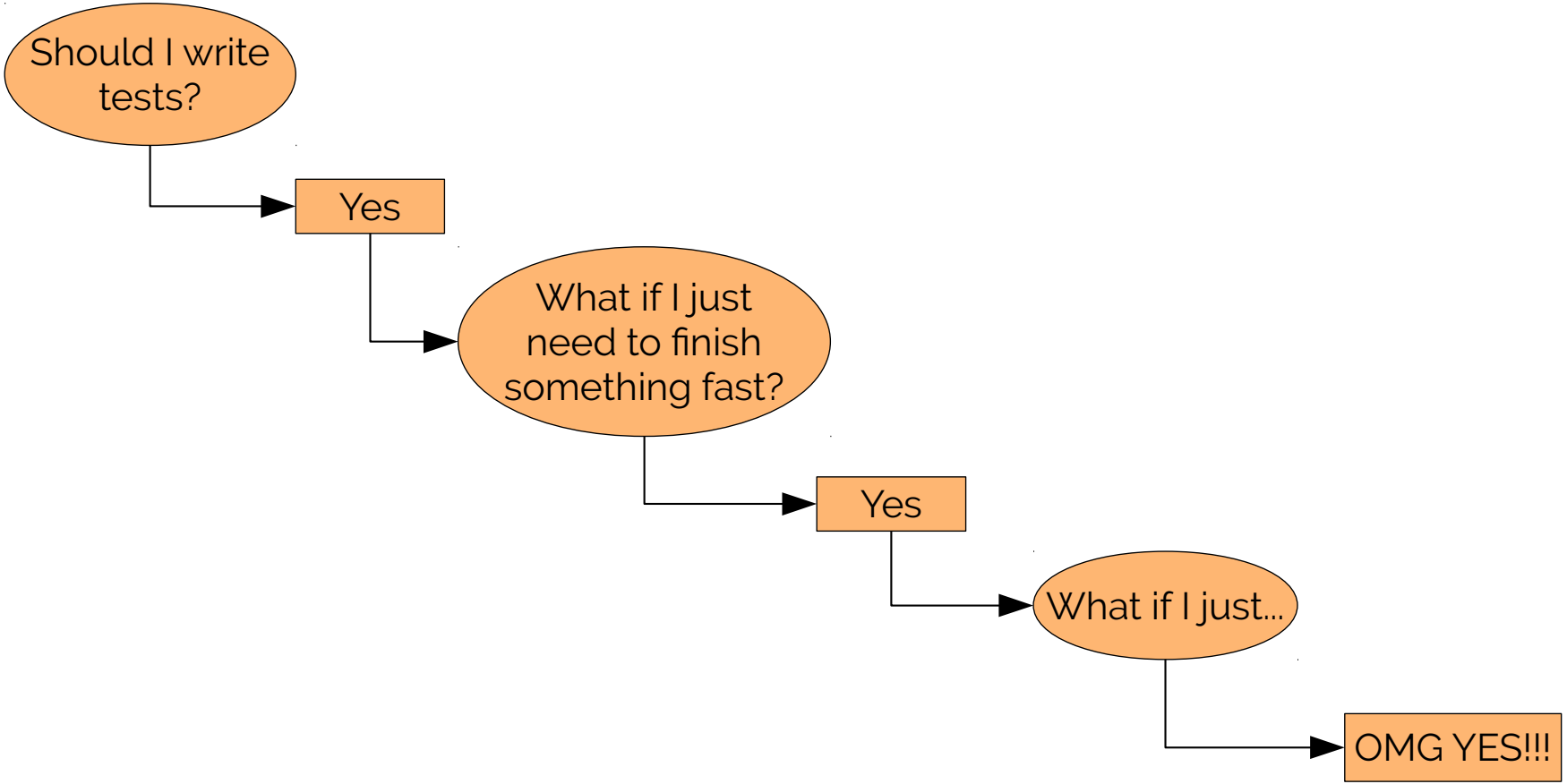
- Code-reviews
- Coverage reports

## How do we fix it?

- TDD
- Just don't push code without tests

## Why does it matter?

- Modifications, refactors, new features
- Sleep well at night


Should I write tests?
Yes
What if I just need to finish something fast?
Yes
What if I just...
OMG YES!!!

# Default UrlMappings because I'm too lazy...

```
class UrlMappings {

    static mappings = {
        "/$controller/$action?/$id?(.$format)?"{
            constraints {
                // apply constraints here
            }
        }

        "/"(view:"/index")
        "500"(view:'/error')
        "404"(view:'/notFound')
    }
}
```

# Default UrlMappings because I'm too lazy...

```
class UrlMappings {

    static mappings = {
        "/$controller/$action?/$id?(.$format)?"{
            constraints {
                // apply constraints here
            }
        }

        "/"(view:"/index")
        "500"(view:'/error')
        "404"(view:'/notFound')
    }
}
```

## How to detect it?

- Code-reviews

## How do we fix it?

- Delete the default mappings
- Create manually a mapping per controller action

## Why does it matter?

- Have in one place all urls in application

# The master piece

```
def getInsurancePolicyConditions(String bookType, List<Company> companyList, List<Department> departmentList, List<SubdivisionType> subdivisionTypesList, List<Region>
regionList, List<Division> divisionList) {
    Sql sql = Sql.newInstance(dataSource) as Sql
    def insurancePolicyList = InsurancePolicy.findAllByBookType(bookType);

    String insurancePolicies=insurancePolicyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String companies=companyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String departments=departmentList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String subdivisionTypes=subdivisionTypesList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String regions=regionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String divisions=divisionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String stmt="""select count(*) as counter from insurance_policy_condition where"""
    if(insurancePolicyList?.size()>0){
        stmt=stmt+""" and insurance_policy_id in (${insurancePolicies})"""
    }
    if(companyList?.size()>0){
        stmt=stmt+""" and company_id in (${companies})"""
    }
    if(departmentList?.size()>0){
        stmt=stmt+""" and department_id in (${departments})"""
    }
    if(subdivisionTypesList?.size()>0){
        stmt=stmt+""" and subdivision_type_id in (${subdivisionTypes})"""
    }
    if(regionList?.size()>0){
        stmt=stmt+""" and region_id in (${regions})"""
    }
    if(divisionList?.size()>0){
        stmt=stmt+""" and division_id in (${divisions})"""
    }
    stmt=stmt.replaceFirst("and","")
    def row

    if(stmt!=""){
        row = sql.firstRow(stmt)
        return row.counter
    }else{
        return 0
    }
}
```

# The master piece

```
def getInsurancePolicyConditions(String bookType, List<Company> companyList, List<Department> departmentList, List<SubdivisionType> subdivisionTypesList, List<Region>
regionList, List<Division> divisionList) {
    Sql sql = Sql.newInstance(dataSource) as Sql
    def insurancePolicyList = InsurancePolicy.findAllByBookType(bookType);

    String insurancePolicies=insurancePolicyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String companies=companyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String departments=departmentList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String subdivisionTypes=subdivisionTypesList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String regions=regionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String divisions=divisionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String stmt="""select count(*) as counter from insurance_policy_condition where"""
    if(insurancePolicyList?.size()>0){
        stmt=stmt+""" and insurance_policy_id in (${insurancePolicies})"""
    }
    if(companyList?.size()>0){
        stmt=stmt+""" and company_id in (${companies})"""
    }
    if(departmentList?.size()>0){
        stmt=stmt+""" and department_id in (${departments})"""
    }
    if(subdivisionTypesList?.size()>0){
        stmt=stmt+""" and subdivision_type_id in (${subdivisionTypes})"""
    }
    if(regionList?.size()>0){
        stmt=stmt+""" and region_id in (${regions})"""
    }
    if(divisionList?.size()>0){
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    }
    stmt=stmt.replaceFirst("and","")
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# The master piece

```
def getInsurancePolicyConditions(String bookType, List<Company> companyList, List<Department> departmentList, List<SubdivisionType> subdivisionTypesList, List<Region>
regionList, List<Division> divisionList) {
    Sql sql = Sql.newInstance(dataSource) as Sql
    def insurancePolicyList = InsurancePolicy.findAll...BookType(bookType);

    String insurancePolicies=insurancePolicyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String companies=companyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String departments=departmentList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String subdivisionTypes=subdivisionTypesList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String regions=regionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String divisions=divisionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String stmt="""select count(*) as counter from insurance_policy_condition where"""
    if(insurancePolicyList?.size()>0){
        stmt=stmt+""" and insurance_policy_id in (${insurancePolicies})"""
    }
    if(companyList?.size()>0){
        stmt=stmt+""" and company_id in (${companies})"""
    }
    if(departmentList?.size()>0){
        stmt=stmt+""" and department_id in (${departments})"""
    }
    if(subdivisionTypesList?.size()>0){
        stmt=stmt+""" and subdivision_type_id in (${subdivisionTypes})"""
    }
    if(regionList?.size()>0){
        stmt=stmt+""" and region_id in (${regions})"""
    }
    if(divisionList?.size()>0){
        stmt=stmt+""" and division_id in (${divisions})"""
    }
    stmt=stmt.replaceFirst("and","")
    def row

    if(stmt!=""){
        row = sql.firstRow(stmt)
        return row.counter
    }else{
        return 0
    }
}
```

Let's pretend we didn't see this signature...

# The master piece

```
def getInsurancePolicyConditions(String bookType, List<Company> companyList, List<Department> departmentList, List<SubdivisionType> subdivisionTypesList, List<Region>
regionList, List<Division> divisionList) {
    Sql sql = Sql.newInstance(dataSource) as Sql
    def insurancePolicyList = InsurancePolicy.findAllByBookType(bookType);

    String insurancePolicies=insurancePolicyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String companies=companyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String departments=departmentList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String subdivisionTypes=subdivisionTypesList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String regions=regionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String divisions=divisionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
    String stmt="""select count(*) as counter from insurance_policy_condition where"""
    if(insurancePolicyList?.size()>0){
        stmt=stmt+""" and insurance_policy_id in (${insurancePolicies})"""
    }
    if(companyList?.size()>0){
        stmt=stmt+""" and company_id in (${companies})"""
    }
    if(departmentList?.size()>0){
        stmt=stmt+""" and department_id in (${departments})"""
    }
    if(subdivisionTypesList?.size()>0){
        stmt=stmt+""" and subdivision_type_id in (${subdivisionTypes})"""
    }
    if(regionList?.size()>0){
        stmt=stmt+""" and region_id in (${regions})"""
    }
    if(divisionList?.size()>0){
        stmt=stmt+""" and division_id in (${divisions})"""
    }
    stmt=stmt.replaceFirst("and","")
    def row

    if(stmt!=""){
        row = sql.firstRow(stmt)
        return row.counter
    }else{
        return 0
    }
}
```

# The master piece

```
String companies =
    companyList?.
    id?.
    toString()?.
    replace("[","")?.
    replace("]","")?.
    replace(" ","")?.
    trim()
```

The result will be a String, at least is not def

# The master piece

```
String companies =
    companyList?.
    id?.
    toString()?.
    replace("[","")?.
    replace("]","")?.
    replace(" ","")?.
    trim()
```

List<Company> companyList
according method signature

# The master piece

```
String companies =
    companyList?.
    id?.
    toString()?.
    replace("[","")?.
    replace("]","")?.
    replace(" ","")?.
    trim()
```

Collect and extract the id of the domain objects

```
[2, 5, 7]
```

# The master piece

```
String companies =
    companyList?.
    id?.
    toString()?.
    replace("[","")?.
    replace("]","")?.
    replace(" ","")?.
    trim()
```

String representation of the list `"[2, 5, 7]"`

# The master piece

```
String companies =
    companyList?.
    id?.
    toString()?.
    replace("[","")?.
    replace("]","")?.
    replace(" ","")?.
    trim()
```

Remove [ "2, 5, 7]"

# The master piece

```
String companies =
    companyList?.
    id?.
    toString()?.
    replace("[","")?.
    replace("]","")?.
    replace(" ","")?.
    trim()
```

Remove ]

"2, 5, 7"

# The master piece

```
String companies =
    companyList?.
    id?.
    toString()?.
    replace("[","")?.
    replace("]","")?.
    replace(" ","")?.
    trim()
```

Remove “space”

`"2,5,7"`

# The master piece

```
String companies =
    companyList?.
    id?.
    toString()?.
    replace("[","")?.
    replace("]","")?.
    replace(" ","")?.
    trim()
```

Trim any space left

`"2,5,7"`

```
String insurancePolicies=insurancePolicyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
String companies=companyList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
String departments=departmentList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
String subdivisionTypes=subdivisionTypesList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
String regions=regionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
String divisions=divisionList?.id?.toString()?.replace("[","")?.replace("]","")?.replace(" ","")?.trim()
```

# The master piece

```
String stmt="""select count(*) as counter from insurance_policy_condition where"""
if(insurancePolicyList?.size()>0){
    stmt=stmt+""" and insurance_policy_id in (${insurancePolicies})"""
}
if(companyList?.size()>0){
    stmt=stmt+""" and company_id in (${companies})"""
}
if(departmentList?.size()>0){
    stmt=stmt+""" and department_id in (${departments})"""
}
if(subdivisionTypesList?.size(
    stmt=stmt+""" and subdivis                    visionTypes})"""
}
if(regionList?.size()>0){
    stmt=stmt+""" and region_id in (${regions})"""
}
if(divisionList?.size()>0){
    stmt=stmt+""" and division_id in (${divisions})"""
}
```

Multi-line string
because...

# The master piece

```
String stmt="""select count(*) as counter from insurance_policy_condition where"""
if(insurancePolicyList?.size()>0){
    stmt=stmt+""" and insurance_policy_id in (${insurancePolicies})"""
}
if(companyList?.size()>0){
    stmt=stmt+""" and company_id in (${companies})"""
}
if(departmentList?.size()>0){
    stmt=stmt+""" and department_id in (${departments})"""
}
if(subdivisionTypesList?.size()>0){
    stmt=stmt+""" and subdivision_type_id in (${subdivisionTypes})"""
}
if(regionList?.size()>0){
    stmt=stmt+""" and region_id in (${regions})"""
}
if(divisionList?.size()>0){
    stmt=stmt+""" and division_id in (${divisions})"""
}
```

# The master piece

Variable on method signature

```
if(companyList?.size()>0){
    stmt=stmt+""" and company_id in (${companies})"""
}
```

The string with the ids: `"2,5,7"`

Build the sql query concatenating strings

# The master piece

```
String stmt="""select count(*) as counter from insurance_policy_condition where"""
if(companyList?.size()>0){
    stmt=stmt+""" and company_id in (${companies})"""
}
stmt=stmt.replaceFirst("and","")
```

Remove the first “and”

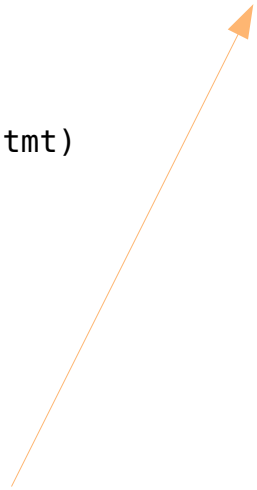
# The master piece

```
String stmt="""select count(*) as counter from insurance_policy_condition where"""

def row

if(stmt!=""){
    row = sql.firstRow(stmt)
    return row.counter
}else{
    return 0
}
```

"stmt" can't never be empty

# The master piece

```
String stmt="""select count(*) as counter from insurance_policy_condition where"""
...
def row

if(stmt!=""){
    row = sql.firstRow(stmt)
    return row.counter
}else{
    return 0
}
```



What happens if all lists in method signature are empty?

This is the query executed and it fails!

# The master piece: The solution

```
Integer getInsurancePolicyConditions(String bookType, List<Company> companyList, List<Department> departmentList,
List<SubdivisionType> subdivisionTypesList, List<Region> regionList, List<Division> divisionList) {

    List<InsurancePolicy> insurancePolicyList = InsurancePolicy.findAllByBookType(bookType)

    return InsurancePolicyCondition.createCriteria().count {
        if (insurancePolicyList) {
            'in' 'insurancePolicy', insurancePolicyList
        }
        if (companyList) {
            'in' 'company', companyList
        }
        if (departmentList) {
            'in' 'deparment', departmentList
        }
        if (subdivisionTypesList) {
            'in' 'subdivision', subdivisionTypesList
        }
        if (regionList) {
            'in' 'region', regionList
        }
        if (divisionList) {
            'in' 'division', divisionList
        }
    }
}
```

# The master piece: The solution

```
Integer getInsurancePolicyConditions(String bookType, List<Company> companyList, List<Department> departmentList,
List<SubdivisionType> subdivisionTypesList, List<Region> regionList, List<Division> divisionList) {

    List<InsurancePolicy> insurancePolicyList = InsurancePolicy.findAllByBookType(bookType)

    return InsurancePolicyCondition.createCriteria().count {
        if (insurancePolicyList) {
            'in' 'insurancePolicy', insurancePolicyList
        }
        if (companyList) {
            'in' 'company', companyList
        }
        if (departmentList) {
            'in' 'deparment', departmentList
        }
        if (subdivisionTypesList) {
            'in' 'subdivision', subdivisionTypesList
        }
        if (regionList) {
            'in' 'region', regionList
        }
        if (divisionList) {
            'in' 'division', divisionList
        }

    }
}
```

# The master piece: The solution

```
Integer getInsurancePolicyConditions(String bookType, List<Company> companyList, List<Department> departmentList,
List<SubdivisionType> subdivisionTypesList, List<Region> regionList, List<Division> divisionList) {

    List<InsurancePolicy> insurancePolicyList = InsurancePolicy.findAllByBookType(bookType)

    return InsurancePolicyCondition.createCriteria().count {
        if (insurancePolicyList) {
            'in' 'insurancePolicy', insurancePolicyList
        }
        if (companyList) {
            'in' 'company', companyList
        }
        if (departmentList) {
            'in' 'deparment', departmentList
        }
        if (subdivisionTypesList) {
            'in' 'subdivision', subdivisionTypesList
        }
        if (regionList) {
            'in' 'region', regionList
        }
        if (divisionList) {
            'in' 'division', divisionList
        }
    }
}
```

# The master piece: The solution

```
Integer getInsurancePolicyConditions(String bookType, List<Company> companyList, List<Department> departmentList,
List<SubdivisionType> subdivisionTypesList, List<Region> regionList, List<Division> divisionList) {

    List<InsurancePolicy> insurancePolicyList = InsurancePolicy.findAllByBookType(bookType)

    return InsurancePolicyCondition.createCriteria().count {
        if (insurancePolicyList) {
            'in' 'insurancePolicy', insurancePolicyList
        }
        if (companyList) {
            'in' 'company', companyList
        }
        if (departmentList) {
            'in' 'deparment', departmentList
        }
        if (subdivisionTypesList) {
            'in' 'subdivision', subdivisionTypesList
        }
        if (regionList) {
            'in' 'region', regionList
        }
        if (divisionList) {
            'in' 'division', divisionList
        }
    }
}
```

# The master piece: The solution

```
Integer getInsurancePolicyConditions(String bookType, List<Company> companyList, List<Department> departmentList,
List<SubdivisionType> subdivisionTypesList, List<Region> regionList, List<Division> divisionList) {

    List<InsurancePolicy> insurancePolicyList = InsurancePolicy.findAllByBookType(bookType)

    return InsurancePolicyCondition.createCriteria().count {
        if (insurancePolicyList) {
            'in' 'insurancePolicy', insurancePolicyList
        }
        if (companyList) {
            'in' 'company', companyList
        }
        if (departmentList) {
            'in' 'deparment', departmentList
        }
        if (subdivisionTypesList) {
            'in' 'subdivision', subdivisionTypesList
        }
        if (regionList) {
            'in' 'region', regionList
        }
        if (divisionList) {
            'in' 'division', divisionList
        }
    }
}
```

Just using GORM the right way!

## How to detect it?

- Code-reviews

## How do we fix it?

- Teach developers their tools, languages,...
- Mentoring
- Buy books, send them to conferences,...

## Why does it matter?

- Write clean and maintainable code
- Help your team grow

*With great power comes great responsibility*

## Do you want to learn more?


- http://guides.grails.org/
- http://grails.org/community.html
- https://grails.org/documentation.html

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