Code Smells

Nom secteur

TRIANON
Compensation
& Benefits Management

Code smells

Définition

- Les code smells violent des principles de development et diminuent la qualité du code.
- Ils rendent le code plus vulnerable aux bugs
- Ils peuvent augmenter le risque d'erreurs
- Ils ajoutent de la dette technique

Code Smells

Exemples

- Bloaters
  - Large classes
  - Long methods
  - Primitive obsession
  - Long parameter list
- Dispensables
  - Excessive comments
  - Duplicate code
  - Dead code
- Couplers
  - Feature envy
  - Message chains
  - Middle Man

Code Smells

Refactoring – Long Method, Duplicate code…

Extract Method

```
void printOwing() {
  printBanner();

  // Print details.
  System.out.println("name: " + name);
  System.out.println("amount: " + getOutstanding());
}
```

```
void printOwing() {
  printBanner();
  printDetails(getOutstanding());
}

void printDetails(double outstanding) {
  System.out.println("name: " + name);
  System.out.println("amount: " + outstanding);
}
```

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Refactoring – Long parameter list

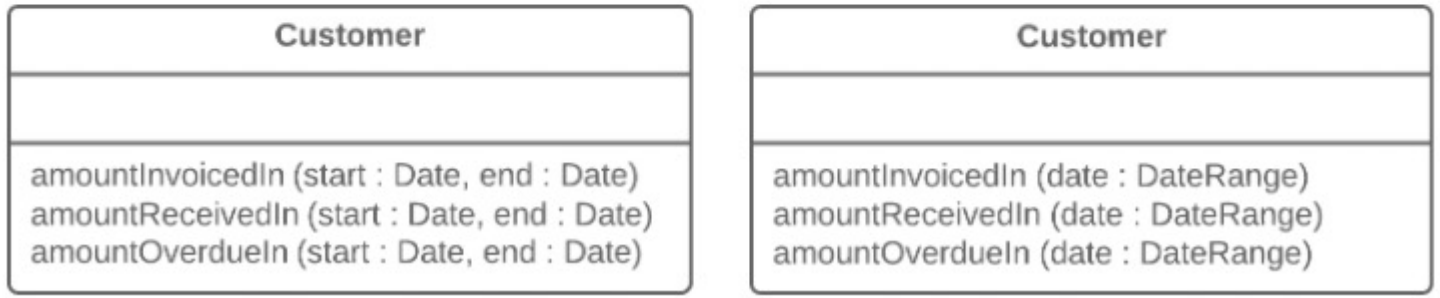
Introduce Parameter Object

Problem

Your methods contain a repeating group of parameters.

Solution

Replace these parameters with an object.



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Refactoring – Dead Code

- Utiliser un IDE qui permet de détecter le code non utilisé
- En TDD possibilité de supprimer les parties de code non couverte par les tests (code coverage)

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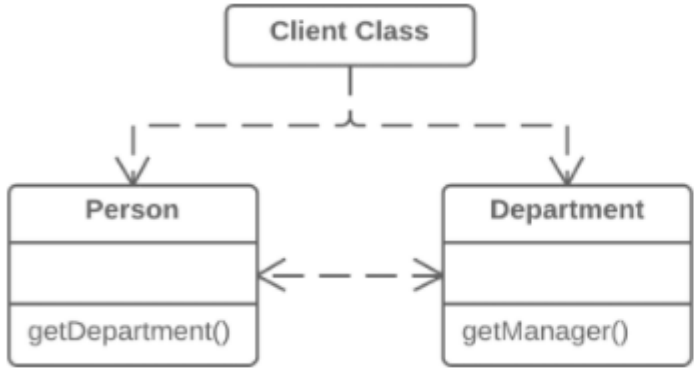
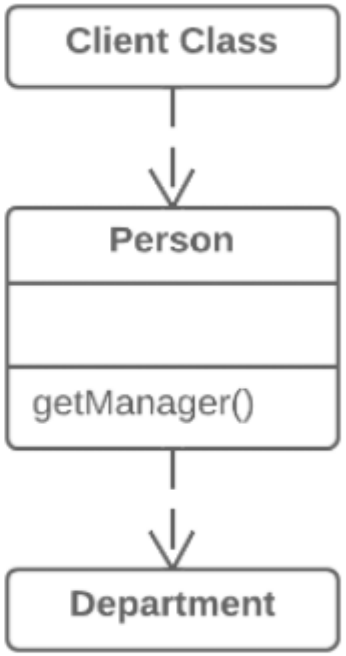
Refactoring – Message Chain

Hide delegate





Client1

```
Personne.GetDepartement().GetManager();
```

Client2

```
Personne.GetManager();
```

Code smells

Refactoring Complex/Long switch statements

Replace Conditional with Polymorphism

```
public class Bird
{
  // ...
  public double GetSpeed()
  {
    switch (type)
    {
      case EUROPEAN:
        return GetBaseSpeed();
      case AFRICAN:
        return GetBaseSpeed() - GetLoadFa
      case NORWEGIAN_BLUE:
        return isNailed ? 0 : GetBaseSpee
      default:
        throw new Exception("Should be un
    }
  }
}
```

```
public abstract class Bird
{
  // ...
  public abstract double GetSpeed();
}

class European: Bird
{
  public override double GetSpeed()
  {
    return GetBaseSpeed();
  }
}
class African: Bird
{
  public override double GetSpeed()
  {
    return GetBaseSpeed() - GetLoadFactor
  }
}
class NorwegianBlue: Bird
{
  public override double GetSpeed()
  {
    return isNailed ? 0 : GetBaseSpeed(vo
  }
}

// Somewhere in client code
speed = bird.GetSpeed();
```

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Quelques outils

- Designite https://www.designite-tools.com/features/
- SonarQube https://www.sonarqube.org/
- SonarLint https://www.sonarlint.org/