Tools for Bad Smell Detection

Eduardo Figueiredo

http://www.dcc.ufmg.br/~figueiredo
Tools

- JDeodorant
- inFusion
- Stench Blossom
- PMD
JDeodorant

http://jdeodorant.com/
JDeodorant

- **Highlights**
  - Open source project
  - Analyzes Java code
  - Eclipse plugin

- **Bad smells**
  - Feature Envy
  - Long Method
  - God Class
Refactorings are recommended for each detected bad smell instance
Screenshot: Feature Envy
http://www.intooitus.com/products/infusion
inFusion

- **Highlights**
  - It supports C, C++ and Java
  - It includes visualization (polymetric views)

- **Bad smells**
  - Duplicated code
  - Feature Envy
  - God Class, etc.
Screenshot: Bad Smells

**Quality Deficit Index for jhotdraw60b1: 1.4**

**Change** defect: 1.4

**Reuse** defect: 1.3

**Understand** defect: 1.3

**Size & Complexity** defect: 0.8

**Encapsulation** defect: 1.1

**Coupling** defect: 2.8

**Hierarchies** defect: 0.9

**Cohesion** defect: 0.8

**Size & Complexity of system jhotdraw60b1**

- **Design Flaw**
  - SAP Breakers (3 subsystems)
  - Tradition Breaker (4 classes)
  - Data Clumps (12 methods)
  - Schizophrenic Class (8 classes)
  - Refused Parent Bequest (1 class)
  - Blob Operation (2 methods)
  - Intensive Coupling (1 method)

- **Deficit Impact**
  - 15
  - 12
  - 12
  - 8
  - 6
  - 4
  - 2

**Bad smells**
Screenshot: Visualizations
Stench Blossom

http://multiview.cs.pdx.edu/refactoring/smells/
Stench Blossom

- **Highlights**
  - Open source project
  - Analyzes Java code
  - Eclipse plugin
  - Detect smells while coding

- **Bad smells**
  - Feature Envy
  - Data Clumps
  - Long Method, etc.
```java
if ( Arrays.equals( router_node_id, node_id ) ) {  

    // we should never become dead ourselves as 
    // checking that stored values are close en 
    // dead we don't return ourselves and it al

    Debug.out( "DHTRouter: contactDead called on ro 

    return( local_contact );
}

try{
    try{
        try{
            this_mon.enter();

            consecutive_dead++;
            /*
            if (+ consecutive_dead is @M consecutive d
```
Screenshot: Feature Envy
PMD

- Highlights
  - Open source project
  - It supports Java, JavaScript, and others
  - PMD is integrated with IDE, like Eclipse

- Bad smells
  - God Class
  - Duplicated code
  - Long Parameter List, etc.
Screenshot: Rule Editor
Websites of the Tools