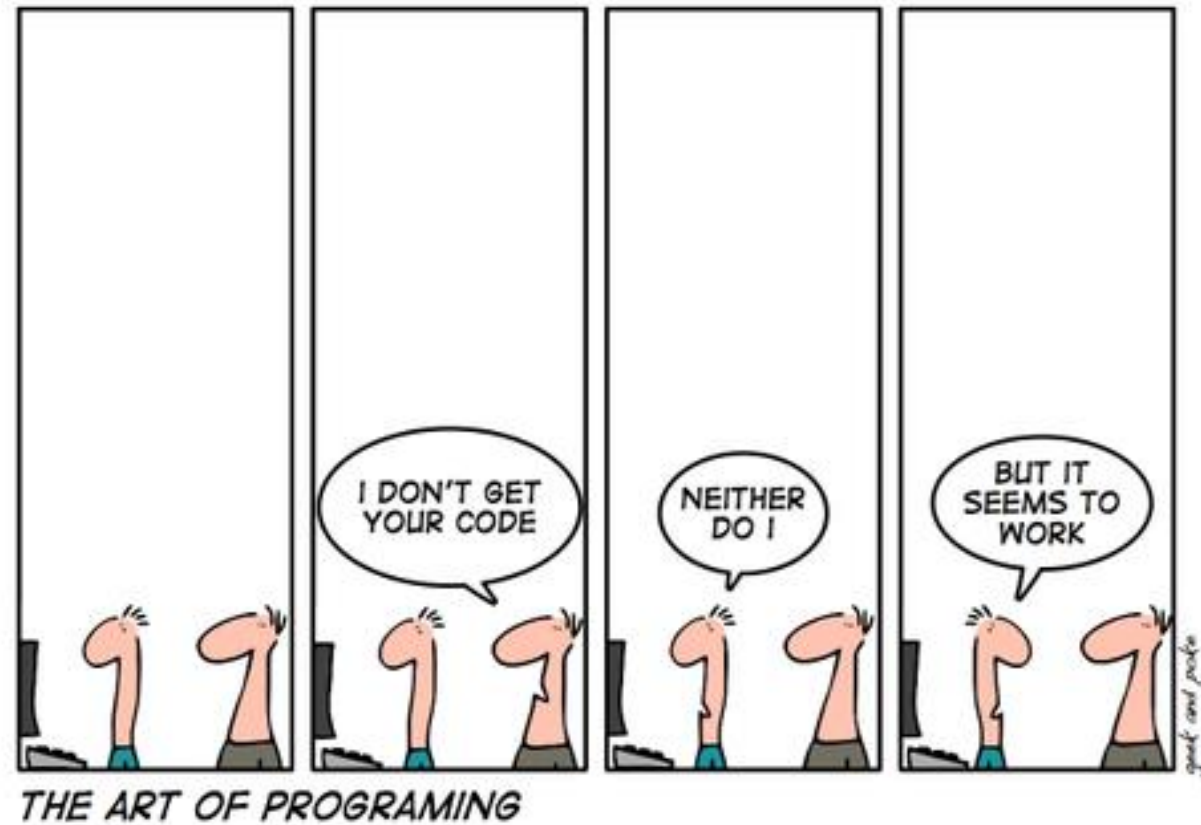


SonarQube in action

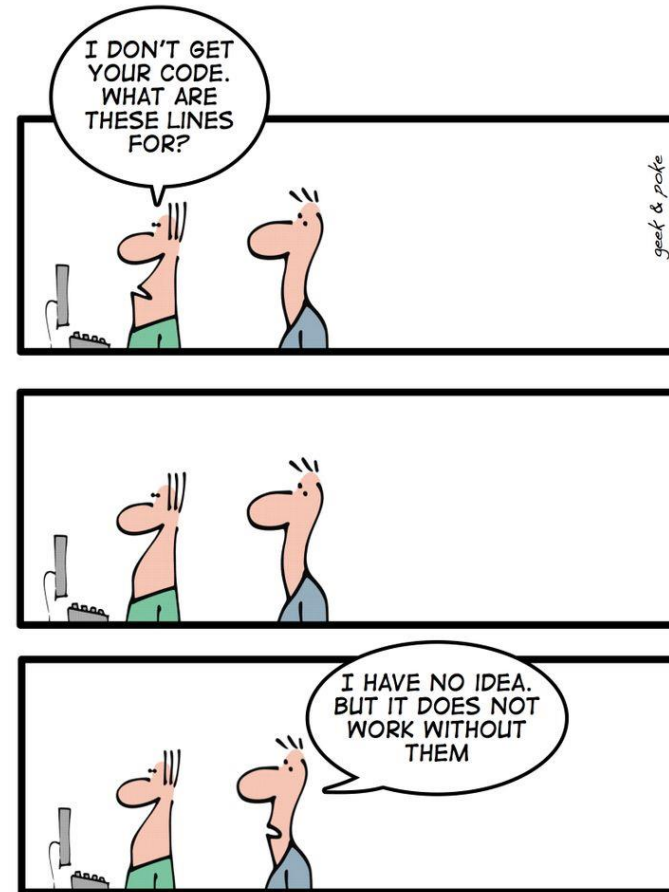
GILLES QUERRET • RIVERSIDE SOFTWARE

A solid orange horizontal bar at the bottom of the slide.

Code quality

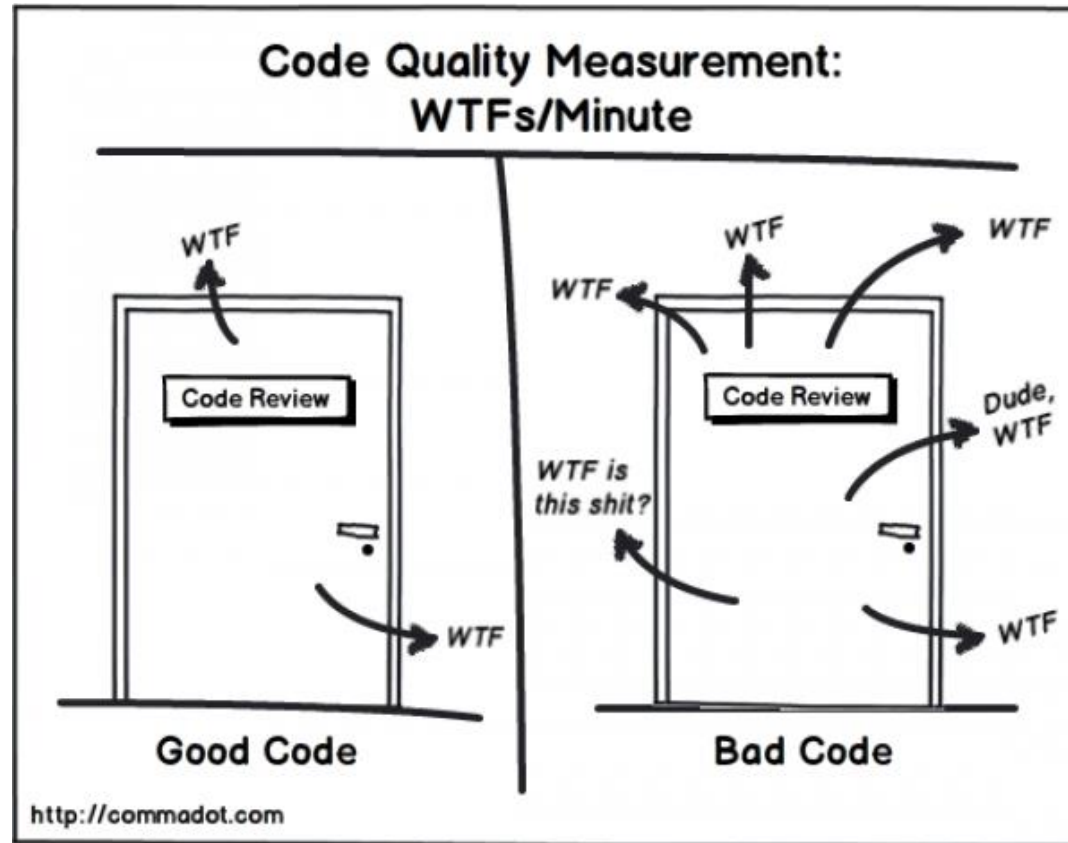


Code quality



THE ART OF PROGRAMMING - PART 2: KISS

Code quality

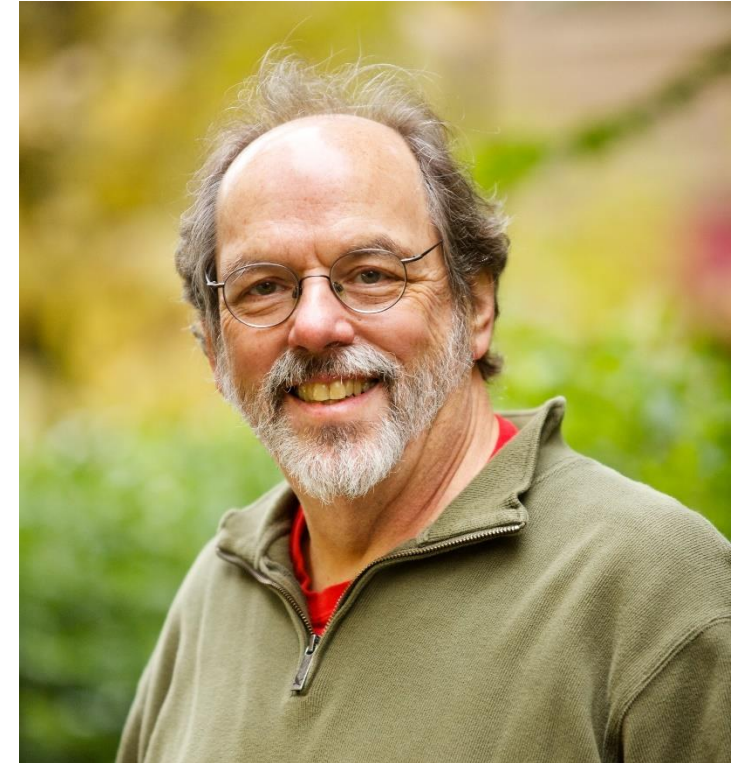


Technical debt

Term coined by Ward Cunningham in 1992

Metaphor around the time it takes to work with low quality code :

- If technical debt is high, you'll pay high interest (in terms of time spent) each time you work on the project
- Pay down the principal by refactoring code
- Increase the debt if you add quick and dirty code

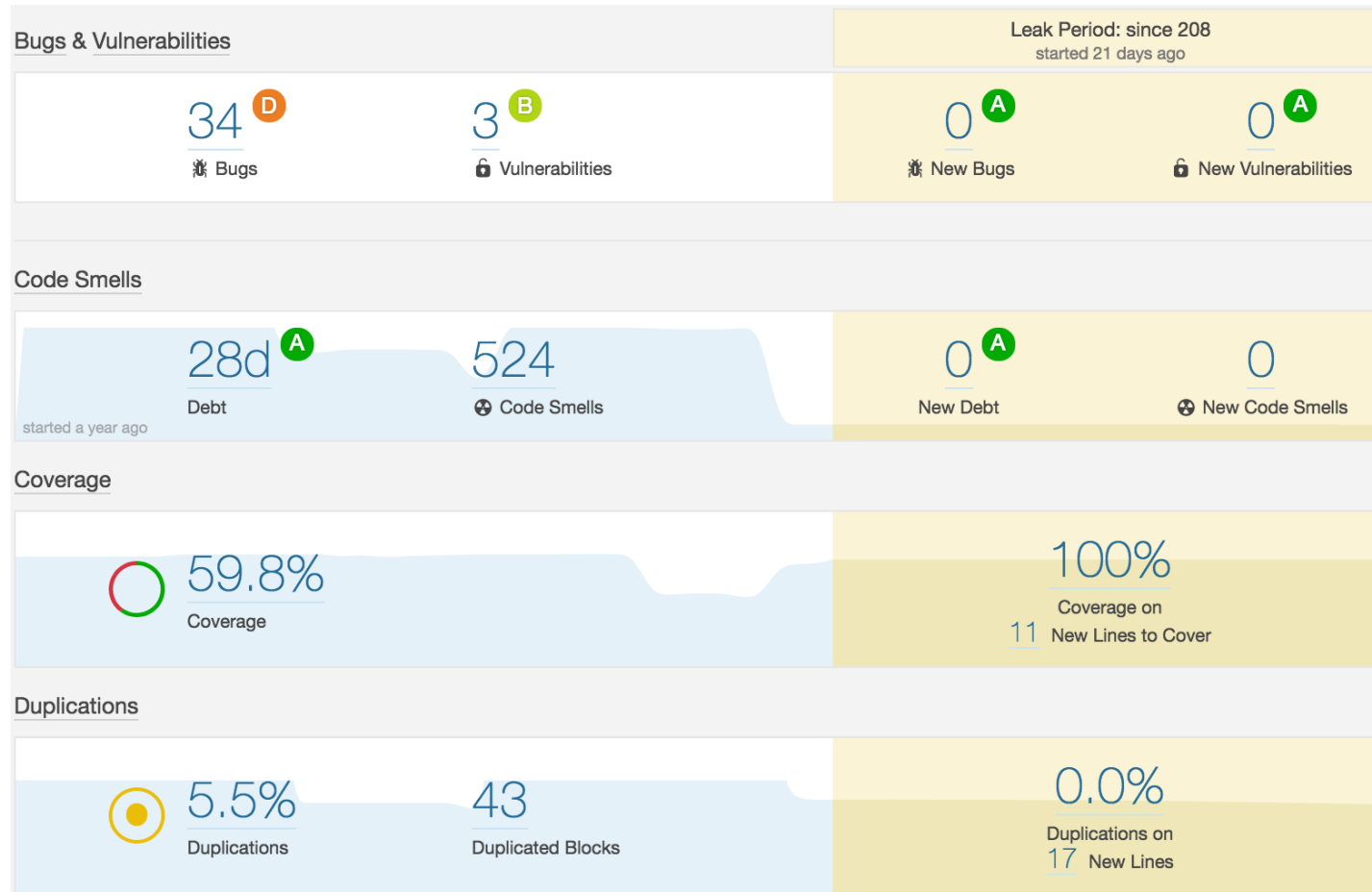


Audience

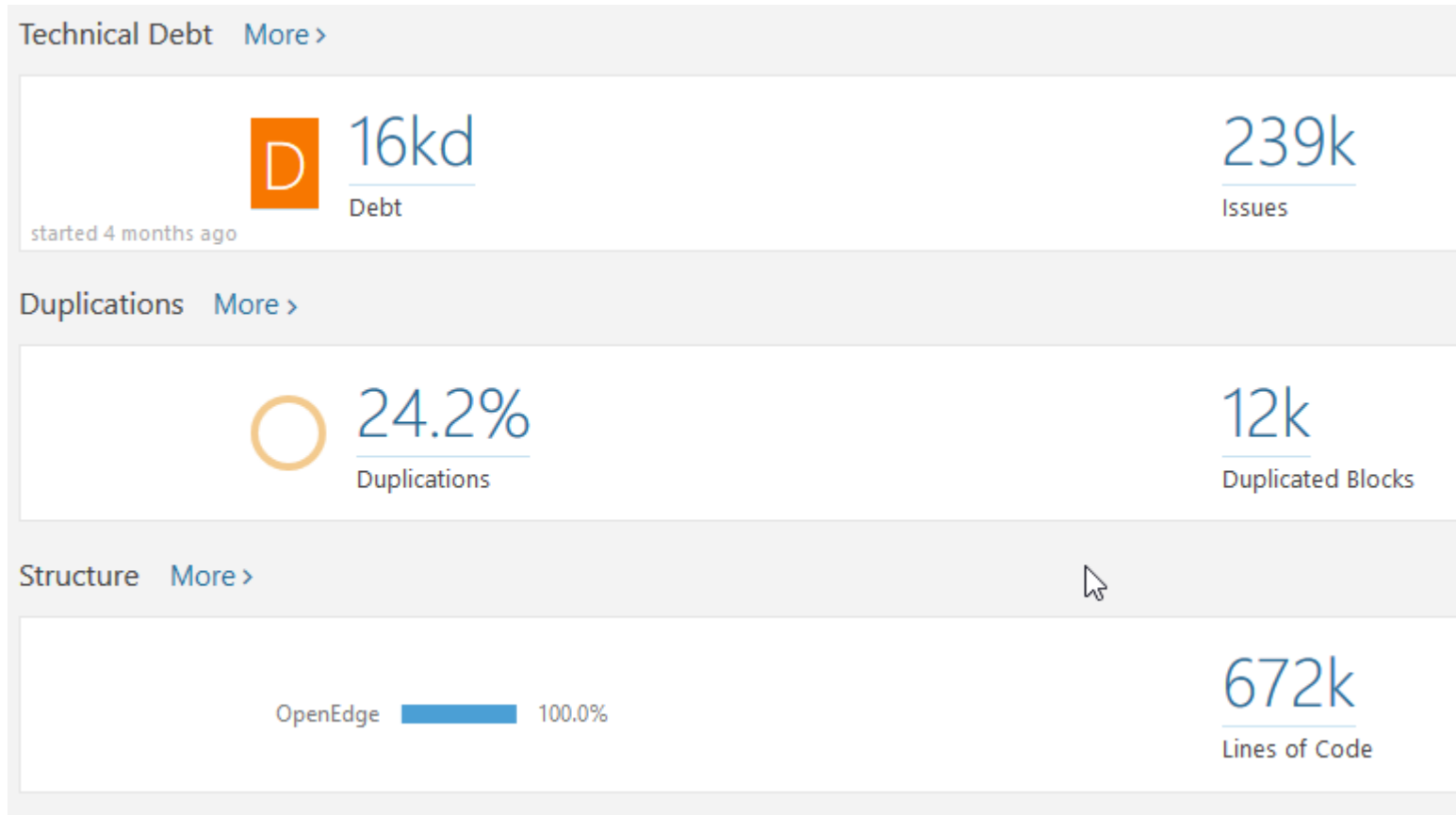




-
- Code quality management platform
 - Open source
 - Extensible
 - Over 20 languages (from COBOL to Javascript through C++)



First analysis



So what can I do ?



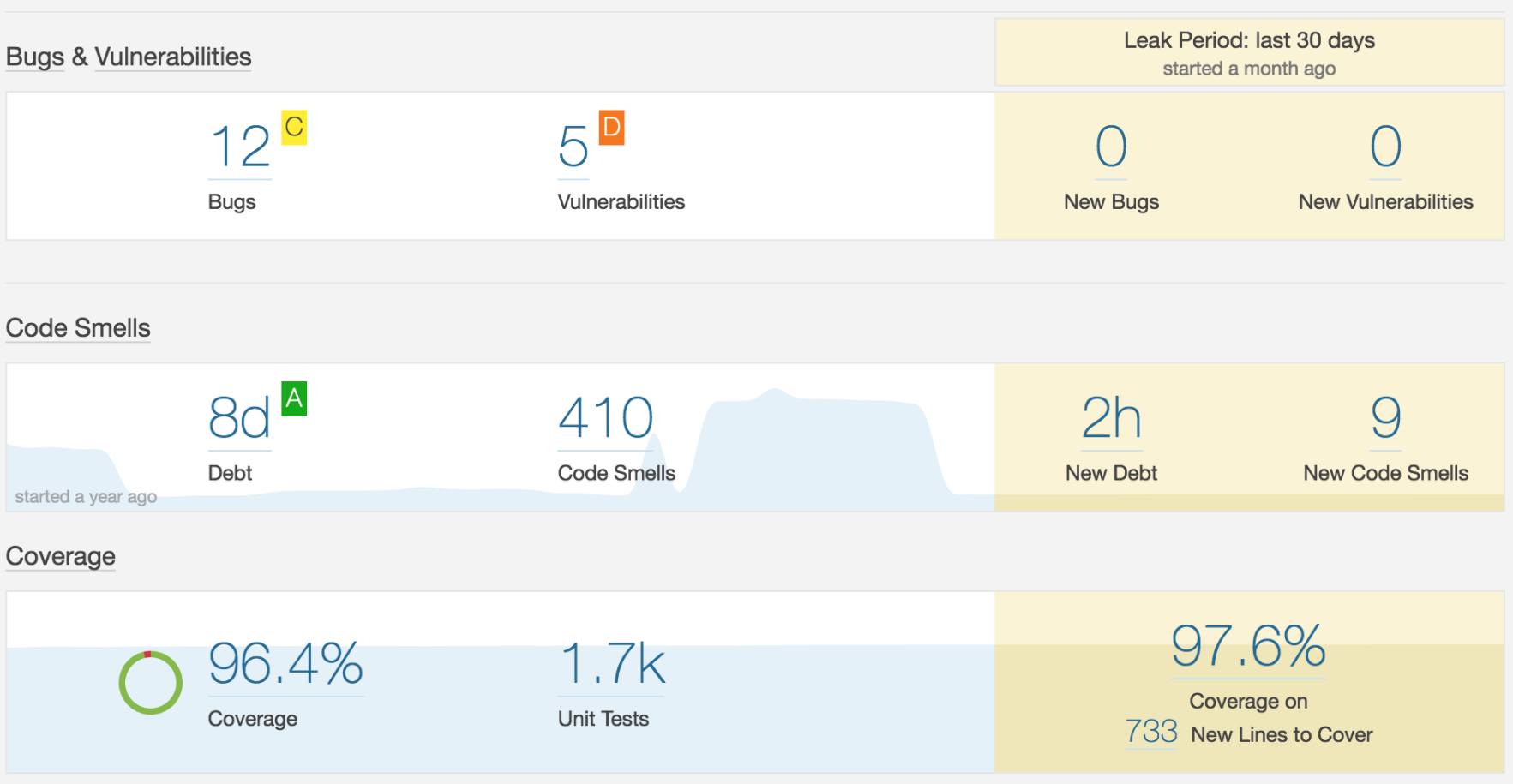
So what can I do ?



So what can I do ?



Fix the leak



Quality gates

Quality Gate

Passed

Metric	Over Leak Period	Operator	Warning	Error		
Blocker Issues	<input type="checkbox"/>	is greater than ▾	<input type="text"/>	<input type="text" value="0"/>	Update	Delete
Coverage on New Code	Always	is less than ▾	<input type="text"/>	<input type="text" value="80"/>	Update	Delete
Critical Issues	<input type="checkbox"/>	is greater than ▾	<input type="text"/>	<input type="text" value="0"/>	Update	Delete
Open Issues	<input type="checkbox"/>	is greater than ▾	<input type="text" value="0"/>	<input type="text"/>	Update	Delete
Reopened Issues	<input type="checkbox"/>	is greater than ▾	<input type="text" value="0"/>	<input type="text"/>	Update	Delete
Skipped Unit Tests	<input type="checkbox"/>	is greater than ▾	<input type="text" value="0"/>	<input type="text"/>	Update	Delete
Unit Test Errors	<input type="checkbox"/>	is greater than ▾	<input type="text"/>	<input type="text" value="0"/>	Update	Delete
Unit Test Failures	<input type="checkbox"/>	is greater than ▾	<input type="text"/>	<input type="text" value="0"/>	Update	Delete

Pull request analysis

When working with GitHub or BitBucket server, SonarQube can push comments on the pull request

Other SCM users have to rely on the usual leak period

OpenEdge plugin

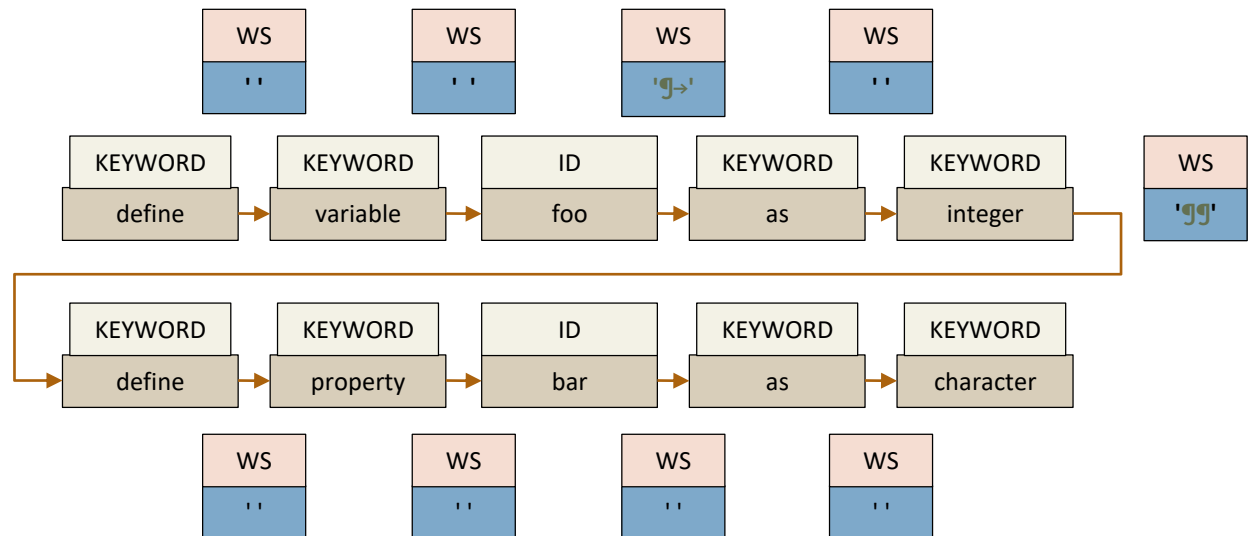
- Open source plugin written by Riverside Software
- Common metrics (LOC, comments, complexity, ...)
- Code duplication
- Code coverage
- XREF and code parsing (based on proparse, much faster than Prolint)
- Extensible

Lexer and parsers

- KEYWORD : 'define' | 'variable' | 'property' | 'as' | 'character' | 'integer'
- WS : (' ' | '\t' | '\n')* -> HIDDEN
- ID : [a-zA-z]*
- EOS : '.'

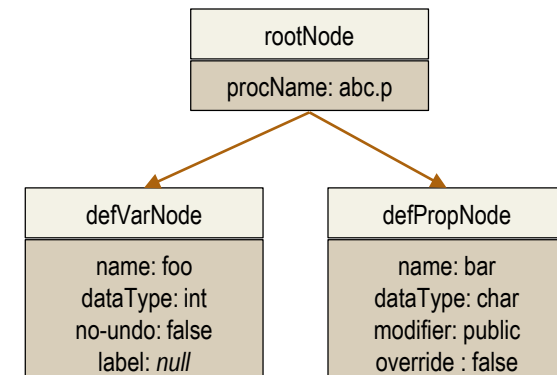
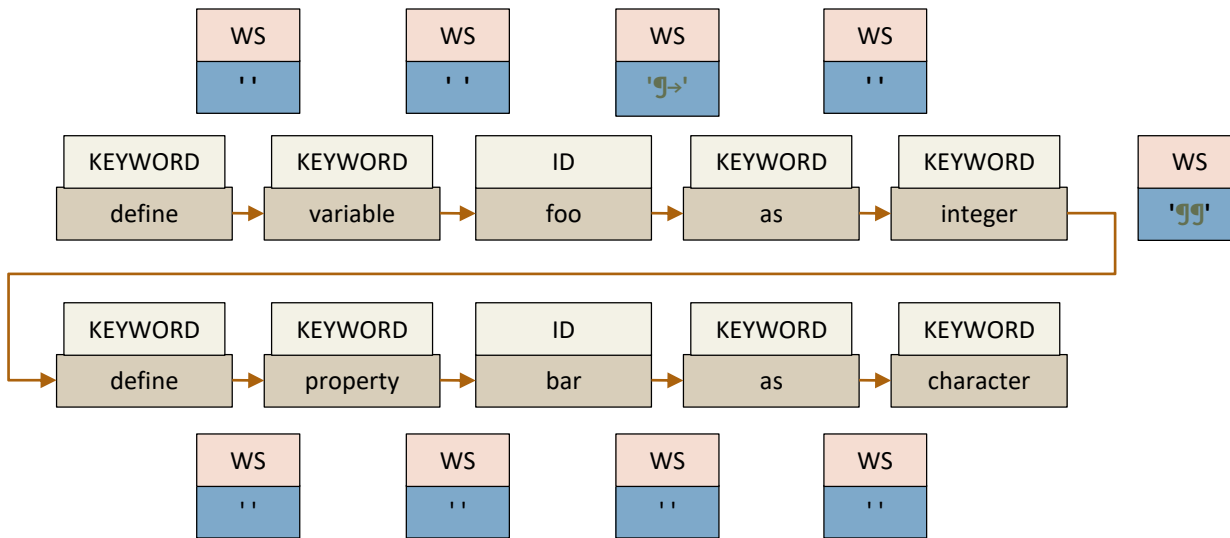
```
define_variable_foo  
→ as_integer.
```

```
define_property_bar_as_character.
```

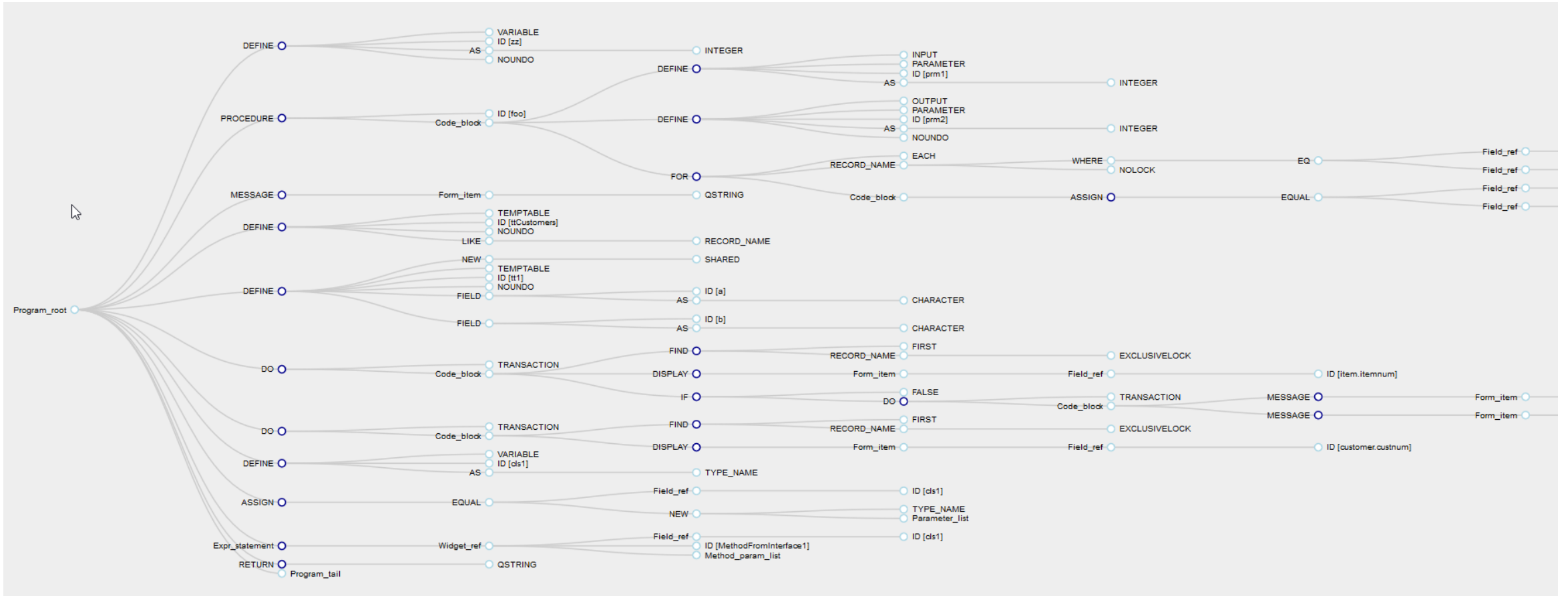


Lexer and parsers

- defVar: KW_DEFINE KW_VARIABLE ID KW_AS DATATYPE KW_NO_UNDO? (KW_LABEL QUOTED_STRING)?
- defProp: KW_DEFINE (KW_PUBLIC | KW_PROTECTED | KW_PRIVATE)? (KW_STATIC | KW_ABSTRACT)? KW_OVERRIDE? KW_PROPERTY ID KW_AS (DATATYPE | CLASSNAME)



Lexer and parsers



OpenEdge plugin - Requirements

- Automated build process
 - PCT is strongly recommended
- Analysis triggered by Java
 - Continuous integration server is strongly recommended

OpenEdge plugin - Integration

SonarTech commented on the diff 40 minutes ago

```
...nar/server/util/MetricWorkDurationTypeValidation.java
```

```
30 + private final Durations durations;
31 +
32 + public MetricWorkDurationTypeValidation(Durations durations) {
33 +     this.durations = durations;
34 + }
35 +
36 + @Override
37 + public String key() {
38 +     return PropertyType.METRIC_WORK_DURATION.name();
39 + }
40 +
41 + @Override
42 + public void validate(String value, @Nullable List<String> options) {
43 +     try {
44 +         durations.decode(value);
45 +     } catch (IllegalArgumentException e) {
```

SonarTech added a note 40 minutes ago

Either log or rethrow this exception.

Add a line note

SonarTech commented 40 minutes ago

SonarCube analysis reported 7 issues:

- 3 critical
- 3 major
- 1 minor

Watch the comments in this conversation to review them.

Add more commits by pushing to the `feature/ws_measures_create` branch on `SonarSource/sonarcube`.

Failed — 1 errored and 2 successful checks

- sonarcube** — SonarCube reported 7 issues, with 3 critical
- continuous-integration/travis-ci/push** — The Travis CI build passed
- continuous-integration/travis-ci/pr** — The Travis CI build passed

Merge with caution!

You can also merge branches on the command line.

Merge pull request

Project 1 commons-lang

Pull request #1 OPEN develop → trunk Merge Decline Edit

Develop Overview Diff Commits

Details

Issues Merging the Pull Request

Sonar for Stash detected violations against the configured thresholds

- Technical debt: Max. increase allowed: 1%, actual 9%
- Sonar issues with severity >= MAJOR: Max. increase allowed: 3, actual 25
- Duplicate code lines: Max. increase allowed: 1%, actual 6%
- Test coverage: Min. coverage threshold: 99%, actual 92.6%

Please go through the code, fix the marked violations, push the changes and try to merge again.

Close

Metric	develop	trunk
Tech. debt	63d	58d
All issues	2325	2288
Dupl. lines	1245	1178
Coverage	92.6%	92.8%

Unwatch this pull request

Learn more

Activity

What do you want to say?

Administrator commented on a file 1 hour ago

```
src / main / java / org / apache / commons / lang3 / builder / EqualsBuilder.java
```

Progress Developer Studio

The screenshot displays the Progress Developer Studio interface. On the left, the Project Explorer shows a project named 'sample' with subfolders 'dupl', 'excl', and 'inc', and files including 'acquisition.bmp', 'test1.p', 'test1.t', 'test2.p', 'test3.p', 'test4.p', 'test5.p', 'test6.p', 'test7.p', 'test8.p', 'test9.p', and 'varusade01.p'. Below it, the Outline view shows a tree structure with 'Includes', 'Variables' (containing 'CtrlFrame - WIDGET-HANDLE', 'foobar - CHARACTER', 'obj - progress.lang.object', 'obj2 - COM-HANDLE', and 'zz - INTEGER'), 'Widgets', 'TempTables', 'ProDataSets', 'Buffers', and 'Procedures'.

The main editor window shows the code for 'test1.p'. The code includes a variable definition, comments, a procedure 'foo', a 'for each' loop, and a shared temp-table definition. The code is as follows:

```
def var zz as int no-undo.  
  
/* Some comments  
Et des caractères accentués  
<b>Vérification échappement code HTML</b>  
&lt;b&gt;Deuxième vérification&lt;/b&gt;  
*/  
  
procedure foo :  
  def input param prm1 as int.  
  def output param prm2 as int no-undo.  
  
  for each customer where customer.custnum eq prm1 no-undo  
    prm2 = custnum.  
  end.  
  
end procedure.  
  
define shared temp-table tt1 no-undo  
  field a as char  
  field b as char.  
define shared buffer b1 for tt1.  
define shared dataset ds1 for b1
```

At the bottom, the Console window shows the output of a SonarLint analysis:

```
SonarLint Console  
SonarLint analysis of file /SonarTestProject/src/procedures  
Found 16 issue(s)
```

Demo

Questions ?

Reference ?

- Sonar Source : <http://www.sonarsource.com>
- Sonar OE plugin demo site : <http://sonar.riverside-software.fr>

- Riverside Software : <http://riverside-software.fr>
- Contact : contact@riverside-software.fr