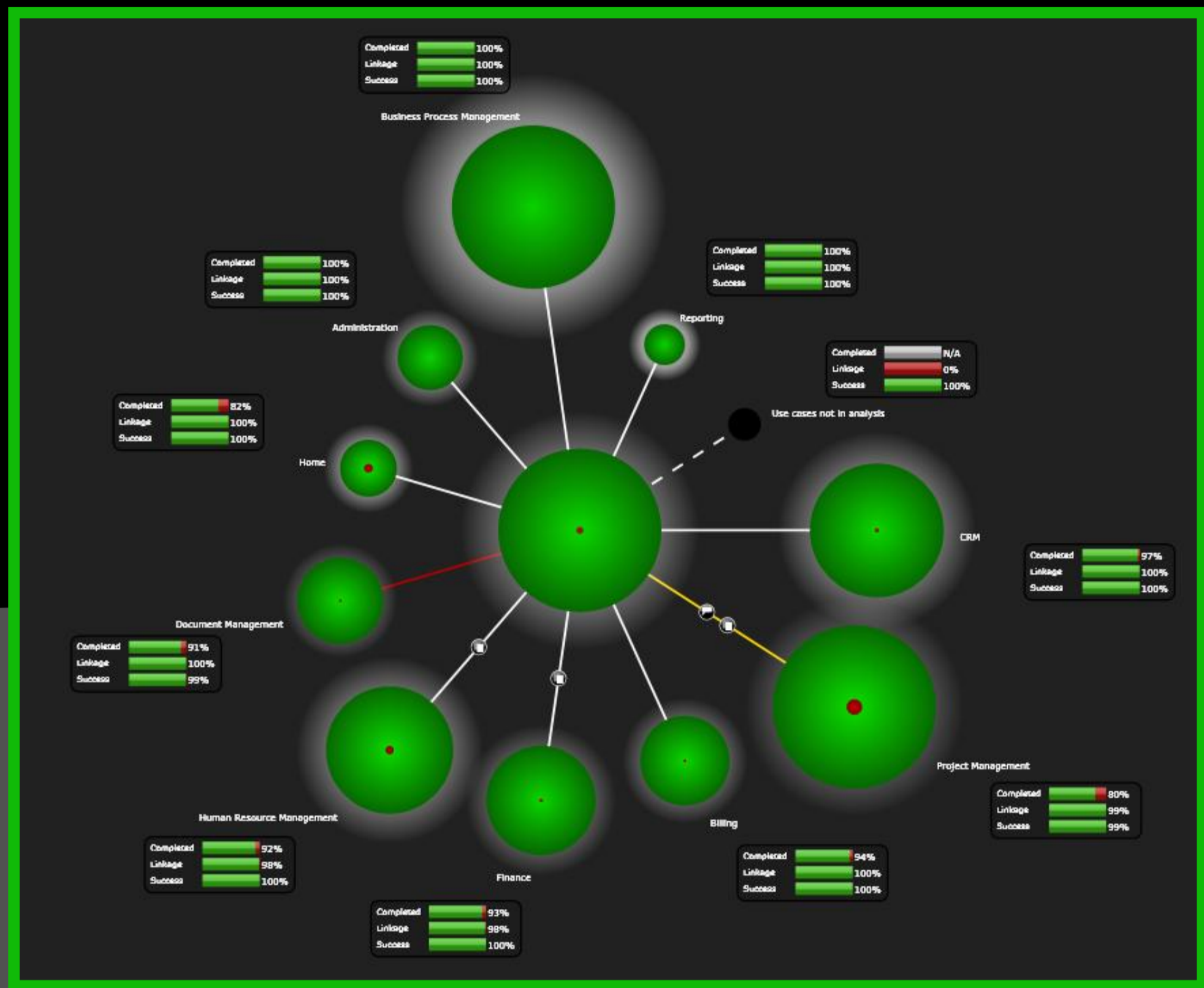


# Substring Hole Analysis

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## Coverage of a large system



[http://davybrion.com/blog/wp-content/uploads/2008/11/genesis\\_project\\_overview.png](http://davybrion.com/blog/wp-content/uploads/2008/11/genesis_project_overview.png)

2

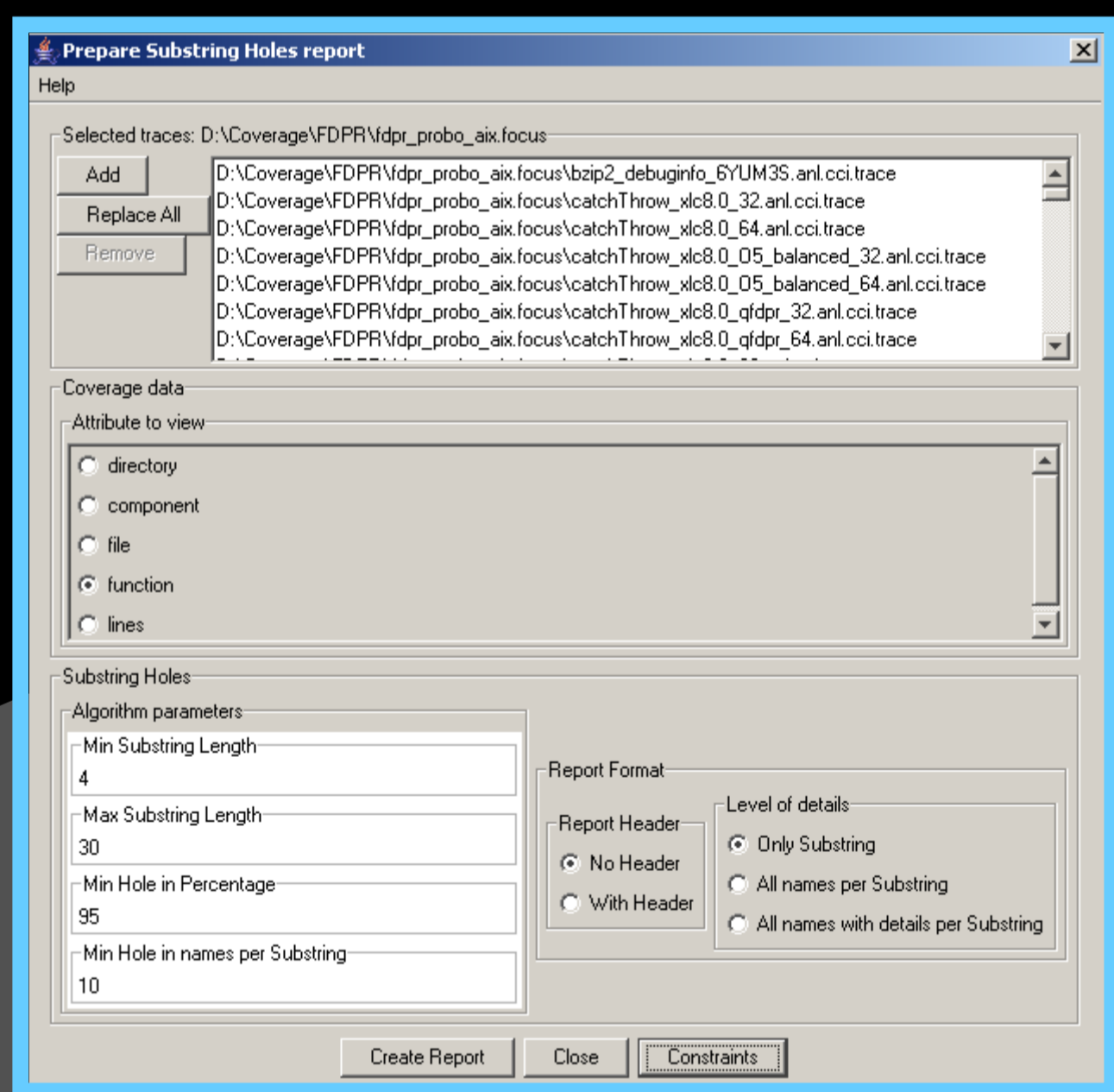
## What is a semantic hole?

A hole is a substring that exists in many functions/file names for which there is poor coverage

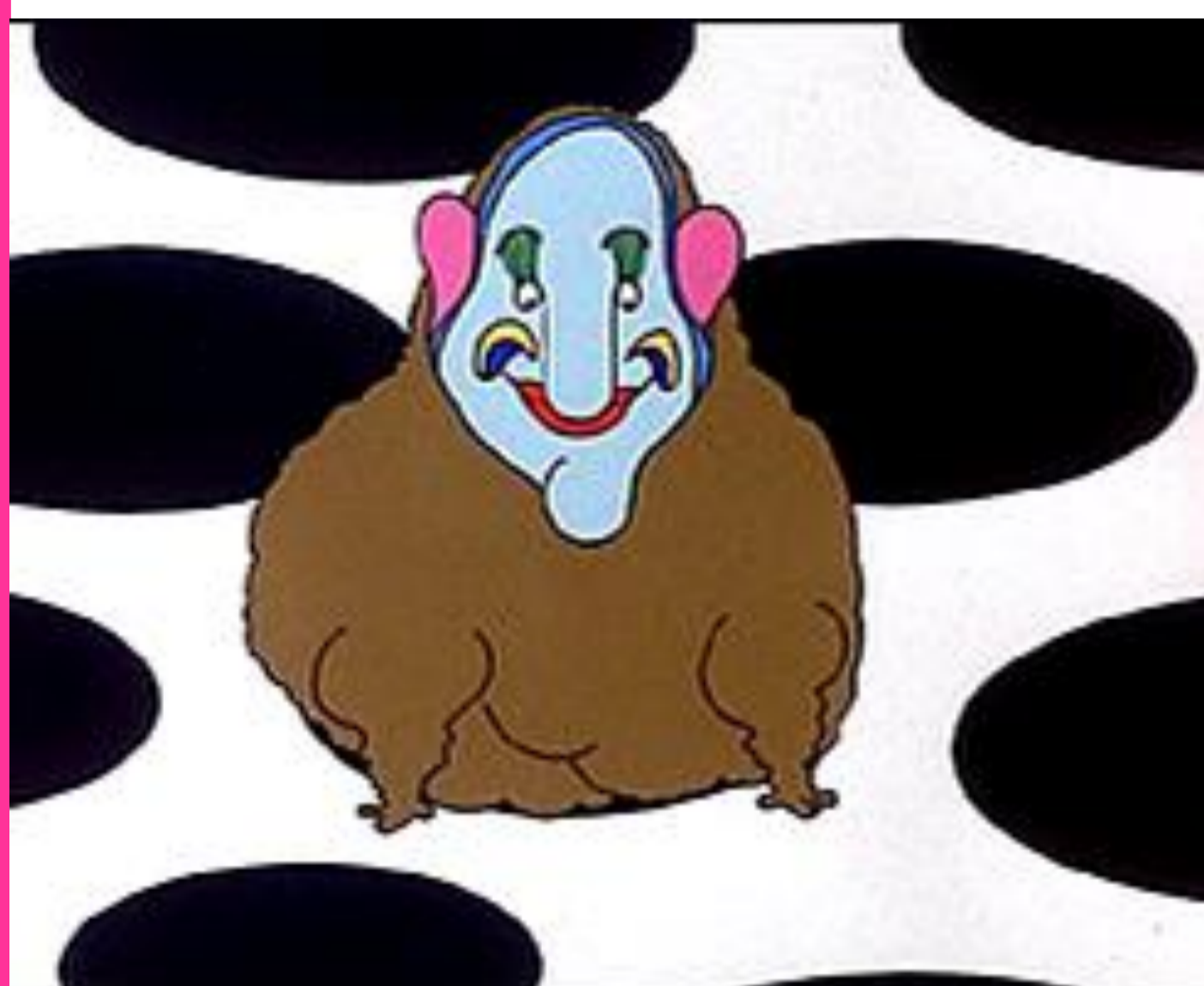
```
Substring Holes Report - [D:\Coverage\FDPR\fdpr_probo_aks\focus\SubstringHolesSubDetailsAll2009-5-7-2-27-53.txt]
Name: Courier New
Size: 11
holePercentage: 95.00 sort:SOCOV_TOTAL_LENGTH similarityPercentage: 50.00 uncoverCoefficient: 2.00 power: 0.5
minSubStringLength: 4 maxSubStringLength: 30 minTotal: 10
Total Uncovered Sub-string Components
1 13575 13556 AbsAsm: (other)
2
3 Uncovered
4
5
6
7 Assembler/AbsAsm other AbsAsm.h AbsAsm:AbsoluteTag::getClassTypeName()-const
8 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbsoluteTag::getInstance()
9 Assembler/AbsAsm other AbsAsm.h AbsAsm:AbsoluteTag::getSize()-const
10 Assembler/AbsAsm other AbsAsm.h AbsAsm:AbsoluteTag::setOverrideBeginOffset(int)
11 Assembler/AbsAsm other AbsAsm.h AbsAsm:AbsoluteTag::setOverrideSize(int)
12 Not Found other Not Found AbsAsm:AbsoluteTag::~AbsoluteTag()
13 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractAction::addToTrash(Object*)
14 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractAction::apply()
15 Assembler/AbsAsm other AbsAsm.h AbsAsm:AbstractAction::getClassTypeName()-const
16 Assembler/AbsAsm other AbsAsm.h AbsAsm:AbstractAction::isApplied()-const
17 Not Found other Not Found AbsAsm:AbstractAction::isApplied()-const
18 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractAction::removeFromTrash(Object*)
19 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractAction::unapply()
20 Not Found other Not Found AbsAsm:AbstractAction::~AbstractAction()
21 Not Found other Not Found AbsAsm:AbstractAction::~default_AbstractAction()
22 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractFactory::AbstractFactory()
23 Not Found other Not Found AbsAsm:AbstractFactory::addSpecialDecomposer()
24 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractFactory::createView(const AbsAsm:Lexema)-const
25 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractFactory::create_d(ParamData)-const
26 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractFactory::getDecomposer(AbsAsm:Serial)-const
27 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractFactory::registerBuilder(AbsAsm:InsBuilder*)
28 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractFactory::registerDecomposer(AbsAsm:Serial, AbsAsm:InsDe
29 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractFactory::registerSpecialDecomposer(AbsAsm:SpecialDecompos
30 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractFactory::registerViewBuilder(AbsAsm:ViewBuilder*)
31 Assembler/AbsAsm other AbsAsm.cpp AbsAsm:AbstractFactory::sortBuilders()-const
32
```

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## Focus subset API



He's as blind as he can be,  
Just sees what he wants to see,  
Nowhere Man can you  
see me at all?



Nowhere Man, Yellow Submarine. 1968

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## Focus results

```
Substring Holes Report - [D:\Coverage\FDPR\fdpr_probo_aks\focus\SubstringHolesSubs2009-5-7-2-6-16.txt]
Name: Courier New
Size: 11
holePercentage: 95.00 sort:SOCOV_TOTAL_LENGTH similarityPercentage: 50.00 uncoverCoefficient: 2.00 power: 0.50
minSubStringLength: 4 maxSubStringLength: 30 minTotal: 10
Total Uncovered Sub-string Components
1 13575 13556 AbsAsm: (other)
2
3 4246 4194 MR: (other)
4 2559 2542 default (other)
5 599 598 Same (other)
6 590 590 Ppcls:create (other)
7 602 591 Ppcls:clone (other)
8 866 863 Intra (other)
9 504 503 sdi: (other)
10 411 399 String-const (other)
11 389 385 AIXPpcConfiguration (other)
12 315 315 Dwarf (other)
13 265 253 SimpleEdge (other)
14 187 162 base_ (other)
15 176 174 Ppcls:VD (other)
16 176 171 Ppcls:Instruction::has_ (other)
17 145 144 External (other)
18 130 130 Ppcls:MSForm_PA_ (other)
19 133 133 has_XO_DF_ (other)
20 133 131 dbg_print (other)
21 130 124 Symboled (other)
22 117 117 v_ (other)
23 110 110 FuncCFG (other)
24 106 105 Instruction::is (other)
25 98 98 Ppcls:CFORM_ (other)
26 97 97 get_XO-const (other)
27 86 86 Circulation (other)
28 86 84 Comments: (other)
29 82 82 NewGA: (other)
30 80 80 Cluster (other)
31 78 81 :Vertex (other)
32 70 70 MaxFlowInUser (other)
33
```

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## Action item for a hole

Covered in different testcase - check!

Config doesn't allow execution - add filter

Remove dead code

Enhance test bucket

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## Workflow

