**Aplicação Code Smells**

**Relatório de Refactoring**

## Class ConditionJPanel

Code Smell “God Class”:

projecto\_es.ConditionJPanel [projecto\_es.ConditionJPanel::javax.swing.JComboBox metricsAvailable, projecto\_es.ConditionJPanel::javax.swing.JComboBox noperatorsAvailable, projecto\_es.ConditionJPanel::javax.swing.JTextField limit, projecto\_es.ConditionJPanel::javax.swing.JComboBox loperatorsAvailable, projecto\_es.ConditionJPanel::validatePanel(boolean, java.lang.StringBuilder, int):boolean, projecto\_es.ConditionJPanel::getConditionAsString():java.lang.String]

Apesar do plugin JDeodorant detectar o code smell God Class, após inspecção manual foi decidido que os elementos a que a class tem conhecimento são justificados bem como as suas responsabilidades (criação dos elementos da interface e validação dos mesmos)

## Code Smell “Long Method”:

projecto\_es.ConditionJPanel public boolean validatePanel(boolean, java.lang.StringBuilder, int)

errorMessage B3 7/12

projecto\_es.ConditionJPanel public boolean validatePanel(boolean, java.lang.StringBuilder, int)

errorMessage B5 5/9

projecto\_es.ConditionJPanel public boolean validatePanel(boolean, java.lang.StringBuilder, int)

errorMessage B7 3/6

projecto\_es.ConditionJPanel public boolean validatePanel(boolean, java.lang.StringBuilder, int)

errorMessage B10 0/2

projecto\_es.ConditionJPanel public boolean validatePanel(boolean, java.lang.StringBuilder, int)

missingValues B1 5/10

De facto a função validatePanel continha diversas funcionalidades que poderiam ser isoladas (validação dos diversos valores introduzidos pelo utilizador). Estas validações foram isoladas em uma função para cada validação.

## Class “Rule”

Code Smell “God Class”:

projecto\_es.Rule [projecto\_es.Rule::java.util.ArrayList<projecto\_es.Condition> conditions, projecto\_es.Rule::numberOfConditions():int, projecto\_es.Rule::getCondition(int):projecto\_es.Condition, projecto\_es.Rule::java.util.ArrayList<projecto\_es.LogicalOperator> logicalOperator, projecto\_es.Rule::getLogicalOperator(int):projecto\_es.LogicalOperator]

projecto\_es.Rule [projecto\_es.Rule::java.util.ArrayList<projecto\_es.Condition> conditions, projecto\_es.Rule::numberOfConditions():int, projecto\_es.Rule::getCondition(int):projecto\_es.Condition]

Seguindo a sugestão do JDeodorant, foi extraída uma classe que representa a lista de condições da regra (class ConditionsList), solucionando assim o code smell e isolando a lógica das condições em uma classe própria.

Adicionalmente foram também criadas constantes de forma a eliminar diversos “números mágicos”.

## Class IDetectionParameters

Code Smell “God Class”:

projecto\_es.IDetetionParameters [projecto\_es.IDetetionParameters::javax.swing.JFrame frame, projecto\_es.IDetetionParameters::main(java.lang.String[]):void, projecto\_es.IDetetionParameters::exitWindow():void, projecto\_es.IDetetionParameters::validateValues():boolean, projecto\_es.IDetetionParameters::javax.swing.JPanel panel, projecto\_es.IDetetionParameters::checkForNewCond():void, projecto\_es.IDetetionParameters::javax.swing.JButton insertCond, projecto\_es.IDetetionParameters::javax.swing.JButton removeCond, projecto\_es.IDetetionParameters::checkForRemCond():void, projecto\_es.IDetetionParameters::java.lang.String code\_smell, projecto\_es.IDetetionParameters::addConditionPanel(java.lang.String):void, projecto\_es.IDetetionParameters::java.util.List<projecto\_es.ConditionJPanel> conditionPanels]

projecto\_es.IDetetionParameters [projecto\_es.IDetetionParameters::javax.swing.JPanel panel, projecto\_es.IDetetionParameters::checkForNewCond():void, projecto\_es.IDetetionParameters::javax.swing.JButton insertCond, projecto\_es.IDetetionParameters::javax.swing.JButton removeCond, projecto\_es.IDetetionParameters::checkForRemCond():void, projecto\_es.IDetetionParameters::java.lang.String code\_smell, projecto\_es.IDetetionParameters::addConditionPanel(java.lang.String):void, projecto\_es.IDetetionParameters::java.util.List<projecto\_es.ConditionJPanel> conditionPanels]

Apesar do plugin JDeodorant detectar o code smell God Class, após inspecção manual foi decidido que os elementos a que a class tem conhecimento são justificados bem como as suas responsabilidades (criação dos elementos da interface e validação dos mesmos)

## Class IDetectionParameters

Code Smell “God Class”:

projecto\_es.ICodeSmellsQuality [projecto\_es.ICodeSmellsQuality::javax.swing.JTable tableInfo, projecto\_es.ICodeSmellsQuality::defineJTableContent():void, projecto\_es.ICodeSmellsQuality::javax.swing.JScrollPane scrollPaneForJTable, projecto\_es.ICodeSmellsQuality::updateTableButton():void, projecto\_es.ICodeSmellsQuality::javax.swing.JButton update]

projecto\_es.ICodeSmellsQuality [projecto\_es.ICodeSmellsQuality::javax.swing.JFrame frame, projecto\_es.ICodeSmellsQuality::main(java.lang.String[]):void, projecto\_es.ICodeSmellsQuality::javax.swing.JButton goBack, projecto\_es.ICodeSmellsQuality::goBackButton():void]

projecto\_es.ICodeSmellsQuality [projecto\_es.ICodeSmellsQuality::javax.swing.JTextField excelPath, projecto\_es.ICodeSmellsQuality::javax.swing.JButton selectExcel, projecto\_es.ICodeSmellsQuality::selectExcelButton():void]

projecto\_es.ICodeSmellsQuality [projecto\_es.ICodeSmellsQuality::javax.swing.JFrame frame, projecto\_es.ICodeSmellsQuality::main(java.lang.String[]):void, projecto\_es.ICodeSmellsQuality::javax.swing.JButton goBack, projecto\_es.ICodeSmellsQuality::goBackButton():void, projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelDetentionTable, projecto\_es.ICodeSmellsQuality::initialize():void, projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelDetentionQuality, projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelQualityLabels, projecto\_es.ICodeSmellsQuality::definePanelDetentionQualityLook():void, projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelQualityGraphic, projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelLayoutCodeSmellSelected, projecto\_es.ICodeSmellsQuality::definePanelQualityLabelsContent():void, projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelLayoutQualityData, projecto\_es.ICodeSmellsQuality::javax.swing.JLabel codeS, projecto\_es.ICodeSmellsQuality::defineAuxPanelWithChoosenCodeSmell():void, projecto\_es.ICodeSmellsQuality::javax.swing.JComboBox codeSmellSelected, projecto\_es.ICodeSmellsQuality::int truePositives, projecto\_es.ICodeSmellsQuality::int falsePositives, projecto\_es.ICodeSmellsQuality::int trueNegatives, projecto\_es.ICodeSmellsQuality::int falseNegatives, projecto\_es.ICodeSmellsQuality::definePanelQualityGraphicContent():void, projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelCenterTable, projecto\_es.ICodeSmellsQuality::javax.swing.JTable tableInfo, projecto\_es.ICodeSmellsQuality::defineJTableContent():void, projecto\_es.ICodeSmellsQuality::javax.swing.JScrollPane scrollPaneForJTable, projecto\_es.ICodeSmellsQuality::updateTableButton():void, projecto\_es.ICodeSmellsQuality::javax.swing.JButton update, projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelSouthInfo, projecto\_es.ICodeSmellsQuality::definePanelDetentionTableLook():void, projecto\_es.ICodeSmellsQuality::javax.swing.JLabel label, projecto\_es.ICodeSmellsQuality::definePanelSouthInfoContent():void, projecto\_es.ICodeSmellsQuality::javax.swing.JTextField excelPath, projecto\_es.ICodeSmellsQuality::javax.swing.JButton selectExcel, projecto\_es.ICodeSmellsQuality::selectExcelButton():void]

projecto\_es.ICodeSmellsQuality [projecto\_es.ICodeSmellsQuality::int truePositives, projecto\_es.ICodeSmellsQuality::int falsePositives, projecto\_es.ICodeSmellsQuality::int trueNegatives, projecto\_es.ICodeSmellsQuality::int falseNegatives, projecto\_es.ICodeSmellsQuality::definePanelQualityGraphicContent():void]

projecto\_es.ICodeSmellsQuality [projecto\_es.ICodeSmellsQuality::javax.swing.JLabel codeS, projecto\_es.ICodeSmellsQuality::defineAuxPanelWithChoosenCodeSmell():void, projecto\_es.ICodeSmellsQuality::javax.swing.JComboBox codeSmellSelected]

projecto\_es.ICodeSmellsQuality [projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelLayoutCodeSmellSelected, projecto\_es.ICodeSmellsQuality::definePanelQualityLabelsContent():void, projecto\_es.ICodeSmellsQuality::javax.swing.JPanel panelLayoutQualityData, projecto\_es.ICodeSmellsQuality::javax.swing.JLabel codeS, projecto\_es.ICodeSmellsQuality::defineAuxPanelWithChoosenCodeSmell():void, projecto\_es.ICodeSmellsQuality::javax.swing.JComboBox codeSmellSelected]

Apesar do plugin JDeodorant detectar o code smell God Class, após inspecção manual foi decidido que os elementos a que a class tem conhecimento são justificados bem como as suas responsabilidades (criação dos elementos da interface e validação dos mesmos

## Class “JavaToExcel”

Code Smell “God Class”:

projecto\_es.JavaToExcel [projecto\_es.JavaToExcel::java.util.ArrayList<java.lang.String[]> lines, projecto\_es.JavaToExcel::writeToExcel():void, projecto\_es.JavaToExcel::java.lang.String path\_exel]

projecto\_es.JavaToExcel [projecto\_es.JavaToExcel::java.lang.String path\_java, projecto\_es.JavaToExcel::run():void, projecto\_es.JavaToExcel::projecto\_es.MetricsCalculator mc]

Através de inspecção manual foi decidido ignorar este code smell pois foi considerado que os elementos a que a classe tem conhecimento são justificados

## Class “ClassDataStructure”

projecto\_es.ClassDataStructure [projecto\_es.ClassDataStructure::java.util.HashMap<java.lang.String,java.lang.Boolean> codeSmellsEvaluation, projecto\_es.ClassDataStructure::setCodeSmellsEvaluation(java.lang.String, boolean):void, projecto\_es.ClassDataStructure::getCodeSmellsEvaluation(java.lang.String):java.lang.Boolean]

projecto\_es.ClassDataStructure [projecto\_es.ClassDataStructure::java.lang.String packageName, projecto\_es.ClassDataStructure::int nom\_class, projecto\_es.ClassDataStructure::int loc\_class, projecto\_es.ClassDataStructure::int wmc\_class, projecto\_es.ClassDataStructure::java.util.List<projecto\_es.ClassDataStructure> innerClasses, projecto\_es.ClassDataStructure::java.lang.String className, projecto\_es.ClassDataStructure::java.util.List<projecto\_es.MethodDataStructure> lmds, projecto\_es.ClassDataStructure::calculateMetricsStoreMethods(com.github.javaparser.ast.body.ClassOrInterfaceDeclaration):void, projecto\_es.ClassDataStructure::addMethod(java.lang.String, int, int):void]

Através de inspecção manual foi decidido ignorar este code smell pois foi considerado que os elementos a que a classe tem conhecimento são justificados

## Class “ICodeSmellsRules”

projecto\_es.ICodeSmellsRules [projecto\_es.ICodeSmellsRules::javax.swing.JTable rules, projecto\_es.ICodeSmellsRules::setColumnWidth(int):void, projecto\_es.ICodeSmellsRules::printRows():void]

projecto\_es.ICodeSmellsRules [projecto\_es.ICodeSmellsRules::java.util.List<projecto\_es.Rule> allRules, projecto\_es.ICodeSmellsRules::updateRules():void, projecto\_es.ICodeSmellsRules::filterRule(java.lang.String):java.util.List<projecto\_es.Rule>]

Apesar do plugin JDeodorant detectar o code smell God Class, após inspecção manual foi decidido que os elementos a que a class tem conhecimento são justificados bem como as suas responsabilidades (criação dos elementos da interface e validação dos mesmos)

## Class “ListsToInterface”

Code Smell “Feature Envy”:

Move Method projecto\_es.ListsToInterface::showGeneralMetrics(projecto\_es.GeneralStatistics):javax.swing.JList<java.lang.String> projecto\_es.GeneralStatistics 0/4

O método foi extraído para a classe GeneralMetrics

## Class “CodeSmellsCalculator”

Code Smell “Feature Envy”:

Move Method projecto\_es.CodeSmellsCalculator::checkMetricClass(projecto\_es.Condition, projecto\_es.ClassDataStructure):int projecto\_es.ClassDataStructure 0/3

O método foi extraído para a classe GeneralMetrics

Code Smell “Long Method”:

projecto\_es.JavaToExcel public void makeLines(projecto\_es.MetricsCalculator) lineData B5 0/10

projecto\_es.JavaToExcel public void makeLines(projecto\_es.MetricsCalculator) lineData B10 0/10

Desta função foi extraído o bloco de código de criação de um método assim simplificando a função e evitando a duplicação de código

projecto\_es.ExcelToData public static List<projecto\_es.ClassDataStructure> getallClass(java.lang.String) cds B3 2/3

projecto\_es.ExcelToData public static List<projecto\_es.ClassDataStructure> getallClass(java.lang.String) cds B3 2/3

Consideramos que esta função tem um tamanho justificado tendo apenas um objectivo, a leitura de dados do ficheiro Excel

Foram detectados vários long methods mas correspondem a funções de criação das interfaces

projecto\_es.ListsToInterface public JList<java.lang.String> showMethodMetrics(java.lang.String, java.lang.String) metricsNamesList B3 0/10

projecto\_es.ListsToInterface public JList<java.lang.String> showMethodMetrics(java.lang.String, java.lang.String) metricsNamesList B4 0/9

projecto\_es.ListsToInterface public JList<java.lang.String> showMethodMetrics(java.lang.String, java.lang.String) metricsNamesList B5 0/8

projecto\_es.ListsToInterface public JList<java.lang.String> showMethodMetrics(java.lang.String, java.lang.String) metricsNamesList B6 0/7

projecto\_es.ListsToInterface public JList<java.lang.String> showMethodMetrics(java.lang.String, java.lang.String) metricsNamesList B7 1/5

projecto\_es.ListsToInterface public JList<java.lang.String> showMethodMetrics(java.lang.String, java.lang.String) metricsNamesList B8 0/4

projecto\_es.ListsToInterface public JList<java.lang.String> showClassMetrics(java.lang.String) metricsNamesList B1 0/10

projecto\_es.ListsToInterface public JList<java.lang.String> showClassMetrics(java.lang.String) metricsNamesList B2 0/9

projecto\_es.ListsToInterface public JList<java.lang.String> showClassMetrics(java.lang.String) metricsNamesList B3 1/7

projecto\_es.ListsToInterface public JList<java.lang.String> showClassMetrics(java.lang.String) metricsNamesList B4 0/6

projecto\_es.ICodeSmellsRules private void initialize() editRule B9 0/21

projecto\_es.ICodeSmellsRules private void initialize() editRule B10 0/20

projecto\_es.ICodeSmellsRules private void initialize() editRule B12 0/18

projecto\_es.ICodeSmellsRules private void initialize() activateRule B9 0/17

projecto\_es.ICodeSmellsRules private void initialize() activateRule B10 0/16

projecto\_es.ICodeSmellsRules private void initialize() activateRule B12 0/14

projecto\_es.ICodeSmellsRules private void initialize() activatedRuleScrollPane B9 0/17

projecto\_es.ICodeSmellsRules private void initialize() activatedRuleScrollPane B10 0/16

projecto\_es.ICodeSmellsRules private void initialize() activatedRuleScrollPane B12 0/14

projecto\_es.ICodeSmellsRules private void initialize() codeSmells B9 0/16

projecto\_es.ICodeSmellsRules private void initialize() codeSmells B10 0/15

projecto\_es.ICodeSmellsRules private void initialize() codeSmells B12 0/13

projecto\_es.ICodeSmellsRules private void initialize() rulesScrollPane B9 0/16

projecto\_es.ICodeSmellsRules private void initialize() rulesScrollPane B10 0/15

projecto\_es.ICodeSmellsRules private void initialize() rulesScrollPane B12 0/13

projecto\_es.IDetetionParameters private void initialize() panel B1 0/15

projecto\_es.IDetetionParameters private void initialize() insertCond B1 0/15

projecto\_es.IDetetionParameters private void initialize() insertCond B5 0/4

projecto\_es.IDetetionParameters private void initialize() panelsouthLEFT B1 0/14

projecto\_es.IDetetionParameters private void saveNewRule() stringBuffer B2 0/12

projecto\_es.IDetetionParameters private void updateRule() stringBuffer B2 0/12

projecto\_es.IDetetionParameters private void initialize() removeCond B1 0/11

projecto\_es.IDetetionParameters private void initialize() removeCond B5 0/2

projecto\_es.IMenu private void initialize() frame B1 0/7

projecto\_es.ICodeSmellsQuality private void initialize() frame B1 0/6

projecto\_es.ICodeSmellsRules private void initialize() frmCodeSmells B1 0/6

projecto\_es.IDetetionParameters private void addConditionPanel(java.lang.String) iic B1 0/6

projecto\_es.IDetetionParameters private void addConditionPanel(java.lang.String) iic B1 0/6

projecto\_es.IDetetionParameters private void initialize() panelsouthRIGHT B1 0/6

projecto\_es.IMetricsCalculator private void initialize() frame B1 0/6

projecto\_es.InterfaceMetricsStatistics private void initialize() buttonSelectFile B1 0/6

projecto\_es.IMetricsCalculator public java.lang.String generate\_nameFile(java.lang.String) i B1 0/6

projecto\_es.IMetricsCalculator public java.lang.String generate\_nameFile(java.lang.String) i B2 0/4

projecto\_es.IDetetionParameters private void initialize() cancelButton B1 0/6

projecto\_es.IDetetionParameters private void initialize() cancelButton B5 0/3

projecto\_es.IDetetionParameters private void initialize() saveButton B1 0/6

projecto\_es.IDetetionParameters private void initialize() saveButton B5 0/3

projecto\_es.ICodeSmellsQuality private void initialize() panelDetentionTable B1 0/5

projecto\_es.ICodeSmellsRules private void initialize() isUniq B3 0/5

projecto\_es.ICodeSmellsRules private void setColumnWidth(int) col B2 0/5

projecto\_es.ICodeSmellsRules public void draw() groupLayout B1 0/5

projecto\_es.IDetetionParameters private void initialize() frame B1 0/5

projecto\_es.IMenu public void setQualityCodeSmells() quality\_codesmells B1 0/5

projecto\_es.IMenu public void setQualityCodeSmells() windowQuality B1 0/5

projecto\_es.IMetricsCalculator public void setShowStatisitcs\_Button() ims B1 0/5

projecto\_es.IMetricsCalculator public void setShowStatisitcs\_Button() show\_Statistics B1 0/5

projecto\_es.InterfaceMetricsStatistics private void initialize() panel\_4 B1 0/5

projecto\_es.InterfaceMetricsStatistics private void initialize() panel\_5 B1 0/5

tests.ListsToInterfaceTest static void setUpBeforeClass() throws java.lang.Exception statistics B1 0/5

projecto\_es.ICodeSmellsQuality private void definePanelDetentionTableLook() panelCenterTable B1 0/4

projecto\_es.IMenu private void initialize() lblNewLabel\_2 B1 0/4

projecto\_es.IMetricsCalculator public void saveFile(projecto\_es.JavaToExcel) save\_exel B1 0/4

projecto\_es.IMetricsCalculator public void setExecutar\_Button() b\_executar B1 0/4

projecto\_es.IMetricsCalculator public void setExecutar\_Button() jte B1 0/4

projecto\_es.IMetricsCalculator public void setSelecionarProjeto\_Button() choose\_file B1 0/4

projecto\_es.IMetricsCalculator public void setSelecionarProjeto\_Button() select\_file B1 0/4

projecto\_es.CodeSmellsCalculator public void detection(projecto\_es.ClassDataStructure, projecto\_es.MethodDataStructure, projecto\_es.Rule, projecto\_es.CodeSmellStatistics) finalValue B13 0/4

projecto\_es.CodeSmellsCalculator public void detection(projecto\_es.ClassDataStructure, projecto\_es.MethodDataStructure, projecto\_es.Rule, projecto\_es.CodeSmellStatistics) finalValue B14 0/2

projecto\_es.ICodeSmellsRules private void setColumnWidth(int) width B2 0/4

projecto\_es.ICodeSmellsRules private void setColumnWidth(int) width B3 0/3

projecto\_es.ICodeSmellsRules private void initialize() allCodeSmellsJL B1 0/4

projecto\_es.ICodeSmellsRules private void initialize() allCodeSmellsJL B9 0/3

projecto\_es.ICodeSmellsRules private void initialize() allCodeSmellsJL B10 0/2

projecto\_es.ListsToInterface public JList<java.lang.String> getMethodsJList() listTemp B1 0/4

projecto\_es.ListsToInterface public JList<java.lang.String> getMethodsJList() listTemp B2 0/3

projecto\_es.ListsToInterface public JList<java.lang.String> getMethodsJList() listTemp B3 0/2

projecto\_es.ICodeSmellsQuality private void definePanelDetentionTableLook() panelDetentionTable B1 0/3

projecto\_es.IDetetionParameters private boolean validateValues() validateLogicOperator B3 0/3

projecto\_es.IMenu private void initialize() lblNewLabel B1 0/3

projecto\_es.IMenu private void initialize() lblNewLabel\_1 B1 0/3

projecto\_es.IMenu public void setCodeRules() code\_rules B1 0/3

projecto\_es.IMenu public void setCodeRules() e1 B1 0/3

projecto\_es.IMenu public void setCodeRules() windowCodeRules B1 0/3

projecto\_es.IMenu public void setCreateExcel() create\_excel B1 0/3

projecto\_es.IMenu public void setCreateExcel() windowMetrics B1 0/3

projecto\_es.IMenu public void setShowStatisitcs() show\_statistics B1 0/3

projecto\_es.IMenu public void setShowStatisitcs() windowStatistics B1 0/3

projecto\_es.IMetricsCalculator private void initialize() path\_Exel B1 0/3

projecto\_es.IMetricsCalculator private void initialize() path\_Java B1 0/3

projecto\_es.IMetricsCalculator public void set\_GoBackButton() goBack B1 0/3

projecto\_es.IMetricsCalculator public void set\_GoBackButton() window B1 0/3

projecto\_es.InterfaceMetricsStatistics private void initialize() goBackButton B1 0/3

projecto\_es.InterfaceMetricsStatistics private void initialize() lblNewLabel\_1 B1 0/3

projecto\_es.InterfaceMetricsStatistics private void initialize() lblNewLabel\_2 B1 0/3

projecto\_es.InterfaceMetricsStatistics private void initialize() lblNewLabel\_3 B1 0/3

projecto\_es.InterfaceMetricsStatistics private void initialize() lblNewLabel\_4 B1 0/3

projecto\_es.InterfaceMetricsStatistics private void initialize() lblNewLabel\_41 B1 0/3

projecto\_es.InterfaceMetricsStatistics private void initialize() lblNewLabel\_4\_1 B1 0/3

projecto\_es.InterfaceMetricsStatistics private void initialize() textField B1 0/3

tests.ListsToInterfaceTest void testCompareTwoJLists() list1 B1 0/3

tests.ListsToInterfaceTest void testCompareTwoJLists() list2 B1 0/3

tests.MethodDataStructureTest static void setUpBeforeClass() throws java.lang.Exception method B1 0/3

projecto\_es.ListsToInterface public JList<java.lang.String> getClassJList() listTemp B4 0/3

projecto\_es.ListsToInterface public JList<java.lang.String> getClassJList() listTemp B5 0/2

projecto\_es.ListsToInterface public JList<java.lang.String> getPackageJList() listTemp B4 0/3

projecto\_es.ListsToInterface public JList<java.lang.String> getPackageJList() listTemp B5 0/2

projecto\_es.ListsToInterface public JList<java.lang.String> showClasses(java.lang.String) classesNamesList B5 0/3

projecto\_es.ListsToInterface public JList<java.lang.String> showClasses(java.lang.String) classesNamesList B6 0/2

projecto\_es.ICodeSmellsQuality private void defineJTableContent() tableInfo B1 0/3

projecto\_es.ICodeSmellsQuality private void defineJTableContent() tableInfo B4 0/2

projecto\_es.ICodeSmellsQuality private void defineJTableContent() tc B3 0/3

projecto\_es.ICodeSmellsRules private void initialize() activeRule B12 0/2

projecto\_es.ICodeSmellsRules private void initialize() labelCodeSmellsDisp B12 0/2

projecto\_es.ICodeSmellsRules private void initialize() ruleHistory B12 0/2

projecto\_es.ICodeSmellsRules public void draw() goBack B1 0/2

projecto\_es.IDetetionParameters private void initialize() panelSOUTH B1 0/2

projecto\_es.IDetetionParameters private void saveNewRule() newId B4 0/2

projecto\_es.ICodeSmellsRules public void createTable(List<projecto\_es.Rule>) rulesScrollPane B1 1/7

projecto\_es.ICodeSmellsRules public void createTable(List<projecto\_es.Rule>) rulesScrollPane B7 0/5

projecto\_es.ICodeSmellsRules public void createTable(List<projecto\_es.Rule>) rules B1 1/6

projecto\_es.ICodeSmellsRules public void createTable(List<projecto\_es.Rule>) rules B7 0/4

projecto\_es.ListsToInterface public JList<java.lang.String> showMethods(java.lang.String) methodsNamesList B1 0/6

projecto\_es.ListsToInterface public JList<java.lang.String> showMethods(java.lang.String) methodsNamesList B2 0/5

projecto\_es.ListsToInterface public JList<java.lang.String> showMethods(java.lang.String) methodsNamesList B3 1/3

projecto\_es.ListsToInterface public JList<java.lang.String> showMethods(java.lang.String) methodsNamesList B4 0/2

projecto\_es.Main public static void main(java.lang.String[]) calc B1 1/4

projecto\_es.Main public static void main(java.lang.String[]) calc B4 0/3

projecto\_es.ICodeSmellsRules public void createActivedRule(projecto\_es.Rule) activatedRuleScrollPane B1 1/6

projecto\_es.ICodeSmellsRules public void createActivedRule(projecto\_es.Rule) activatedRuleScrollPane B7 0/4

projecto\_es.ICodeSmellsRules public void createActivedRule(projecto\_es.Rule) activatedRule B1 1/5

projecto\_es.ICodeSmellsRules public void createActivedRule(projecto\_es.Rule) activatedRule B7 0/3

projecto\_es.IDetetionParameters private void saveNewRule() writer B4 1/4

projecto\_es.IDetetionParameters private void updateRule() writer B6 1/4

projecto\_es.IDetetionParameters private void saveNewRule() writer B4 1/3

projecto\_es.IDetetionParameters private void updateRule() writer B6 1/3

projecto\_es.IMetricsCalculator public java.lang.String generate\_nameFile(java.lang.String) stop B3 1/2