



Priority

# Category Partitioning Testing Tool

**OOPT**  
**2<sup>nd</sup>**  
**Cycle**

**Team 4**

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Team4

# Presentation

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**PMD Warnings**

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Team 2

# PMD Warnings

# Client

## AdminProject.java

▶ 49	Thu Jun 01 10:04:0...	AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPointerException, RuntimeException, Exception i...
▶ 26	Thu Jun 01 10:04:0...	SimplifyBooleanReturns	Avoid unnecessary if..then..else statements when returning booleans
▶ 37	Thu Jun 01 10:04:0...	SimplifyBooleanReturns	Avoid unnecessary if..then..else statements when returning booleans
▶ 11	Thu Jun 01 10:04:0...	SingularField	Perhaps 'projectList' could be replaced by a local variable.
▶ 11	Thu Jun 01 10:04:0...	UnusedPrivateField	Avoid unused private fields such as 'projectList'.

## AdminUser.java

▶ 52	Thu Jun 01 10:04:0...	SimplifyBooleanReturns	Avoid unnecessary if..then..else statements when returning booleans
▶ 22	Thu Jun 01 10:04:0...	SimplifyBooleanReturns	Avoid unnecessary if..then..else statements when returning booleans
▶ 6	Thu Jun 01 10:04:0...	SuspiciousConstantFieldName	The field name indicates a constant but its modifiers do not
▶ 5	Thu Jun 01 10:04:0...	SuspiciousConstantFieldName	The field name indicates a constant but its modifiers do not
▶ 6	Thu Jun 01 10:04:0...	UnusedPrivateField	Avoid unused private fields such as 'PW'.

## AdminVer.java

▶ 438	Thu Jun 01 10:04:0...	AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPointerException, RuntimeException, Exception i...
▶ 424	Thu Jun 01 10:04:0...	AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPointerException, RuntimeException, Exception i...
▶ 41	Thu Jun 01 10:04:0...	ConfusingTernary	Avoid if (x != y) ..; else ..;



# Server

## AdminProject.java

▶ 17	Thu Jun 01 09:52:2...	UnusedPrivateField	Avoid unused private fields such as 'projectName'.
------	-----------------------	--------------------	--

## AdminUser.java

▶ 67	Thu Jun 01 09:52:2...	SimplifyBooleanReturns	Avoid unnecessary if..then..else statements when returning booleans
▶ 79	Thu Jun 01 09:52:2...	SimplifyBooleanReturns	Avoid unnecessary if..then..else statements when returning booleans
▶ 5	Thu Jun 01 09:52:2...	UnusedImports	Avoid unused imports such as 'java.util.regex.Pattern'
▶ 4	Thu Jun 01 09:52:2...	UnusedImports	Avoid unused imports such as 'java.util.regex.Matcher'

## MainServer.java

▶ 43	Thu Jun 01 09:52:2...	AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPointerException, RuntimeException, Exception i...
▶ 95	Thu Jun 01 09:52:2...	AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPointerException, RuntimeException, Exception i...
▶ 128	Thu Jun 01 09:52:2...	AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPointerException, RuntimeException, Exception i...

## ServerThread.java

▶ 18	Thu Jun 01 09:52:2...	UnusedPrivateField	Avoid unused private fields such as 'projectName'.
▶ 17	Thu Jun 01 09:52:2...	UnusedPrivateField	Avoid unused private fields such as 'status'.





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# Team 2

# Metrics Report

# Client

## Cyclomatic complexity

Metric	Total	Mean	Std. Dev.	Maximum	Resource causing Maximum	Method
▼ McCabe Cyclomatic Complexity (avg/max pe		1.806	2.268	24	/FinalClient/src/controller/AdminVer.java	makeTmpFile
▼ src		1.806	2.268	24	/FinalClient/src/controller/AdminVer.java	makeTmpFile
▼ controller		2.462	3.592	24	/FinalClient/src/controller/AdminVer.java	makeTmpFile
▼ AdminVer.java		4.529	5.679	24	/FinalClient/src/controller/AdminVer.java	makeTmpFile
▼ AdminVer		4.529	5.679	24	/FinalClient/src/controller/AdminVer.java	makeTmpFile
makeTmpFile	24					
analyzeFile	11					
makeCase	8					
countSingleError	8					
makeTmpFile	6					
addVer	2					
uploadVer	2					
delVer	2					
delOpinion	2					
downloadFile	2					
rcvVerList	2					
rcvOpinionList	2					
isContain	2					
AdminVer	1					
addOpinion	1					
getTempVer	1					
setTempVer	1					
> Client.java		2.143	0.639	3	/FinalClient/src/controller/Client.java	rcvObjFromServer
> AdminUser.java		1.667	0.745	3	/FinalClient/src/controller/AdminUser.java	chgPW
> MainController.java		1.167	0.373	2	/FinalClient/src/controller/MainController.java	init
> AdminProject.java		1.75	0.433	2	/FinalClient/src/controller/AdminProject.java	addProject
> AdminCase.java		1	0	1	/FinalClient/src/controller/AdminCase.java	AdminCase
> Main.java		1	0	1	/FinalClient/src/controller/Main.java	main
> view		2.227	1.677	6	/FinalClient/src/view/MainUI.java	ProjectAddPanel



# Client

## Number of Parameters

▼ Number of Parameters (avg/max per method)	0.671	0.893	6	FinalClient/src/controller/AdminVer.java	makeTmpFile
▼ src	0.671	0.893	6	FinalClient/src/controller/AdminVer.java	makeTmpFile
▼ controller	1	1.109	6	FinalClient/src/controller/AdminVer.java	makeTmpFile
> AdminVer.java	1.824	1.294	6	FinalClient/src/controller/AdminVer.java	makeTmpFile
> AdminUser.java	1.333	1.106	3	/FinalClient/src/controller/AdminUser.java	chgPW
> Client.java	0.571	0.495	1	/FinalClient/src/controller/Client.java	Client
> AdminCase.java	0.455	0.498	1	/FinalClient/src/controller/AdminCase.java	setChoiceList
> AdminProject.java	0.75	0.433	1	/FinalClient/src/controller/AdminProject.java	AdminProject
> Main.java	1	0	1	/FinalClient/src/controller/Main.java	main
> MainController.java	0	0	0	/FinalClient/src/controller/MainController.java	MainController
> view	0.705	0.967	4	/FinalClient/src/view/MainUI.java	Version
> model	0.419	0.52	2	/FinalClient/src/model/Version.java	Version
> Nested Block Depth (avg/max per method)	1.518	1.053	7	/FinalClient/src/controller/AdminVer.java	makeTmpFile





# Client

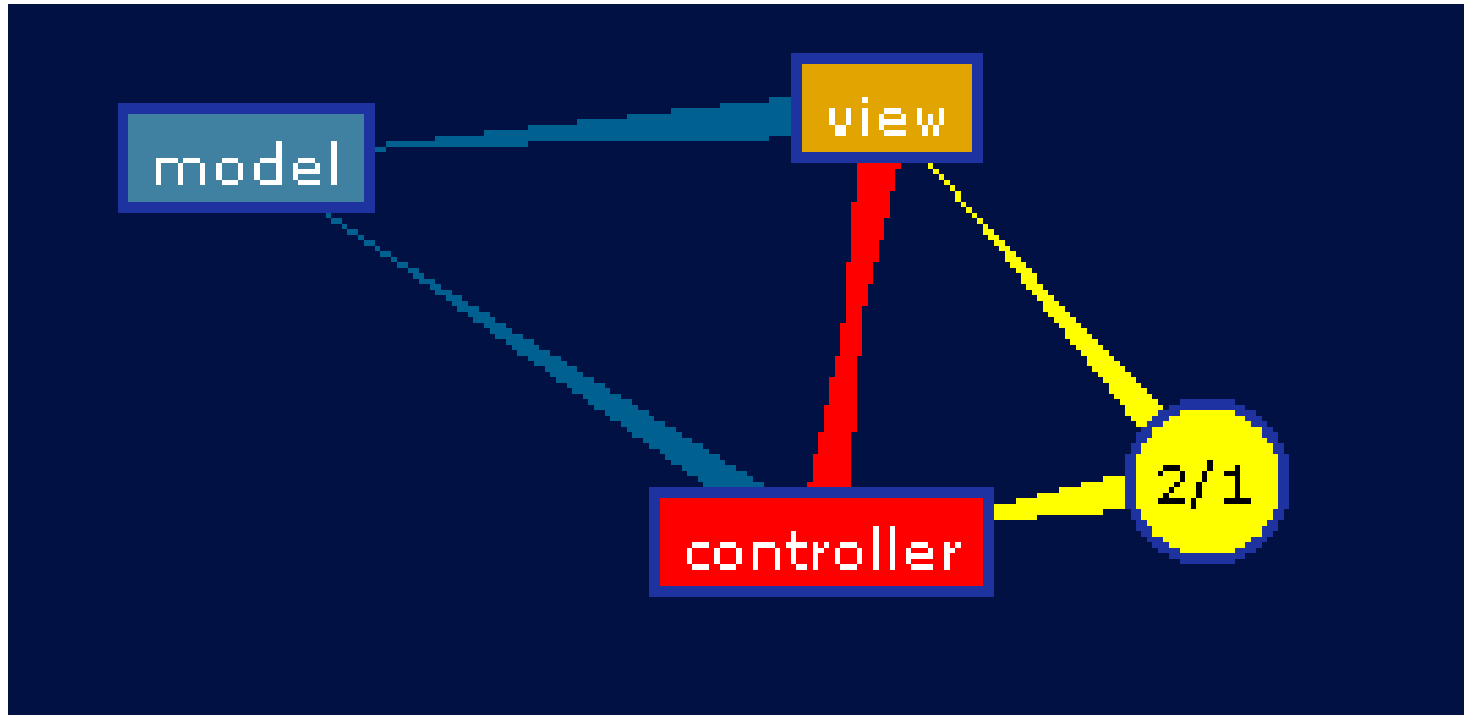
## Nested Block Depth

▼ Nested Block Depth (avg/max per method)	1.518	1.053	7	FinalClient/src/controller/AdminVer.java	makeTmpFile
▼ src	1.518	1.053	7	FinalClient/src/controller/AdminVer.java	makeTmpFile
▼ controller	1.865	1.286	7	FinalClient/src/controller/AdminVer.java	makeTmpFile
> AdminVer.java	2.706	1.774	7	FinalClient/src/controller/AdminVer.java	makeTmpFile
> Client.java	2.143	0.639	5	FinalClient/src/controller/Client.java	sendFile1
> AdminUser.java	1.667	0.745	3	FinalClient/src/controller/AdminUser.java	chgPW
> MainController.java	1.167	0.373	2	FinalClient/src/controller/MainController.java	init
> AdminProject.java	1.75	0.433	2	FinalClient/src/controller/AdminProject.java	addProject
> AdminCase.java	1	0	1	FinalClient/src/controller/AdminCase.java	AdminCase
> Main.java	1	0	1	FinalClient/src/controller/Main.java	main
▼ view	1.886	1.265	6	FinalClient/src/view/MainUI.java	FileAddPanel
▼ MainUI.java	1.886	1.265	6	FinalClient/src/view/MainUI.java	FileAddPanel
> FileAddPanel	3	2.16	6	FinalClient/src/view/MainUI.java	FileAddPanel
> ProjectAddPanel	3	2	5	FinalClient/src/view/MainUI.java	ProjectAddPanel
> Version	1.667	1.491	5	FinalClient/src/view/MainUI.java	Version
> LoginPanel	2.5	1.5	4	FinalClient/src/view/MainUI.java	LoginPanel
> ProjectListPanel	2	1	3	FinalClient/src/view/MainUI.java	ProjectListPanel
> PwdChgPanel	3	0	3	FinalClient/src/view/MainUI.java	PwdChgPanel
> Project	1.667	0.943	3	FinalClient/src/view/MainUI.java	Project
> VerListPanel	1.667	0.943	3	FinalClient/src/view/MainUI.java	VerListPanel
> VerAddPanel	1.667	0.943	3	FinalClient/src/view/MainUI.java	VerAddPanel
> Opinion	1.667	0.943	3	FinalClient/src/view/MainUI.java	Opinion
> OpinionListPanel	2	1	3	FinalClient/src/view/MainUI.java	OpinionListPanel
> MainUI	1.714	0.7	3	FinalClient/src/view/MainUI.java	setOList
> NoticeContent	1.333	0.471	2	FinalClient/src/view/MainUI.java	NoticeContent
> NoticePanel	1.5	0.5	2	FinalClient/src/view/MainUI.java	NoticePanel
> ContentPanel	1.5	0.5	2	FinalClient/src/view/MainUI.java	ContentPanel
> model	1.054	0.226	2	FinalClient/src/model/Category.java	addChoice



# Client

## Dependency Graph View



# Server

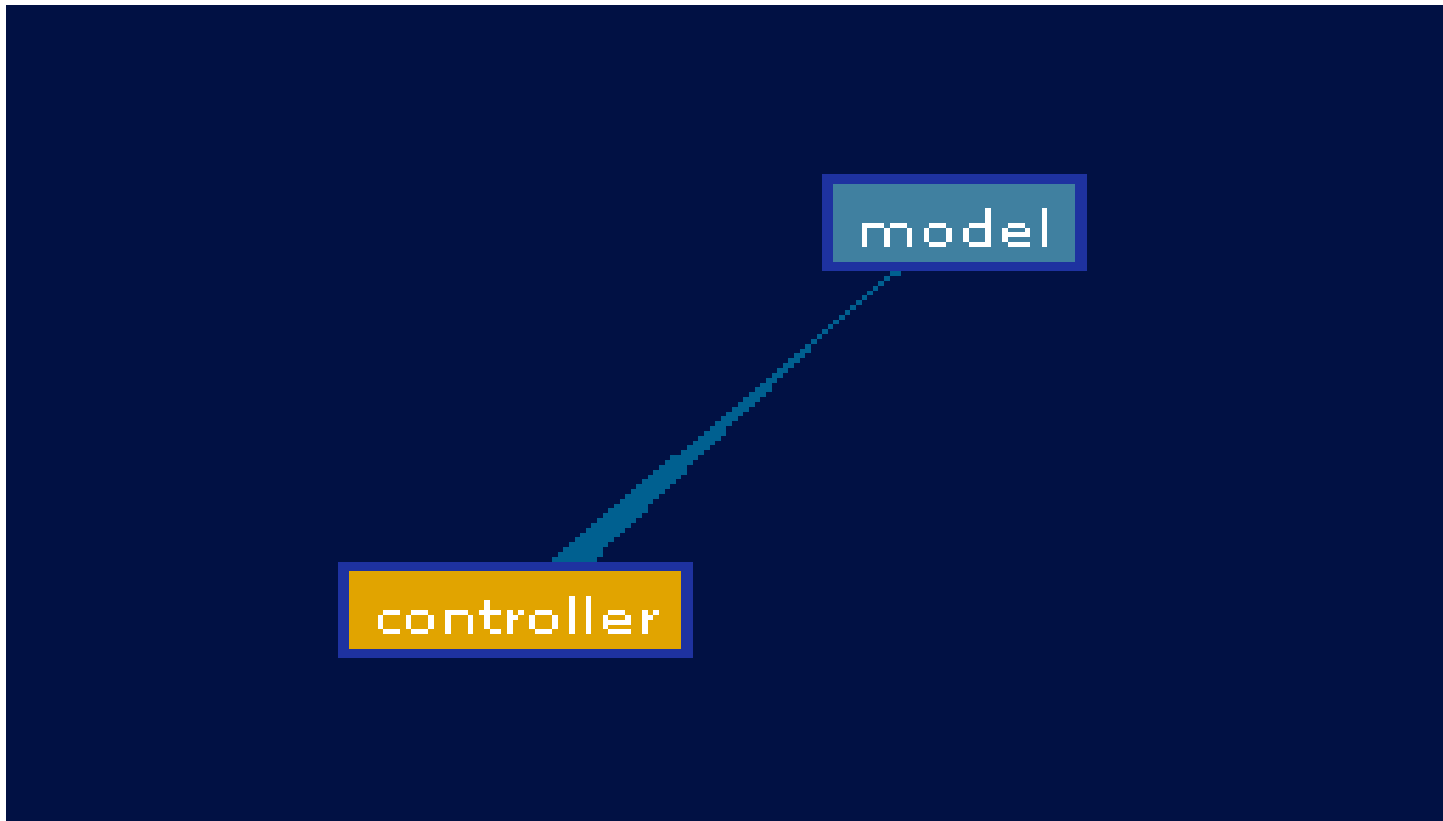
## Cyclomatic complexity

Metric	Total	Mean	Std. Dev.	Maximum	Resource causing Maximum	Method
▼ McCabe Cyclomatic Complexity (avg/max per package)		1.736	2.582	25	/FinalServer/src/controller/ServerThread.java	analyzeMSG
▼ src		1.736	2.582	25	/FinalServer/src/controller/ServerThread.java	analyzeMSG
▼ controller		2.705	3.853	25	/FinalServer/src/controller/ServerThread.java	analyzeMSG
▼ ServerThread.java		10	10.677	25	/FinalServer/src/controller/ServerThread.java	analyzeMSG
▼ ServerThread		10	10.677	25	/FinalServer/src/controller/ServerThread.java	analyzeMSG
analyzeMSG	25					
run						
ServerThread	1					
> AdminVer.java		3.111	2.726	10	/FinalServer/src/controller/AdminVer.java	chkAuth
> MainServer.java		3.167	2.115	6	/FinalServer/src/controller/MainServer.java	SaveObject
> AdminUser.java		1.778	1.227	5	/FinalServer/src/controller/AdminUser.java	chkPW
> Server.java		2.125	0.781	3	/FinalServer/src/controller/Server.java	Server
> AdminProject.java		1	0	1	/FinalServer/src/controller/AdminProject.java	AdminProject
> model		1.091	0.417	3	/FinalServer/src/model/Category.java	addChoice
> Number of Parameters (avg/max per method)		0.655	0.878	5	/FinalServer/src/controller/AdminVer.java	chkAuth
> Nested Block Depth (avg/max per method)		1.373	0.796	5	/FinalServer/src/controller/AdminVer.java	chkAuth
> Afferent Coupling (avg/max per packageFragment)		1.5	1.5	3	/FinalServer/src/model	
> Efferent Coupling (avg/max per packageFragment)		1.5	1.5	3	/FinalServer/src/controller	
> Instability (avg/max per packageFragment)		0.5	0.5	1	/FinalServer/src/controller	
> Abstractness (avg/max per packageFragment)		0	0	0	/FinalServer/src/controller	
> Normalized Distance (avg/max per packageFragment)		0.5	0.5	1	/FinalServer/src/model	
> Depth of Inheritance Tree (avg/max per type)		1.091	0.287	2	/FinalServer/src/controller/ServerThread.java	
> Weighted methods per Class (avg/max per type)	191	17.364	8.315	30	/FinalServer/src/controller/ServerThread.java	
> Number of Children (avg/max per type)	0	0	0	0	/FinalServer/src/controller/AdminProject.java	
> Number of Overridden Methods (avg/max per type)	1	0.091	0.287	1	/FinalServer/src/controller/ServerThread.java	
> Lack of Cohesion of Methods (avg/max per type)		0.596	0.261	0.894	/FinalServer/src/model/Version.java	
> Number of Attributes (avg/max per type)	54	4.909	2.678	11	/FinalServer/src/model/Choice.java	
> Number of Static Attributes (avg/max per type)	0	0	0	0	/FinalServer/src/controller/AdminProject.java	
> Number of Methods (avg/max per type)	108	9.818	6.422	24	/FinalServer/src/model/Version.java	



# Server

## Dependency Graph View





Team 2

FindBugs

# Team 2

# FindBugs



# FinalClient

- ▼ FinalClient (12)
  - ▼ Troubling (8)
    - ▼ High confidence (6)
      - ▼ Non-transient non-serializable instance field in serializable class (6)
        - Class controller.Client defines non-transient non-serializable instance field br [Troubling(14), High confidence]
        - Class controller.Client defines non-transient non-serializable instance field ois [Troubling(14), High confidence]
        - Class controller.Client defines non-transient non-serializable instance field oos [Troubling(14), High confidence]
        - Class controller.Client defines non-transient non-serializable instance field pw [Troubling(14), High confidence]
        - Class controller.Client defines non-transient non-serializable instance field sock [Troubling(14), High confidence]
        - Class model.Version defines non-transient non-serializable instance field ctgList [Troubling(14), High confidence]
      - ▼ Normal confidence (2)
        - ▼ Unwritten field (2)
          - Unwritten field: view.MainUI\$OpinionListPanel.verNum [Troubling(12), Normal confidence]
          - Unwritten field: view.MainUI\$Version.date [Troubling(12), Normal confidence]
    - ▼ Of Concern (4)
      - ▼ High confidence (4)
        - ▼ Dead store to local variable (1)
          - Dead store to ui in controller.Main.main(String[]) [Of Concern(15), High confidence]
        - ▼ Write to static field from instance method (3)
          - Write to static field view.MainUI.c from instance method new view.MainUI() [Of Concern(15), High confidence]
          - Write to static field view.MainUI.cards from instance method new view.MainUI() [Of Concern(15), High confidence]
          - Write to static field view.MainUI.mc from instance method new view.MainUI() [Of Concern(15), High confidence]



# FinalServer

- ▼ FinalServer (5)
  - ▼ Scariest (1)
    - ▼ Normal confidence (1)
      - ▼ Self comparison of field with itself (1)
        - Self comparison of AdminVer.tmpVer with itself in controller.AdminVer.delOpinion() [Scariest(3), Normal confidence]
  - ▼ Scary (1)
    - ▼ High confidence (1)
      - ▼ An apparent infinite loop (1)
        - There is an apparent infinite loop in new controller.MainServer() [Scary(8), High confidence]
  - ▼ Troubling (3)
    - ▼ Normal confidence (3)
      - ▼ Dead store to local variable that shadows field (1)
        - Dead store to tmpVer rather than field with same name in controller.AdminVer.delOpinion() [Troubling(11), Normal confidence]
      - ▼ Value is null and guaranteed to be dereferenced on exception path (1)
        - obj is null guaranteed to be dereferenced in controller.ServerThread.analyzeMSG(String) on exception path [Troubling(11), Normal confidence]
      - ▼ Constructor invokes Thread.start() (1)
        - new controller.MainServer() invokes controller.ServerThread.start() [Troubling(14), Normal confidence]



# Team 3

# PMD Warnings





# Control.GUIManager.newProjectView3

```
139 public void newProjectView3 (ArrayList<String> cNa
140
141    .EventQueue.invokeLater(new Runnable() {
142         public void run() {
143             try {
144                 newProjectFrame3 = new NewProject
145                 newProjectFrame3.setVisible(true)
146             } catch (Exception e) {
147                 e.printStackTrace();
148             }
149         }
150     });
```

Rule	Error Message
DoNotUseThreads	To be compliant to J2EE, a webapp should not use a
AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPoint
BeanMembersShouldSerialize	Found non-transient, non-static member. Please mar
AvoidPrintStackTrace	Avoid printStackTrace(); use a logger call instead.
AvoidPrintStackTrace	Avoid printStackTrace(); use a logger call instead.
ExcessivePublicCount	This class has a bunch of public methods and attribu
AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPoint
LooseCoupling	Avoid using implementation types like 'ArrayList'; us

# Control.GUIManager.newProjectView4

```
public void addVersionView4 (ArrayList<String> rvN
   .EventQueue.invokeLater(new Runnable() {
        public void run() {
            try {
                addVersionFrame4 = new AddVersion
                addVersionFrame4.setVisible(true)
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    });
```

created	Rule	Error Message
Thu Jun 01 10:22:3...	DoNotUseThreads	To be compliant to J2EE, a w
Thu Jun 01 10:22:3...	AvoidCatchingGenericException	Avoid catching generic excep
Thu Jun 01 10:22:3...	BeanMembersShouldSerialize	Found non-transient, non-sta
Thu Jun 01 10:22:3...	AvoidPrintStackTrace	Avoid printStackTrace(); use a
Thu Jun 01 10:22:3...	AvoidPrintStackTrace	Avoid printStackTrace(); use a
Thu Jun 01 10:22:3...	ExcessivePublicCount	This class has a bunch of put
Thu Jun 01 10:22:3...	AvoidCatchingGenericException	Avoid catching generic excep
Thu Jun 01 10:22:3...	LooseCoupling	Avoid using implementation
Thu Jun 01 10:22:3...	BeanMembersShouldSerialize	Found non-transient, non-sta
Thu Jun 01 10:22:3...	BeanMembersShouldSerialize	Found non-transient. non-sta



# Control.GUIManager.saveFileChooser

```
244     FileChooser fc = new FileChooser();
245     System.out.println("open 탐색기");
246 }
247
248 public void saveFileChooser() {
249     FileChooser fc = new FileChooser();
250     System.out.println("save 탐색기");
251 }
252
253 //버전패널 추가하는거
254 public void addVerisonPanel(int vn, int fn){
255     leaderMain.addVersionPanel(vn, fn);
256 }
```

Rule	Error Message
LocalVariableCouldBeFinal	Local variable 'frame' could be declared final
LooseCoupling	Avoid using implementation types like 'Array'
AvoidCatchingGenericException	Avoid catching generic exceptions such as N
UnusedLocalVariable	Avoid unused local variables such as 'fc'.
BeanMembersShouldSerialize	Found non-transient, non-static member. Ple
MethodArgumentCouldBeFinal	Parameter 'cName' is not assigned and could
UncommentedEmptyConstruct...	Document empty constructor
AvoidCatchingGenericException	Avoid catching generic exceptions such as N
MethodArgumentCouldBeFinal	Parameter 'cNum' is not assigned and could
BeanMembersShouldSerialize	Found non-transient, non-static member. Ple

# Control.GUIManager

```
1 package Control;
2 import java.awt.EventQueue;
21
22 public class GUIManager{
23
24     public MainSystem mainSystem;
25
26     public LeaderMainView leaderMain;
27     public MemberMainView memberMain;
28
29     public NewProjectView1 newProjectFrame1;
30     public NewProjectView2 newProjectFrame2;
```

Rule	Error Message
DoNotUseThreads	To be compliant to J2EE, a webapp should not us
AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPc
BeanMembersShouldSerialize	Found non-transient, non-static member. Please i
AvoidPrintStackTrace	Avoid printStackTrace(); use a logger call instead.
AvoidPrintStackTrace	Avoid printStackTrace(); use a logger call instead.
ExcessivePublicCount	This class has a bunch of public methods and att
AvoidCatchingGenericException	Avoid catching generic exceptions such as NullPc
LooseCoupling	Avoid using implementation types like 'ArrayList';
BeanMembersShouldSerialize	Found non-transient, non-static member. Please i



## Control.GUIManager.GUIManager

```
46 //
47 //     loginView();
48 //
49 // }
50
51 public GUIManager() {
52
53 }
54
55 public void loginView() {
```

10:42:3...	AvoidCatchingGenericException	Avoid catching generic exceptions such a
10:42:3...	AvoidCatchingGenericException	Avoid catching generic exceptions such a
10:42:3...	MethodArgumentCouldBeFinal	Parameter 'rvName' is not assigned and c
10:42:3...	PackageCase	Package name contains upper case chara
10:42:3...	UnnecessaryConstructor	Avoid unnecessary constructors - the con
10:42:3...	AvoidCatchingGenericException	Avoid catching generic exceptions such a
10:42:3...	MethodArgumentCouldBeFinal	Parameter 'cNum' is not assigned and cor
10:42:3...	LooseCoupling	Avoid using implementation types like 'Ai
10:42:3...	AvoidCatchingGenericException	Avoid catching generic exceptions such a

## Control.ReceiveThreadInNetworkManager.run

```
y {
  while(true){
    if(clientId == 0){
      DataInputStream in = new DataInputStream(this.rtSc
      String feedback = in.readUTF();
      // 疏...泥...
      MainSystem.reqSetFeedback(feedback);
    }

    if(clientId == 1){//...
      ObjectInputStream in = new ObjectInputStream(this.
      Object project = in.readObject();
```

AvoidLiteralsInIfCondition	Avoid using Literals in Conditional Statements
LocalVariableCouldBeFinal	Local variable 'in' could be declared final
AvoidInstantiatingObjectsInLoo...	Avoid instantiating new objects inside loops
LocalVariableCouldBeFinal	Local variable 'project' could be declared final
LocalVariableCouldBeFinal	Local variable 'check' could be declared final
CallSuperInConstructor	It is a good practice to call super() in a construc
LocalVariableCouldBeFinal	Local variable 'feedback' could be declared final
ImmutableField	Private field 'rtSocket' could be made final; it is
AvoidUsingHardCodedIP	Do not hard code the IP address
MethodArgumentCouldBeFinal	Parameter 'feedback' is not assigned and could l



# Control.NetworkManager.reqLogin

```

ic boolean reqLogin(int id){
try {
    this.socket = new Socket("127.0.0.1",7777);

    DataOutputStream out = new DataOutputStream(this.socket.getOutputStream());
    DataInputStream in = new DataInputStream(this.socket.getInputStream());

    out.writeInt(id);
}
}

```

:3...	LocalVariableCouldBeFinal	Local variable 'feedback' could be decl
:3...	ImmutableField	Private field 'rtSocket' could be made f
:3...	AvoidUsingHardCodedIP	Do not hard code the IP address
:3...	MethodArgumentCouldBeFinal	Parameter 'feedback' is not assigned a
:3...	UnusedPrivateField	Avoid unused private fields such as 'na
:3...	MethodArgumentCouldBeFinal	Parameter 'socket' is not assigned and
:3...	MethodArgumentCouldBeFinal	Parameter 'id' is not assigned and coul
:3...	RedundantFieldInitializer	Avoid using redundant field initializer t
:3...	UnusedPrivateField	Avoid unused private fields such as 'tr

# Control.ReceiveThreadInNetworkManager

```

private Socket rtSocket;
private int clientId = 0;
private MainSystem rtms;

public ReceiveThreadInNetworkManager(Socket socket, int id) {
    this.rtSocket = socket;
    this.clientId = id;
}

```

:3...	MethodArgumentCouldBeFinal	Parameter 'socket' is not assigned and could be
:3...	MethodArgumentCouldBeFinal	Parameter 'id' is not assigned and could be decl
:3...	RedundantFieldInitializer	Avoid using redundant field initializer for 'client
:3...	UnusedPrivateField	Avoid unused private fields such as 'rtms'.
:3...	LocalVariableCouldBeFinal	Local variable 'out' could be declared final
:3...	ImmutableField	Private field 'name' could be made final; it is on
:3...	LocalVariableCouldBeFinal	Local variable 'out' could be declared final
:3...	BeanMembersShouldSerialize	Found non-transient, non-static member. Please



# Control.NetworkManager.reqLogin

```
public boolean reqLogin(int id) {
    try {
        this.socket = new Socket("127.0.0.1",7777);

        DataOutputStream out = new DataOutputStream(this.socket.getOutputStream());
        DataInputStream in = new DataInputStream(this.socket.getInputStream());

        out.writeInt(id);

        int check = in.readInt();

        if(check == 0){
            System.out.println("로그인 실패");
            return false;
        }

        System.out.println("로그인 성공");
        new ReceiveThreadInNetworkManager( this.socket, id ).start();
        return true;

    } catch (UnknownHostException e) {
        e.printStackTrace();
    } catch (IOException e) {
        e.printStackTrace();
    }
    return false;
}
```

..	AvoidLiteralsInIfCondition	Avoid using Literals in Conditional Statements
..	LocalVariableCouldBeFinal	Local variable 'in' could be declared final
..	AvoidInstantiatingObjectsInLoops	Avoid instantiating new objects inside loops
..	LocalVariableCouldBeFinal	Local variable 'project' could be declared final
..	LocalVariableCouldBeFinal	Local variable 'check' could be declared final
..	CallSuperInConstructor	It is a good practice to call super() in a constructor
..	LocalVariableCouldBeFinal	Local variable 'feedback' could be declared final
..	ImmutableField	Private field 'rtSocket' could be made final; it is only initialized i
..	AvoidUsingHardCodedIP	Do not hard code the IP address
..	MethodArgumentCouldBeFinal	Parameter 'feedback' is not assigned and could be declared fina
..	UnusedPrivateField	Avoid unused private fields such as 'name'.
..	MethodArgumentCouldBeFinal	Parameter 'socket' is not assigned and could be declared final
..	MethodArgumentCouldBeFinal	Parameter 'id' is not assigned and could be declared final
..	RedundantFieldInitializer	Avoid using redundant field initializer for 'clientId'
..	UnusedPrivateField	Avoid unused private fields such as 'rtms'.
..	LocalVariableCouldBeFinal	Local variable 'out' could be declared final
..	ImmutableField	Private field 'name' could be made final; it is only initialized in t
..	LocalVariableCouldBeFinal	Local variable 'out' could be declared final
..	BeanMembersShouldSerialize	Found non-transient, non-static member. Please mark as transie
..	LocalVariableCouldBeFinal	Local variable 'in' could be declared final
..	OnlyOneReturn	A method should have only one exit point, and that should be t
..	MethodArgumentCouldBeFinal	Parameter 'id' is not assigned and could be declared final
..	AvoidInstantiatingObjectsInLoops	Avoid instantiating new objects inside loops
..	AtLeastOneConstructor	Each class should declare at least one constructor
..	LocalVariableCouldBeFinal	Local variable 'out' could be declared final





# Control.ResultManager.calculateTestCaseNum

```

for(int i = 0; i < tmp.getCategoryNum(); i++) {
    for(int j = 0; j < tmp.getCategoryList().get(i).getRPValueNum(); j++)
        for(int k = 0; k < tmp.getCategoryList().get(i).getRPValueList().g
            if(tmp.getCategoryList().get(i).getRPValueList().get(j).getCon
                //지음시 index 변경으로 arrayindexoutofbound 예상됨.
                tmp.getCategoryList().get(i).setRPValueNum(tmp.getCategory
                tmp.getCategoryList().get(i).getRPValueList().get(j).setCo
                tmp.getCategoryList().get(i).getRPValueList().remove(j);
                j--;
                break;
            }
            else if(tmp.getCategoryList().get(i).getRPValueList().get(j).g
                tmp.getCategoryList().get(i).setRPValueNum(tmp.getCategory
                tmp.getCategoryList().get(i).getRPValueList().get(j).setCo
                tmp.getCategoryList().get(i).getRPValueList().remove(j);
                j--;
                break;

```

LawOfDemeter	Potential violation of Law of Demeter (method chain calls)
CollapsibleIfStatements	These nested if statements could be combined
MethodArgumentCouldBeFinal	Parameter 'conditionCheck' is not assigned and could be decla
LawOfDemeter	Potential violation of Law of Demeter (method chain calls)
LawOfDemeter	Potential violation of Law of Demeter (object not created local
<b>NPathComplexity</b>	<b>The method calculateTestCaseNum() has an NPath complexity</b>
LawOfDemeter	Potential violation of Law of Demeter (method chain calls)
LawOfDemeter	Potential violation of Law of Demeter (method chain calls)
ModifiedCyclomaticComplexity	The method 'calculateTestCaseNum' has a Modified Cyclomatic
LawOfDemeter	Potential violation of Law of Demeter (object not created local
LawOfDemeter	Potential violation of Law of Demeter (method chain calls)
LawOfDemeter	Potential violation of Law of Demeter (object not created local
PositionLiteralsFirstInComparis...	Position literals first in String comparisons
LawOfDemeter	Potential violation of Law of Demeter (method chain calls)
LawOfDemeter	Potential violation of Law of Demeter (object not created local



# Team 3

# Metrics Report



# Cyclomatic complexity

Metric	Total	Mean	Std. Dev.	Maximum	Resource causing Maximum	Method
▼ McCabe Cyclomatic Complexity (avg/max pe		2.152	3.83	42	/SMA/src/Control/ResultManager.java	calculateTestCaseNum
▼ src		2.152	3.83	42	/SMA/src/Control/ResultManager.java	calculateTestCaseNum
▼ Control		2.387	5.936	42	/SMA/src/Control/ResultManager.java	calculateTestCaseNum
▼ ResultManager.java		26	11.431	42	/SMA/src/Control/ResultManager.java	calculateTestCaseNum
> ResultManager		26	11.431	42	/SMA/src/Control/ResultManager.java	calculateTestCaseNum
> NetworkManager.java		3	1.789	6	/SMA/src/Control/NetworkManager.java	run
> MainSystem.java		1.056	0.229	2	/SMA/src/Control/MainSystem.java	reqReceivedProject
> GUIManager.java		1	0	1	/SMA/src/Control/GUIManager.java	GUIManager
> ProjectManager.java		1	0	1	/SMA/src/Control/ProjectManager.java	ProjectManager
▼ GUI		2.704	2.258	11	/SMA/src/GUI/FileChooser.java	FileChooser
▼ FileChooser.java		11	0	11	/SMA/src/GUI/FileChooser.java	FileChooser
> FileChooser		11	0	11	/SMA/src/GUI/FileChooser.java	FileChooser
> LeaderMainView.java		1.857	2.1	7	/SMA/src/GUI/LeaderMainView.java	actionPerformed
> AddVersionView3.java		4.667	2.055	7	/SMA/src/GUI/AddVersionView3.java	AddVersionView3
> NewProjectView3.java		5	2.16	7	/SMA/src/GUI/NewProjectView3.java	NewProjectView3
> NewProjectView2.java		5.5	0.5	6	/SMA/src/GUI/NewProjectView2.java	NewProjectView2
> AddVersionView2.java		5.5	0.5	6	/SMA/src/GUI/AddVersionView2.java	AddVersionView2
> NewProjectView4.java		3.667	1.247	5	/SMA/src/GUI/NewProjectView4.java	NewProjectView4
> AddVersionView4.java		3.667	1.247	5	/SMA/src/GUI/AddVersionView4.java	AddVersionView4
> MemberVersionDisplay.java		4	1	5	/SMA/src/GUI/MemberVersionDisplay.java	MemberVersionDisplay
> LoginView.java		2.5	1.5	4	/SMA/src/GUI/LoginView.java	actionPerformed
> VersionDisplay.java		2.333	1.247	4	/SMA/src/GUI/VersionDisplay.java	VersionDisplay
> VersionPanel.java		1.2	0.6	3	/SMA/src/GUI/VersionPanel.java	actionPerformed
> LeaderFeedbackView.java		1.5	0.5	2	/SMA/src/GUI/LeaderFeedbackView.java	LeaderFeedbackView
> NewProjectView1.java		1.5	0.5	2	/SMA/src/GUI/NewProjectView1.java	actionPerformed
> AddVersionView1.java		1.5	0.5	2	/SMA/src/GUI/AddVersionView1.java	actionPerformed
> FinalView.java		1.5	0.5	2	/SMA/src/GUI/FinalView.java	FinalView
> MemberMainView.java		1	0	1	/SMA/src/GUI/MemberMainView.java	MemberMainView
> MemberVersionPanel.java		1	0	1	/SMA/src/GUI/MemberVersionPanel.java	MemberVersionPanel





# Number of Parameters

▼ Number of Parameters (avg/max per method)	0.865	0.87	8	/SMA/src/Control/ResultManager.java	recurse
▼ src	0.865	0.87	8	/SMA/src/Control/ResultManager.java	recurse
▼ Control	0.919	1.182	8	/SMA/src/Control/ResultManager.java	recurse
▼ ResultManager.java	3.333	3.3	8	/SMA/src/Control/ResultManager.java	recurse
> ResultManager	3.333	3.3	8	/SMA/src/Control/ResultManager.java	recurse
> GUIManager.java	0.708	0.841	2	/SMA/src/Control/GUIManager.java	newProjectView3
> NetworkManager.java	1	0.632	2	/SMA/src/Control/NetworkManager.java	ReceiveThreadInNetwork...
> MainSystem.java	0.833	0.687	2	/SMA/src/Control/MainSystem.java	reqCreateProject
> ProjectManager.java	0.833	0.799	2	/SMA/src/Control/ProjectManager.java	reqCreateProject
> GUI	1.019	0.561	2	/SMA/src/GUI/LeaderMainView.java	addVersionPanel
> Model	0.667	0.638	2	/SMA/src/Model/Version.java	createCategory
> Server	0.75	0.829	2	/SMA/src/Server/MainServer.java	sendToLeader



# Nested Block Depth

▼ Nested Block Depth (avg/max per method)	1.68	1.148	8	SMA/src/Control/ResultManager.java	recurse
▼ src	1.68	1.148	8	SMA/src/Control/ResultManager.java	recurse
▼ Control	1.887	1.438	8	SMA/src/Control/ResultManager.java	recurse
▼ ResultManager.java	6.667	1.247	8	SMA/src/Control/ResultManager.java	recurse
▼ ResultManager	6.667	1.247	8	/SMA/src/Control/ResultManager.java	recurse
recurse	8				
calculateTestCaseNum	7				
combinationTestCase	5				














Team 3

FindBugs

# Team 3

# FindBugs



- ▼  > SMA (6) [SMA master]
  - ▼  Of Concern (6)
    - ▼  High confidence (6)
      - ▼  Dead store to local variable (2)
        -  Dead store to fc in Control.GUIManager.openFileChooser() [Of Concern(15), High confidence]
        -  Dead store to fc in Control.GUIManager.saveFileChooser() [Of Concern(15), High confidence]
      - ▼  Write to static field from instance method (4)
        -  Write to static field Control.MainSystem.gm from instance method new Control.MainSystem() [Of Concern(15), High confidence]
        -  Write to static field Control.MainSystem.nm from instance method new Control.MainSystem() [Of Concern(15), High confidence]
        -  Write to static field Control.MainSystem.pm from instance method new Control.MainSystem() [Of Concern(15), High confidence]
        -  Write to static field Control.MainSystem.rm from instance method new Control.MainSystem() [Of Concern(15), High confidence]

Q & A





# Thank you!