

***** Tracking NULL Checks in Open-Source Java Systems *****

```
- If statments in code: {  
if ((name == null) || (adress == null)) 24  
if (customers != null) 32  
if ((c.name != null) && (c.adress != null)) 34  
if (c != null) 42  
if ((customers.get(i).name.equals(name)) && (customers.get(i) != null)) 50  
if ((newCity != null) && (newStreet != null)) 59  
if ((cName == null) || (cAddress == null) || (cStreet == null)) 73  
if ((obj != null) && (customer2.adress != null)) 80  
if (customer2.getCustomerbyName(cName) == null) 83  
if ((null == city2) || (Street2 == null)) 91  
if (ad != null) 95  
}
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- Null comprands : {  
Null comparand[1] := name  
Null comparand[2] := adress  
Null comparand[3] := c.name  
Null comparand[4] := c.adress  
Null comparand[5] := customers.get(i)  
Null comparand[6] := newCity  
Null comparand[7] := newStreet  
Null comparand[8] := cName  
Null comparand[9] := cAddress  
Null comparand[10] := cStreet  
Null comparand[11] := obj  
Null comparand[12] := customer2.adress  
Null comparand[13] := city2  
Null comparand[14] := Street2  
}
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-Null comprands type :{  
name ,Type := Name  
adress ,Type := Name  
c.name ,Type := field access  
c.adress ,Type := field access  
customers.get(i) ,Type := method call  
newCity ,Type := Name
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newStreet ,Type := Name
cName ,Type := Name
cAddress ,Type := Name
cStreet ,Type := Name
obj ,Type := Name
customer2.adress ,Type := field access
city2 ,Type := Name
Street2 ,Type := Name

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Null-c (name) Is a memeber variable
Null-c (adress) Is a memeber variable
Null-c (newCity) Is a parameter variable
Null-c (newStreet) Is a parameter variable
Null-c (cName) Is a local variable
Null-c (cAddress) Is a local variable
Null-c (cStreet) Is a local variable
Null-c (obj) Is a local variable
Null-c (city2) Is a parameter variable
Null-c (Street2) Is a local variable

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- Null comparands definition :

NC_Def :=String name; 7
NC_Def :=name = null; 12
NC_Def :=this.name = name; 18
NC_Def :=Address adress; 8
NC_Def :=adress = null; 13
NC_Def :=this.adress = new Address(city, street); 19
NC_Def :=String cName = in.next(); 68
NC_Def :=String cAddress = in.next(); 69
NC_Def :=String cStreet = in.next(); 70
NC_Def :=Object obj = (String) customer2.name; 79
NC_Def :=String city2 = in.next(); 89
NC_Def :=String Street2 = in.next(); 90

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No assigned value to name in line String name; 7
null assigned to name
name is a reference value assigned to this.name
No assigned value to adress in line Address adress; 8
null assigned to adress

new Address(city, street) is a Object creation assigned to this.adress

in.next() is a method call assigned to String cName

in.next() is a method call assigned to String cAddress

in.next() is a method call assigned to String cStreet

(String) customer2.name is a casting assigned to Object obj

in.next() is a method call assigned to String city2

in.next() is a method call assigned to String Street2

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Average of If statments that contains null :=1.0%

Average of Members from all Null_comparand :=0.0%

Average of Parameters from all Null_comparand :=0.0%

Average of Locals from all Null_comparand :=0.0%

Average of Methode calls from all Null_comparand :=0.0%