

# Visualization of Code Changes

## Design Prototypes

# Example changeset

**Software:** Mockito, popular mocking framework for unit tests written in Java

**Changeset:** Pull request #1247

## Change details:

- package org.mockito.internal.exceptions **modified**
  - class MockitoLimitations **deleted**
  - class Reporter **modified**
    - method missingMethodInvocation **modified** (**deleted** call to MockitoLimitations)
    - method unfinishedVerificationException **modified** (**deleted** call to MockitoLimitations)
    - method cannotStubVoidMethodWithAReturnValue **modified** (**deleted** call to MockitoLimitations)
    - method misplacedArgumentMatcher **modified** (**deleted** call to MockitoLimitations)
- package org.mockito.internal.junit **modified**
  - class MismatchReportingTestListener **modified**
    - method testFinished **modified** (**deleted** call to org.mockito.internal.junit.util.TestName.getTestName)
- package org.mockito.internal.junit.util **modified**
  - class TestName **deleted**
    - method getTestName **deleted**
- package org.mockito.internal.matchers.text **modified**
  - class ArrayIterator **deleted**
    - method ArrayIterator **deleted**
    - method hasNext **deleted**
    - method next **deleted**
    - method remove **deleted**
  - class ValuePrinter **modified**
    - method print **modified** (**deleted** call to ArrayIterator)
- package org.mockito.internal.util.collections **modified**
  - class Sets **modified**
    - method newIdentitySet **deleted**

**Prototype 1**

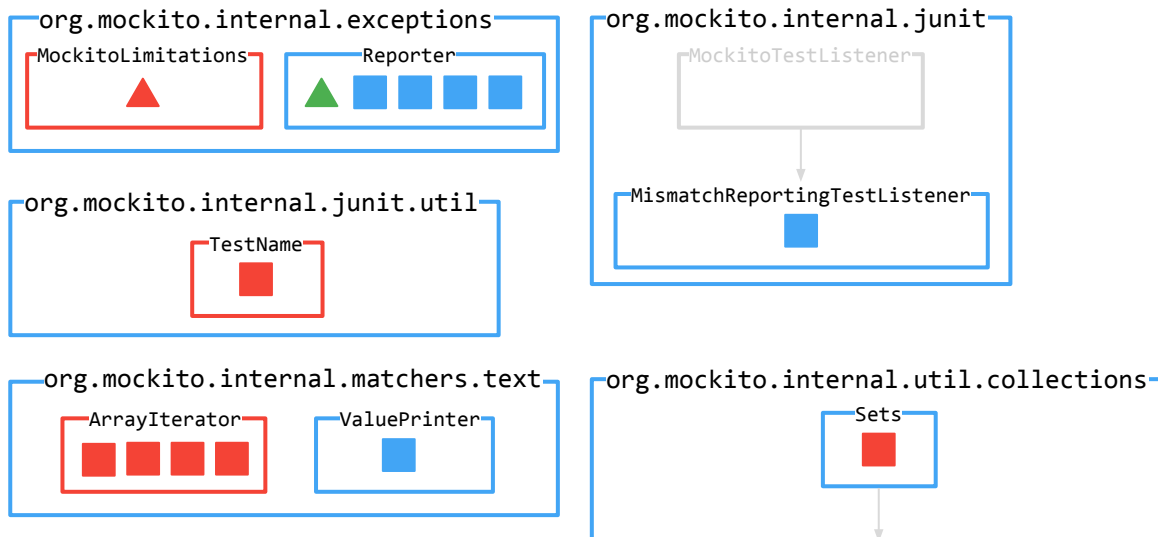
## Change Summary

- Packages (0+, 0-, 5🔒)
- Classes (0+, 3-, 4🔒)
- Methods (0+, 6-, 6🔒)
- Variables (1+, 1-, 0🔒)

## Change Details

- org.mockito.internal.exceptions
  - MockitoLimitations
    - NON\_PUBLIC\_PARENT
  - Reporter
    - NON\_PUBLIC\_PARENT
    - missingMethodInvocation
    - unfinishedVerificationExc...
    - cannotStubVoidMethodWithA...
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- org.mockito.internal.junit
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  - Sets
    - newIdentitySet

## Overview



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- Packages (0+, 0-, 5🔒)
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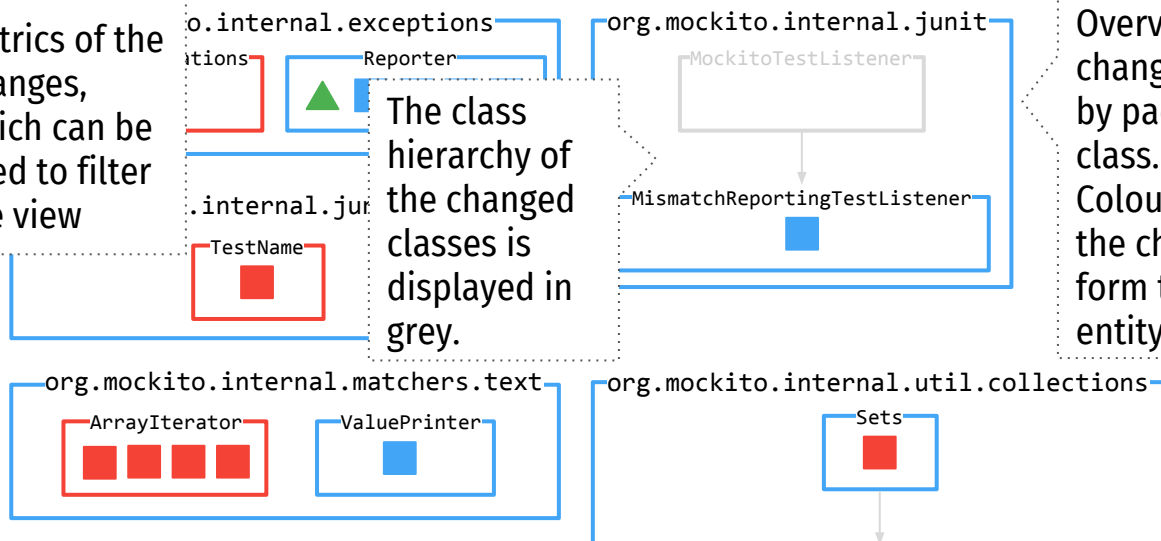
Metrics of the changes, which can be used to filter the view

The class hierarchy of the changed classes is displayed in grey.

Overview of the changes, grouped by package and class. Colours express the change status, form the type of entity.

Textual list of the structural changes

## Overview



## Change Summary

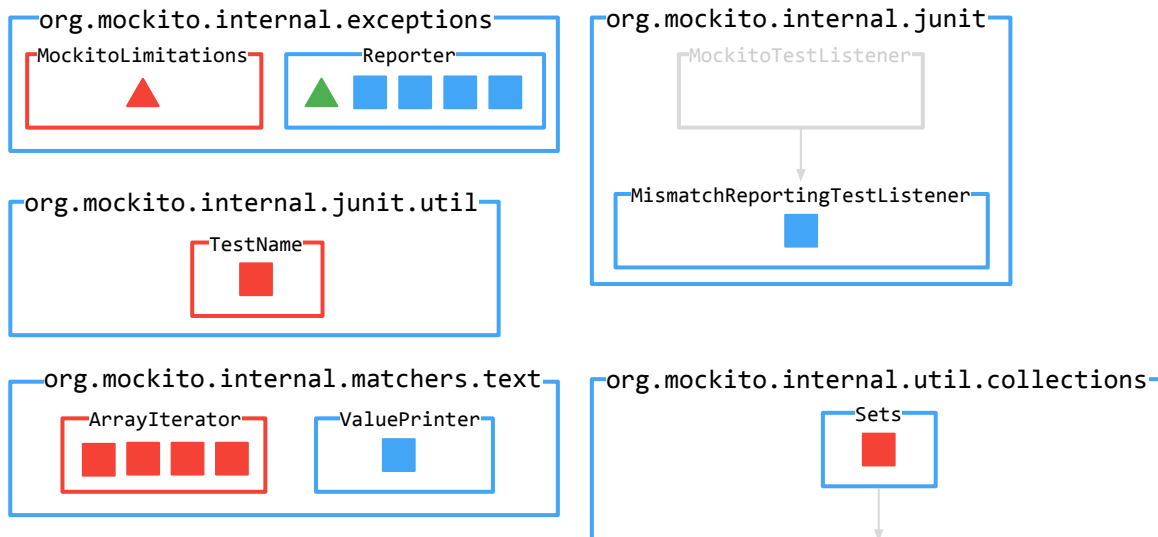
- ✦ Packages (0+, 0-, 5🔒)
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- Methods (0+, 6-, 6🔒)
- Variables (1+, 1-, 0🔒)

*\*click\**

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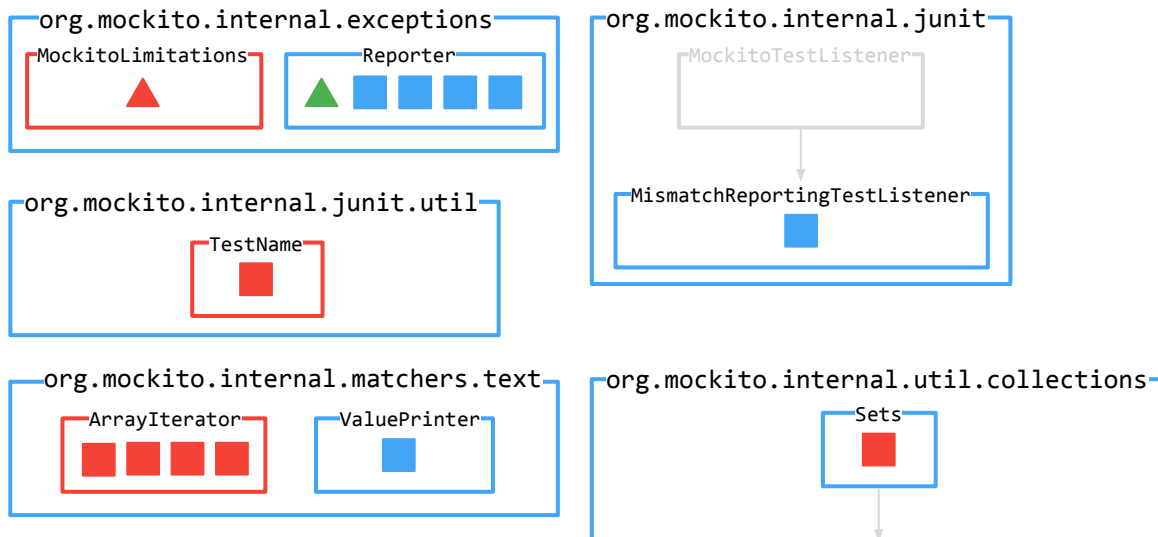
## Change Summary

- Packages (0+, 0-, 5🔒)  
(+) **Added:** 0  
(-) **Removed:** 0  
(🔒) **Modified:** 5
- Classes (0+, 3-, 4🔒)
- Methods (0+, 6-, 6🔒)
- Variables (1+, 1-, 0🔒)

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- 🔒 org.mockito.internal.exceptions
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➤ Packages (0+, 0-, 5🔒)

(+) Added: 0

(-) Removed: 0

(🔒) Modified: 5

➤ Classes (0+, 3-, 4🔒)

➤ Methods (0+, 6-, 6🔒)

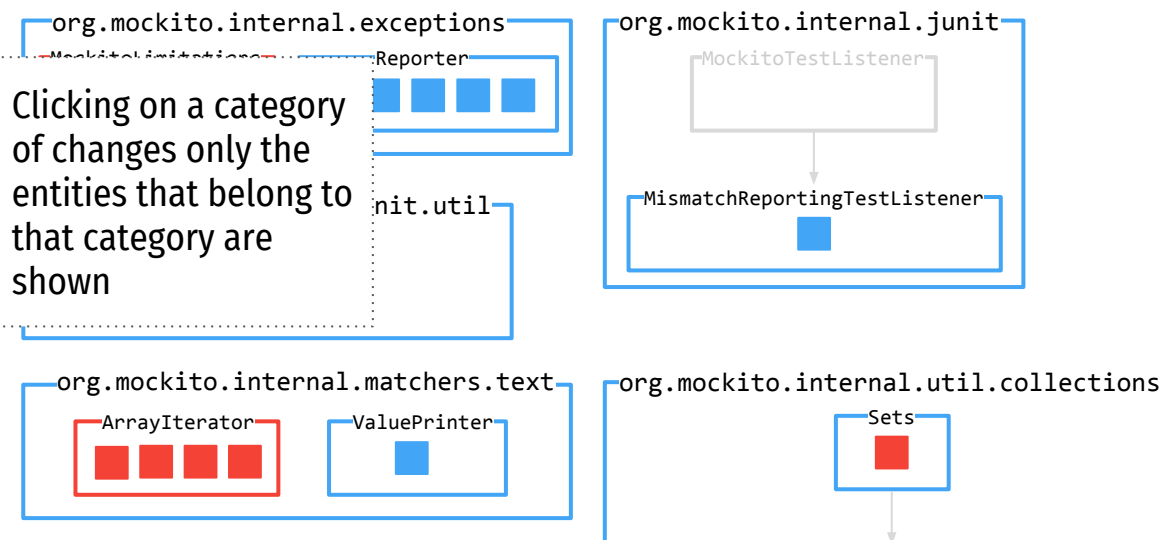
➤ Variables (1+, 1-, 0🔒)

*\*click\**

## Change Details





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## Overview





Change Summary	Overview
<div data-bbox="73 128 359 353"><div data-bbox="73 128 359 158">&gt; Packages (0+, 0-, 5 🛡️)</div><div data-bbox="104 161 239 191">(+) Added: 0</div><div data-bbox="104 194 270 223">(-) Removed: 0</div><div data-bbox="104 227 280 256">(🛡️) Modified: 5</div><div data-bbox="73 259 336 289">&gt; Classes (0+, 3-, 4 🛡️)</div><div data-bbox="73 292 351 322">&gt; Methods (0+, 6-, 6 🛡️)</div><div data-bbox="73 325 351 353">&gt; Variables (1+, 1-, 0 🛡️)</div></div>	
Change Details	

Change Summary	Overview
<div><div>&gt; Packages (0+, 0-, 5 )</div><div>(+) Added: 0</div><div>(-) Removed: 0</div><div> Modified: <div>*click*</div></div><div>&gt; Classes (+, 3)</div><div>&gt; Methods (+, 6-, 6 )</div><div>&gt; Variables (1+, 1-, 0 )</div></div>	
Change Details	

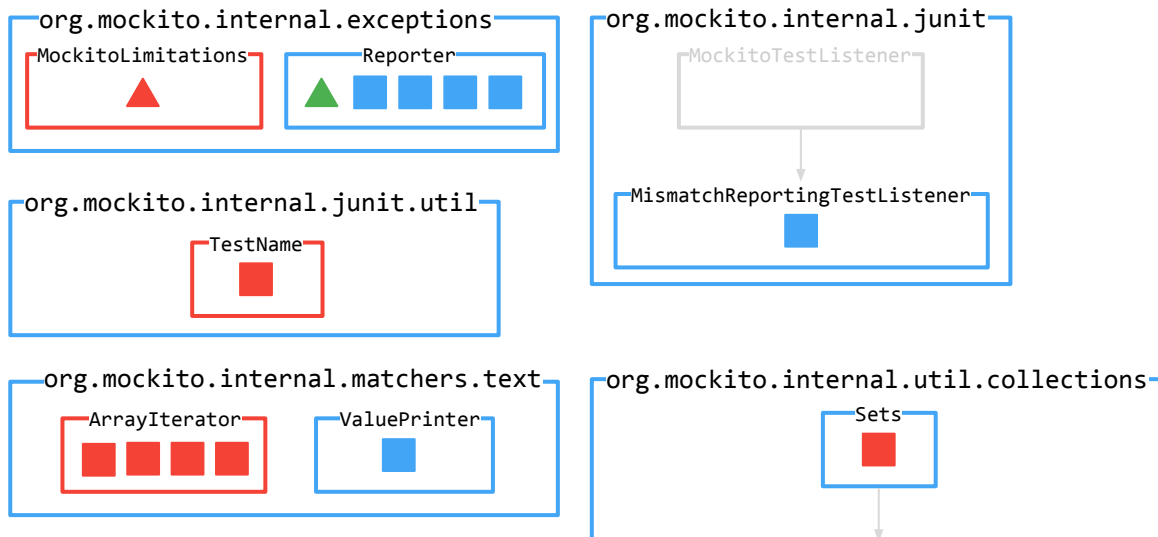
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- Packages (0+, 0-, 5🔒)  
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## Overview



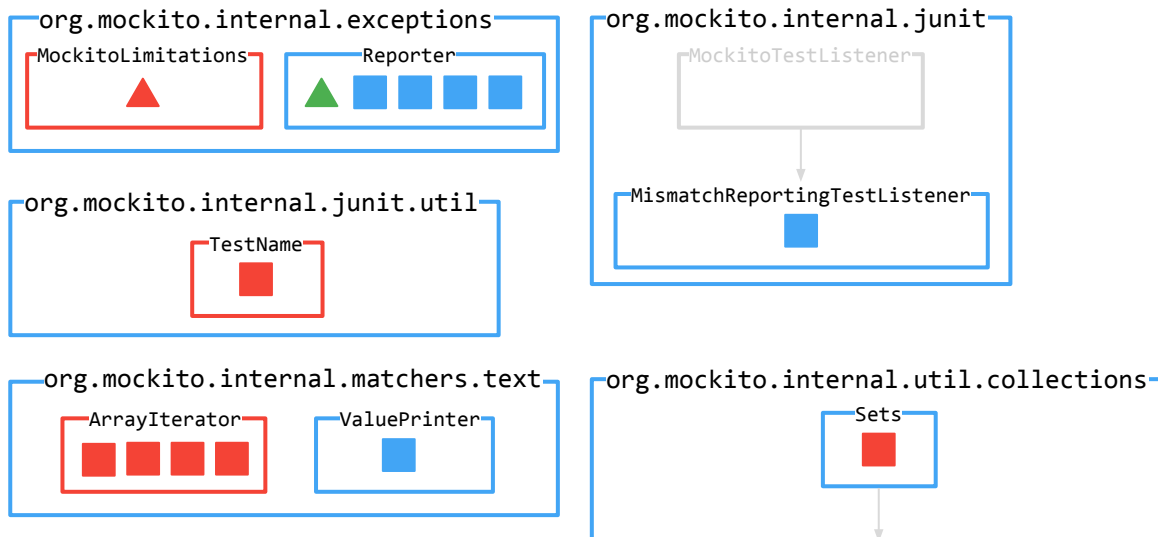
## Change Summary

- Packages (0+, 0-, 5🔒)  
(+) **Added: 0**  
(-) **Removed: 0**  
(🔒) **Modified: 5**
- Classes (0+, **\*click\***)
- Methods (0+, **\*click\***)
- Variables (0+, 1-, 0🔒)

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- org.mockito.internal.exceptions
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    - NON\_PUBLIC\_PARENT
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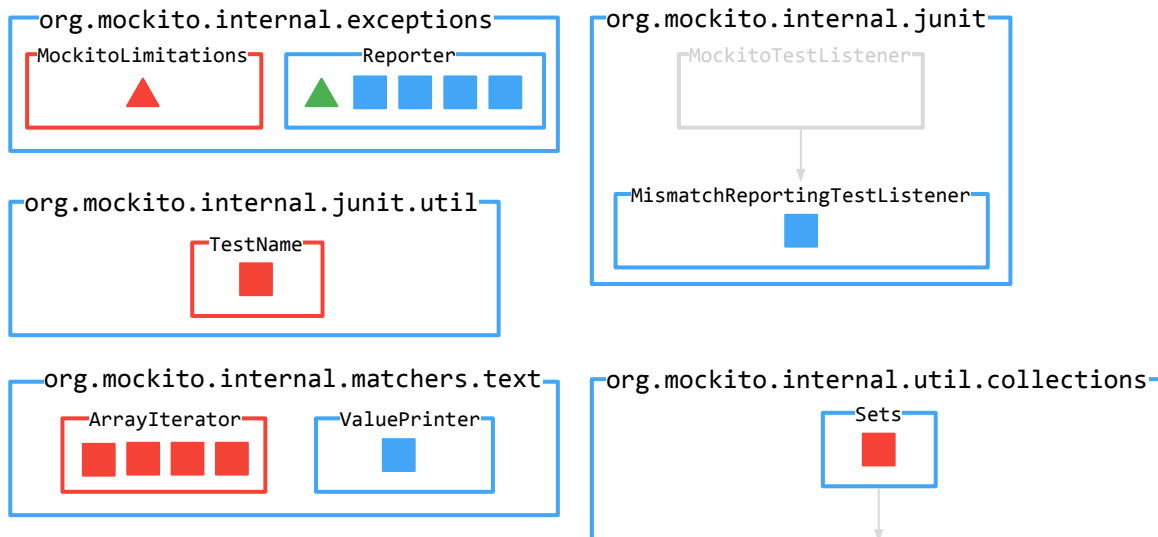
## Change Summary

- Packages (0+, 0-, 5🔒)
- Classes (0+, 3-, 4🔒)
  - (+) **Added:** 0
  - (-) **Removed:** 3
  - (🔒) **Modified:** 4
- Methods (0+, 6-, 6🔒)
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- 🔒 org.mockito.internal.exceptions
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## Overview



## Change Summary

➤ Packages (0+, 0-, 5🔒)

➤ Classes (0+, 3-, 4🔒)

(+) Added: 0

(-) Removed: 0

(🔒) Modified: 4

➤ Methods (6-, 6🔒)

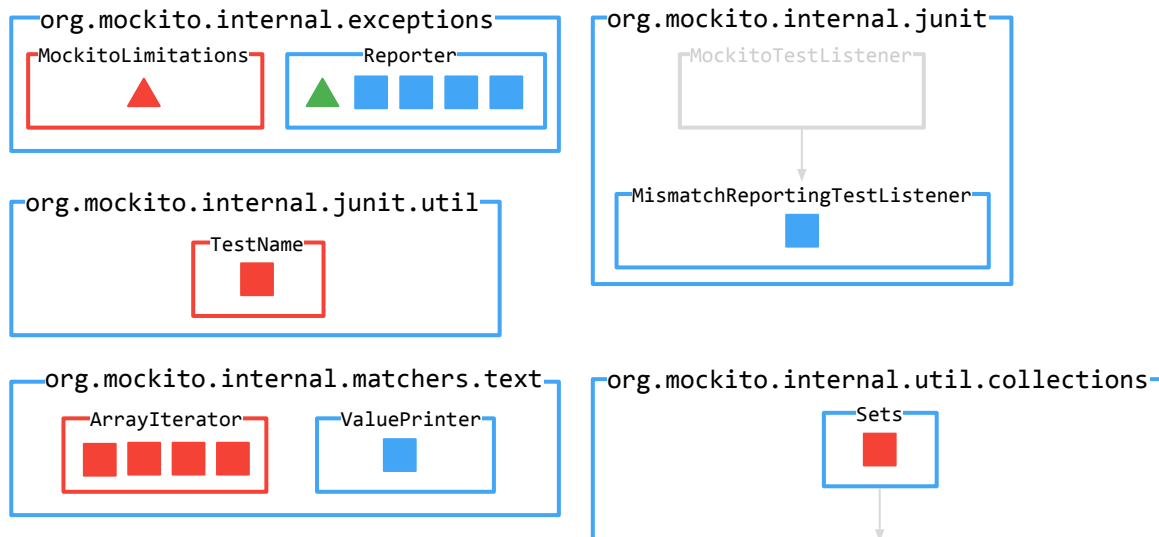
➤ Variables (1+, 1-, 0🔒)

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## Change Details

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<div><div>&gt; Packages (0+, 0-, 5🔒)</div><div>&gt; Classes (0+, 3-, 4🔒)</div><div>(+) <b>Added:</b> 0</div><div>(-) <b>Removed:</b> 3</div><div>(🔒) <b>Modified:</b> 4</div><div>&gt; Methods (0+, 6-, 6🔒)</div><div>&gt; Variables (1+, 1-, 0🔒)</div></div>	<div><div>org.mockito.internal.exceptions<div>MockitoLimitations<div>▲</div></div></div><div>org.mockito.internal.junit.util<div>TestName<div>■</div></div></div><div>org.mockito.internal.matchers.text<div>ArrayIterator<div>■ ■ ■ ■</div></div></div></div>
Change Details	
<div><div>org.mockito.internal.exceptions<div>MockitoLimitations<div>▲NON_PUBLIC_PARENT</div></div></div><div><div>org.mockito.internal.junit.util<div>TestName<div>getTestName</div></div></div></div><div><div>org.mockito.internal.matchers.text<div>ArrayIterator<div>hasNext</div><div>next</div><div>remove</div></div></div></div></div>	

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  - (🔒) Modified: 0
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- Variables (0+, 1-, 0🔒)

*\*click\**

## Change Details

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  - MockitoLimitations
    - NON\_PUBLIC\_PARENT
- org.mockito.internal.junit.util
  - TestName
    - getTestName
- org.mockito.internal.matchers.text
  - ArrayIterator
    - ArrayIterator
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## Overview

org.mockito.internal.exceptions

MockitoLimitations



org.mockito.internal.junit.util

TestName



org.mockito.internal.matchers.text

ArrayIterator





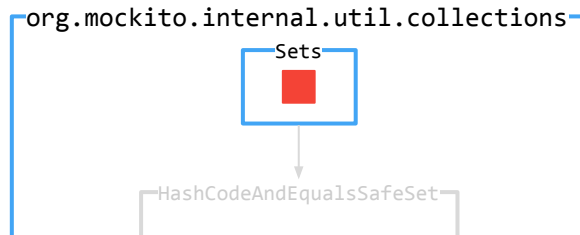
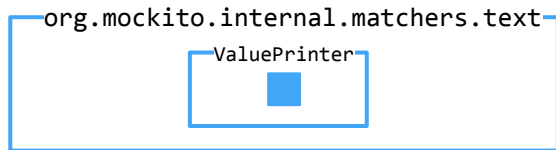
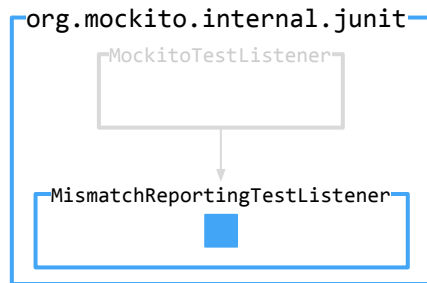
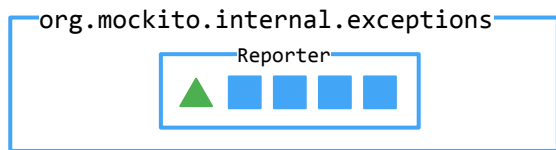
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- 🔒 org.m-.internal.util.collections
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    - newIdentitySet

## Overview



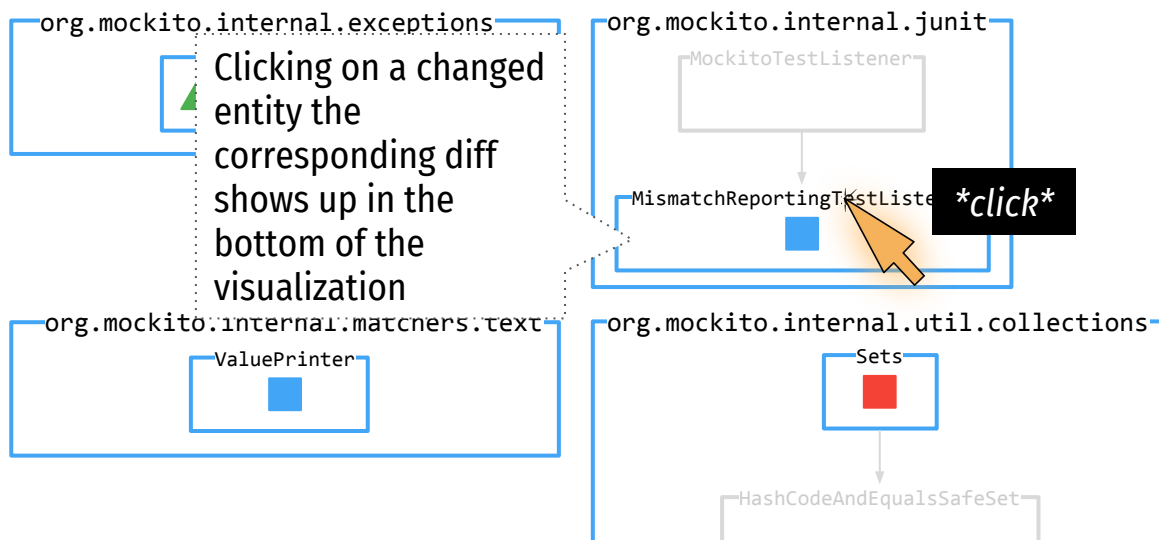
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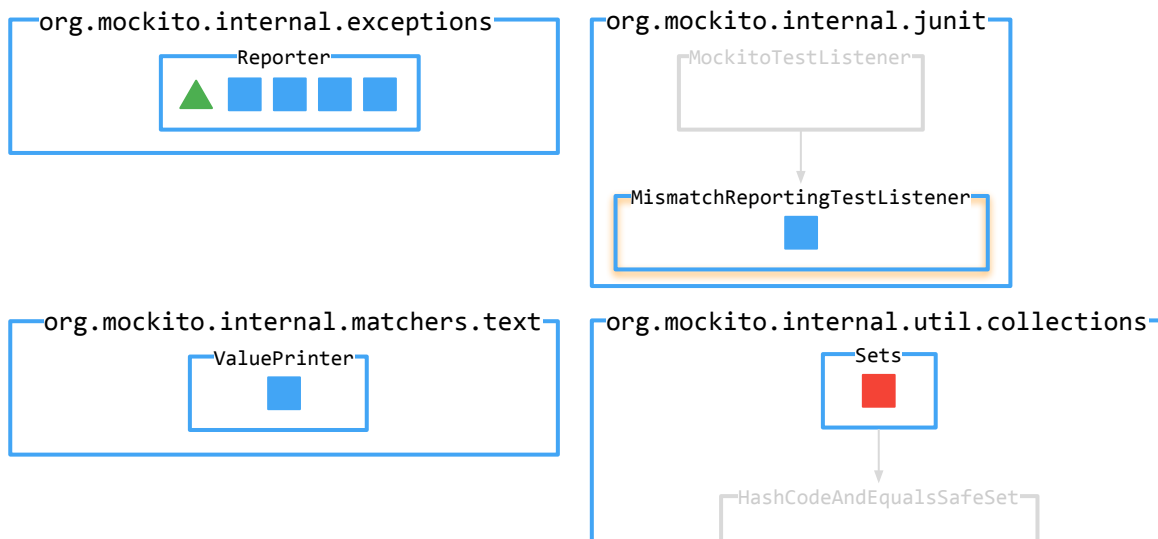
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## Overview



```
3  src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java
4  /**
5   * package org.mockito.internal.junit;
6
7   * -import org.mockito.internal.junit.util.TestName;
8   * import org.mockito.internal.util.MockitoLogger;
9   * import org.mockito.mock.MockCreationSettings;
10
11  00 -4,7 +4,6 00
12  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
13  nobody will read, it's also duplicated
14  mocks = new LinkedList<Object>();
15
16  - String testName = TestName.getTestName(event);
17  if (event.getFailure() != null) {
18  //print unused stubbings only when test succeeds to avoid reporting multiple problems and confusing users
19  new ArgMismatchFinder().getStubbingArgMatches(createdMocks).format(testName, logger);
20
21  29  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
22  nobody will read, it's also duplicated
23  mocks = new LinkedList<Object>();
24
25  + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
26  if (event.getFailure() != null) {
27  //print unused stubbings only when test succeeds to avoid reporting multiple problems and confusing users
28  new ArgMismatchFinder().getStubbingArgMatches(createdMocks).format(testName, logger);
29
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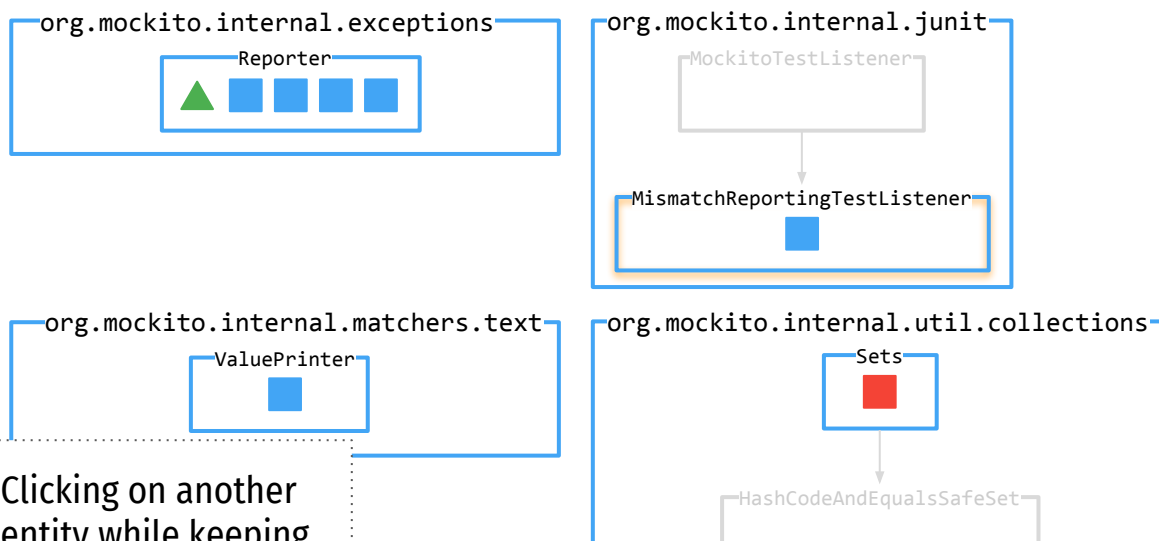
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**\* CTRL + click \***

Clicking on another entity while keeping the control key pressed allows to select multiple entities.  
Their diffs are shown sequentially in the order of clicking.

## Overview



```
org.mockito.internal.junit.MismatchReportingTestListener.java
4  /**
5   * package org.mockito.internal.junit;
6
7   * import org.mockito.internal.util.MockitoLogger;
8   * import org.mockito.mock.MockCreationSettings;
9
10  event() {
11      // TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
12      // nobody will read, it's also duplicated
13      mocks = new LinkedList<Object>();
14
15      String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
16      if (event.getFailure() != null) {
17          // print unused stubbings only when test succeeds to avoid reporting multiple problems and confusing users
18          new ArgMismatchFinder().getStubbingArgMatches(createdMocks).format(testName, logger);
19      }
20  }
```

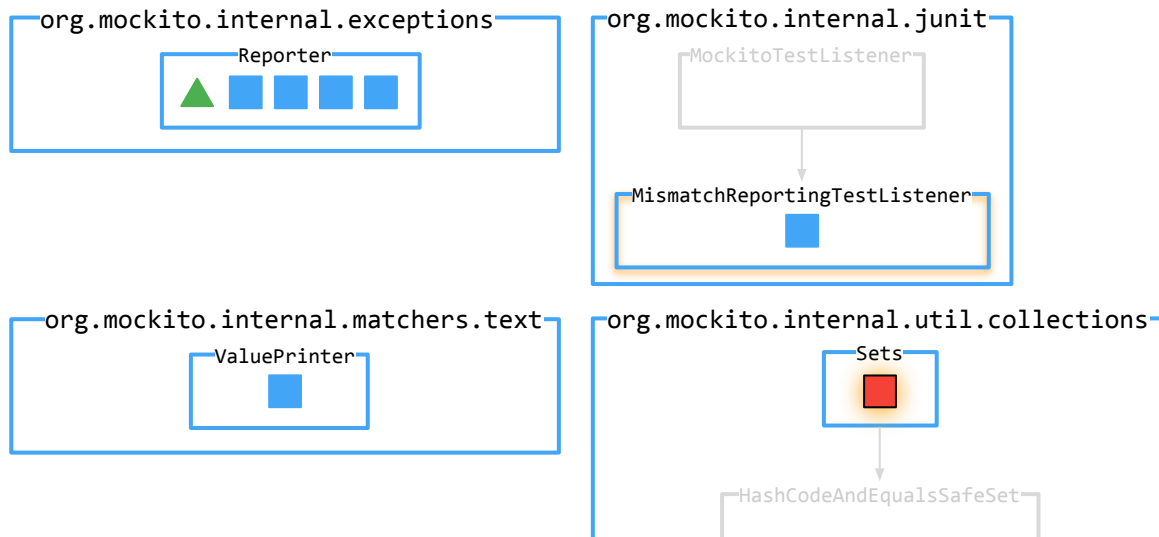
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17  *     //print unused stubbings only when test succeeds to avoid reporting multiple problems and confusing users
18  *     new ArgMismatchFinder().getStubbingArgMatches(createdMocks).format(testName, logger);
19  * }
20  *
21  * 4  /**
22  * 5  * package org.mockito.internal.junit;
23  * 6  *
24  * 7  * import org.mockito.internal.util.MockitoLogger;
25  * 8  * import org.mockito.mock.MockCreationSettings;
26  * 9  *
27  * 10  * //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
28  * 11  * nobody will read, it's also duplicated
29  * 12  * mocks = new LinkedList<Object>();
30  * 13  *
31  * 14  * + String testName = event.getTestClassName();
32  * 15  * if (event.getFailure() != null) {
33  * 16  *     //print unused stubbings only when test succeeds to avoid reporting multiple problems and confusing users
34  * 17  *     new ArgMismatchFinder().getStubbingArgMatches(createdMocks).format(testName, logger);
35  * 18  * }
```

The other diffs are accessed by scrolling

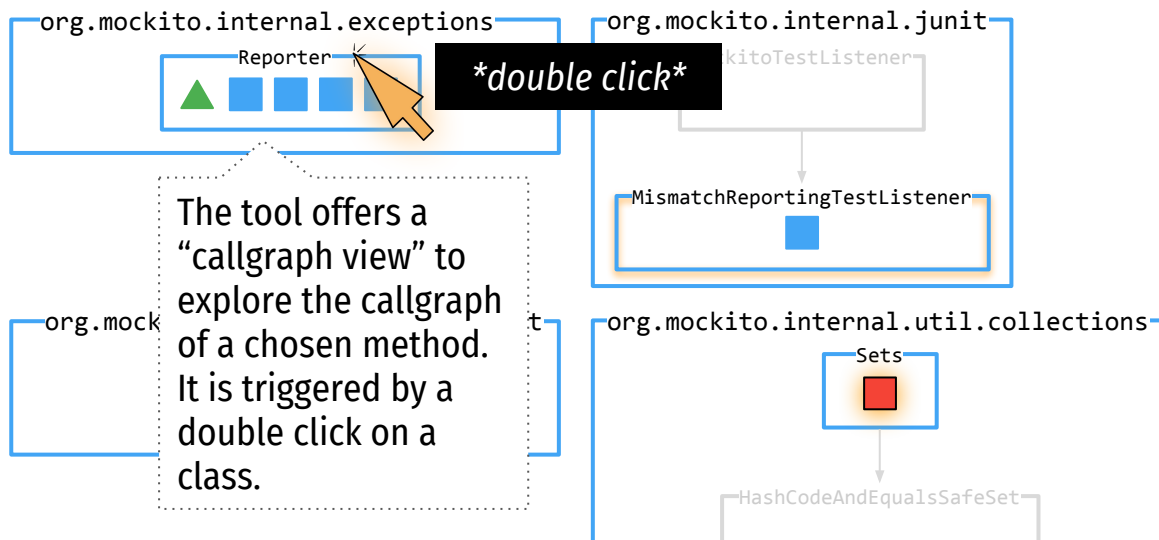
## Change Summary

- Packages (0+, 0-, 5🔗)
- Classes (0+, 3-, 4🔗)
  - (+) **Added:** 0
  - (-) **Removed:** 3
  - (🔗) **Modified:** 4
- Methods (0+, 6-, 6🔗)
- Variables (1+, 1-, 0🔗)

## Change Details

- org.mockito.internal.exceptions
  - Reporter
    - NON\_PUBLIC\_PARENT
    - missingMethodInvocation
    - unfinishedVerificationExc...
    - cannotStubVoidMethodWithA...
    - misplacedArgumentMatcher
- org.mockito.internal.junit
  - MismatchReportingTestListener
    - testFinished
- org.mockito.internal.matchers.text
  - ValuePrinter
    - print
- org.mockito.internal.util.collections
  - Sets
    - newIdentitySet

## Overview



```
33 - String testName = TestName.getTestName(event);
34   if (event.getFailure() != null) {
35       //print unused stubbings only when test succeeds to avoid reporting multiple problems and confusing users
36       new ArgMismatchFinder().getStubbingArgMismatches(createdMocks).format(testName, logger);
37   }
38 }
39
```

```
4 src/main/java/org/mockito/internal/util/collections/Sets.java
5 @@ -18,18 +18,6 @@
6
7     return hashCodeAndEqualsSafeSet.of(mocks);
8 }
9
10
11 public static IdentitySet newIdentitySet() {
12     return new IdentitySet();
13 }
14
15 public static <T> Set<T> newSet(T ... elements) {
16     if (elements == null) {
17         throw new IllegalArgumentException("Expected an array of elements (or empty array) but received a null.");
18     }
19     return new HashSet<T>(elements);
20 }
21
```

```
32 + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
33   if (event.getFailure() != null) {
34       //print unused stubbings only when test succeeds to avoid reporting multiple problems and confusing users
35       new ArgMismatchFinder().getStubbingArgMismatches(createdMocks).format(testName, logger);
36   }
37 }
38
```

## org.mockito.internal.exceptions.Reporter

### Changed methods (4)

#### ➔ missingMethodInvocation

Callees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.MissingMethodInvocationException

Callers

- org.mockito.internal.MockitoCore
  - when(T methodCall)

#### ➔ unfinishedVerificationException

Callees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.UnfinishedVerificationException

Callers

- org.mockito.internal.progress.MockingProgressImpl
  - validateMostStuff()

#### ➔ cannotStubVoidMethodWithAReturnValue

Callees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.CannotStubVoidMethodWithReturnValue

Callers

- org.mockito.internal.stubbing.answers

### Unchanged methods (4)

#### ➔ checkedExceptionInvalid

Callees

- org.mockito.internal.util.StringUtil
  - join(Object ... linesToBreak)

Callers

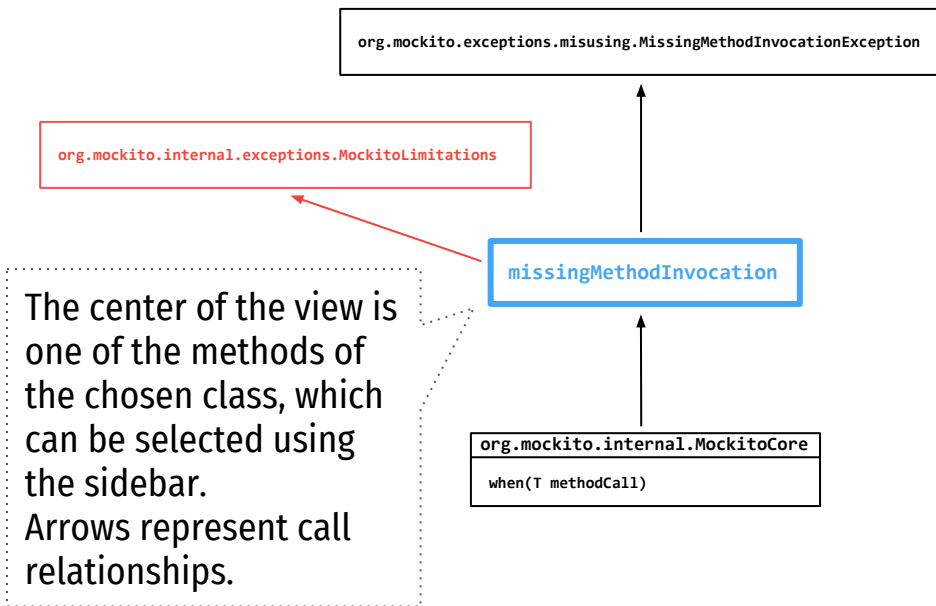
- org.mockito.internal.stubbing.answers
  - validateFor(InvocationOnMock invocation)

#### ⊕ cannotStubWithNullThrowable

#### ⊕ unfinishedStubbing

#### ⊕ incorrectUseOfApi

< Back



## org.mockito.internal.exceptions.Reporter

### Changed methods (4)

#### ➔ missingMethodInvocation

Callees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.MissingMethodInvocationException

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  - when(T methodCall)

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- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.UnfinishedVerificationException

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- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.CannotStubVoidMethodWithReturnValue

Callers

- org.mockito.internal.stubbing.answers

### Unchanged methods (4)

#### ➔ checkedExceptionInvalid

Callees

- org.mockito.internal.util.StringUtil
  - join(Object ... linesToBreak)

Callers

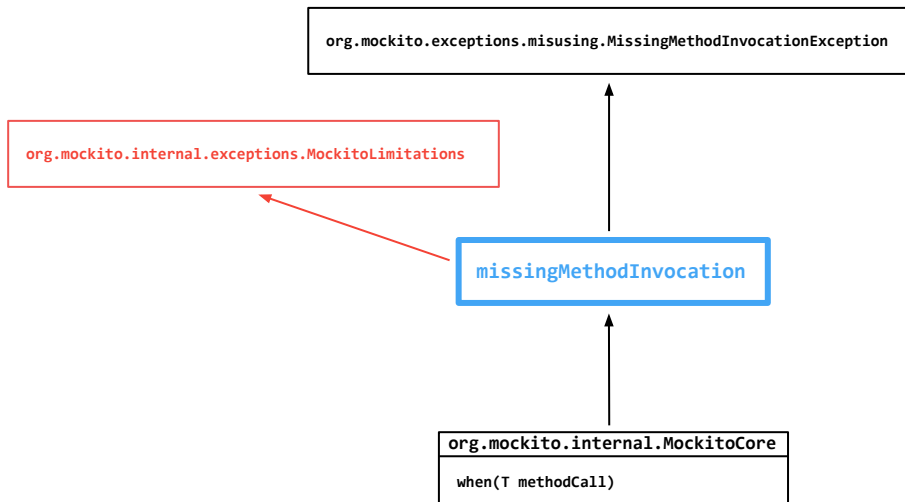
- org.mockito.internal.stubbing.answers
  - validateFor(InvocationOnMock invocation)

#### ⊕ cannotStubWithNullThrowable

#### ⊕ unfinishedStubbing

#### ⊕ incorrectUseOfApi

< Back





## org.mockito.internal.exceptions.Reporter

### Changed methods (4)

#### ➔ missingMethodInvocation

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- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.MissingMethodInvocationException

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- org.mockito.internal.exceptions.MockitoLimitations
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Callers

- org.mockito.internal.stubbing.answers

### Unchanged methods (4)

#### ➔ checkedExceptionInvalid

Callees

- org.mockito.internal.util.StringUtil
  - join(Object ... linesToBreak)

Callers

- org.mockito.internal.stubbing.answers
  - validateFor(InvocationOnMock invocation)

#### ⊕ cannotStubWithNullThrowable

#### ⊕ unfinishedStubbing

#### ⊕ incorrectUseOfApi

< Back

org.mockito.internal.exceptions.MockitoLimitations

unfinishedVerificationException

org.mockito.exceptions.misusing.UnfinishedVerificationException

org.mockito.internal.progress.MockingProgressImpl

validateMostStuff()

## org.mockito.internal.exceptions.Reporter

### Changed methods (4)

#### ➔ missingMethodInvocation

Calleees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.MissingMethodInvocationException

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- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.UnfinishedVerificationException

Callers

- org.mockito.internal.progress.MockingProgressImpl
  - validateMostStuff()

#### ➔ cannotStubVoidMethodWithAReturnValue

Calleees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.CannotStubVoidMethodWithReturnValue

Callers

- org.mockito.internal.stubbing.answers

### Unchanged methods (4)

#### ➔ checkValid

Calleees

- org.mockito.util.StringUtil
- mockito.util.StringUtil.linesToBreak()

Callers

- org.mockito.internal.stubbing.answers
  - validateFor(InvocationOnMock invocation)

cannotStubWithNullThrowable

unfinishedStubbing

incorrectUseOfApi

The methods caller/callee information can be collapsed and expanded

org.mockito.internal.exceptions.MockitoLimitations

unfinishedVerificationException

org.mockito.exceptions.misusing.UnfinishedVerificationException

org.mockito.internal.progress.MockingProgressImpl

validateMostStuff()

< Back

## org.mockito.internal.exceptions.Reporter

### Changed methods (4)

#### ➔ missingMethodInvocation

Calleses

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.MissingMethodInvocationException

Callers

- org.mockito.internal.MockitoCore
  - when(T methodCall)

#### ➔ unfinishedVerificationException

Calleses

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.UnfinishedVerificationException

Callers

- org.mockito.internal.progress.MockingProgressImpl
  - validateMostStuff()

#### ➔ cannotStubVoidMethodWithAReturnValue

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- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.CannotStubVoidMethodWithReturnValue

Callers

- org.mockito.internal.stubbing.answers

### Unchanged methods (4)

- checkedExceptionInvalid
- cannotStubWithNullThrowable
- unfinishedStubbing
- incorrectUseOfApi

< Back

org.mockito.internal.exceptions.MockitoLimitations

unfinishedVerificationException

org.mockito.exceptions.misusing.UnfinishedVerificationException

org.mockito.internal.progress.MockingProgressImpl

validateMostStuff()

## org.mockito.internal.exceptions.Reporter

### Changed methods (4)

#### ➔ missingMethodInvocation

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- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.MissingMethodInvocationException

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- org.mockito.internal.MockitoCore
  - when(T methodCall)

#### ➔ unfinishedVerificationException

Callees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.UnfinishedVerificationException

Callers

- org.mockito.internal.progress.MockingProgressImpl
  - validateMostStuff()

#### ➔ cannotStubVoidMethodWithAReturnValue

Callees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.CannotStubVoidMethodWithR

Callers

- org.mockito.internal.stubbing.answers

### Unchanged methods (4)

- checkedExceptionInvalid
- cannotStubWithNullThrowable
- unfinishedStubbing
- incorrectUseOfApi

Placing the mouse cursor over an entity reveals the corresponding source code (if unchanged) or diff (if changed)

org.mockito.internal.exceptions.MockitoLimitations

org.mockito.exceptions.misusing.UnfinishedVerificationException

unfinishedVerificationException

```
public static MockitoException unfinishedVerificationException(Location location) {  
    return new UnfinishedVerificationException(join(  
        "Missing method call for verify(mock) here:",  
        location,  
        "",  
        "Example of correct verification:",  
        "  verify(mock).doSomething()",  
        "",  
        "Also, this error might show up because you verify either of: final/private/equals()/hashCode() methods.",  
        "Those methods 'cannot' be stubbed/verified.",  
        NON_PUBLIC_LIMITATIONS, NON_PUBLIC_PARENT,  
        NON_PUBLIC_PARENT,  
        ""  
    ));  
}
```

Impl

## org.mockito.internal.exceptions.Reporter

### Changed methods (4)

#### ➔ missingMethodInvocation

Calleees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.MissingMethodInvocationException

Callers

- org.mockito.internal.MockitoCore
  - when(T methodCall)

#### ➔ unfinishedVerificationException

Calleees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.UnfinishedVerificationException

Callers

- org.mockito.internal.progress.MockingProgressImpl
  - validateMostStuff()

#### ➔ cannotStubVoidMethodWithAReturnValue

Calleees

- org.mockito.internal.exceptions.MockitoLimitations
- org.mockito.exceptions.misusing.CannotStubVoidMethodWithReturnValue

Callers

- org.mockito.internal.stubbing.answers

### Unchanged methods (4)

checkedExceptionInvalid.....

Pressing the “back”  
button we go back to  
the initial overview

< Back

*\*click\**

org.mockito.internal.exceptions.MockitoLimitations

unfinishedVerificationException

org.mockito.exceptions.misusing.UnfinishedVerificationException

org.mockito.internal.progress.MockingProgressImpl

validateMostStuff()

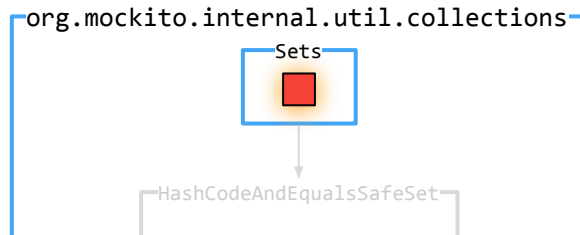
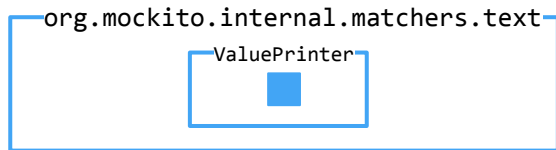
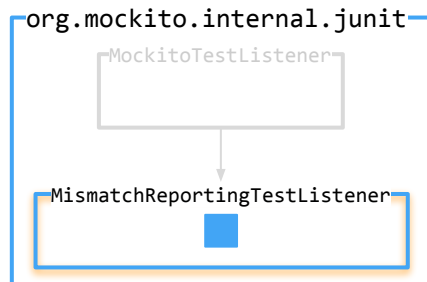
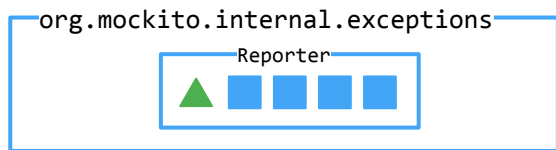
## Change Summary

- Packages (0+, 0-, 5🔗)
- Classes (0+, 3-, 4🔗)
  - (+) **Added:** 0
  - (-) **Removed:** 3
  - (🔗) **Modified:** 4
- Methods (0+, 6-, 6🔗)
- Variables (1+, 1-, 0🔗)

## Change Details

- org.mockito.internal.exceptions
  - Reporter
    - NON\_PUBLIC\_PARENT
    - missingMethodInvocation
    - unfinishedVerificationExc...
    - cannotStubVoidMethodWithA...
    - misplacedArgumentMatcher
- org.mockito.internal.junit
  - MismatchReportingTestListener
    - testFinished
- org.mockito.internal.matchers.text
  - ValuePrinter
    - print
- org.mockito.internal.util.collections
  - Sets
    - newIdentitySet

## Overview



```
33 - String testName = testName.getTestName(event);
34   if (event.getFailure() != null) {
35       //print unused stubbings only when test succeeds to avoid reporting multiple problems and confusing users
36       new ArgMismatchFinder().getStubbingArgMismatches(createdMocks).format(testName, logger);
37   }
38 }
39
40 4 src/main/java/org/mockito/internal/util/collections/Sets.java
41 @@ -18,18 +18,6 @@
42 18     return HashCodeAndEqualsSafeSet.of(mocks);
43 19 }
44 20
45 21 - public static IdentitySet newIdentitySet() {
46 22 -     return new IdentitySet();
47 23 - }
48 24 -
49 25 public static <T> Set<T> newSet(T ... elements) {
50 26     if (elements == null) {
51 27         throw new IllegalArgumentException("Expected an array of elements (or empty array) but received a null.");
52 28     }
53 29     return HashCodeAndEqualsSafeSet.of(mocks);
54 30 }
55 31
56 32 + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
57 33   if (event.getFailure() != null) {
58 34       //print unused stubbings only when test succeeds to avoid reporting multiple problems and confusing users
59 35       new ArgMismatchFinder().getStubbingArgMismatches(createdMocks).format(testName, logger);
60 36   }
61 37 }
```

# Prototype 2

Coloured arrows represent changed relationships among changed classes.

Gray arrows represent suggestions for navigating the context of the changes

org.mockito.internal.exceptions.Reporter

- missingMethodInvocation
- unfinishedVerificationException
- cannotStubVoidMethodWithAReturnValue
- misplacedArgumentMatcher

org.mockito.internal.exceptions.MockitoLimitations

3 callers

org.mockito.internal.junit.util.MismatchReportingTestListener

5 callees

- testFinished

org.mockito.internal.junit.util.TestName

- getTestName

org.mockito.internal.matchers.text.ValuePrinter

- print

org.mockito.internal.matchers.text.ArrayIterator

- ArrayIterator
- hasNext
- next
- remove

Zoom level can be adjusted

8 callers

org.mockito.internal.util.collections.Sets

- newIdentitySet

1 subclass

The diagrams represent changes, grouped by class.

Current Zoom: 300%

Minimap

Diff

Infinite canvas.

The arrows represent callgraph and class hierarchy relationships.

The canvas can be browsed through the minimap





Positioning the cursor over an entity brings up its corresponding diff in a compact version. Scrolling the mouse while hovering the entity scrolls the code inside the diff view.

org.mockito.internal.exceptions.Reporter

- missingMethodInvocation
- unfinishedVerificationException
- cannotStubVoidMethodWithAReturnValue
- misplacedArgumentMatcher

org.mockito.internal.junit.util.TestName

- getTestName

org.mockito.internal

org.mockito

- print

org.mockito

- newId

8 callers

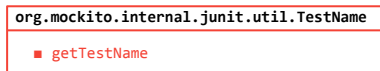
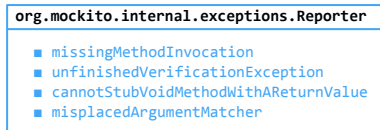
```
11 src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
2  - * Copyright (c) 2016 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
4  - */
5  -package org.mockito.internal.exceptions;
6  -
7  -public class MockitoLimitations {
8  -
9  -    public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not
10 - supported.";
11 -}
12
```

Current Zoom: 300%

### Minimap



### Diff



```

11 ##### src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
2  - * Copyright (c) 2016 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
4  - */
5  -package org.mockito.internal.exceptions;
6  -
7  -public class MockitoLimitations {
8  -
9  -    public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not
10 -supported.";
11 -}

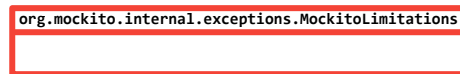
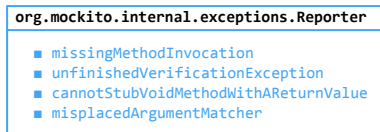
```

Current Zoom: 300%

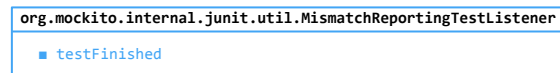
## Minimap



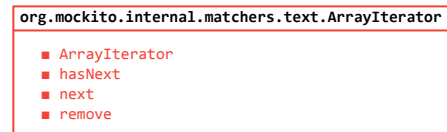
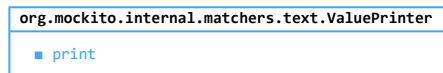
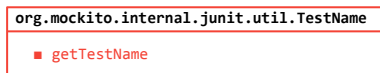
## Diff



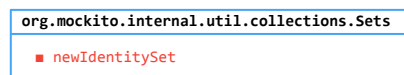
3 callers



5 callees



8 callers

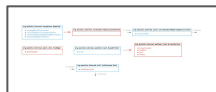


1 subclass

When an entity is selected by clicking on it, the full diff shows up here.

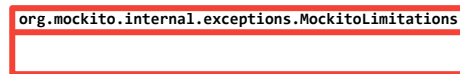
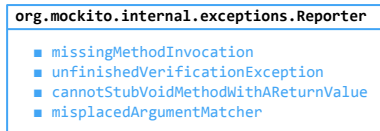
Current Zoom: 300%

Minimap

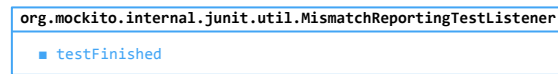


Diff

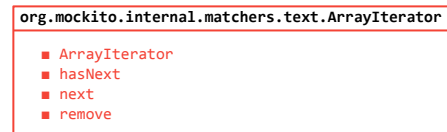
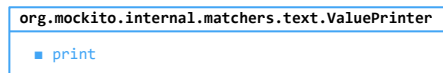
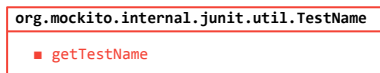
```
11 ■■■■■ src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
2  - * Copyright (c) 2016 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
4  - */
5  -package org.mockito.internal.exceptions;
6  -
7  -public class MockitoLimitations {
8  -
9  -    public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not
10     supported.";
11     -
12 }
```



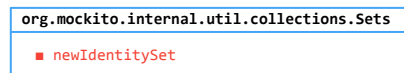
3 callers



5 callees



8 callers



1 subclass

Current Zoom: 300%

*\*click\**

Minimap



Diff

```
11 ##### src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
2  - * Copyright (c) 2016 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
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10     supported.";
11     -
12 }
```

Clicking this button  
the diff view  
becomes fullscreen

View

## Diff



11 ■■■■■ src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java

View

... @@ -1,11 +0,0 @@

```
1  -/*
2  - * Copyright (c) 2016 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
4  - */
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7  -public class MockitoLimitations {
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10 -
11 -}
```

## Diff

*\*click\**

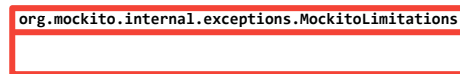
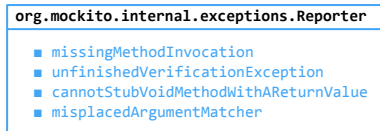


11 ■■■■■ src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java

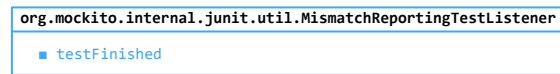
View ▾

... @@ -1,11 +0,0 @@

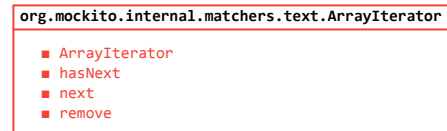
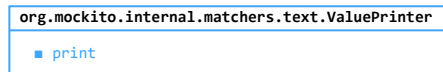
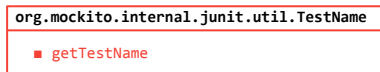
```
1  -/*
2  - * Copyright (c) 2016 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
4  - */
5  -package org.mockito.internal.exceptions;
6  -
7  -public class MockitoLimitations {
8  -
9  -     public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not
        supported.";
10 -
11 -}
```



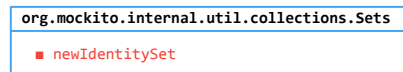
3 callers



5 callees



8 callers



1 subclass

Current Zoom: 300%

Minimap



Diff

11 ■■■■■ src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java

... @@ -1,11 +0,0 @@

```
1  -/*
2  - * Copyright (c) 2016 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
4  - */
5  -package org.mockito.internal.exceptions;
6  -
7  -public class MockitoLimitations {
8  -
9  -    public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not
10 - supported.";
11 -}
```

View

Positioning the cursor over an arrow between 2 changed entities brings up the details of the changes in relationships among them.

org.mockito.internal.exceptions.Reporter

- missingMethodInvocation
- unfinishedVerificationException
- cannotStubVoidMethodWithAReturnValue
- misplacedArgumentMatcher

org.mockito

org.mockito.internal.junit.util.MismatchReportingTestListener

testFinished

5 callees

org.mockito.internal.junit.util

- getTestName

4 calls to org.mockito.internal.exceptions.MockitoLimitations were removed:

- missingMethodInvocation to MockitoLimitations
- unfinishedVerificationException to MockitoLimitations
- cannotStubVoidMethodWithAReturnValue to MockitoLimitations
- misplacedArgumentMatcher to MockitoLimitations

org.mockito.internal.matchers.text.ArrayIterator

cor

8 callers

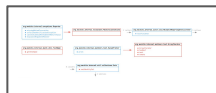
org.mockito.internal.util.collections.Sets

- newIdentitySet

1 subclass

Current Zoom: 300%

Minimap



Diff

11 src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java

... @@ -1,11 +0,0 @@

```
1  /*
2  - * Copyright (c) 2016 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
4  - */
5  -package org.mockito.internal.exceptions;
6  -
7  -public class MockitoLimitations {
8  -
9  -    public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not supported.";
10 -
11 -}
```

View





org.mockito.internal.exceptions

- missingMethodInvocation
- unfinishedVerificationException
- cannotStubVoidMethodWithArgumentMatchers
- misplacedArgumentMatcher

org.mockito.internal.junit.util

- getTestName

```
Reporter
4 ■■■■■ src/main/java/org/mockito/internal/util/collections/Sets.java
  org.mockito.internal.exceptions.MockitoLimitations
  18/10/18 10:10:00
  return hashCodeAndEqualsSafeSet.of(mock);
  19
  20
  21 - public static IdentitySet newIdentitySet() {
  22 -   return new IdentitySet();
  23 - }
  24 - public static <T> Set<T> newSet(T ... elements) {
  25   if (elements == null) {
  26     throw new IllegalArgumentException("Expected an array of elements (or empty array) but received a null.");
  27   }
  28 }
```

org.mockito.internal.junit.util.MismatchReportingTestListener

5 callees

org.mockito.internal.matchers.text.ArrayIterator

- ArrayIterator
- hasNext
- next
- remove

8 callers

org.mockito.internal.util.collections.S

- newIdentitySet

1 subclass

**\* CTRL + click \***

Clicking on another entity while keeping the control key pressed allows to select multiple entities. Their diffs are shown sequentially in the order of clicking.

Current Zoom: 300%

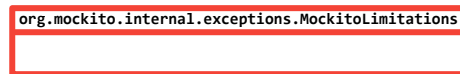
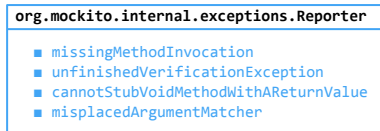
Minimap



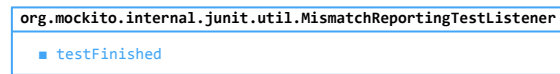
11 ■■■■■ src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java

```
11 ■■■■■ src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
12/10/18 10:11:00
1 - /*
2 -  * Copyright (c) 2016 Mockito contributors
3 -  * This program is made available under the terms of the MIT License.
4 -  */
5 -package org.mockito.internal.exceptions;
6 -
7 -public class MockitoLimitations {
8 -
9 -   public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not supported.";
10 -
11 -}
```

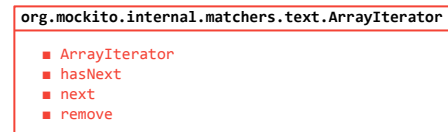
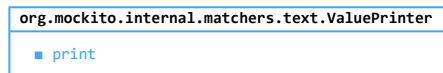
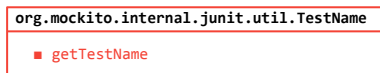
View



3 callers



5 callees



8 callers



1 subclass

Current Zoom: 300%

Minimap



Diff

```
11 ##### src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
2  - * Copyright (c) 2010 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
4  - */
5  -package org.mockito.internal.exceptions;
6  -
7  -public class MockitoLimitations {
8  -
9  -    public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not
supported.";
10 -
11 -}
```

org.mockito.internal.exceptions.Reporter

- missingMethodInvocation
- unfinishedVerificationException
- cannotStubVoidMethodWithAReturnValue
- misplacedArgumentMatcher

Positioning the cursor over a navigation suggestion brings up its details

org.mockito.internal.junit.util.TestName

- getTestName

org.mockito.internal

- print

The method `testFinished` has 3 callers:

- org.mockito.internal.framework.DefaultMockitoSession
  - finishMocking()
- org.mockito.internal.junit.JUnitRule
  - evaluate()
- org.mockito.internal.runners.DefaultInternalRunner
  - testFinished(Description description)

org.mockito.internal.junit.util.MismatchReportingTestListener

- testFinished

5 callees

3 callers

8 callers

org.mockito.internal

- newIdentitySet

1 subclass

Current Zoom: 300%

Minimap



Diff

11 src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java

```
1  /**
2   * Copyright (c) 2016 Mockito contributors
3   * This program is made available under the terms of the MIT License.
4   */
5  -package org.mockito.internal.exceptions;
6  -
7  -public class MockitoLimitations {
8  -
9  -    public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not supported.";
10 -
11 -}
```

org.mockito.internal.exceptions.Reporter

- missingMethodInvocation
- unfinishedVerificationException
- cannotStubVoidMethodWithAReturnValue
- misplacedArgumentMatcher

To start the actual navigation in the suggested directions, a click on the arrow is necessary

*\*click\**

3 callers

5 callees

org.mockito.internal.junit.util.MismatchReportingTestListener

- testFinished

5 callees

org.mockito.internal.junit.util.TestName

- getTestName

org.mockito.internal

- print

The method `testFinished` has 3 callers:

- org.mockito.internal.framework.DefaultMockitoSession
  - finishMocking()
- org.mockito.internal.junit.JUnitRule
  - evaluate()
- org.mockito.internal.runners.DefaultInternalRunner
  - testFinished(Description description)

rayIterator

8 callers

org.mockito.internal

- newIdentitySet

1 subclass

Current Zoom: 300%

Minimap



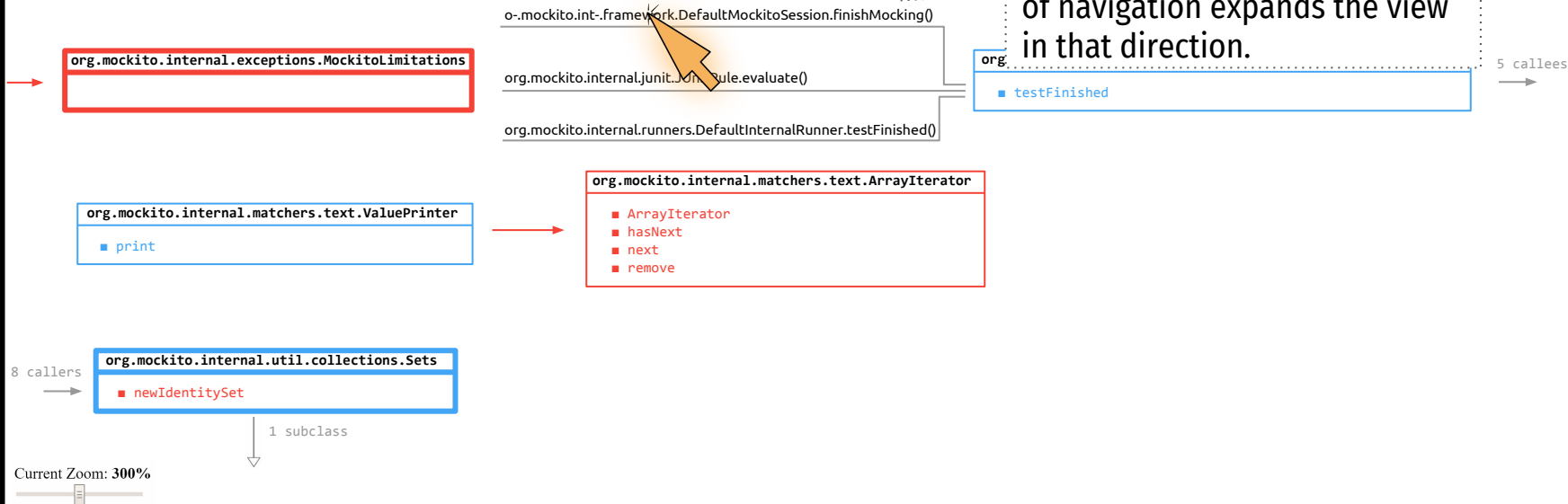
Diff

```
11 ##### src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
2  - * Copyright (c) 2010 Mockito contributors
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5  -package org.mockito.internal.exceptions;
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11 -}
```



*\*click\**

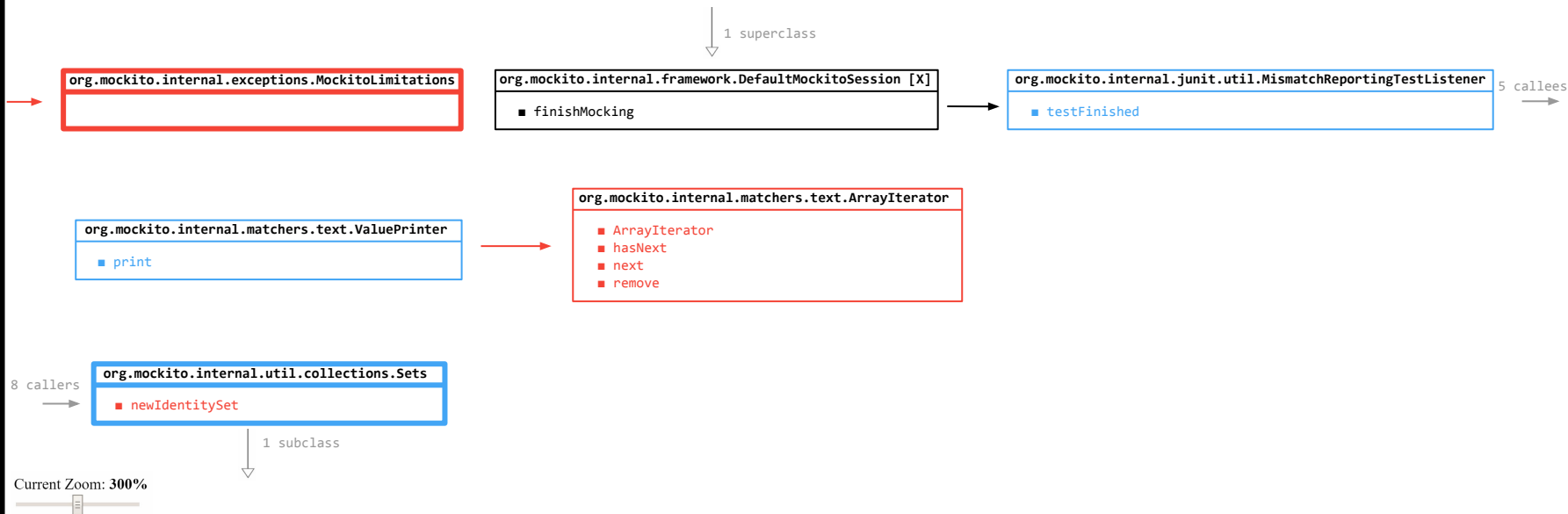
A click on the chosen direction of navigation expands the view in that direction.



Minimap

Diff

```
11 ##### src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
2  - * Copyright (c) 2010 Mockito contributors
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11 -}
```



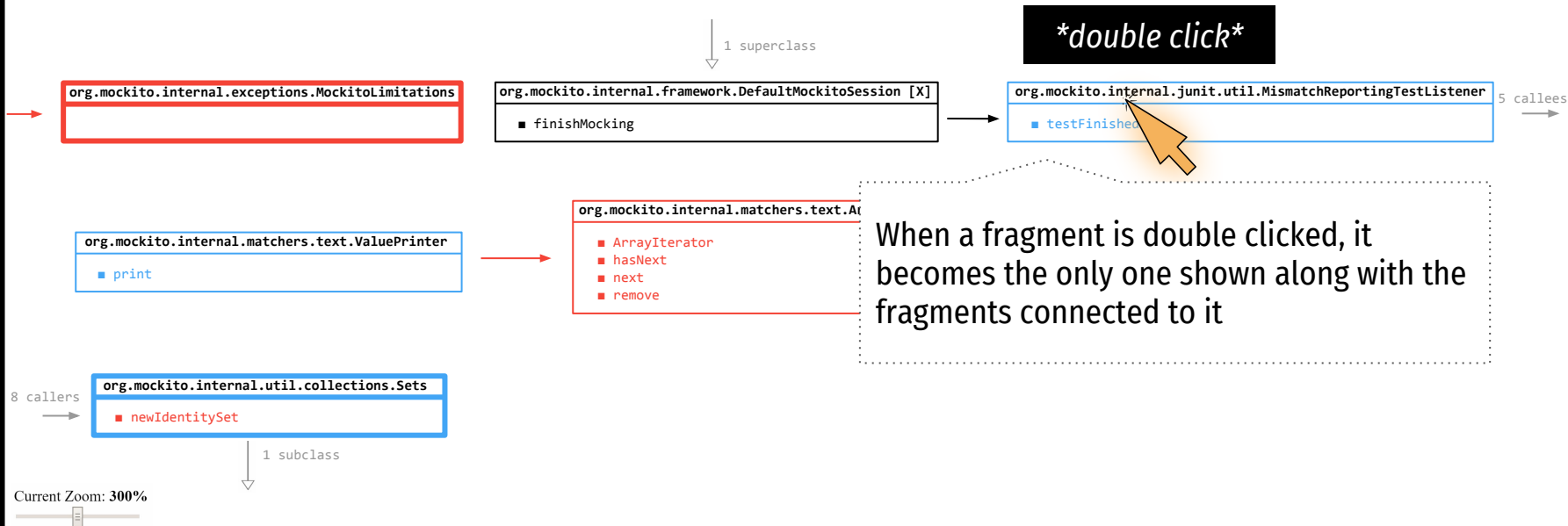
## Minimap



## Diff

```
11 ##### src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
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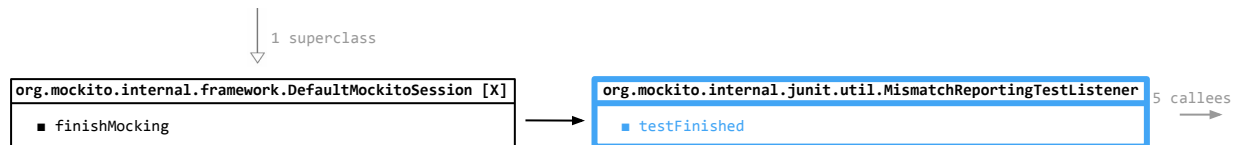


## Minimap



## Diff

```
11 ##### src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
2  - * Copyright (c) 2010 Mockito contributors
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5  -package org.mockito.internal.exceptions;
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7  -public class MockitoLimitations {
8  -
9  -    public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not
10 supported.";
11 -}
```



Current Zoom: 300%

## Minimap



## Diff

3 src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java

00 -4,7 +4,6 00

```
4  */
5  package org.mockito.internal.junit;
6
```

```
7 -import org.mockito.internal.junit.util.TestName;
8  import org.mockito.internal.util.MockitoLogger;
9  import org.mockito.mock.MockCreationSettings;
10
```

00 -30,7 +29,7 00 public void testFinished(TestFinishedEvent event) {

```
30  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
31  mocks = new LinkedList<Object>();
32
```

33 - String testName = TestName.getTestName(event);

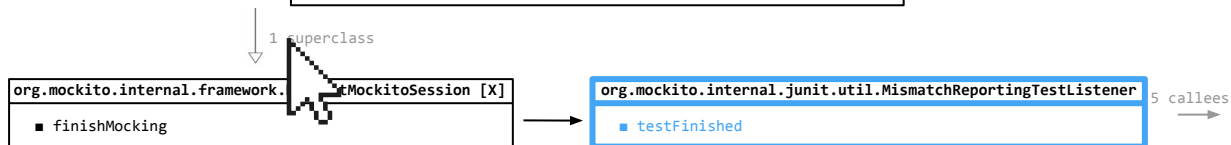
```
4  */
5  package org.mockito.internal.junit;
6
```

```
7  import org.mockito.internal.util.MockitoLogger;
8  import org.mockito.mock.MockCreationSettings;
9
```

```
29  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
30  mocks = new LinkedList<Object>();
31
```

32 + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();

The class `DefaultMockitoSession` has 1 superclass:  
📁 `org.mockito.MockitoSession`



Current Zoom: 300%

## Minimap



## Diff

3 ■■■ src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java

00 -4,7 +4,6 00

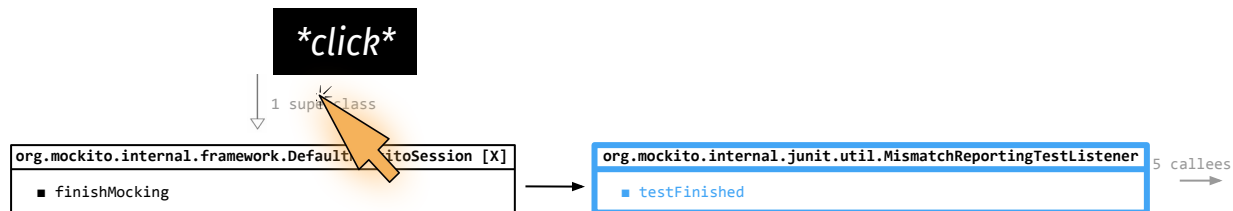
```
4  */
5  package org.mockito.internal.junit;
6
7  -import org.mockito.internal.junit.util.TestName;
8  import org.mockito.internal.util.MockitoLogger;
9  import org.mockito.mock.MockCreationSettings;
```

00 -30,7 +29,7 00 public void testFinished(TestFinishedEvent event) {

```
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33  - String testName = TestName.getTestName(event);
```

```
4  */
5  package org.mockito.internal.junit;
6
7  import org.mockito.internal.util.MockitoLogger;
8  import org.mockito.mock.MockCreationSettings;
```

```
29  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
30  mocks = new LinkedList<Object>();
31
32  + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
```



Current Zoom: 300%

## Minimap



## Diff

3 src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java

@@ -4,7 +4,6 @@

```
4  */
5  package org.mockito.internal.junit;
6
```

```
7  -import org.mockito.internal.junit.util.TestName;
8  import org.mockito.internal.util.MockitoLogger;
9  import org.mockito.mock.MockCreationSettings;
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@@ -30,7 +29,7 @@ public void testFinished(TestFinishedEvent event) {

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```

```
33  - String testName = TestName.getTestName(event);
```

```
4  */
5  package org.mockito.internal.junit;
6
```

```
7  import org.mockito.internal.util.MockitoLogger;
8  import org.mockito.mock.MockCreationSettings;
```

@@ -30,7 +29,7 @@ public void testFinished(TestFinishedEvent event) {

```
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    nobody will read, it's also duplicated
30  mocks = new LinkedList<Object>();
31
```

```
32  + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
```

`org.mockito.internal.framework.org.mockito.MockitoSession [X]`

- `finishMocking`



`org.mockito.internal.framework.DefaultMockitoSession [X]`

- `finishMocking`



`org.mockito.internal.junit.util.MismatchReportingTestListener`

- `testFinished`

5 callees

The canvas is panned to keep every fragment in sight

Current Zoom: 300%

## Minimap



## Diff

3 ■■■ src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java

00 -4,7 +4,6 00

```
4  /*
5   package org.mockito.internal.junit;
6
7  -import org.mockito.internal.junit.util.TestName;
8   import org.mockito.internal.util.MockitoLogger;
9   import org.mockito.mock.MockCreationSettings;
10
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```
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5   package org.mockito.internal.junit;
6
7   import org.mockito.internal.util.MockitoLogger;
8   import org.mockito.mock.MockCreationSettings;
9
```

```
29  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
30  mocks = new LinkedList<Object>();
31
```

32 + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();

org.mockito.internal.framework.org.mockito

■ finishMocking

org.mockito

framework.DefaultMockito

```

1  @Incubating
2  public interface MockitoSession {
3
4      /**
5       * Must be invoked when the user is done with mocking for given session (test method).
6       * It detects unused stubbings and may throw {@link UnnecessaryStubbingException}
7       * or emit warnings ({@link MockitoHint}) depending on the {@link Strictness} level.
8       * The method also detects incorrect Mockito usage via {@link MockitoValidateMockitoUsage()}.
9       * <p>
10      * In order to implement {@link Strictness} Mockito session keeps track of mocking using {@link MockitoListener}.
11      * This method cleans up the listeners and ensures there is no leftover state after the session finishes.
12      * It is necessary to invoke this method to conclude mocking session.
13      * For more information about session lifecycle see {@link MockitoSessionBuilder#startMocking()}.
14      * <p>
15      * This method is intended to be used in your test framework's 'tear down' method.
16      * In the case of JUnit it is the "&#064;After" method.
17      * <p>
18      * For example, see javadoc for {@link MockitoSession}.
19      *
20      * @since 2.7.0
21      */
22      @Incubating
23      void finishMocking();
24  }

```

5 callees

Positioning the cursor over one of the expanded entities, its corresponding source code shows in a fly-by box.

Scrolling the mouse causes the scrolling of the source code in the box.

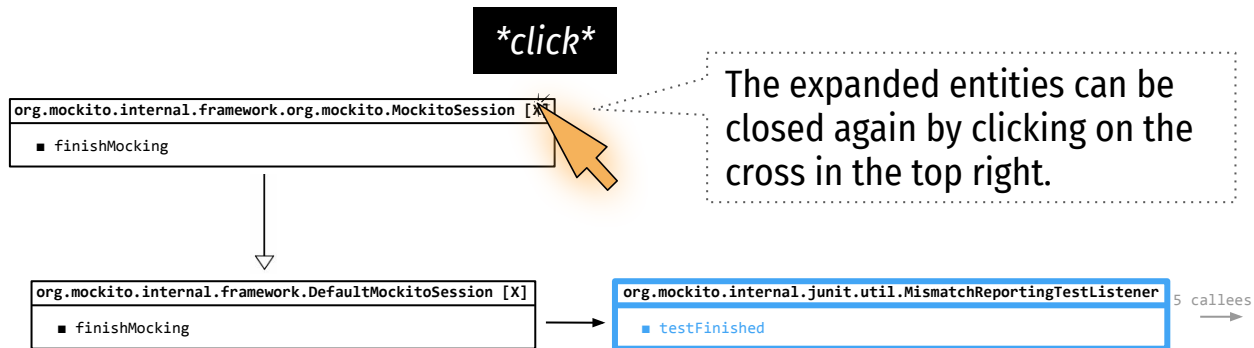
Diff

//junit/MismatchReportingTestListener.java

```

5  package org.mockito.internal.junit;
6
7  -import org.mockito.internal.junit.util.TestName;
8  import org.mockito.internal.util.MockitoLogger;
9  import org.mockito.mock.MockCreationSettings;
10
11  @@ -30,7 +29,7 @@ public void testFinished(TestFinishedEvent event) {
12
13      //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
14      nobody will read, it's also duplicated
15      mocks = new LinkedList<Object>();
16
17  -    String testName = TestName.getTestName(event);
18
19      //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
20      nobody will read, it's also duplicated
21      mocks = new LinkedList<Object>();
22
23  +    String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();

```



Current Zoom: 300%

## Minimap



## Diff

3 src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java

00 -4,7 +4,6 00

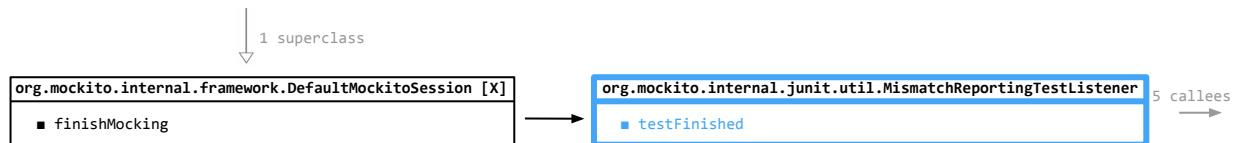
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31
32  + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
```



Current Zoom: 300%

## Minimap



## Diff

3 src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java

00 -4,7 +4,6 00

```
4  */
5  package org.mockito.internal.junit;
6
7  -import org.mockito.internal.junit.util.TestName;
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33 - String testName = TestName.getTestName(event);
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4  */
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6
7  import org.mockito.internal.util.MockitoLogger;
8  import org.mockito.mock.MockCreationSettings;
```

```
29 //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
30 nobody will read, it's also duplicated
31 mocks = new LinkedList<Object>();
```

```
32 + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
```





Current Zoom: 300%

## Minimap



## Diff

3 src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java

00 -4,7 +4,6 00

```
4  /*
5   package org.mockito.internal.junit;
6
7  -import org.mockito.internal.junit.util.TestName;
8   import org.mockito.internal.util.MockitLogger;
9   import org.mockito.mock.MockCreationSettings;
10
```

00 -30,7 +29,7 00 public void testFinished(TestFinishedEvent event) {

```
30  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
31  mocks = new LinkedList<Object>();
32
```

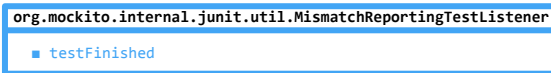
33 - String testName = TestName.getTestName(event);

```
4  /*
5   package org.mockito.internal.junit;
6
7   import org.mockito.internal.util.MockitLogger;
8   import org.mockito.mock.MockCreationSettings;
9
```

```
29  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
30  mocks = new LinkedList<Object>();
31
```

32 + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();

3 callers



5 callees



Current Zoom: 300%



## Minimap

## Diff

3 ■■■ src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java

View ▾

00 -4,7 +4,6 00

```
4  /*
5   package org.mockito.internal.junit;
6
7  -import org.mockito.internal.junit.util.TestName;
8   import org.mockito.internal.util.MockitoLogger;
9   import org.mockito.mock.MockCreationSettings;
10
```

```
00 -30,7 +29,7 00 public void testFinished(TestFinishedEvent event) {
30     //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
31     mocks = new LinkedList<Object>();
32
```

```
- String testName = TestName.getTestName(event);
```

```
4  /*
5   package org.mockito.internal.junit;
6
7   import org.mockito.internal.util.MockitoLogger;
8   import org.mockito.mock.MockCreationSettings;
9
```

```
29     //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
30     mocks = new LinkedList<Object>();
31
```

```
+ String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
```

Clicking on the “Back” button  
we are brought back to the  
main view with all the  
fragments

*\*click\**

3 callers

`org.mockito.internal.junit.util.MismatchReportingTestListener`

5 callees

■ `testFinished`

Current Zoom: 300%

## Minimap



## Diff

3 ■■■ src/main/java/org/mockito/internal/junit/MismatchReportingTestListener.java

00 -4,7 +4,6 00

```
4  */
5  package org.mockito.internal.junit;
```

```
7 -import org.mockito.internal.junit.util.TestName;
8  import org.mockito.internal.util.MockitoLogger;
9  import org.mockito.mock.MockCreationSettings;
```

00 -30,7 +29,7 00 public void testFinished(TestFinishedEvent event) {

```
30  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
31  mocks = new LinkedList<Object>();
```

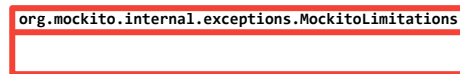
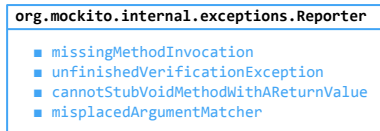
```
33  - String testName = TestName.getTestName(event);
```

```
4  */
5  package org.mockito.internal.junit;
```

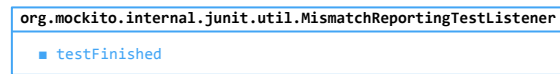
```
7  import org.mockito.internal.util.MockitoLogger;
8  import org.mockito.mock.MockCreationSettings;
```

```
29  //TODO make it better, it's easy to forget to clean up mocks and we still create new instance of list that
    nobody will read, it's also duplicated
30  mocks = new LinkedList<Object>();
```

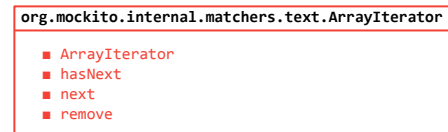
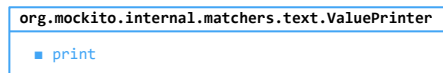
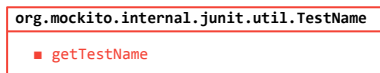
```
32  + String testName = event.getTestClassInstance().getClass().getSimpleName() + "." + event.getTestMethodName();
```



3 callers



5 callees



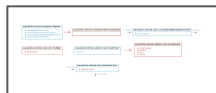
8 callers



1 subclass

Current Zoom: 300%

Minimap



Diff

```
11 ##### src/main/java/org/mockito/internal/exceptions/MockitoLimitations.java
... @@ -1,11 +0,0 @@
1  -/*
2  - * Copyright (c) 2010 Mockito contributors
3  - * This program is made available under the terms of the MIT License.
4  - */
5  -package org.mockito.internal.exceptions;
6  -
7  -public class MockitoLimitations {
8  -
9  -    public final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not
10 supported.";
11 -}
```

# Prototype 3

## Callers

In the center, diffs are shown sequentially as in a Github pull request

**Base view**

```
55 +
56 +
57 +     public boolean hasNext() {
58 +         return currentIndex < Array.getLength(value);
59 +     }
60 +
61 +
62 +     public Object next() {
63 +         return Array.get(value, currentIndex++);
64 +     }
65 +
66 +     public void remove() {
67 +         throw new UnsupportedOperationException("cannot remove items from an array");
68 +     }
69 +
70 +     }
71 +
72 + }
73 +
74 + }
75 +
76 + }
77 +
78 + }
79 +
80 + }
81 +
82 + }
83 +
84 + }
85 +
86 + }
87 +
88 + }
89 +
90 + }
91 +
92 + }
93 +
94 + }
95 +
96 + }
97 +
98 + }
99 +
100 + }
```

```
55 69      }
56 71      if (value instanceof FormattedText) {
    return (((FormattedText) value).getText());
    }
}
```

The center view is complemented by two sidebars that show in real time the callgraph information of the methods in the center view.

✓Sets.java [View]

terms of the MIT License.

```
get(Iterable<Object> mocks) {
    rks:
}
```

8 callers of newMockSafeHashSet

◀ o-m-int-conf-InjectAnnotat. ▶

```

21 - public static IdentitySet newIdentitySet() {
22 -     return new IdentitySet();
23 - }
24 -
25 21 public static <T> Set<T> newSet(T ... elements) {
26 22     if (elements == null) {
27 23         throw new IllegalArgumentException("Expected an array of elements (or empty array) but received a null.");

```

<b>Callees</b>
----------------

## Callers

## Base view

## Callees

```

56 +
57 +         public boolean hasNext() {
58 +             return currentIndex < Array.getLength(value);
59 +         }
60 +
61 +         public Object next() {
62 +             return Array.get(value, currentIndex++);
63 +         }
64 +
65 +         public void remove() {
66 +             throw new UnsupportedOperationException("cannot remove items from an array");
67 +         }
68 +     });

```

```

54 69    }
55 70    if (value instanceof FormattedText) {
56 71        return (((FormattedText) value).getText());

```

✱

4 ■■■■■ src/main/java/org/mockito/internal/util/collections/Sets.java

View ▾

... ... @@ -1,27 +1,23 @@

```

1 1  /*
2 2  * Copyright (c) 2007 Mockito contributors
3 3  * This program is made available under the terms of the MIT License.
4 4  */
5 5  package org.mockito.internal.util.collections;
6 6
7 7  import java.util.LinkedHashSet;
8 8  import java.util.Set;
9 9
10 10 import static java.util.Arrays.asList;
11 11
12 12 public abstract class Sets {
13 13     public static Set<Object> newMockSafeHashSet(Iterable<Object> mocks) {
14 14         return HashCodeAndEqualsSafeSet.of(mocks);
15 15     }
16 16
17 17     public static Set<Object> newMockSafeHashSet(Object... mocks) {
18 18         return HashCodeAndEqualsSafeSet.of(mocks);
19 19     }
20 20

```

*\*scroll\**

```

21 -     public static IdentitySet newIdentitySet() {
22 -         return new IdentitySet();
23 -     }
24 -
25 21     public static <T> Set<T> newSet(T... elements) {
26 22         if (elements == null) {
27 23             throw new IllegalArgumentException("Expected an array of elements (or empty array) but received a null.");

```

✱

8 callers of newMockSafeHashSet

◀ o-.m-.int-.conf-.InjectAnnotat. ▶

Callers	Base view	Callees
	<pre>40 40 41 41 /** 42 42  * Reports verification and misusing errors. 43 43  * &lt;p&gt; 44 44  * One of the key points of mocking library is proper verification/exception 45 45  * messages. All messages in one place makes it easier to tune and amend them. 46 46  * &lt;p&gt; 47 47  * Reporter can be injected and therefore is easily testable. 48 48  * &lt;p&gt; 49 49  * Generally, exception messages are full of line breaks to make them easy to 50 50  * read (xunit plugins take only fraction of screen on modern IDEs). 51 51 */ 52 52 public class Reporter { 53 53 54 54 + private final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not supported."; 55 55 + 56 56 private Reporter() { 57 57 } 58 58 59 59 60 60 61 61 62 62 63 63 64 64 65 65 66 66 67 67 68 68 69 69 } 70 70 71 71 72 72 public static MockitoException unfinishedStubbing(Location location) { 73 73     return new UnfinishedStubbingException(join( 74 74         "Unfinished stubbing detected here:", 75 75         location, 76 76         "", 77 77         "E.g. thenReturn() may be missing.", 78 78         "Examples of correct stubbing:", 79 79         "    when(mock.isOk()).thenReturn(true);", 80 80         "    when(mock.isOk()).thenThrow(exception);", 81 81         "    doThrow(exception).when(mock).someVoidMethod();", 82 82         "Hints:", 83 83         " 1. missing thenReturn()", 84 84         " 2. you are trying to stub a final method, which is not supported", 85 85         " 3: you are stubbing the behaviour of another mock inside before 'thenReturn' instruction if completed", 86 86         "" 87 87     )); 88 88 } 89 89 90 90 91 91 public static MockitoException incorrectUseOfApi() { 92 92     return new MockitoException(join( 93 93         "Incorrect use of API detected here:", 94 94         new LocationImpl(), 95 95         "", 96 96         "You probably stored a reference to OngoingStubbing returned by when() and called stubbing methods like thenReturn() on this refe", 97 97         "Examples of correct usage:", 98 98         "    when(mock.isOk()).thenReturn(true).thenReturn(false).thenThrow(exception);", 99 99         "    when(mock.isOk()).thenReturn(true, false).thenThrow(exception);", 100 100         "" 101 101     )); 102 102 } 103 103 104 104 public static MockitoException missingMethodInvocation() {</pre>	<p>1 callee of unfinishedStubbing</p> <p>← org.m-.int-.util.StringUtil.join →</p>





Callers	Base view [X]	<i>org.mockito.internal.util.StringUtil</i> [X]	Callees
<p>The file is positioned at the line corresponding to the selected method, which is also highlighted.</p>		<pre> 1  /* 2   * Copyright (c) 2017 Mockito contributors 3   * This program is made available under the terms of the MIT License. 4   */ 5  package org.mockito.internal.util; 6 7  import static java.util.Arrays.asList; 8 9  import java.util.Collection; 10 import java.util.regex.Matcher; 11 import java.util.regex.Pattern; 12 13 public class StringUtil { 14 15     private static final Pattern CAPS = Pattern.compile("[A-Z\\d][^A-Z\\d]*"); 16 17     private StringUtil() {} 18     /** 19      * @param text 20      *      to have the first line removed 21      * @return less first line 22      */ 23     public static String removeFirstLine(String text) { 24         return text.replaceFirst(".*?\\n", ""); 25     } 26 27     /** 28      * Joins Strings with line break character. It adds line break in front, too. 29      * This makes it something like 'format' no really 'join'. 30      */ 31     public static String join(Object ... linesToBreak) { 32         return join("\n", asList(linesToBreak)); 33     } 34 35     /** 36      * Joins Strings with EOL character 37      * 38      * @param start the starting String 39      * @param lines collection to join 40      */ 41     public static String join(String start, Collection&lt;?&gt; lines) { 42         return join(start, "", lines); 43     } 44 45     /** 46      * Joins Strings with EOL character 47      * 48      * @param start the starting String 49      * @param linePrefix the prefix for each line to be joined 50      * @param lines collection to join </pre> <p>A new tab with the source code of the class containing the selected caller/callee is opened. The sidebars represent now the caller/callee information of this tab/class, which is in focus (italic title).</p>	

Callers	Base view [X]	<i>org.mockito.internal.util.StringUtil</i> [X]	Callees
		<pre> 1  /* 2   * Copyright (c) 2017 Mockito contributors 3   * This program is made available under the terms of the MIT License. 4   */ 5  package org.mockito.internal.util; 6 7  import static java.util.Arrays.asList; 8 9  import java.util.Collection; 10 import java.util.regex.Matcher; 11 import java.util.regex.Pattern; 12 13 public class StringUtil { 14 15     private static final Pattern CAPS = Pattern.compile("[A-Z\\d][^A-Z\\d]*"); 16 17     private StringUtil() {} 18     /** 19      * @param text 20      *         to have the first line removed 21      * @return less first line 22      */ 23     public static String removeFirstline(String text) { 24         return text.replaceFirst(".*?\\n", ""); 25     } 26 27     /** 28      * Joins Strings with line break character. It adds line break in front, too. 29      * This makes it something like 'format' no really 'join'. 30      */ 31     public static String join(Object ... linesToBreak) { 32         return join("\\n", asList(linesToBreak)); 33     } 34 35     /** 36      * Joins Strings with EOL character 37      * 38      * @param start the starting String 39      * @param lines collection to join 40      */ 41     public static String join(String start, Collection&lt;?&gt; lines) { 42         return join(start, "", lines); 43     } 44 45     /** 46      * Joins Strings with EOL character 47      * 48      * @param start the starting String 49      * @param linePrefix the prefix for each line to be joined 50      * @param lines collection to join </pre>	

*\*scroll to left\**

Callers	Base view [X]	<i>org.mockito.internal.util.StringUtil</i> [X]	Callees
	<pre>on non-public parent classes is not supported.";</pre> <pre>ted", pre 'thenReturn' instruction if completed",</pre> <pre>when() and called stubbing methods like thenReturn() on this refe throw(exception);", tion);",</pre>	<pre>1  /* 2   * Copyright (c) 2017 Mockito contributors 3   * This program is made available under the terms of the MIT License. 4   */ 5   package org.mockito.internal.util; 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31   public static String join(Object ... linesToBreak) { 32       return join("\n", asList(linesToBreak)); 33   } 34 35   /** 36    * Joins Strings with EOL character 37    * 38    * @param start the starting String 39    * @param lines collection to join 40    */ 41   public static String join(String start, Collection&lt;?&gt; lines) { 42       return join(start, "", lines); 43   } 44 45   /** 46    * Joins Strings with EOL character 47    * 48    * @param start 49    * @param lines 50    * @param line</pre> <p>As the user scrolls horizontally to the left, the initial tab is revealed. Both tabs remain visible, allowing for a simultaneous reading of the code, but only one of them is in focus.</p> <p><i>*scroll to left*</i></p>	

Callers	Base view [X]	o.m-.int-.util.StringUtil [X]	Callees
	<div data-bbox="459 164 884 487" data-label="Text"> <p>When the initial tab occupies more than 50% of the width, it becomes in focus again and its caller/callee information is displayed in the sidebars.</p> </div> <pre data-bbox="426 164 1016 960"> //ex g am  them a).  ads  ation) {  };",  is not supported", ck inside before 'thenReturn' instruction if completed",  ng returned by when() and called stubbing methods like thenReturn() on this refe h(false).thenThrow(exception);", enThrow(exception);", </pre>	<pre data-bbox="1029 109 1503 1004"> 1  /* 2   * Copyright (c) 2017 Mockito contributors 3   * This program is made available under the terms of the MIT Li 4   */ 5  package org.mockito.internal.util; 6 7  import static java.util.Arrays.asList; 8 9  import java.util.Collection; 10 import java.util.regex.Matcher; 11 import java.util.regex.Pattern; 12 13 public class StringUtil { 14 15     private static final Pattern CAPS = Pattern.compile("[A-Z\\ 16 17     private StringUtil() {} 18     /** 19      * @param text 20      *         to have the first line removed 21      * @return less first line 22      */ 23     public static String removeFirstLine(String text) { 24         return text.replaceFirst("\\n", ""); 25     } 26 27     /** 28      * Joins Strings with line break character. It adds line br 29      * This makes it something like 'format' no really 'join'. 30      */ 31     public static String join(Object ... linesToBreak) { 32         return join("\\n", asList(linesToBreak)); 33     } 34 35     /** 36      * Joins Strings with EOL character 37      * 38      * @param start the starting String 39      * @param lines collection to join 40      */ 41     public static String join(String start, Collection&lt;&gt; lines 42         return join(start, "", lines); 43     } 44 45     /** 46      * Joins Strings with EOL character 47      * 48      * @param start the starting String 49      * @param prefix the prefix for each line to be joined 50      * @param lines collection to join </pre>	<div data-bbox="1514 450 1870 511" data-label="Text"> <p>1 callee of unfinishedStubbing  ← org.m-.int-.util.StringUtil.join →</p> </div>

*\*scroll to left\**

Callers	Base view [X]	o.m-.int-.util.StringUtil [X]	Callees
	<pre> 40 40 41 41 /** 42 42  * Reports verification and misusing errors. 43 43  * &lt;p&gt; 44 44  * One of the key points of mocking library is proper verification/exception 45 45  * messages. All messages in one place makes it easier to tune and amend them 46 46  * &lt;p&gt; 47 47  * Reporter can be injected and therefore is easily testable. 48 48  * &lt;p&gt; 49 49  * Generally, exception messages are full of line breaks to make them easy to 50 50  * read (xunit plugins take only fraction of screen on modern IDEs). 51 51 */ 52 52 public class Reporter { 53 53 54 54 + private final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not supported."; 55 55 + 56 56 private Reporter() { 57 57 } 58 58 59 59 60 60 61 61 62 62 63 63 64 64 65 65 66 66 67 67 68 68 } 69 69 70 70 71 71 public static MockitoException unfinishedStubbing(Location location) { 72 72     return new UnfinishedStubbingException(join( 73 73         "Unfinished stubbing detected here:", 74 74         location, 75 75         "", 76 76         "E.g. thenReturn() may be missing.", 77 77         "Examples of correct stubbing:", 78 78         "    when(mock.isOk()).thenReturn(true);", 79 79         "    when(mock.isOk()).thenThrow(exception);", 80 80         "    doThrow(exception).when(mock).someVoidMethod();", 81 81         "Hints:", 82 82         "  1. missing thenReturn()", 83 83         "  2. you are trying to stub a final method, which is not supported", 84 84         "  3: you are stubbing the behaviour of another mock inside before 'thenReturn' instruction if completed", 85 85         "" 86 86     )); 87 87 } 88 88 89 89 90 90 91 91 public static MockitoException incorrectUseOfApi() { 92 92     return new MockitoException(join( 93 93         "Incorrect use of API detected here:", 94 94         new LocationImpl(), 95 95         "", 96 96         "You probably stored a reference to OngoingStubbing returned by when() and called stubbing methods like thenReturn() on this reference", 97 97         "Examples of correct usage:", 98 98         "    when(mock.isOk()).thenReturn(true).thenReturn(false).thenThrow(exception);", 99 99         "    when(mock.isOk()).thenReturn(true, false).thenThrow(exception);", 100 100         "" 101 101     )); 102 102 } 103 103 </pre>	<div data-bbox="1043 141 1449 305"> <p>Eventually, the other tab takes over the entire workspace.</p> </div> <div data-bbox="1506 436 1874 513"> <p>1 callee of unfinishedStubbing</p> <p>← org.m-.int-.util.StringUtil.join →</p> </div>	

Callers	Base view [X]	o.m-.int-.util.StringUtil [X]	Callees
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# Callers

# Base view

# Callees

```

40 40
41 41 /**
42 42  * Reports verification and misusing errors.
43 43  * <p>
44 44  * One of the key points of mocking library is proper verification/exception
45 45  * messages. All messages in one place makes it easier to tune and amend them.
46 46  * <p>
47 47  * Reporter can be injected and therefore is easily testable.
48 48  * <p>
49 49  * Generally, exception messages are full of line breaks to make them easy to
50 50  * read (xunit plugins take only fraction of screen on modern IDEs).
51 51 */
52 52 public class Reporter {
53 53
54 54 + private final static String NON_PUBLIC_PARENT = "Mocking methods declared on non-public parent classes is not supported.";
55 55 +
56 56 private Reporter() {
57 57 }
58 58
59 59
60 60
61 61
62 62
63 63
64 64
65 65
66 66
67 67
68 68
69 69 }
70 70
71 71
72 72 public static MockitoException unfinishedStubbing(Location location) {
73 73     return new UnfinishedStubbingException(join(
74 74         "Unfinished stubbing detected here:",
75 75         location,
76 76         "",
77 77         "E.g. thenReturn() may be missing.",
78 78         "Examples of correct stubbing:",
79 79         "    when(mock.isOk()).thenReturn(true);",
80 80         "    when(mock.isOk()).thenThrow(exception);",
81 81         "    doThrow(exception).when(mock).someVoidMethod();",
82 82         "Hints:",
83 83         "  1. missing thenReturn()",
84 84         "  2. you are trying to stub a final method, which is not supported",
85 85         "  3: you are stubbing the behaviour of another mock inside before 'thenReturn' instruction if completed",
86 86         ""
87 87     ));
88 88 }
89 89
90 90
91 91 public static MockitoException incorrectUseOfApi() {
92 92     return new MockitoException(join(
93 93         "Incorrect use of API detected here:",
94 94         new LocationImpl(),
95 95         "",
96 96         "You probably stored a reference to OngoingStubbing returned by when() and called stubbing methods like thenReturn() on this refe
97 97         "Examples of correct usage:",
98 98         "    when(mock.isOk()).thenReturn(true).thenReturn(false).thenThrow(exception);",
99 99         "    when(mock.isOk()).thenReturn(true, false).thenThrow(exception);",
100 100         ""
101 101     ));
102 102 }
103 103

```

1 callee of unfinishedStubbing

← org.m-.int-.util.StringUtil.join →