

JUnit A Cook's Tour

: JUnit 3.8.x .

1.

(Test Infected : Programmers Love Writing Tests, Java Report, July 1998, Volume 3, Number 7)

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JUnit

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JUnit ?

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Setup Fixture Fixture

3. JUnit

JUnit ("Patterns Generate Architectures", Kent Beck Ralph Johnson, EC00P 94)
가
JUnit

3.1 - TestCase

TestCase
가
(Gamma, E., et al. Design Patterns : Elements of Reusable Object-Oriented Software, Addison-Wesley, Reading, MA, 1995)
" " "..."
TestCase

```
public abstract class TestCase implements Test
{
    ...
}
```

TestCase TestCase 가

```
public abstract class TestCase implements Test
{
    private final String fName;
    public TestCase (String name) {
        fName = name;
    }
}
```

```
public abstract void run ();  
...  
}
```

JUnit 가

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(Gamma, E., Applying

Design Patterns in Java, in Java Gems, SIGS Reference Library, 1997).

```
1 TestCase
```



3.2 in-run ()



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TestCase

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```
public void run()
{
    setUp ();
    runTest ();
    tearDown ();
}
```

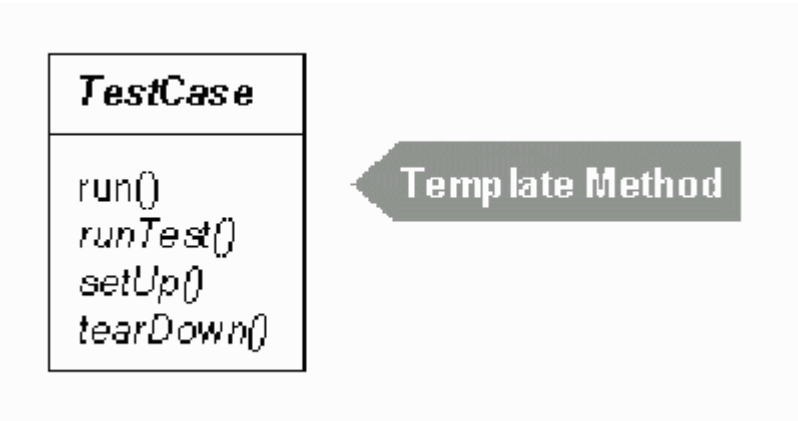
```
}

protected void runTest ()
{
    ...
}

protected void setUp ()
{
    ...
}

protected void tearDown ()
{
    ...
}

setUp    tearDown
                2
```



3.3

TestCase가 가 ? .

가 .

가 TestCase

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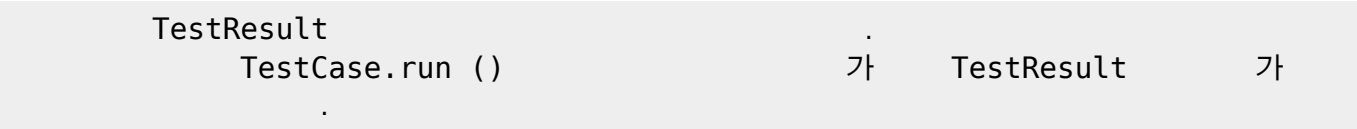
Smalltalk (Beck, K. Smalltalk , Prentice Hall, 1996

) 가 .

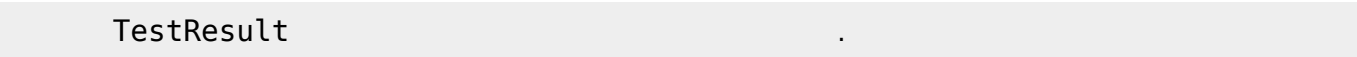
가 .

TestResult .

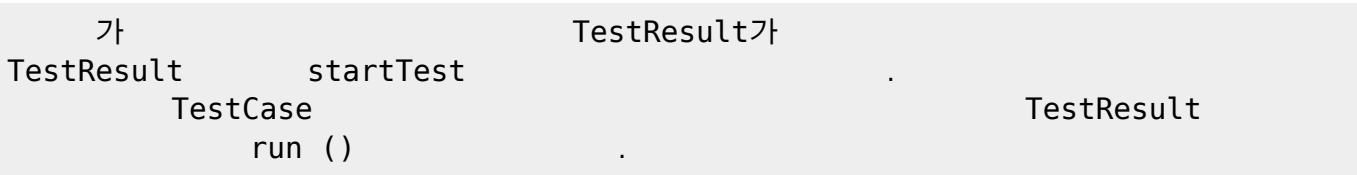
```
public class TResult extends Object
{
    protected int fRunTests;
    public TResult () {
        fRunTests = 0;
    }
}
```



```
public void run (TResult result) {
    result.startTest (this);
    ();
    runTest ();
    tearDown ();
}
```



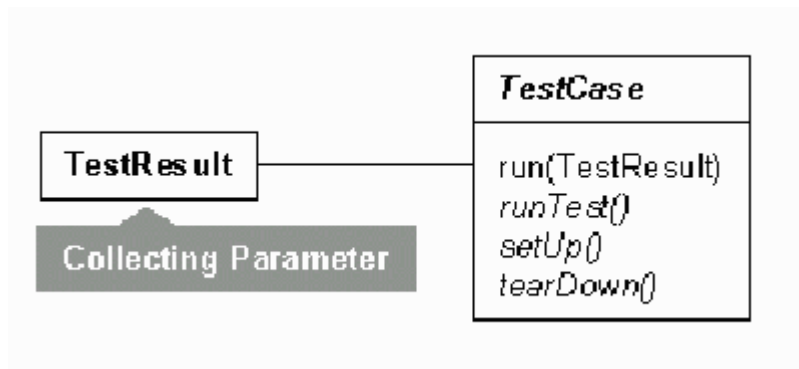
```
startTest (TResult result) {
    fRunTests ++;
}
```



```
public TResult run () {
    TResult result = createResult ();
    ();
    ;
}
```

```
protected TResult createResult () {
    return new TResult ();
}
```





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JUnit

가

ArrayIndexOutOfBoundsException

AssertionFailedError

가 catch (1)

(2)

```

public void run (TestResult result) {
    result.startTest (this);
    ();
    {
        runTest ();
    }
    catch (AssertionFailedError e) { // 1
        result.addFailure (this, e);
    }
    catch (Throwable e) { // 2
        result.addError (this, e);
    }
    {
        tearDown ();
    }
}
  
```

AssertionFailedError TestCase assert

JUnit assert

가

```

protected void assertTrue (boolean condition) {
    if (! condition)
        throw new AssertionFailedError ();
}
  
```

```
AssertionFailedError (TestCase)가
TestCase.run () AssertionFailedError
```

```
AssertionFailedError {
public AssertionFailedError () {}
}
```

```
. TestResult
```

```
addError (, Throwable t) {
fErrors.addElement (new TestFailure (test, t));
}
```

```
addFailure (, Throwable t) {
fFailures.addElement (new TestFailure (test, t));
}
```

```
TestFailure
```

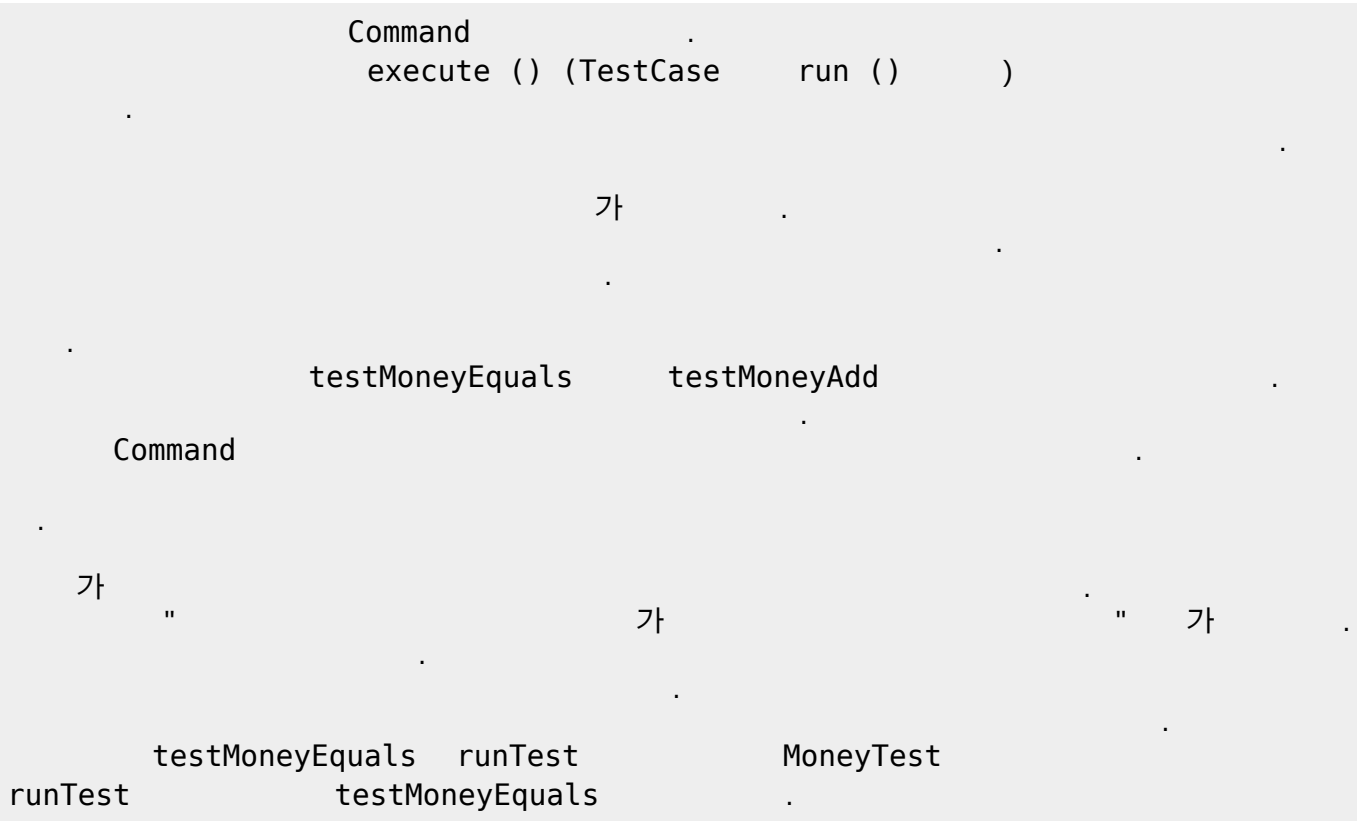
```
TestFailure Object {
protected Test fFailedTest
Throwable fThrownException;
}
```

```
TestResult 가
" "
TestResult
throw
MoneyTest
TestResult 가
```

```
public void testMoneyEquals () {
assertTrue (! f12CHF.equals (null));
assertEquals (f12CHF, f12CHF);
assertEquals (f12CHF, new Money (12, "CHF"));
assertTrue (! f12CHF.equals (f14CHF));
}
```

```
JUnit TestResult
TextTestResult
UITestResult JUnit Test Runner
TestResult
TestResult
HTMLTestResult HTML
```

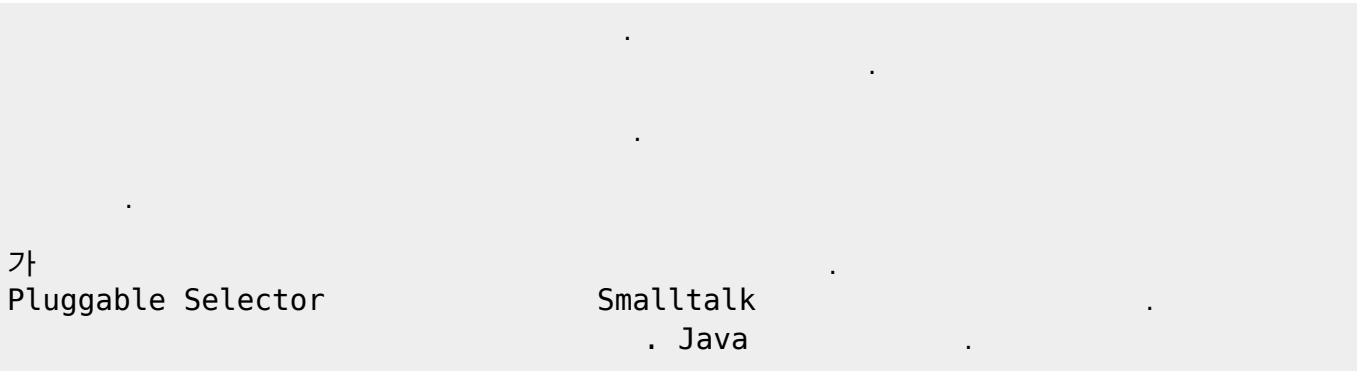
3.4 -TestCase



```
TestMoneyEquals MoneyTest {
public TestMoneyEquals () {super ( "testMoneyEquals"); }
runTest () {testMoneyEquals (); }
}
```



```
TestCase test = new MoneyTest ( "testMoneyEquals" ) {
protected void runTest () {testMoneyEquals (); }
};
```



Java

Java

API

Java

JUnit

runTest

Method

가

```

protected void runTest () throws Throwable {
    Method runMethod = null;
    try {
        runMethod = getClass (). getMethod (fName, new Class [0]);
    } catch (NoSuchMethodException e) {
        assertTrue ( "Method \" " + fName + "\" " " ", false);
    }
    try {
        runMethod.invoke (this, new Class [0]);
    }
    // InvocationTargetException   IllegalAccessException
}

```

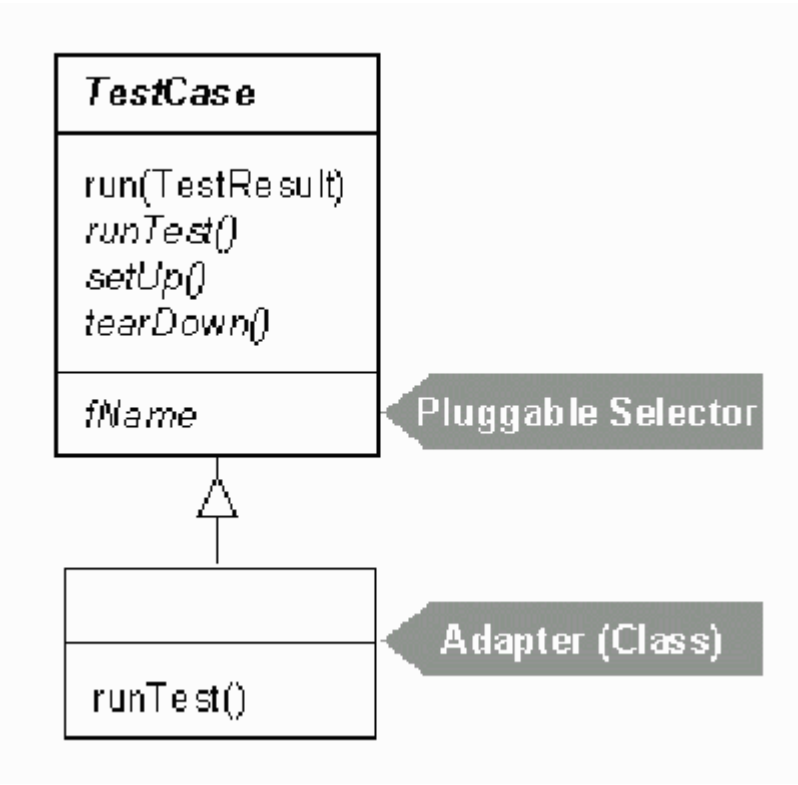
JDK 1.1

API

public

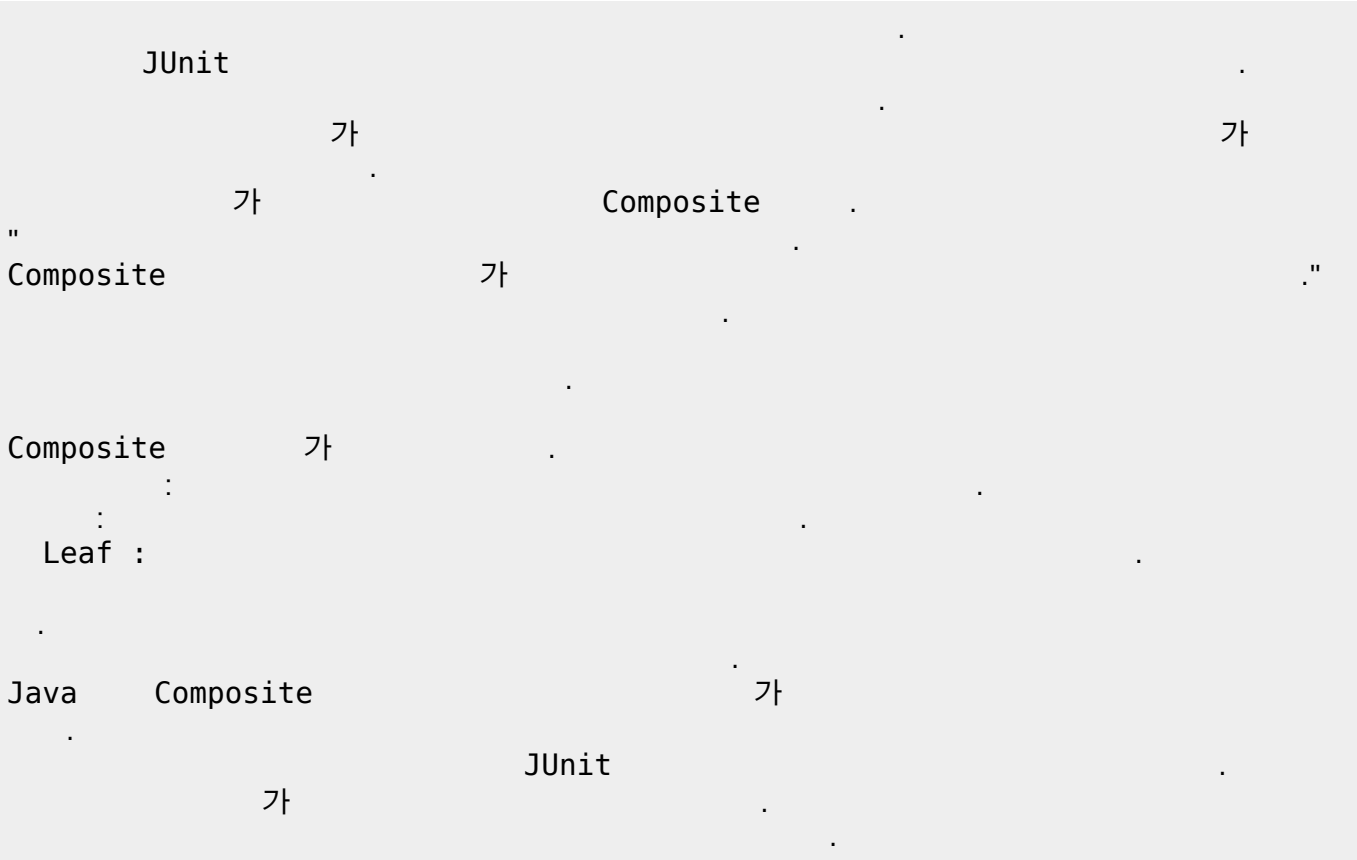
NoSuchMethodException

가 가



3.5

-TestSuite



```
public interface Test {
    public abstract void run (TestResult result);
}
```

```

TestCase Composite Leaf
      가
      TestSuite
TestSuite

```

```

TestSuite Test {
    private Vector fTests = new Vector ();
}

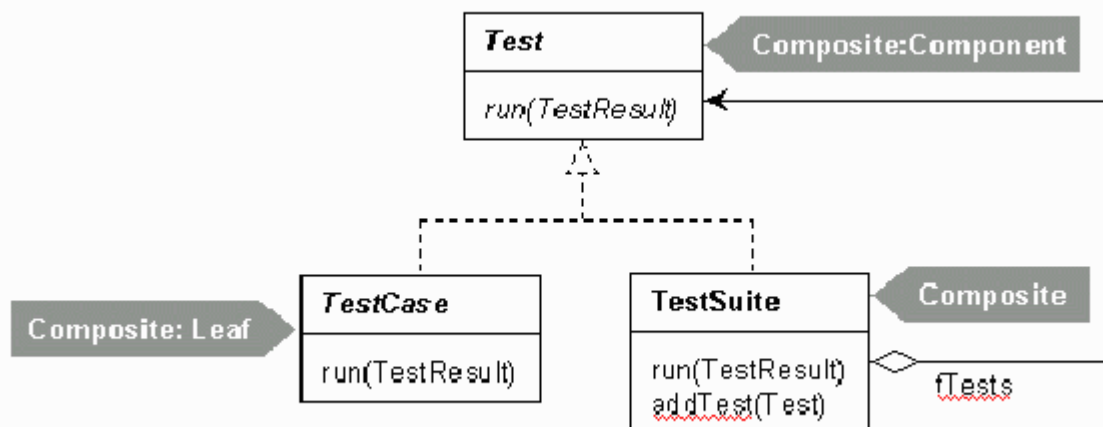
```

```
run ()
```

```

public void run (TestResult result) {
    for (Enumeration e = fTests.elements (); e.hasMoreElements ();) {
        Test test = (Test) e.nextElement ();
        test.run ();
    }
}

```



가

addTest

```

public void addTest (
    ) {
    fTests.addElement (test);
}

```

```

      가
TestCase TestSuite Test
      TestSuite
      TestSuite
TestSuite

```

```

public static Test suite()
{
    TestSuite suite = new TestSuite ();
    suite.addTest (new MoneyTest ( "testMoneyEquals"));
}

```

```
suite.addTest (new MoneyTest ( "testSimpleAdd"));
}
```

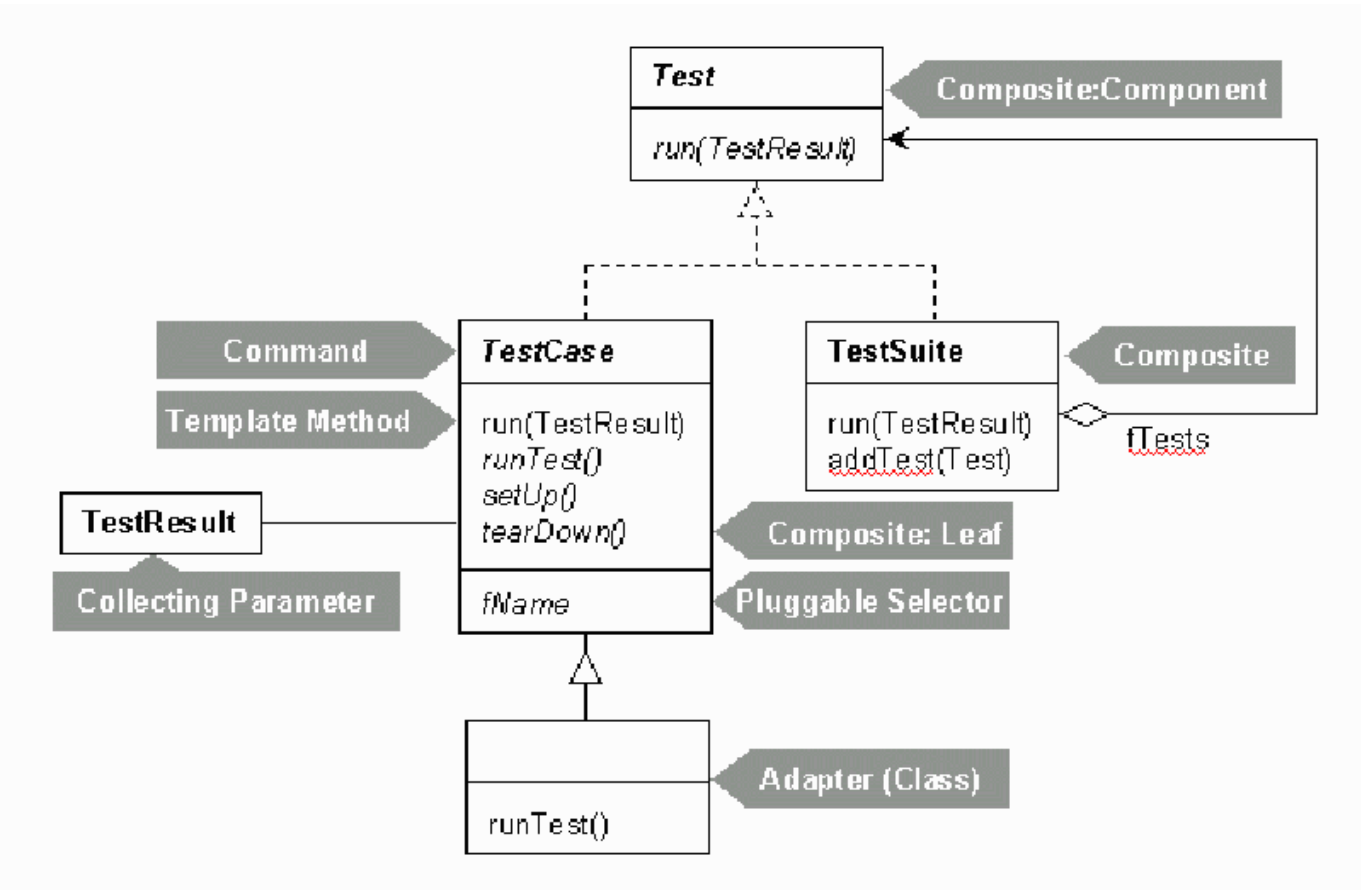
```
JUnit
    static suite ()
    {
        TestSuite
        "test"
    }
}
```

```
public static Test suite ()
{
    return new TestSuite (MoneyTest.class);
}
```

The original way is still useful when you want to run a subset of the test cases only.

3.6

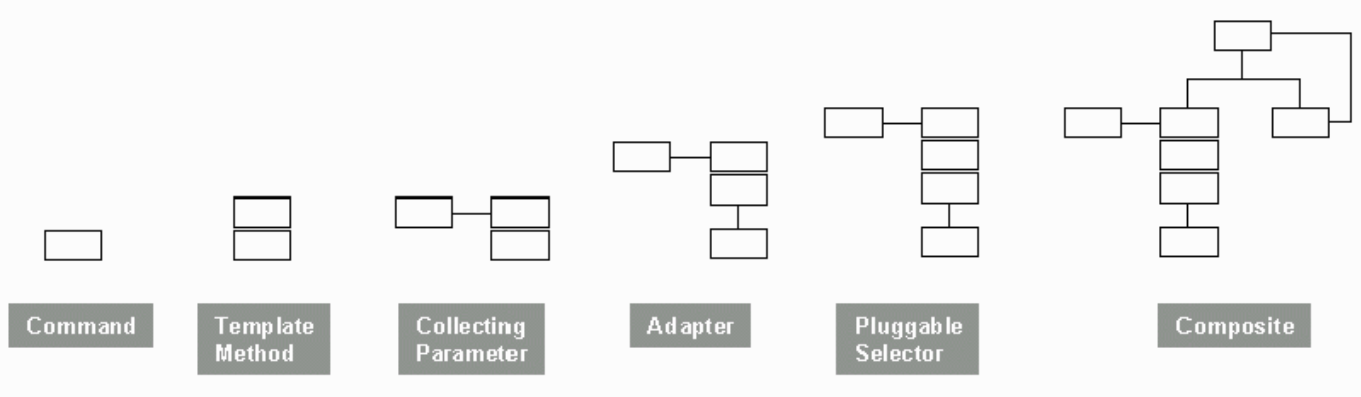
JUnit A Cook's Tour



TestCase가 4

“ ”

JUnit
Method run
(
Command TestCase
, Template 6



Composite
가
“ ”
4.

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Patterns

Pattern density

JUnit TestCase " "가
가 가
가
"

Eat your own dog food

TestTest 가
JUnit 가

Intersection, not union

```
JUnit  
(test.extensions)  
가  
)  
. 가  
TestDecorator
```

```
JUnit, , , 가
monomania
( ).
```

JUnit <http://www.junit.org>

5.

John Vliissides, Ralph Johnson, Nick Edgar .

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