

JUnit A Cook's Tour

: JUnit 3.8.x .

1.

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

가

가

JUnit

가

가

가

$$(\quad, \quad)$$

2.

JUnit ?

가 가 .

가

가

가

가

가

가

가

?

, PM !!

가

가

가

1

5

가

가

Setup	Fixture	Fixture
-------	---------	---------

3. JUnit

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

3.1 - TestCase

TestCase

-
-
-

가

()

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

" " "execute"

TestCase

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

Test	TestCase	class	"public abstract"
TestCase		가	

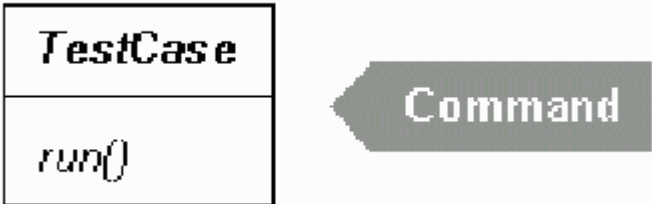
```
public abstract class TestCase implements Test
{
    private final String fName;

    public TestCase (String name) {
        fName = name;
    }
}
```

```
}

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

JUnit
가
가
가
(Gamma, E., Applying Design Patterns in Java, in Java Gems, SIGS Reference Library, 1997)
1 TestCase



3.2 Blanks to fill in - run()

fixture

TestCase abstract 가 subclassing TestCase
가 super class

test fixture fixture
fixture 가 fixture 가

가

가 fixture(setup and teardown)
fixture 가 가

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

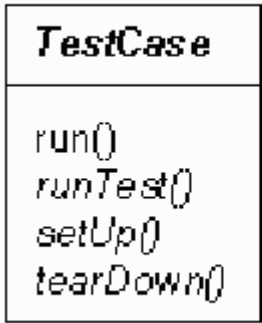
```
protected void runTest()
{
    ...
}
```

```
protected void setUp()
{
    ...
}
```

```
protected void tearDown()
{
    ...
}
```

setUp tearDown

2



Template Method

3.3 Reporting results - TestResult

TestCase가 forest	가	?	.
가	.	.	.
가		TestCase	flag
가	flag	.	.

```
Smalltalk (Beck, K. Smalltalk, Prentice Hall, 1996)
Collecting Parameter
    .
    가
    .
    TestResult
    .
```

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

```

@TestResult
    TestCase.run()
    가
    TestResult
    가

```

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

TestResult

```
public synchronized void startTest (Test test)
{
    fRunTests ++;
}
```

```

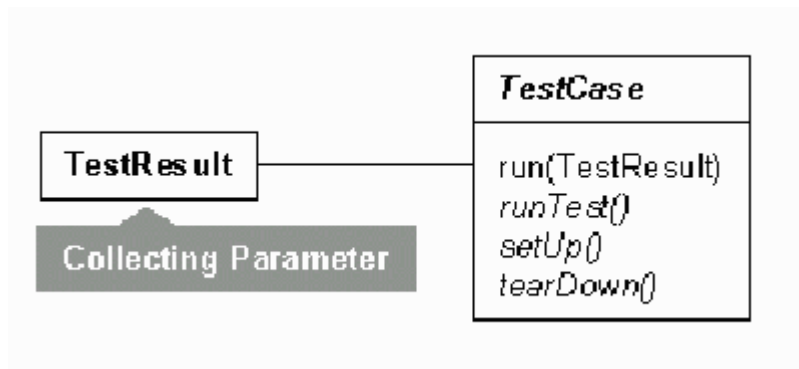
가
TestResult startTest synchronized .
TestCase
가 run() .
TestResult

```

```
public TestResult run () {
    TestResult      = createResult ();
    (    );
    ;
}
```

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

3



가

가

가

JUnit

가

assertions

ArrayIndexOutOfBoundsException

AssertionFailedError

가 catch (1)

(2)

```

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

AssertionFailedError TestCase assert
 JUnit assert
 가

```

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

}

AssertionFailedError (TestCase)가
 TestCase.run() AssertionFailedError

```
public class AssertionFailedError extends Error
{
    public AssertionFailedError () {}
}
```

TestResult

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

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

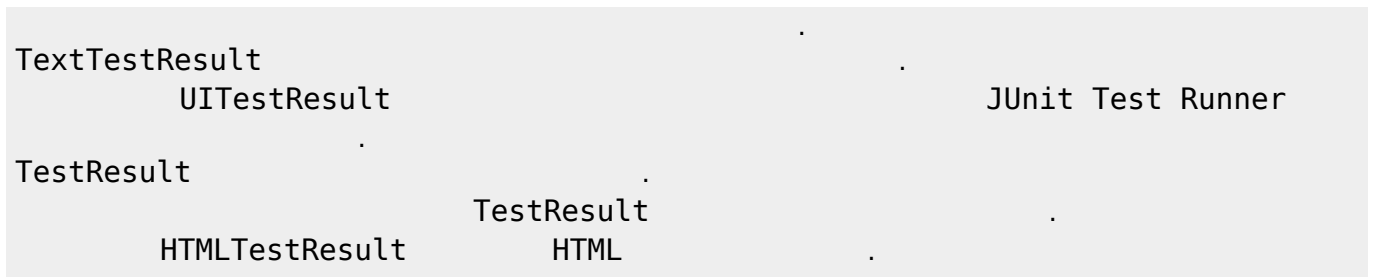
TestFailure
 helper class

```
public class TestFailure extends Object
{
    protected Test fFailedTest;
    protected Throwable fThrownException;
}
```

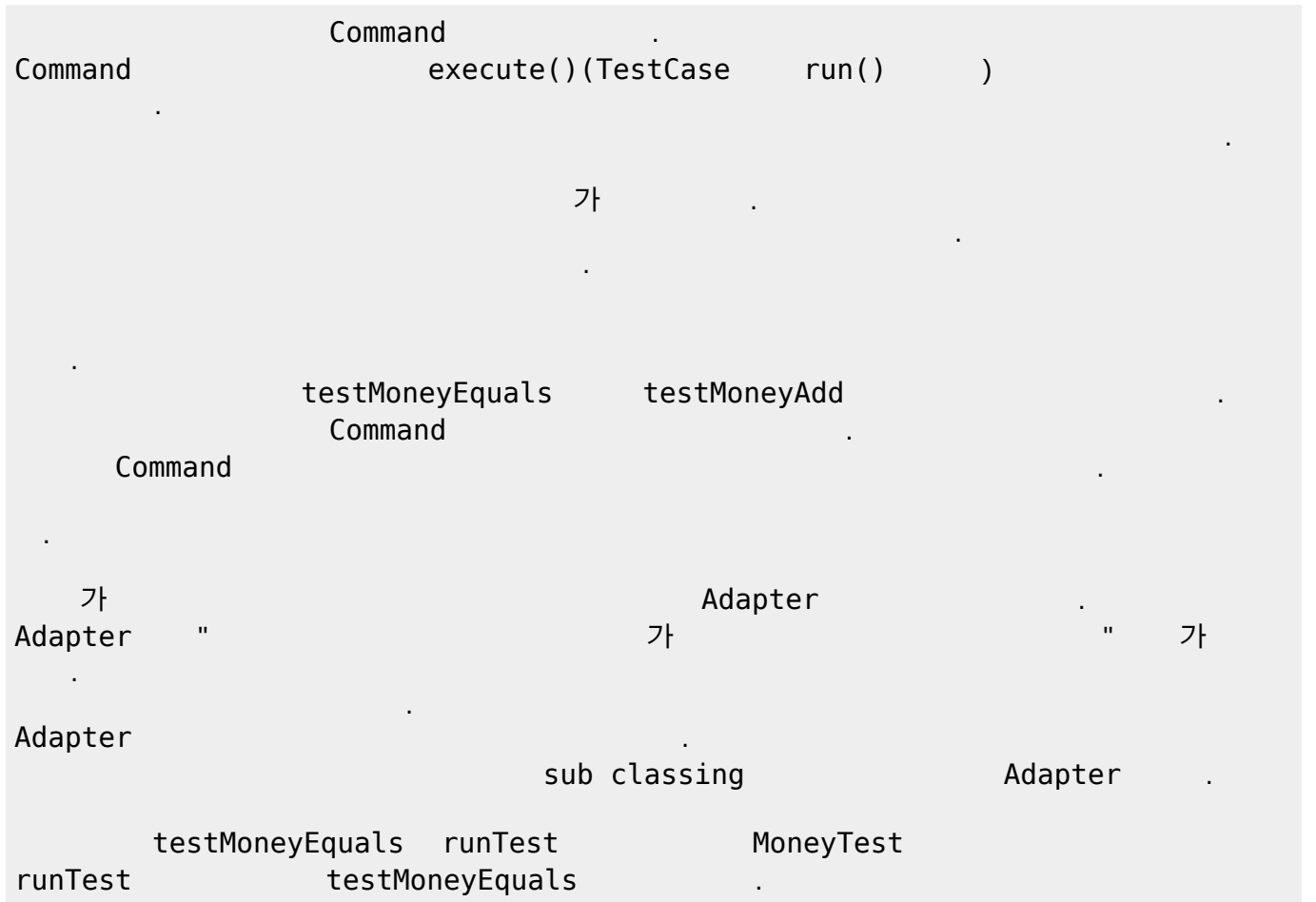
collecting parameter collecting parameter
 " " TestResult 가
 throw MoneyTest TestResult 가

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

JUnit TestResult

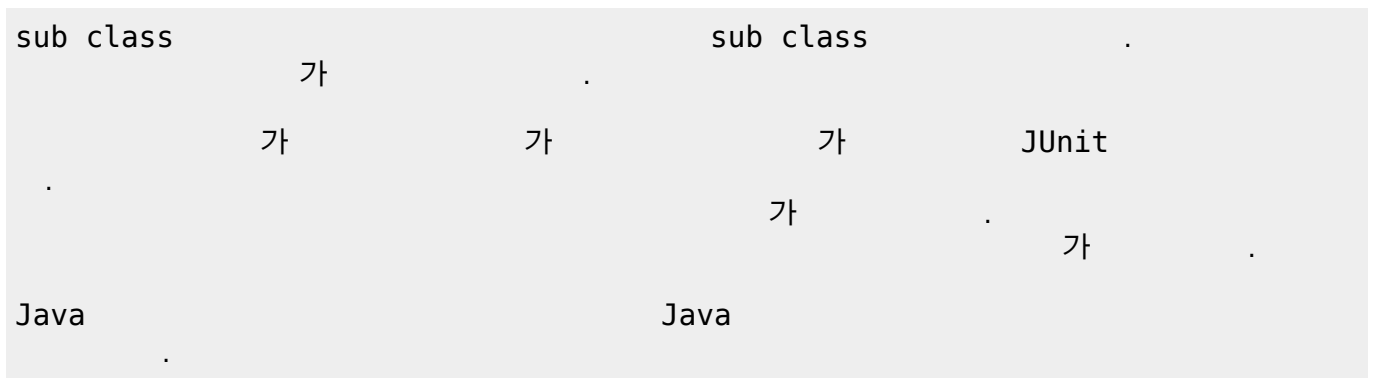


3.4 No stupid subclasses - TestCase again



```

public class TestMoneyEquals extends MoneyTest
{
    public TestMoneyEquals() {super("testMoneyEquals"); }
    protected void runTest() {testMoneyEquals(); }
}
  
```



```

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

```

```

sub classing
smalltalk      pluggable
sub classing
가            pluggable      pluggable Selector
pluggable Selector      smalltalk      Selector
smalltalk      . Java
Java      Selector
Java reflection API
Java      pluggable Selector
,      reflection
      reflection
JUnit      pluggable Selector      adapter
class
runTest      pluggable Selector
reflection
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
}

```

```

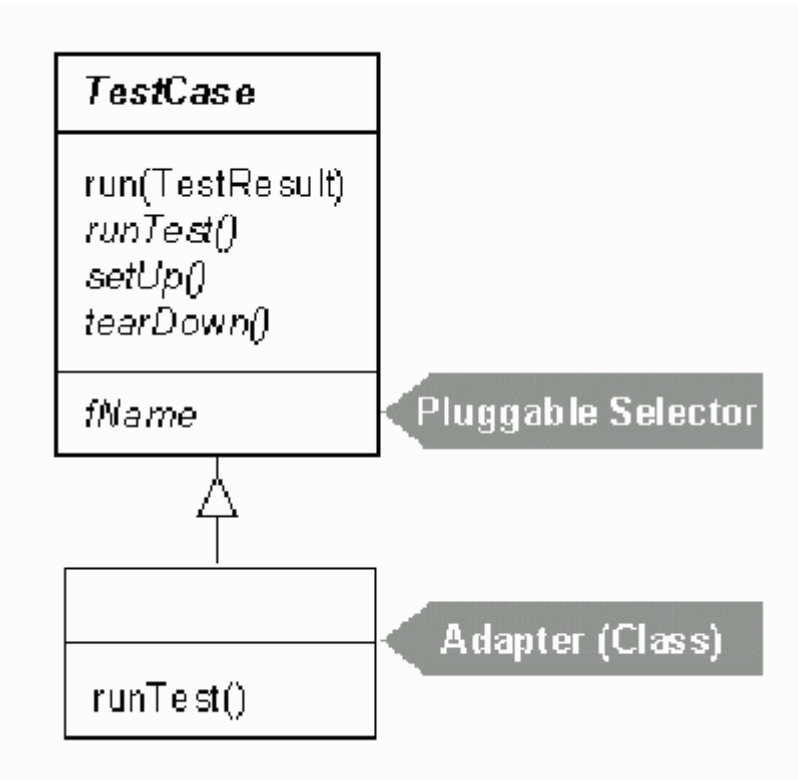
JDK 1.1 reflection API      public

```

public

NoSuchMethodException

Adapter pluggable selector가 가



3.5 Don't care about one or many - TestSuite

JUnit

가

가

Composite

" Composite 가 "

suites of suites of suites of tests

Composite 가

Component :

Composite :

Leaf : Component composition

Java Composite 가

JUnit

가

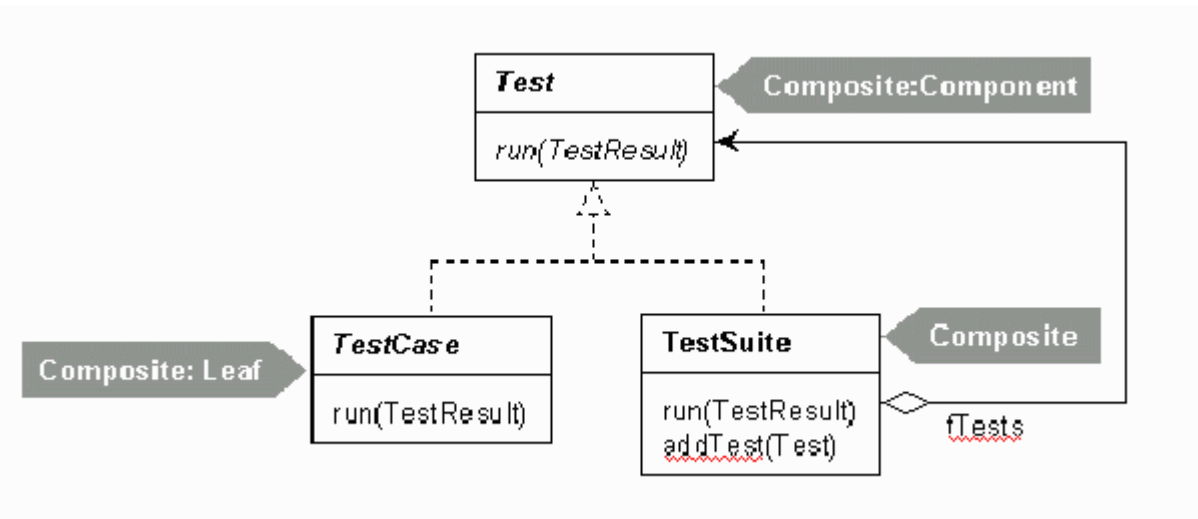
```
public interface Test
{
    public abstract void run(TestResult result);
}
```

TestCase Composite Leaf
Composite 가
TestSuite
TestSuite Vector

```
public class TestSuite implements 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 (result);
    }
}
```



suite 가 addTest

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

가
TestCase TestSuite Test test suites
TestSuite

TestSuite
TestSuite

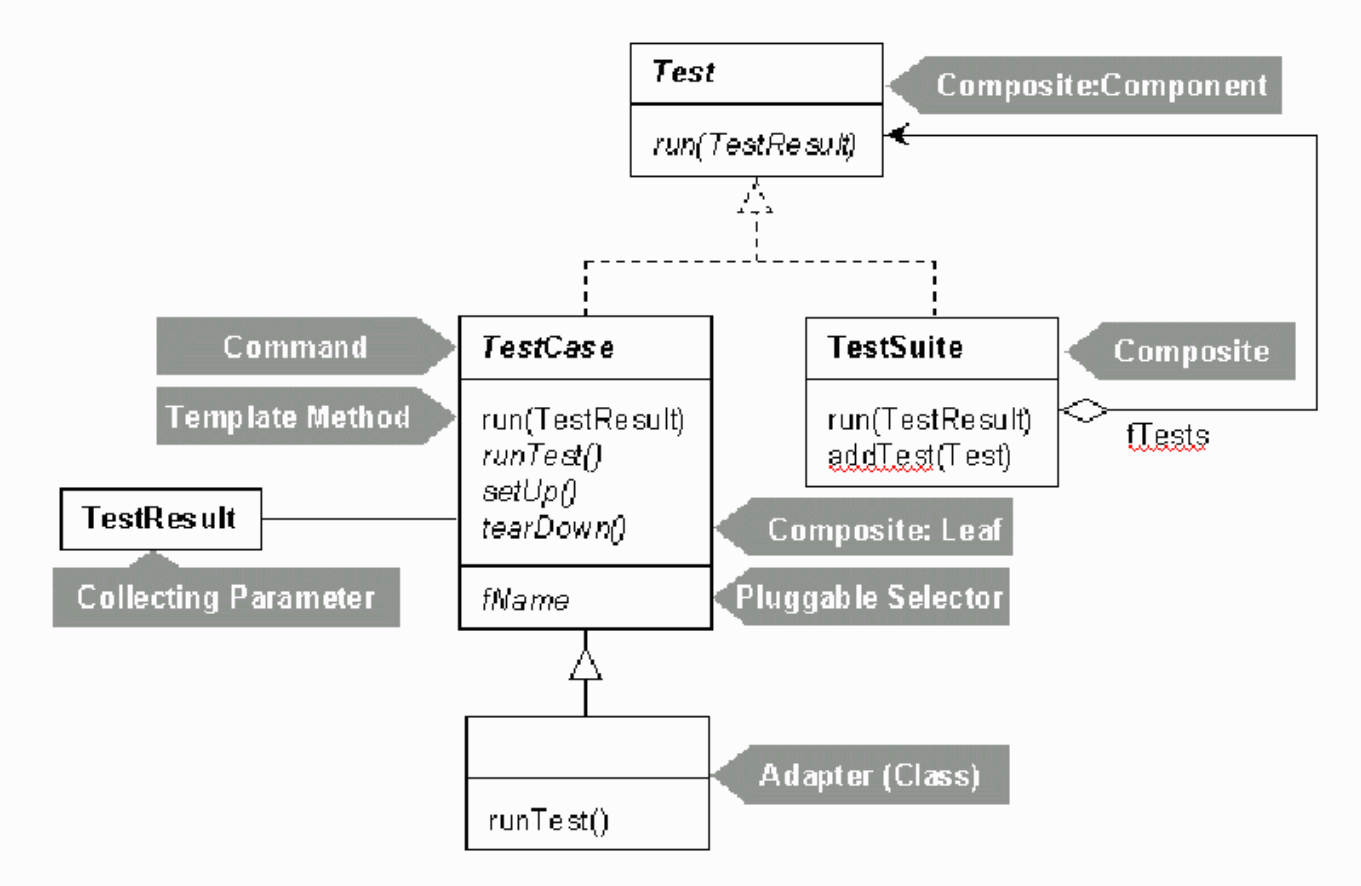
```
public static Test suite()  
{  
    TestSuite suite= new TestSuite ();  
    suite.addTest(new MoneyTest ( "testMoneyEquals"));  
    suite.addTest(new MoneyTest ( "testSimpleAdd"));  
}
```

JUnit
가
static suite() 가
TestSuite 가
"test"
reflection
가

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

3.6

JUnit A Cook's Tour
JUnit

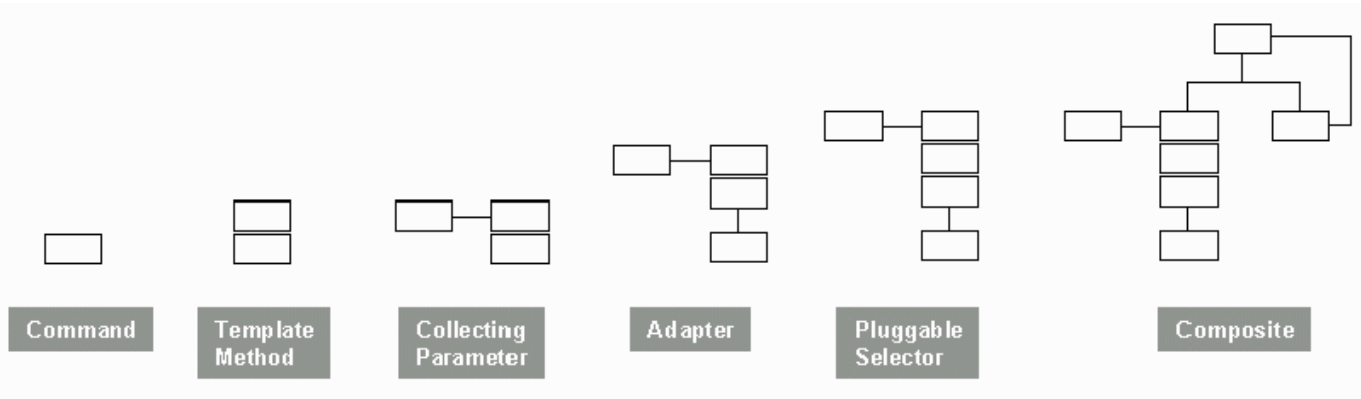


TestCase가 4가

JUnit

Command TestCase Template Method run

(가 6.)



Composite

Composite가

4.

가 .

Patterns

.
.
.

Pattern density

JUnit TestCase " "가 .
가 가 .
가 가 .
가 .
" "

Eat your own dog food ()

TestTest 가 , .
JUnit 가 .

Intersection, not union

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

JUnit ,
가 가 .
JUnit, , 가
().

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

5.

John Vlissides, Ralph Johnson, Nick Edgar

: <http://junit.sourceforge.net/doc/cookstour/cookstour.htm>

junit

From:

<http://rwiki.repia.com/> -

. - 2023.12

Permanent link:

http://rwiki.repia.com/doku.php?id=wiki:java:junit:junit_a_cook_s_tour&rev=1598946636

Last update: **2022/03/10 19:52**

