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JUnit A Cook's Tour

```
: JUnit 3.8.x
```

1.

2.

```
JUnit
               가
                         가
가
                                                 가
          가
                           가
                                               가
        가
             가
           , PM
                 !!
     가
                         가
           가
                                     5
                                       가
        가
```

```
Setup Fixture Fixture
```

3. JUnit

```
JUnit ("Patterns Generate Architectures", Kent Beck Ralph
Johnson, ECOOP 94 )
가
.
JUnit
```

3.1 - TestCase

```
TestCase

,
,

(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
フト
```

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

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

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



3.2 in-run ()

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

run() runTest() setUp() tearDown()

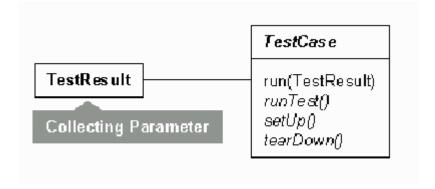
3.3

```
TestCase가 가 ?

가 TestCase
가 ...

Smalltalk (Beck, K. Smalltalk , Prentice Hall, 1996 )
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
              startTest (
                                   ) {
   fRunTests ++;
    가
                               TestResult가
TestResult startTest
         TestCase
                                                        TestResult
             run ()
public TestResult run () {
   TestResult = createResult ();
     ( );
protected TestResult createResult () {
   return new TestResult ();
   3
```



가 .

```
가 ,
기
JUnit
가
ArrayIndexOutOfBoundsException
AssertionFailedError
가 catch (1)
(2)
```

```
public void run (TestResult    ) {
    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

7t

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

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```
)가
AssertionFailedError
                          (TestCase
                                              AssertionFailedError
       TestCase.run ()
          AssertionFailedError
    public AssertionFailedError () {}
          . TestResult
                                   , Throwable t) {
              addError (
    fErrors.addElement (new TestFailure (test, t));
                                    , Throwable t) {
              addFailure (
    fFailures.addElement (new TestFailure (test, t));
TestFailure
          TestFailure Object {
    protected Test fFailedTest
         Throwable fThrownException;
                                                       가
                               TestResult
                                                TestResult
   throw
      MoneyTest
                                  가
            TestResult
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

```
Command
                    execute () (TestCase run ()
                                 가
                testMoneyEquals testMoneyAdd
     Command
   가
                                   가
        testMoneyEquals
                         runTest
                                           MoneyTest
runTest
                  testMoneyEquals
         TestMoneyEquals MoneyTest
   public TestMoneyEquals () {super ( "testMoneyEquals"); }
            runTest () {testMoneyEquals (); }
              가
                             가
                                             가
                                                        JUnit
                                          가
                                                        가
                                    Java
Java
   TestCase test = new MoneyTest ( "testMoneyEquals") {
        protected void runTest () {testMoneyEquals (); }
   };
                                 Smalltalk
Pluggable Selector
                                   . Java
```

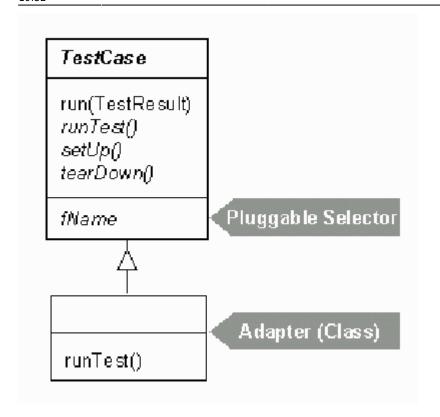
```
Java API
Java Java

Java

Junit

runTest

Method
フト
```



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 ( );
                            Test
                                           Composite:Component
                            run(TestResult)
                                                     Composite
                                     TestSuite
                  TestCase
 Composite: Leaf
                                     run(TestResult)
                  run(TestResult)
                                                     fTests:
                                     addTest(Test)
                                    가
                                                    addTest
public void addTest (
    fTests.addElement (test);
           가
TestCase TestSuite
                         Test
                   TestSuite
                    TestSuite
     TestSuite
public static Test suite()
    TestSuite = new TestSuite ();
    suite.addTest (new MoneyTest ( "testMoneyEquals"));
```

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

JUnit

7h

Static suite ()

7h

TestSuite

7h

"test"

public static Test suite ()

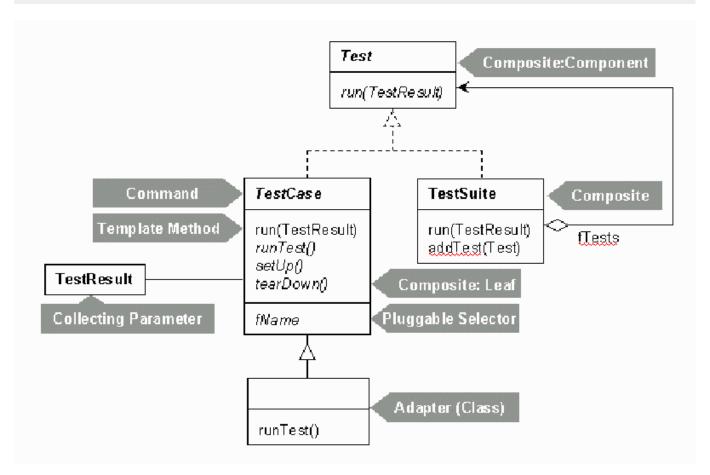
{
    return new TestSuite (MoneyTest.class);
}
```

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

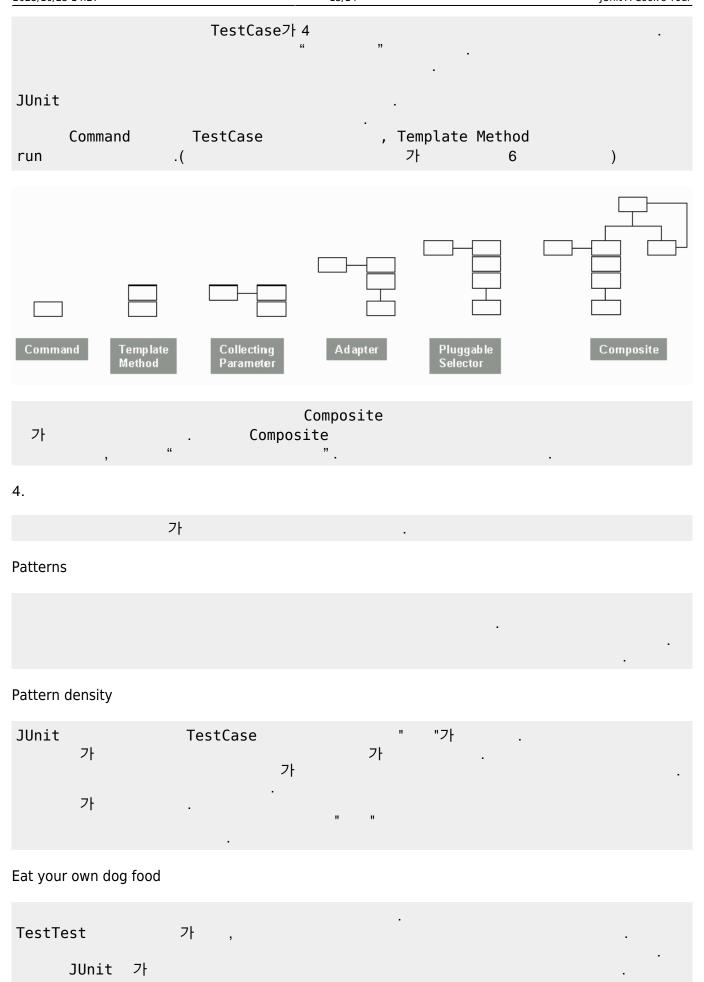
3.6

```
JUnit A Cook's Tour

JUnit
```



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Intersection, not union

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JUnit http://www.junit.org

5.

John Vlissides, Ralph Johnson, Nick Edgar

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