

# 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
                            ( , )
                                가

```

2.

```

JUnit
    , 가 가 가
        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, ECOOP 94 ) 가 JUnit

#### 3.1 - TestCase

TestCase

- 
- 
- 

가

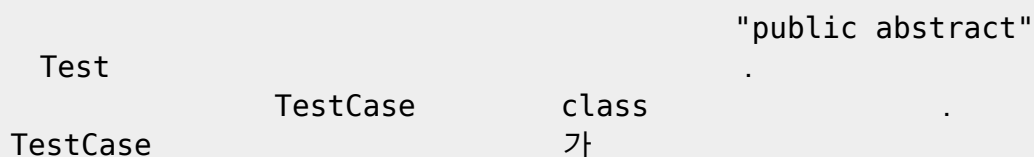
( )

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
{
    ...
}
```



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

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

```

}

public abstract void run ();
...
}

```

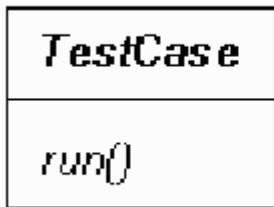
JUnit  
가

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

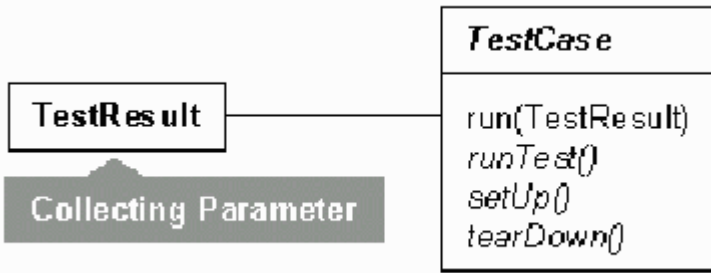
TestCase abstract 가 subclassing TestCase  
가 super class

test fixture 가 fixture  
fixture 가 fixture 가

가 fixture(setup and teardown)  
fixture 가 가







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 AssertionError();
}

```

AssertionFailedError (TestCase)가  
 TestCase.run() AssertionFailedError

```

public class AssertionError extends Error
{
    public AssertionError () {}
}

```

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;
}

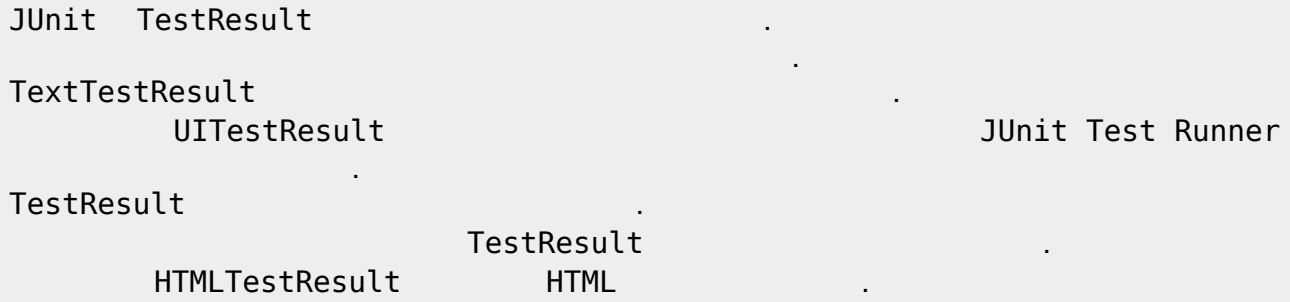
```

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

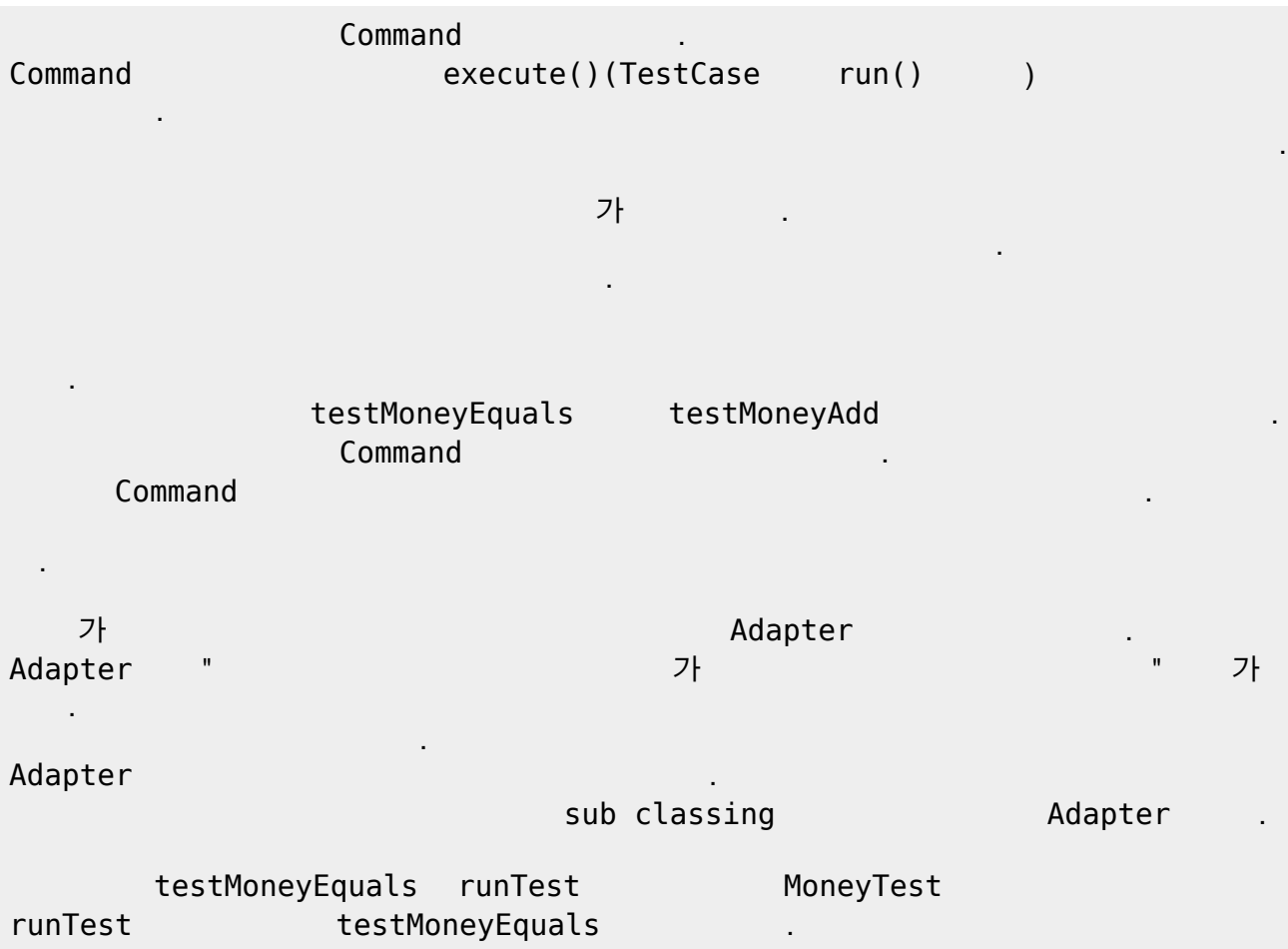
```

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

```

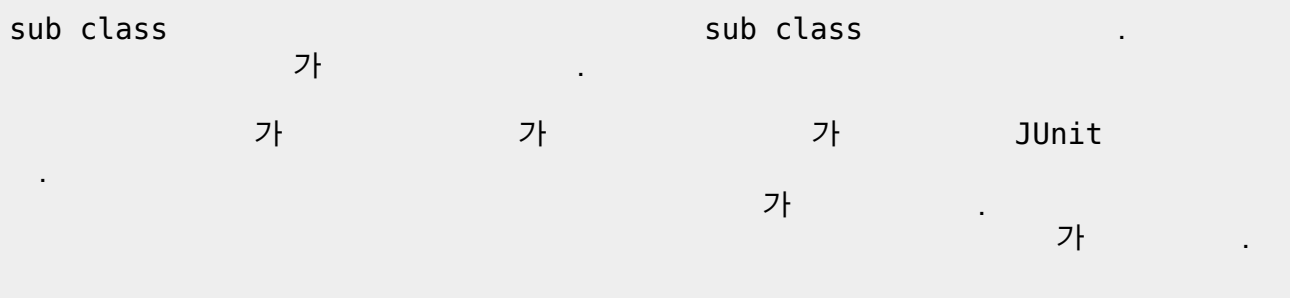


### 3.4 No stupid subclasses - TestCase again



```

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



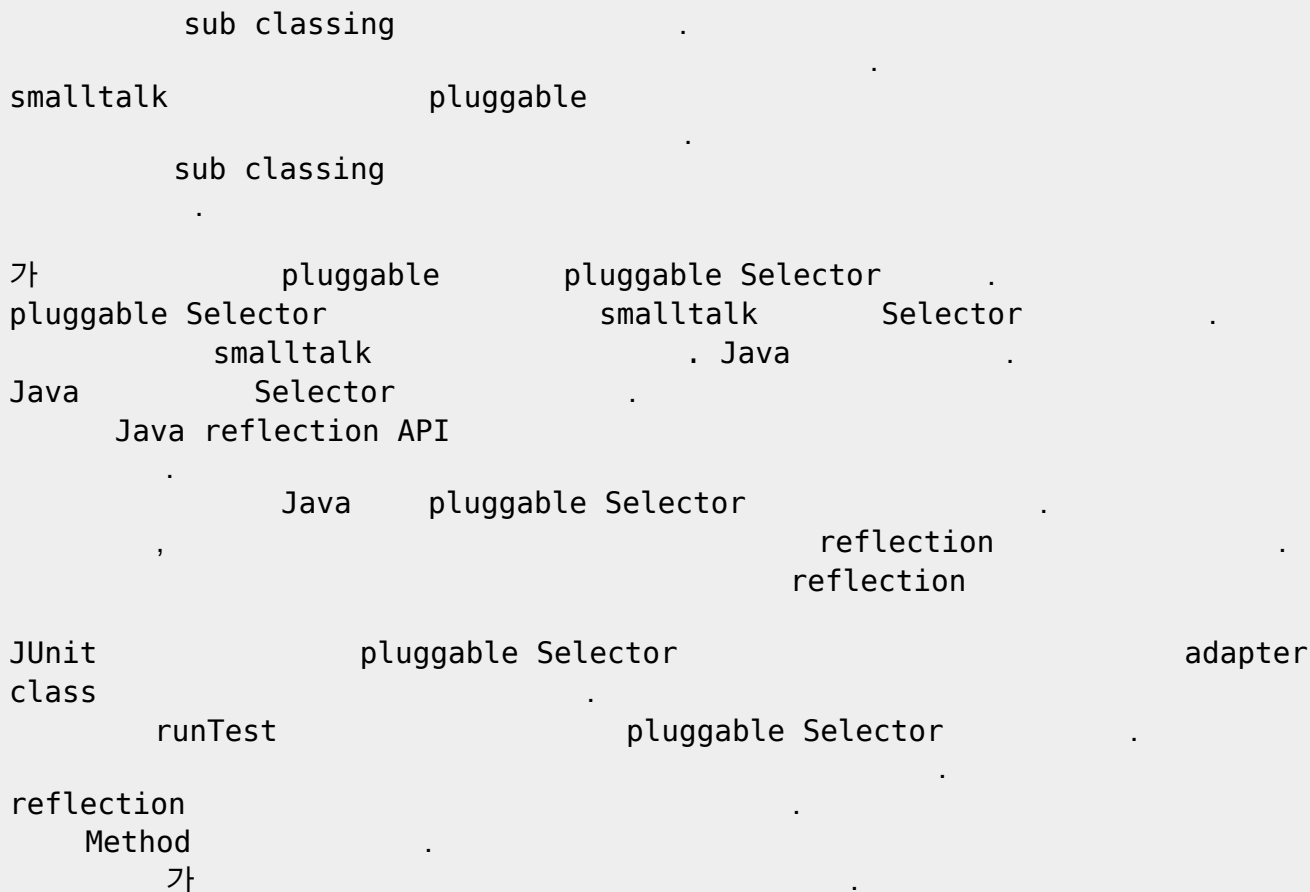
Java

Java

```

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

```



```

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 IllegalAccessExptions
}

```



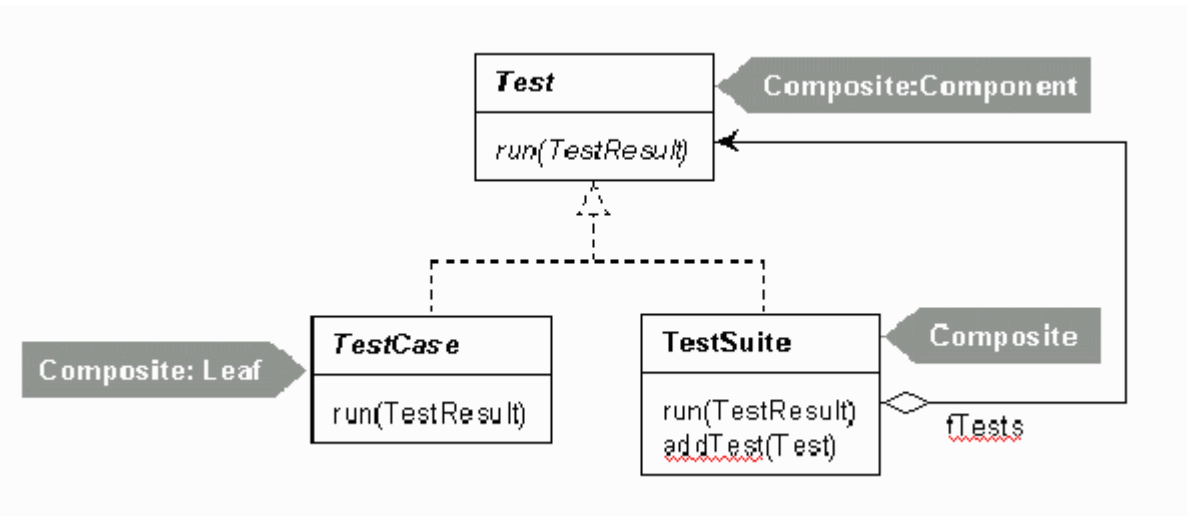
```
public interface Test {
    public abstract void run (TestResult result);
}
```

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"
```

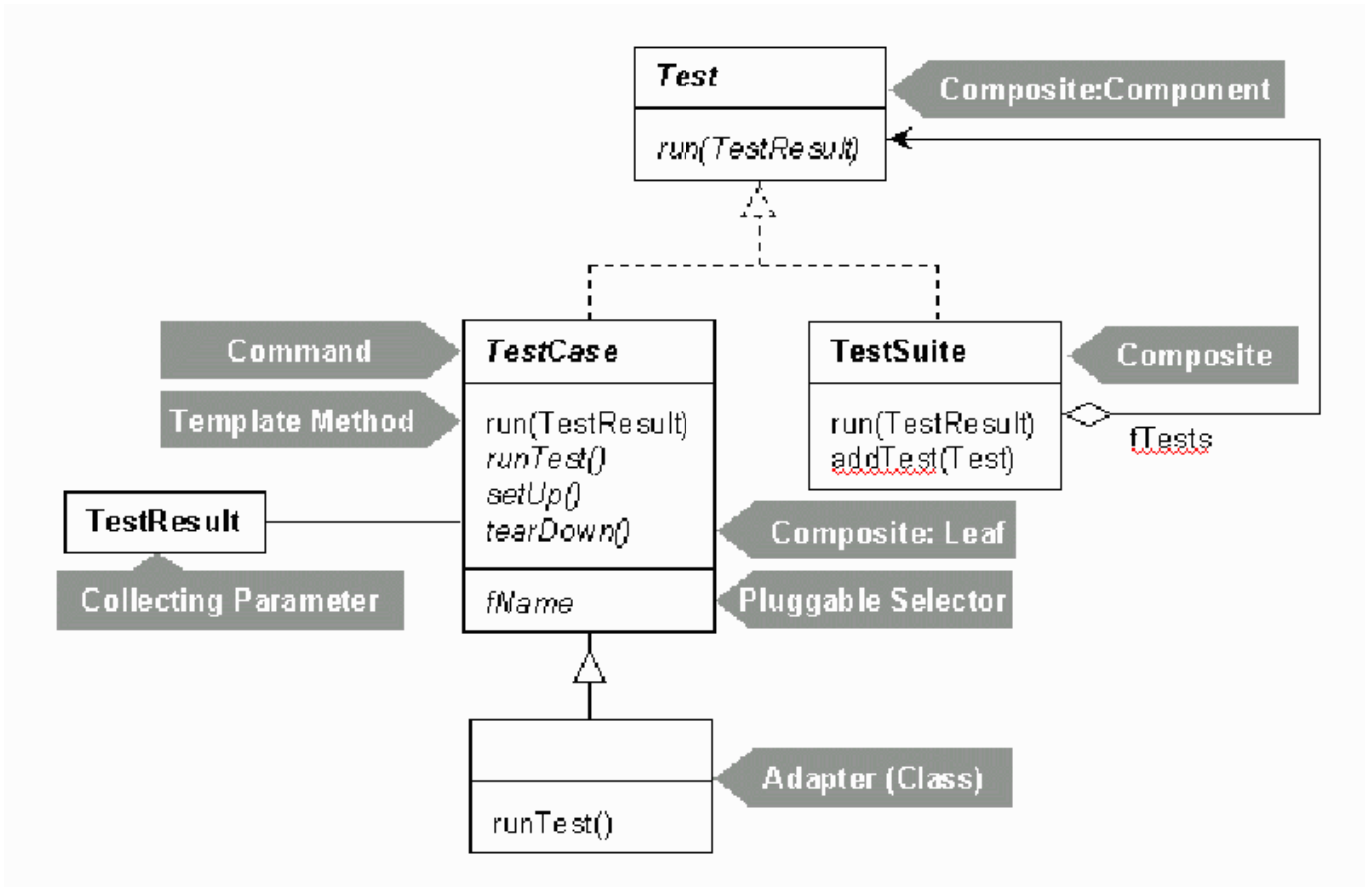
```
public static Test suite ()  
{  
    return new TestSuite (MoneyTest.class);  
}
```

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

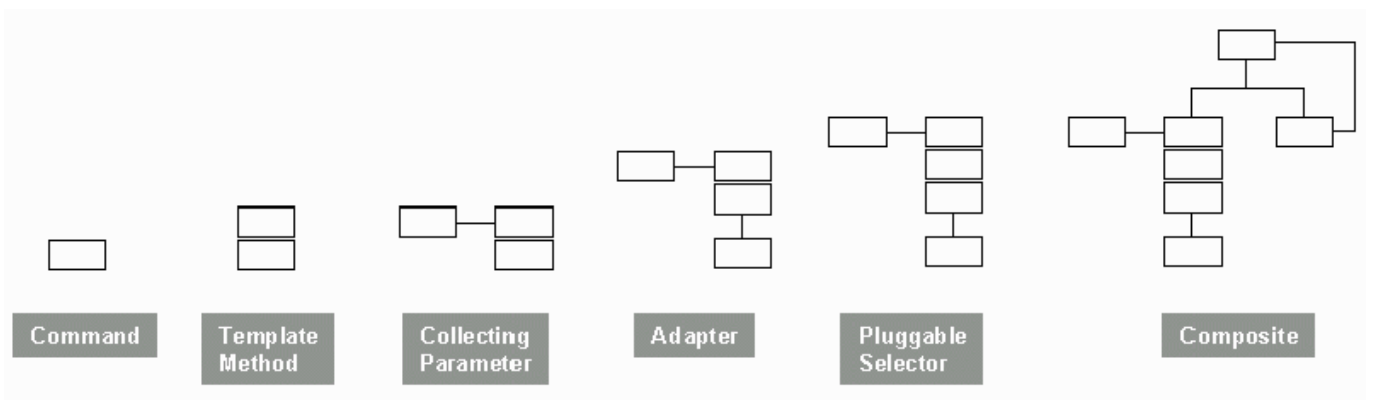
## 3.6

### JUnit A Cook's Tour

JUnit



TestCase가 4가  
 " " 가  
 JUnit  
 Command TestCase Template Method run  
 ( 가 6 .)



Composite  
 Composite가 " "

4.

가

### Patterns

### Pattern density

```
JUnit TestCase " "가  
가 가 가  
가 " "
```

### Eat your own dog food

```
TestTest 가 ,  
JUnit 가
```

### Intersection, not union

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

```
JUnit ,  
가 가  
JUnit, , 가  
( monomania ).
```

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

5.

John Vlissides, Ralph Johnson, Nick Edgar .

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