

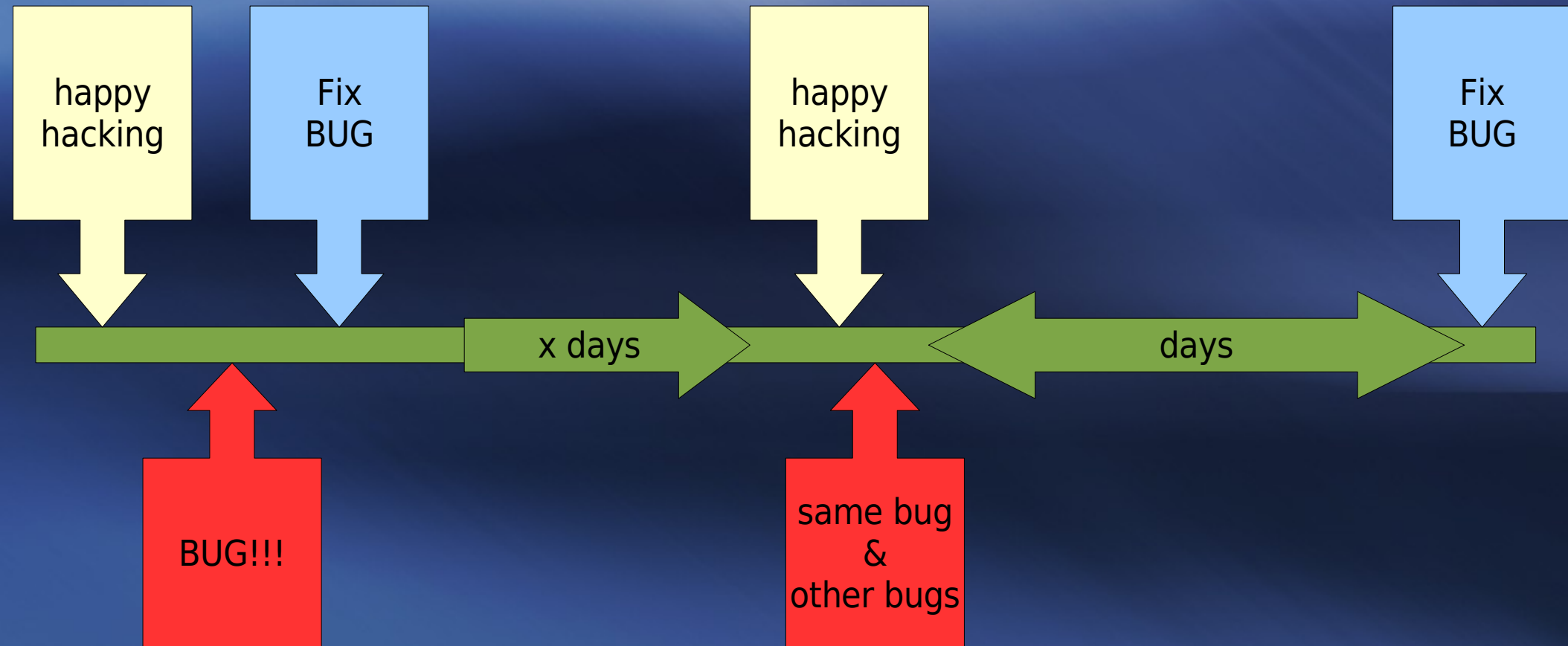
Unit Testing: de la teoría a la práctica

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Test = prueba, examen

- ¿Qué prueban en un software?
 - Un bloque de código fuente
 - Una funcionalidad completa
- ¿Por qué probamos un software?
 - Encontrar y corregir bugs.
- ¿Cómo probamos un software?
 - Input / Output
- ¿Cuándo probamos un software?
 - Después de programar

Eliminando bugs



Test = someter a una prueba

- Si tenemos una función que realiza cierto cálculo:

```
función suma( a, b)
```

```
    ....
```

```
fin
```

- Podemos probar esta función de esta manera:

```
Si (suma(1,1) es igual a 2)
```

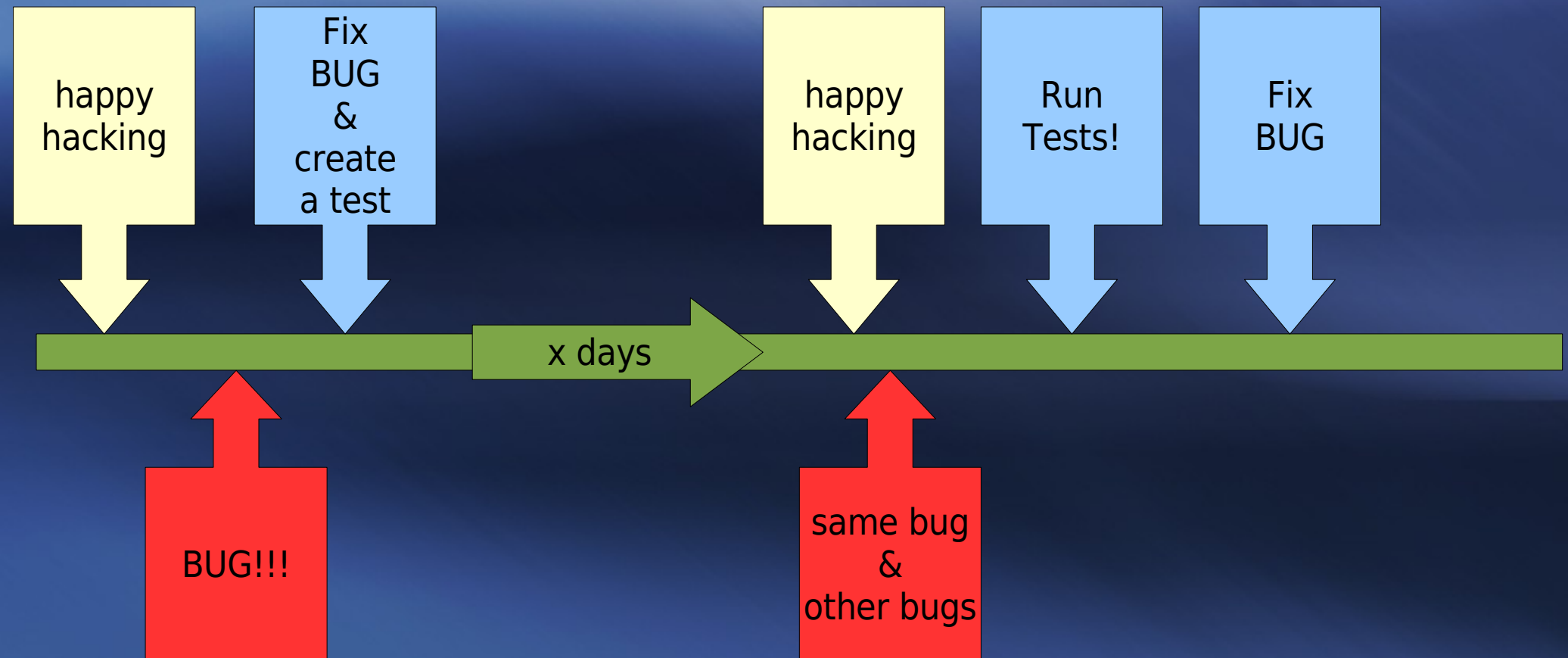
```
    // :-D
```

```
caso contrario
```

```
    // :-(
```

```
fin
```

Automatizando pruebas



Test case

- Si tenemos una función que realiza cierto cálculo:

```
función suma( a, b)
```

```
    ....
```

```
fin
```

- Implementando un test case:

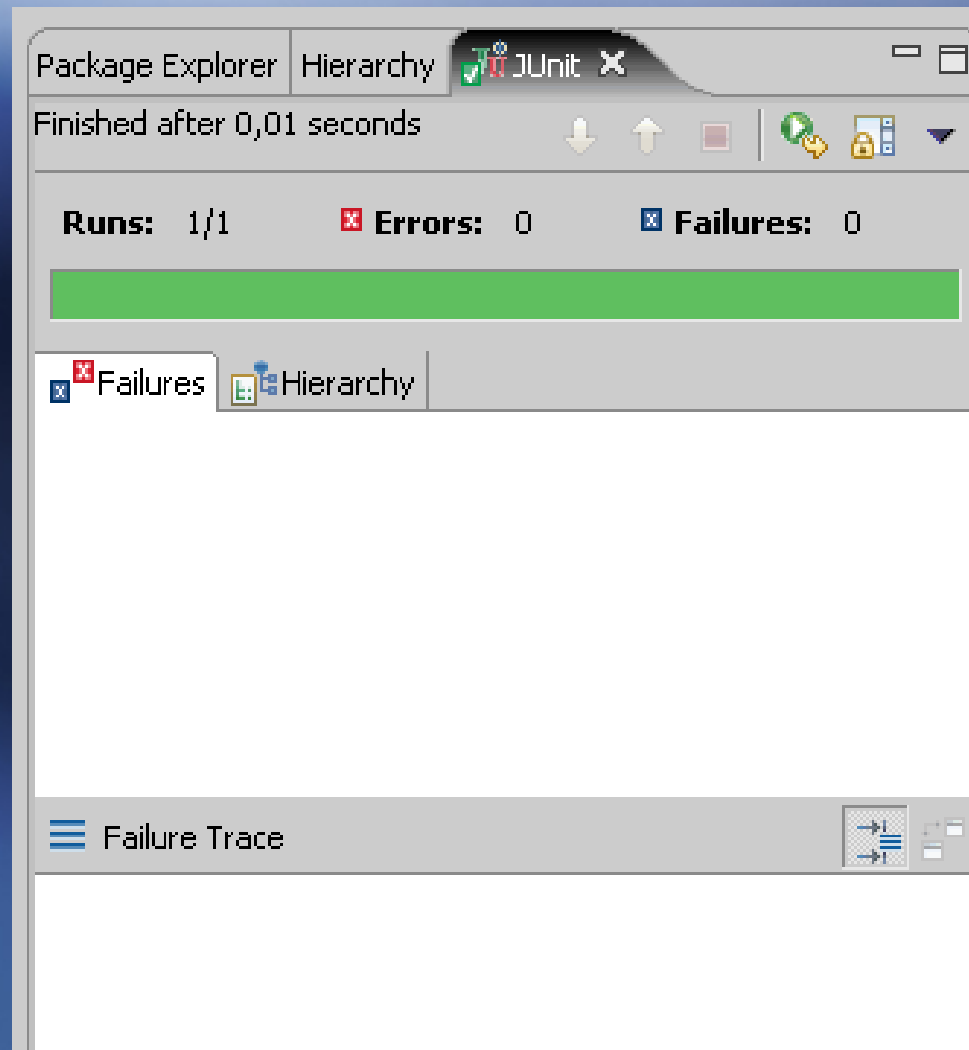
```
función testSuma()
```

```
    resultado = suma(1,1)
```

```
    assertTrue(2,resultado)
```

```
fin
```

Unit Testing Framework



Unit Testing Framework

The screenshot shows an IDE window titled "JUnit" with a "Package Explorer" and "Hierarchy" view. The test run is complete, having finished after 0.47 seconds. The summary shows 2/2 runs, 0 errors, and 1 failure. The "Failures" tab is active, displaying a tree view of the test results. The test class is `com.syncsoft.plainsqltests.SakilaTest`, which contains two test methods: `testCustomerReport` (passed) and `testReturnVideo` (failed). The "Failure Trace" at the bottom details the error: `junit.framework.AssertionFailedError: Should be no rows after video return`, with the stack trace pointing to `SpTestCase.assertRowCount` at line 27, `SakilaTest.testReturnVideo` at line 74, and the underlying reflection methods.

Package Explorer Hierarchy JUnit

Finished after 0.47 seconds

Runs: 2/2 Errors: 0 Failures: 1

Failures Hierarchy

- com.syncsoft.plainsqltests.SakilaTest
 - testCustomerReport
 - testReturnVideo

Failure Trace

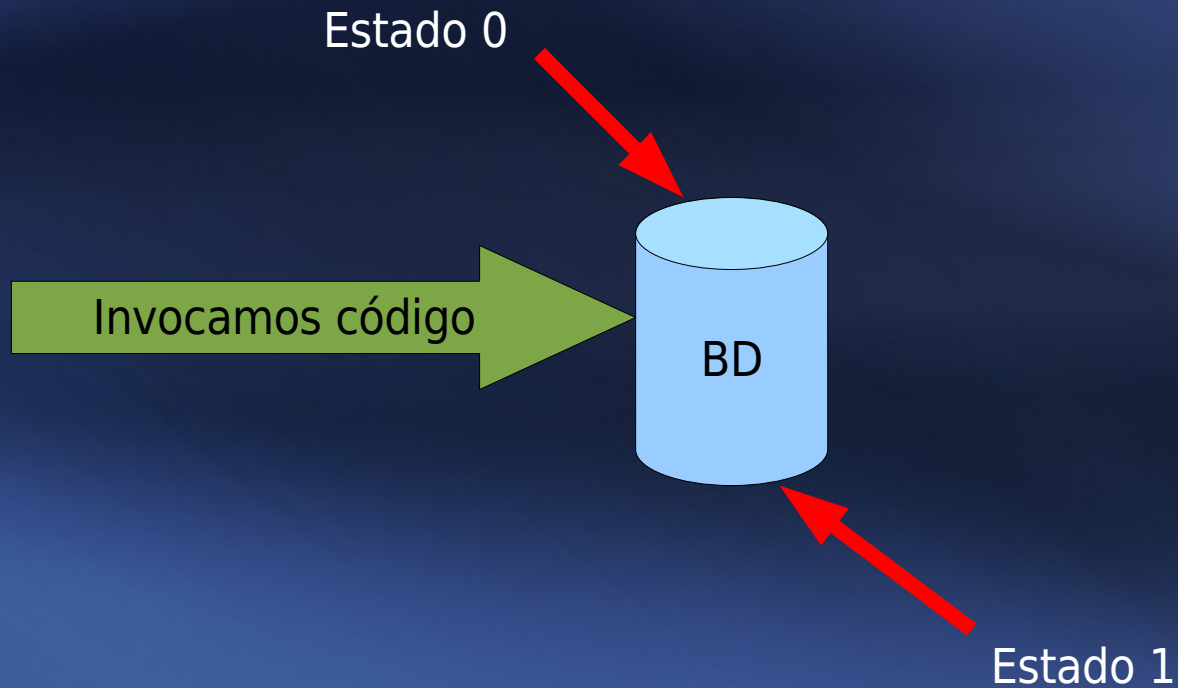
```
junit.framework.AssertionFailedError: Should be no rows after video return
at com.syncsoft.plainsql.SpTestCase.assertRowCount(SpTestCase.java:27)
at com.syncsoft.plainsqltests.SakilaTest.testReturnVideo(SakilaTest.java:74)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorI
```


Unit Testing & Open Source

- Existen Unit Testing Frameworks para cada lenguaje de programación.
- Java: JUnit
- Ruby: Test::Unit
- Python: PyUnit
- Perl: TAP (Test Anything Protocol)
- PHP: PHPUnit
- .NET: NUnit

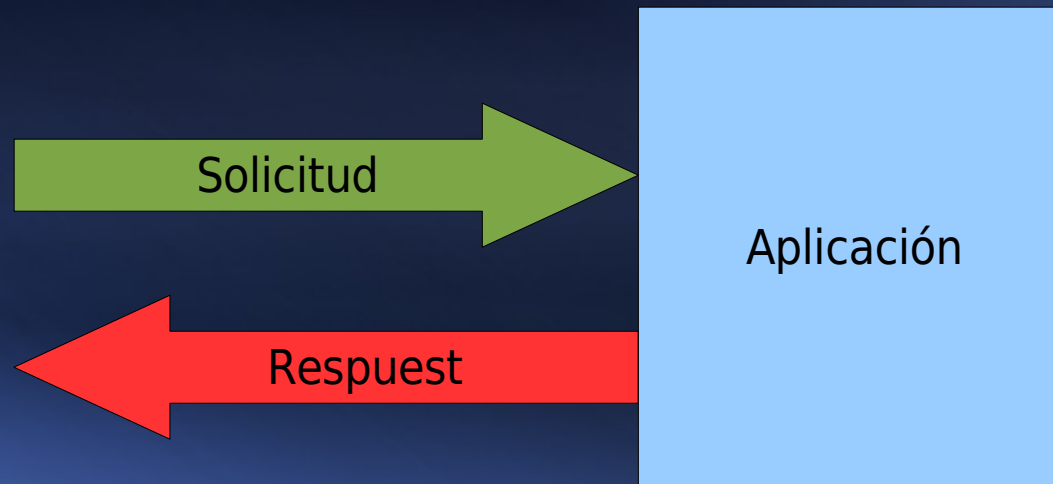
Unit testing al máximo

- DBUnit, SQLUnit

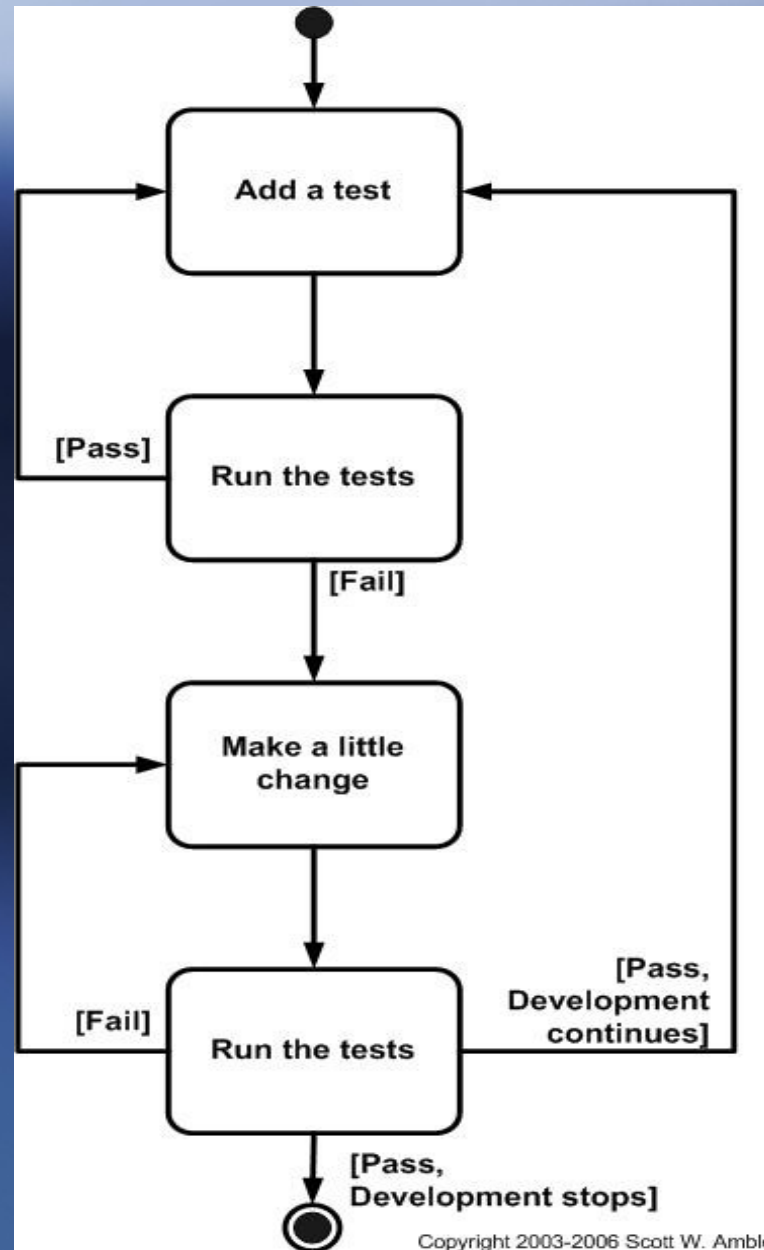


Unit testing al máximo

- HtmlUnit / HttpUnit



Test driven development



Conclusiones

- Facilita el cambio.
- Simplifica la integración.
- Lleva la programación a otro nivel.
- Aunque suene difícil de creer, acelera el desarrollo de software.

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