

Validación y verificación software Testing

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Herramientas de automatización de pruebas

Para automatizar la ejecución de pruebas dinámicas:

JUnit

Validación de calidad de las pruebas

Cobertura

Para facilitar las pruebas dinámicas de unidad

Mockito

No funcionales

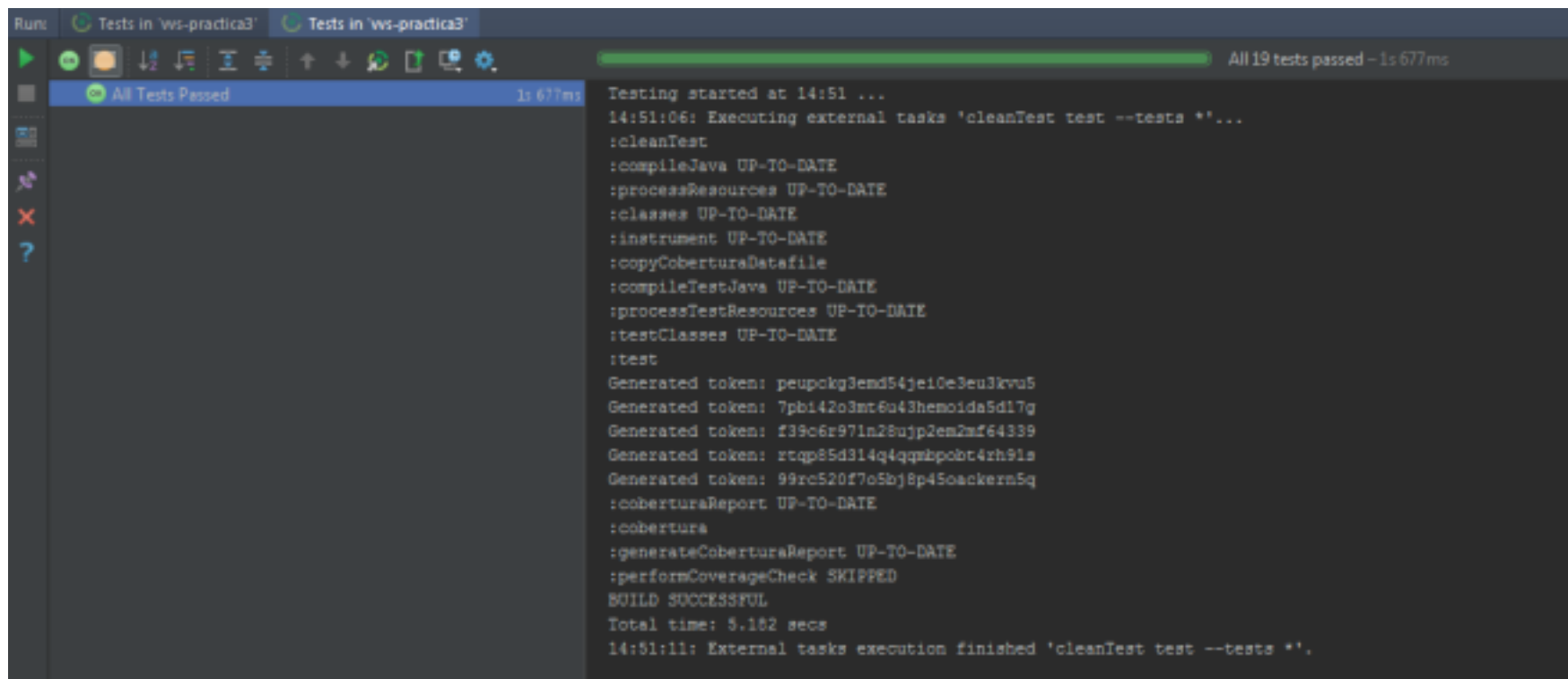
JETM

Estructurales

Checkstyle

PMD

JUnit



The screenshot shows the 'Run' window of an IDE. At the top, there are two tabs: 'Tests in 'ws-practica3'' and 'Tests in 'ws-practica3''. Below the tabs is a toolbar with various icons. A green progress bar at the top right indicates 'All 19 tests passed - 1s 677ms'. The main area is divided into two panes. The left pane, titled 'All Tests Passed', shows a tree view with a green circle icon and the text '1s 677ms'. The right pane displays the test execution log. The log starts with 'Testing started at 14:51 ...' and lists various tasks and their status, all marked as 'UP-TO-DATE'. It also includes generated tokens and a final 'BUILD SUCCESSFUL' message.

```
Testing started at 14:51 ...
14:51:06: Executing external tasks 'cleanTest test --tests *'...
:cleanTest
:compileJava UP-TO-DATE
:processResources UP-TO-DATE
:classes UP-TO-DATE
:instrument UP-TO-DATE
:copyCoberturaDatafile
:compileTestJava UP-TO-DATE
:processTestResources UP-TO-DATE
:testClasses UP-TO-DATE
:test
Generated token: peupokg3emd54je10e3eu3kvv5
Generated token: 7pb142o3mt6u43hemoida5d17g
Generated token: f39c6r971n28uyp2em2mf64339
Generated token: rtqp85d314q4qqxbpobt4rh91s
Generated token: 99rc520f7o5bj8p45oackern5q
:coberturaReport UP-TO-DATE
:cobertura
:generateCoberturaReport UP-TO-DATE
:performCoverageCheck SKIPPED
BUILD SUCCESSFUL
Total time: 5.182 secs
14:51:11: External tasks execution finished 'cleanTest test --tests *'.
```

Cobertura

Coverage Report - All Packages

Package /	# Classes	Line Coverage		Branch Coverage		Complexity
All Packages	23	85%	104/124	61%	43/69	1.654
app	1	0%	0/2	N/A	N/A	1
modelo.contenido	1	N/A	N/A	N/A	N/A	1
modelo.contenido.impl	1	73%	14/19	66%	4/6	1.5
modelo.contenido.impl.emisara	1	75%	25/33	38%	13/24	2.75
modelo.contenido.impl.track	3	100%	6/6	100%	2/2	1.2
modelo.servidor	2	N/A	N/A	N/A	N/A	1
modelo.servidor.impl	3	97%	40/49	83%	13/15	1.667
modelo.token	1	N/A	N/A	N/A	N/A	1
util.http	1	97%	34/35	83%	13/15	2.2
util.json	1	46%	6/13	N/A	N/A	4
util.servidor	2	72%	5/13	N/A	N/A	1.2
util.servidor.handler	5	88%	28/44	70%	7/10	1.7
util.token	1	100%	4/4	N/A	N/A	1

Mockito

```
private Anuncio mockAnuncio = mock(Anuncio.class);
```

```
@Test
public void testBuscar() {
    List<Contenido> listaEsperada = new ArrayList<>();
    listaEsperada.add(mockAnuncio);
    when(mockAnuncio.buscar("PUBLICIDAD")).thenReturn(listaEsperada);
    assertEquals(listaEsperada, mockAnuncio.buscar("PUBLICIDAD"));
    when(mockAnuncio.buscar("Prueba")).thenReturn(new ArrayList<Contenido>());
    assertEquals(Lists.newArrayList(), mockAnuncio.buscar("Prueba"));
}
```

JETM

Test Summary

58	0	0	1.114s
tests	failures	ignored	duration

100%
successful

Packages

Classes

Package	Tests	Failures	Ignored	Duration	Success rate
contenido	7	0	0	0.021s	100%
jetm	1	0	0	0.758s	100%
jetm.contenido	7	0	0	0.003s	100%
jetm.servidor	12	0	0	0.099s	100%
mocktests.contenido	7	0	0	0.021s	100%
mocktests.servidor	12	0	0	0.114s	100%
servidor	12	0	0	0.098s	100%

JETM

Class `jetm.ReportGenerator`

[all](#) > [jetm](#) > ReportGenerator

1
tests

0
failures

0
ignored

0.758s
duration

100%
successful

Tests

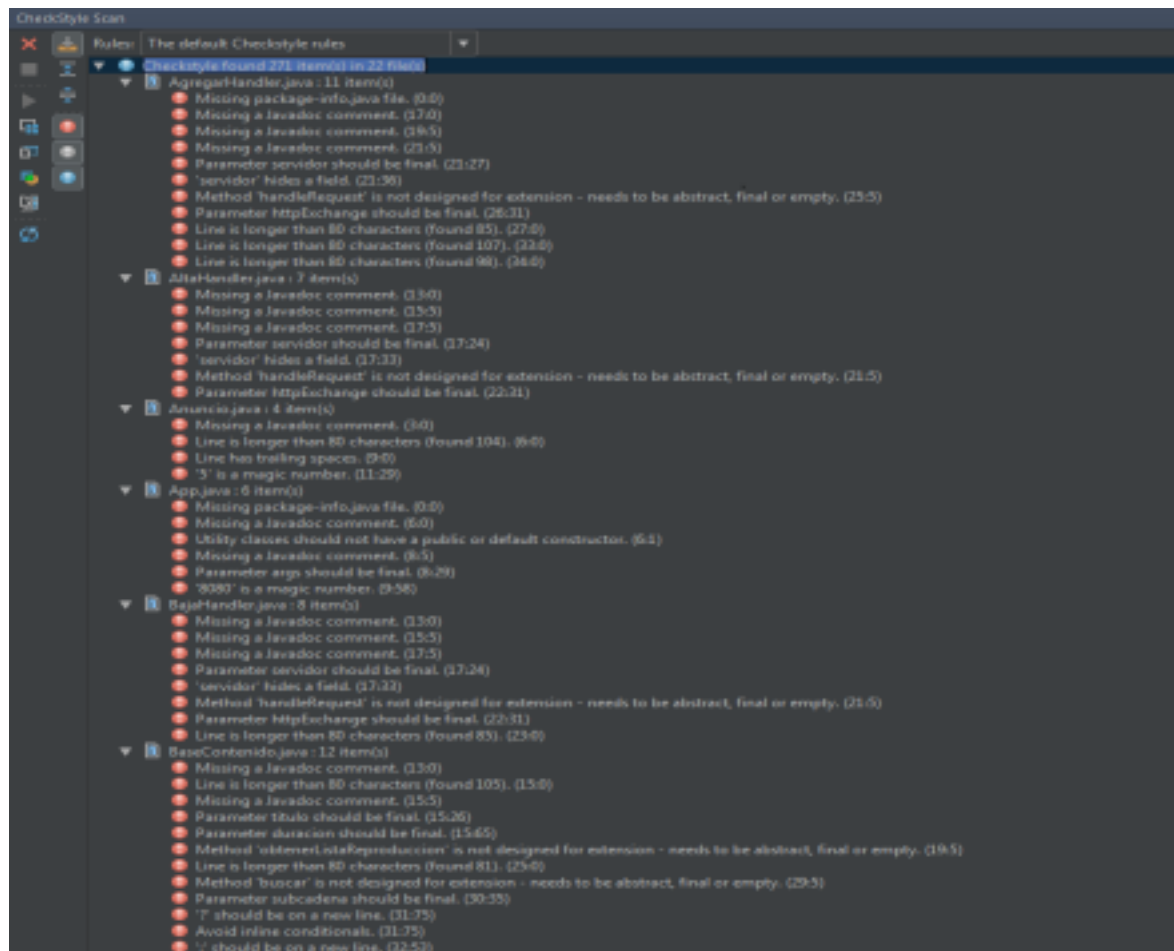
Standard output

Standard error

Generated token: 6446jyfe0b621si9afddovc23k
Generated token: h90ga5gbk3371m3rmv1lqgd6je
Generated token: 7u72jv61j83frr4eg9j72e3lt
Generated token: 9k4201apbo3a4ve9km7gf0rjua
Generated token: uc6s51vklhhq1lee0b3s6h7i1

Measurement Point	#	Average	Min	Max	Total
AnuncioTest:testBuscar	1	0.003	0.003	0.003	0.003
AnuncioTest:testObtenerListaReproduccion	1	0.017	0.017	0.017	0.017
CancionTest:testBuscar	1	0.017	0.017	0.017	0.017
CancionTest:testObtenerListaReproduccion	1	0.005	0.005	0.005	0.005
ServidorTest:servidorAgregarContenidoTestForbidden	1	422.471	422.471	422.471	422.471
ServidorTest:servidorAgregarContenidoTestResultOK	1	31.067	31.067	31.067	31.067
ServidorTest:servidorAgregarYBuscarTestResultOK	1	88.903	88.903	88.903	88.903
ServidorTest:servidorAltaTestResponseOK	1	1.665	1.665	1.665	1.665
ServidorTest:servidorBackupAgregarContenidoTestResultOK	1	13.527	13.527	13.527	13.527
ServidorTest:servidorBajaTestResponseBadRequest	1	1.082	1.082	1.082	1.082
ServidorTest:servidorBajaTestResponseOK	1	1.966	1.966	1.966	1.966
ServidorTest:servidorBuscarConCaducidadDeToken	1	10.755	10.755	10.755	10.755
ServidorTest:servidorBuscarTestPublicidadResult	1	1.767	1.767	1.767	1.767
ServidorTest:servidorBuscarTestSinPublicidad	1	1.985	1.985	1.985	1.985
ServidorTest:servidorEliminarYBuscarTestResultOK	1	4.480	4.480	4.480	4.480
ServidorTest:servidorTestResponseNotFound	1	1.505	1.505	1.505	1.505

Checkstyle

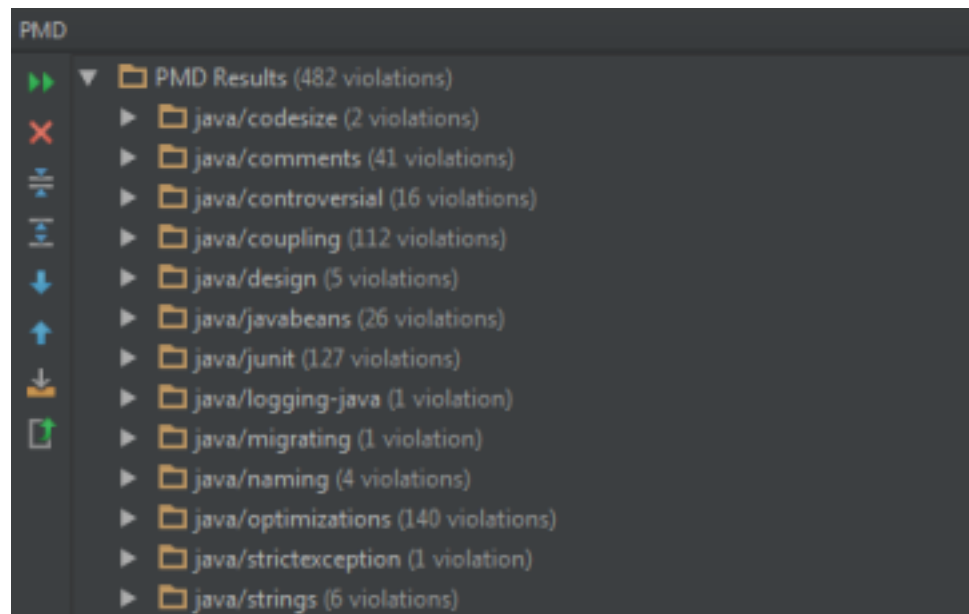



```

+ C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3>gradle check
x compileJava UP-TO-DATE
:processResources UP-TO-DATE
:classes UP-TO-DATE
:checkstyleMain UP-TO-DATE
:compileTestJava
warning: [options] bootstrap class path not set in conjunction with -source 1.7
1 warning
:processTestResources UP-TO-DATE
:testClasses
:checkstyleTest
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:8: Missing package-info.java file.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:13: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:15:6: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:18:13: Variable 'anuncio' must be private and have accessor methods.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:22:5: Method 'TestObtenerListaReproduccion' is not designed for extension - needs to be abstract, final or empty.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:23:17: Name 'TestObtenerListaReproduccion' must match pattern '[a-z][a-zA-Z0-9]*'.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:23:47: '[' is not preceded with whitespace.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:31: Line is longer than 80 characters (found 82).
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:35:5: Method 'TestBuscar' is not designed for extension - needs to be abstract, final or empty.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:36:17: Name 'TestBuscar' must match pattern '[a-z][a-zA-Z0-9]*'.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\AnuncioTest.java:36:29: '[' is not preceded with whitespace.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:12: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:14:5: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:14:20: Variable 'cancion' must be private and have accessor methods.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:14:59: '180' is a magic number.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:22:5: Method 'TestObtenerListaReproduccion' is not designed for extension - needs to be abstract, final or empty.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:23:17: Name 'TestObtenerListaReproduccion' must match pattern '[a-z][a-zA-Z0-9]*'.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:23:47: '[' is not preceded with whitespace.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:31: Line is longer than 80 characters (found 82).
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:35:5: Method 'TestBuscar' is not designed for extension - needs to be abstract, final or empty.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:36:17: Name 'TestBuscar' must match pattern '[a-z][a-zA-Z0-9]*'.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\CancionTest.java:36:29: '[' is not preceded with whitespace.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:15: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:17:5: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:17:13: Variable 'emisora' must be private and have accessor methods.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:19:5: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:19:13: Variable 'cancion' must be private and have accessor methods.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:21:5: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:23:13: Variable 'cancion2' must be private and have accessor methods.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:23:47: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:23:13: Variable 'anuncio' must be private and have accessor methods.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:25:5: Missing a Javadoc comment.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:25:21: Variable 'resultadoBusqueda' must be private and have accessor methods.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:31:5: Method 'actIP' is not designed for extension - needs to be abstract, final or empty.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:34:48: '120' is a magic number.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:35:50: '180' is a magic number.
[ant:checkstyle] C:\Users\Dorotien\Desktop\Uni\WV3\Carr\wva-practical3\src\test\java\contenido\EmisoraTest.java:47:5: Method 'TestAgregarContenido' is not designed for extension - needs to be abstract, final or empty.

```

PMD



FindBugs

