

JUnit cheat sheet

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Assertions and assumptions

Use assertions to verify the behavior under test:

```
Assertions.assertEquals(Object expected,  
Object actual, Supplier<String> message)
```

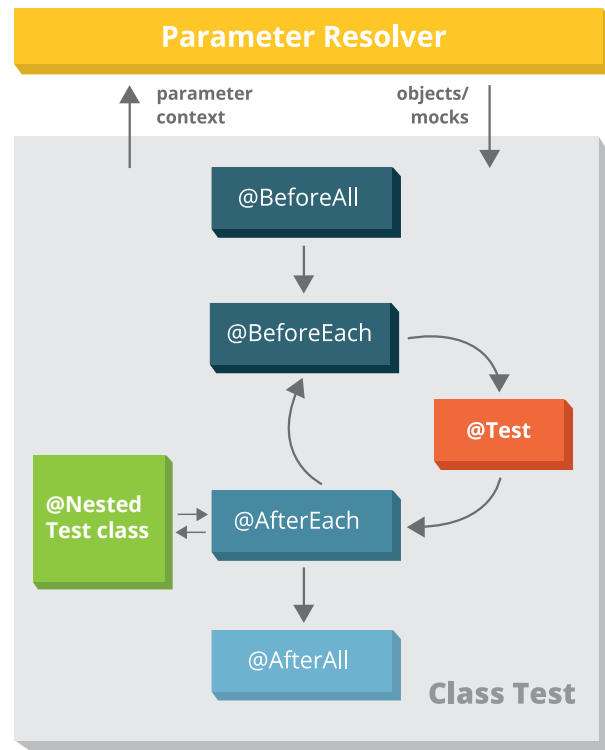
```
// Group assertions are run all together and  
reported together.
```

```
Assertions.assertAll("heading",  
() -> assertTrue(true),  
() -> assertEquals("expected",  
    objectUnderTest.getSomething()));
```

```
// To check for an exception:
```

```
expectThrows(NullPointerException.class,  
() -> { ((Object) null).getClass(); });
```

Lifecycle of standard tests



Parameter resolution

ParameterResolver - extension interface to provide parameters

```
public class MyInfoResolver implements ParameterResolver {  
    public Object resolve(ParameterContext paramCtx,  
        ExtensionContext extCtx) {  
        return new MyInfo();  
    }  
}
```

Extend your tests with your parameter resolver.

```
@ExtendWith(MyInfoResolver.class)  
class MyInfoTest { ... }
```

Useful code snippets

```
@TestFactory  
Stream<DynamicTest> dynamicTests(MyContext ctx) {  
    // Generates tests for every line in the file  
    return Files.lines(ctx.testDataFilePath).map(1 ->  
dynamicTest("Test:" + 1, () -> assertTrue(runTest(1))));  
}
```

```
@ExtendWith({ MockitoExtension.class,  
DataParameterProvider.class })  
class Tests {  
    ArrayList<String> list;  
  
    @BeforeEach  
    void init() { /* init code */ }  
  
    @Test  
    @DisplayName("Add elements to ArrayList")  
    void addAllToEmpty(Data dep) {  
        list.addAll(dep.getAll());  
        assertAll("sizes",  
            () -> assertEquals(dep.size(), list.size(),  
                () -> "Unexpected size:" + instance),  
            () -> assertEquals(dep.getFirst(), list.get(0),  
                () -> "Wrong first element" + instance));  
    }  
}
```

Useful annotations

@Test - marks a test method

@TestFactory - method to create test cases
at Runtime

@DisplayName - make reports readable with
proper test names

@BeforeAll/@BeforeEach - lifecycle methods
executed prior testing

@AfterAll/@AfterEach - lifecycle methods for cleanup

@Tag - declare tags to separate tests into suites

@Disabled - make JUnit skip this test.

Use **@Nested** on an inner class to control the
order of tests.

Use **@ExtendWith()** to enhance the execution:
provide mock parameter resolvers and specify
conditional execution.

Use the lifecycle and **@Test** annotations on the
default methods in interfaces to define contracts:

```
@Test  
interface HashCodeContract<T> {  
    <T> getValue();  
    <T> getAnotherValue();  
    @Test  
    void hashCodeConsistent() {  
        assertEquals(getValue().hashCode(),  
            getAnotherValue().hashCode(),  
                "Hashes differ");  
    }  
}
```

"Never trust a test you
haven't seen fail."

— Colin Vipurs