

# Creating JUnit test case

Let's use MagicDraw as an example to describe the creation of JUnit test cases.

## JUnit 3 test case

The JUnit test case should be created by extending the abstract [com.nomagic.magicdraw.tests.MagicDrawTestCase](#) class from Open API (see the following [MyTest](#) sample). The [MagicDrawTestCase](#) class starts MagicDraw automatically for each test case method defined in [MagicDrawTestCase](#) and performs the memory leak test after each completed test case.

[MagicDrawTestCase](#) provides default and specific constructors for creating a test case instance with a specific custom name for the specific test case method. Test cases with specific names might be helpful when several instances of the same test case are created and analyzed.

The [MagicDrawTestCase](#) initialization and tear down should be implemented in overridden [setUpTest\(\)](#) and [tearDownTest\(\)](#) methods. The standard JUnit method [suite](#) might be used for preparing the tests suite with several instances of test cases which may use different test data.

```
import com.nomagic.magicdraw.tests.MagicDrawTestCase;
public class MyTest extends MagicDrawTestCase
{
    public MyTest(String testMethodToRun, String testName)
    {
        super(testMethodToRun, testName);
    }

    @Override
    protected void setUpTest() throws Exception
    {
        super.setUpTest();
        //do setup here
    }

    @Override
    protected void tearDownTest() throws Exception
    {
        super.tearDownTest();
        //do tear down here
    }

    public void testSomething()
    {
        //implement the unit test here
    }

    public static Test suite() throws Exception
    {
        //you may create a test suite with several instances of the
test.
        TestSuite suite = new TestSuite();
        suite.addTest(new MyTest("testSomething", "MagicDraw Test
Sample"));
        suite.addTest(new MyTest("testSomething", "Another MagicDraw
Test Sample"));
        return suite;
    }
}
```

[MagicDrawTestCase](#) also provides methods for opening, saving, and closing MagicDraw projects. It also performs the memory leak test after the test case has been completed and the project has been closed. The memory leak test for the whole test case can be disabled using the [setMemoryTestReady\(boolean\)](#) method, while the [setSkipMemoryTest\(boolean\)](#) method can be used to disable the memory leak test on closing the MagicDraw project.

The list of required MagicDraw plugins for the test case can be configured by overriding the [getRequiredPlugins\(\)](#) method of [MagicDrawTestCase](#). The overridden method implementation should return the list of required plugins IDs. Textual information about required plugins and their loading status can be obtained using [getRequiredPluginsDescription\(\)](#) and [isRequiredPluginsLoaded\(\)](#) methods.

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Textual information about the test process can be logged using the Log4j logger. The test case logger for the TEST category can be accessed using the [getLogger\(\)](#) method of *MagicDrawTestCase*. More information about the Log4j logger configuration and usage can be found at <http://logging.apache.org/log4j/1.2/manual.html>.

## JUnit 4 test case

The JUnit4 test class should be annotated to use [com.nomagic.magicdraw.tests.MagicDrawTestRunner](#) from Open API (see a code sample below). The *MagicDrawTestRunner* class starts MagicDraw automatically and performs the memory leak test after each completed test case.

```
import com.nomagic.magicdraw.tests.MagicDrawTestRunner;
import org.junit.*;
import org.junit.runner.RunWith;

@RunWith(MagicDrawTestRunner.class)
public class MyTest
{
    @Before
    public void beforeTestBegins()
    {
        //do test case setup here, e.g. load project
    }

    @Test
    public void testSomething()
    {
        //implement the unit test case here
    }

    @After
    public void afterTestDone()
    {
        //do tear down here, e.g. close project
    }
}
```

## JUnit 5 test case

The JUnit5 test class should be annotated to extend [com.nomagic.magicdraw.tests.MagicDrawApplication](#) from Open API (see a code sample below). The *MagicDrawApplication* extension starts MagicDraw automatically before running the test cases.

```
import com.nomagic.magicdraw.tests.MagicDrawApplication;
import org.junit.jupiter.api.*;
import org.junit.jupiter.api.extension.ExtendWith;

@ExtendWith(MagicDrawApplication.class)
public class MyTest
{
    @BeforeEach
    void beforeTestBegins()
    {
        //do test case setup here, e.g. load project
    }

    @Test
    void testSomething()
    {
        //implement the unit test case here
    }

    @AfterEach
    void afterTestDone()
    {
        //do tear down here, e.g. close project
    }
}
```

