Living Documentation

Version 0.6.2-SNAPSHOT

Table of Contents

Chapter 1. Introduction

DBUnit Rules aims for bringing DBUnit closer to your JUnit tests. Here are the main features:

- JUnit rule to integrate with DBUnit via annotations:

```
    @Rule
    public DBUnitRule dbUnitRule = DBUnitRule.instance(jdbcConnection);①

    @Test
    @DataSet(value = "datasets/yml/users.yml")
    public void shouldSeedDataSet(){
        //database is seed with users.yml dataset
    }
```

① The rule depends on a JDBC connection.

- CDI interceptor to seed database without rule instantiation;
- Json, Yaml, xml and flat xml support;
- Cucumber integration;
- JPA integration;
- Multiple database support;
- Date/time support in datasets;

The project is composed by 5 modules:

- Core: Contains the dataset executor and JUnit rule;
- CDI: provides the DBUnit interceptor
- Cucumber: a CDI aware cucumber runner;
- JPA: Comes with a dataset executor based on JPA entity manager
- Examples module.

Chapter 2. Summary

Scenarios			Steps							Features: 3	
Passed	Failed	Total	Passed	Failed	Skipped	Pending	Undefined	Missing	Total	Duration	Status
Manage database with DBUnit Rules Core											
1	0	1	4	0	0	0	0	0	4	002ms	passed
Manage database with DBUnit Rules CDI											
1	0	1	4	0	0	0	0	0	4	408ms	passed
Dynamic data using scritable datasets											
2	0	2	7	0	0	0	0	0	7	002ms	passed
Totals											
4	0	4	15	0	0	0	0	0	15	413ms	

Chapter 3. Features

3.1. Manage database with DBUnit Rules Core

> In order to manage database state in JUnit tests
> As a developer
> I want to use DBUnit in my tests.

DBUnit Rules Core module brings DBunit to your unit tests via JUnit rules.

3.1.1. Scenario: Seed database using yml dataset

Given

The following junit rules 👍 (001ms)

```
@RunWith(JUnit4.class)
public class DBUnitRulesIt {
    @Rule
    public EntityManagerProvider emProvider =
EntityManagerProvider.instance("rules-it"); ①

    @Rule
    public DBUnitRule dbUnitRule =
DBUnitRule.instance(emProvider.getConnection()); ②
}
```

① EntityManagerProvider is a simple Junit rule that creates a JPA entityManager for each test. DBunit rule don't depend on EntityManagerProvider, it only needs a JDBC connection.

② DBUnit rule responsible for reading `@DataSet` annotation and prepare the database for each test.

And

The following dataset 👍 (000ms)

src/test/resources/dataset/yml/users.yml

```
user:
  - id: 1
    name: "@realpestano"
  - id: 2
    name: "@dbunit"
tweet:
  - id: abcdef12345
    content: "dbunit rules!"
    user_id: 1
  - id: abcdef12233
    content: "dbunit rules!"
    user_id: 2
  - id: abcdef1343
    content: "CDI for the win!"
    user_id: 2
follower:
  - id: 1
    user_id: 1
    follower_id: 2
```

When

The following test is executed: 👍 (000ms)

```
    @Test
    @DataSet(value = "datasets/yml/users.yml", useSequenceFiltering =
true)
    public void shouldSeedUserDataSet() {
        User user = (User) emProvider.em().createQuery("select u from
User u join fetch u.tweets join fetch u.followers where u.id =
1").getSingleResult();
        assertThat(user).isNotNull();
        assertThat(user.getId()).isEqualTo(1);
        assertThat(user.getTweets()).isNotNull().hasSize(1);
        Tweet tweet = user.getTweets().get(0);
        assertThat(tweet).isNotNull();
        Calendar date = tweet.getDate();
        Calendar now = Calendar.getInstance();

assertThat(date.get(Calendar.DAY_OF_MONTH)).isEqualTo(now.get(Calendar.
DAY_OF_MONTH));
    }
```

Then

The database should be seeded with the dataset content before test execution 👍 (000ms)

3.2. Manage database with DBUnit Rules CDI

In order to manage database state in **CDI** based tests
As a developer
I want to use DBUnit in a CDI test environment.

DBUnit CDI integration is done through a CDI interceptor.

CDI must be enabled in your test, see the following example:

```
@RunWith(CdiTestRunner.class) ①
public class DBUnitCDITest {

}
```

① CdiTestRunner is provided by Apache Deltaspike but you should be able to use other CDI test runners.

3.2.1. Scenario: Seed database using yml dataset

Given

DBUnit interceptor is enabled in your test beans.xml: 👍 (408ms)

src/test/resources/META-INF/beans.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://java.sun.com/xml/ns/javaee"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/beans_1_0.xsd">
     <interceptors>

<class>com.github.dbunit.rules.cdi.DBUnitInterceptor</class>
     </interceptors>
</beans>
```

Your test itself must be a CDI bean to be intercepted. if you're using Deltaspike test control just enable the following property in `test/resources/META-INF/apache-deltaspike.properties`:

```
deltaspike.testcontrol.use_test_class_as_cdi_bean=true
```

And

The following dataset 👍 (000ms)

src/test/resources/dataset/yml/users.yml

```
user:
  - id: 1
    name: "@realpestano"
  - id: 2
    name: "@dbunit"
tweet:
  - id: abcdef12345
    content: "dbunit rules!"
    user_id: 1
  - id: abcdef12233
    content: "dbunit rules!"
    user_id: 2
  - id: abcdef1343
    content: "CDI for the win!"
    user_id: 2
follower:
  - id: 1
    user_id: 1
    follower_id: 2
```

When

The following test is executed: 👍 (000ms)

```
    @Test
    @UsingDataSet("yml/users.yml")
    public void shouldSeedUserDataSetUsingCdiInterceptor() {
        List<User> users = em.createQuery("select u from User u order
by u.id asc").getResultList();
        User user1 = new User(1);
        User user2 = new User(2);
        Tweet tweetUser1 = new Tweet();
        tweetUser1.setId("abcdef12345");
        assertThat(users).isNotNull().hasSize(2).contains(user1,
user2);
        List<Tweet> tweetsUser1 = users.get(0).getTweets();

assertThat(tweetsUser1).isNotNull().hasSize(1).contains(tweetUser1);
    }
```

Then

The database should be seeded with the dataset content before test execution 👍 (000ms)

3.3. Dynamic data using scritable datasets

In order to have dynamic data in datasets
As a developer
I want to use scripts in DBUnit datasets.

Scritable datasets are backed by JSR 223. [2: Scripting for the Java Platform, for more information access the official docs here].

3.3.1. Scenario: Seed database with groovy script in dataset

Given

Groovy script engine is on test classpath 👍 (002ms)

```
<dependency>
    <groupId>org.codehaus.groovy</groupId>
    <artifactId>groovy-all</artifactId>
    <version>2.4.6</version>
    <scope>test</scope>
</dependency>
```

And

The following dataset 👍 (000ms)

```
tweet:
  - id: "1"
    content: "dbunit rules!"
    date: "groovy:new Date()" ①
    user_id: 1
```

① Groovy scripting is enabled by `groovy:` string.

When

The following test is executed: 👍 (000ms)

```
@Test
@DataSet(value = "datasets/yml/groovy-with-date-
replacements.yml",cleanBefore = true, disableConstraints = true,
executorId = "scripts-it")
public void shouldReplaceDateUsingGroovyInDataset() {
    Tweet tweet = (Tweet) emProvider.em().createQuery("select t from
Tweet t where t.id = '1'").getSingleResult();
    assertThat(tweet).isNotNull();

assertThat(tweet.getDate().get(Calendar.DAY_OF_MONTH)).isEqualTo(now.ge
t(Calendar.DAY_OF_MONTH));

assertThat(tweet.getDate().get(Calendar.HOUR_OF_DAY)).isEqualTo(now.get
(Calendar.HOUR_OF_DAY));
}
```

Then

Dataset script should be interpreted when seeding the database 👍 (000ms)

3.3.2. Scenario: Seed database with javascript in dataset

Javascript engine comes within JDK so no additional classpath dependency is necessary.

Given

The following dataset 👍 (000ms)

```
tweet:
  - id: "1"
    content: "dbunit rules!"
    likes: "js:(5+5)*10/2" ①
    user_id: 1
```

① Javascript scripting is enabled by `js:` string.

When

The following test is executed: 👍 (000ms)

```
@Test
@DataSet(value = "datasets/yml/js-with-calc-
replacements.yml",cleanBefore = true ,disableConstraints = true,
executorId = "scripts-it")
public void shouldReplaceLikesUsingJavaScriptInDataset() {
    Tweet tweet = (Tweet) emProvider.em().createQuery("select t from
Tweet t where t.id = '1'").getSingleResult();
    assertThat(tweet).isNotNull();
    assertThat(tweet.getLikes()).isEqualTo(50);
}
```

Then

Dataset script should be interpreted when seeding the database 👍 (000ms)