Stemmarest

Dokumentation des PSE2 Projekt

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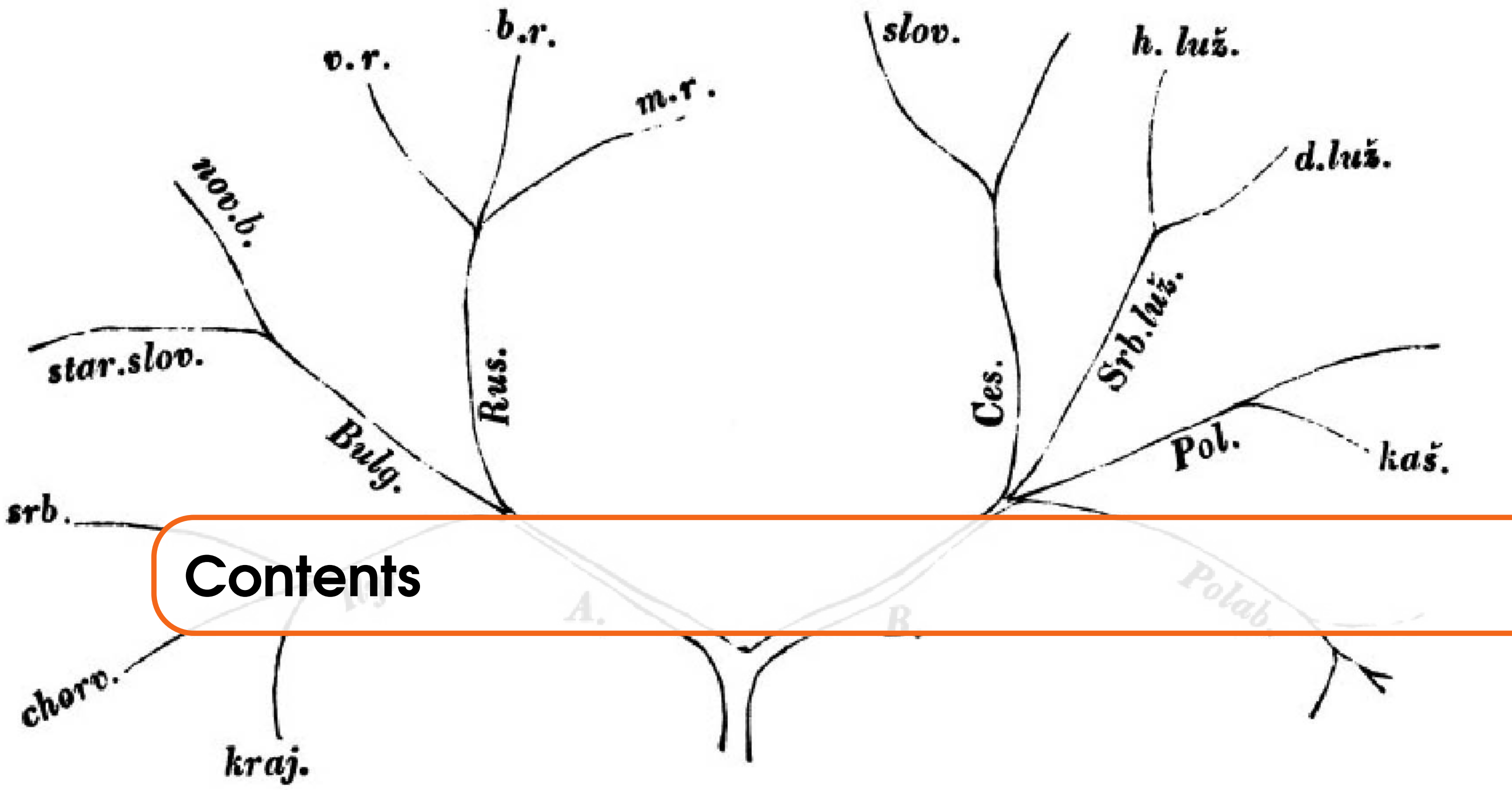
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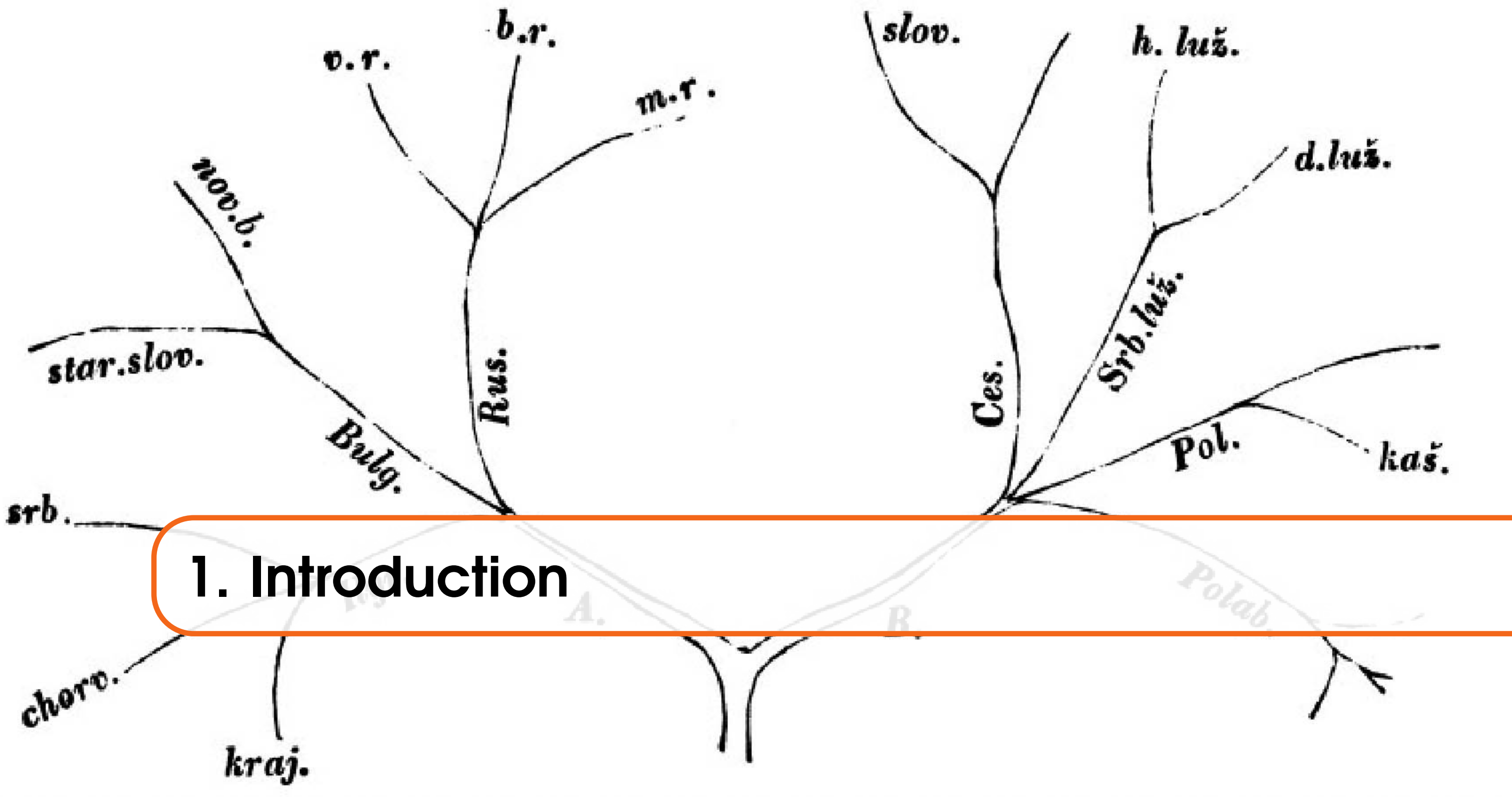
Contents

Project



1. Introduction

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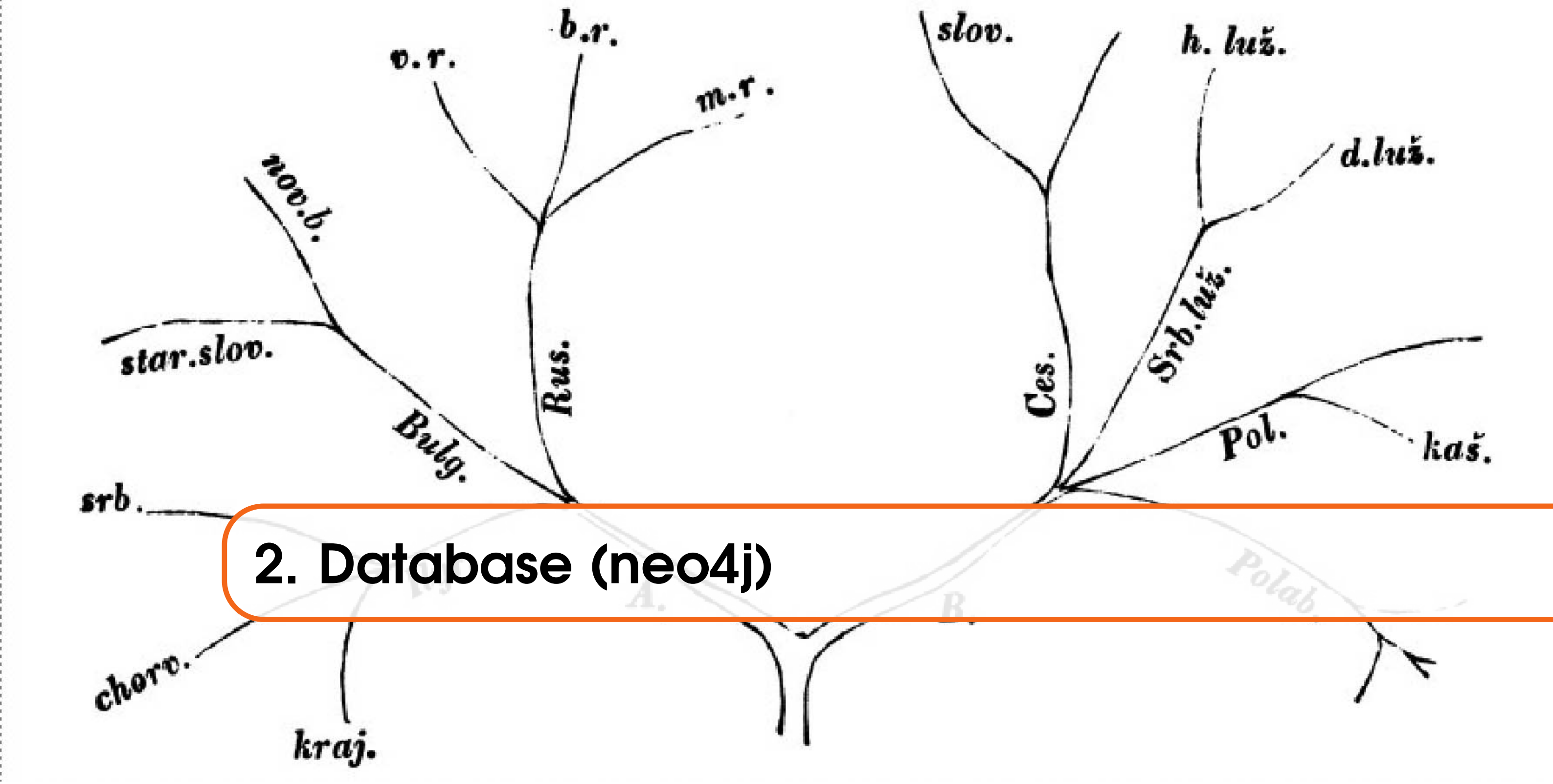
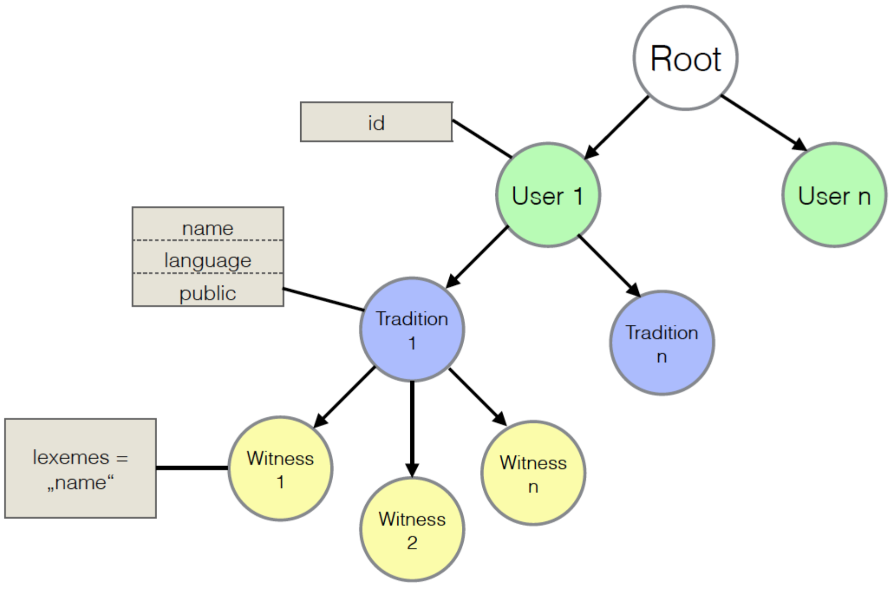
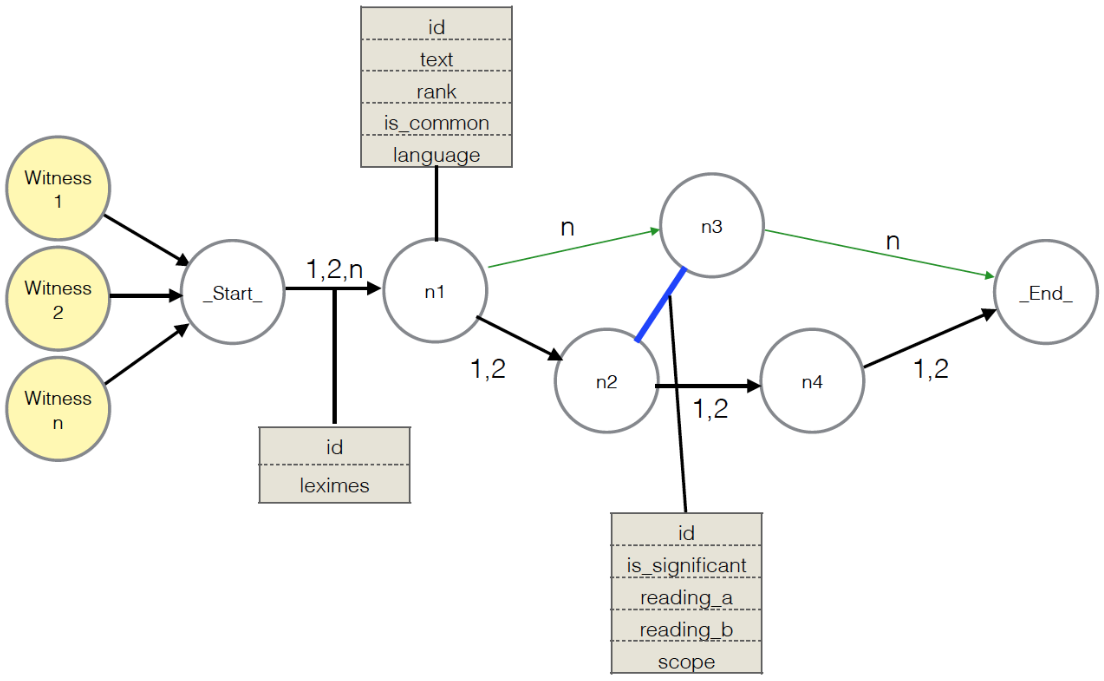


2. Database (neo4j)

2.1 Structure

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is_common
language
Witness 1
Witness 2
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Start
1,2,n
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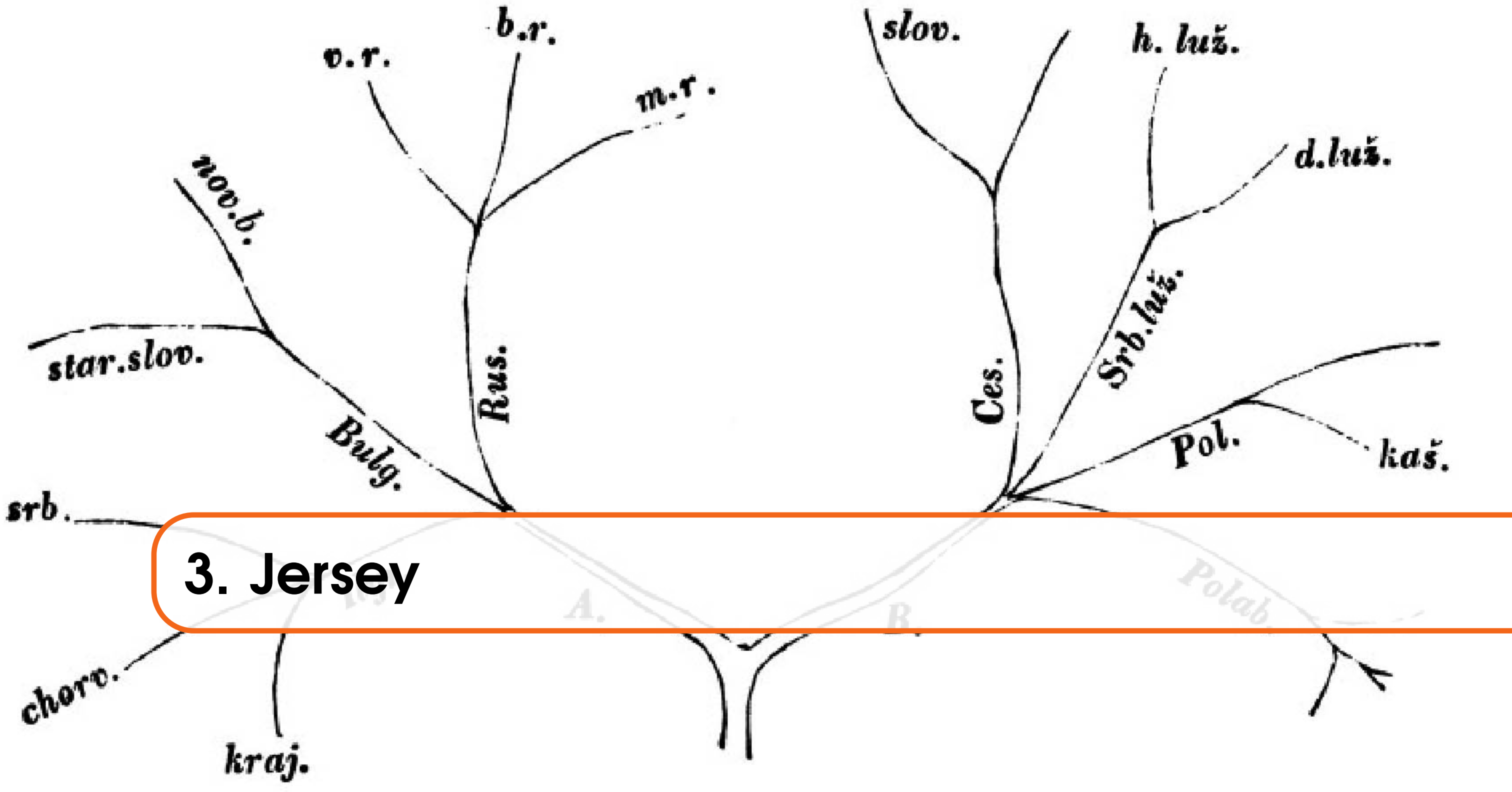
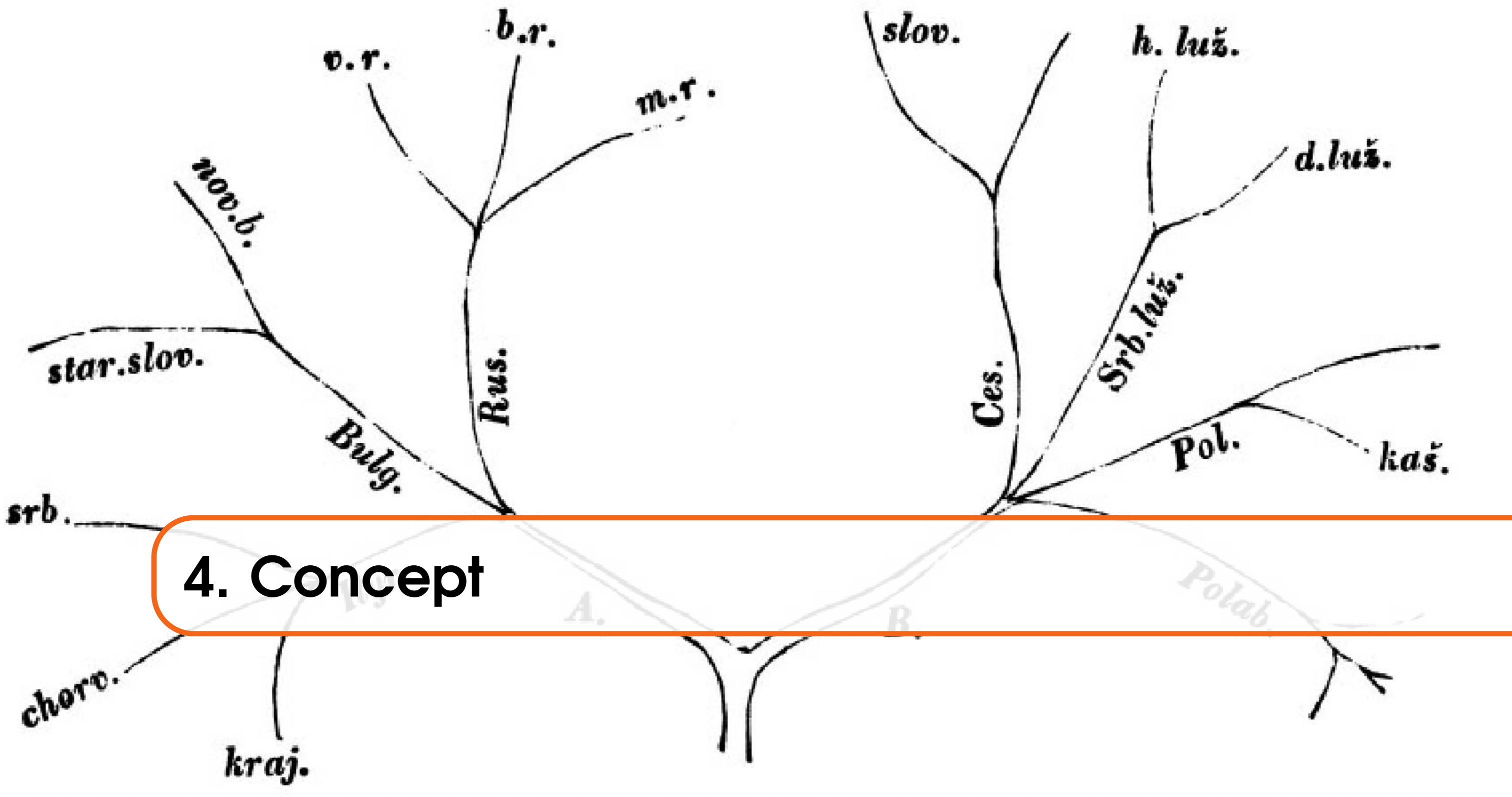


3. Jersey

Lorem Ipsum

II

Testing



4. Concept

This chapter describes the test-concept of the Digital Humanities PSE2 Project. The testing is used to assure the quality of the project and for test driven development. All tests are written in a manner they don't have any impact on the architecture of the project. To achieve this object mocking and injection by mockito is used.

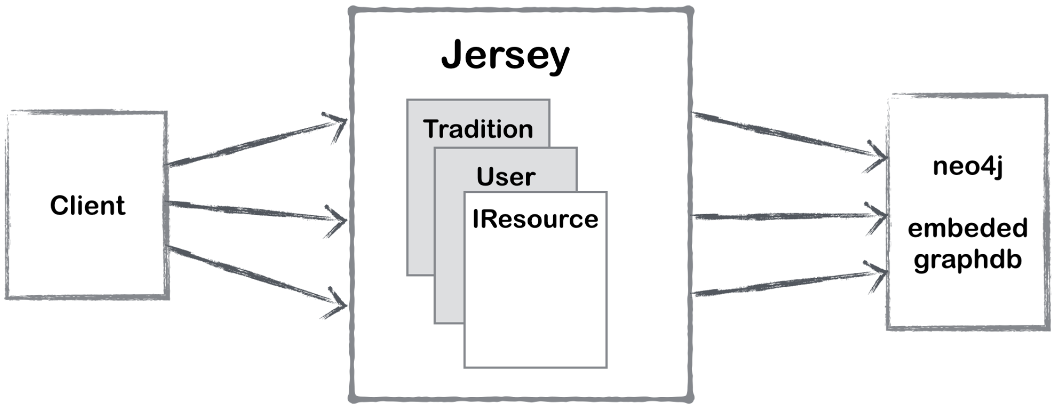
Integration Tests

Every user story is tested by an integration Test. The integration tests assures the quality of the project. The technique of integration tests is described in the Integration test chapter.

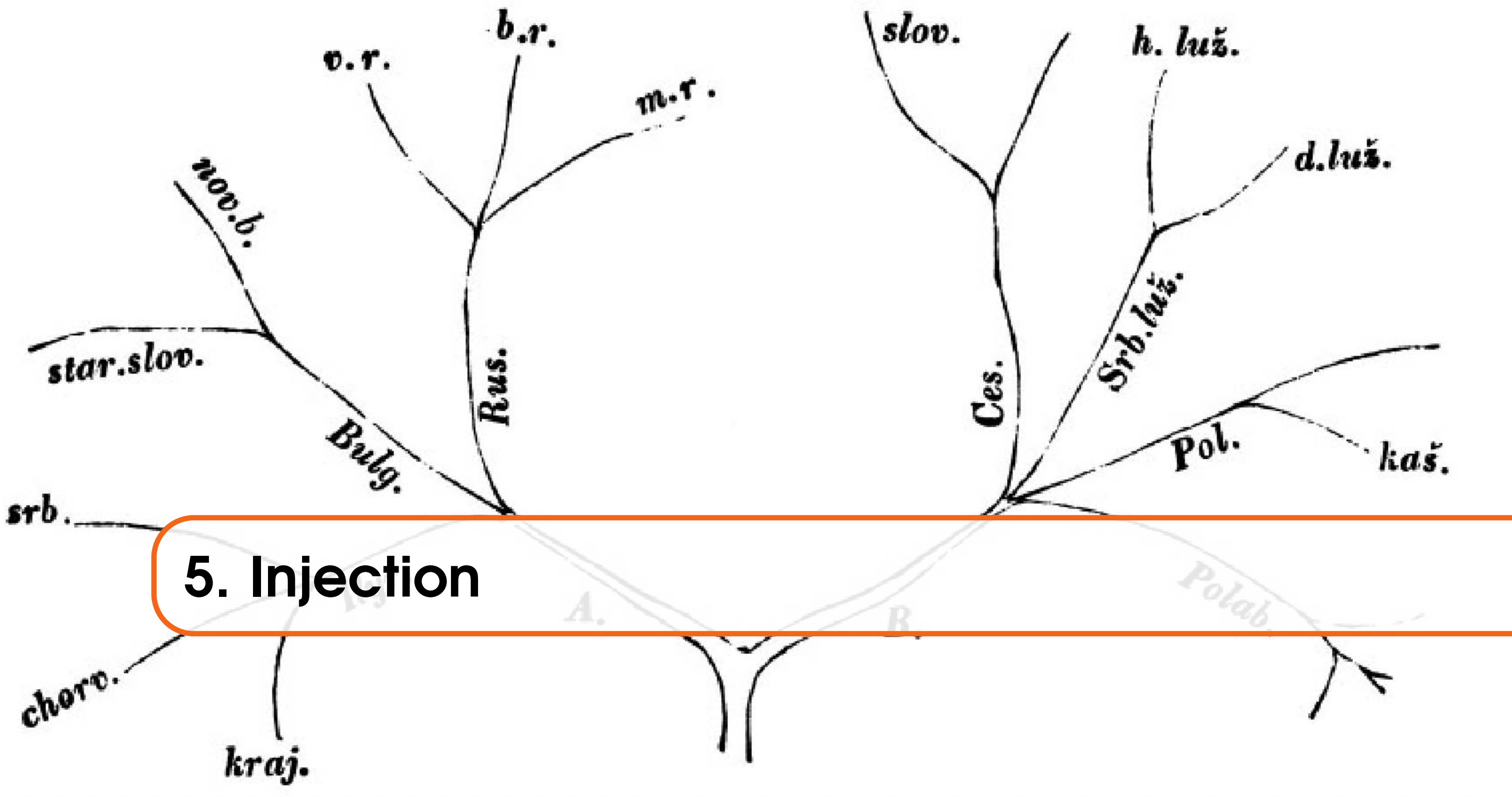
Unit Tests

Unit tests are used for test driven development and are defined by the developer. They are only for the development process and are not referenced in quality audits.

Jersey Overview



In the productive system for every REST call jersey is instantiating the requested resource and providing the service. Each resource object has its own database service, which is closed after each call. In production a embedded neo4j GraphDatabase is used. To achieve a minimal invasive test system the productive database needs to be replaced with a test database. To change the database without test related code in the project, object injection is used.



5. Injection

Mockito is used to mock, spy and inject objects in the tests. To use Mockito with junit the following annotation has to be done directly above the class header.

```
@RunWith(MockitoJUnitRunner.class)
```

With the MockitoJUnitRunner the annotations @Mock, @Spy and @InjectMocks can be used. To inject an GraphDatabaseService, the GraphDatabaseFactory is mocked and the newEmbeddedDatabase method overwritten that it returns an impermanent database.

```
@Mock
protected GraphDatabaseFactory mockDbFactory =
    new GraphDatabaseFactory();
```

The Mock annotation creates a Mock object. This is needed to overwrite the newEmbeddedDatabase method.

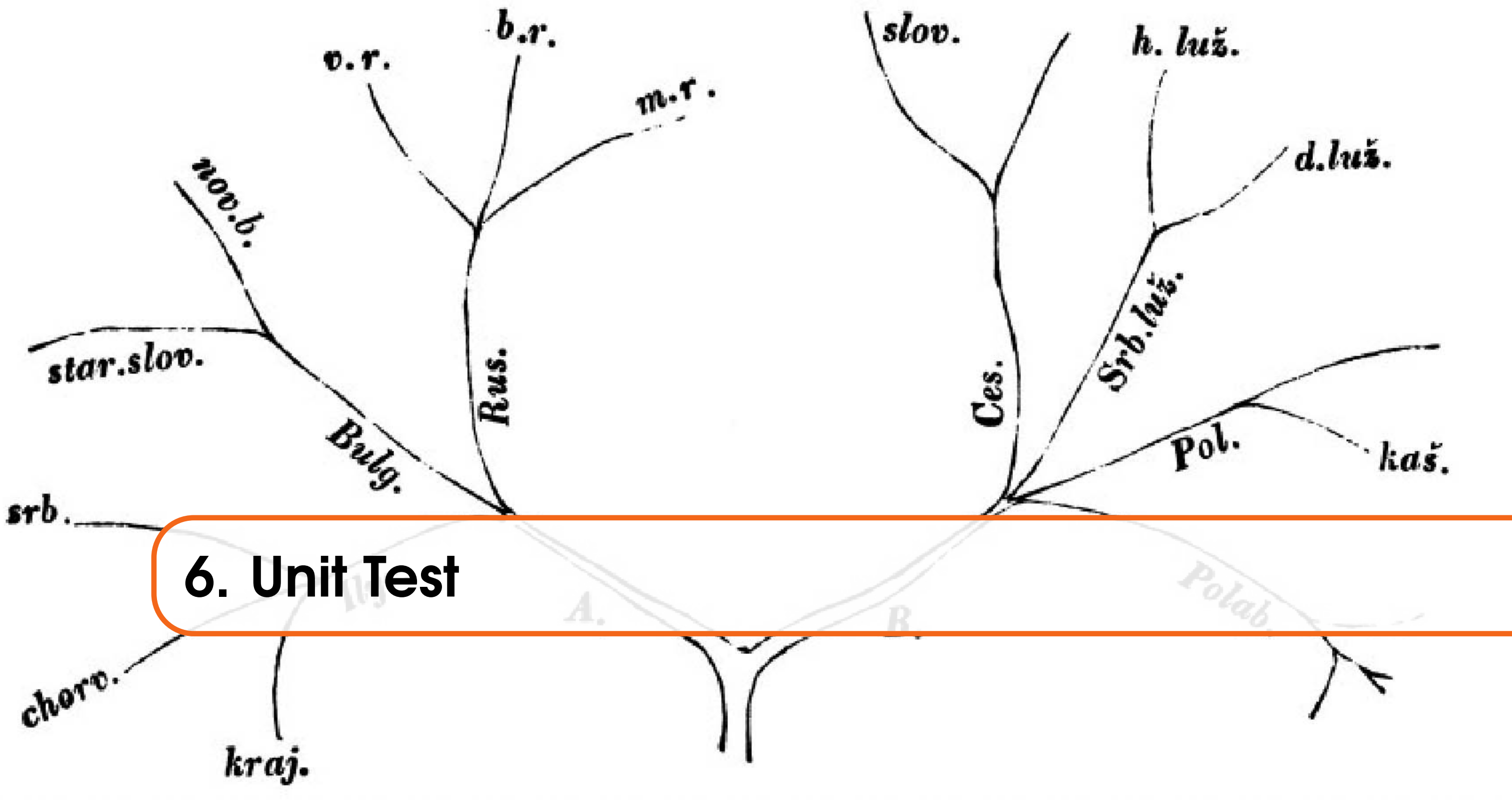
```
Mockito.when(mockDbFactory.newEmbeddedDatabase(Matchers.anyString()))
            .thenReturn(mockDbService);
```

Where mockDbService is a spy object. This is needed to suppress each shutdown call of this object. This is necessary because the resource is not new created for every restcall and so the database should not be closed. See more in the Integrationtest chapter.

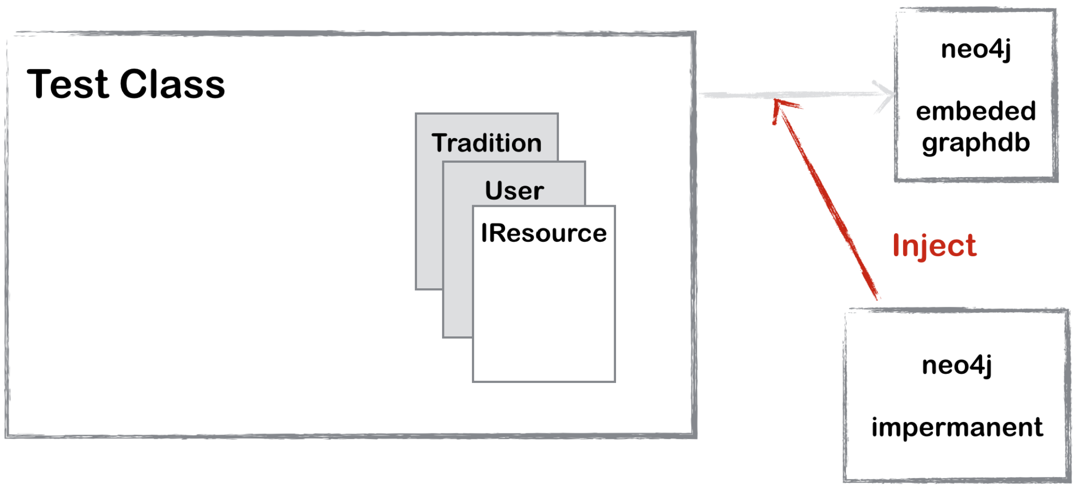
```
@Spy
protected GraphDatabaseService mockDbService =
   new TestGraphDatabaseFactory().newImpermanentDatabase();

Mockito.doNothing().when(mockDbService).shutdown();
```

And the injection of the Mockobjects into a resource

```
@InjectMocks
private User userResource;
```



6. Unit Test

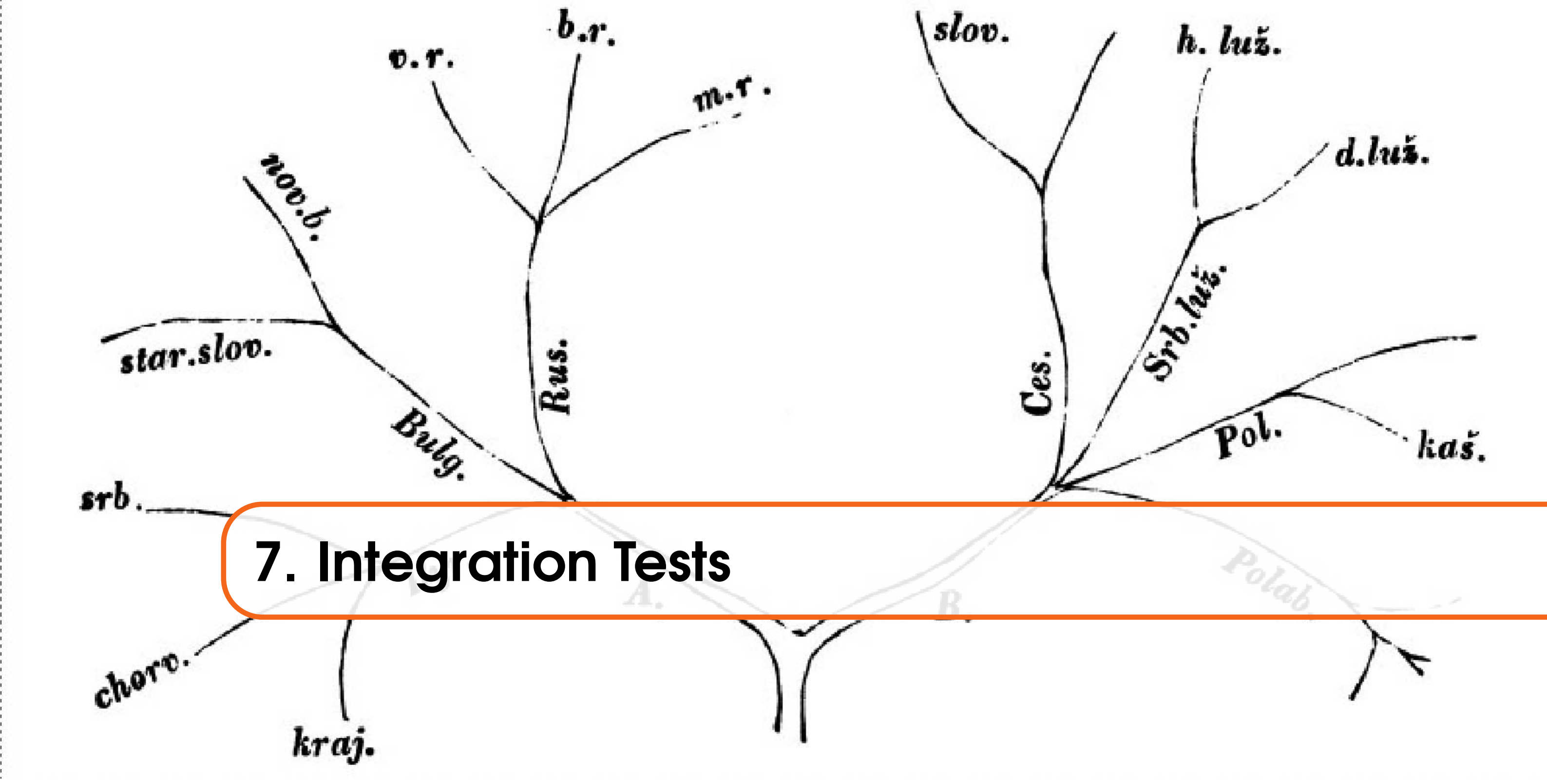


For Unit Tests the methods of the resource are called directly.

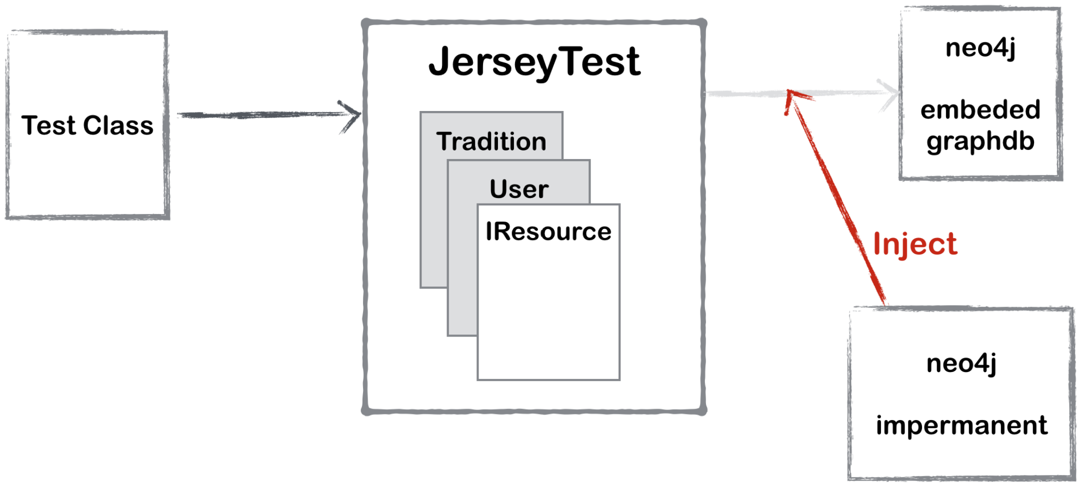
```
@Test
public void SimpleTest(){
   String actualResponse = userResource.getIt();
   assertEquals(actualResponse, "User!");
}
```

Example

https://github.com/tohotforice/PSE2_DH/blob/e364fcb0c164981281c5799a6bf9f9f9ea5eb503/stemmarest/src/test/java/net/stemmaweb/stemmaserver/UserUnitTest.java



7. Integration Tests



To inject objects into a resource it is mandatory that the resource is created statically at the place the injection is done. This is not possible when the resources are instantiated when a REST call occurs. To solve this JerseyTestServerFactory creates a server where already instantiated resources can be registered. To start a JerseyTestServer a global JerseyTest has to be created.

```
private JerseyTest jerseyTest;
```

The JerseyTestServerFactory creates a JerseyTest with already instantiated resources. This is necessary to inject the mock objects. Multiple resources can be added by chaining .addResource(..).addResource()

```
jerseyTest = JerseyTestServerFactory.newJerseyTestServer()
         .addResource(userResource).create();
jerseyTest.setUp();
```

The test is done by calling a webresource of jerseyTest

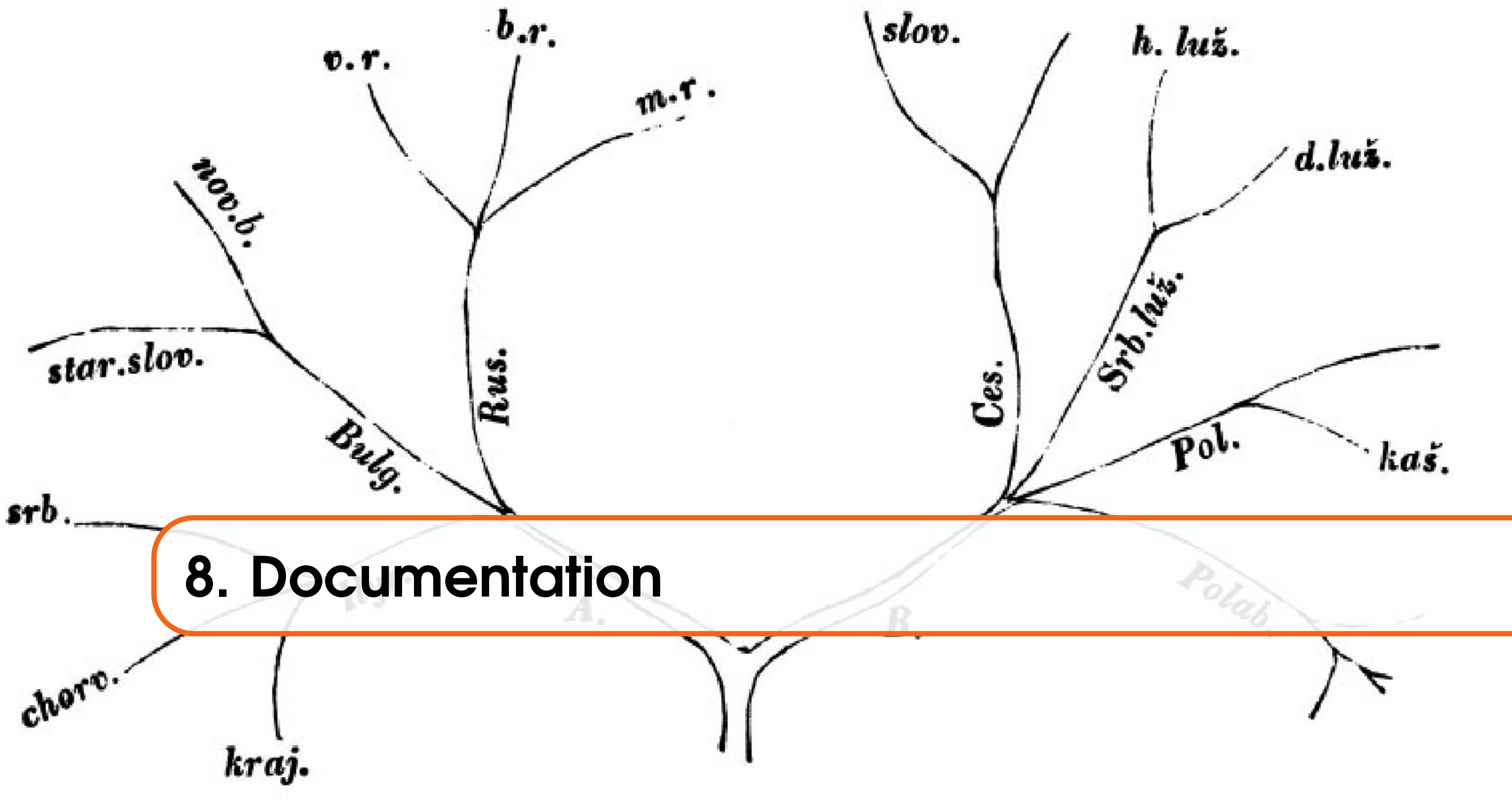
```
@Test
```

```
public void SimpleTest(){
  String actualResponse = jerseyTest.resource()
       .path("/user").get(String.class);
  assertEquals(actualResponse, "User!");
}
```

Example

https://github.com/tohotforice/PSE2_DH/blob/e364fcb0c164981281c5799a6bf9f9f9ea5eb503/stemmarest/src/test/java/net/stemmaweb/stemmaserver/UserTest.java

III RESTful API



8. Documentation

8.1 /user

GET /user

Summary

Returns a welcome message

Parameter

Return — SUCCESS. text/plain
"User!"

8.2 /user/create

POST /user/create

Summary

Creates a user.

Parameter application/json
{ "userId":<userId>, "isPublic":<isAdmin> }

Return — CREATED. application/json
{ "userId":<userId>, "isPublic":<isAdmin> }

Return — CONFLICT. application/json
Error: A user with this id already exists

8.3 /user/{id}

GET /user/{id}

Summary

Returns the user as JSON Object

Parameter URL
Id: the user id

Return — OK. application/json
{ 'userId': <userId>, 'isAdmin': <isAdmin> }
The information about the user

Return — NOT_FOUND. application/json
The information about the user

8.4 /user/traditions/{userId}

GET /user/traditions/{userId}

Summary

List all Traditions of a user

Parameter URL
userId: the id of the user

Return — OK. application/json
{"traditions":[{"name":<traditionName> }] }

Return — NOT_FOUND. application/json
Error: A user with this id does not exist!

8.5 /textinfo/{textId}

POST /textinfo/{textId}

Summary

Update the textInfo of a tradition.

Parameter URL
textId: the id of the tradition

Parameter application/json
{ 'name': <new_name>, 'language': <new_language>, 'isPublic': <is_public>, 'ownerId': <new_ownerId> }

Return — SUCCESS. application/json
{ 'name': <new_name>, 'language': <new_language>, 'isPublic': <is_public>, 'ownerId': <new_ownerId> }
The new information of the tradition.

Return — CONFLICT. application/json
"Error: A user with this id does not exist"
If the user does not exist.

Return — NOT_FOUND. application/json
If the tradition was not found.

8.6 /tradition/witness/{tradId}

GET /tradition/witness/{tradId}

Summary

List all Witness of a tradition

Parameter URL
tradId: the id of the tradition

Return — OK. application/json

Return — NOT_FOUND. application/json
Error: A tradition with this id does not exist!

8.7 /tradition/new

POST /tradition/new

Summary

Create a new tradition.

Parameter text/plain
name: The name of the tradition

Parameter multipart/form-data
language: The language of the tradition
public: 0 if the tradition is not public 1 if the tradition is public
name: The name of the tradition
file: multipart file input stream

Return — CONFLICT. application/json
"Error: No user with this id exists"

Return — INTERNAL_SERVER_ERROR. application/json
"Error: Tradition could not be imported!" *If the server was not able to parse the input file*

Return — OK. application/json
"Tradition imported successfully"

8.8 /tradition/get/{tradId}

GET /tradition/get/{tradId}

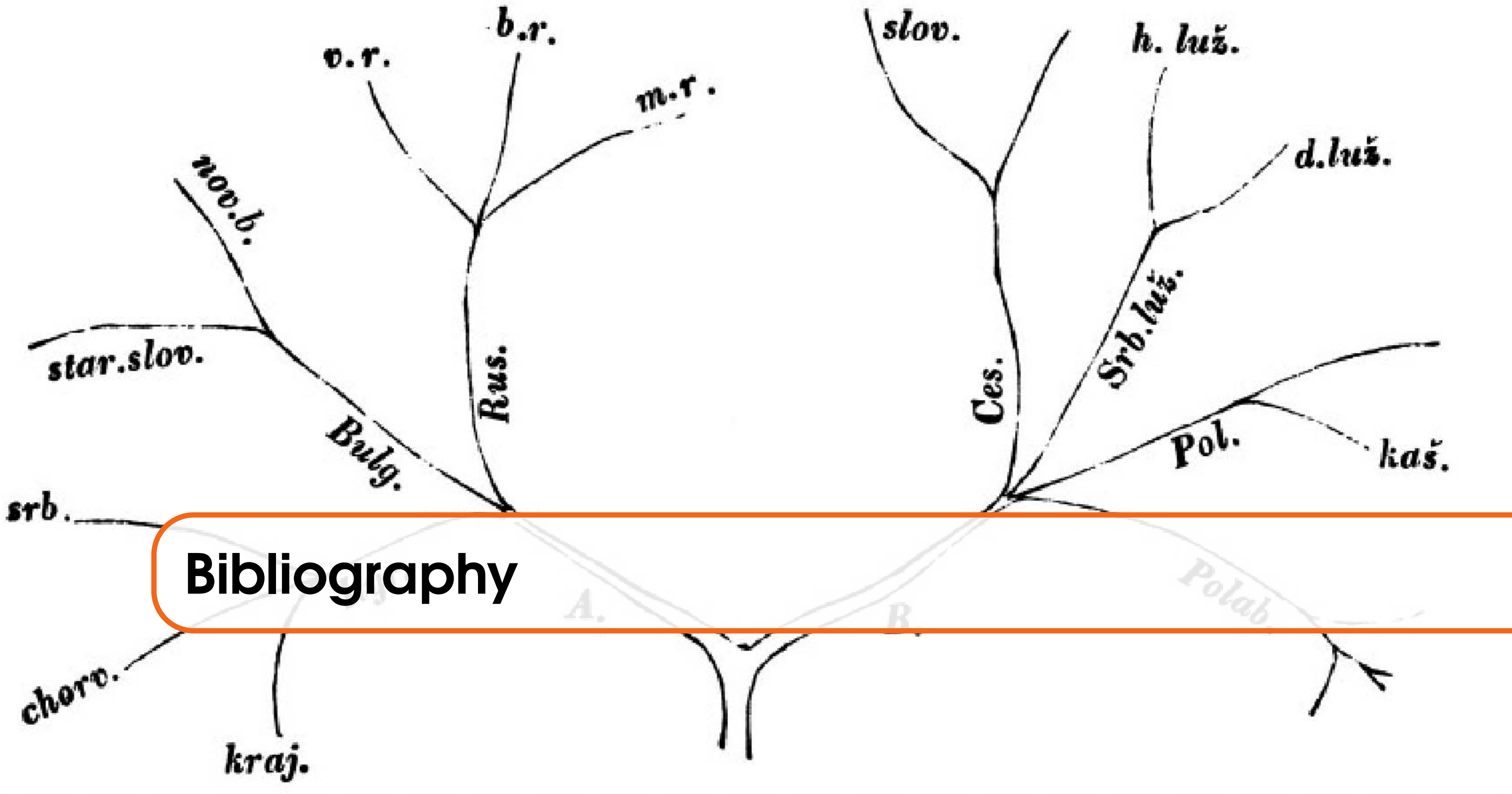
Summary

Get a graphml of a tradition

Parameter URL
tradId: the id of the tradition

Return — OK. application/xml

Return — NOT_FOUND. application/json
Error: A tradition with this id does not exist!



Bibliography