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**Coding Conventions (Server)**

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# File Meta Structure

## File Location

All custom production code that is written for the server of Knownana should be located in the lib folder. All server-tests should be written into the file server.spec.js, which is located in the root folder of the server (repository path: development/server).

## File/Folder Names

Folder names as well as file names should written in snake\_case. In case that a file contains the definition of a ‘class’, its name starts with a capital letter (e.g. ‘Class\_name.js’)

# Internal File Structure

## JavaScript Source Files

The content of JavaScript Files should have the following ordering:

* nodeJS require-statements
* definition of constants
* definition of variables that store data
* definition of public functions
* definition of private functions
* assignments to the export object.

### Naming Conventions

* All variable and function names are written in camelCase
* Constructor names are written in PascalCase
* ‘Class’names are written in PascalCase

### Private/Anonymous Functions

In order to enable a good test coverage of the server code with unit tests, private and anonymous functions should be avoided. By making them public, they can be mocked by the tester.

### Synchronous Code

In absolutely no case write synchronous code that accesses the file system or does any other time-consuming operations. Since nodeJS is working in a single thread, this may cause the server to slow down significantly.

One exception is code that is only executed once during the startup/shutdown of the server.

### Comments

Since all code should follow the Clean Code principle, it oughtn’t be necessary to write any comments that explain the behavior of the code. But because JavaScript lacks of a type safe way to define functions, we decided to prescribe the documentation of all methods by using JSDoc[[1]](#footnote-1). This documentation should contain the following information:

* Is the function **synchronous** or **asynchronous**?
* Is the function meant to be called **locally** or **publicly**?
* What is the expected type of the different parameters? (Number, String, Object, Array, Function)

In case of a function: how does the expected signature of the method look like?

* How is the return value of the function passed to the caller? (Callback, Promise, Return Value, Nothing)
* If a JSON object is expected as parameter, or returned as return value, the format of the JSON has to be explained

An example for such a function documentation could look like this:

[EXAMPLE HERE]

### Functions vs. Promises

Depending on several conditions (see below), the return type of a function has to be chosen. But no matter which return type is chosen, it *has to be documented* in JSDoc above of the function.

**Functions with private purpose**

Functions that are meant to be called only locally should return their result, as well as any potential error message in a callback function. This callback function has to have the following signature:

function (err, result)

where err is an error message, if an error occurred, and null if not. result contains the actual return value – or null, if an error occurred. The name of the callback function parameter in the signature of a method should be cb.

If a private function doesn’t have any return value and no error could possibly happen, it doesn’t need to provide a way to pass a callback function.

**Functions with public purpose**

Functions that are meant to be called publicly should return their result, as well as any potential error message in form of a JavaScript Promise[[2]](#footnote-2).

If a function (private or public) doesn’t have any return value and no error could possibly happen, it doesn’t need support callbacks/Promises.

If a function (private or public) is synchronous and is not expected to throw any errors, it can as well return the return value directly.

# Version History

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| **Version** | **Date** | **Description** |
| 1.0 | 07.06.2016 | Document creation |

1. https://en.wikipedia.org/wiki/JSDoc [↑](#footnote-ref-1)
2. https://developer.mozilla.org/de/docs/Web/JavaScript/Reference/Global\_Objects/Promise [↑](#footnote-ref-2)