TEST PLAN

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GOAL

The goal of the testing is to estimate the functionality of the abandonware java web server and determine whether or not it is in usable condition for the purpose of IOT and transferring data over sensors. Furthermore the original requirements must be adapted to the new use of the server and the tests should correspond to the new requirements and check whether they are fit for them or not.

CONSTRAINTS AND RISKS

The following table is showing what are the possible constraints and risks that can occur during the testing process, what will be the impact and possible mitigation.

Constraint or risk	Probability	Impact	Measures
Hardware problem	*Medium*	High	Make a multiple backup in different locations to avoid loss of data
Illness	*Low*	Medium	The test leader should follow the accepted health rules by authorities and continue work on slow pace in case of illness.
Lacking personnel	*Medium*	Medium	The test team should work extensively in case of emergency to finish by the accepted deadline
An outside malicious attack	*Low*	High	Create multiple backups and use an antivirus software to avoid a malicious attack
Limited time	*Medium*	High	The work time of the tester can be extended presumably due to the deadline approaching
Unwanted wiping of data	*Medium*	High	Create multiple backups to ensure the continuation of the testing process.

Lack of knowledge by the staff	*Medium*	Medium	The staff can learn extra time and consult with lectures, tutorial, and experts on testing matters.

APPLICATION UNDER TEST

My Web Server

REQUIREMENTS

REQUIREMENTS DEFINED WITH REGARD TO THE NEEDS OF SDC AND THE OTHER STAKEHOLDERS

Security: The web server should be able to resist major malicious attacks while maintaining functionality.

Usability: The web server should be easy to deploy and modify by third party developers after they receive the source code and files.

Performance: The server should be sufficiently responsive to high loads.

All of the aforementioned requirements are further broken down into more specific ones and are covered by the testing plan.

REQUIREMENTS BY THE ORIGINAL DEVELOPERS DISREGARDED IN SDC VERSION

Availability to other operating systems - The systems that will run the server might vary from the original intentions of the developers thus leading to unneeded testing for specific operating systems..
The license under which the code will be released along with the auxiliary files and additional features – The license might be different form GPL 2.0 but still provide the appropriate rights.

SCHEDULE

The total number of work hours is set to 20 at least, but if the project is behind schedule the work hours can be flexible from the side of the “Test Leader”. The deadline is hard and is set to 11th December.

Time (in work hours)	Task	Priority	Staff Assigned
2	*Reading the documentation and refactoring requirements to suit the new use of the software*	High	Test Leader
2	*Understanding the concepts that the software comes with and how they are implemented*	Medium	Test Leader
11	*Writing manual test cases appropriate to the new requirements*	Medium	Test Leader
10	*Test the system further with the other test types*	High	Test Leader
5	*Finalizing the report based on the testing*	High	Test Leader

RESPONSIBILITIES

Software Development Company (SDC) – Provide appropriate tools, information regarding the needs of the company from the software and establishing a proper work environment.

Test Leader - To test according to the SDC requirements and schedule, write a report based on the testing and provide it to the appropriate manager of SDC to read.

TEST PLAN

This section will outline the different tests that will be conducted, their level and purpose.

EXPLORATORY TEST

Approach: Running the server without prior knowledge and evaluate its work and performance.

Level: Manual

Purpose: Get basic idea of the program and how it handles different requests

UNIT TESTS

Approach: The tests that are included from the source will be investigated and marked as fit or unfit for the new purpose of the software stated by SDC.

Level: Unit

Purpose: To ensure the tests that are coming with the code are applicable to the new purpose of the software.

INTEGRATION TESTS

Approach: Check the included integration tests and see if they are fit for the purpose of testing the software for its new use.

Level: Unit

Purpose: Check if the unit tests can work together rather than within themselves.

SYSTEM TESTS

Approach: The system will be tested manually with different cases to further ensure the fit of the software for its new purpose.

Level: Manual

Purpose: Ensure the manual tests compliment the unit tests and provide further information regarding the state of the system and whether its fit for the purpose of IOT data transfer over the internet.

ACCEPTANCE TESTS

Approach: Check the requirements of SDC and provide meaningful report to the management.

Level: Manual

Purpose: See whether the specified software is fit for the purpose.

DETAILED REQUIREMENTS BASED ON THE SUPPLEMENTARY USECASES

REQUIREMENTS FOR USE CASE 1:

Requirement 1.1: The server should be able to be started with different port, by the needs of the administrator.

Requirement 1.2: The system is loading properly the resources provided.

Requirement 1.3: The system is keeping a log on startup action.

Requirement 1.4: The system is refusing a startup in case of missing elements.

REQUIREMENTS FOR USE CASE 2:

Requirement 2.1: The server should stop on demand of an administrator.

Requirement 2.2: The server should keep log on stopping of the server.

REQUIREMENTS FOR USE CASE 3:

Requirement 3.1: The server should share the resources with the browser.

Requirement 3.2: The server should throw an appropriate error dependent on the situation.

Requirement 3.3: The server should keep a log on all access to and from the browser as well as administrator changes.

Requirement 3.4: The server should present that it has internal error when encountering an error prone process.

Requirement 3.5: If an invalid request is sent to the server it should respond that the request cannot be handled.

Requirement 3.6: If the shared resource is outside of its container the system should present that the resource is forbidden.

REQUIREMENTS OUTSIDE OF THE USE CASES DEFINED BY THE STAKEHOLDERS

Requirement 4.1: The system should have basic web vulnerabilities protection.

Requirement 4.2: The system should be easily modifiable by future IOT developers.

Requirement 4.3: The system should be adaptable to different devices associated with IOT.

Requirement 4.4: The system should be responsive under high load.

ITERATION

In terms of iteration this is the first one and as first phase it cannot and will not aim to cover the full extent of the software. This phase will provide basic testing in all aspects and some aspects will be tested more deeply, but further testing will be needed.

For the next iteration a new set of automatic cases can be created, associated with the security branch and testing more in terms of configurations. Testing on different platforms might prove useful since the system will be mostly deployed in the IOT sphere.

The security testing can be further improved since in this iteration it is touched on base level and not deep enough to claim that the system is secure.