

# Functional specification document

Little Sister

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# INHALTSVERZEICHNIS

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## 1 CURRENT STATE

### 1.1 INITIAL SITUATION

The HTL-Leonding has a lack of space in their computer labs due to a lot of newcomers. That's problematic for the class that has to carry out a test and there is no room available. Currently there are a lot of time schedule difficulties. Letting pupils work on their private notebooks is not a possibility, because of the disturbing factor and the prohibited communication with other pupils during the test.

### 1.2 GOAL

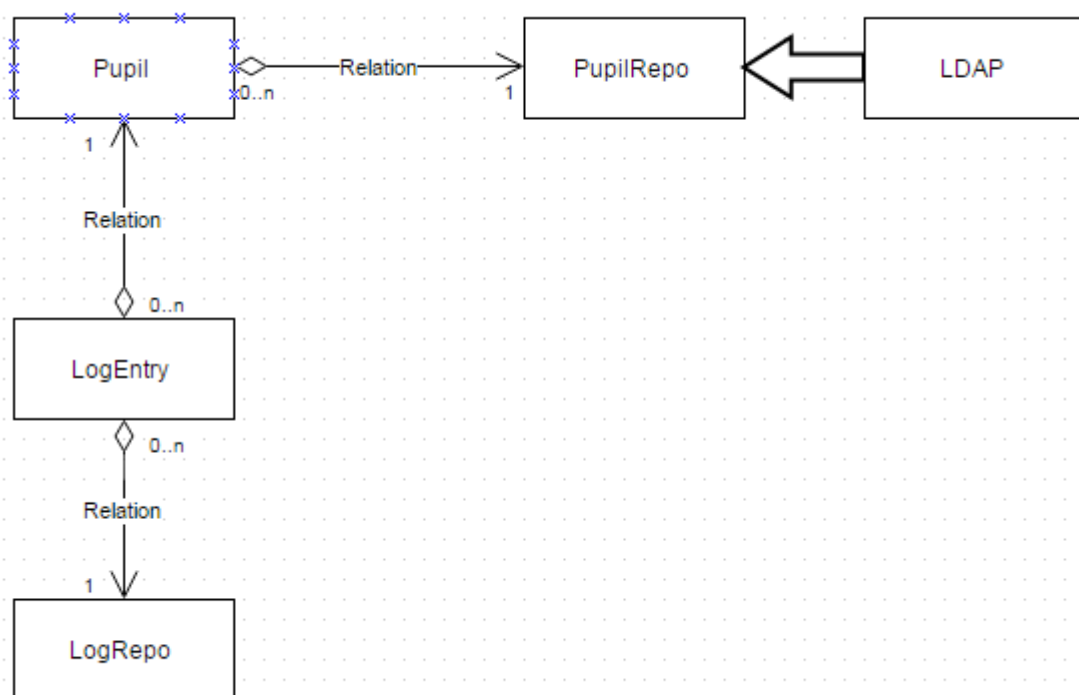
Creating a tool that assists the student during a test. The student should be able to develop in a familiar environment and be free of disturbances. The tool should document suspicious behavior and make screenshots every 1-2 minutes.

## 2 FUNCTIONAL REQUIREMENTS

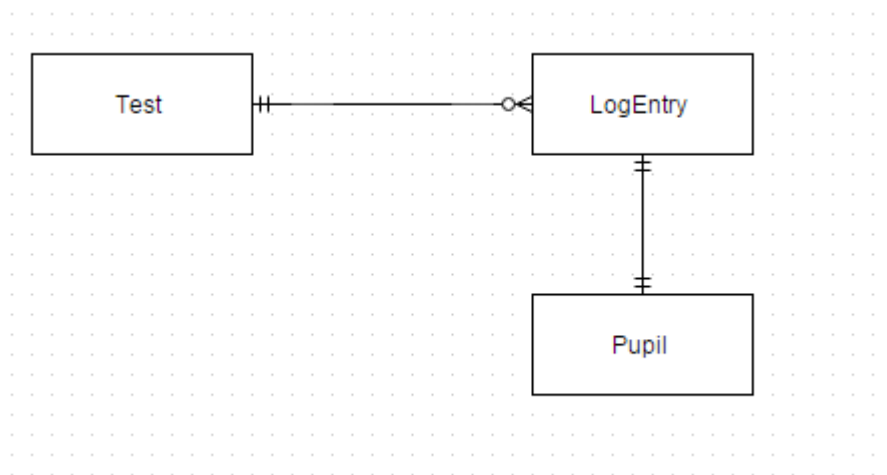
### 2.1 GENERAL REQUIREMENTS

The teacher needs to host a server from his laptop and let all pupils connect to it. All have to maintain the connection throughout the test. Every client is sending information to the server and the teacher can evaluate the data. The client also checks if the laptop, the student is working on, has any additional network cards or uses any mass storage devices during the exam. Furthermore the MAC-Addresses need to be controlled so the student cannot start the program in a virtual machine. While these are the basic functionalities, there are many possibilities to extend the tool even further.

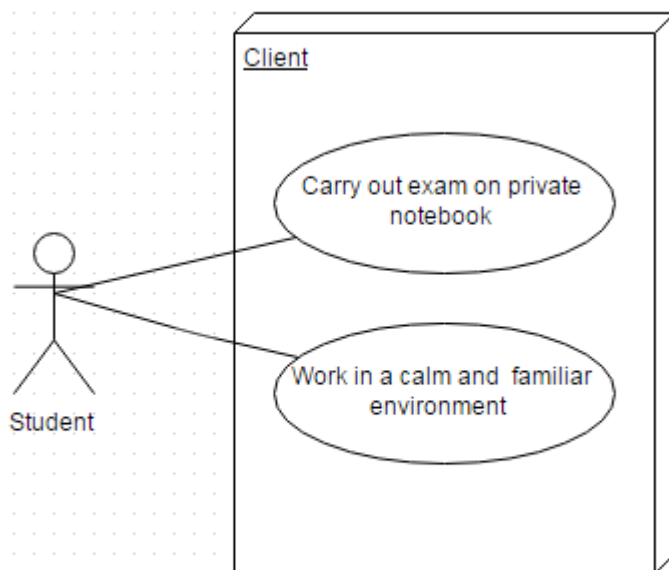
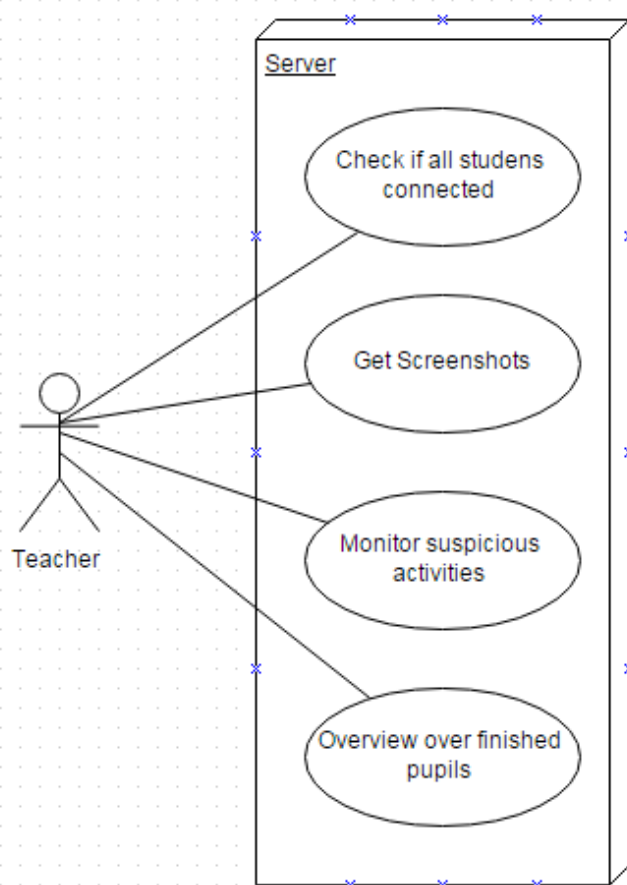
#### 2.1.1 MODEL OF THE PROBLEM AREA



### 2.1.2 ENTITY RELATIONSHIP DIAGRAM



## 2.2 USE CASE

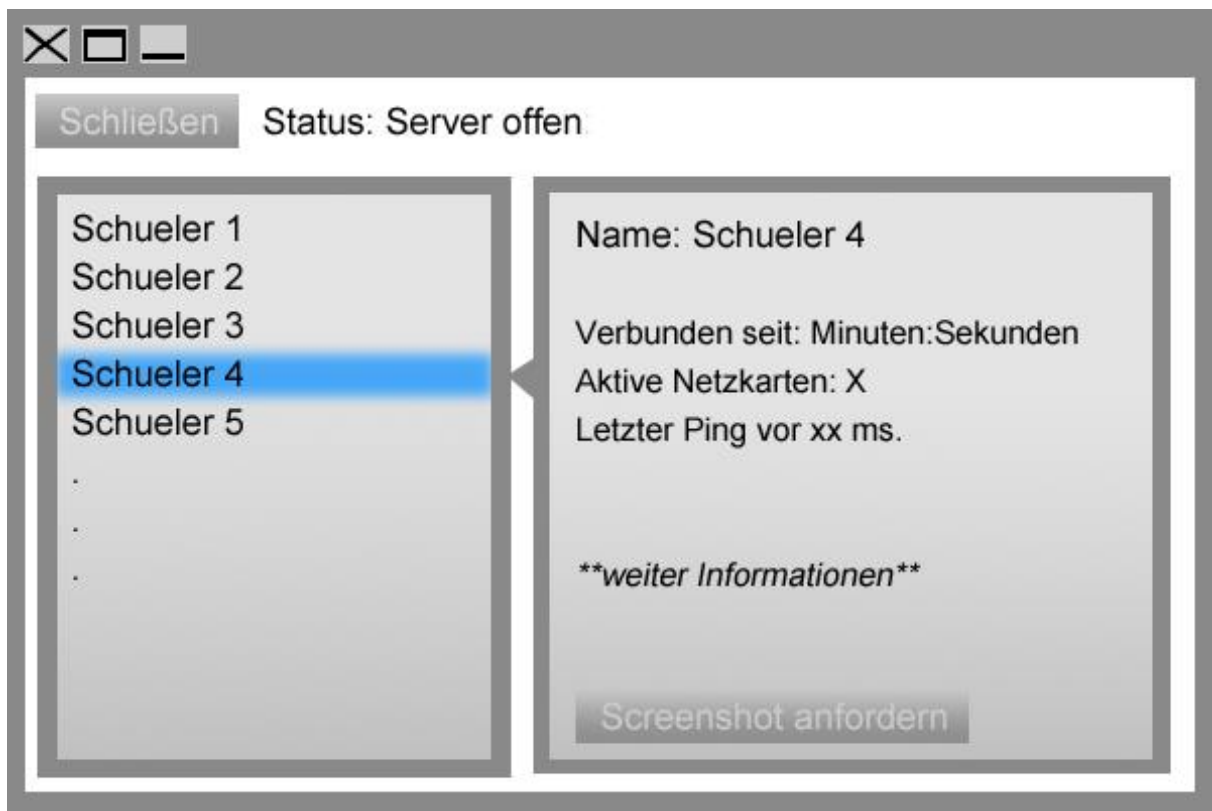


## 2.3 USE-CASE DIAGRAMM DESCRIPTION

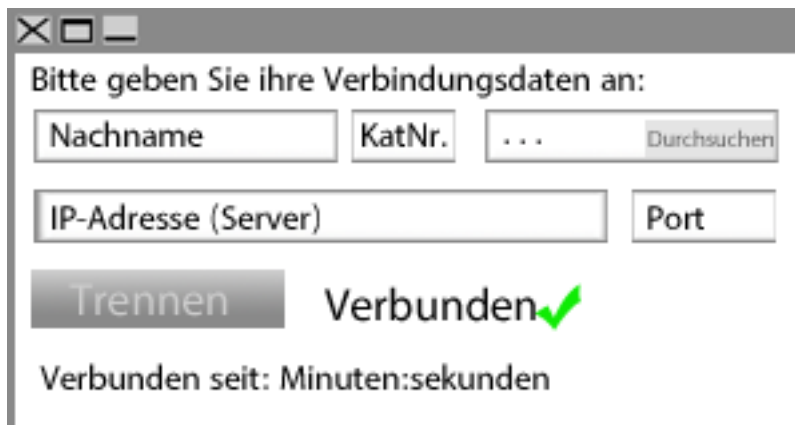
Use-Case - Server	
<b>Involved Actors</b>	Teacher
<b>Goal</b>	<ul style="list-style-type: none"> <li>• Check if all pupils connected</li> <li>• Get Screenshots from pupils</li> <li>• Monitor all suspicious activities</li> <li>• Overview over finished pupils</li> </ul>
<b>Precondition (in order)</b>	<ul style="list-style-type: none"> <li>• List of all pupils taking the exam, a set up Server and connection to Router</li> <li>• Connected to all pupils</li> <li>• Connected to all pupils</li> <li>• Connection to all pupils</li> </ul>
<b>Postcondition (in order)</b>	<ul style="list-style-type: none"> <li>• Determine missing students</li> <li>• Documented the development</li> <li>• Taking action in confirmed cases of cheating</li> <li>• Being sure that everyone finished and handed in the exam</li> </ul>

Use-Case - Client	
<b>Involved Actors</b>	Student
<b>Goal</b>	<ul style="list-style-type: none"> <li>• Carry out the exam on a private computer</li> <li>• Development in a calm and well-known environment</li> </ul>
<b>Precondition (in order)</b>	<ul style="list-style-type: none"> <li>• Wi-Fi capable notebook</li> <li>• Connection to the server</li> </ul>
<b>Postcondition (in order)</b>	<ul style="list-style-type: none"> <li>• Completing an exam on a personal notebook</li> <li>• Student can work fast in a familiar environment</li> </ul>

### 3 GUI



GUI Example 1: Server



GUI Example 2:Client



## 4 DATA VOLUME

Exam duration: 1 lesson (50 minutes) – 4 lessons (200 minutes + 20 minutes breaks)

Screenshot size can vary from 150kB up to 500kB.

Assuming we are taking a screenshot every minute that makes 50 – 220 screenshots. The data transferred can go from 7.5MB up to 110MB per student. With approximately 25 pupils taking the exam the size of the transferred data can add up to 2.75GB in the worst case (high resolution, max size screenshots, 220 minutes time).