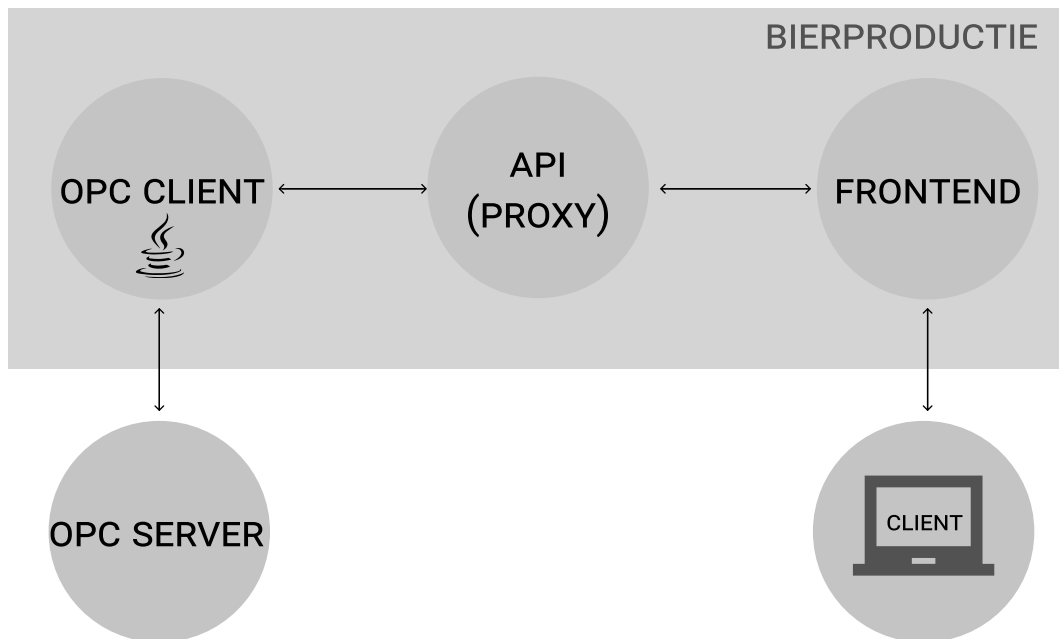


# Bierproductie

A management system for brewing machines



Bachelor of Engineering, Software Technology

Semesterproject 3. semester, ST3-PRO

**Project Period:** 31.08.2020 - 19.12.2020

**Hand in date:** 19.12.2020

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**Education:** Bachelor of Engineering, Software Technology

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**Supervisor:** Parisa Niloofar

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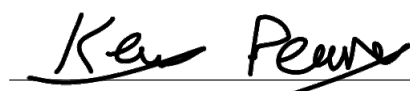
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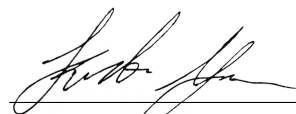
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Pages: 10

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By signing this document, each group member confirms that everyone have participated equally to this project, and everyone is thus collectively responsible for the content of the report.

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*From project description*

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<b>startProduction</b>	
<b>System operation</b>	startProduction
<b>Cross References</b>	Use case: Start the beer Machine
<b>Responsibility</b>	Starting the beer machine if the pre-conditions is met. If the pre-conditions is not met, the beer machine will not start
<b>Output</b>	The beer machine started the production
<b>Pre-conditions</b>	1. A beer type should be selected
<b>Post-conditions</b>	The beer machine started brewing

**Table 1:** Operation Contracts startProduction

<b>stopProduction</b>	
<b>System operation</b>	stopProduction
<b>Cross References</b>	Use case: Stop the beer Machine
<b>Responsibility</b>	Stop's the beer machine if the pre-conditions is met. If the pre-conditions is not met, the beer machine will not do anything
<b>Output</b>	The beer machine is stopped
<b>Pre-conditions</b>	The beer machine should be running
<b>Post-conditions</b>	The beer machine is stopped

**Table 2:** Operation Contracts stopProduction

<b>produceBatchReport</b>	
<b>System operation</b>	produceBatchReport
<b>Cross References</b>	Use case: make Batch report
<b>Responsibility</b>	Made a report after the pre-conditions is met
<b>Output</b>	Produces a batch report and add it to the database
<b>Pre-conditions</b>	The beer Machine is done brewing
<b>Post-conditions</b>	There is a Batch Report produced

**Table 3:** Operation Contracts produceBatchReport

<b>calculatedOptimalProductionSpeed</b>	
<b>System operation</b>	calculatedOptimalProductionSpeed
<b>Cross References</b>	Use case: calculate optimal production speed
<b>Responsibility</b>	It is responsible for calculating the optimal production speed
<b>Output</b>	number
<b>Pre-conditions</b>	The beer machine should be running
<b>Post-conditions</b>	The number is giving to the whom requested the number

**Table 4:** Operation Contracts calculatedOptimalProductionSpeed

<b>monitorAndStoreData</b>	
<b>System operation</b>	monitorAndStoreData
<b>Cross References</b>	Use case: monitor and store data
<b>Responsibility</b>	It is responsible for posting data to the database
<b>Output</b>	Post data to the database
<b>Pre-conditions</b>	The beer machine should be on
<b>Post-conditions</b>	The database is update with new data

**Table 5:** Operation Contracts monitorAndStoreData

<b>monitorAndDisplayData</b>	
<b>System operation</b>	monitorAndDisplayData
<b>Cross References</b>	Use case: monitor and display data
<b>Responsibility</b>	It is responsible for posting data to the client
<b>Output</b>	Post data to the client
<b>Pre-conditions</b>	The beer machine should be on
<b>Post-conditions</b>	The client is updated with the queried data

**Table 6:** Operation Contracts monitorAndDisplayData

<b>estimateErrorFunction</b>	
<b>System operation</b>	estimateErrorFunction
<b>Cross References</b>	Use case: estimate error function
<b>Responsibility</b>	It is responsible for calculating the error rate
<b>Output</b>	number
<b>Pre-conditions</b>	The beer machine is running
<b>Post-conditions</b>	The number is giving to the whom requested the number

**Table 7:** Operation Contracts estimateErrorFunction

<b>calculatedOEE</b>	
<b>System operation</b>	calculatedOEE
<b>Cross References</b>	Use case: calculated OEE
<b>Responsibility</b>	It is responsible for calculating the machine overall equipment effectiveness
<b>Output</b>	number
<b>Pre-conditions</b>	The beer machine is running and estimateErrorFunction returned a number ready for consumption
<b>Post-conditions</b>	The number is giving to the whom requested the number

**Table 8:** Operation Contracts calculatedOEE

### 6.2.3 Updated UML Class Diagram

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