

# MUSTE server protocol

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Document version 0.0.1

## 1 Design principles

- stateful - authentication happens once
- unidirectional - client sends request, server answers

## 2 Message format

- Client messages (CM) are messages from the client sent to the server

Message Name	Valid Responses	Description
CMLoginRequest	SMLoginSuccess SMLoginFail	Send login request
CMMOTDRequest	SMMOTDResponse SMSessionInvalid	Request a Message-of-the-day, e.g. the user survey from the server
CMDataResponse	SMDDataReceived SMDDataInvalid SMSessionInvalid	Send result of the survey
CMLessonsRequest	SMLessonsList SMSessionInvalid	Request available lessons
CMLessonInit	SMMenuList SMLessonInvalid SMSessionInvalid	Start a new lesson
CMMenuRequest	SMMenuList SMLessonInvalid SMSessionInvalid	Send request for menus
CMLogoutRequest	SMLogoutResponse	Ends a session

- Server messages (SM) are messages from the server sent to a client

Message Name	Description
SMLoginSuccess	Login successful
SMLoginFail	Login failed
SMMOTDResponse	A potential html-fragment for a message of the day
SMSessionInvalid	Invalid Session
SMDataReceived	Data received
SMDataInvalid	Invalid data
SMLessonsList	Lesson listing
SMLessonInvalid	Invalid lesson
SMMenuList	List of possible menus in a lesson

### 3 Message Datatypes

General format:

```
{"message":string, "parameters":object}
```

With **message** field containing the message name and **parameters** containing (optional) message parameters.

Message	Parameters	
CMLoginRequest	{"username":string,"password":string}	
CMMOTDRequest	{"token":string}	
CMDataResponse	{"token":string,"context":string, "data":["field":string,"value":string]}	1
CMLessonsRequest	{"token":string}	
CMLessonInit	{"token":string,"lesson":string}	
CMMenuRequest	{"token":string,"score":number, "a":{"tree":string,"grammar":string}, "b":{"tree":string,"grammar":string} }	
CMLogoutRequest	{"token":string}	
SMLoginSuccessful	{"token":string}	2
SMLoginFail	null	
SMMOTDResponse	{"filename":string}	3
SMSessionInvalid	{"error":string}	4
SMLessonsList	{"lessons":[{"name":string,"passed":boolean, "exercisecount":number}]}	5
SMMenuList	{"passed":bool,"score":number, "a":{"lesson":string,"tree":string, "lin":[{"path":[number],"lin":string}], "menu":{"score":number, "lin":[[[number],string]]}}}, "b":{"lesson":string,"tree":string, "lin":[{"path":[number],"lin":string}], "menu":{"score":number, "lin":[[[number],string]]}}}:}	5
SMLessonInvalid	null	
SMDDataReceived	null	
SMDDataInvalid	{"error":string}	6
SMLogoutResponse	null	

1 **token** is an identifier assigned to the client session by the server. **context** defines the semantics of **data**.

- For *startQuestionnaire* and *finalQuestionnaire*: **field** can be one of *Field1* to *Field20* and **value** can either be a number between 1 and 5 for fields with Likert scale and a string for the freeform fields
- For *finishedSession* and *canceledSession*: **field** is *PlayTime* and **value** is the time used for completing the session or before canceling and going back

2 The token to be used by all following client requests

3 A file name to be displayed as a message of the day

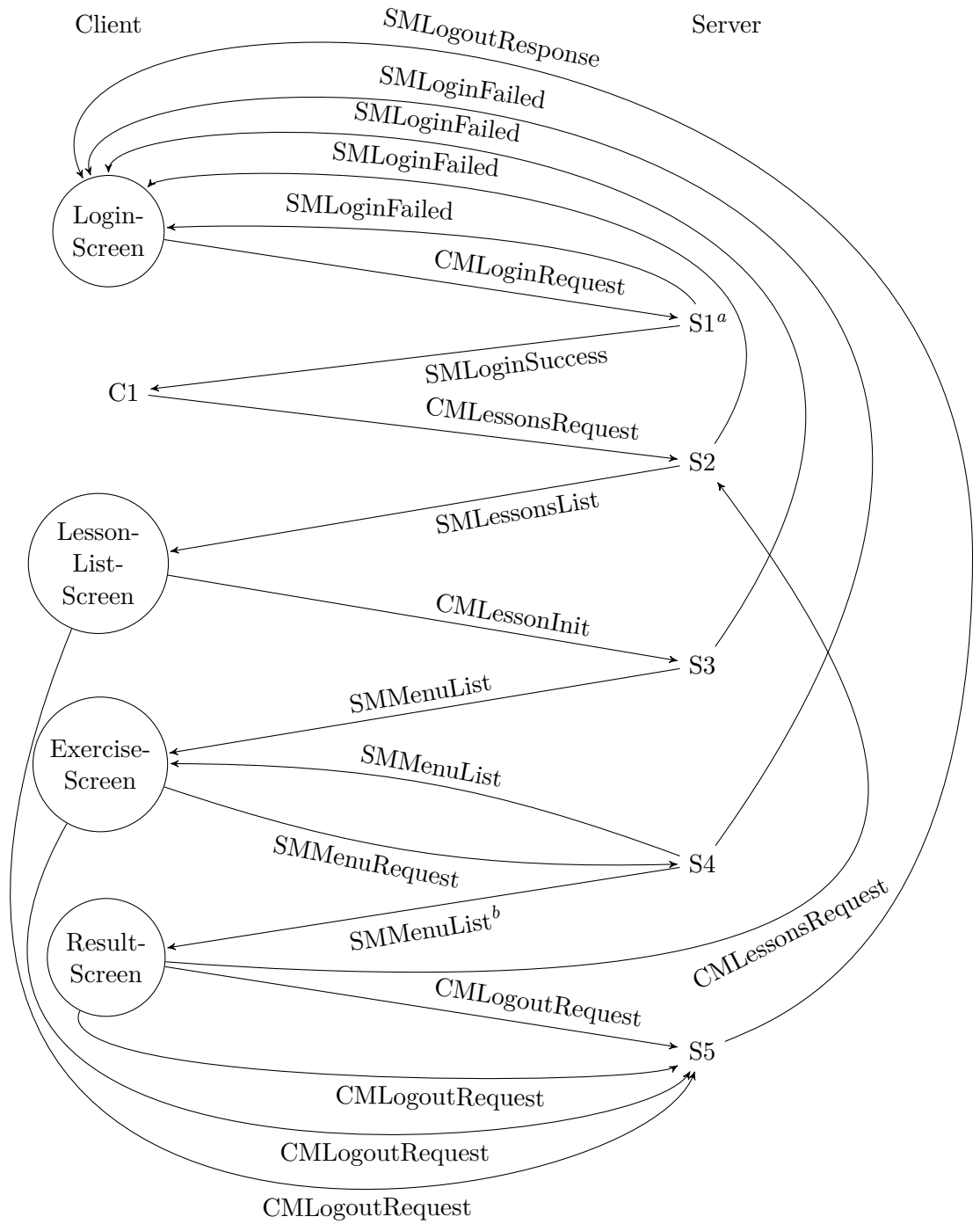
4 Reason like timeout or not authenticated

5 lessen *name* and *lesson* are the same as the name of the PGF used for the lesson

6 Potential error message



## 4 Sequences



<sup>a</sup>S1,...,S5,C1 are hidden states

<sup>b</sup>If session is passed i.e. if both trees are the same

## 5 Database

User

Exercise