

# Software Requirements Specification

---

Streamster – video streaming application

**Michał Karol Pompa – 266494**

**Michaela Golhová – 266099**

**Matej Michálek – 266827**

**Supervisor:**

**Behnam Boujarzadeh**

**VIA University College  
Software Engineering**

**18. 12. 2020**

# Table of content

1. Introduction .....	1
1.1. Purpose .....	1
1.2. Scope .....	1
1.3. Definitions, acronyms, and abbreviations .....	1
1.4. References .....	2
1.5. Overview .....	2
2. Overall description .....	3
2.1. Product perspective .....	3
2.1.1. Site adaptation requirements .....	3
2.2. Product functions .....	3
2.3. User Classes and characteristics .....	4
2.4. Constraints .....	4
3. Specific requirements .....	5
3.1. External interfaces requirements .....	5
3.1.1. User interfaces .....	5
3.2. System features .....	7
3.2.1. Account and profile management .....	7
3.2.2. Login / Logout .....	12
3.2.3. Uploading videos .....	14
3.2.4. Managing uploaded videos .....	16
3.2.5. Watching videos .....	18
3.2.6. Search for videos .....	19
3.2.7. Feedback on videos .....	20
3.2.8. Groups .....	22
3.2.9. Recommending videos .....	26
3.3. Performance requirements .....	28
3.4. Software system attributes .....	28

# 1. Introduction

The following document is a Software Requirements Specification for Streamster – video streaming application based on IEEE Standard 830-1998 (IEEE Recommended Practice for Software Requirements Specifications, 1998).

## 1.1. Purpose

The purpose is to improve the experience of video streaming platforms by creating personalized video recommendations, based on the user's preferences and behaviour and guaranteeing that the shared video reaches a selected audience (Pompa, Golhová and Michálek, 2020).

The intended audience is the following:

- Developers
- Supervisors

## 1.2. Scope

The Streamster is a video sharing and streaming platform. After the user registers on the platform, they can upload a video to their profile. The user can search for videos uploaded by other users and watch them. The user can rate a video and leave a comment. Moreover, users can form communities, to share videos with each other. Streamster will also recommend videos to a user, basing on their preferences and behaviour. Streamster will not check all the uploaded videos for inappropriate content.

## 1.3. Definitions, acronyms, and abbreviations

Definitions, acronyms and abbreviations are extracted from this document and can be found in the attached file - Glossary.pdf.

## 1.4. References

Anon 1998. *IEEE Recommended Practice for Software Requirements Specifications. IEEE Std 830-1998.*

Pompa, M.K., Golhová, M. and Michálek, M., 2020. *Streamster - Project Description.*

## 1.5. Overview

The rest of the document is divided into two sections, Overall Description and Specific Requirements. Overall description presents the product perspective and its relations to other products. Moreover, it states the product functions, defines the user classes and their characteristics and enumerates constraints that can limit developers' options. The next section, Specific requirements defines requirements to the user interface of the system and functional requirements divided within the system's features. Moreover, it contains performance requirements and software system attributes. Each feature has the description of its purpose and functional requirements defining the feature. Functional requirement contains one or more Stimulus/Response sequences that describes the usage of the requirement.

## 2. Overall description

### 2.1. Product perspective

Since the product is entirely self-contained and does not depend on any other system, therefore it does not provide or consume any Hardware, Software and Communication interfaces to or from other systems.

#### 2.1.1. Site adaptation requirements

It is required that the user of the system has an internet connection with speed at least 10 Mb/s to ensure comfortable usage of the system.

Moreover, it is required that the user runs the application on a mobile device with Android OS version 8.0 or higher.

### 2.2. Product functions

The Streamster provides groups of functionalities as follows:

1. Account and profile management
2. Login / Logout
3. Uploading videos
4. Managing uploaded videos
5. Watching videos
6. Search for videos
7. Feedback on videos
8. Groups
9. Recommending videos

## 2.3. User Classes and characteristics

There are three user classes that are meant to be using the system. First user class is a student that watches videos in the system. From such a user it is not required a high level of technical proficiency and the educational level is expected to be basic. The age of the standard user is between 12 to 30 years old. Second class of the user is an instructor/teacher that uploads videos to the system. It is expected that such users have intermediate technical proficiency to understand technical details of the videos that they want to upload. It is expected that instructors have more than basic educational level and their age is more than 18 years old. Third class of the user is an administrator that manages the user's roles. From an administrator it is required to have basic technical knowledge and basic education. It is expected that an administrator is at least 18 years old.

User classes with their characteristics, also known as personas, can be found in the attached file - Persona.pdf.

## 2.4. Constraints

There are several constraints that will limit the developer's options during the development of the system.

- The Android application must support Android in version 8.0 or higher.
- The web application must support Chrome browser in version 81 or higher
- The system must store all passwords encrypted
- The system must ensure that all network traffic between client applications (Android application and web application) is secured using TLS
- The system must be able to allow at least 1000 users to watch video at the same time
- The system must be functional for a user with an internet connection with a speed of at least 10 Mb/s.

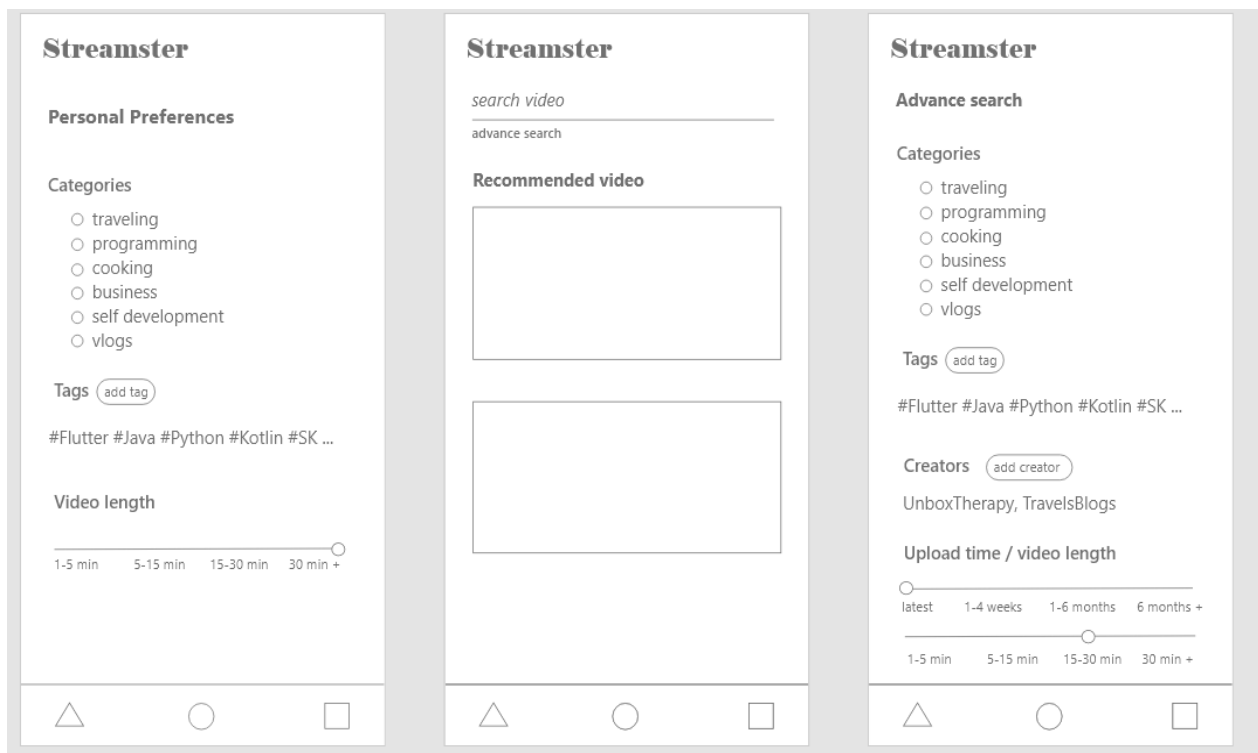
## 3. Specific requirements

### 3.1. External interfaces requirements

#### 3.1.1. User interfaces

The user interface should support the environments where the system is used. So that the user interface must adjust to the used screen size. The supported format for a web browser is a horizontal layout with screen resolution of 1920x1080 pixels. For a mobile application, the device should support a vertical layout except for a watching video screen where both horizontal and vertical layouts should be supported.

An example of a personal preferences screen and advanced search screen is presented below with associated descriptions.



Android application

**Personal Preferences Page**

The user will be able to navigate through the profile page to personal preferences to set their study programs, tags they are interested in or video length they prefer.

**Advanced Search**

The user can use advanced search to specify further criteria for searching. Study programs and creators will be predefined, and the user can choose one or multiple options from the list. The user can add multiple tags by specifying its name and select upload time of video or its length.



## 3.2. System features

### 3.2.1. Account and profile management

#### 3.2.1.1. Purpose of feature

The user can create and manage their own account and profile in the system. If the user decides not to use the system any longer, the user can delete their account together with groups and videos that the user owns. All new users are registered with a role of Student. The administrator can grant a Teacher role to a user or remove it.

#### 3.2.1.2. Associated functional requirements

##### 3.2.1.2.1. Functional Requirement 1

The user creates an account on the registration page by specifying first name and last name, email, avatar and password. The system registers a new user and creates its account and profile. The new user has a Student role assigned to them. The account is identifiable through a unique email. There must not be more than one account with the same email. The password must have at least 8 characters and contain at least one of each of the following: digit, uppercase letter, lowercase letter. The letters must be a valid letter from English alphabet.

#	Stimulus/Response sequences	
1	Summary	<b>The user is specifying correct data in registration form and uploads their picture (avatar).</b>
	Stimulus	The user enters the data into registration form and uploads their picture (avatar)
	Response	The system registers a new user with a Student role, creates its account and profile. The system displays a successful message.
2	Summary	<b>The user is specifying correct data in registration form without avatar.</b>
	Stimulus	The user enters the data into registration form without uploading their picture (avatar)
	Response	The system registers a new user with a Student role, creates its account and profile. The system displays a successful message. The system uses the default user avatar.

3	Summary	<b>The user is specifying the already taken email in registration form.</b>
	Stimulus	The user enters the data into a registration form with email that is already taken.
	Response	The system does not register a new user. The system displays an error message about an already taken email.
4	Summary	<b>The user is specifying invalid password in registration form.</b>
	Stimulus	The user enters the data into registration form with password that contains invalid characters and/or does not contain any of the following: digit, uppercase and lowercase letter
	Response	The system does not register a new user. The system displays an error message about invalid password.
5	Summary	<b>The user is specifying invalid email in registration form.</b>
	Stimulus	The user enters the data into registration form with invalid email address
	Response	The system does not register a new user. The system displays an error message about invalid email address.
6	Summary	<b>The user uploads a picture (avatar) in invalid format in registration form.</b>
	Stimulus	The user uploads picture (avatar) in invalid format
	Response	The system does not register a new user. The system displays an error message that the format of the uploaded picture (avatar) is invalid.

### 3.2.1.2.2. Functional Requirement 2

The user changes personal information in their profile page. The following information can be modified: first name, last name, email, password and avatar. In the case of email, the new email must be unique in the system. In the case of a new password, it must consist of at least 8 characters and contains at least one digit, one uppercase letter, one lowercase letter and the letters must be from the English alphabet.

#	Stimulus/Response sequences	
1	Summary	<b>The user changes their email address to a new unique email address.</b>
	Stimulus	The user enters their new unique email address.
	Response	The system updates the user's email address and displays a message about successful change of email address.
2	Summary	<b>The user changes their old email address to a new email address that is already used in the system.</b>
	Stimulus	The user enters their new email address.
	Response	The system does not update the email address of the user. The system displays an error message about an already taken email.
3	Summary	<b>The user changes their old email address to a new one that is invalid.</b>
	Stimulus	The user enters invalid email address
	Response	The system does not update the email address. The system displays an error message about invalid email address.
4	Summary	<b>The user changes their password to a new valid password.</b>
	Stimulus	The user enters their new valid password and old password to confirm the password change.
	Response	The system updates the user's password and displays a message about successful change of password.
5	Summary	<b>The user changes their password to a new invalid password.</b>
	Stimulus	The user enters their new invalid password and old password to confirm the password change.
	Response	The system does not update the user's password and displays an error message about invalid password.

6	Summary	<b>The user changes their password but fails to confirm the operation with incorrect password.</b>
	Stimulus	The user changes password and enters incorrect password to confirm the operation.
	Response	The system does not update user data and displays an error message about incorrect password.
7	Summary	<b>The user uploads a new avatar of valid format.</b>
	Stimulus	The user selects the file of valid format for avatar.
	Response	The system updates the user's avatar and displays a message about successful change of avatar.
8	Summary	<b>The user uploads a new avatar of invalid format.</b>
	Stimulus	The user selects the file of invalid format for avatar.
	Response	The system does not update the user's avatar and displays an error message about invalid avatar file format.
9	Summary	<b>The user removes the current avatar.</b>
	Stimulus	The user clicks on the delete button to remove their avatar.
	Response	The system displays a default user avatar.
10	Summary	<b>The user changes their full name.</b>
	Stimulus	The user enters their new full name.
	Response	The system updates the user's full name and displays a message about successful change of full name.

### 3.2.1.2.3. Functional Requirement 3

The user deletes their account in the profile page. The videos and groups that a user is owner of as well as their personal data will be deleted from the system on the delete account request.

#	Stimulus/Response sequences	
1	<b>Summary</b>	<b>The user deletes their account and is logged out from the system.</b>
	Stimulus	The user deletes their account on the profile page and confirms the action.
	Response	The system deletes groups that the user is owner of, videos that the user has uploaded and the account with the user's personal data. The system logs out the user and displays a message about successful deletion of the account.
2	<b>Summary</b>	<b>The user tries to delete their account and then does not confirm the action.</b>
	Stimulus	The user deletes their account on the profile page and cancels the confirmation dialog.
	Response	The system does not delete the user account.

### 3.2.1.2.4. Functional Requirement 4

The administrator can grant a Teacher role to a user or remove it.

#	Stimulus/Response sequences	
1	<b>Summary</b>	<b>The administrator changes a role of user from Student to Teacher</b>
	Stimulus	The administrator assigns a Teacher role to the user.
	Response	The system updates the role of the user to Teacher. The user gains access to creating groups and uploading videos.
2	<b>Summary</b>	<b>The administrator changes a role of user from Teacher to Student</b>
	Stimulus	The administrator assigns a Student role to the user.
	Response	The system updates the role of the user to Student. The user can't create groups or upload videos anymore.

### 3.2.2.Login / Logout

#### 3.2.2.1. Purpose of feature

The user can log in to the system with their email and password. If the user forgets their password, the user can reset the password. An email with reset link is sent to the user email address and then if the user activates the reset link, a new generated password will be sent to the user email. Moreover, the logged in user can log out from the system at any time.

#### 3.2.2.2. Associated functional requirements

##### 3.2.2.2.1. Functional Requirement 1

The user logs in on the login page using email and password.

#	Stimulus/Response sequences	
1	Summary	<b>The user logs in on the login page using valid email and correct password.</b>
	Stimulus	The user enters email and correct password into login form.
	Response	The system authenticates the user and redirects the user to the home page.
2	Summary	<b>The user logs in on the login page using invalid email and/or incorrect password.</b>
	Stimulus	The user enters email and password into login form.
	Response	The system does not authenticate the user and displays an error message about invalid email or incorrect password.

#### 3.2.2.2.2. Functional Requirement 2

When the user forgets the password, they can reset it on the login page. Afterwards, the system sends email with a reset link to the user email address. When a user clicks on the reset link, the system generates a new password and sends it to the user email.

#	Stimulus/Response sequences	
1	Summary	<b>The user requests to reset their password, specifies their correct email address and an email with reset link is sent to their email address. After clicking on the reset link, the new generated password is sent to the user email.</b>
	Stimulus	The user selects the option to reset their password on the login page and enters their correct email address.
	Response	The system verifies the user email and sends an email with a reset link to the user email address. If the user activates the reset link, the system generates a new password, saves it and sends it to the user email.
2	Summary	<b>The user requests to reset their password and specifies an incorrect email address.</b>
	Stimulus	The user selects the option to reset their password on the login page and enters an incorrect email address.
	Response	The system does not verify the user email, therefore does not send an email with a reset link and displays an error message about the incorrect email address.

#### 3.2.2.2.3. Functional Requirement 3

The user can log out from the system at any time.

#	Stimulus/Response sequences	
1	Summary	<b>The user logs out from the system.</b>
	Stimulus	The user clicks the logout button.
	Response	The system logs the user out from the system, redirects the user to the login page.

### 3.2.3. Uploading videos

#### 3.2.3.1. Purpose of feature

The instructor and teacher can upload a new video by selecting a video file with supported file format from the device file system and specifying information in mandatory and optional video attributes.

#### 3.2.3.2. Associated functional requirements

##### 3.2.3.2.1. Functional Requirement 1

The instructor or teacher selects a file, sets video attributes and uploads it to the platform.

#	Stimulus/Response sequences	
1	Summary	<b>The instructor or teacher selects a file of correct format, fills in all mandatory video attributes (title, at least one study program, at least one tag, thumbnail, video) and uploads it to the platform.</b>
	Stimulus	The instructor or teacher selects a video of supported format from the device file system, inserts a title, selects at least one study program, inserts at least one tag and thumbnail
	Response	The system processes the file, stores it with its mandatory attributes. Afterwards displays a message about successful upload.
2	Summary	<b>The instructor or teacher selects a file of correct format but does not fill in all mandatory video attributes (title, at least one study program, at least one tag, thumbnail, video) and tries to upload it to the platform.</b>
	Stimulus	The instructor or teacher selects a video of supported format from the device file system and does not insert at least one of the mandatory fields.
	Response	The system processes the file but does not store it and displays a message about missing mandatory video attributes.
3	Summary	<b>The instructor or teacher selects a file of the correct format, fills in all mandatory and some optional video attributes and uploads it to the platform.</b>
	Stimulus	The instructor or teacher selects a video of supported format from the device file system, fills in all mandatory video attributes, inserts video description, uploads video thumbnail of supported file format (png, jpg), selects video language.



	Response	The system processes the video and the video thumbnail, stores the video with its mandatory attributes and optional attributes and displays a message about successful upload.
4	Summary	<b>The instructor or teacher selects a file of correct format, fills in all mandatory video attributes and uploads a video thumbnail of unsupported file format.</b>
	Stimulus	The instructor or teacher selects a video of supported format from the device file system, fills in all mandatory video attributes and uploads video thumbnail of unsupported file format from the device file system.
	Response	The system processes the video but does process the video thumbnail and displays a message about unsupported format video thumbnail file format.
5	Summary	<b>The instructor or teacher selects a video file of incorrect format.</b>
	Stimulus	The instructor or teacher selects a video of unsupported format from the device file system.
	Response	The system does not process the file and displays an error message about unsupported video file format.

#### 3.2.3.2.2. Functional Requirement 2

The instructor or teacher selects a file, sets video attributes and uploads it to the platform to a specific group.

#	Stimulus/Response sequences	
1	Summary	<b>The instructor or teacher uploads a video from a specific group. The instructor or teacher selects a file of the correct format, fills in all mandatory video attributes (title, at least one study program, at least one tag) and uploads it to the platform.</b>
	Stimulus	The instructor or teacher navigates to a specific group and clicks the upload button. The instructor or teacher selects a video of supported format from the device file system, inserts a title, selects at least one study program, inserts at least one tag and selects more groups that they have access to, in addition to the already specified group.
	Response	The system processes the file, stores it with its mandatory attributes and shares it within the selected groups. Afterwards displays a message about successful upload.

#### 3.2.3.2.3. Functional Requirement 3

The teacher selects a file, sets video attributes and uploads it to the platform under their profile.

#	Stimulus/Response sequences	
1	Summary	<b>The teacher uploads a video into his profile. The teacher selects a file of the correct format, fills in all mandatory video attributes (title, at least one study program, at least one tag) and uploads it to the platform.</b>
	Stimulus	The teacher navigates to his profile and clicks the upload button. The teacher selects a video of supported format from the device file system, inserts a title, selects at least one study program, inserts at least one tag and selects one or more groups that they have access to.
	Response	The system processes the file, stores it with its mandatory attributes and shares it within the selected groups. Afterwards displays a message about successful upload.

### 3.2.4.Managing uploaded videos

#### 3.2.4.1. Purpose of feature

The instructor or teacher changes video attributes or removes their uploaded videos.

#### 3.2.4.2. Associated functional requirements

##### 3.2.4.2.1. Functional requirement 1

The video owner can edit video attributes at any time in the edit video page. Each of the video attributes can be edited.

#	Stimulus/Response sequences	
1	Summary	<b>The video owner updates a title, description or language of video.</b>
	Stimulus	The video owner edits a title, description or language of the video.
	Response	The system updates the corresponding video attribute and displays updated video details.

2	Summary	<b>The video owner updates tags, study programs or group access video attributes.</b>
	Stimulus	The video owner adds or removes tag/study program/group.
	Response	The system updates the corresponding list of attributes and displays updated video details.
3	Summary	<b>The video owner updates the video thumbnail in the correct file format.</b>
	Stimulus	The video owner edits the video thumbnail by selecting a new file of supported format.
	Response	The system updates the video thumbnail and displays updated video details.
4	Summary	<b>The video owner updates the video thumbnail of incorrect file format.</b>
	Stimulus	The video owner edits the video thumbnail by selecting a new file of unsupported format.
	Response	The system does not update the video thumbnail and displays an error message about unsupported file format.

#### 3.2.4.2.2. Functional requirement 3

The video owner can remove the selected video from their uploaded videos.

#	Stimulus/Response sequences	
1	Summary	<b>The video owner chooses an uploaded video and removes it</b>
	Stimulus	The video owner chooses the uploaded video, clicks the delete button and then confirms the deletion.
	Response	The system displays a confirmation window to confirm the deletion, the video owner confirms it, the system removes selected video from the system and from groups. The system deletes all data associated with video. Afterwards displays a message about successful video deletion.
2	Summary	<b>The video owner chooses an uploaded video and tries to remove it.</b>
	Stimulus	The video owner chooses the uploaded video and clicks the delete button next to one of the videos and then cancels the deletion.
	Response	The system displays a confirmation window to confirm the deletion. The video owner cancels the request and the selected video stays in the system.

### 3.2.5. Watching videos

#### 3.2.5.1. Purpose of feature

The user can watch and interact with video. The user can play/stop, change volume and move to a specific timestamp while watching a video.

#### 3.2.5.2. Associated functional requirements

##### 3.2.5.2.1. Functional requirement 1

The user can play and stop a video

#	Stimulus/Response sequences	
1	Summary	<b>The user plays/stops a video.</b>
	Stimulus	The user clicks on the play button/stop button.
	Response	The system starts/stops the video.

##### 3.2.5.2.2. Functional requirement 2

The user can change the volume of a video

#	Stimulus/Response sequences	
1	Summary	<b>The user changes the volume of a video that they are currently watching.</b>
	Stimulus	The user changes the volume of a video.
	Response	The system increases or decreases the sound level.

##### 3.2.5.2.3. Functional requirement 3

The user can move to a specific timestamp of the video by clicking to the desired point in the video timeline.

#	Stimulus/Response sequences	
1	Summary	<b>The user moves to a specific timestamp of the video.</b>
	Stimulus	The user clicks to the desired point in the video timeline.
	Response	The system starts streaming the video from the specific video timestamp.

### 3.2.6. Search for videos

#### 3.2.6.1. Purpose of feature

The user can search for the video using the basic or an advanced search.

#### 3.2.6.2. Associated functional requirements

##### 3.2.6.2.1. Functional Requirement 1

The user can search for a video with a basic search

#	Stimulus/Response sequences	
1	Summary	The user searches for a video by search term
	Stimulus	The user enters search term to the search bar
	Response	The system displays videos that match

##### 3.2.6.2.2. Functional Requirement 2

The user can search for a video with an advanced search

#	Stimulus/Response sequences	
1	Summary	The user searches for a video by specifying multiple search criteria
	Stimulus	The user clicks advance search button
	Response	The system displays options for advance search
	Stimulus	The user specifies one or multiple search criteria such as: video tags, creator of the video, length of the video or upload time
	Response	The system displays videos that match

### 3.2.7.Feedback on videos

#### 3.2.7.1. Purpose of feature

The user can react on video by liking, disliking it or creating comments

#### 3.2.7.2. Associated functional requirements

##### 3.2.7.2.1. Functional Requirement 1

The user can comment on a video in the comment area under a video. All comments for a video are displayed on the same watching video page as the commented video with the comment, author's name and avatar and timestamp when comment was added.

#	Stimulus/Response sequences	
1	Summary	<b>The user creates a comment</b>
	Stimulus	The user navigates to the specific video and creates a comment
	Response	The system displays a comment in the comment section with the author's name, avatar and timestamp when the comment was added.

##### 3.2.7.2.2. Functional Requirement 2

The user can delete a comment that they have created. The owner can delete any comment on the video that they own.

#	Stimulus/Response sequences	
1	Summary	<b>The user deletes their comment</b>
	Stimulus	The user navigates to the specific video and deletes their comment
	Response	The system deletes selected comment from the video
2	Summary	<b>The owner of video deletes comment from their video</b>
	Stimulus	The owner of video deletes a comment from the comment section
	Response	System deletes selected comment from the video

### 3.2.7.2.3. Functional Requirement 3

The user can rate a video using a like or dislike reaction. The amount of both reactions is displayed under each video.

#	Stimulus/Response sequences	
1	Summary	The user leaves like on a video
	Stimulus	The user clicks on a like button
	Response	The system registers a reaction and displays updated amount.
2	Summary	The user leaves dislike on a video
	Stimulus	The user clicks on a dislike button
	Response	The system registers a reaction and displays updated amount.

### 3.2.8.Groups

#### 3.2.8.1. Purpose of feature

The teacher can create groups and assign instructor role to a student or add a teacher to a group. Whenever a teacher or instructor shares the video in the group, all group members are notified about it. Any group member can at any time stop sharing the video in the group. The teacher can add a Student to the group. Every group member has a role assigned, that defines members capabilities, so that the group can be managed by more than one person.

#### 3.2.8.2. Associated functional requirements

##### 3.2.8.2.1. Functional Requirement 1

The teacher creates a group by specifying its name, description. The teacher who created a group becomes a group owner.

#	Stimulus/Response sequences	
1	<b>Summary</b>	<b>The teacher creates a group</b>
	Stimulus	The teacher clicks a create group button.
	Response	The system displays creating a group page.
	Stimulus	The teacher specifies a unique group name and description, then clicks a create button.
	Response	The system creates a group with specified information. The system sets the group owner of the created group to the user who created the group.
2	<b>Summary</b>	<b>The teacher creates a group and specifies already taken group name</b>
	Stimulus	The teacher clicks a create group button.
	Response	The system displays a creating group page.
	Stimulus	The teacher specifies a group name that is already taken and clicks the create button.
	Response	The system displays an error message about the already taken group name. The system does not create a new group.



#### 3.2.8.2.2. Functional Requirement 2

The group owner or teacher can add a user by specifying their email address or full name and role. If a teacher is added to the group, they have a teacher role assigned to them. When a student is added to the group, they have a student role.

#	Stimulus/Response sequences	
1	Summary	<b>The group owner or teacher adds a user to the group by specifying email address or full name.</b>
	Stimulus	The group owner or teacher clicks an add user button.
	Response	The system opens a dialog with a search bar. .
	Stimulus	The group owner or teacher enters the email address or full name of a user that they want to add to a group.
	Response	The system displays a list of matching users.
	Stimulus	The group owner or teacher selects the desired user and clicks the add button.
	Response	The system adds specified user to the group with appropriate role.

#### 3.2.8.2.3. Functional Requirement 3

The group owner or teacher can remove a user from the group.

#	Stimulus/Response sequences	
1	Summary	<b>The group owner or teacher removes a user from the group.</b>
	Stimulus	The group owner or teacher selects the user and clicks the remove button.
	Response	The system displays a confirmation dialog
	Stimulus	The group owner or teacher confirms removal of the group participant
	Response	The system removes the selected user from the group and closes the confirmation dialog.
	Response	If the group owner or teacher did not confirm group member removal on the confirmation dialog, the system closes the dialog and does not remove the user from the group.

#### 3.2.8.2.4. Functional Requirement 4

The group owner or teacher can change the student's role to instructor in the group or degrade instructor to the student.

#	Stimulus/Response sequences	
1	<b>Summary</b>	<b>The group owner or teacher change the student's role to instructor</b>
	Stimulus	The group owner or teacher selects the student and changes their role to instructor
	Response	The system updates the role of the selected student to instructor.
2	<b>Summary</b>	<b>The group owner or teacher degrades the instructor to the student.</b>
	Stimulus	The group owner or teacher selects the instructor and changes their role to student
	Response	The system updates the role of the selected instructor to student.
3	<b>Summary</b>	<b>The group owner or teacher tries to change group owner's role</b>
	Stimulus	The group owner or teacher selects the group owner and changes their role
	Response	The system displays an error message that the group owner role can not be changed
4	<b>Summary</b>	<b>The group owner or teacher tries to change teacher's role</b>
	Stimulus	The group owner or teacher selects the teacher and changes their role
	Response	The system displays an error message that the teachers role can not be changed

#### 3.2.8.2.5. Functional Requirement 5

The group owner deletes the group. When a group is deleted, all group members are removed from the group. All videos that have been shared in the group are no longer shared in the group. The system sends notification to all group participants that the group has been deleted.

#	Stimulus/Response sequences	
1	Summary	The group owner deletes the group
	Stimulus	The group owner clicks the delete group button.
	Response	The system displays the confirmation dialog.
	Stimulus	The group owner confirms group deletion
	Response	The system deletes the group. The system sends notification to all group members that the group has been deleted.
	Stimulus	The group owner does not confirm group deletion
	Response	The system closes the dialog and does not delete the group

#### 3.2.8.2.6. Functional Requirement 6

The group owner, teacher or instructor can share a video in the group by selecting a video in their profile and choosing a group to share the video. When a user shares the video in the group, all group members receive a notification. The user who shared the video can stop sharing it in the group so it's no longer available for the group participants.

#	Stimulus/Response sequences	
1	Summary	The group owner, teacher or instructor shares a video in the group.
	Stimulus	The group owner, teacher or instructor selects a video and clicks the share button.
	Response	The system displays a dialog with input field to choose a group. The system shows available groups where the user can share a video.
	Stimulus	The group owner, teacher or instructor selects a group to share a video and clicks the share button.

	Response	The system shares the video in the selected group. The system sends a notification to all group members of a selected group about a new shared video.
2	Summary	<b>The group owner, teacher or instructor stops sharing the video in the group</b>
	Stimulus	The group owner, teacher or instructor selects a video that is shared in one or more groups and clicks the stop sharing button.
	Response	The system displays a dialog with input field to choose a group. The system shows groups where the video is shared.
	Stimulus	The group owner, teacher or instructor selects a group and clicks the stop sharing button.
	Response	The system stops sharing the video in the selected group

#### 3.2.8.2.7. Functional Requirement 7

The group member can see all videos shared in the group on the group page. The group member can select a video to watch from the list of videos in the group.

#	Stimulus/Response sequences	
1	Summary	<b>The group member sees list of videos in the group</b>
	Stimulus	The group member opens a group page.
	Response	The system displays the list of videos that are shared in the group.
	Stimulus	The group member selects a video from the list and plays it.
	Response	The system opens a watching video page with the selected video

### 3.2.9. Recommending videos

#### 3.2.9.1. Purpose of feature

The system gathers data about the user, like user preferences, video history, video ratings or comments. Then evaluates data and based on it recommends videos to the user.

### 3.2.9.2. Associated functional requirements

#### 3.2.9.2.1. Functional Requirement 1

The user can set personal preferences by modifying preferences on the profile page.

#	Stimulus/Response sequences	
1	Summary	<b>The user sets personal preferences on profile page</b>
	Stimulus	The user specifies favourite study programs, tags, preferred length interval of the video in the personal preferences
	Response	The system creates user preferences basing on the user's personal preference and user behaviour

#### 3.2.9.2.2. Functional Requirement 2

The system recommends video to user

#	Stimulus/Response sequences	
1	Summary	<b>The system evaluates gathered data and based on result recommends videos</b>
	Stimulus	The user enters to home page
	Response	The system displays recommended videos to user

#### 3.2.9.2.3. Functional Requirement 3

The system gathers data about the user

#	Stimulus/Response sequences	
1	Summary	<b>The system creates user behaviour based on gathered data</b>
	Stimulus	The user watches videos, reacts on videos and searches for videos
	Response	The system registers user behaviour

### 3.3. Performance requirements

The system must meet the following performance targets:

- The system must respond to search queries in less than 5 seconds
- The system must be able to find recommendations for a user in less than 5 seconds

### 3.4. Software system attributes

The list of software attributes that the system must fulfil can be found in the table below.

<b>Reliability</b>	The system must be able to allow at least 1000 users to watch video at the same time. The system must be functional for a user with an internet connection with a speed of at least 10 Mb/s.
<b>Availability</b>	The system must have a 95% availability.
<b>Security</b>	The system must store all passwords encrypted. The system must ensure that all network traffic between client applications (Android application and web application) is secured using TLS.
<b>Portability</b>	The Android application must support Android in version 8.0 or higher. The web application must support Chrome browser in version 81 or higher.