Kontroll Client Data Structure

# Introduction

## Page and Page Segments

Page segments and scopes will be explained here.

## Static and Dynamic DOM elements

Each *static* DOM element is directly connected to a page segment, which contains all necessary data in order to render and interact with the element. A segment can contain two types of *dynamic* DOM elements: content and caption.

## Content and Caption

Both caption and content are very similar in principle; they are handled differently because of their differences in complexity. The caption of a segment is a fairly static, singular label of any UI element such as buttons (usually simple text or images), which will differ only according to language settings. In contrast content is a complex structure of several DOM elements (content items and their children) itself. They can consist of many different HTML tags and their inclusion to the document as well as their actual data content can depend on a various set of conditions.

# Data Structure for Content

Because of its complexity, content is layered in several levels:

* Document level
* Chapter level
* Conditions level
* Rendering Level

Each level consists of a tree data structure with specific types of keys and values. The actual content values to be rendered are only to be found at the lowest level of the hierarchy. The above levels are just logical levels for proper content management.

## Document Level

The document level is the direct connection between Kontroll data and the browser’s DOM. Page segments are connected to static DOM elements via their *scope*, whereas each page segment represents a scope within a page and the full scope name of a page segment renders the *id* of the according DOM element.

|  |  |
| --- | --- |
| *KontrollDataTree* | *KontrollDataNode* |
| ScopeTree | ScopeNode  * *Id:* domId * *Value:* ContentChapterTree * *Value:* CaptionTree |
| ContentChapterTree | ContentChapterNode  * *Id:* itemNumber * *Value:* ContentConditionsTree |
| ContentConditionsTree | ContentConditionsNode  * *Id:* conditions * *Value:* ContentRenderingTree |
| ContentRenderingTree | ContentRenderingNode  * *Id:* preliminary, deleted * *Value:* ContentItem |

## Chapter Level

Any document is usually divided in chapters that follow a specific order and hierarchy, known as the outline of a document. In Kontroll the content of a page segment is considered a *content document* of its own, whereas each content item is outlined and identified by an item number.