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Those things that were once on the tip of your tongue can now be found with the tips of your fingers.
Find them on Electrical Installation Wiki
www.electrical-installation.org
Download the Electrical Installation Guide 2018
What is the content of this guide/wiki?

- a technical bible, created 25+ years ago
- helping electrical engineers (consultants, contractors …) to design safe and efficient electrical installations according to international standards (IEC), such as the IEC 60364
- state-of-the-art knowledge
- written and updated by our experts
- 600+ illustrations, 200+ math formulas, 230+ tables …
- has been translated in 10+ languages
The Electrical Installation Wiki is:

- the same content as the Electrical Installation Guide (EIG)
- on the web, accessible by anyone
- a wiki, like wikipedia = open to external contributions
- the english wiki is live since 2010
The book contains 17 chapters (topics):

A. General rules of electrical installation design
B. Connection to the MV utility distribution network
C. Connection to the LV utility distribution network
D. MV and LV architecture selection guide for buildings
E. LV Distribution
F. Protection against electric shocks and electrical fires
G. Sizing and protection of conductors
H. LV switchgear: functions and selection
I. Overvoltage protection
J. Energy efficiency in electrical distribution
K. Power Factor Correction
L. Power Factor Correction
M. Power harmonics management
N. Characteristics of particular sources and loads
O. Photovoltaic (PV) installation
P. Residential and other special locations
Q. ElectroMagnetic Compatibility (EMC)
R. Measurement
Chapter A

General rules of electrical installation design

Section with 9 paragraphs

Each chapter has several sections, generally composed of several paragraphs
Let’s take a look at how this navigation « structure » has been implemented in the new version of the Electrical Installation Wiki …
How did we implement this solution in Mediawiki, with the help of Semantic Mediawiki?
How is the navigation automated in EIG Wiki?

There is only one source for the book structure and all navigation related tools:

- MediaWiki:Eig-hierarchy

Maintenance is simplified: only one page to modify.
How is the main Hierarchy page used – general principle

Each “inside” page in the book has a “Has parent page” property. This property is added with the help of Hierarchy Builder extension, using #hierarchyParent.

```
{{#set:Has parent page={{#hierarchyParent:{{FULLPAGENAME}}}|{{MediaWiki:eig-hierarchy}}|hierarchyargtype=wikitext|link=none}}}}
```

In addition, the first level (chapter pages) are set with the main page as parent.

Note: we had to update the extension to take into account extra characters in page titles (multilinguism)

```
$currentPagePattern = '/\[\[\'. 'Q' . str_replace('/','' ,$targetPageName) . '\E' . '\]]\]/';
$numMatches = preg_match_all( $currentPagePattern, '\Q'.str_replace('/','',$row).'\E', $matches );
```
Automatic generation of chapters Table of Contents

Each chapter has its own **summary**

It is generated automatically from the main hierarchy with #hierarchySubtree

{{#hierarchySubtree:{{FULLPAGENAME}}}{{Mediawiki:eig-hierarchy}}hierarchyargtype=wikitextsep=<br />format=ul}}
Side navigation Menu

For the left navigation menus (1 per chapter), the chapter hierarchy is generated in a similar way using \#hierarchySubtree

```
{{#hierarchySubtree:{{#var:chapter-toc-page}}|{{Mediawiki:eig-hierarchy}}|hierarchyargtype=wikitext|sep=<br />|format=ul}}
```

This chapter hierarchy is then invoked with the Dokit SideSummary extension, which displays and manages the sidemenu on the left (navigation menu inside the current Chapter)

```
{{#sideSummary:chapter-structure-mw-message}}
```

Note: this is also compatible with the DisplayTitle extension, so if a DisplayTitle has been defined for a particular page, the link text in the sidemenu will reflect this Display Title
To implement the “prev – next” buttons at the bottom of page (navigation to previous next page in the hierarchy), we have modified the `formatBreadcrumb` function in HierarchyBuilder.php to generate suitable html.

The CSS classes previous and next are used to manage the look&feel of the links (big buttons).

```php
private static function formatBreadcrumb( $previous, $parent, $next ) {
    $breadcrumb = "<ul class='pager'>" . PHP_EOL;
    if ( $previous != null ) {
        $breadcrumb .= "<li class='previous'>[" . $previous . "| " . "Previous" . "]</li>" . PHP_EOL;
    } else {
        $breadcrumb .= "" . PHP_EOL;
    }
    if ( $next != null ) {
        $breadcrumb .= "<li class='next'>[" . $next . "| " . "Next" . "]</li>" . PHP_EOL;
    } else {
        $breadcrumb .= "" . PHP_EOL;
    }
    $breadcrumb .= "</ul>" . PHP_EOL;
    return $breadcrumb;
}```
Breadcrumbs

The user can also navigate in the book with the breadcrumbs at the top of the page.

This is done with the **Semantic Breadcrumb Links** extension, also working with the "Has parent page" property only.

```php
$GLOBALS['egSBLPropertySearchPatternByNamespace'] = array(
    NS_MAIN => array(
        SBL_PROP_PARENTPAGE,
        SBL_PROP_PARENTPAGE,
        SBL_PROP_PARENTPAGE,
        SBL_PROP_PARENTPAGE,
    
    )
)
In complement …

Working with SMW gave us some more ideas for the structuration of the book/wiki

Each figure or table in the book (wiki) is marked as a property of the page where it is displayed:

- "Has figure id", "Has table id"

It allows the creation of an index of figures and tables, and where they can be found

There is more to explore in the future, like possibly providing the possibility to search pages by topic, standards, local country specificities … provided that we are able to define the relevant Semantic Properties