# Using CSS to style the PDF output

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syncro soft

<oXygen/> XML Editor

# Problems with XSL-FO PDF generation

You need:

- Good XSLT knowledge to make customizations
- Know how to create a plugin or a customization folder for the DITA OT
- Where to find various parameters and templates which need to be overwritten
- XSL-FO knowledge to make customizations
- Compatibility problems with various DITA OT versions

# CSS-based PDF publishing

Advantages:

- Lots more people are comfortable with CSS
- Use CSS both for XHTML and PDF styling
- CSS is much easier to learn than XSL-FO
- Majority of users do not need completely different styling for the Web or print outputs
- Consistent editing/publishing solution

# Two main possibilities to obtain PDF from DITA using DITA OT

- Create a single XHTML document from DITA input, apply CSS and obtain PDF

  https://github.com/xmlrocks/dita-ot-pdf-css-page
- Create a single DITA merged document DITA input, apply CSS and obtain PDF

  https://github.com/oxygenxml/dita-css

# XHTML + CSS = PDF

Advantages:

- CSS can be shared with web published content
- Better support in PDF processors

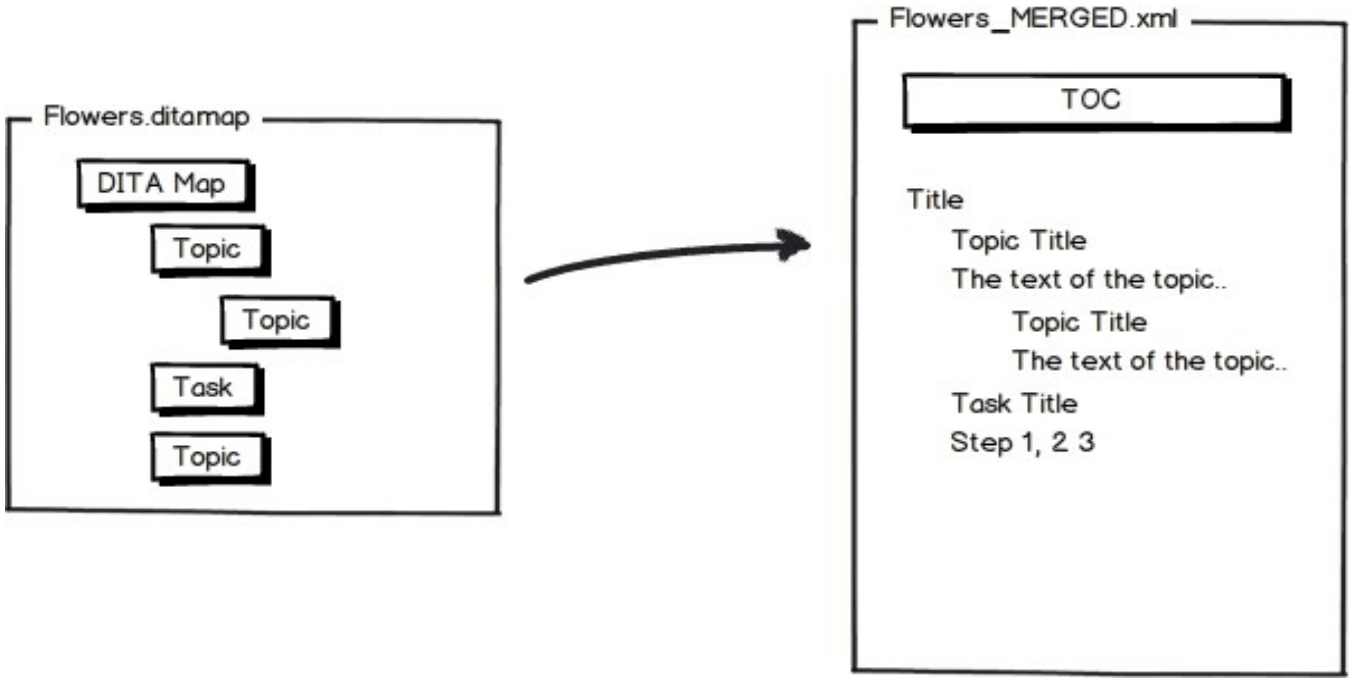
Disadvantage:

- Less semantic meaning in HTML output

# DITA + CSS = PDF

1. Creates a single file containing the resolved, or **merged** DITA map with all its topics
2. Apply XSLT post-processing.
3. Apply CSS styles and obtain the PDF output using either Antenna House, Prince XML or Oxygen Chemistry.

# Create a single file containing the resolved, or "merged" DITA map with all its topics

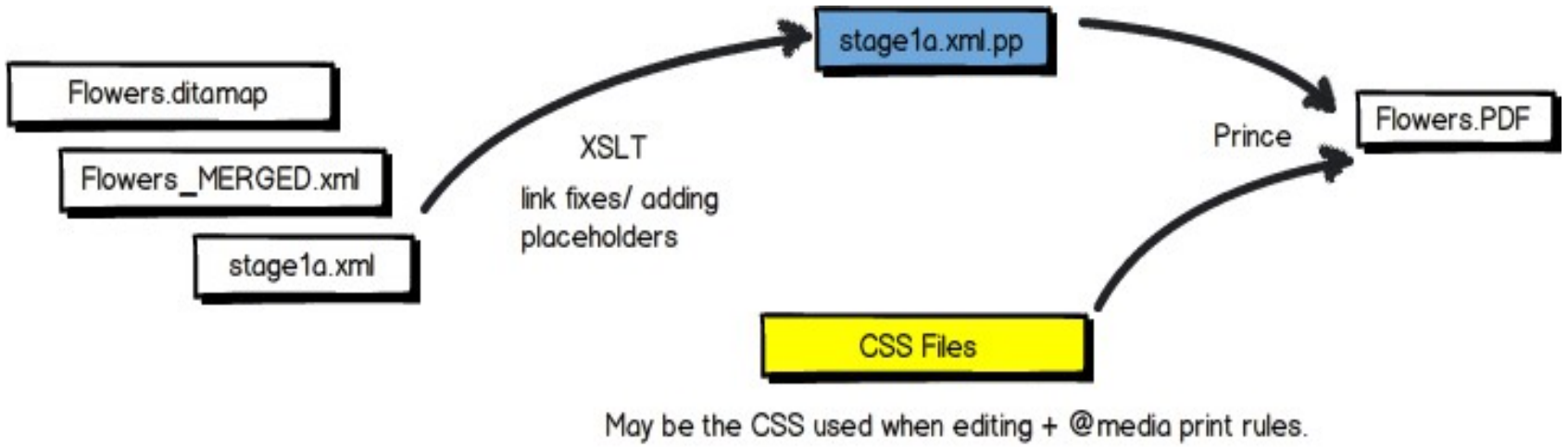


# Post-processing XSLT stage

Examples:

- Mark every topic reference to a chapter
- Cleaning the TOC, keeping only the navtitles.
- Add various additional elements, for example for front page.

# Add CSSs to the merged XML output and process to PDF



# Fonts

- Dynamically load fonts
- Specify fallback fonts

```
@font-face {
    font-family:"roboto";
    font-style:normal;
    src:url("../fonts/RobotoCondensed-Regular.ttf");
}

 front-page-title {
        ……..……..
         font-size:2em;
         font-family:roboto, serif;
         font-weight:bold;
    }
```

# Using Web fonts

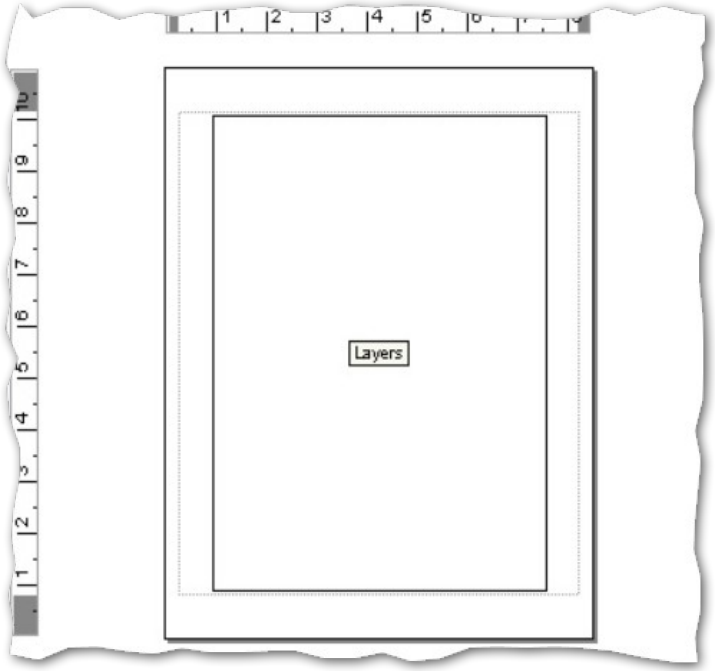
- Using Google fonts:

```
@import url('https://fonts.googleapis.com/css?
family=Montserrat:300,300i,400,500,700i');

section title {
    font-family: Montserrat, Serif;
    font-weight:500;
}
```

# Setting page margins and size:
# https://www.w3.org/TR/css3-page/

```
@page {
   padding-top:0.2em;
   padding-bottom:0.2em;
   /* Letter */
   size: us-letter;
   margin: 1in;
}
```



# So what's the difference between padding and margin?

Padding is space inside the border.

Margin is space outside the border.

# Using named pages:

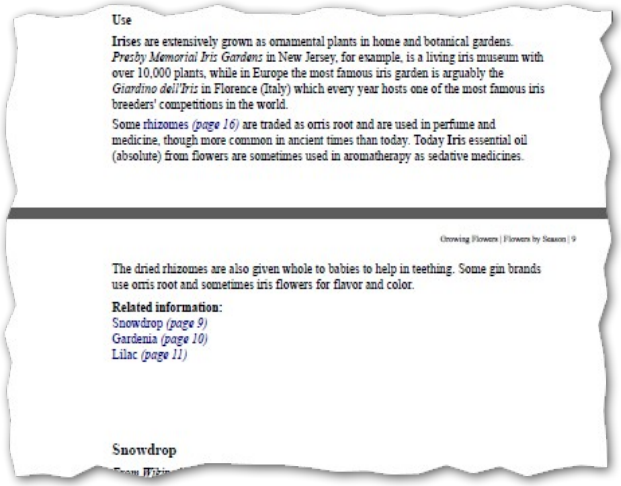
```
@page table-landscape {
        size:landscape;
 }
@page table-portrait {
        size:portrait;
 }
*[class~="topic/table"][orient='land'] {
     page: table-landscape;
}
*[class~="topic/table"][orient='port'] {
     page: table-portrait;
}
```

# Changing the column count:

```
@page two-columns{
        column-count: 2;
        column-gap: 1in;
 }
*[class~="topic/topic"][outputclass='two-columns'] {
     page: two-columns;
}

*[class~="topic/topic"][outputclass='two-columns'] title {
   column-span: all;
}
```

# Page breaks:
# https://www.w3.org/TR/css-break-3/



**Use**

**Irises** are extensively grown as ornamental plants in home and botanical gardens. *Presby Memorial Iris Gardens* in New Jersey, for example, is a living iris museum with over 10,000 plants, while in Europe the most famous iris garden is arguably the *Giardino dell'Iris* in Florence (Italy) which every year hosts one of the most famous iris breeders' competitions in the world.

Some rhizomes *(page 16)* are traded as orris root and are used in perfume and medicine, though more common in ancient times than today. Today **Iris** essential oil (absolute) from flowers are sometimes used in aromatherapy as sedative medicines.



The dried rhizomes are also given whole to babies to help in teething. Some gin brands use orris root and sometimes iris flowers for flavor and color.

**Related information:**

Snowdrop *(page 9)*
Gardenia *(page 10)*
Lilac *(page 11)*

**Snowdrop**

```
*[outputclass= "break-before"] {
    page-break-before:always;
}
```

# Avoid breaking pages

```
*[class ~= "topic/title"] {
    page-break-after:avoid;
}
*[class ~= "topic/row"] {
    page-break-inside:avoid;
}
*[class ~= "topic/strow"] {
    page-break-inside:avoid;
}
*[class ~= "topic/fig"] {
    page-break-inside:avoid;
}
```

# Page mirroring

https://www.w3.org/TR/css3-page/#spread-pseudos

```
@page :left {
 margin-left: 3cm;
 margin-right: 4cm;
}

@page :right {
 margin-left: 4cm;
 margin-right: 3cm;
}
```

# First page, last page and blank pages

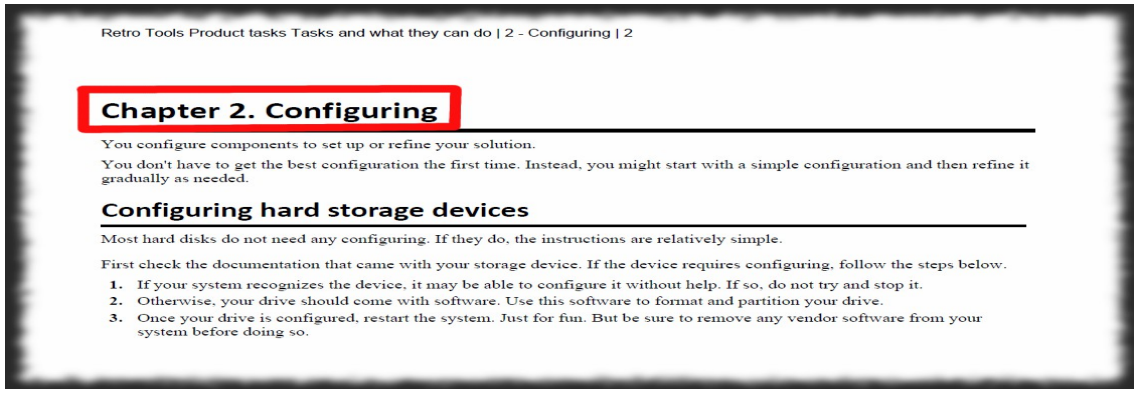
https://www.w3.org/TR/css3-page/#spread-pseudos

```
@page :first {
  border-top: 5pt solid yellow;
}
@page :last {
  border-bottom: 5pt solid yellow;
}
@page :blank {
  background-color:gray;
}
```

# Counters

## https://www.w3.org/TR/CSS2/generate.html

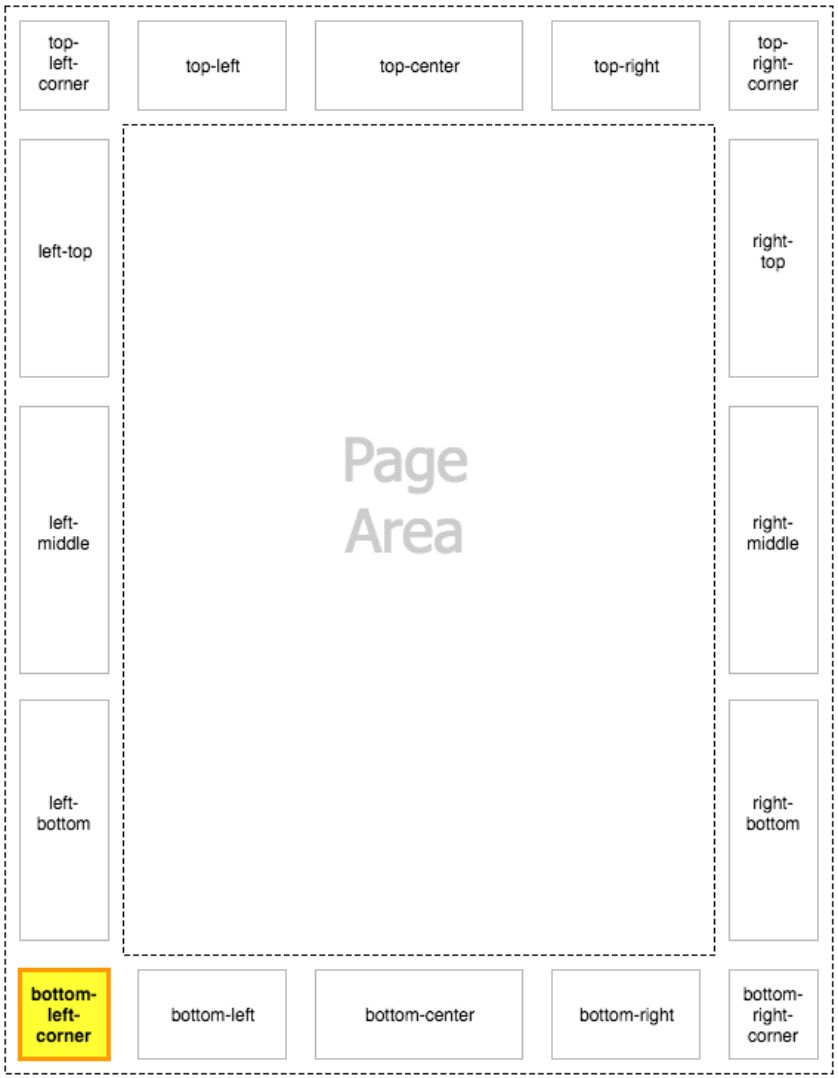
Counting chapters:



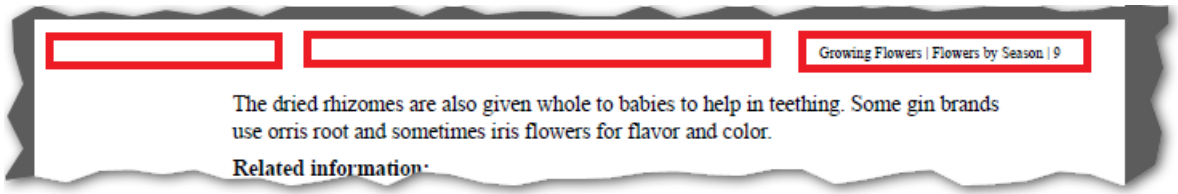

```
*[class ~= "topic/topic"][is-chapter]{
    counter-increment:chapter;
}
*[class ~= "topic/topic"][is-chapter] > *[class ~= "topic/title"]:before {
    content: "Chapter " counter(chapter) ". ";
}
*[class ~= "topic/topic"][is-part]{
    counter-increment:part;
    counter-reset:chapter;
}
```

# Page Margin Boxes

https://www.oxygenxml.com/doc/versions/19.1/ug-chemistry/topics/ch_page_formatting.html



# Counting pages

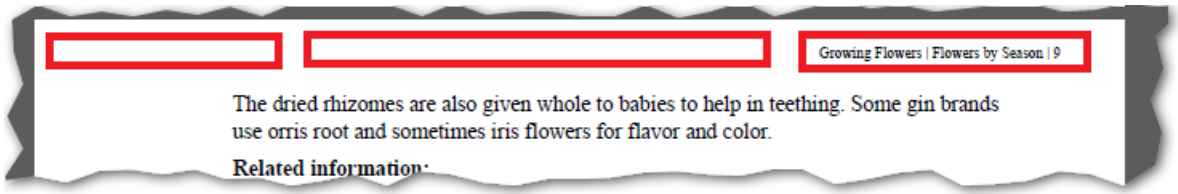



First page starts after the table of contents:

```
*[class ~= "map/map"] > toc + *[class ~= "topic/topic"]{
   counter-reset: page 1;
}
```

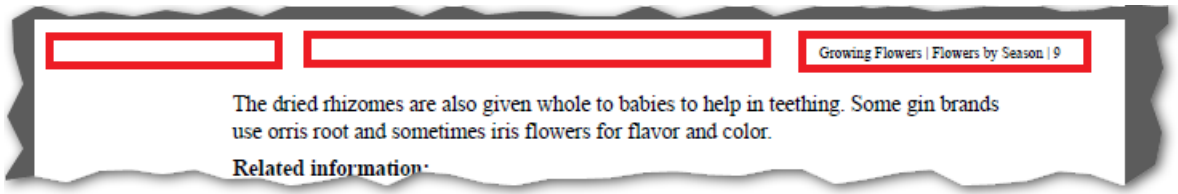
# Generating static content

## https://www.w3.org/TR/css-gcpm-3/




```
/* Collect the chapter titles. */
*[class ~= "topic/chapter”] > *[class ~= "topic/title"] {
    string-set: chaptertitle  " | " counter(chapter) " - " content();
}
```

# Page headers




```
@page {
    @top-right {
      content: string(maptitle) " | " string(chaptertitle) " | " counter(page);
      font-size:8pt;
    }
}
```

# Front page

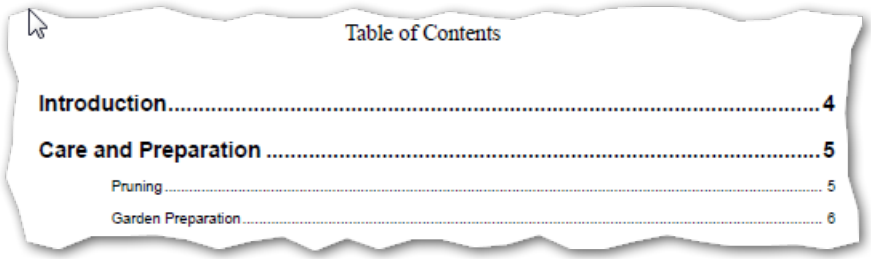
```
front-page {
    page: front-page;
}
front-page-title {
    display:block;
    text-align:center;
    margin-top:3in;
    font-size:2em;
    font-family:arial, helvetica, sans-serif;
    font-weight:bold;
}
@page front-page {
    @top-left          {          content:none }
    @top-center        {          content:none }
    @top-right         {          content:none }
    @bottom-left       {          content:none }
    @bottom-center     {          content:none }
    @bottom-right      {          content:none }
}
```

# Custom background image in the front page

https://github.com/radu-pisoi/com.oxygenxml.pdf.css.customization.sample

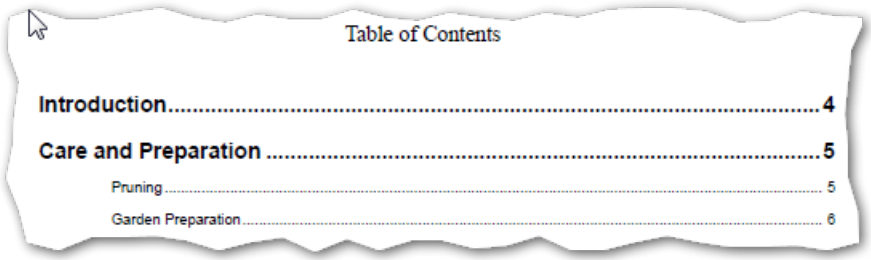
```
 // Background image for the cover page.
@page front-page{
    background-image: url("images/author_cover_background.svg");
    background-size: 8.5in 11in;
    background-position: right bottom;
}
```

# Table of Contents Layout




```
@page table-of-contents {
   @top-left {      content: none; font-size:8pt;}
   @top-center {    content: none }
   @top-right {     content: none; font-size:8pt;}
   @bottom-left {   content: none }
   @bottom-right {  content: none }
}
@page table-of-contents {
   @top-left {
      content: "Contents | " counter(page, lower-roman);
   }
 }
*[class ~= "map/map"] > map {
   display: block;
   page: table-of-contents;
}
```

# Table of contents Composition




```
*[class ~= "map/topicref"] *[class ~= "topic/navtitle"]:after,
/* For the Index page we do not have a navtitle, but a linktext */
*[class ~= "map/topicref"] *[class ~= "map/linktext"]:after {
    display:inline;
    content: leader('.') target-counter(attr(href), page);
    link:attr(href);
    -ah-link:attr(href);
    -oxy-link: attr(href);
}
```

- CSS Leaders: https://www.w3.org/TR/css-content-3/
- Target Counter: https://www.w3.org/TR/css-gcpm-3/#target-counter
- Links

# Frontmatter and Backmatter

```
front-matter, back-matter {
    page: matter-page;
}

/* Put the topics on a separate page. */
front-matter > *[class ~= "topic/topic"], back-matter > *[class ~= "topic/topic"]{
  page-break-before: always;
}


@page matter-page {
    @top-left          {        content:none }
    @top-center         {        content:none }
    @top-right         {        content:none }
    @bottom-left        {        content:none }
    @bottom-center      {        content:none }
    @bottom-right       {        content:none }
}
```

# Image handling

```
*[class~="topic/image"] {
  content: attr(href, url);
 }

 *[class~="topic/image"][placement="inline"] {
   display: inline;
 }
 *[class~="topic/image"][placement="break"] {
   display: block;
 }

/*https://www.w3.org/TR/css3-images/#image-resolution*/

 *[class ~= "topic/image"] {
       prince-image-resolution: 120dpi;
       -ah-image-resolution: 120dpi;
       image-resolution: 120dpi;
   }
   *[class~="topic/image"][width] {
      width: attr(width, px);
   }
   *[class~="topic/image"][height] {
      height: attr(height, px);
   }
```

# Handling Tables

https://www.w3.org/TR/css-tables-3/#layout-principles

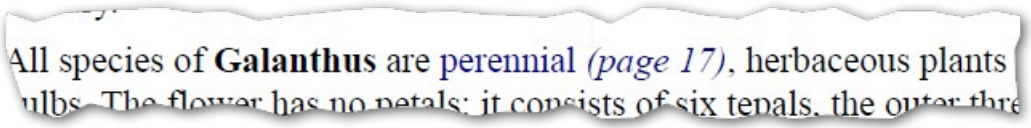
```
*[class~="topic/entry"][colspan] {
  table-column-span:attr(colspan);
}
*[class~="topic/entry"][rowspan] {
  table-row-span:attr(rowspan);
}
 *[class~="topic/table"] {
    display:block ;
 }
 *[class~="topic/table"] >    *[class~="topic/tgroup"] {
    display:table;
    table-layout: fixed;
 }
 *[class~="topic/table"] > *[class~="topic/title"] {
    display:block;
 }
 *[class~="topic/colspec"] {
    display:table-column;
    width:attr(colwidth) !important;
 }
```

# Handling Table Borders

| Installing | Configuring |
| --- | --- |
| Install hard drive | Configuring hard drive |
| Remove cover | Configuring cover |

```
*[class~="topic/row"]:not(:last-child) > *[class~="topic/entry"][rowsep = '1']{
  border-bottom:1pt solid black;
 }
```

# Links




```
*[class ~= "topic/xref"][href]:after {
    content: " (page " target-counter(attr(href), page) ")";
    link: attr(href);
 }
```

# Index Page

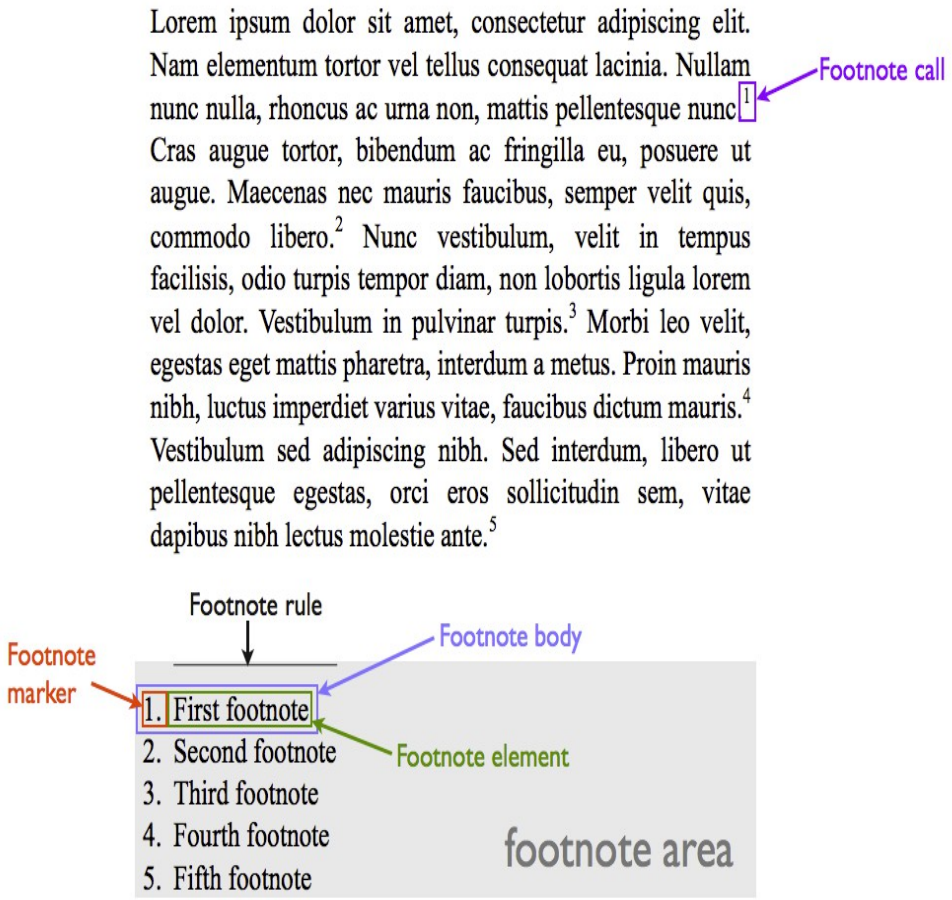
```
@page index {
        column-count: 2;
        column-fill: auto;
 }
index\.groups index-link {
    content: target-counter(attr(href), page) ",";
    link:attr(href);
    -ah-link: attr(href);
    -oxy-link: attr(href);
}

index\.groups index-link:last-child {
    content: target-counter(attr(href), page);
}
```

# Footnotes

https://www.w3.org/TR/css-gcpm-3/#creating-footnotes

```
*[class~="topic/fn"] {
    float: footnote;
    counter-increment: footnote;
}
*[class~="topic/fn"]::footnote-call {
    content: counter(footnote);
    font-size: 83%;
    vertical-align: super;
    line-height: none;
}
@page {
    @footnote {
        border-top: solid black thin;
        padding-top: 8pt;
    }
}
```



# Support for multiple languages

- Fallback fonts
- Static texts depending on the language
- Right to left writing

# Support for multiple languages

```
* {
    font-family: Calibri, SimSun, "Malgun Gothic";
}

*[class~="topic/note"]:lang(de):before {
  content: url('../../img/note.png') " Anmerkung: ";
  font-weight: bold;
}

*[dir='rtl'] {
    direction: rtl;
    unicode-bidi: embed;
}
```

# Oxygen-specific CSS extensions

```
section:after {
  contents: "Number of words: "
            oxy_xpath("count(tokenize(normalize-
space(string-join(text(), ")), ' '))";
}
```

# (XML/HTML + CSS)=PDF Processors

- Prince XML
- Antenna House
- PDFReactor
- Chemistry (embedded in Oxygen)
- Vivliostyle (HTML + CSS)

# Useful links

https://www.oxygenxml.com/doc/versions/19.1/ug-chemistry/

https://www.smashingmagazine.com/2015/01/designing-for-print-with-css/

# Thank You!

Questions?

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