Introduction to CSS for Paged Media

9 June 2022

Tony Graham
Antenna House, Inc.

Specifying a print stylesheet

```
<link rel="stylesheet" type="text/css" media="print" href="foo.css">
```

```
<style type="text/css" media="print">
…
</style>
```

Print media stylesheet

```css
@import url("PrintOnly.css") print; /* PrintOnly.css printing */

@media print {          /* applies to paged media */
  body {
    margin: 0;
    font-size: 10pt }
  }
@media screen {          /* applies to screen display */
  body {
    margin: 10%;
    font-size: 12px }
  }

body {                   /* applies to all media */
  font-family: sans-serif;
}
```

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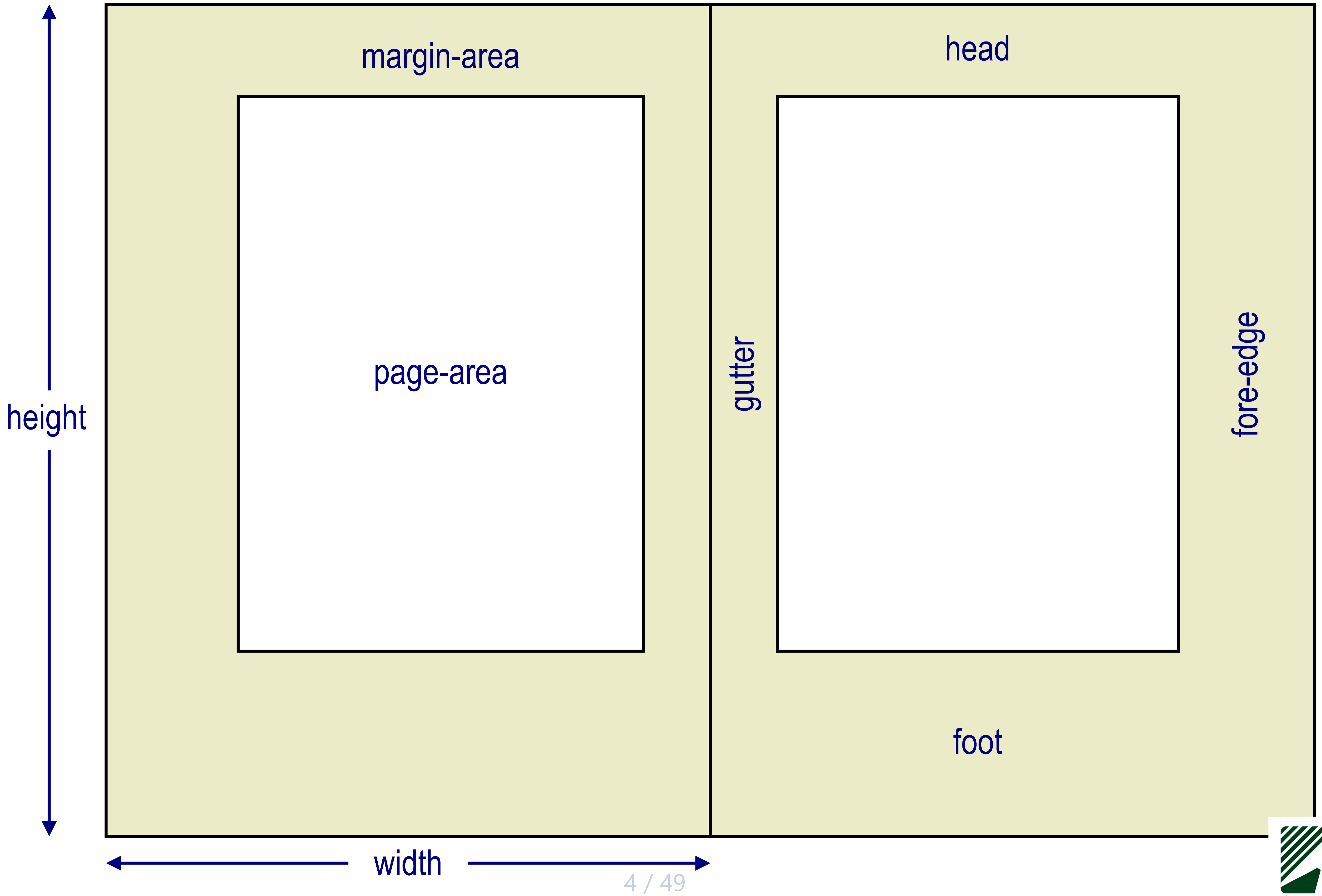
Pages


margin-area
head
page-area
gutter
fore-edge
height
foot
width

‘@page’ Rule

‘@page’ rule sets page size, margin, margin boxes

```
@page {
    size: 1920px 1080px; /* 1080p */
    margin: 0;
    margin-bottom: 50px;
}
```

Page size : ‘size’ property

- Specify width and height

```
@page {
  size: 210mm 297mm; ; /* ISO/JIS A4 */
}
```

- Use predefined page size

```
@page {
  size: A4; /* ISO/JIS A4 (210mm×297mm) */
}
```

- Also set orientation

```
@page {
  size: A4 landscape;    /* A4 landscape (297mm×210mm) */
}
```

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Page margins

- Margin shorthand:

```
@page {
   margin: 10%;   /* Top, bottom, left, right margins
                     each take up 10% of the page width */
}
```

- Individual margin properties

```
@page {
   /* Top/bottom margins are set to 2cm and left/right are
      set to 3 cm */
   margin-top: 2cm;
   margin-bottom: 2cm;
   margin-left: 3cm;
   margin-right: 3cm;
}
```

Named pages

```
@page Landscape {   /* "Landscape" named page */
  size: A4 landscape;
}
@page Portrait {    /* "Portrait" named page */
  size: A4;
}
table.WideTable {
  page: Landscape;  /* place a large table on the side of a
                       "Landscape" page */
}
html  {
  page: Portrait;   /* Use a "Portrait" page as the default */
}
```

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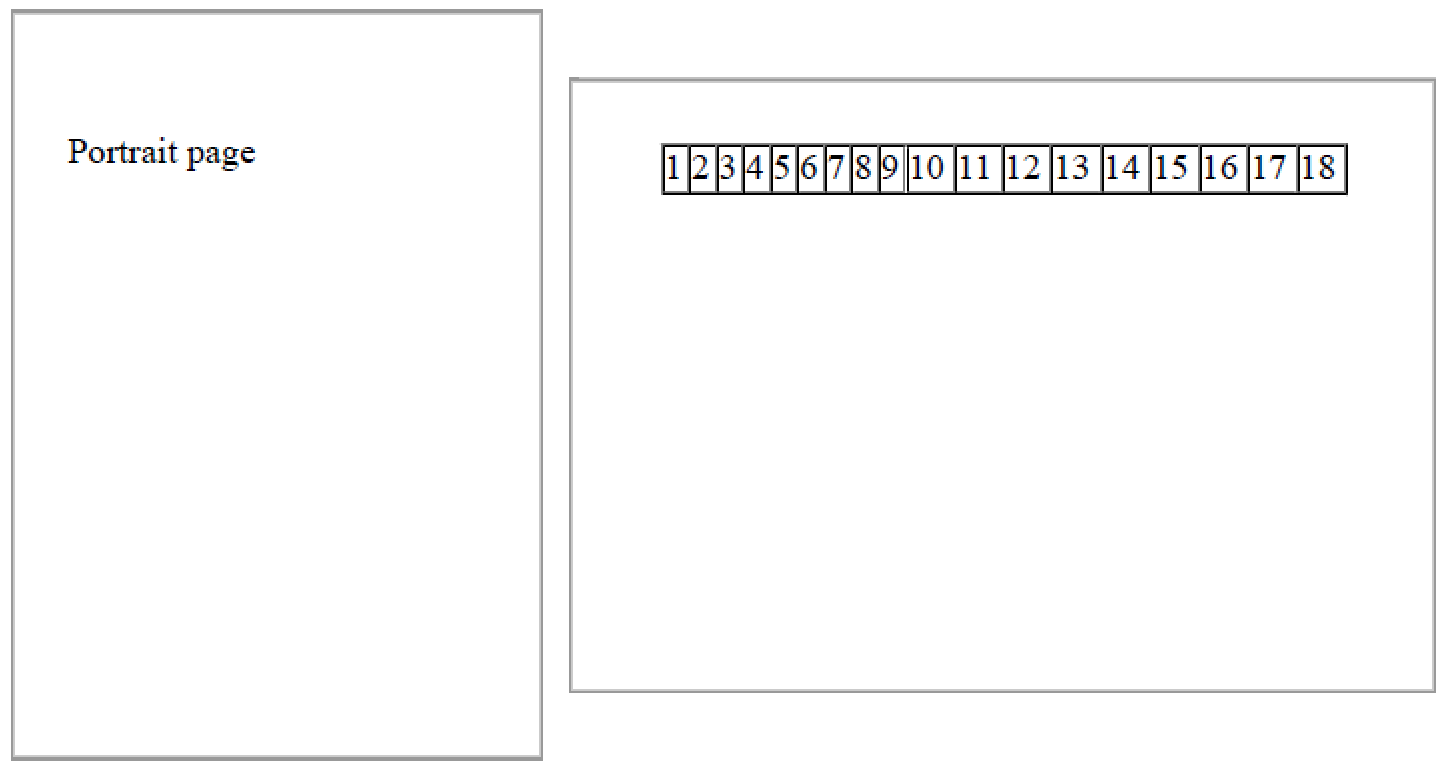
Named pages

```
<p>Portrait page</p>

<table class="WideTable" border="1" style="width:100%">
<tr>
<td>1</td>
…
<td>18</td>
</tr>
</table>
```



Portrait page

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

‘:left’, ‘:right’, ‘:first’ pages

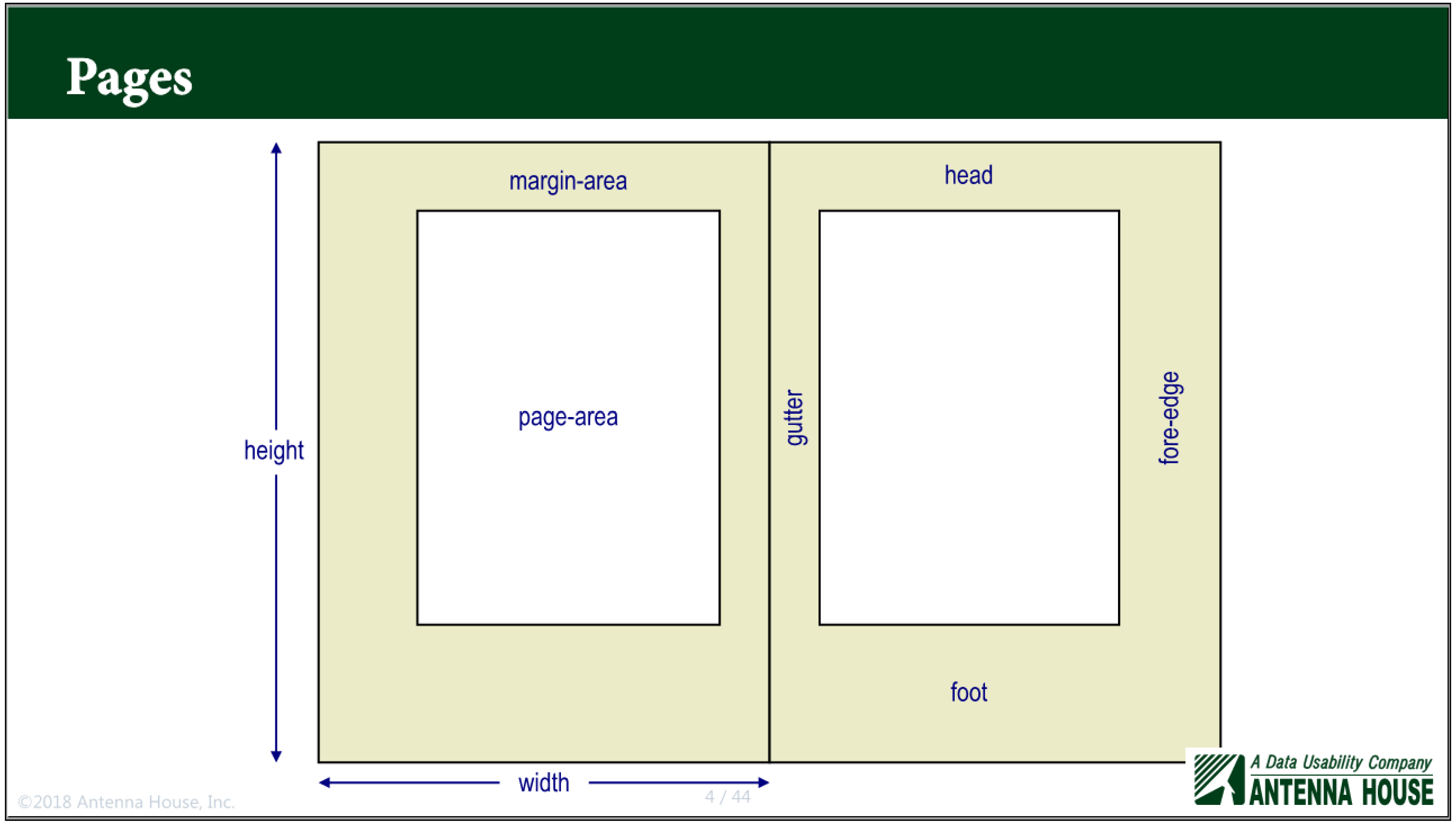
```
@page Chapter:left {       /* left-hand page */
  margin-left: 23mm;
  margin-right: 27mm;
}

@page Chapter:right {      /* right-hand page */
  margin-left: 27mm;
  margin-right: 23mm;
}

@page Chapter:first {      /* First page of a Chapter */
  /* hide page header */
  @top-right { content: none }
  @top-left  { content: none }
}
```

‘:last’ and ‘:only’ are AH Formatter extensions

Headers and footers


Pages

margin-area
head
page-area
height
gutter
fore-edge
foot
width
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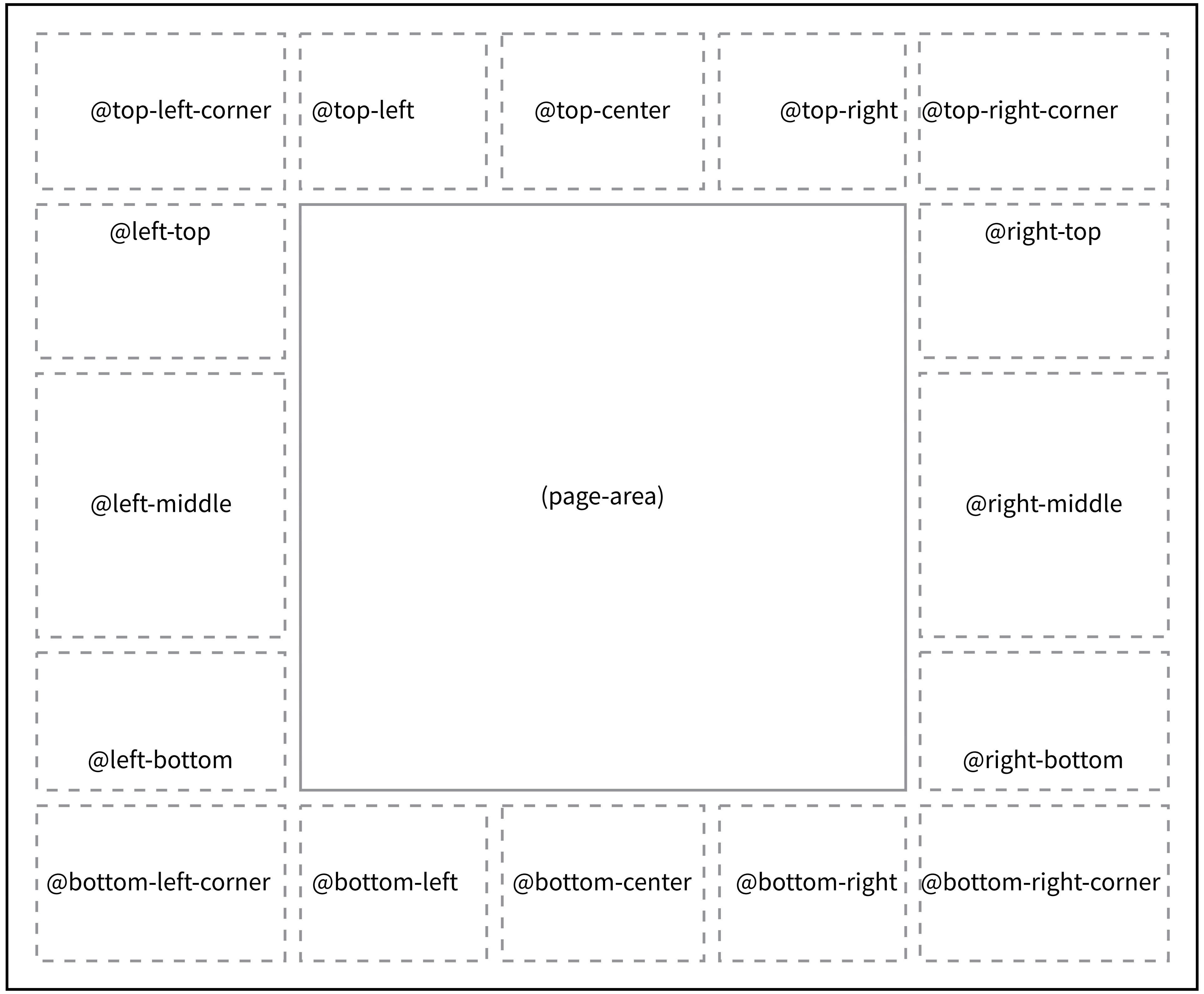
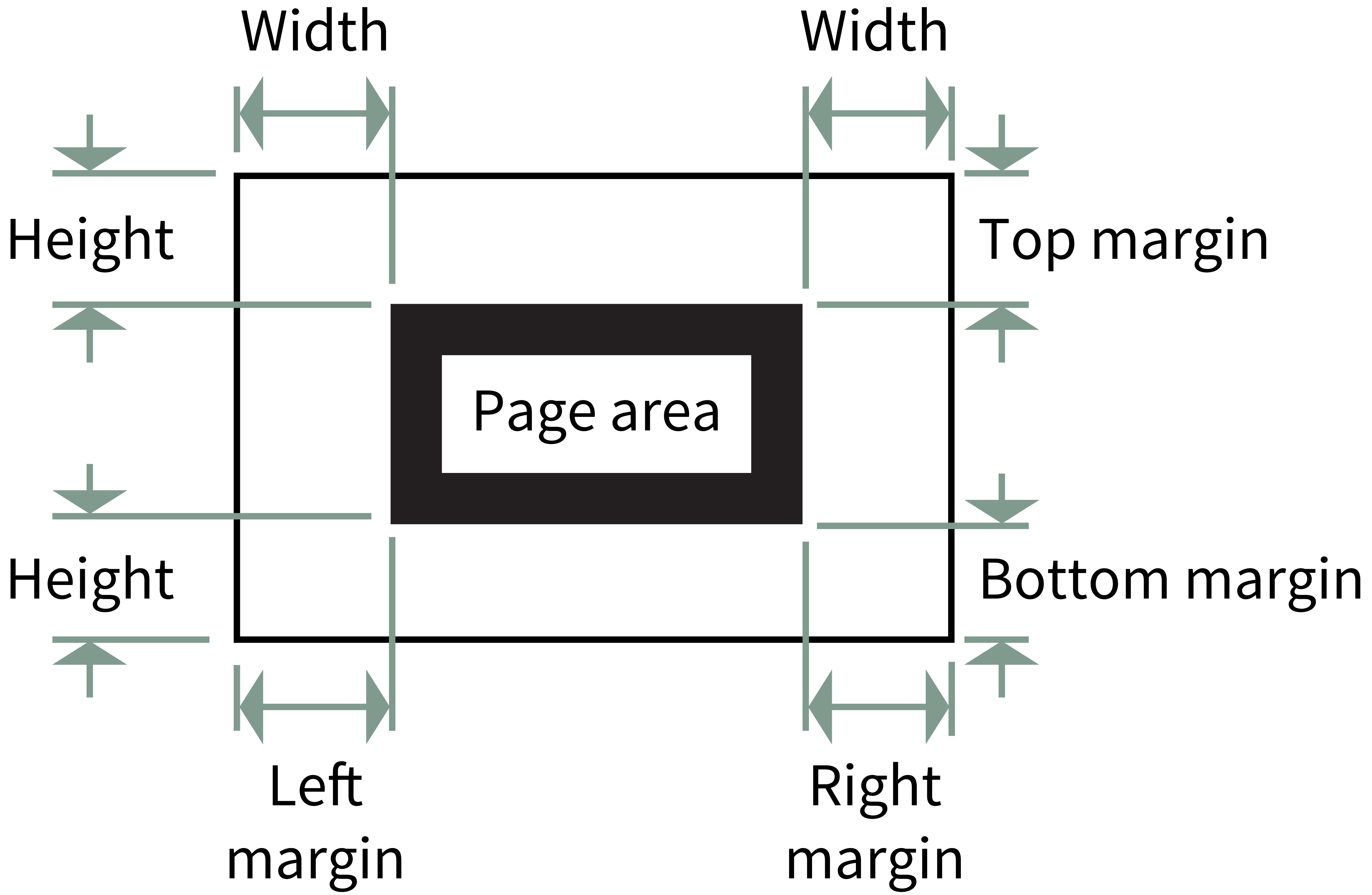
Page-margin boxes



Page-margin box dimensions

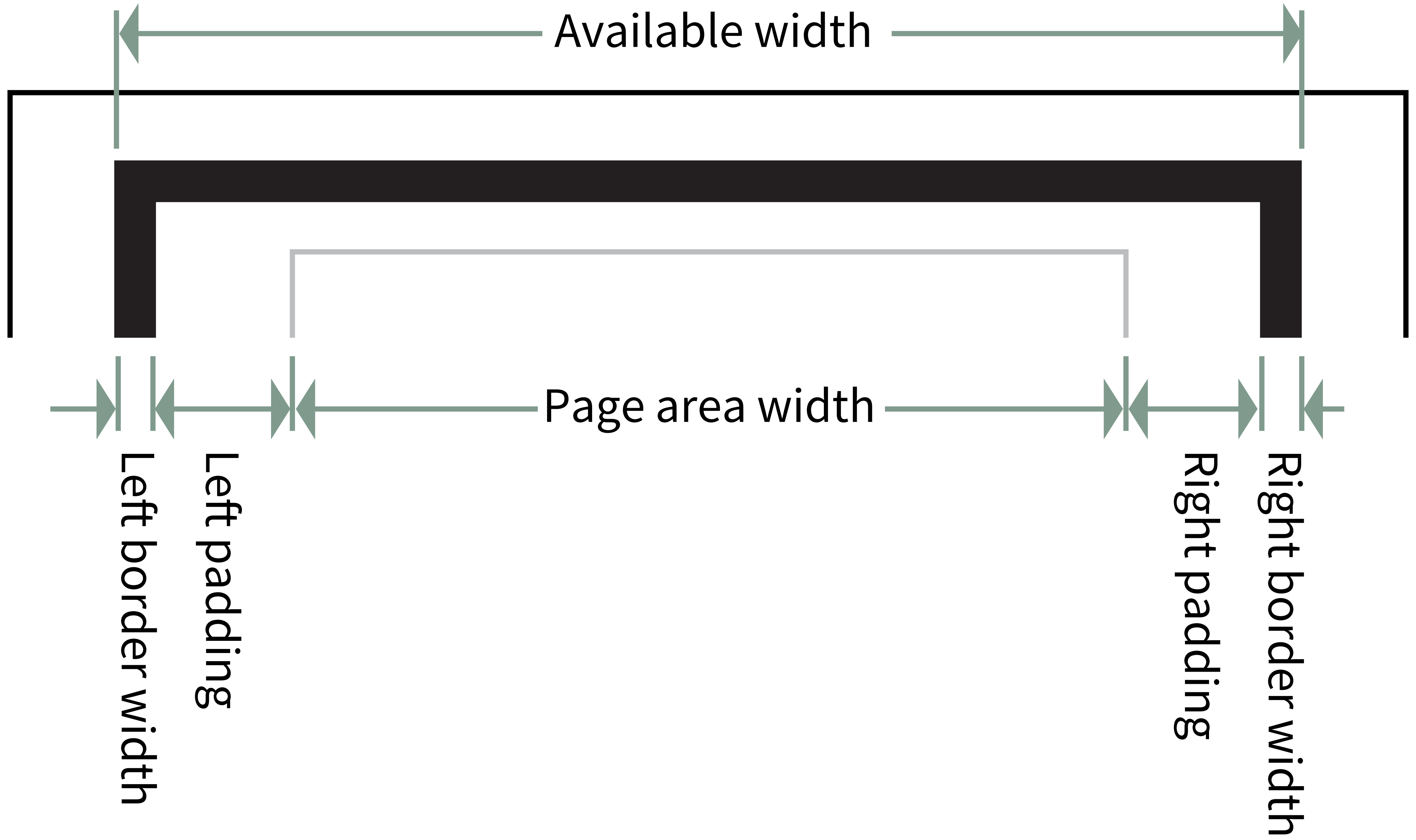
- Page-margin box that has content is ‘generated’
  - Takes part in size calculations
- Otherwise, similar to `display: none;`

Corner page-margin boxes



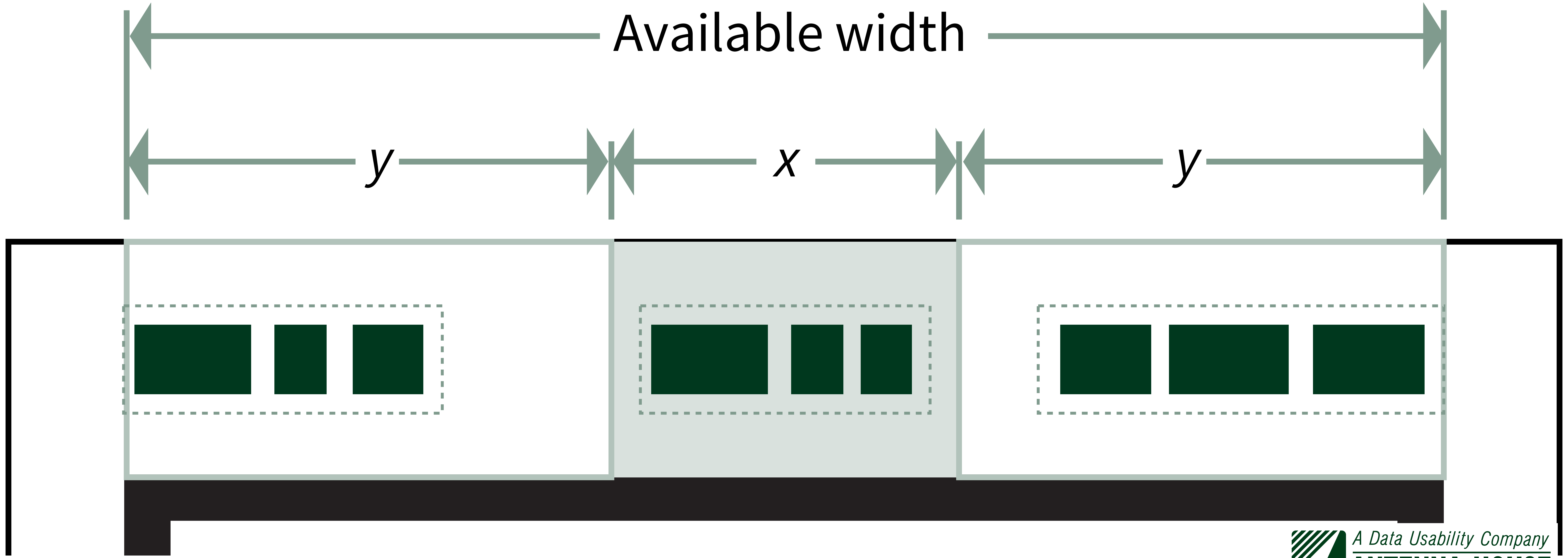
Top and bottom page-margin boxes

Available width divided among generated page-margin boxes



Center page-margin boxes

Center page-margin box, if generated, is always centered



‘string-set()’ and ‘string()’

Insert strings from the document into the margin boxes

```
@page {
  @top-left {
    content: string(Chapter);
  }
}

h1 { string-set: Chapter content(); }
```

‘string-set’ property

- Makes a named variable for a string

```
string-set: Chapter content();
```

- Reference in margin box ‘content’ property

```
content: string(Chapter);
```

- ‘string-set’ content list:
    - <string>
    - <counter()>
    - <counters()>
    - <content()> – String value of element, ::before, ::after, or first letter
    - attr(<attr-name>) – Attribute value
    - -ah-attr-from(...) – Attribute from ancestor element

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‘string()’ function

- Copy named string into document

```
@top-right {   /* Title in right-hand page header.*/
  content: string(Chapter);
}
```

- If string may be set multiple times on page

```
@page Index:right {
  @top-left {
    content: string(IndexTerm, first);
  }

  @top-right {
    content: string(IndexTerm, last);
  }
}
```

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Insert a running element

- ‘running()’ removes element from flow

```
.slide:not(#slide0) h1 {
    position: running(Title);
    font: 900 150%/1em "Minion Pro", serif;
    font-weight: 100;
    font-size: 75px;
    height: 100px;
    padding-top: 0;
    margin: 0;
    background: transparent;
    -ah-display-align: center;
}
```

- ‘element()’ inserts into margin box

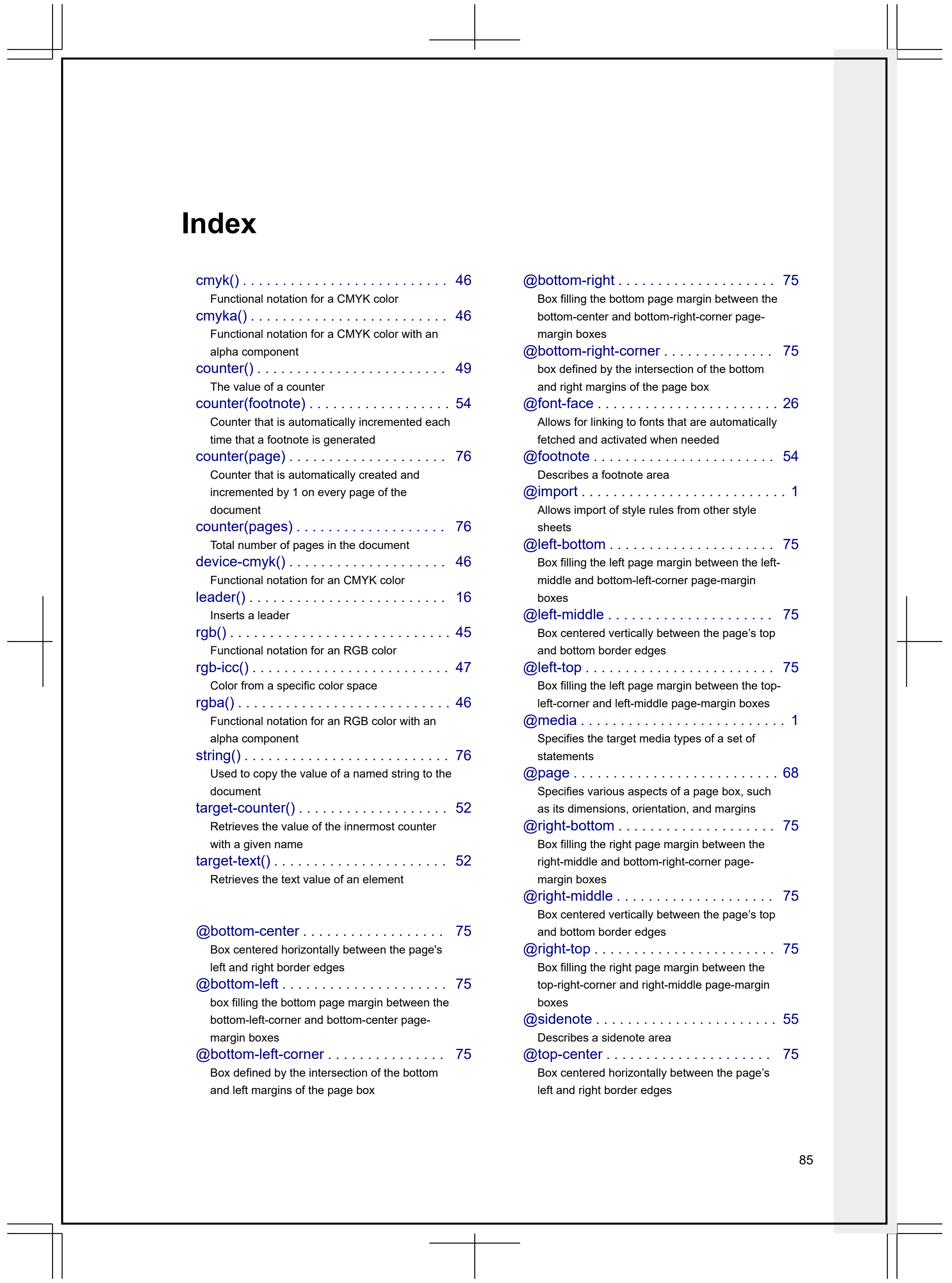
```
@top-left {
    content: element(Title);
}
```

Page numbers

- Current page – counter(page)
- Total pages – counter(pages)

```
@bottom-center {
    content: counter(page) " / " counter(pages);
    font-size: 0.5em;
    color: #c6d0db;
}
```

Bleeds and crop marks



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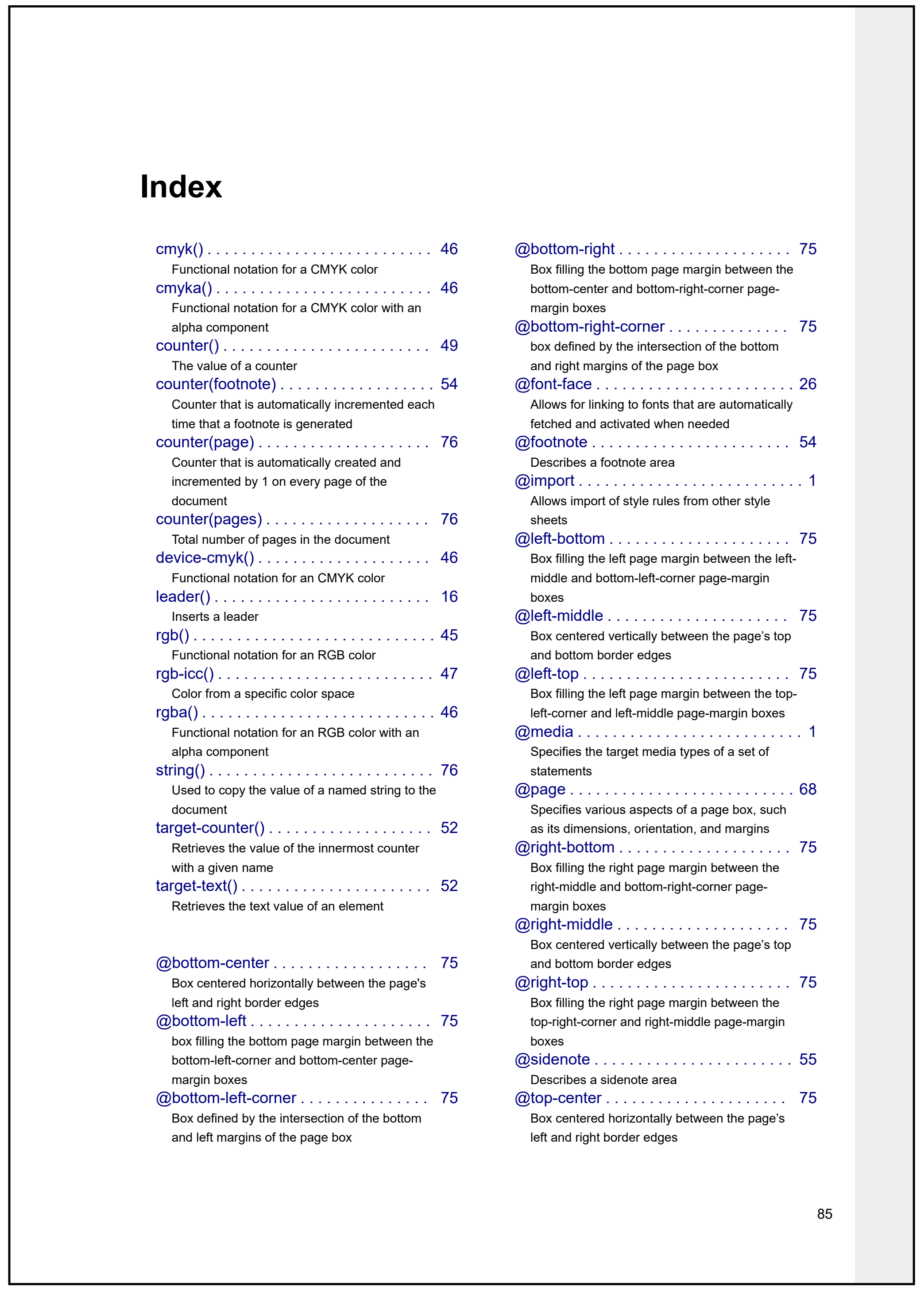

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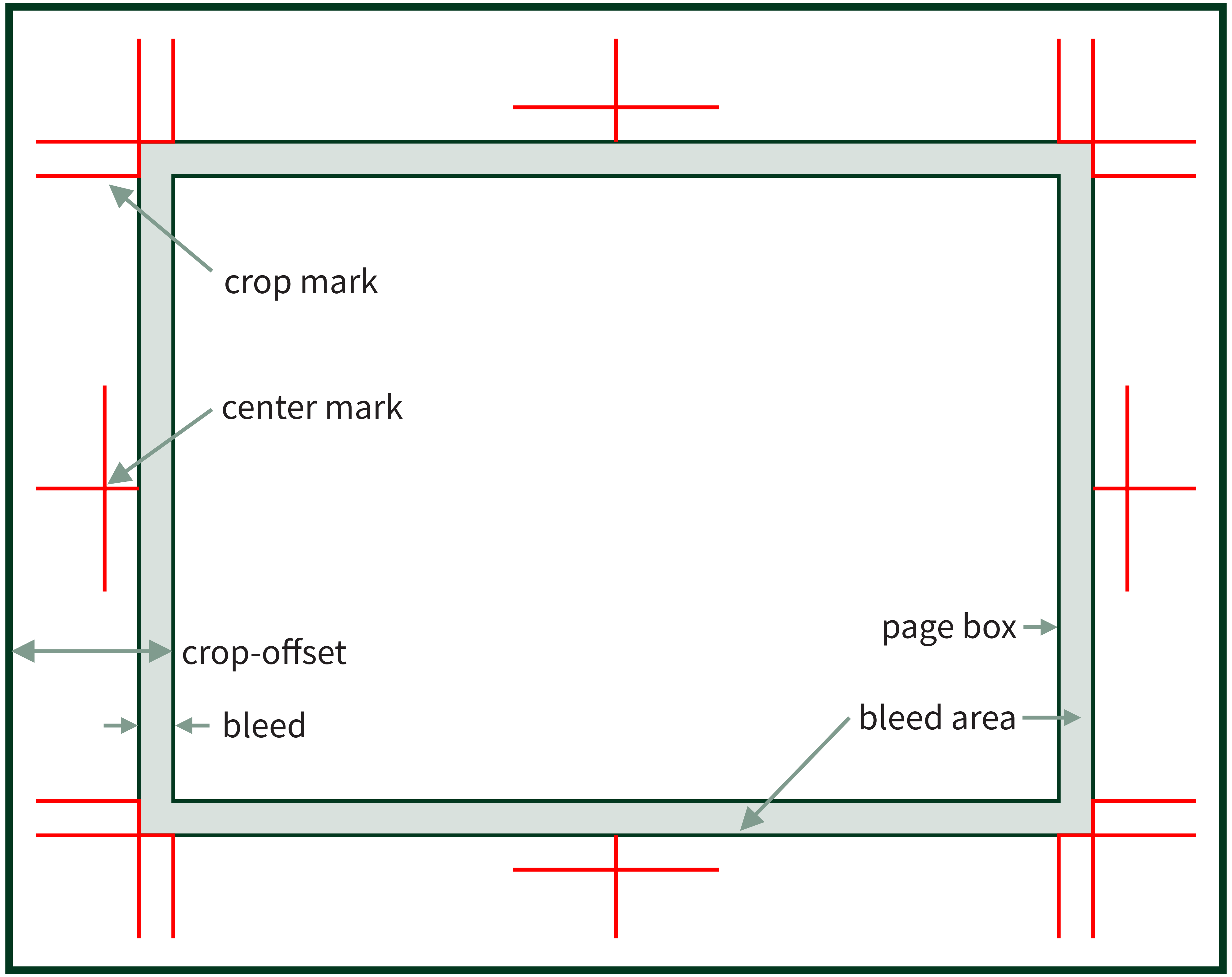
Bleed and crop terms



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Making the bleed

Use a negative margin

```
@top-left {
    margin-top: -3mm;
    padding-top: 3mm;
    margin-left: -3mm;
    margin-right: -3mm;
}
```

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Showing the bleed

```
bleed: 3mm;                 /* page bleed length */
marks: crop cross;          /* printer marks to display */
-ah-crop-offset: 14mm;      /* distance from the page box edge to
                               the page sheet edge */
-ah-printer-marks-line-color: auto;
                            /* printer marks line color */
-ah-printer-marks-line-length: 10mm;
                            /* printer marks line length  */
-ah-printer-marks-line-width: 0.12mm;
                            /* printer marks line width */
```

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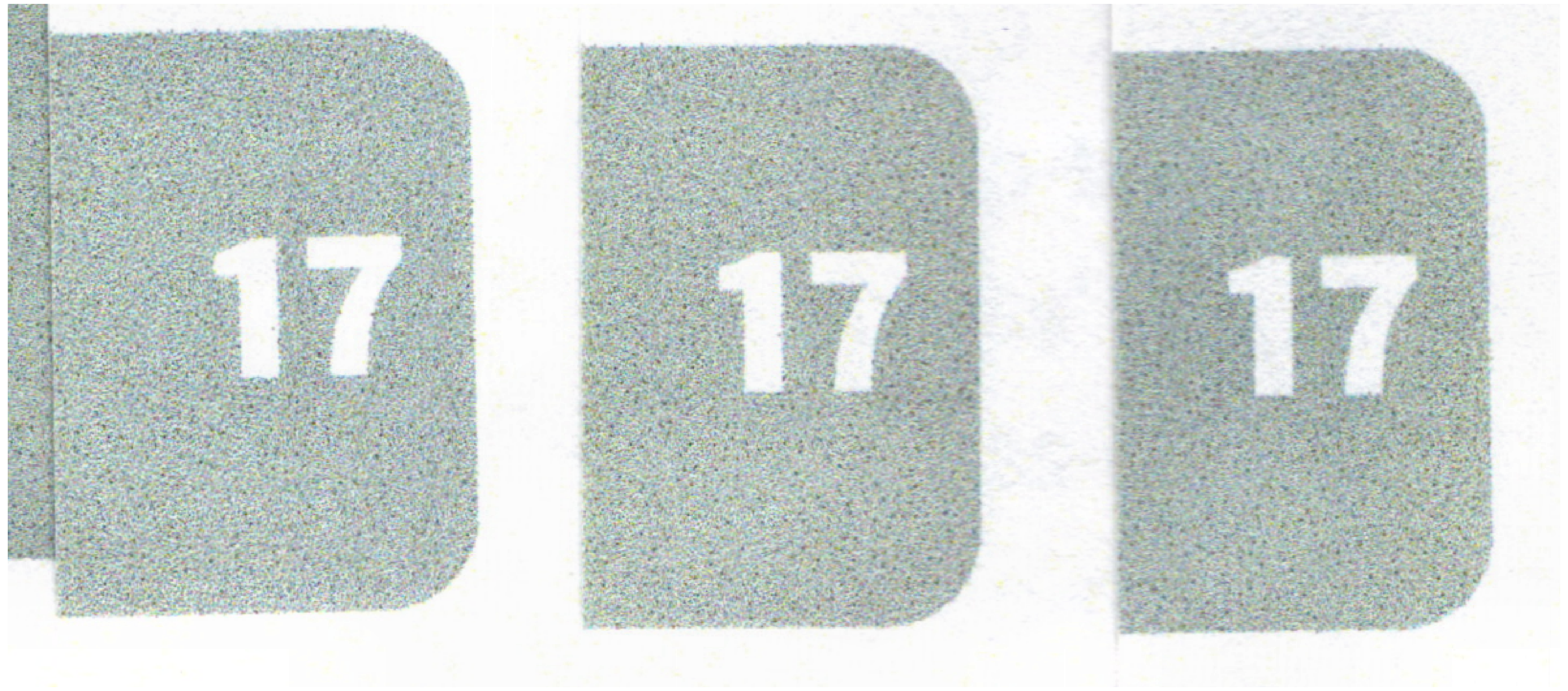
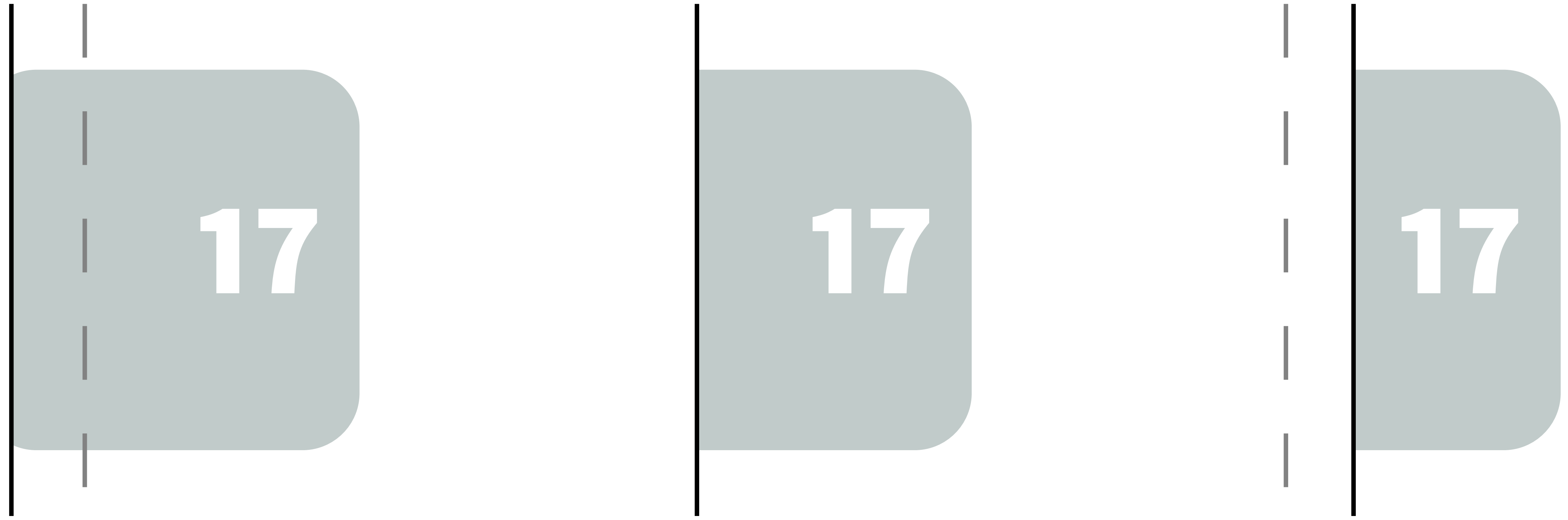
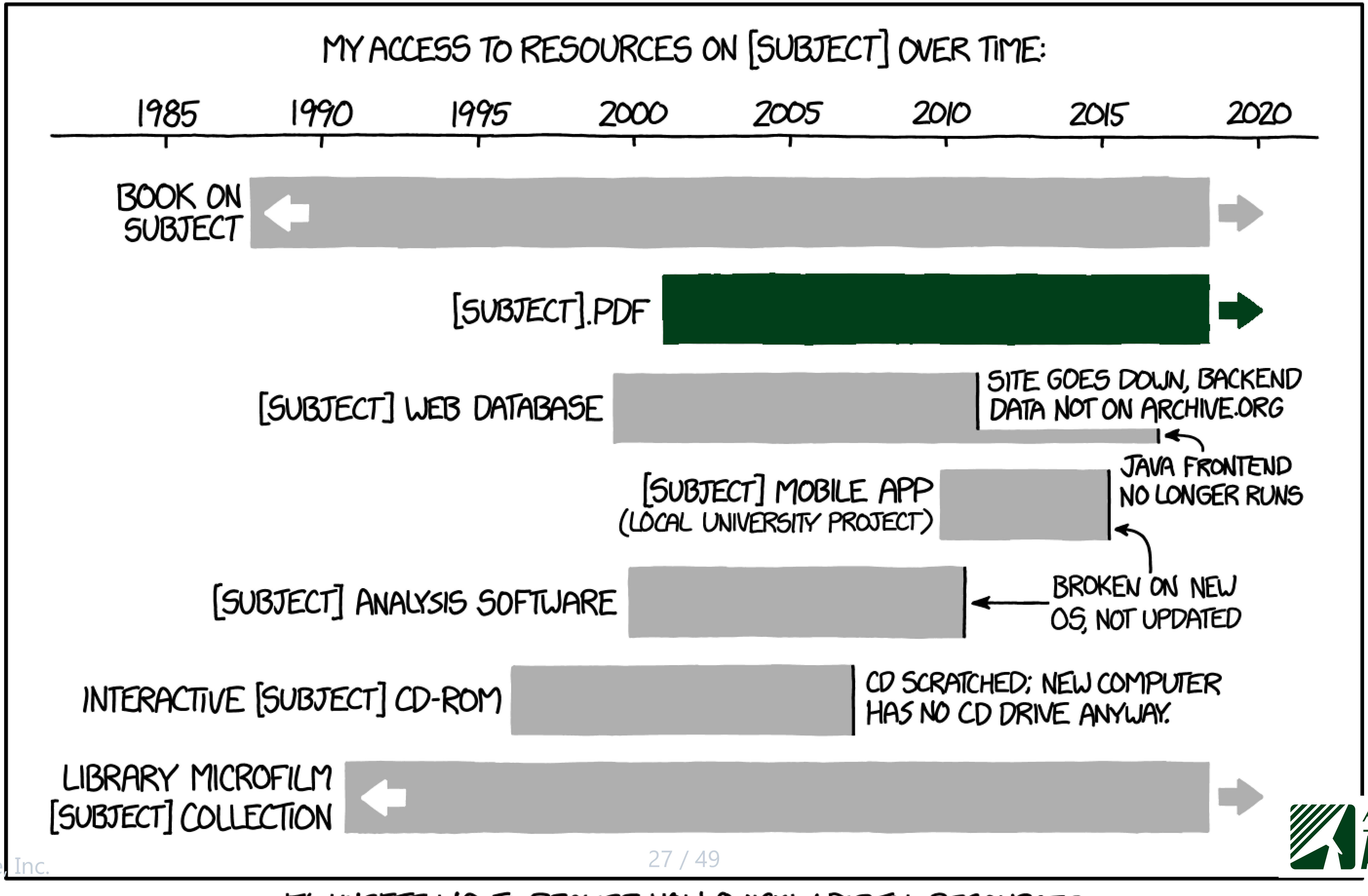
Allow for imprecise trimming





PDF



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PDF versions

Version	Year	Acrobat Reader version
1.3	2000	4.0
1.4	2001	5.0
1.5	2003	6.0
1.6	2004	7.0
1.7	2008	8
2.0	2017	–

PDF variants

- PDF/X – “PDF for Exchange”
- PDF/A – “PDF for Archiving”
- PDF/E – “PDF for Engineering”
- PDF/VT – “PDF for exchange of variable data and transactional (VT) printing”
- PDF/UA – “PDF for Universal Accessibility”

Tagged PDF

- Extra information about logical structure
- *Not* a separate specification
    - First included in PDF 1.4 spec
- Text and graphics can be extracted
- Useful for accessibility

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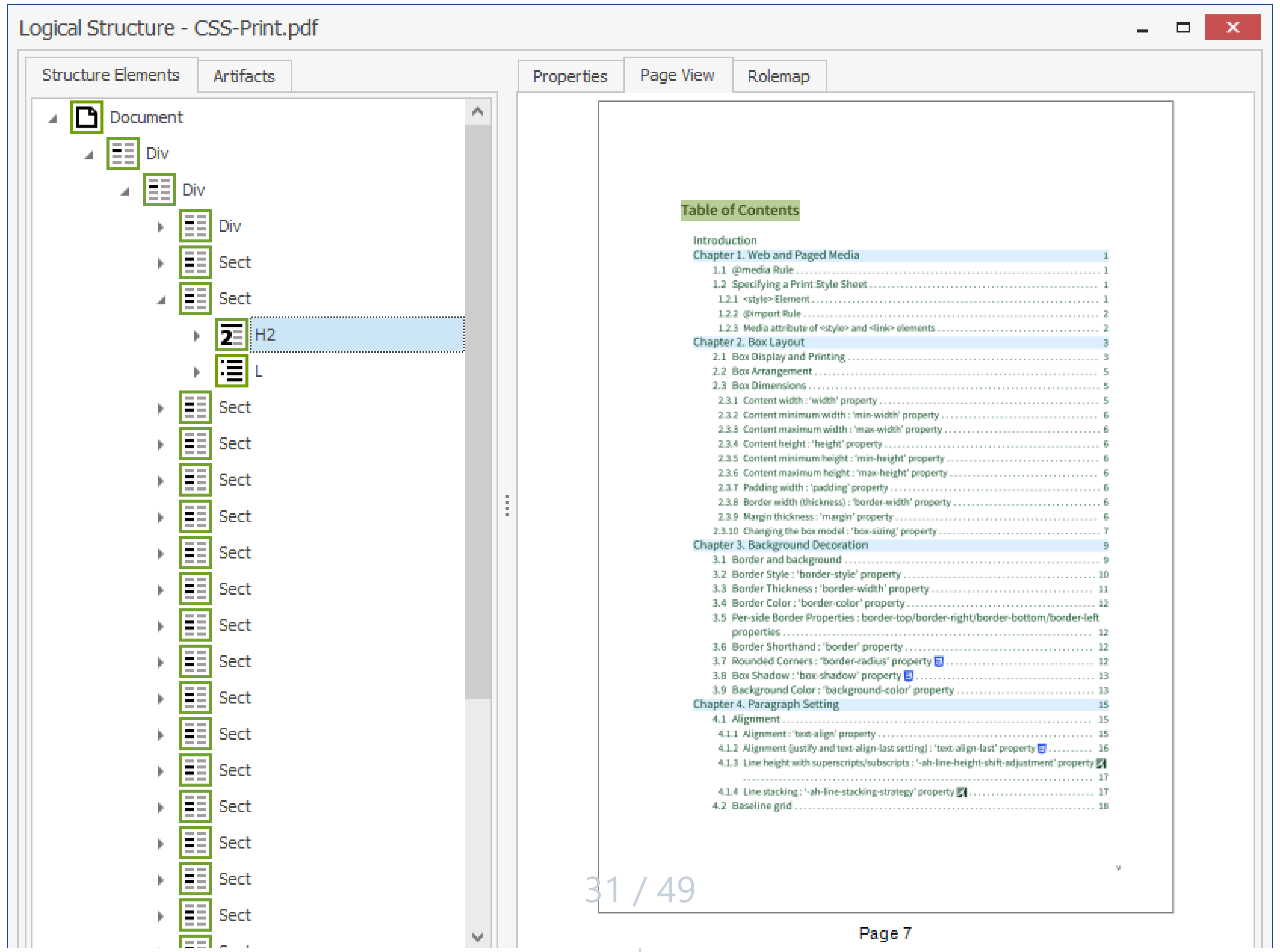
Custom PDF tag name

```
div.TOC {
  page-break-before: right;
  page: TOC;
  -ah-pdftag: 'Sect';
}
```



Logical Structure - CSS-Print.pdf

```
Document
  Div
    Div
      Div
      Sect
      Sect
        H2
        L
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
      Sect
```

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PDF/UA – ISO 14289-1

- Intended to improve accessibility of PDF
- Contents tagged in logical reading order
- Language of the document must be specified
- Meaningful graphics, formulas must have alternate text
- Assistive technologies must have access to content
- Bookmarks are recommended
- Annotations, links, and multimedia may be included
- All fonts must be embedded

Matterhorn Protocol

- Published by PDF Association
- Checklist of ways to *not* conform to PDF/UA
- 31 Checkpoints, 136 Failure Conditions
- Some checkpoints require human review

Checkpoint 15: Tables

Index	Failure Condition	Section	Type	How	See
15-001	A row has a header cell, but that header cell is not tagged as a header.	UA1:7.5-1	Object	Human	-
15-002	A column has a header cell, but that header cell is not tagged as a header.	UA1:7.5-1	Object	Human	-
15-003	In a table not organized with Headers attributes and IDs, a TH cell does not contain a Scope attribute.	UA1:7.5-2	Object	Machine	-
15-004	Content is tagged as a table for information that is not organized in rows and columns.	UA1:7.5-3	Object	Human	-
15-005	A given cell's header cannot be unambiguously determined.	UA1:7.5-2	Object	Human	01-006

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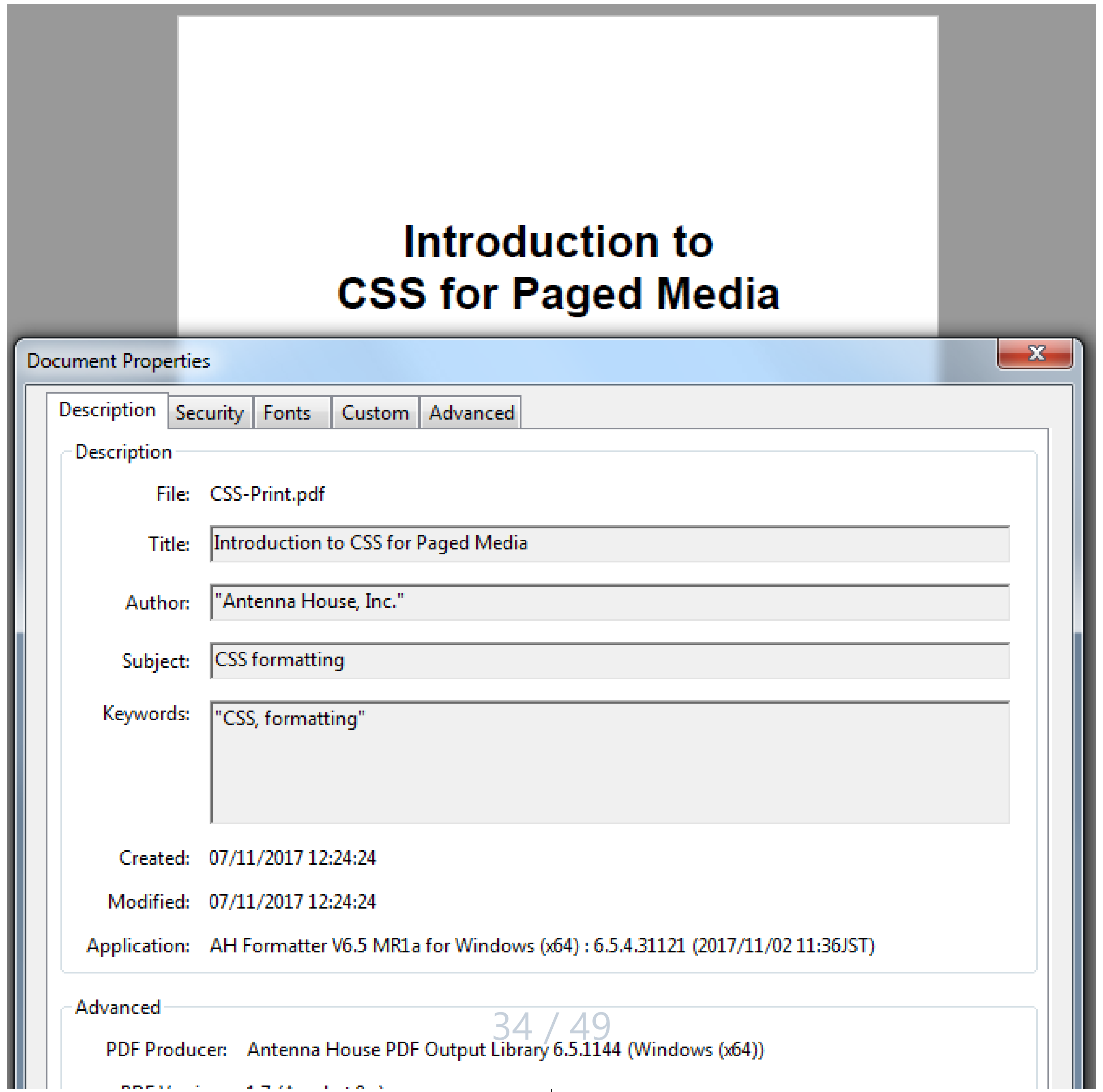
Document properties

```
<meta name="document-title" content="The document title"/>
<meta name="subject" content="The document subject"/>
<meta name="author" content="The author"/>
<meta name="keywords" content="Comma, separated, keywords, list"/>
```



Introduction to
CSS for Paged Media

Document Properties

Description

File:	CSS-Print.pdf
Title:	Introduction to CSS for Paged Media
Author:	"Antenna House, Inc."
Subject:	CSS formatting
Keywords:	"CSS, formatting"
Created:	07/11/2017 12:24:24
Modified:	07/11/2017 12:24:24
Application:	AH Formatter V6.5 MR1a for Windows (x64) : 6.5.4.31121 (2017/11/02 11:36JST)

Advanced

PDF Producer: Antenna House PDF Output Library 6.5.1144 (Windows (x64))

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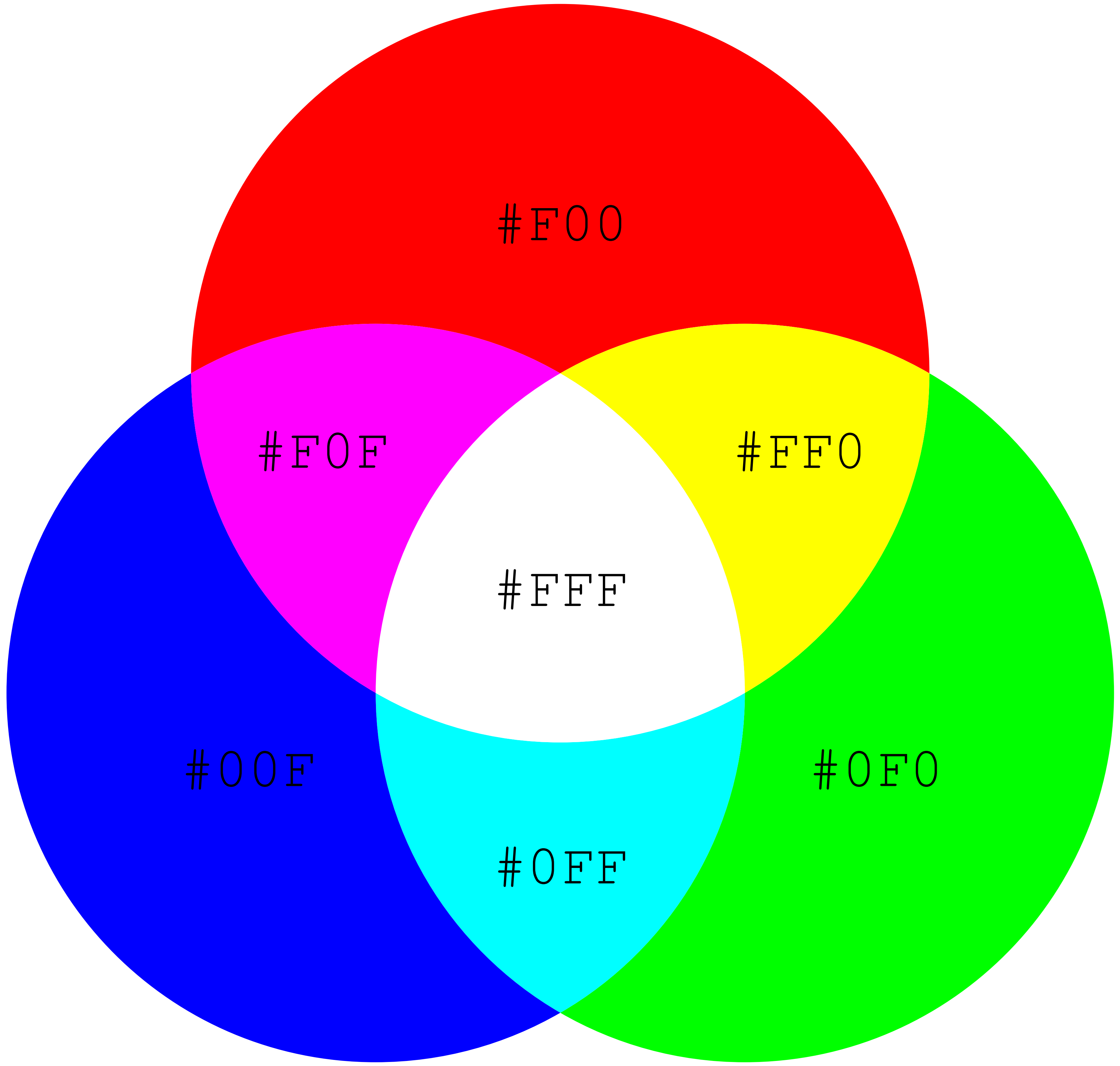
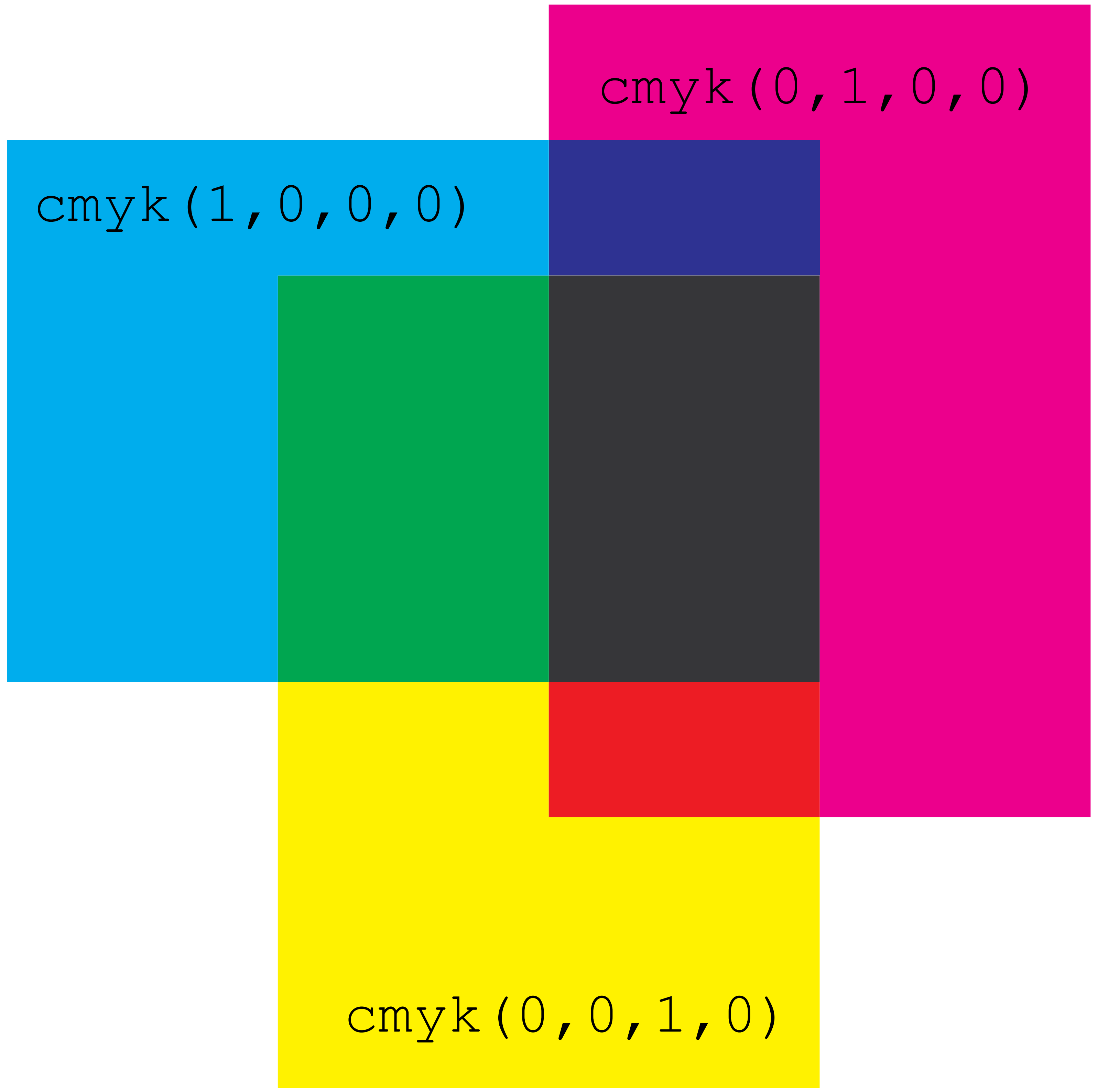
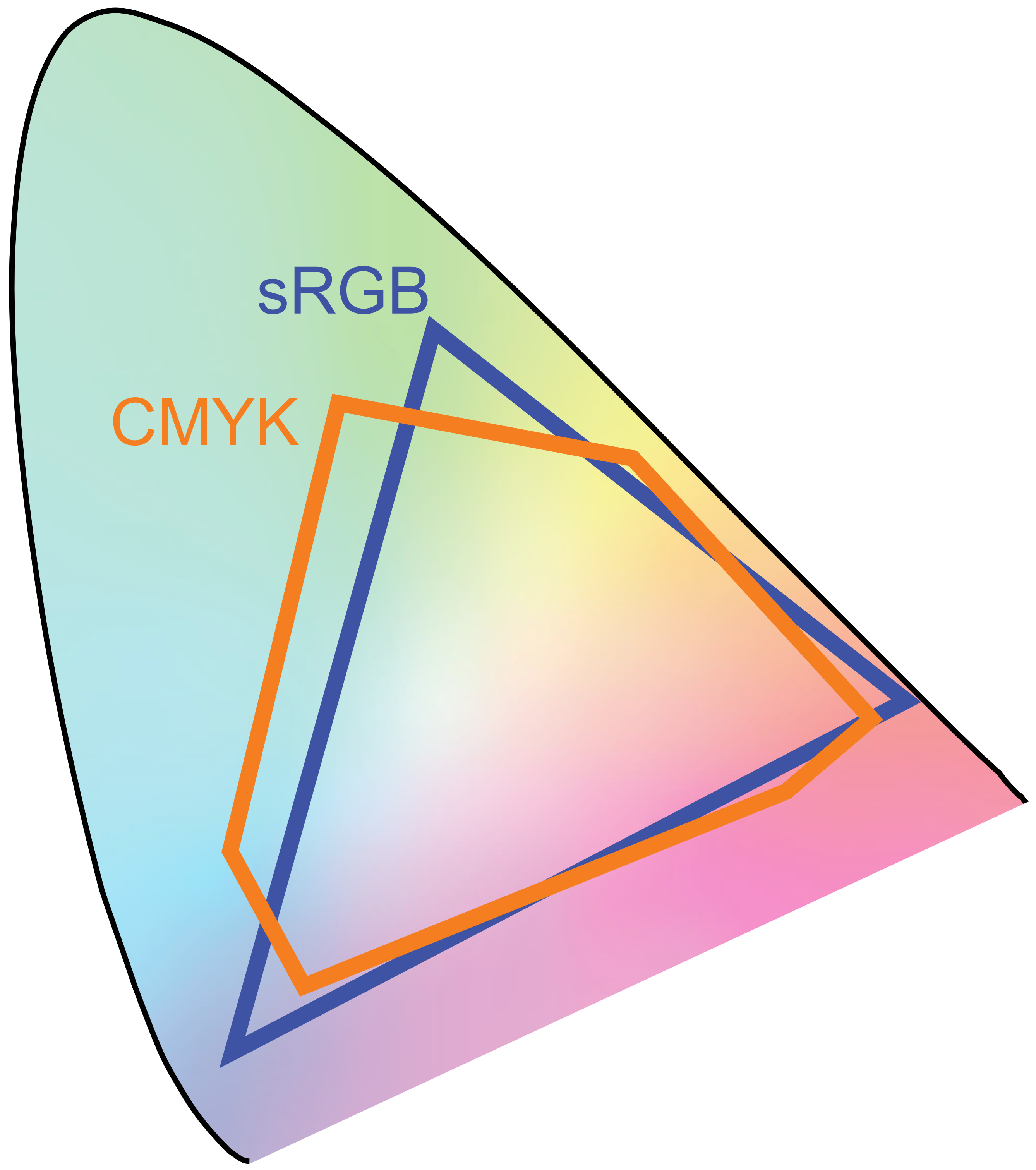
Colour





Colour



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color

```
em { color: green; }                    /* color keyword */
em { color: #042; }                     /* #RGB */
em { color: #003D19; }                  /* #RRGGBB */
em { color: rgb(0, 61, 25); }           /* integer range 0-255 */
em { color: rgb(0%, 24%, 10%); }        /* 0%-100% */
em { color: #0428; }                    /* #RGBA */
em { color: #003D1988; }                /* #RRGGBBAA */
em { color: rgb-icc(#Grayscale, 0.5); }
                                        /* 0.0 (black) to 1.0 (white) */
em { color: cmyk(.9, 0, .75, .83);             /* 0.0-1.0 */
em { color: cmyk(90%, 0%, 75%, 83%);           /* 0%-100% */
em { color: rgb-icc(#CMYK, .9, 0, .75, .83); /* Profile dependent */
em { color: rgb-icc(#Separation, 'PANTONE 627 PC', 1.0); }
                                        /* Name and tint */
em { color: rgb-icc(0, 61, 25, #Separation, 'PANTONE 627 PC', 1,
                    90%, 0%, 75%, 83%); }
                                        /* Both RGB and CMYK equivalents. */
em { color: rgb-icc(#Registration); }          /* On every separation. */
```

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PANTONE® spot colours

```
em { color: rgb-icc(#Separation, 'PANTONE 627 PC', 1.0); }
                                                  /* Name and tint */
em { color: rgb-icc(#Separation, 'PANTONE 627 PC', 0.5); }
                                                /* Tint 0.0 to 1.0 */
em { color: rgb-icc(#Separation, 'PANTONE 627 PC', 50%); }
                                                /* Tint 0% to 100% */
em { color: rgb-icc(#Separation, 'PANTONE 627 PC'); }
                                                /* Assume 1.0 tint */
em { color: rgb-icc(#Separation, 'PANTONE 627 PC',
                    1, 90%, 0%, 75%, 83%); } /* CMYK equivalent. */
em { color: rgb-icc(0, 61, 25, #Separation, 'PANTONE 627 PC'); }
                                                /* RGB equivalent. */
em { color: rgb-icc(0, 61, 25, #Separation, 'PANTONE 627 PC', 1,
                    90%, 0%, 75%, 83%); }
                                /* Both RGB and CMYK equivalents. */
```

0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0

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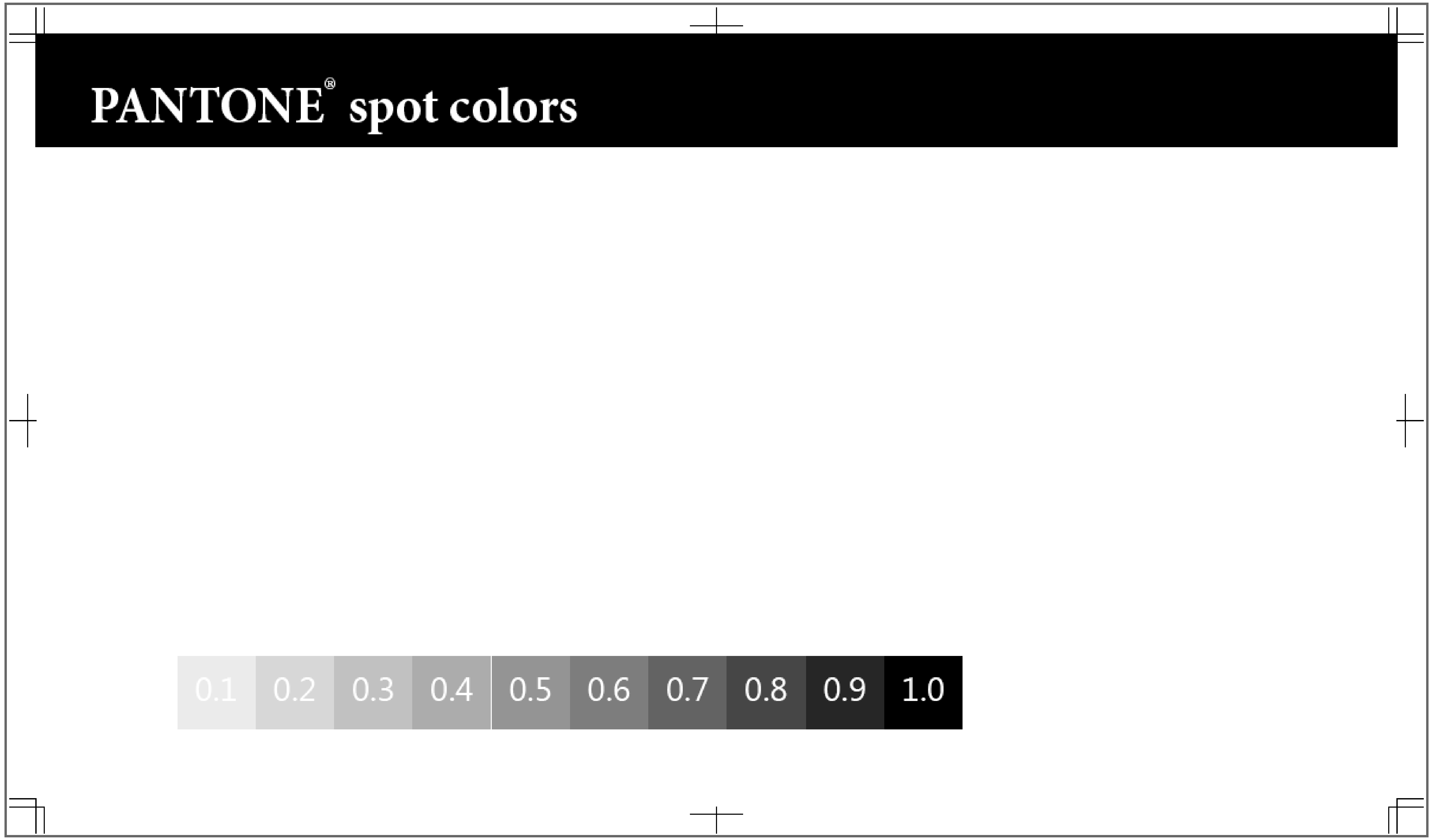
Separation plates



PANTONE® spot colors

0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0

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Differences Between Screen and Page

- Breaks
- Floats
- Navigation
- Left & right pages
- Printed book

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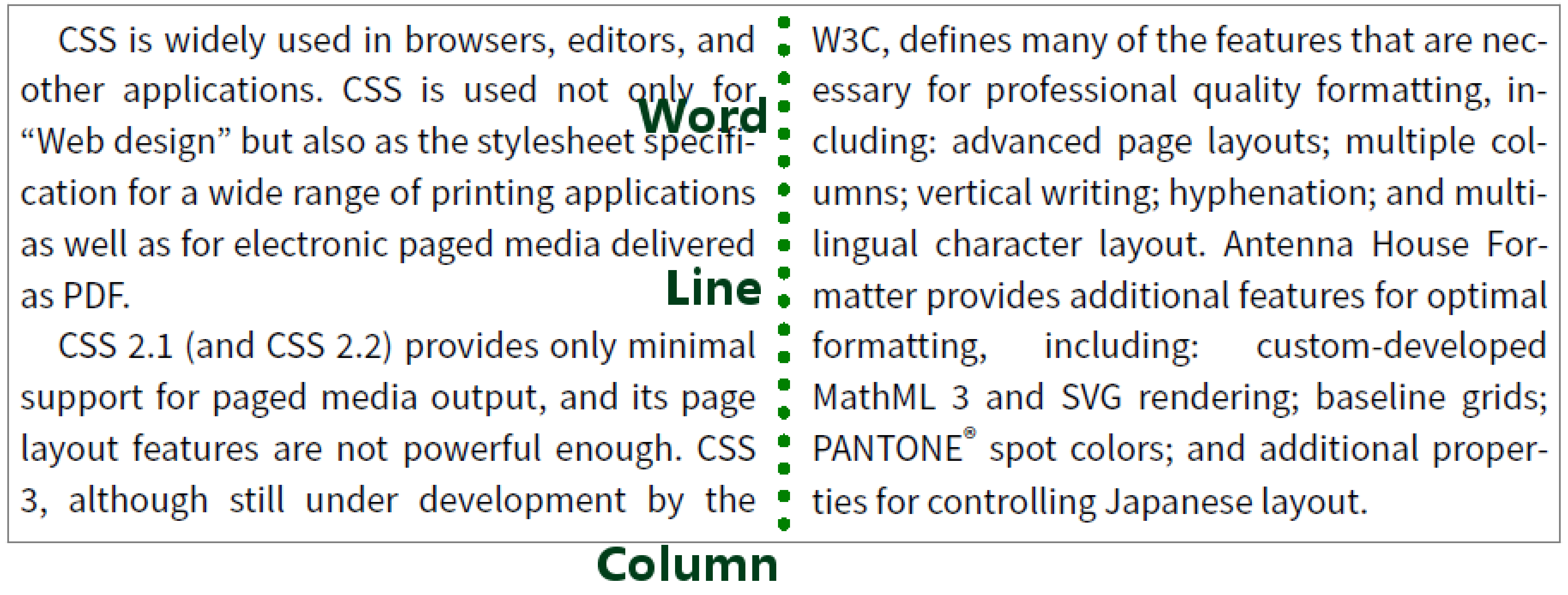
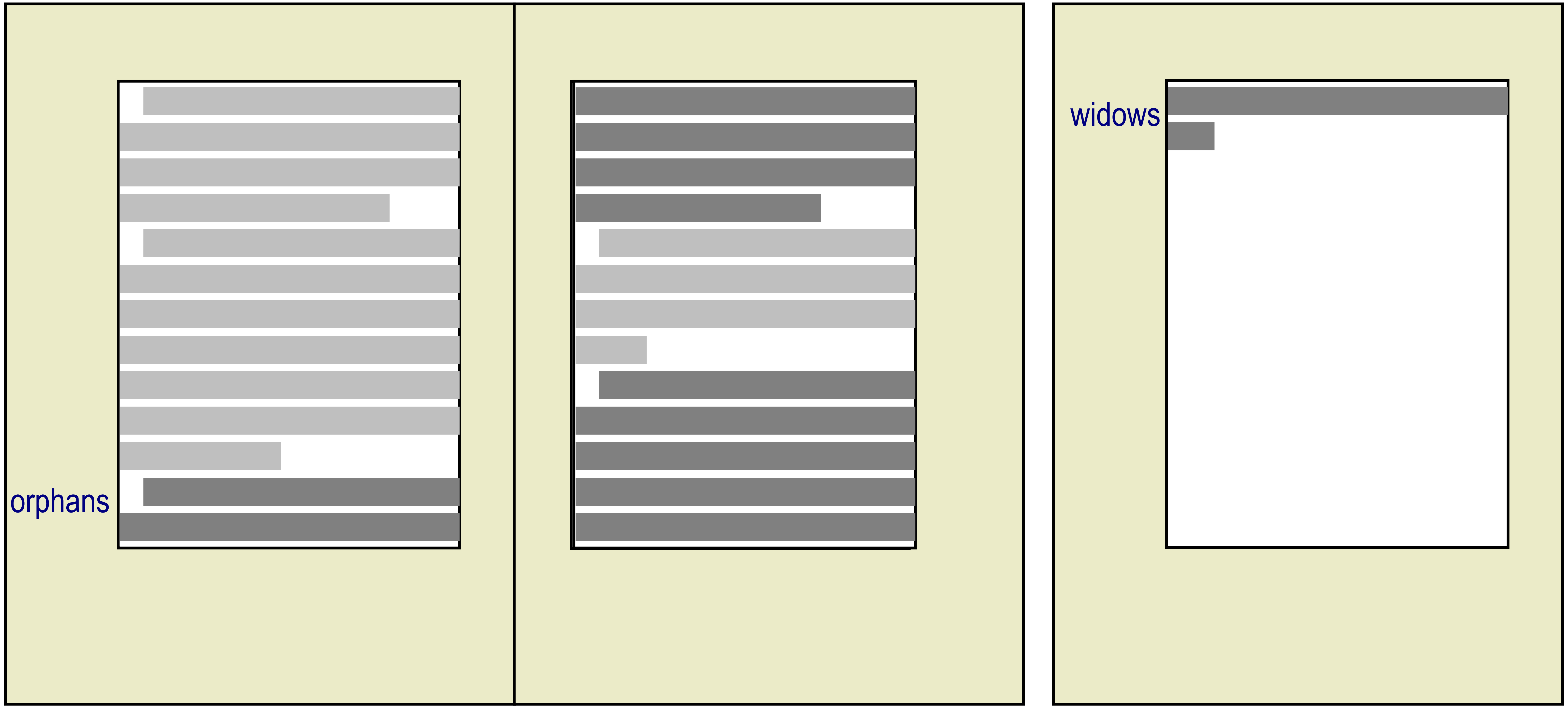
Breaks Happen



CSS is widely used in browsers, editors, and other applications. CSS is used not only for “Web design” but also as the stylesheet specification for a wide range of printing applications as well as for electronic paged media delivered as PDF.

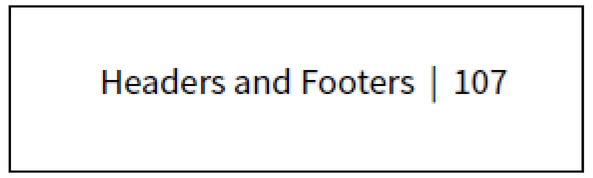
CSS 2.1 (and CSS 2.2) provides only minimal support for paged media output, and its page layout features are not powerful enough. CSS 3, although still under development by the W3C, defines many of the features that are necessary for professional quality formatting, including: advanced page layouts; multiple columns; vertical writing; hyphenation; and multilingual character layout. Antenna House Formatter provides additional features for optimal formatting, including: custom-developed MathML 3 and SVG rendering; baseline grids; PANTONE® spot colors; and additional properties for controlling Japanese layout.

Pages Also Break



Navigation

- Headers and footers



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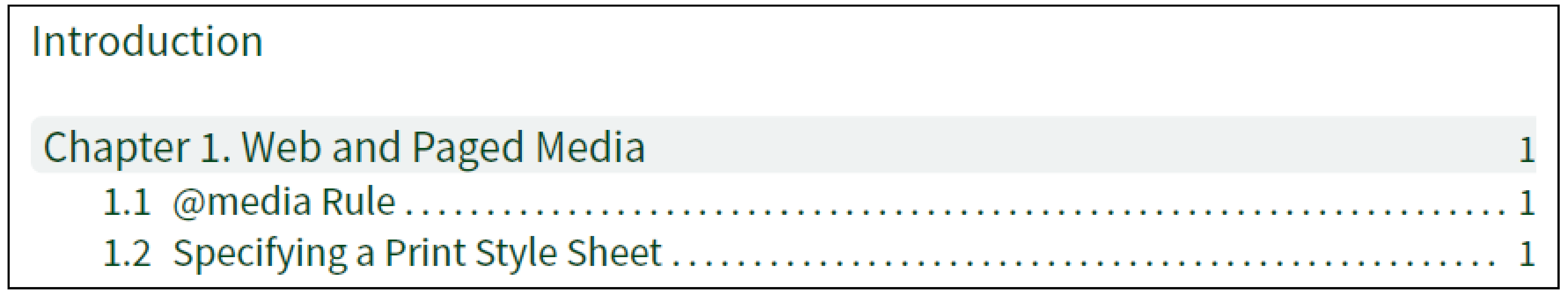


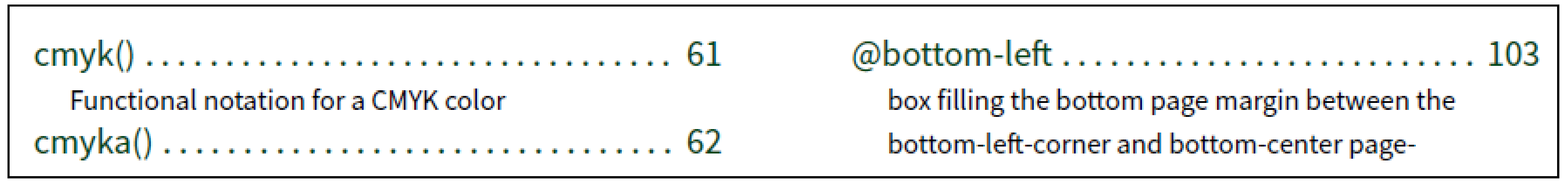
Introduction

Chapter 1. Web and Paged Media 1

1.1 @media Rule 1

1.2 Specifying a Print Style Sheet 1

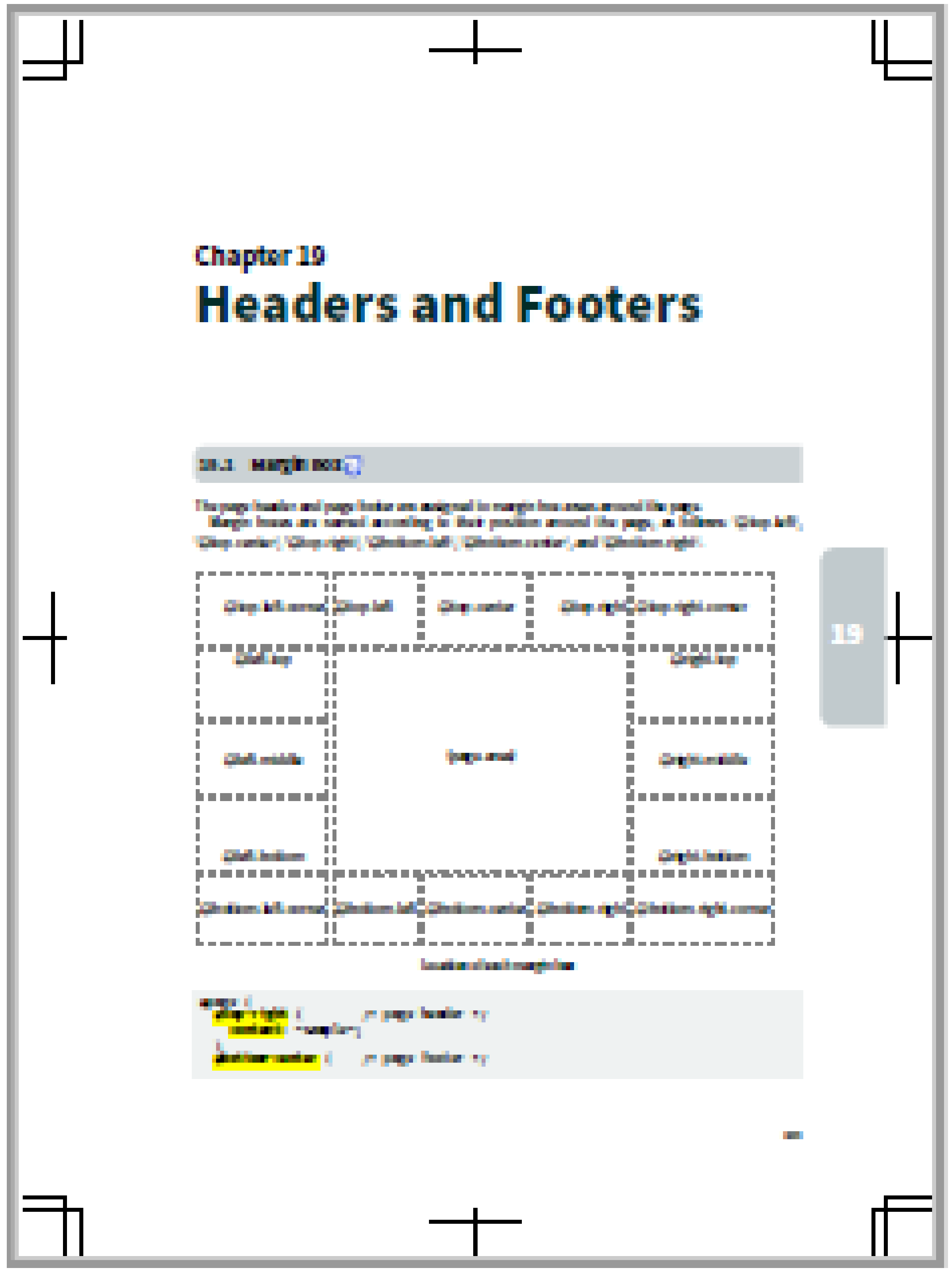
- Index



cmyk() 61
    Functional notation for a CMYK color
cmyka() 62

@bottom-left 103
    box filling the bottom page margin between the
    bottom-left-corner and bottom-center page-

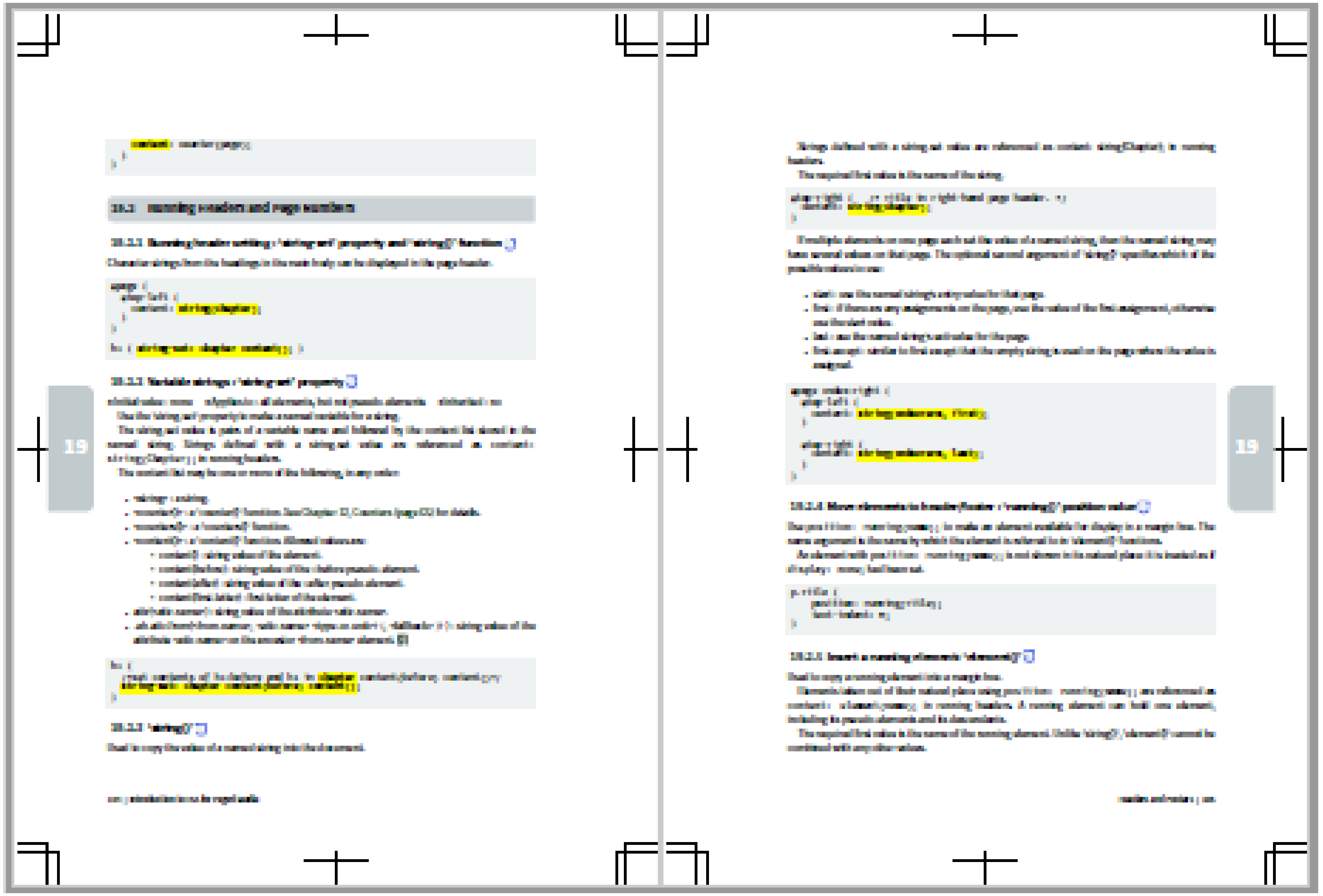
Left and Right Pages



Chapter 19

Headers and Footers

19



19

19

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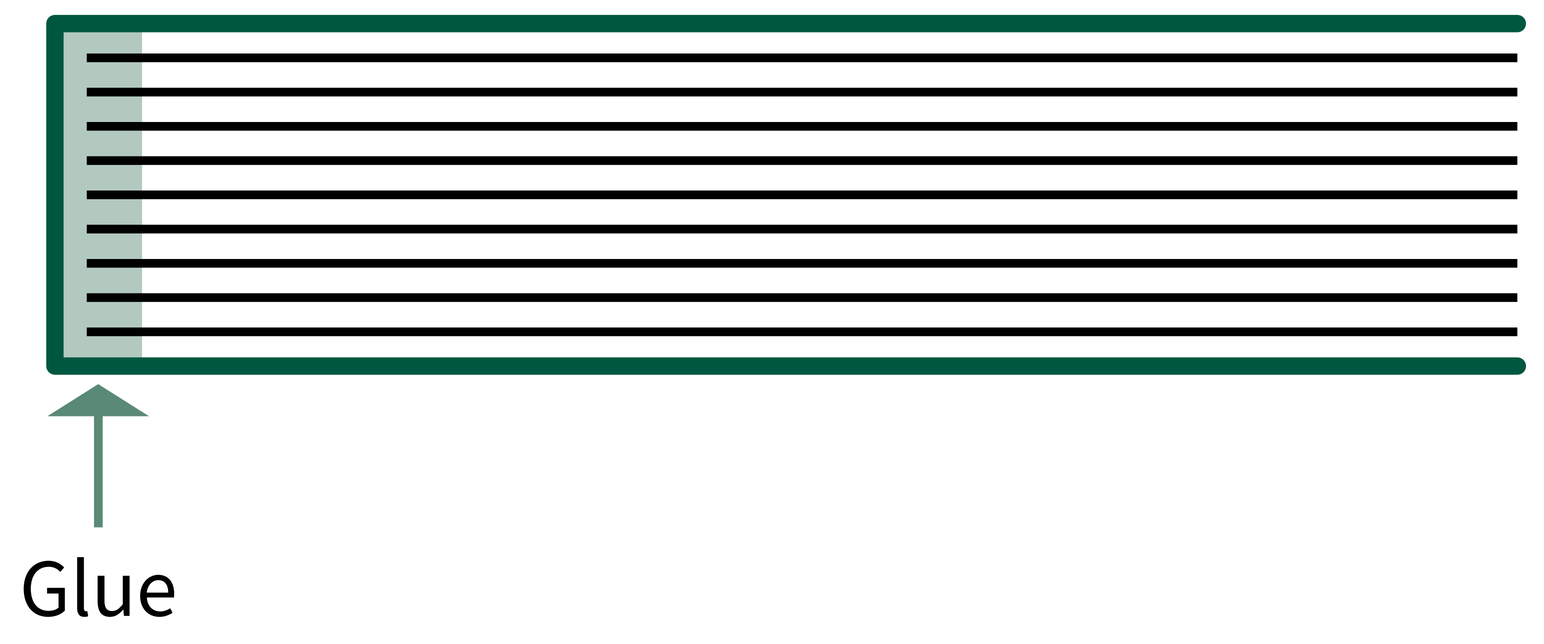
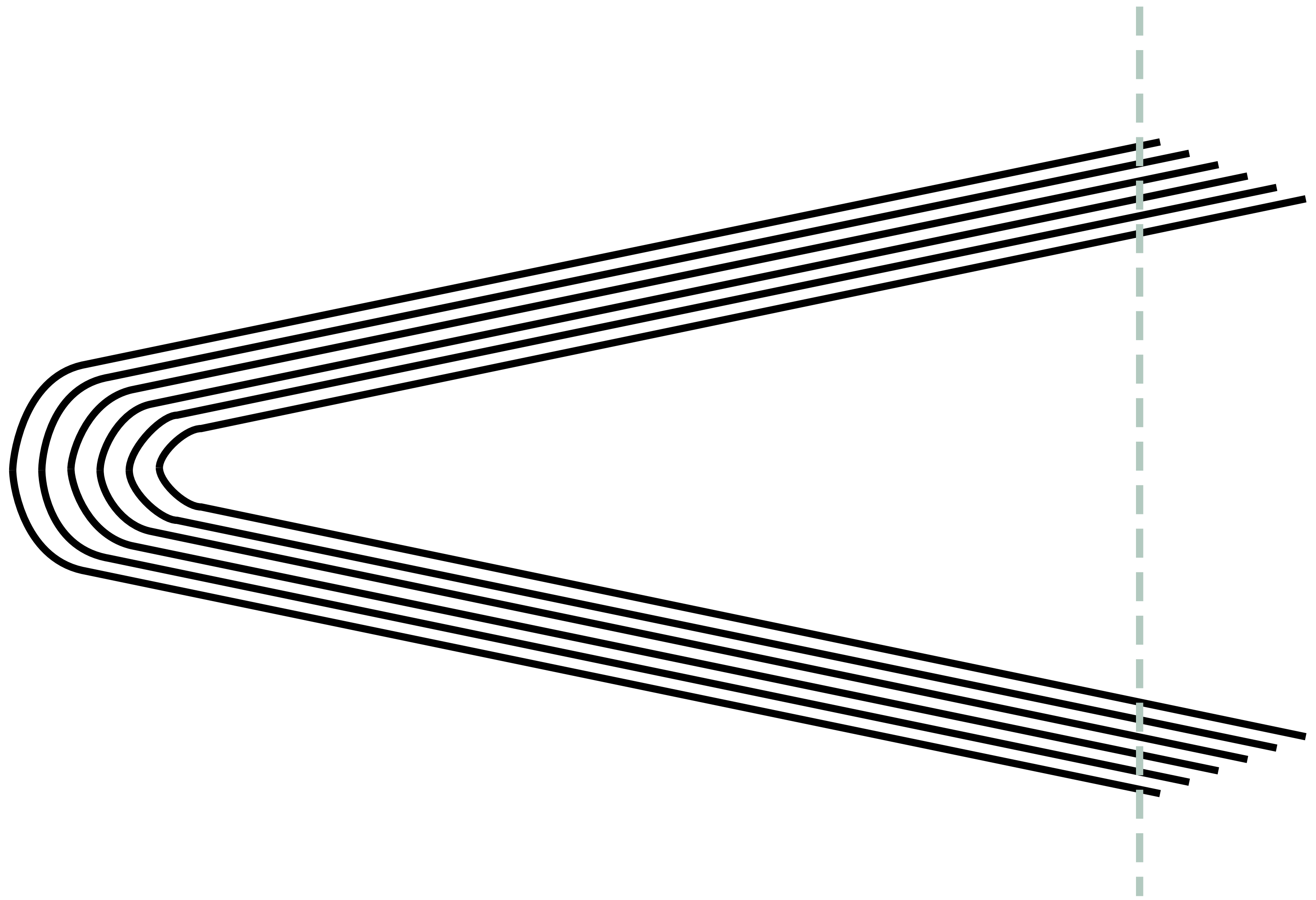
Printed Book

- Page size to suit market/purpose
    - Office document
    - Car owner’s manual
    - Trade paperback
- Bleeds
- Spreads
- Binding
- Show-through

Binding method



Gutter reduced by perfect binding



Fore-edge reduced by trimming of signature

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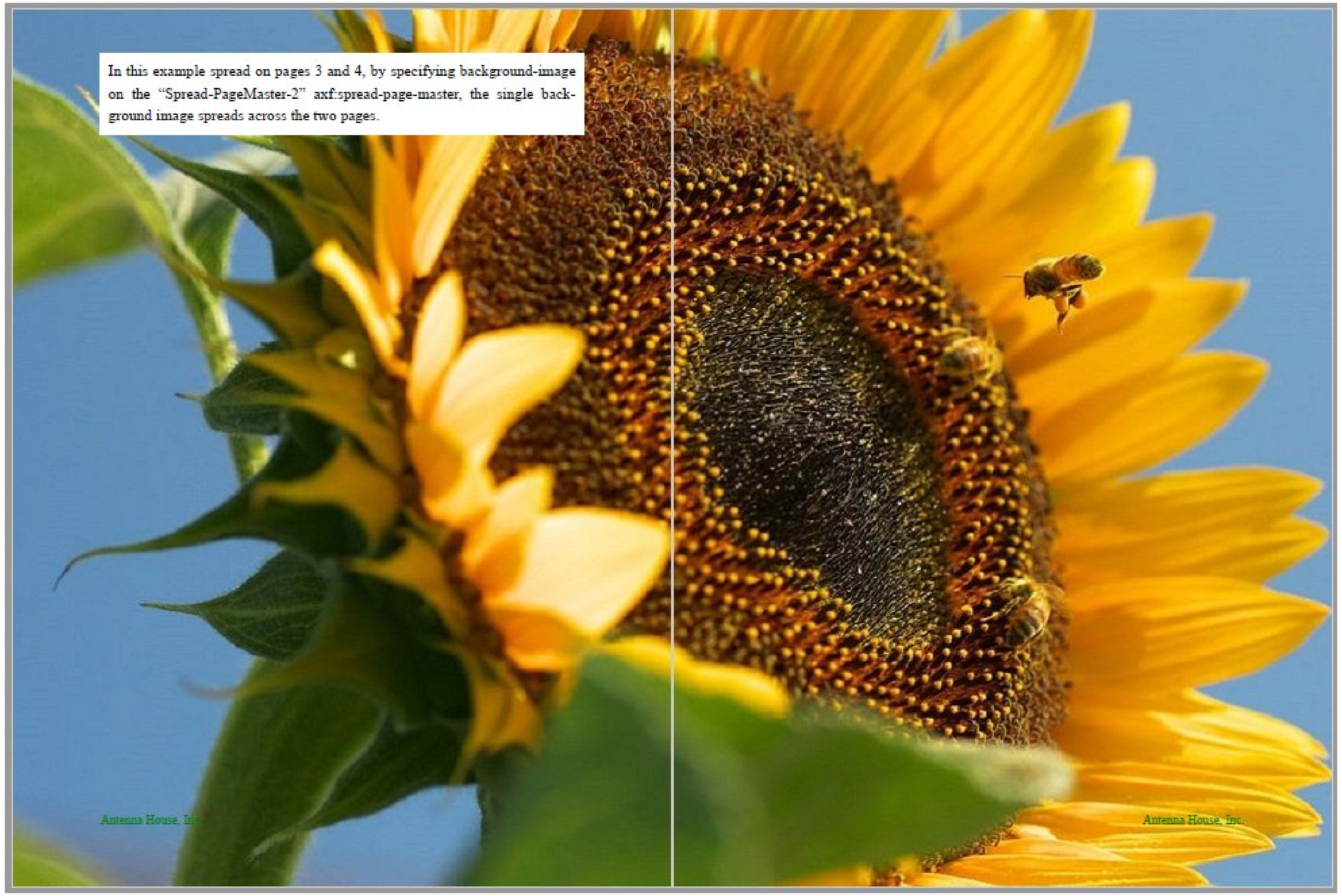
Spread


In this example spread on pages 3 and 4, by specifying background-image on the "Spread-PageMaster-2" axf:spread-page-master, the single background image spreads across the two pages.

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Show-through

Introduction to CSS for Paged Media

Using CSS in paged media design for XML and HTML is not yet common but its use is expected to increase as the development of CSS 3 progresses. This document aims to make CSS for Paged Media easy to understand.

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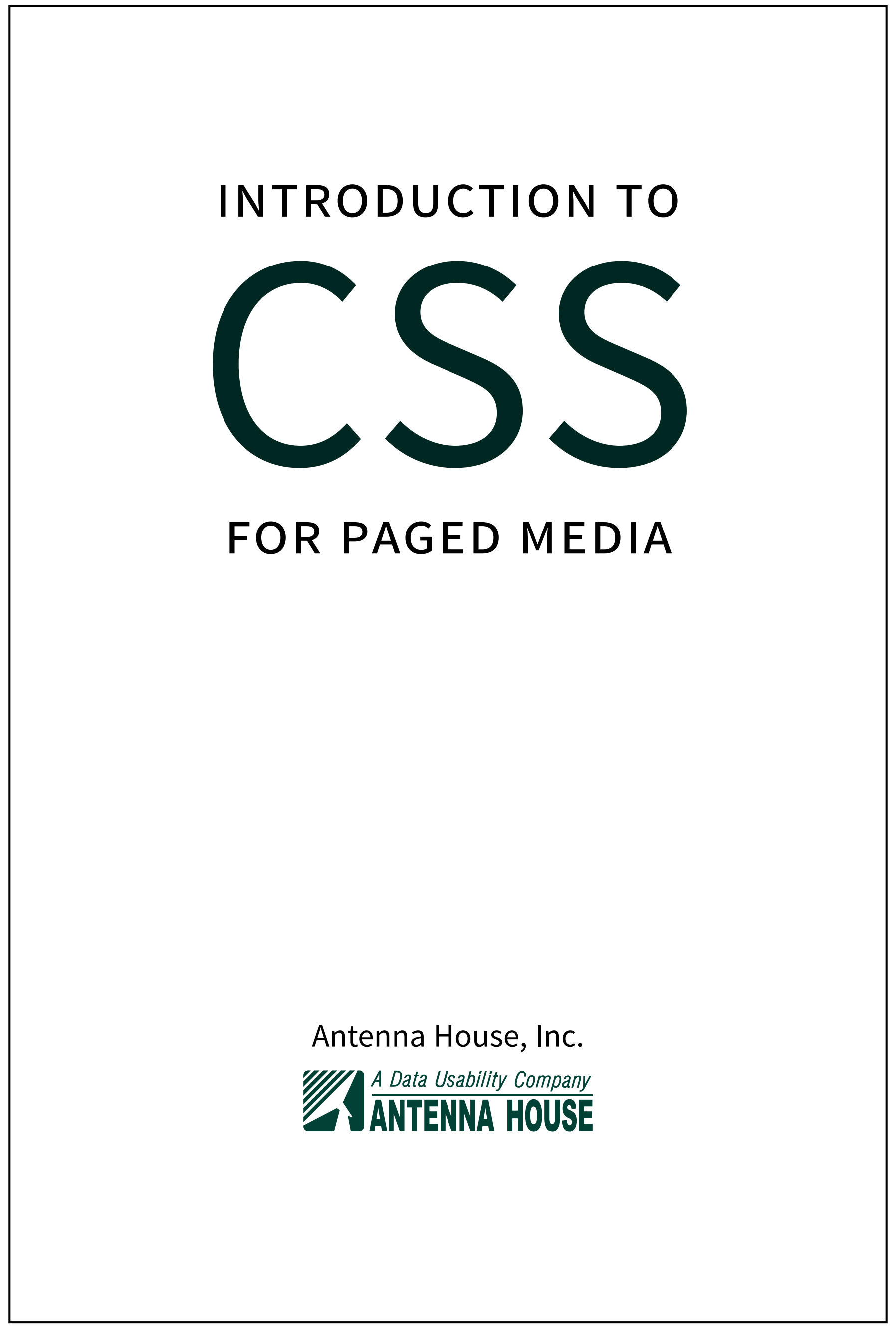
Get the full tutorial

https://www.antennahouse.com/css/


INTRODUCTION TO

CSS

FOR PAGED MEDIA

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