An Introductive Presentation of XSL-FO

Jean-Michel HUFFLEN
LIFC — University of Franche-Comté
GUIT meeting, 15th October 2011

Contents

XSL-FO

Aims to describe high-quality output prints.

XSL-FO

Aims to describe high-quality output prints.

In fact:

$$\text{DSSSL} \longrightarrow \text{XSL} \longrightarrow \begin{array}{c} \text{XSL}\underline{\text{T}} \\ \text{XSL(-FO)} \end{array}$$

XSL-FO

Aims to describe high-quality output prints.

In fact:

$$\text{DSSSL} \longrightarrow \text{XSL} \longrightarrow \begin{matrix}\text{XSL}\underline{\text{T}} \\ \text{XSL}(\text{-FO})\end{matrix}$$

Very verbose language.

Using XSL-FO

XML text

Using XSL-FO

XML text $\stackrel{\text{XSLT}}{\Longrightarrow}$ XSL-FO

Using XSL-FO

$$\text{XML text} \overset{\text{XSLT}}{\Longrightarrow} \text{XSL-FO} \overset{\text{FO processor}}{\Longrightarrow} \text{PDF, PS, etc.}$$

Using XSL-FO

$$\text{XML text} \overset{\text{XSLT}}{\Longrightarrow} \text{XSL-FO} \overset{\text{FO processor}}{\Longrightarrow} \text{PDF, PS, etc.}$$

Automatically chained by 'complete' FO processors.

Using XSL-FO

$$\text{XML text} \overset{\text{XSLT}}{\Longrightarrow} \text{XSL-FO} \overset{\text{FO processor}}{\Longrightarrow} \text{PDF, PS, etc.}$$

Automatically chained by 'complete' FO processors.

Not WISIWYG.

FO processors

Free of charge:

the best—the most complete—Apache fop.

FO processors

Free of charge:

the best—the most complete—Apache fop.

Related to TEX's world: PassiveTEX

FO processors

Free of charge:

the best—the most complete—Apache fop.

Related to TEX's world: PassiveTEX $\Longleftarrow$ stalled.

LaTeX $\Longrightarrow$ XSL-FO

EuroBachoTeX, April 2007.

LaTeX $\Longrightarrow$ XSL-FO

EuroBachoTeX, April 2007.

GUTenberg, October 2008.

LaTeX $\Longrightarrow$ XSL-FO

EuroBachoTeX, April 2007.

GUTenberg, October 2008.

Multidirectional typesetting in XSL-FO. BachoTeX, April 2009.

LaTeX $\Longrightarrow$ XSL-FO

EuroBachoTeX, April 2007.

GUTenberg, October 2008.

Multidirectional typesetting in XSL-FO. BachoTeX, April 2009.

Italian translation updated, by Massimiliano Dominici.

General principles

Same ideas than (LA)TEX, but the markup is more homogeneous.

General principles

Same ideas than (LA)TEX, but the markup is more homogeneous.

LATEX:

- `{\em ...}`
- `\emph{...}`
- `\begin{emph}...\end{emph}`

General principles

Same ideas than (LA)TEX, but the markup is more homogeneous.

LATEX:

- `{\em ...}`
- `\emph{...}`
- `\begin{emph}...\end{emph}`

XSL-FO $\Longleftarrow$ `\begin{emph}...\end{emph}`.

Basic elements

...\par

Basic elements

```
...\par
```

```
<fo:block>...</fo:block>
```

Basic elements

```
...\par

<fo:block>...</fo:block>

\begin{minipage}{...}...\end{minipage}
```

Containers

`fo:block` `fo:inline` `...`

Containers

`fo:block` `fo:inline` `...`

If an attribute is not redefined, it is inherited:

```
<fo:block font-family="sans-serif" font-size="medium">
  You're afraid,
  <fo:inline font-size="large">ain't</fo:inline>
  you?
</fo:block>
```

Rubber lengths $\Longleftarrow$ interactions

`space-before` `space-after`

Rubber lengths $\Longleftarrow$ interactions

`space-before` `space-after`

Components:

`space-before="..."`
`space-before.minimum="..."`
`space-before.optimum="..."`
`space-before.maximum="..."`

Solving conflicts

Beginning or ending a reference $\Longleftarrow$ `conditionality` (`discard` | `retain`).

Between two reference areas $\Longleftarrow$ `precedence` (*`integer`* | `force`).

More about interactions

`keep-with-next="always"` or an integer,
`keep-with-next.within-line`
`keep-with-next.within-page`
`keep-with-previous`...
`keep-together`...

Other elements

Close to LaTeX's commands:

`fo:footnote` `fo:float`

Other elements

Close to LaTeX's commands:

`fo:footnote` `fo:float`

Closer to (X)HTML:

`fo:list-block` `fo:table`

Other elements

Close to LaTeX's commands:

`fo:footnote` `fo:float`

Closer to (X)HTML:

`fo:list-block` `fo:table`

Interactions about such elements.

Multilingual capabilities

Word hyphenation w.r.t. a language. Partly implemented, but specified in the W3C recommendation.

(See examples.)

Page model

$\simeq$ *document classes* in LaTeX.

Page model

$\simeq$ *document classes* in LaTeX.

`fo:region-body`,
`fo:region-before`, `fo:region-after`,
`fo:region-start`, `fo:region-end`.

Page model

$\simeq$ *document classes* in LaTeX.

`fo:region-body`,
`fo:region-before`, `fo:region-after`,
`fo:region-start`, `fo:region-end`.

Headers and footers $\Longleftarrow$ *static content*.

Page model

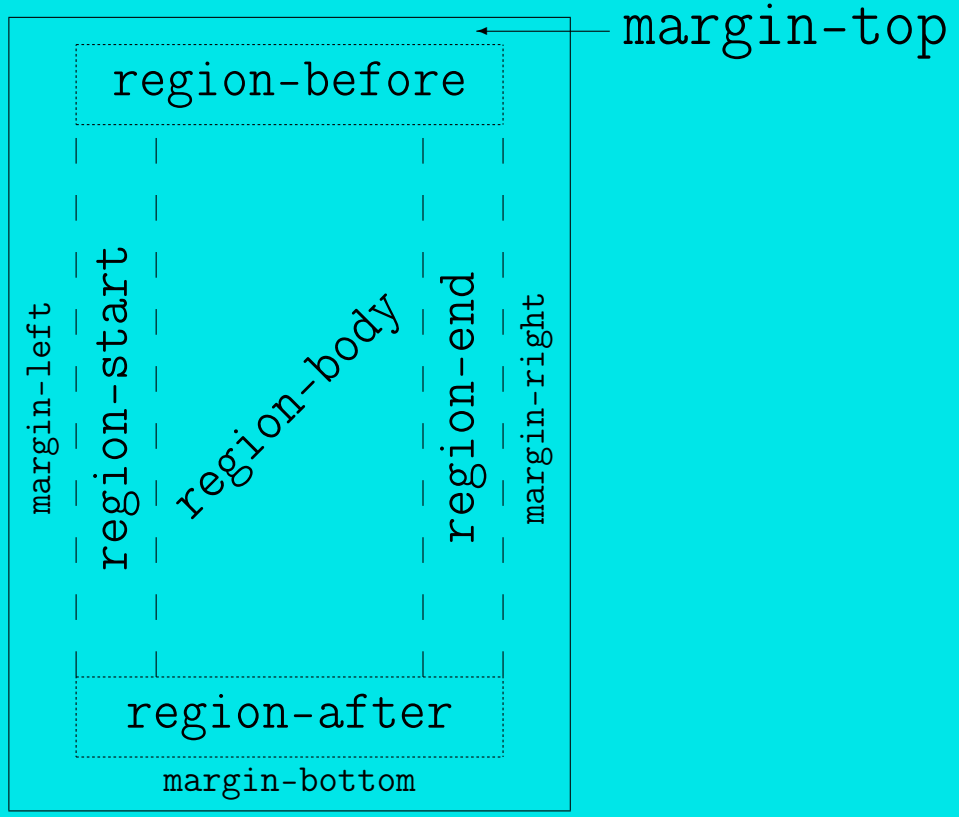
$\simeq$ *document classes* in LaTeX.

`fo:region-body`,
`fo:region-before`, `fo:region-after`,
`fo:region-start`, `fo:region-end`.

Headers and footers $\Longleftarrow$ *static content*.

Text for successive pages $\Longleftarrow$ *flow*.

Page model's regions



One or more pages

`fo:simple-page-master`,

`fo:page-sequence-master`.

More advanced

```
<fo:page-sequence-master ...>
  <fo:repeatable-page-master-alternatives>
    <fo:conditional-page-master-reference
      page-position="..."
      master-name="..."/>
    <fo:conditional-page-master-reference .../>
    ...
  </fo:repeatable-page-master-alternatives>
</fo:page-sequence-master>
```

Directions

- *inline-progression-direction*,
- *block-progression-direction*.

Directions

- *inline-progression-direction*,
- *block-progression-direction*.

In Italian: `lr-tb` (`lr`).

Directions

- *inline-progression-direction*,
- *block-progression-direction*.

In Italian: `lr-tb` (`lr`).

Semitic languages (Hebrew, Arabic):

Directions

- *inline-progression-direction*,
- *block-progression-direction*.

In Italian: `lr-tb` (`lr`).

Semitic languages (Hebrew, Arabic): `rl-tb`.

Directions

- *inline-progression-direction*,
- *block-progression-direction*.

In Italian: `lr-tb` (`lr`).

Semitic languages (Hebrew, Arabic): `rl-tb`.

Traditional Japanese:

Directions

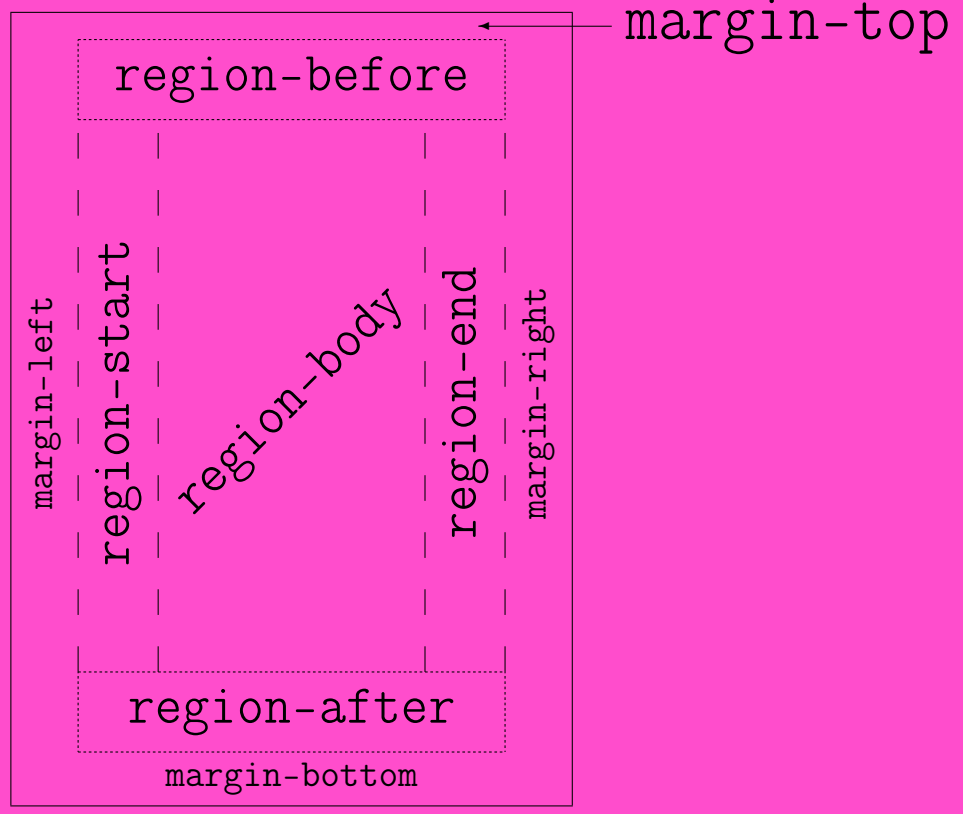
- *inline-progression-direction*,
- *block-progression-direction*.

In Italian: `lr-tb` (`lr`).

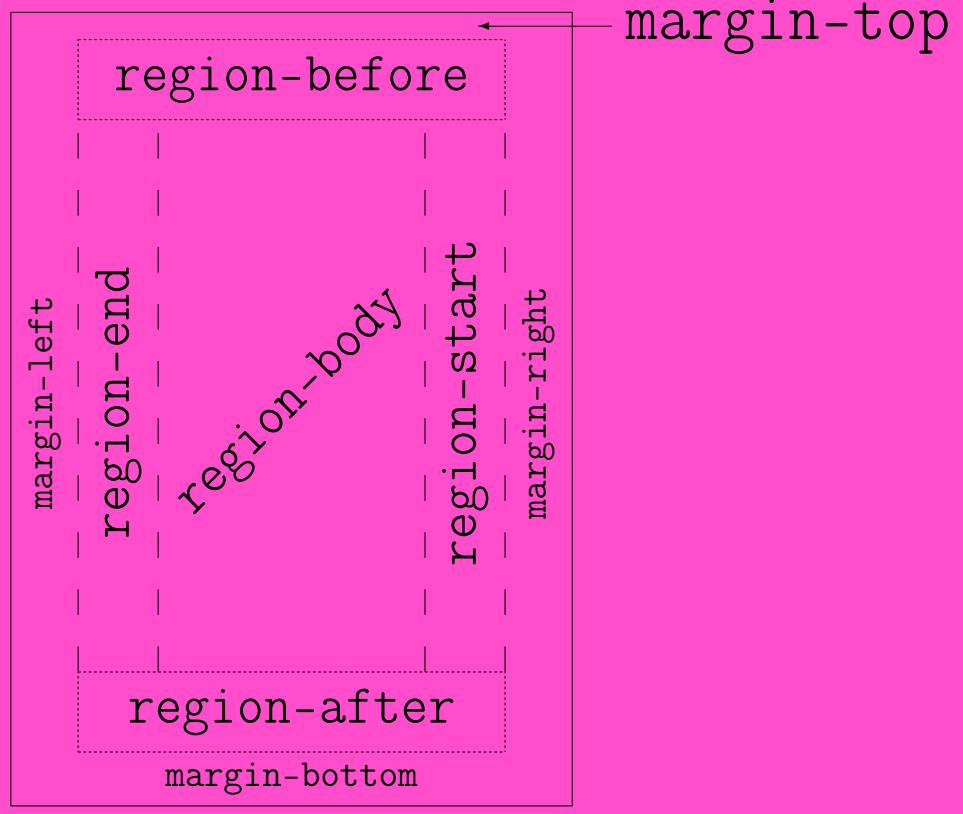
Semitic languages (Hebrew, Arabic): `rl-tb`.

Traditional Japanese: `tb-rl`.

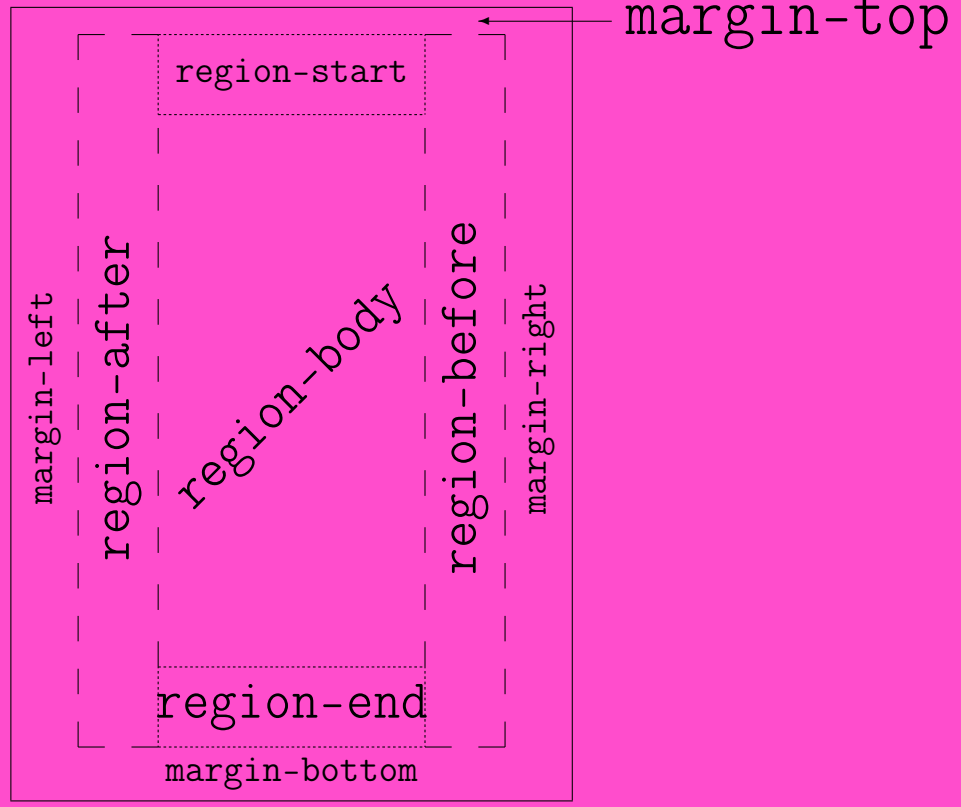
Latin languages



Semitic languages



Traditional Japanese



Other systems

```
lr-alternating-rl-bt

lr-inverting-tb

tb-lr-in-lr-pairs

tb-lr bt-lr bt-rl lr-bt rl-bt
```

Cumulation

(See examples.)

Conclusion

FO processors $\Longleftarrow$ not LaTeX.

Conclusion

FO processors $\Longleftarrow$ not LaTeX.

My personal point of view: (La)TeX and XSL-FO should converge.