

PDF generation with CSS

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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

Our particular problem with XSL-FO PDF generation

- Lots of customization questions from our users
- For each question we lose a lot of time hunting down particular changes which should be made
- Some users just give up either the publishing or the editing solution

CSS-based PDF publishing

Advantages:

- Lots more end users 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

CSS-based PDF publishing

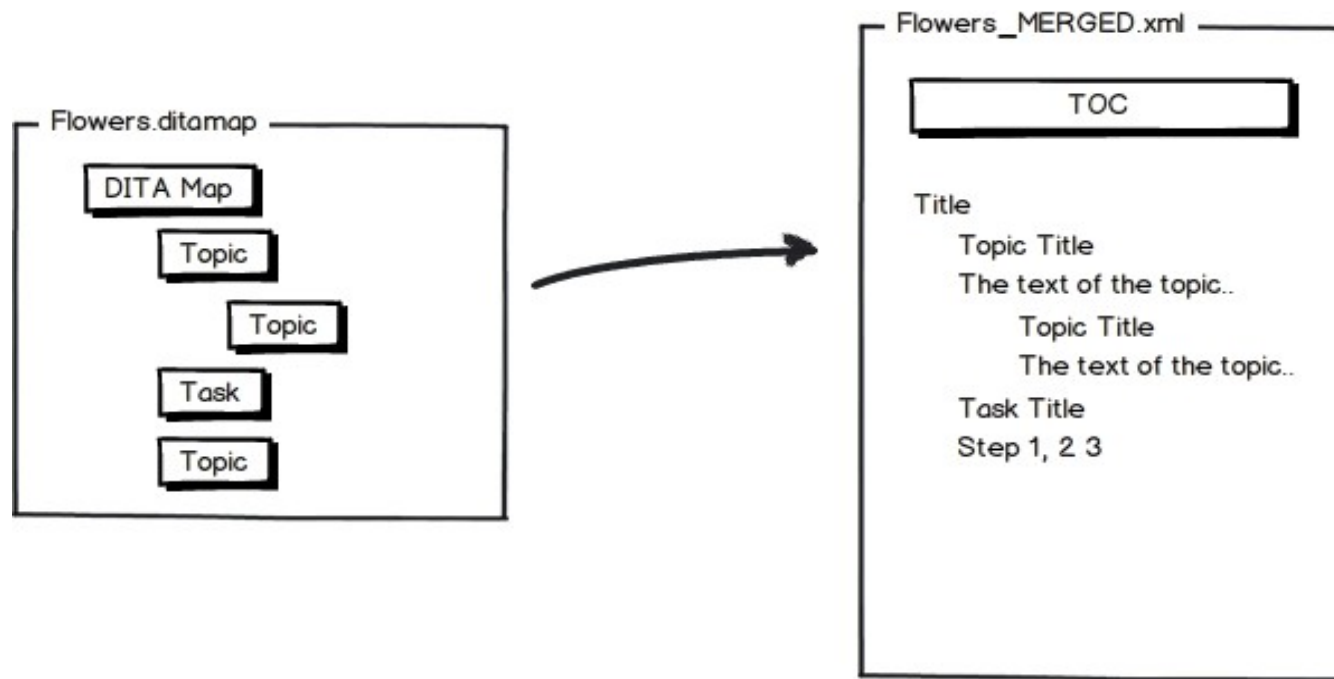
Disadvantages:

- Only commercial engines like Antenna House and Prince XML are available

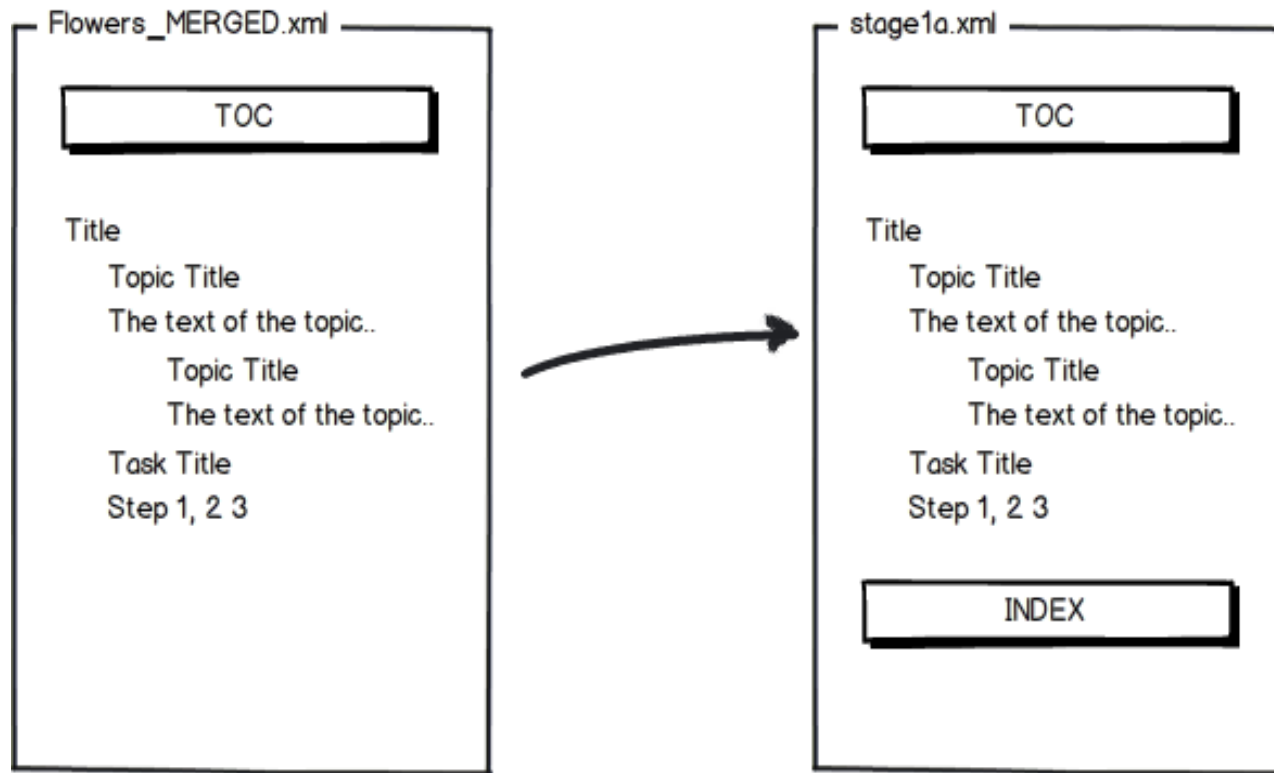
Steps of current DITA OT PDF publishing solution

1. Creates a single file containing the resolved, or **merged** DITA map with all its topics
2. Creates a file derived from the "merged" DITA map file, containing also the index terms
3. Apply XSLT processing to get the final FO file and uses PDF processor to convert the FO file into PDF.

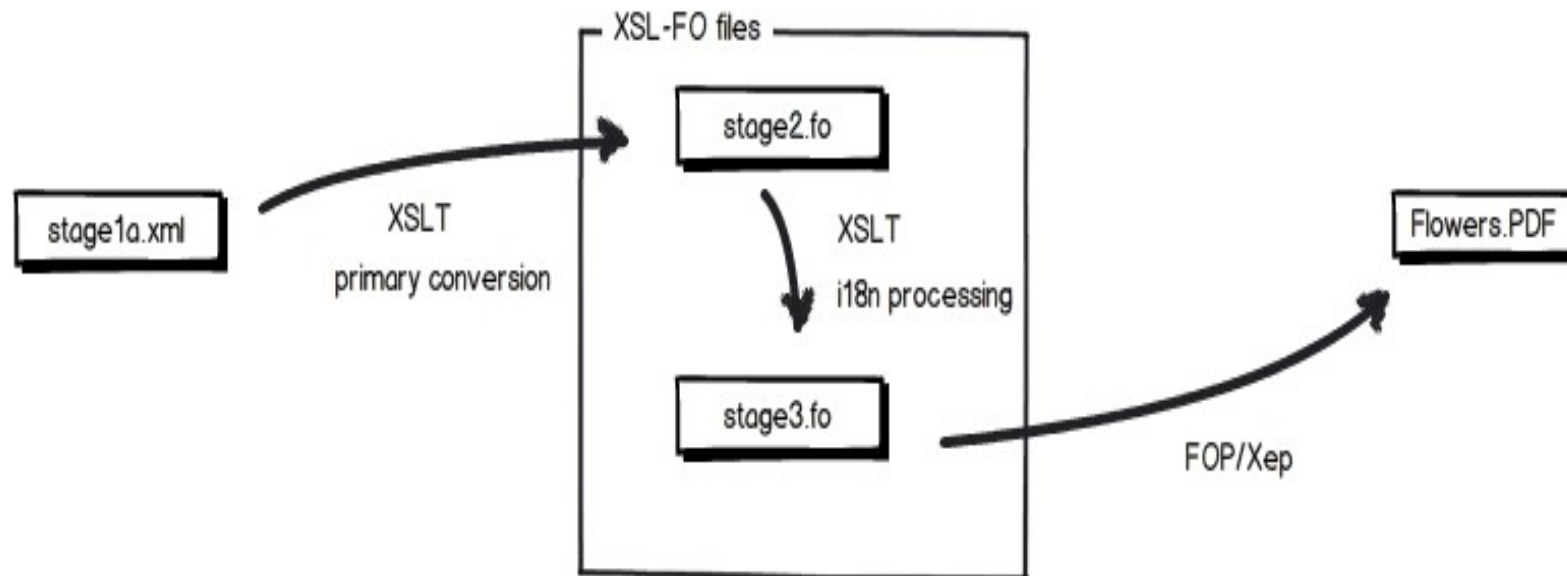
1. Create a single file containing the resolved, or "merged" DITA map with all its topics



2. Create a file derived from the "merged" DITA map file, containing also the indexterms

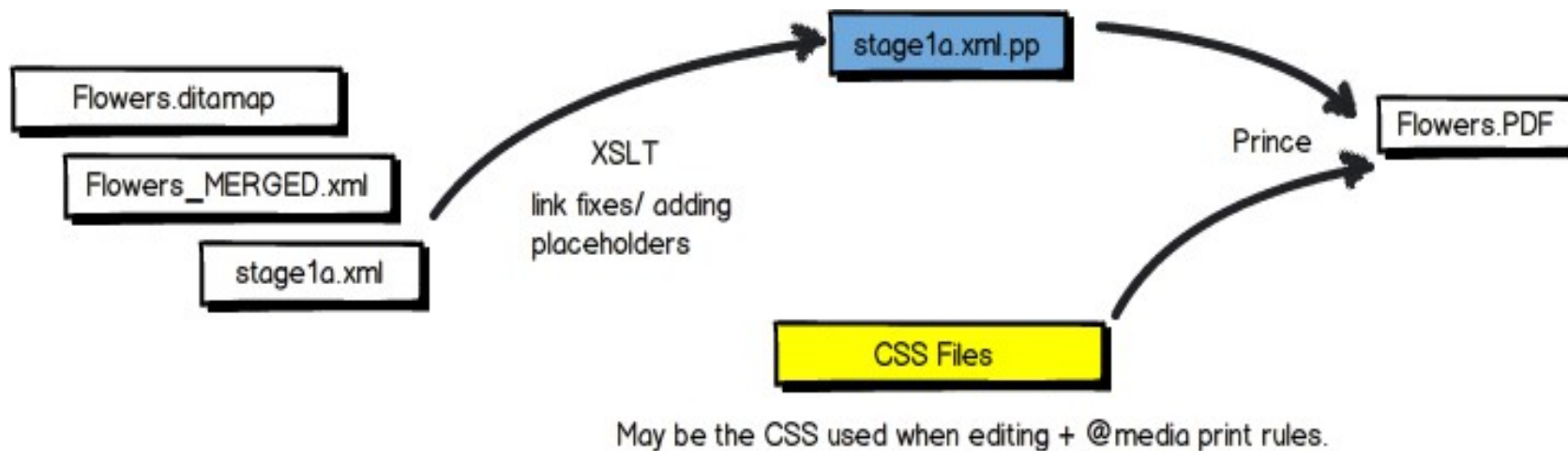


3. Apply XSLT processing to get the final FO file



Steps of the CSS PDF generator plugin

- Duplicate and re-use first two steps from the existing PDF publishing
- Extra XSLT stage
- Add CSSs to the merged XML output and process



XSLT stage

TOC processing:

- Mark every topic reference to a chapter
- Cleaning the TOC, keeping only the navtitles.
- Creates an entry in the TOC pointing to the ID of the index section.

XSLT stage

Content processing:

- Mark each chapter
- If there are relative image references, makes them absolute
- Convert the comments and change tracking processing instructions to elements

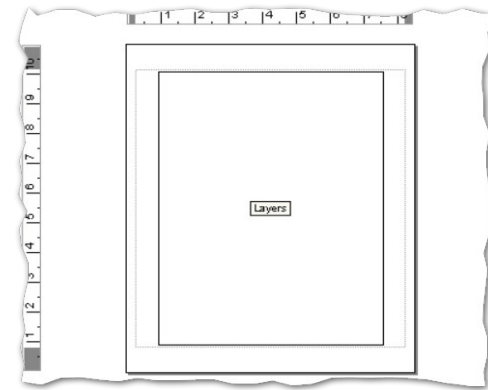
XSLT stage

Index preparation:

- Generates an ID to each of the indexterm from the content.
- Makes a reference to the generated ID from the index structure.

CSS styling examples (1)

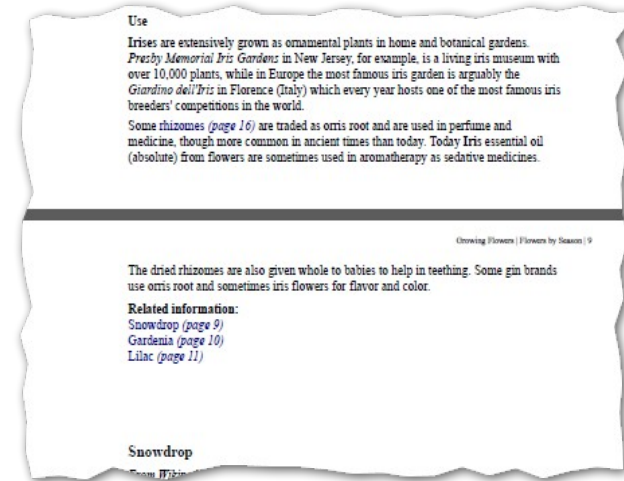
Setting page margins and size:



```
@page{  
  padding-top:0.2em;  
  padding-bottom:0.2em;  
  size: 8.27in 11.69in;  
  margin: 0.75in 0.25in 0.75in 1in;  
}
```

CSS styling examples (2)

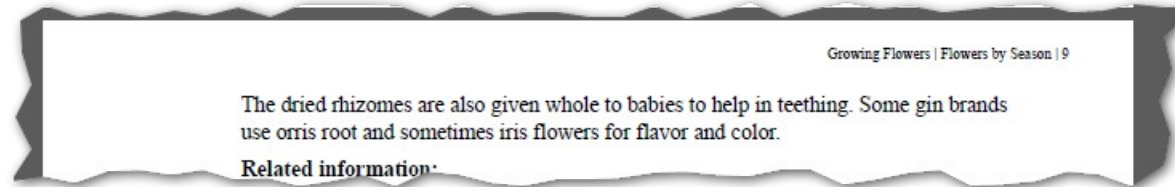
Page breaks:



```
*[class ~= "topic/topic"] [is-chapter = "true"] {
  page-break-before: always;
}
```

CSS styling examples (3)

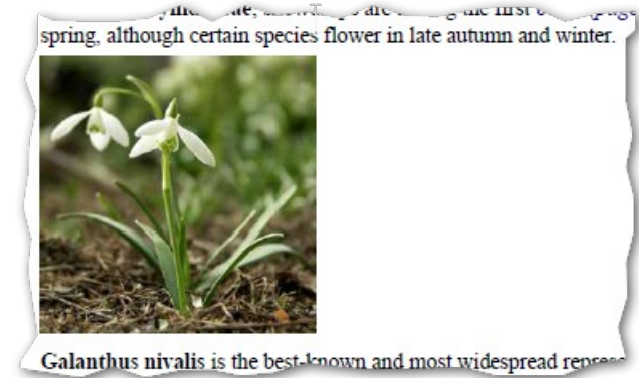
Page numbers:



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


CSS styling examples (4)

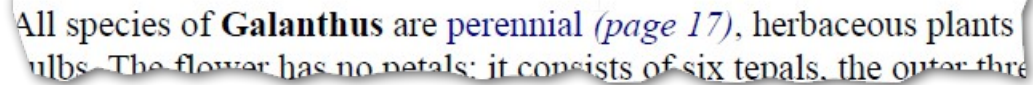
Setting the image resolution:



```
@media print{  
  *[class ~= "map/map"] {  
    prince-image-resolution: 196dpi;  
  }  
}
```

CSS styling examples (5)

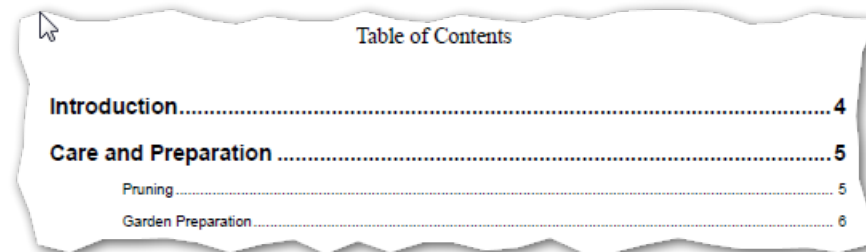
Links:

A snippet of text from a document, showing a reference to a page. The text is: "All species of **Galanthus** are perennial (*page 17*), herbaceous plants with bulbous roots. The flower has no petals; it consists of six tepals, the outer three being larger than the inner three." The word "Galanthus" is bolded, and "page 17" is italicized.

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

CSS styling examples (6)

Table of contents:

A screenshot of a table of contents with a torn paper effect. The title "Table of Contents" is centered at the top. Below it, the following items are listed with dotted lines and page numbers:

Introduction.....	4
Care and Preparation	5
Pruning	5
Garden Preparation	6

```
*[class ~= "map/map"] > map {  
  display: block;  
  page: table-of-contents;  
  counter-reset: page 1;  
}
```

Future plans

- Try to establish a community to share the work load
- Bring the new plugin's output quality to the same level of compliance with the current PDF generation plugin
- Write some decent documentation for it

Availability



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

Thank You!

Questions?

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