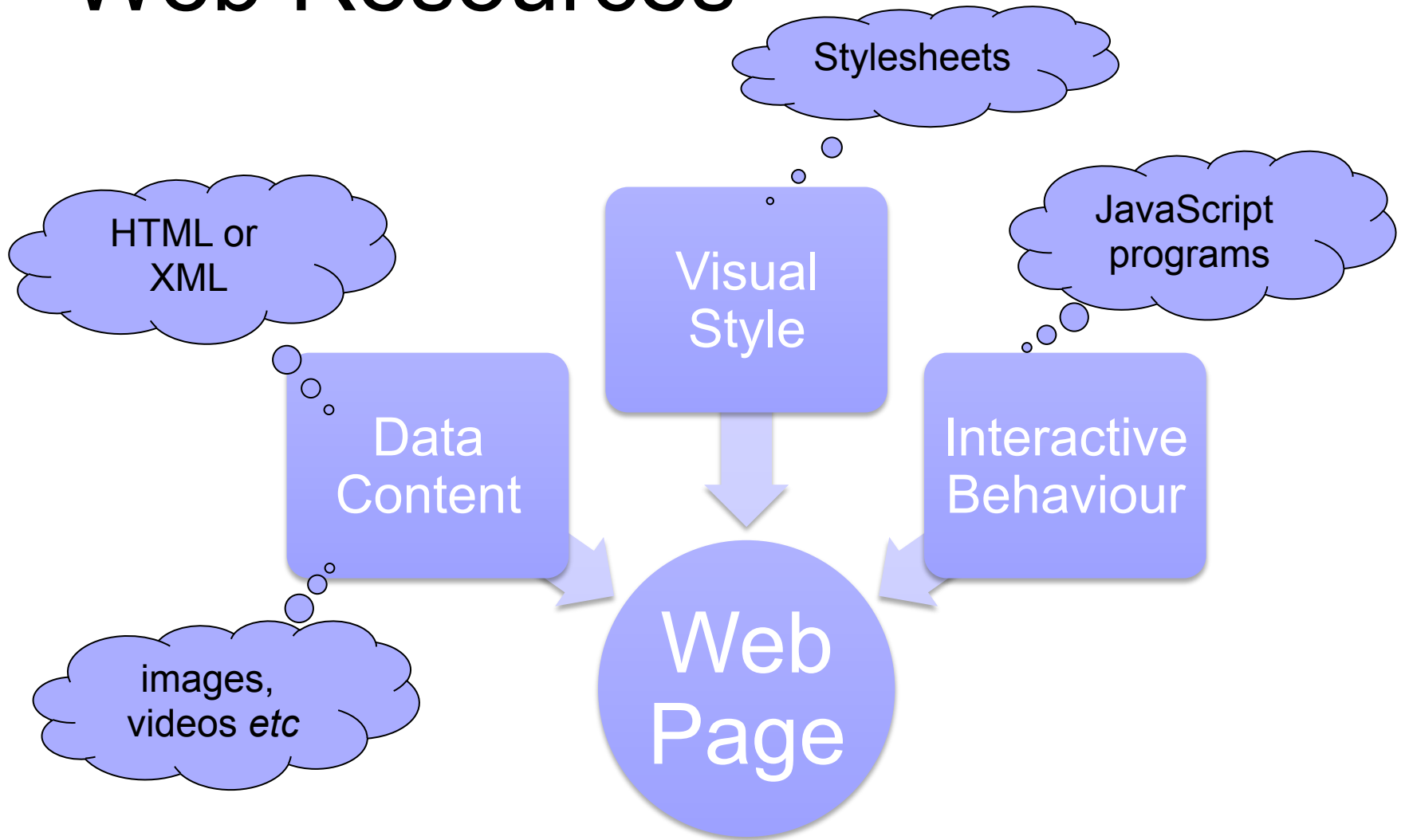




# Stylesheets: CSS & XSL

COMP6218 Web Architecture  
*Professor Leslie Carr*

# Web Resources



# HTML Stylesheets (CSS)

- Stylesheets can be applied to an HTML file with a *link instruction*

```
<html>
```

```
<head>
```

```
<link rel="stylesheet" type="text/css"  
      href="style.css">
```

```
</head>
```

```
<body><h1>Cinderella</h1>
```

```
<p>Once upon a time a <i>wicked queen</i> tried to  
  get rid of her pretty step-daughter, <b>Snow  
  White</b>.</p>
```

```
</body></html>
```

# HTML Stylesheets (CSS)

## ■ or with a *stylesheet element*

```
<html>
```

```
<head>
```

```
<style type="text/css">
```

```
h1 {color:red;}
```

```
</style>
```

```
</head>
```

```
<body><h1>Cinderella</h1>
```

```
<p>Once upon a time a <i>wicked queen</i> tried to  
get rid of her pretty step-daughter, <b>Snow  
White</b>.</p>
```

```
</body></html>
```

# HTML Stylesheets (CSS)

- or in a *style attribute*

```
<html>
```

```
<body><h1 style="color:red">Cinderella</h1>
```

```
<p>Once upon a time a <i>wicked queen</i> tried to  
get rid of her pretty step-daughter, <b>Snow  
White</b>.</p>
```

```
</body></html>
```

# XML Stylesheets (CSS)

- Stylesheets can be applied to an XML data file with a *processing instruction*

```
<?xml version="1.0"?>
```

```
<?xml-stylesheet type="text/css" href="book.css" ?>
```

```
<BOOK>
```

```
<CHAPTER><TITLE>Cinderella</TITLE>
```

```
<PARA>Once upon a time a <character>wicked queen</character>
  tried to get rid of her pretty step-
  daughter, <character>Snow White</character>.</
  PARA>
```

```
</CHAPTER></BOOK>
```

# CSS Stylesheet

**selector**

CHAPTER, TITLE,

PARA {display:block;}

TITLE {font-weight: bold;}

character {font-style: italic;}

CHAPTER {margin: 0.2in 0.5in 0.2in 0.5in;  
border: 2pt solid red;  
padding: 0.1in;}

**style  
definition**

## **Cinderella**

Once upon a time a *wicked queen* tried to get rid of her pretty step-daughter, *Snow White*.

# CSS Stylesheet Selectors

- element name            title
- list of elements        title, para, chapter
- context  
                              chapter title  
                              book title  
                              author name title
- class                     .iimportant  
                              *<p class="important">some kind of text</p>*
- identifier                #thisone  
                              *<p id="thisone">a specific element</p>*

See the helpful guide



# CSS Stylesheets

## ■ Common declarations

```
font-family: Arial
```

```
font-size: 32pt
```

```
font-style: italic
```

```
font-weight: bold
```

```
line-height: 14pt
```

```
color: green
```

```
background-color: yellow
```

```
text-align: center
```

```
text-transform: uppercase
```

```
text-indent: 3em
```

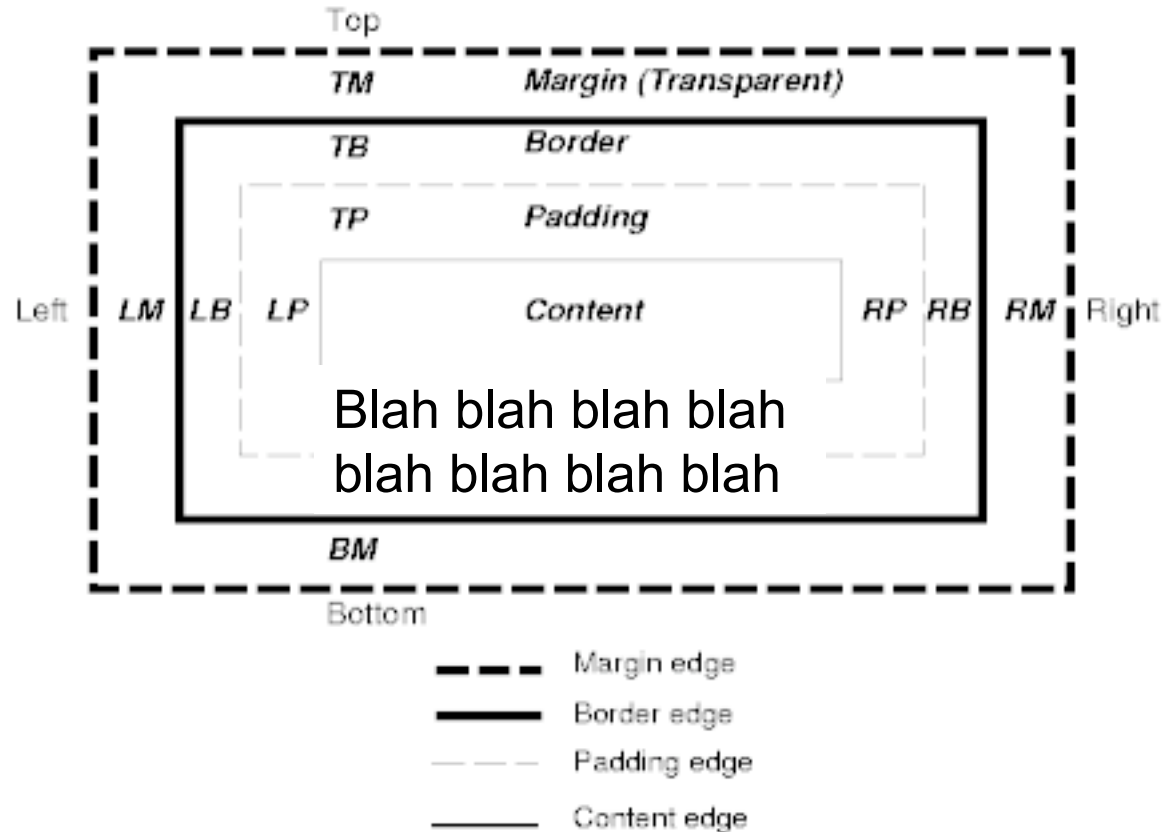
```
display: block
```

```
margin: 12pt 12pt 12pt  
12pt;
```

```
border: 0.1in solid red;
```

```
padding: 0.1in 0.1in 0.1in  
0.1in;
```

# CSS Box Model



A paragraph (or div) has a **BORDER** around its edge, a **MARGIN** outside that and **PADDING** inside

*display: block* creates a NEW BOX; *display: inline* continues putting content inside the current box; *display: none* ignores the material.

# Example

- `<card>`  
`<name>Leslie Carr</name>`  
`<title>Senior Lecturer</title>`  
`<email>lac@ecs.soton.ac.uk</email>`  
`<phone>+44 2380 5924479</phone>`  
`</card>`

# Stylesheet

- `card { display: block; border: red 2mm; width: 4in; }`
- `name { display: block; font-size: 20pt; margin-left: 0; }`
- `title { display: block; color: blue; margin-left: 20pt; }`
- `email { display: block; font-family: monospace; margin-left: 20pt; }`
- `phone { display: block; margin-left: 20pt; }`

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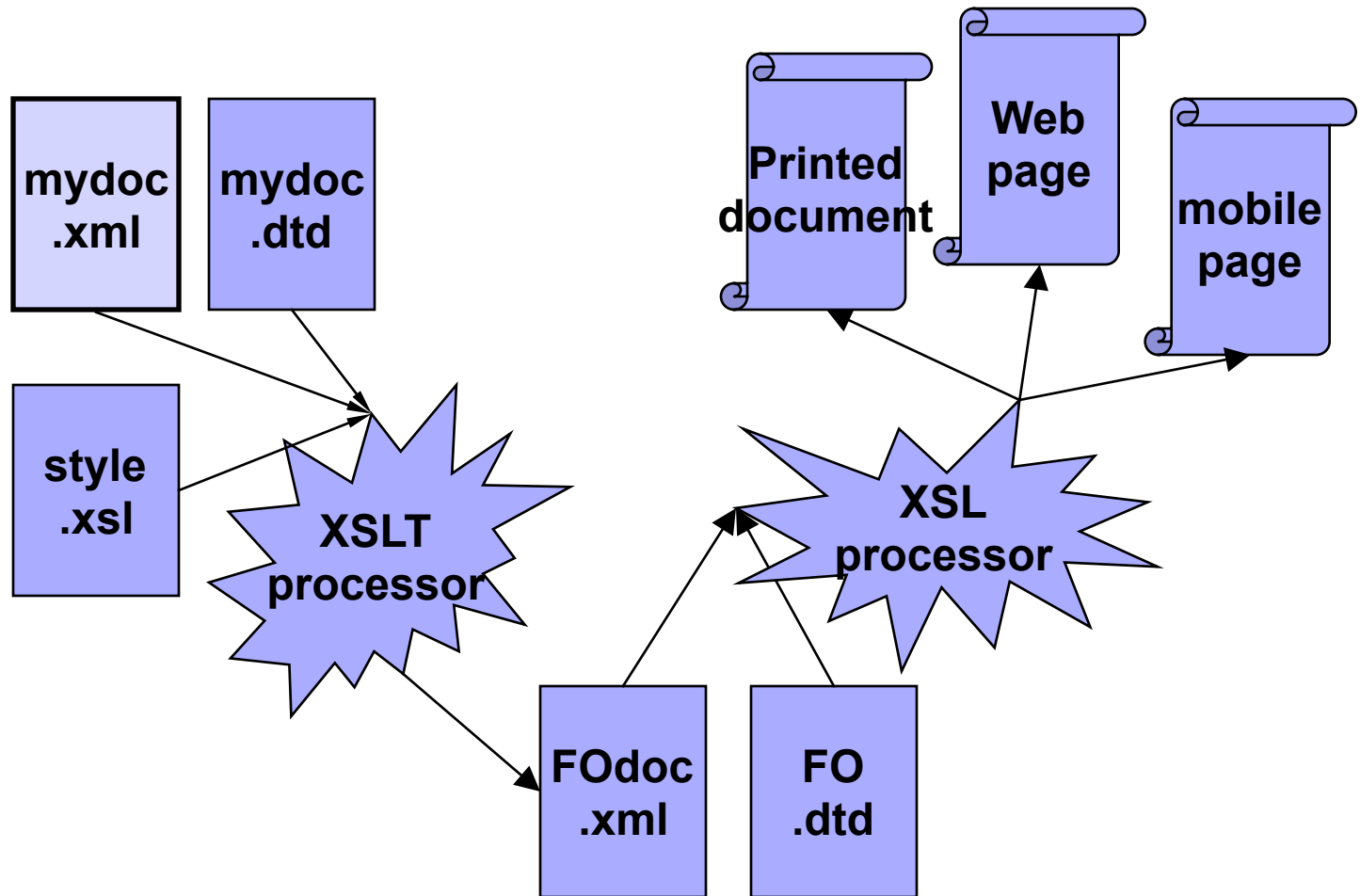
# XSL: XML Stylesheets

- An XSL stylesheet describes how to transform
  - your XML document
  - into a different XML document
  - (one that uses the formatting vocabulary)

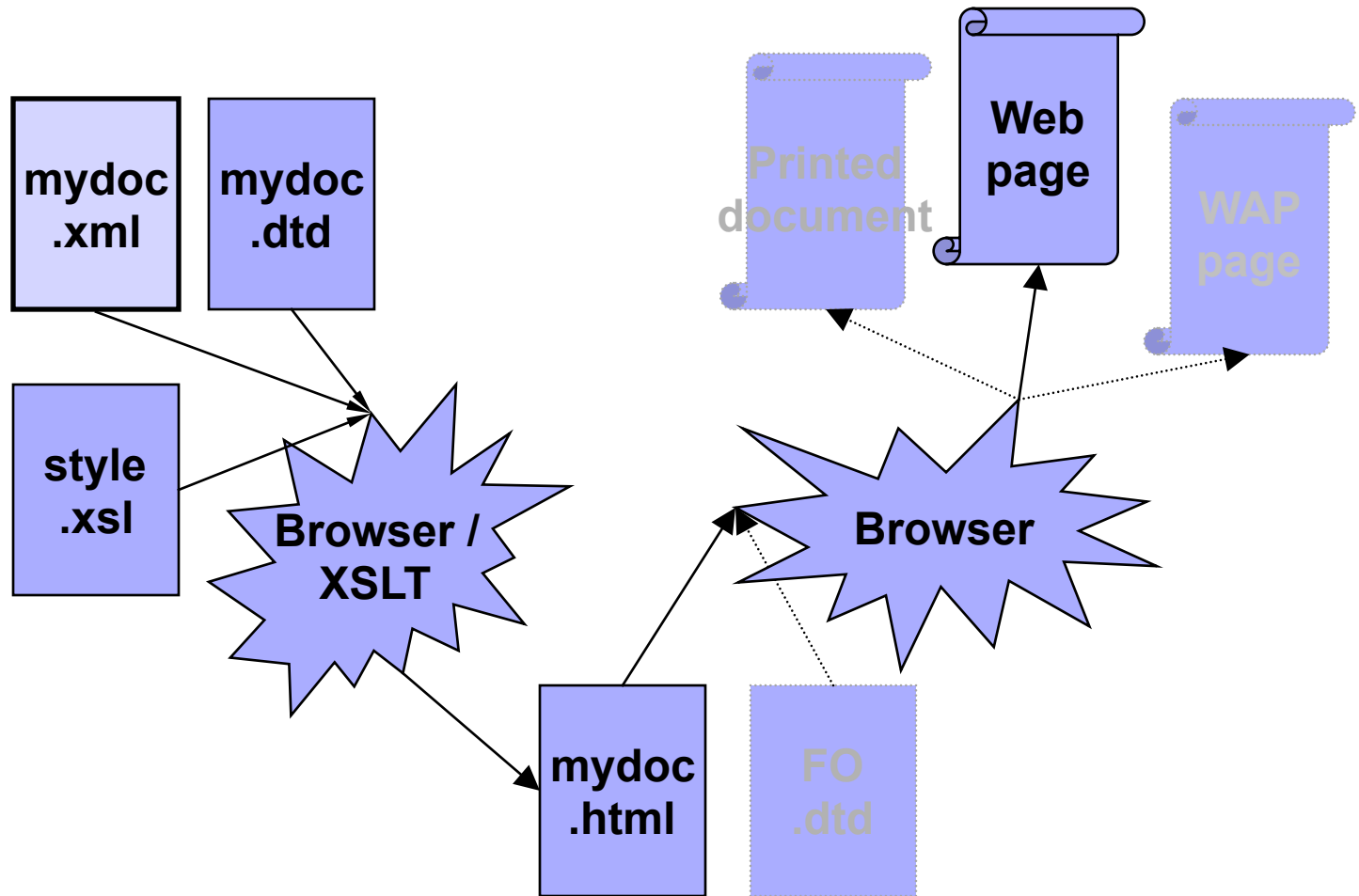
# XML Processing: XSL

- XSL provides
  - an XML vocabulary for specifying formatting semantics
    - FO – Formatting Objects
  - a language for transforming XML data
    - XSL(T) – the “T” stands for **Transform**

# Stylesheet Processing (theory)



# Stylesheet Processing (practice)







# XSL Stylesheet: Templates

- XSL stylesheet consists of a number of templates
- Each template
  - matches an element in the original document
  - specifies the new content to replace the element by

# Simple Stylesheet

- A simple stylesheet might look like this...

```
<stylesheet>
  <template match="rule">
    <hr/>
  </template>
  <template match="newline">
    <br/>
  </template>
  <template match="expletive">
    *!#$%!*
  </template>
</stylesheet>
```

replace <rule>  
with <hr>

replace <newline>  
by <br>

censor all  
swear words

XHTML



# CSS Stylesheets

## ■ Pros

- simple
- good for documents

## ■ Cons

- unable to add to or change documents
- bad for data

- CSS2, CSS3 addresses some of the cons



# XSL Stylesheets

## ■ Cons

- Complex
- Cumbersome for ordinary documents

## ■ Pros

- Able to add to or change documents
- Great for database data