

# CSS selectors

Needed or not?

Supported methods

Filtering classes

Filtering attributes

Combining methods

Child selectors

Simple formulas

Special cases

Combinations

Comparison (1)

Comparison (2)

- used in HTML styling
- a bit different from the path based method
- shortcuts for filtering by attribute
- class filtering is special because it checks for list
- one can select more at the same time
- performance is okay compared to path lookup
- selectors go between curly braces:

```
\xmlall {#1} {{foo bar .whatever, bar foo .whatever}}
```

**Needed or not?**

The following methods are supported:

<code>element</code>	all tags element
<code>element-1 &gt; element-2</code>	all tags element-2 with parent tag element-1
<code>element-1 + element-2</code>	all tags element-2 preceded by tag element-1
<code>element-1 ~ element-2</code>	all tags element-2 preceded by tag element-1
<code>element-1 element-2</code>	all tags element-2 inside tag element-1
<code>[attribute]</code>	has attribute
<code>[attribute=value]</code>	attribute equals value
<code>[attribute~=value]</code>	attribute contains value (space is separator)
<code>[attribute^="value"]</code>	attribute starts with value
<code>[attribute\$="value"]</code>	attribute ends with value
<code>[attribute*="value"]</code>	attribute contains value
<code>.class</code>	has class
<code>#id</code>	has id
<code>:nth-child(n)</code>	the child at index n
<code>:nth-last-child(n)</code>	the child at index n from the end
<code>:first-child</code>	the first child
<code>:last-child</code>	the last child
<code>:nth-of-type(n)</code>	the match at index n
<code>:nth-last-of-type(n)</code>	the match at index n from the end
<code>:first-of-type</code>	the first match
<code>:last-of-type</code>	the last match
<code>:only-of-type</code>	the only match or nothing
<code>:only-child</code>	the only child or nothing
<code>:empty</code>	only when empty
<code>:root</code>	the whole tree

## Supported methods

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

---

.one

```

b.one
b.one.two
g gg f.one
g f.one

```

## Filtering classes

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

---

.one, .two

```

b.one
b.two
b.one.two
g gg f.one
g gg f.two
g f.one

```

## Filtering classes

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

\_\_\_\_\_ .one, .two, #first \_\_\_\_\_

```

b.one
b.two
b.one.two
b#first
g gg f.one
g gg f.two
g f.one

```

## Filtering classes

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

---

[foo], [bar=foo]

```

@foo = bar
@bar = foo

```

## Filtering attributes

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

---

```
[bar~=foo]
```

```
@bar = foo
```

## Filtering attributes

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

---

[bar^="foo"]

```

@bar = foo
@bar = foo1
@bar = foo2
@bar = foo3
@bar = foo+4

```

## Filtering attributes

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

---

[whatever~="five"]

@whatever = four five six

## Filtering attributes

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

---

g f .one, g f .three

```

g gg f.one
g gg f.three
g f.one
g f.three

```

## Combining methods

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

— g > f .one, g > f .three —

```

g f.one
g f.three

```

## Combining methods

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

— d + e —

d e

## Combining methods

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

— d e —

d e

d e e

## Combining methods

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

— d e, g f .one, g f .three —

```

d e
d e e
g gg f.one
g gg f.three
g f.one
g f.three

```

## Combining methods

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

— a:nth-child(3) —

b.one.two

**Child selectors**

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

---

a:nth-last-child(3)

```
<f class="one">g f.one</f>
```

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

g:nth-of-type(3)

```
<gg><f>g gg f</f></gg>
```

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

—— g:nth-last-of-type(3) ——

```
<gg><f class="three">g gg f.three</f></gg>
```

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

— a:first-child —

b.one

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

—— a:last-child ——

@whatever = four five six

## Child selectors

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

— e:first-of-type —

d e

## Child selectors

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

---

gg d:only-of-type

g gg d

**Child selectors**

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

---

a:nth-child(even)

b.two

b.three

c

d e

d f

@bar = foo

@bar = foo2

@bar = foo+4

<gg><d>g gg d</d></gg>

## Simple formulas

```
<gg><f class="one">g gg f.one</f></gg>  
<gg><f class="two">g gg f.two</f></gg>  
<f class="one">g f.one</f>
```

**Simple formulas**

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

---

a:nth-child(odd)

```

b.one
b.one.two
b#first
d e
d e e
@foo = bar
@bar = foo1
@bar = foo3
g
<gg><f>g gg f</f></gg>

```

## Simple formulas

g

```
<gg><f class="three">g gg f.three</f></gg>
```

```
<f class="three">g f.three</f>
```

**Simple formulas**

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

—— a:nth-child(3n+1) ——

```

b.one
b.two
b.one.two
b.three
b#first
c
d e
d e
d e e
d f

```

Simple formulas

```
@foo = bar
@bar = foo
@bar = foo1
@bar = foo2
@bar = foo3
@bar = foo+4
g
<gg><d>g gg d</d></gg>
<gg><f>g gg f</f></gg>
<gg><f class="one">g gg f.one</f></gg>
g
<gg><f class="two">g gg f.two</f></gg>
<gg><f class="three">g gg f.three</f></gg>
```

**Simple formulas**

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

— a:nth-child(2n+3) —

```

b.one.two
c
d e e
@bar = foo
@bar = foo3
<gg><d>g gg d</d></gg>
g
<f class="one">g f.one</f>

```

Simple formulas

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

g:empty

## Special cases

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

— g:root —

```

<b class="one">b.one</b>
<b class="two">b.two</b>
<b class="one two">b.one.two</b>
<b class="three">b.three</b>
<b id="first">b#first</b>
<c>c</c>
<d>d e</d>
<e>d e</e>
<e>d e e</e>
<d>d f</d>

```

Special cases

```
<f foo="bar">@foo = bar</f>
<f bar="foo">@bar = foo</f>
<f bar="foo1">@bar = foo1</f>
<f bar="foo2">@bar = foo2</f>
<f bar="foo3">@bar = foo3</f>
<f bar="foo+4">@bar = foo+4</f>
<g>g</g>
<g><gg><d>g gg d</d></gg></g>
<g><gg><f>g gg f</f></gg></g>
<g><gg><f class="one">g gg f.one</f></gg></g>
<g>g</g>
<g><gg><f class="two">g gg f.two</f></gg></g>
<g><gg><f class="three">g gg f.three</f></gg></g>
<g><f class="one">g f.one</f></g>
<g><f class="three">g f.three</f></g>
<h whatever="four five six">@whatever = four five six</h>
```

**Special cases**

```

<?xml version="1.0" ?>

<a>
  <b class="one">b.one</b>
  <b class="two">b.two</b>
  <b class="one two">b.one.two</b>
  <b class="three">b.three</b>
  <b id="first">b#first</b>
  <c>c</c>
  <d>d e</d>
  <e>d e</e>
  <e>d e e</e>
  <d>d f</d>
  <f foo="bar">@foo = bar</f>
  <f bar="foo">@bar = foo</f>
  <f bar="foo1">@bar = foo1</f>
  <f bar="foo2">@bar = foo2</f>
  <f bar="foo3">@bar = foo3</f>
  <f bar="foo+4">@bar = foo+4</f>
  <g>g</g>
  <g><gg><d>g gg d</d></gg></g>
  <g><gg><f>g gg f</f></gg></g>
  <g><gg><f class="one">g gg f.one</f></gg></g>
  <g>g</g>
  <g><gg><f class="two">g gg f.two</f></gg></g>
  <g><gg><f class="three">g gg f.three</f></gg></g>
  <g><f class="one">g f.one</f></g>
  <g><f class="three">g f.three</f></g>
  <h whatever="four five six">@whatever = four five six</h>
</a>

```

---

\*

```

<b class="one">b.one</b>
<b class="two">b.two</b>
<b class="one two">b.one.two</b>
<b class="three">b.three</b>
<b id="first">b#first</b>
<c>c</c>
<d>d e</d>
<e>d e</e>
<e>d e e</e>
<d>d f</d>

```

## Special cases

```

<f foo="bar">@foo = bar</f>
<f bar="foo">@bar = foo</f>
<f bar="foo1">@bar = foo1</f>
<f bar="foo2">@bar = foo2</f>
<f bar="foo3">@bar = foo3</f>
<f bar="foo+4">@bar = foo+4</f>
<g>g</g>
<g><gg><d>g gg d</d></gg></g>
<g><gg><f>g gg f</f></gg></g>
<g><gg><f class="one">g gg f.one</f></gg></g>
<g>g</g>
<g><gg><f class="two">g gg f.two</f></gg></g>
<g><gg><f class="three">g gg f.three</f></gg></g>
<g><f class="one">g f.one</f></g>
<g><f class="three">g f.three</f></g>
<h whatever="four five six">@whatever = four five six</h>

```

b.one

b.two

b.one.two

b.three

b#first

c

d e

d e

d e e

d f

@foo = bar

@bar = foo

@bar = foo1

@bar = foo2

@bar = foo3

@bar = foo+4

g

<gg><d>g gg d</d></gg>

<d>g gg d</d>

g gg d

<gg><f>g gg f</f></gg>

<f>g gg f</f>

g gg f

<gg><f class="one">g gg f.one</f></gg>

<f class="one">g gg f.one</f>

g gg f.one

## Special cases

```
g
<gg><f class="two">g gg f.two</f></gg>
<f class="two">g gg f.two</f>
g gg f.two
<gg><f class="three">g gg f.three</f></gg>
<f class="three">g gg f.three</f>
g gg f.three
<f class="one">g f.one</f>
g f.one
<f class="three">g f.three</f>
g f.three
@whatever = four five six
```

**Special cases**

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

```
— g gg f .one —————
```

```
g gg f.one
```

Combinations

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

```
—— g/gg/f[@class='one'] ——
```

```
g gg f.one
```

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

```
<a>
```

```
  <b class="one">b.one</b>
```

```
  <b class="two">b.two</b>
```

```
  <b class="one two">b.one.two</b>
```

```
  <b class="three">b.three</b>
```

```
  <b id="first">b#first</b>
```

```
  <c>c</c>
```

```
  <d>d e</d>
```

```
  <e>d e</e>
```

```
  <e>d e e</e>
```

```
  <d>d f</d>
```

```
  <f foo="bar">@foo = bar</f>
```

```
  <f bar="foo">@bar = foo</f>
```

```
  <f bar="foo1">@bar = foo1</f>
```

```
  <f bar="foo2">@bar = foo2</f>
```

```
  <f bar="foo3">@bar = foo3</f>
```

```
  <f bar="foo+4">@bar = foo+4</f>
```

```
  <g>g</g>
```

```
  <g><gg><d>g gg d</d></gg></g>
```

```
  <g><gg><f>g gg f</f></gg></g>
```

```
  <g><gg><f class="one">g gg f.one</f></gg></g>
```

```
  <g>g</g>
```

```
  <g><gg><f class="two">g gg f.two</f></gg></g>
```

```
  <g><gg><f class="three">g gg f.three</f></gg></g>
```

```
  <g><f class="one">g f.one</f></g>
```

```
  <g><f class="three">g f.three</f></g>
```

```
  <h whatever="four five six">@whatever = four five six</h>
```

```
</a>
```

```
—— g/gg f .one ——
```

```
g gg f.one
```

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

```
<document>  
  <title class="one" >title 1</title>  
  <title class="two" >title 2</title>  
  <title class="one" >title 3</title>  
  <title class="three">title 4</title>  
</document>
```

— document title .one, document title .three —

```
title 1  
title 3  
title 4
```

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

```
<document>  
  <title class="one" >title 1</title>  
  <title class="two" >title 2</title>  
  <title class="one" >title 3</title>  
  <title class="three">title 4</title>  
</document>
```

```
—— /document/title[(@class='one') or (@class='three')] ——
```

```
title 1  
title 3  
title 4
```

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

```
<document>  
  <title class="one">title 1</title>  
  <subtitle class="sub">title 1.1</subtitle>  
  <title class="two">title 2</title>  
  <subtitle class="sub">title 2.1</subtitle>  
  <title class="one">title 3</title>  
  <subtitle class="sub">title 3.1</subtitle>  
  <title class="two">title 4</title>  
  <subtitle class="sub">title 4.1</subtitle>  
</document>
```

— document title .one + subtitle, document title .two + subtitle

```
title 1.1  
title 2.1  
title 3.1  
title 4.1
```

*A combined filter triggers a sorting pass!*