

CSS: Classes, IDs, Selectors

Computer Science and Engineering ■ College of Engineering ■ The Ohio State University

Lecture 17

Classes

- Not all paragraphs created equally
 - Some paragraphs are drafts, so want them styled differently
- Solution: **class** attribute

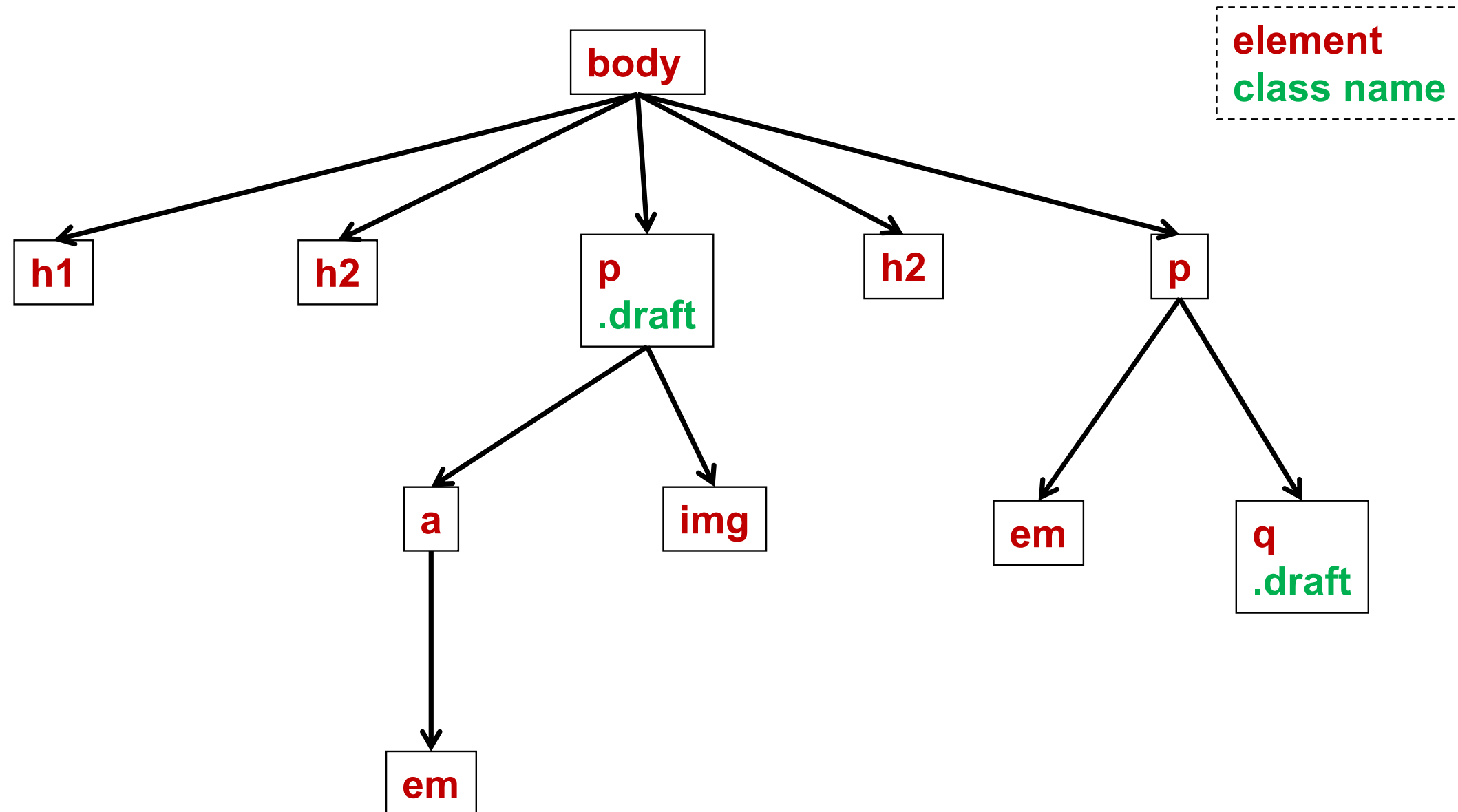
```
<p class="draft">... </p>
```
- CSS syntax for selector: *elt.class*

```
p.draft { color: gray; }
```
- Wildcard (any element): *.class*

```
.draft { font-style: italic; }
```
- An element can be in multiple classes
 - Recall: attributes are a map, so names must be unique

```
<p class="draft even">... </p>
```

Classes Add to Tree Structure



Notes on Classes

- When an element belongs to multiple classes, which style gets applied?
 - Different properties are combined (union)
 - Same properties, ie styled by both, need a way to resolve the conflict (more later)
- Good practice: Classes should reflect semantics or structure, not visual formatting
 - Bad class name: green
 - Good class name: draft
- Example: [css-classes](#)

Problem: Class Requires an Element

- Consider a group of (block) elements that need to be styled together
 - Example: Header and following paragraph(s) are part of the same warning

```
<h2 class="warning"> ... </h2>
```

```
<p class="warning"> ... </p>
```
- This approach is awkward
 - Every element in the group needs to be decorated this same way: ie duplicated code
 - Difficult to style the entire unit's box (*e.g.*, add a border around the whole warning)

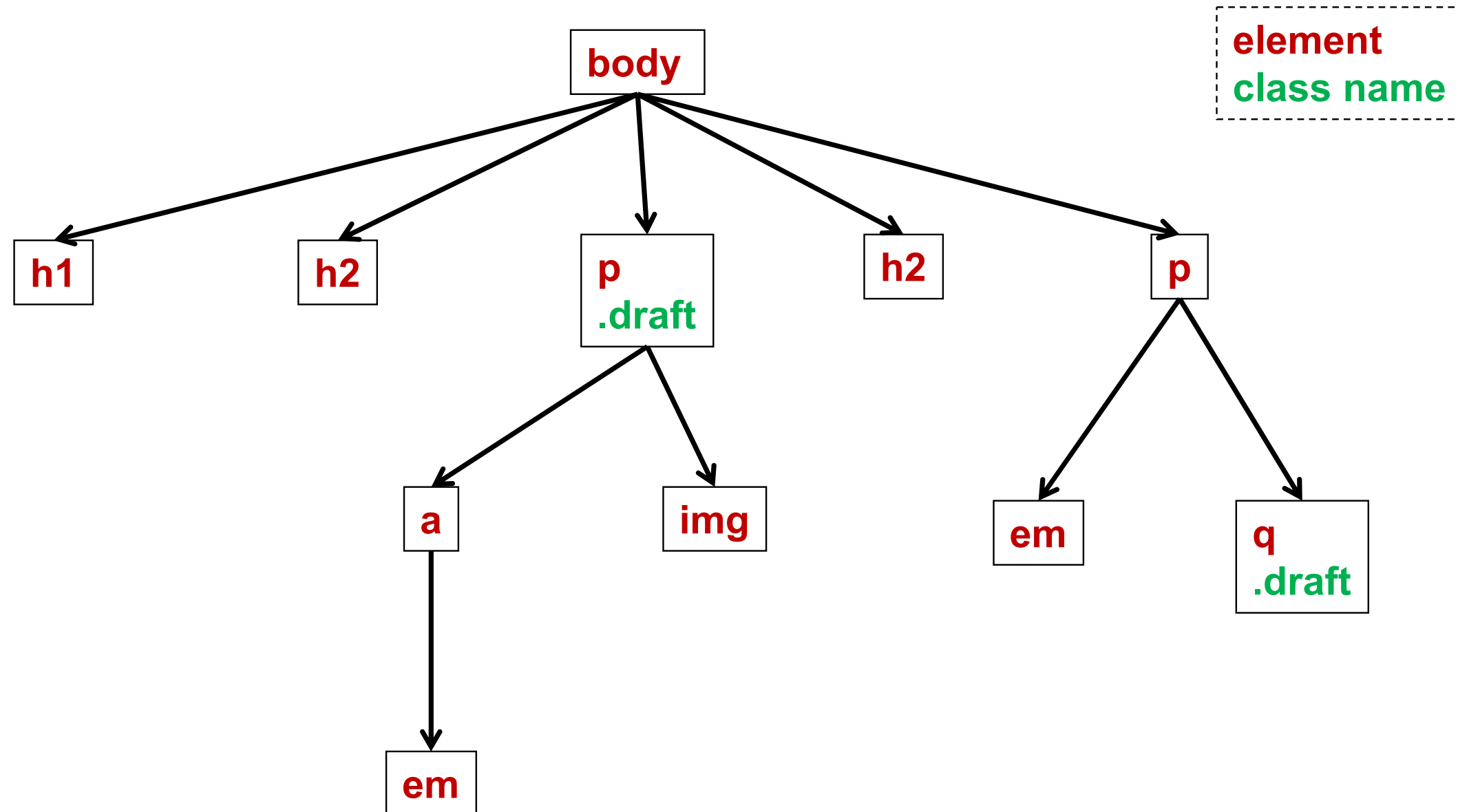
Solution: Div Element

- `div` is a *logical* (non-semantic) block element
- Can be styled like any other block element
 - Font, dimension, border, margin, etc

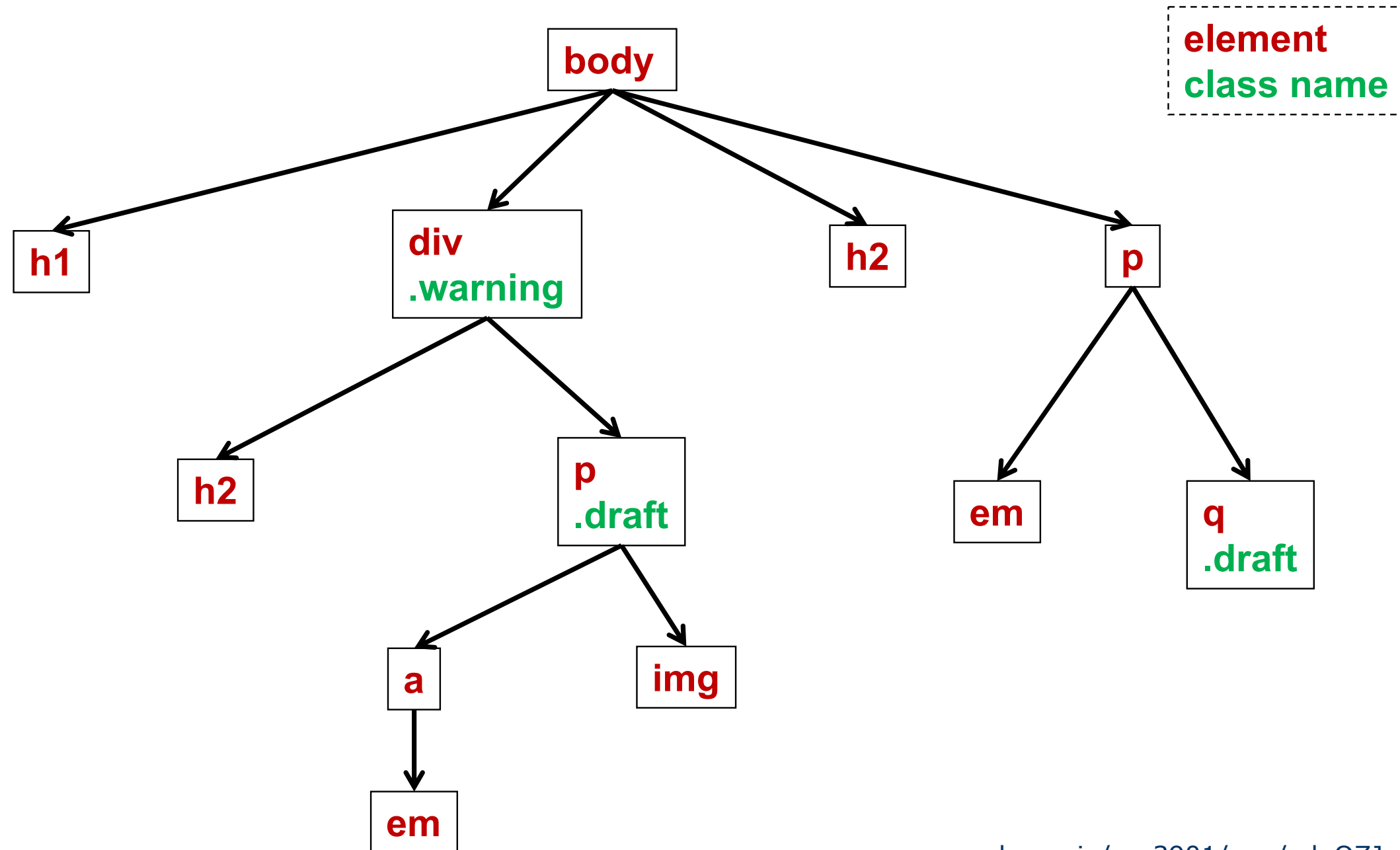
```
.warning { border: thick; }
```
- Can have other block elements as children
 - Recall: (Text) styles are inherited by children

```
<div class="warning">  
  <h2> ... </h2>  
  <p> ... </p>  
</div>
```

Original Tree



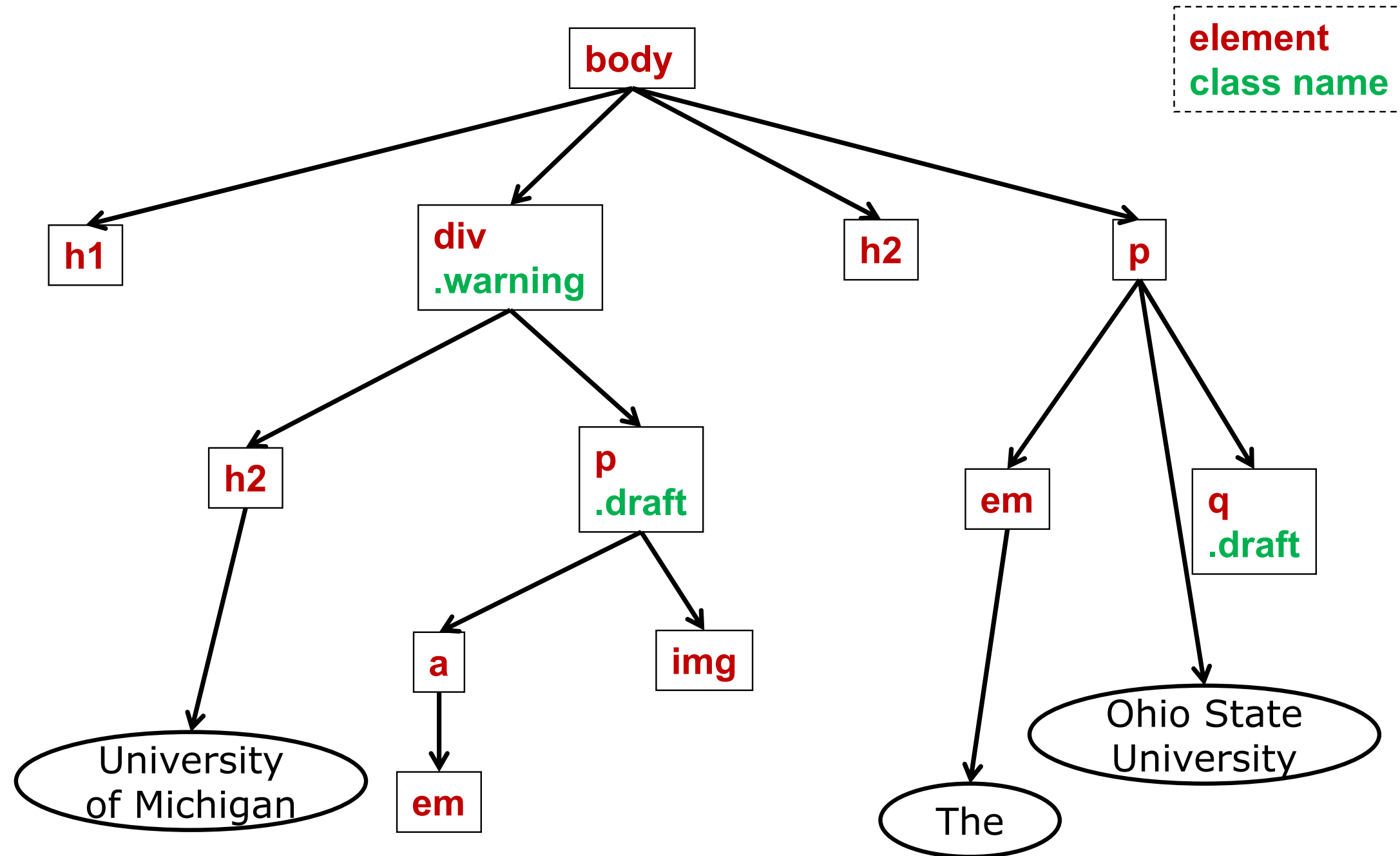
Divs in the Tree



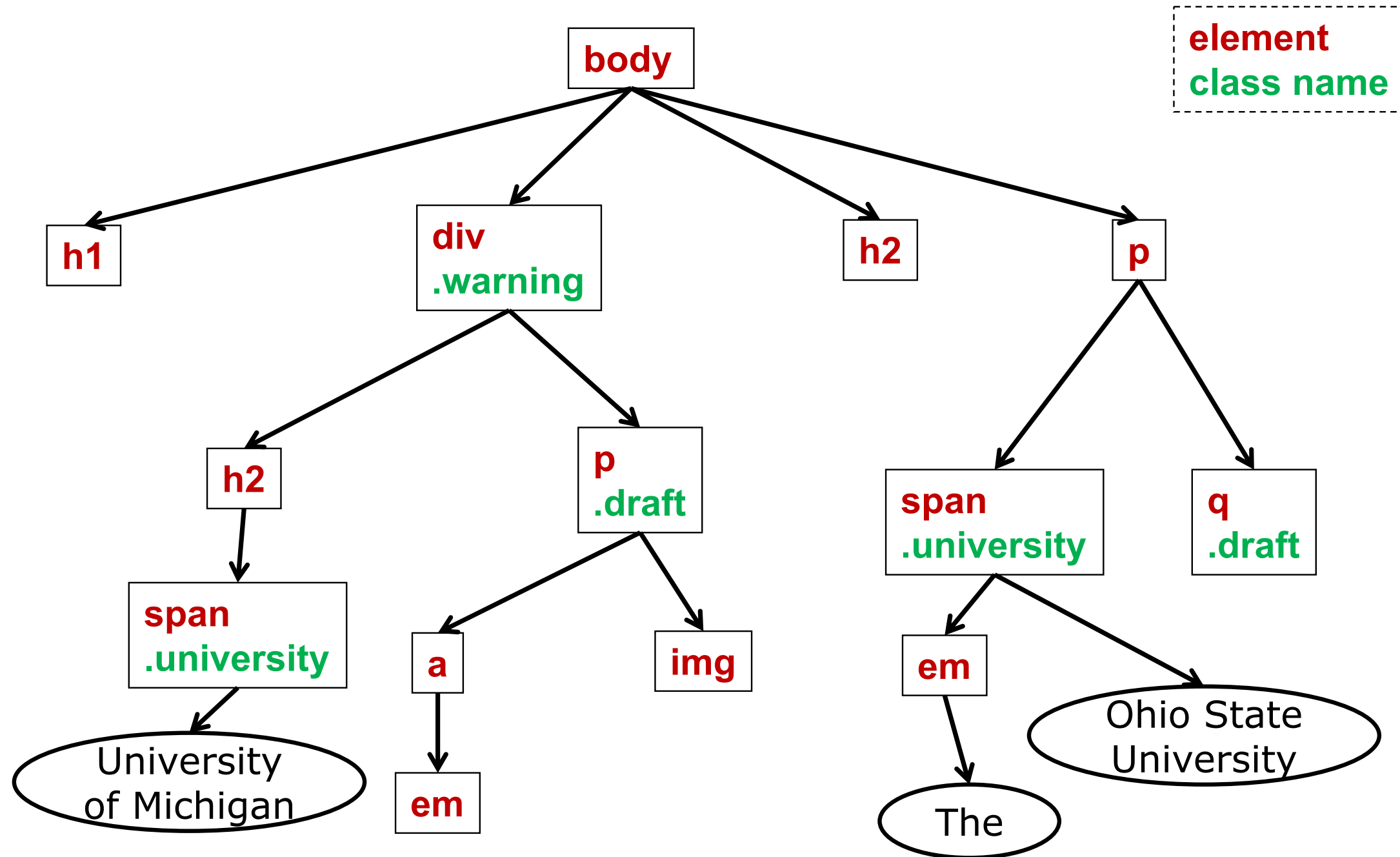
Span Element

- Limitations of `div`, since it is block-level:
 - Creates line breaks
 - Semantics (and styling) might belong to *inline* elements
 - Eg textbook titles appearing in the text
- Solution: `span` tag
 - `<p> One book to consider is the`
 - `<span class="book">Book of Ruby</span>, ...`
- Now all book titles can be styled consistently
- Like `div`, `span` is often used with classes

Original Tree: With Text Nodes



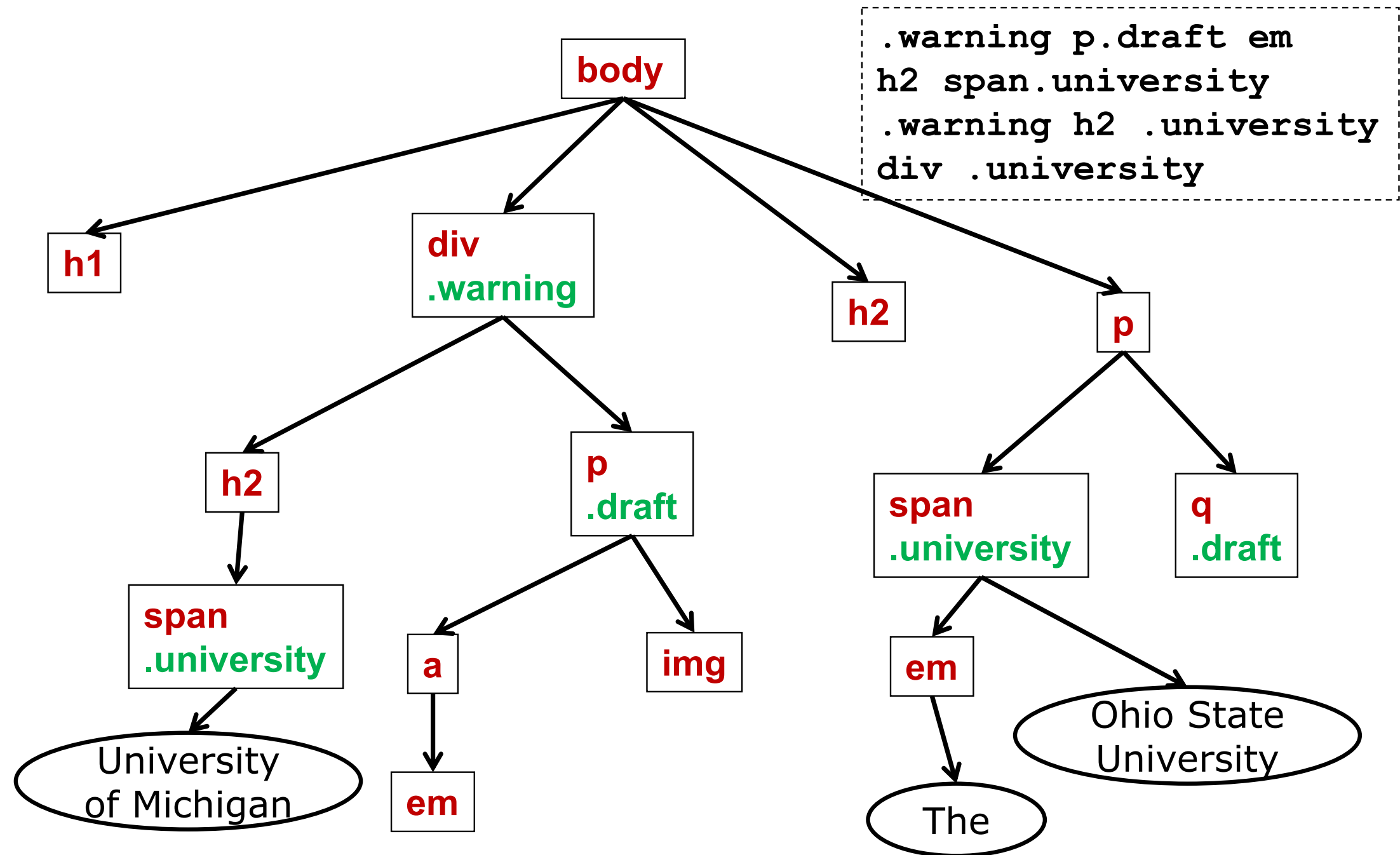
Adding Spans to the Tree



Ancestors in Selectors

- Sometimes you care about where in the tree an element occurs
 - University names appearing *within* warnings need a different styling
- CSS syntax: **ancestor ancestor... elt**
`.warning .university`
- Note: *big* difference between
`.warning em .university`
`.warning em, .university`
`.warning, em .university`

Your Turn



More Exotic Paths in Selectors

□ Child: >

`.warning > p` */* p's parent is .warning */*

`.warning li > em`

□ Adjacent sibling: +

`h1 + p` */* only first p after h1 */*

□ General sibling: ~

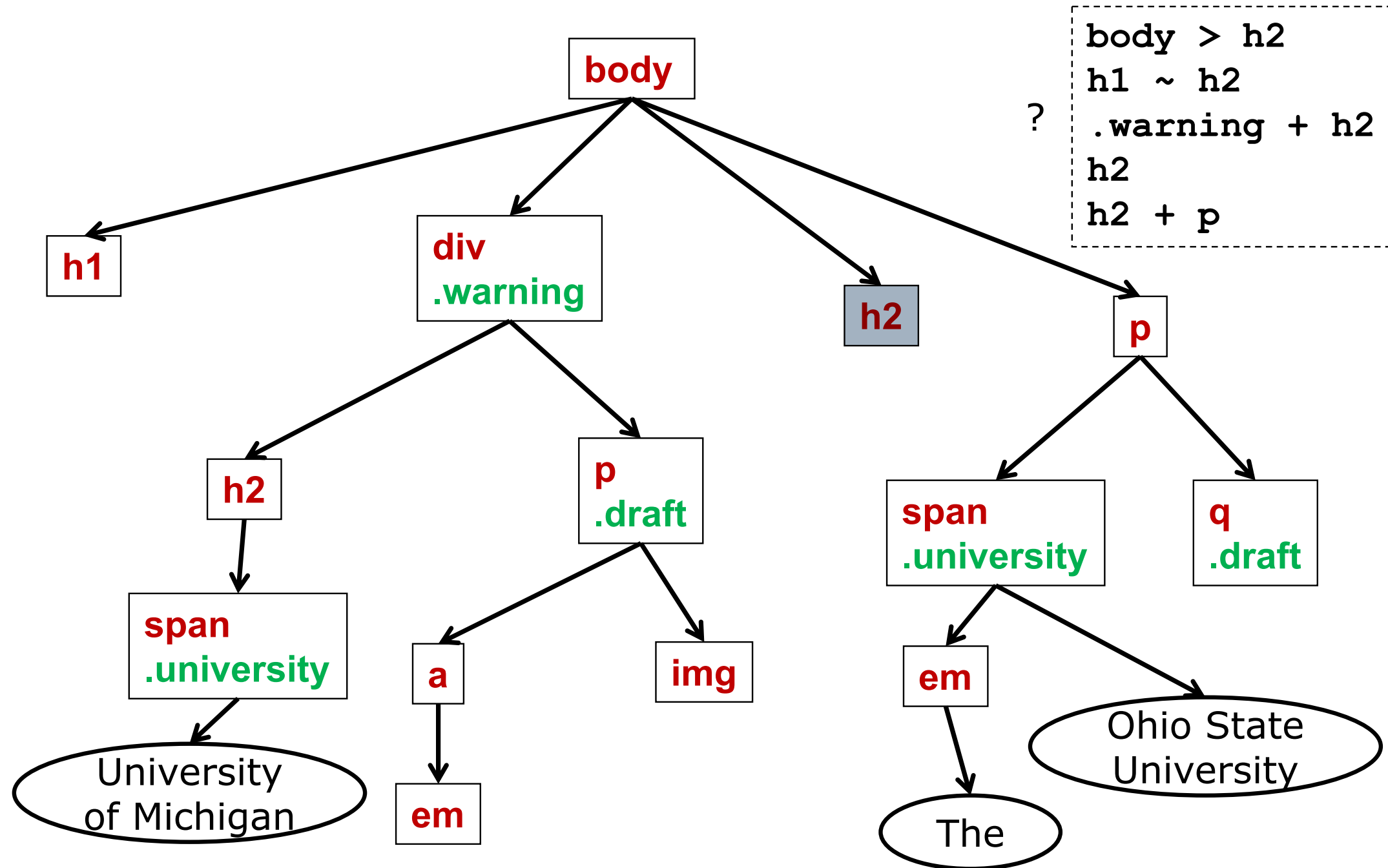
`h1 ~ p` */* sibling p's after h1 */*

□ Attributes: `[attr="value"]`, `*=`, `$=`

`input[type="button"]`

`a[href$=".pdf"]` */* class website */*

Your Turn: Select Shaded Node



Id = Class With Two Constraints

- Some classes are meant to be unique
 - There is *at most one* element in the class, per page

```
<div class="sponsors"> <!-- unique on page -->
```
- Solution: **id** attribute

```
<div id="sponsors">
```
- CSS syntax for id selector: *elt#id*

```
p#sponsors { color: red; }
```
- Wildcard (any element): *#id*

```
#headline { box-style: thin; }
```
- Also: An element can have *at most one* id

Scraping With Selectors

- Nokogiri: A Ruby gem for parsing and scraping HTML
 - Given CSS selector, returns matching elements in page
 - Returns a NodeSet, which acts like an array

```
agent = Mechanize.new
page = agent.get 'http://www.cse.osu.edu/news'
news = page.css 'h2.content-headline'
news.class ==> Nokogiri::XML::NodeSet
news.size ==> 11
news.each { |title| puts title.text }
```

Summary: CSS Classes and Selectors

□ Classes and Ids

- Class gives an extra dimension to tree
- ID is unique: at most one per page
- CSS selector syntax (. vs #)

□ Divs and Spans

- Div is a logical block element
- Span is a logical inline element
- Often used together with classes/ids

□ Selectors with ancestors, siblings, attributes

- CSS selector syntax (space, >, +, ~)