Study Unit 5: DESIGNING LAYOUT

Outline

Students will learn More CSS HTML layout with different Browsers and conflict.

- Floating Elements
- Sizing and Positioning
- Evil IE -Thinking …
- User Centric Design

Learning Outcomes of Study Unit 5

Upon completion of this study unit, you should be able to learn more basic HTML with div and CSS with id and classes in practice.

1.1: Floating Elements

- float, clear, overflow

1.2: Sizing and Positioning

- position (absolute, relative, fixed)
- alignment vs. float vs. position
- inline boxes, vertical-align
- display, visibility

1.3: Evil IE

1.4: User Centric Design

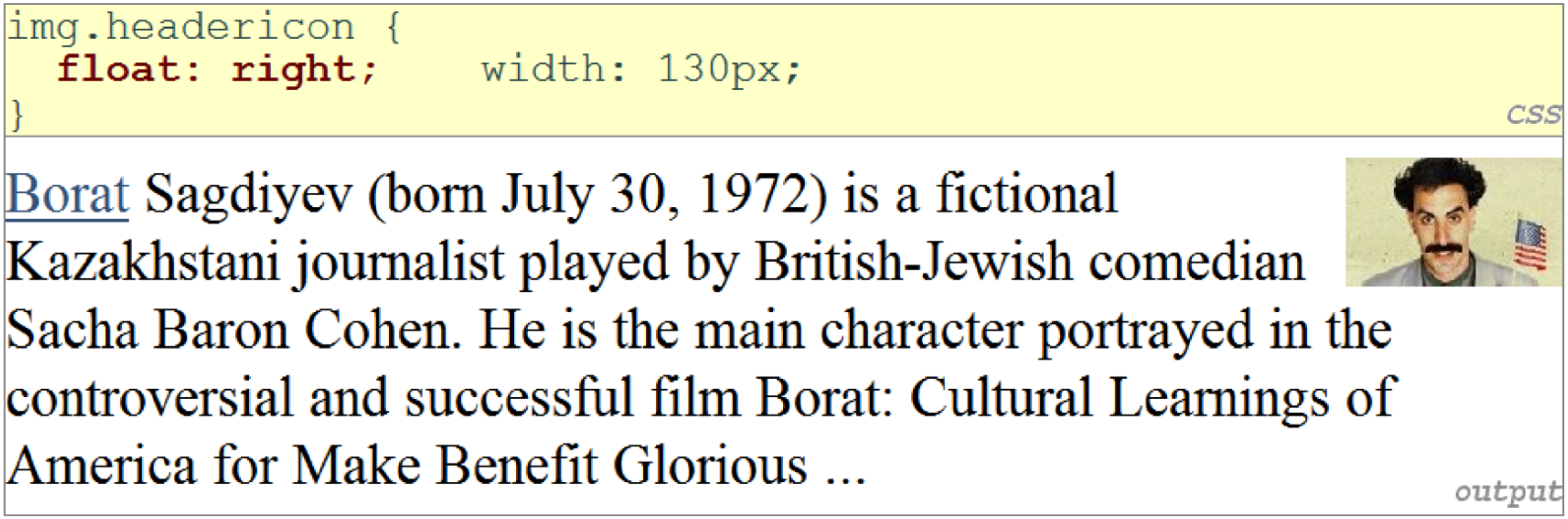
- Design, UCD
- UCD process
- UCD – Web page: purpose, elements, rhetorical situation

1.1: Floating Elements

Outline

- **Floating Elements**
- Sizing and Positioning
- Evil IE
- Thinking …
  - User Centric Design

The CSS float Property



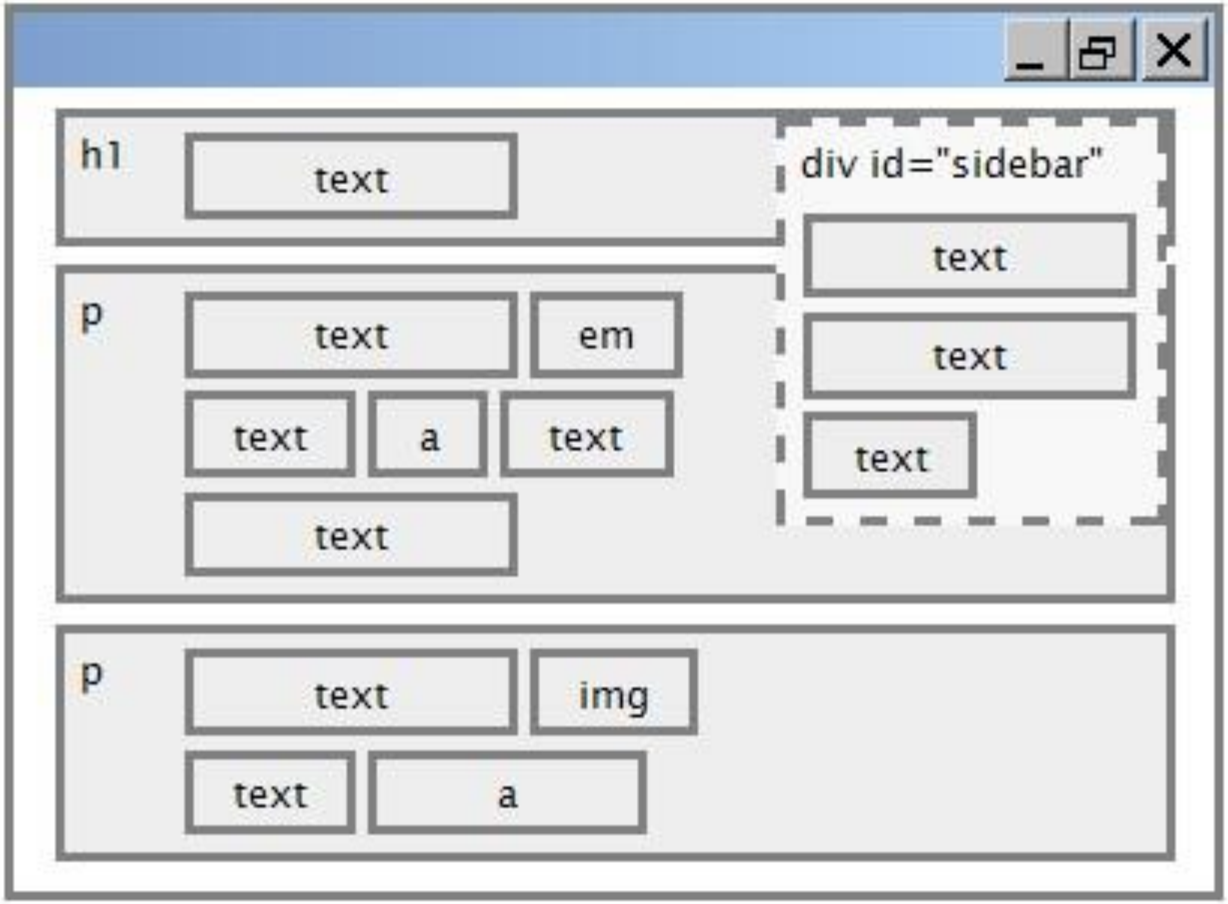
```
img.headericon {
  float: right;    width: 130px;
}
```

Borat Sagdiyev (born July 30, 1972) is a fictional Kazakhstani journalist played by British-Jewish comedian Sacha Baron Cohen. He is the main character portrayed in the controversial and successful film Borat: Cultural Learnings of America for Make Benefit Glorious ...

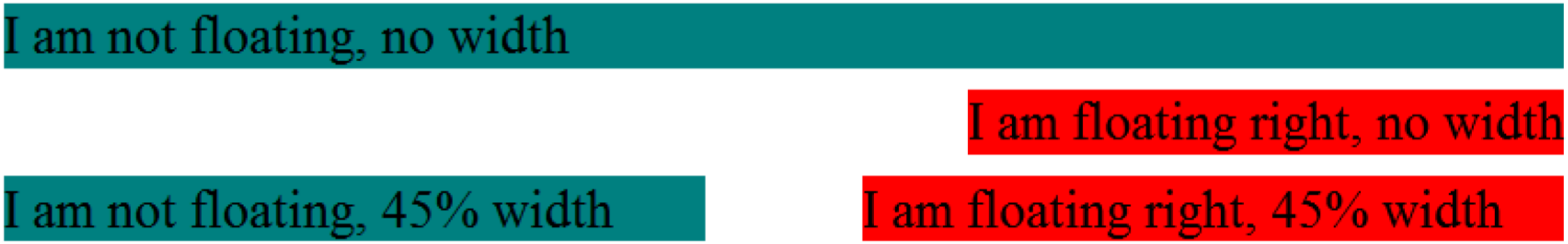
property	description
float	side to hover on; can be left, right, or none (default)

- Removed from normal document flow; underlying text wraps around as necessary

Floating Elements Diagram



Common float Bug: Missing Width



I am not floating, no width

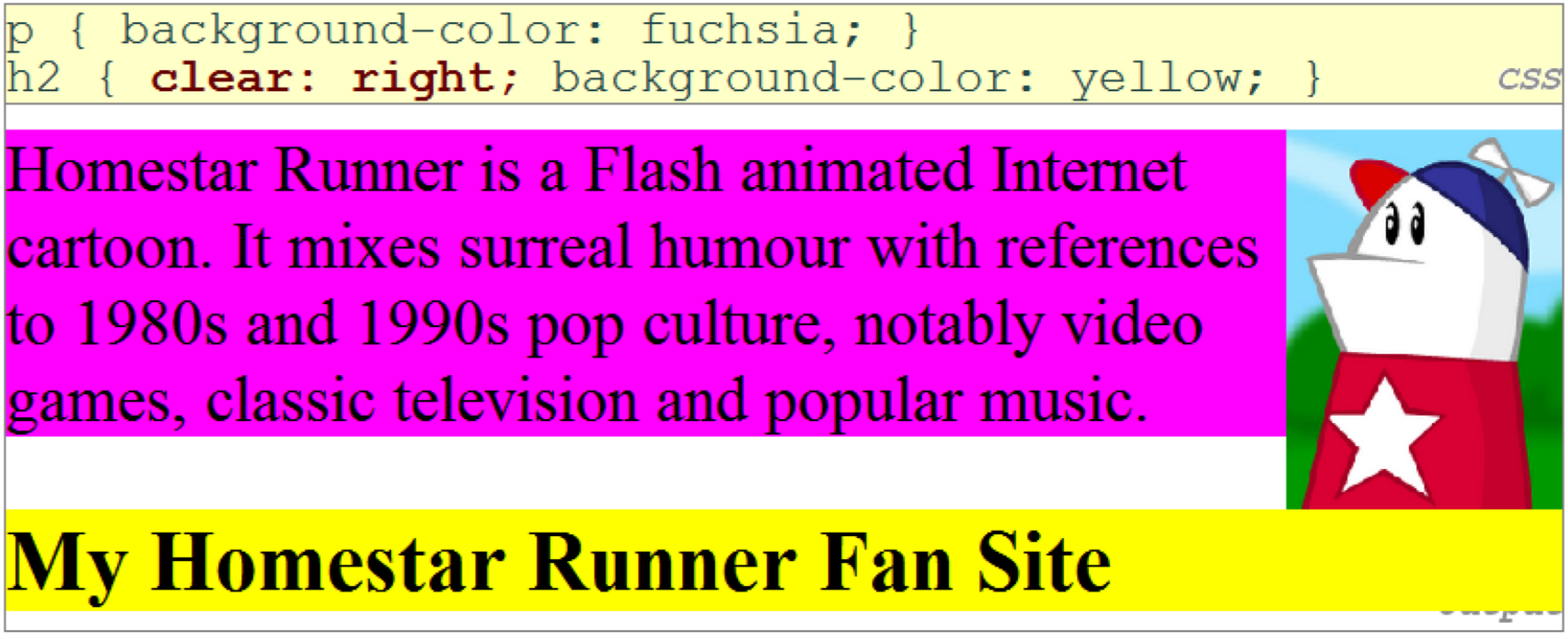
I am floating right, no width

I am not floating, 45% width

I am floating right, 45% width

- Often floating block elements must have a width property value
  - If no width is specified, the floating element may occupy 100% of the page width, so no content can wrap around it

The clear Property



```
p { background-color: fuchsia; }
h2 { clear: right; background-color: yellow; }
```

Homestar Runner is a Flash animated Internet cartoon. It mixes surreal humour with references to 1980s and 1990s pop culture, notably video games, classic television and popular music.

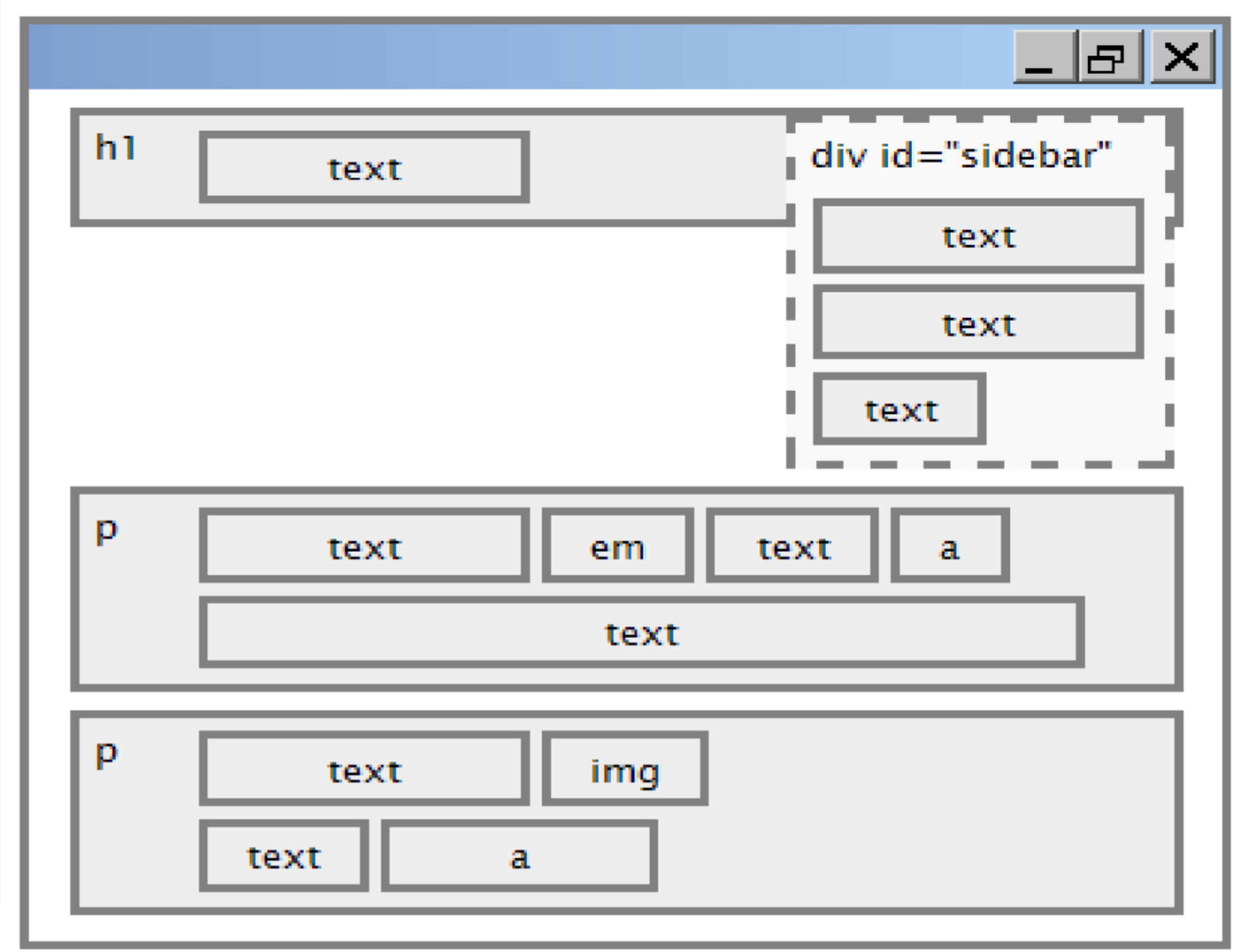
My Homestar Runner Fan Site

Property	Description
clear	disallows floating elements from overlapping this element; can be left, right, or none (default)

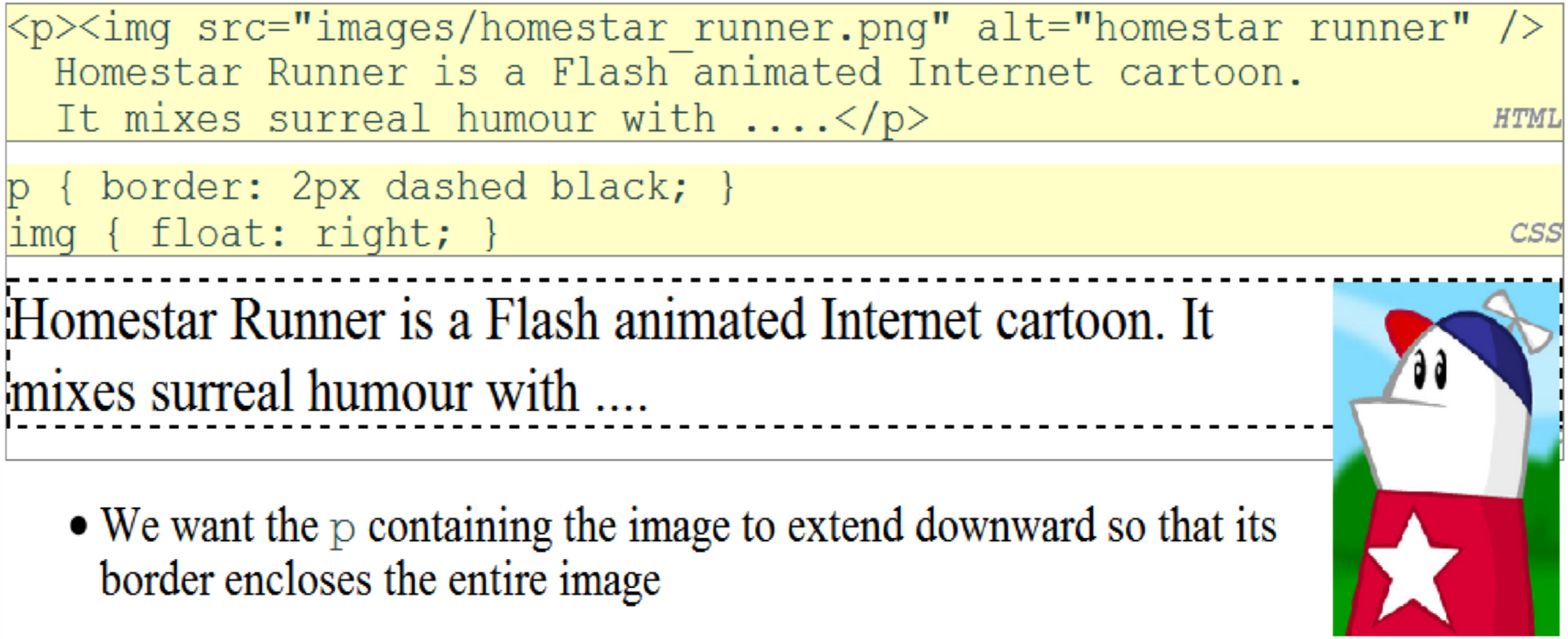
Clear Diagram

```
div#sidebar { float: right; }
p { clear: right; }
```

CSS



Common Error: Container Too Short



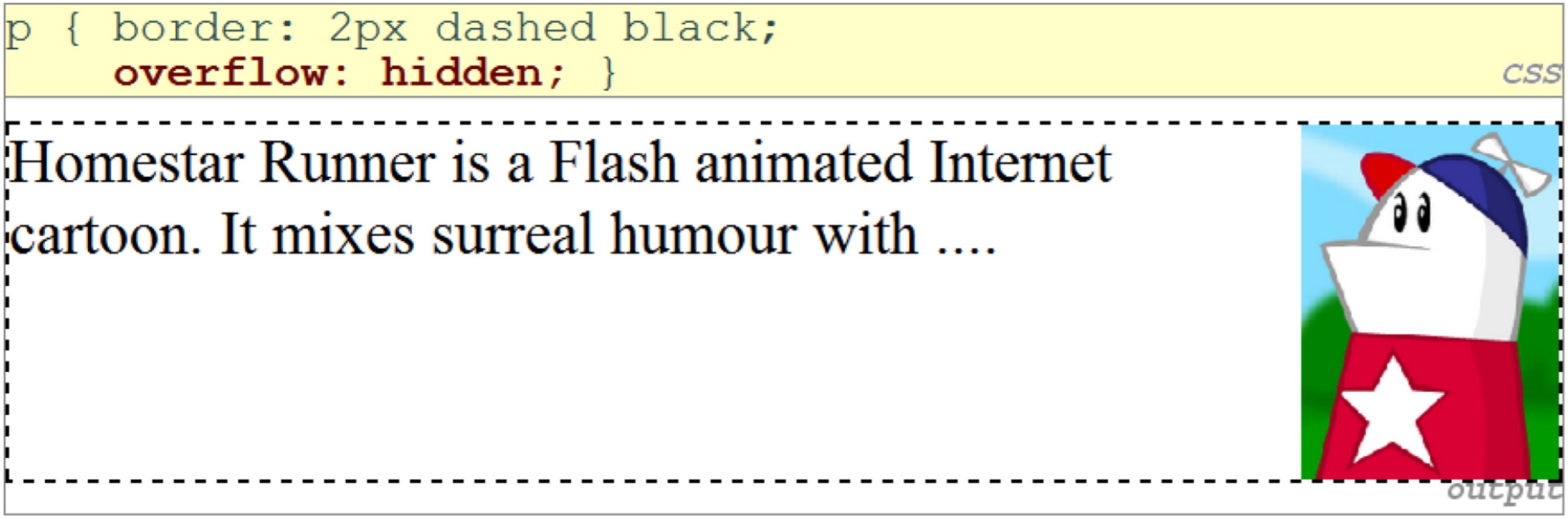
```
<p><img src="images/homestar_runner.png" alt="homestar runner" />
  Homestar Runner is a Flash animated Internet cartoon.
  It mixes surreal humour with ....</p>
```

```
p { border: 2px dashed black; }
img { float: right; }
```

Homestar Runner is a Flash animated Internet cartoon. It mixes surreal humour with ....

- We want the p containing the image to extend downward so that its border encloses the entire image

The overflow Property

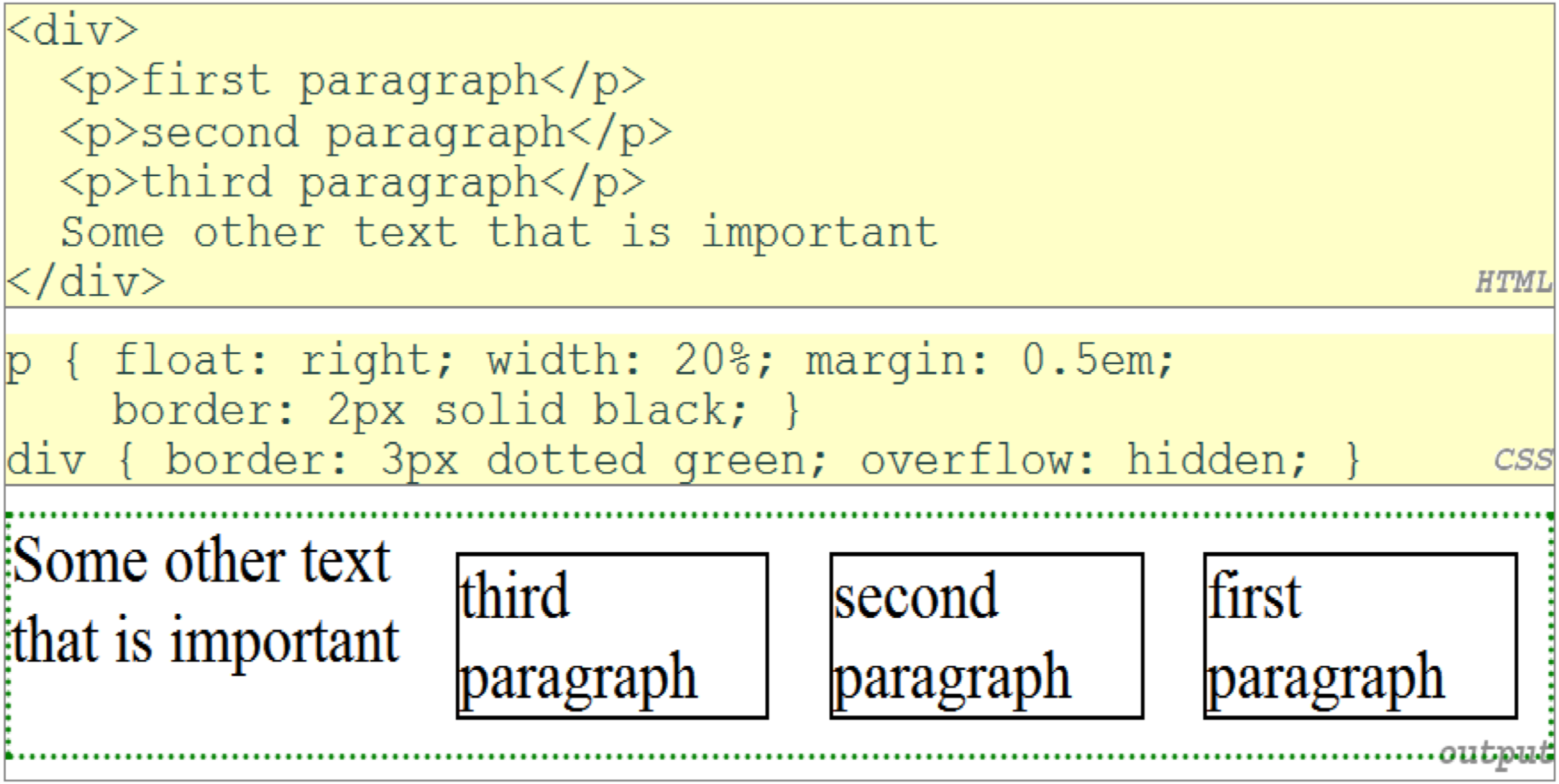


```
p { border: 2px dashed black;
    overflow: hidden; }
```

Homestar Runner is a Flash animated Internet cartoon. It mixes surreal humour with ....

Property	Description
overflow	specifies what to do if an element's content is too large; can be auto, visible, hidden, scroll, or inherit

Multi-column Layouts



```html
<div>
  <p>first paragraph</p>
  <p>second paragraph</p>
  <p>third paragraph</p>
  Some other text that is important
</div>
```

```css
p { float: right; width: 20%; margin: 0.5em;
    border: 2px solid black; }
div { border: 3px dotted green; overflow: hidden; }
```

```
Some other text   third        second       first
that is important paragraph    paragraph    paragraph
```

1.2: Sizing and positioning

Outline

- **Sizing and Positioning**
- Evil IE
  - Thinking

…

- Declarative programming
- User Centric Design

The position Property

```css
div#ad{
    position: fixed;
    right: 10%;
    top: 45%;
}
```

CSS

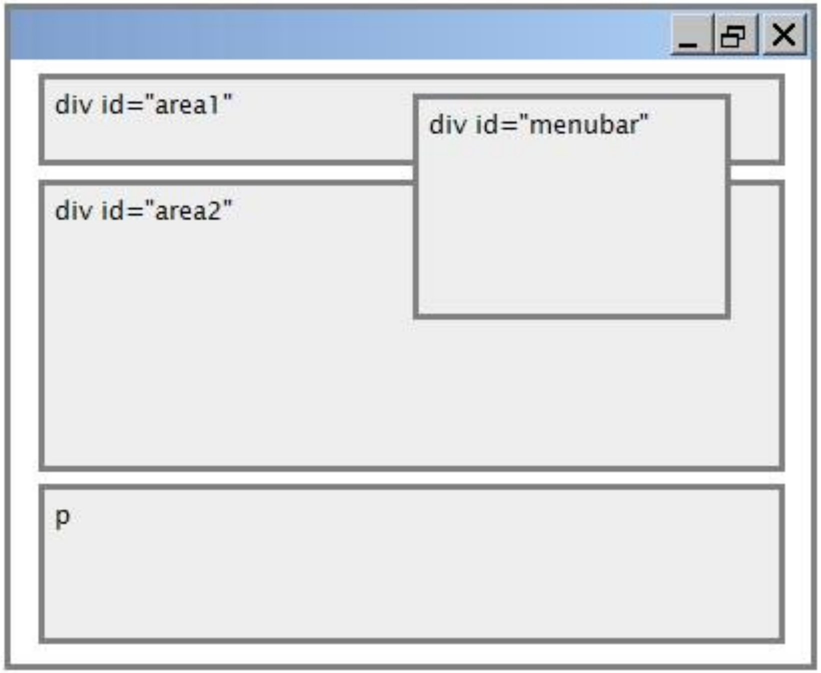
Property	Value	Description
position	static	default position
	relative	offset from its normal static position
	absolute	a fixed position *within its containing element*
	fixed	a fixed position *within the browser window*
top, bottom, left, right	positions of box's corners	

Absolute Positioning

```
#menubar {
    position: absolute;
    left: 400px;
    top: 50px;
}
```

CSS

- Removed from normal flow (like floating ones)
- Positioned relative to the block element containing them (assuming that block also uses absolute or relative positioning)
- Actual position determined by top, bottom, left, right values
- Should often specify a width property as well

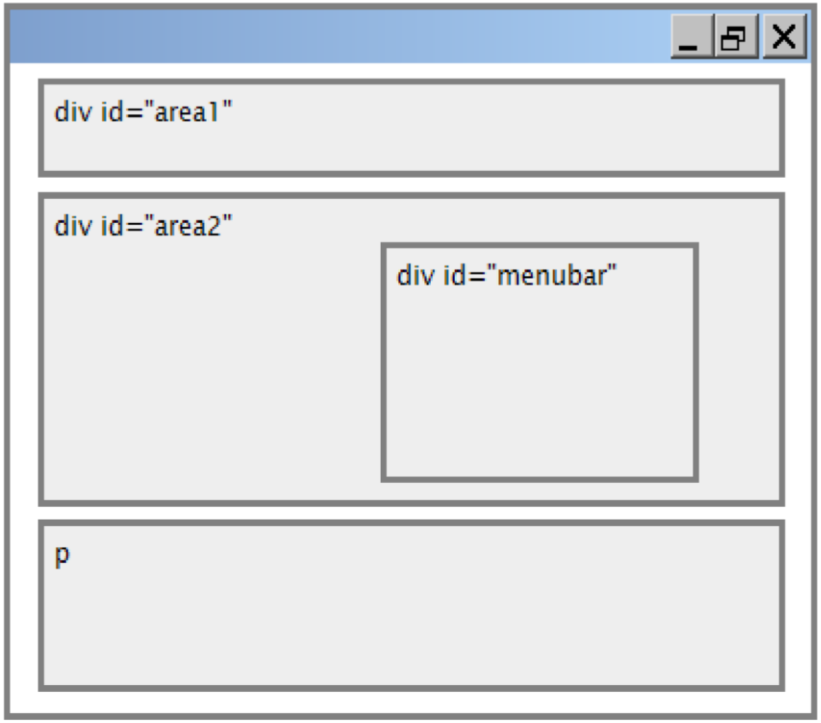


Relative Positioning

```
#area2 { position: relative;}
```

CSS

- Absolute-positioned elements are normally positioned at an offset from the corner of the overall web page
- To instead cause the absolute element to position itself relative to some other element's corner, wrap the absolute

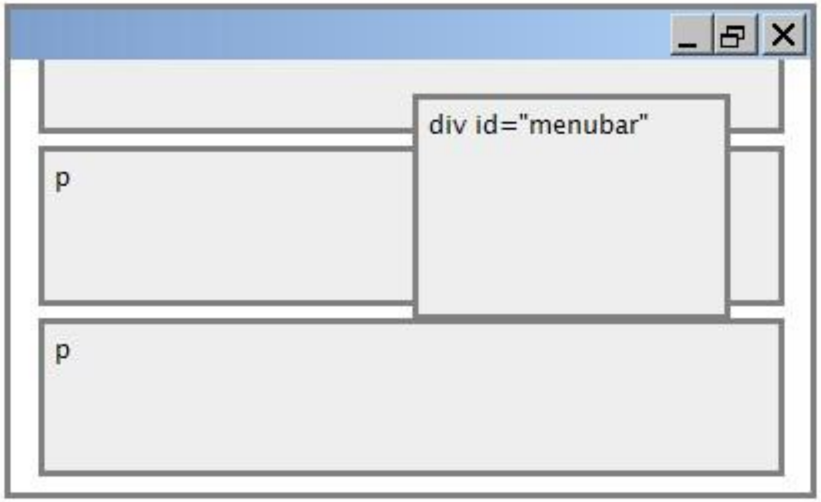


Fixed Positioning

```
#menubar {
    position: fixed;
    left: 400px;
    top: 50px;
}
```

CSS

- Removed from normal flow (like floating ones)
- Positioned relative to the browser window
  - Even when the user scrolls the window, element will remain in the same place



element in an element whose position is relative

Alignment vs. Float vs. Position

- If possible, lay out an element by **aligning** its content
  - Horizontal alignment: text-align • Set this on a block element; it aligns the content within it (not only text, and not the block element itself)
  - Vertical alignment: vertical-align • Set this on an inline element, and it aligns it vertically within its containing element
- If alignment won’t work, try **floating** the element
- If floating won’t work, try **positioning** the element
  - absolute / fixed positioning are a last resort and should not be overused
- More position examples

Details about Inline Boxes

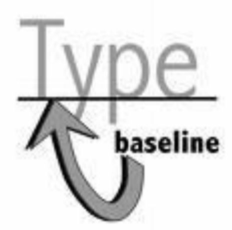
- Size properties (width, height, min-width, etc.) are ignored for inline boxes

- margin-top and margin-bottom are ignored, **but** margin-left and margin-right are **not**
- The containing block box's text-align property controls horizontal position of inline boxes within it • text-align does not align block boxes within the page
- Each inline box's vertical-align property aligns it vertically within its block box

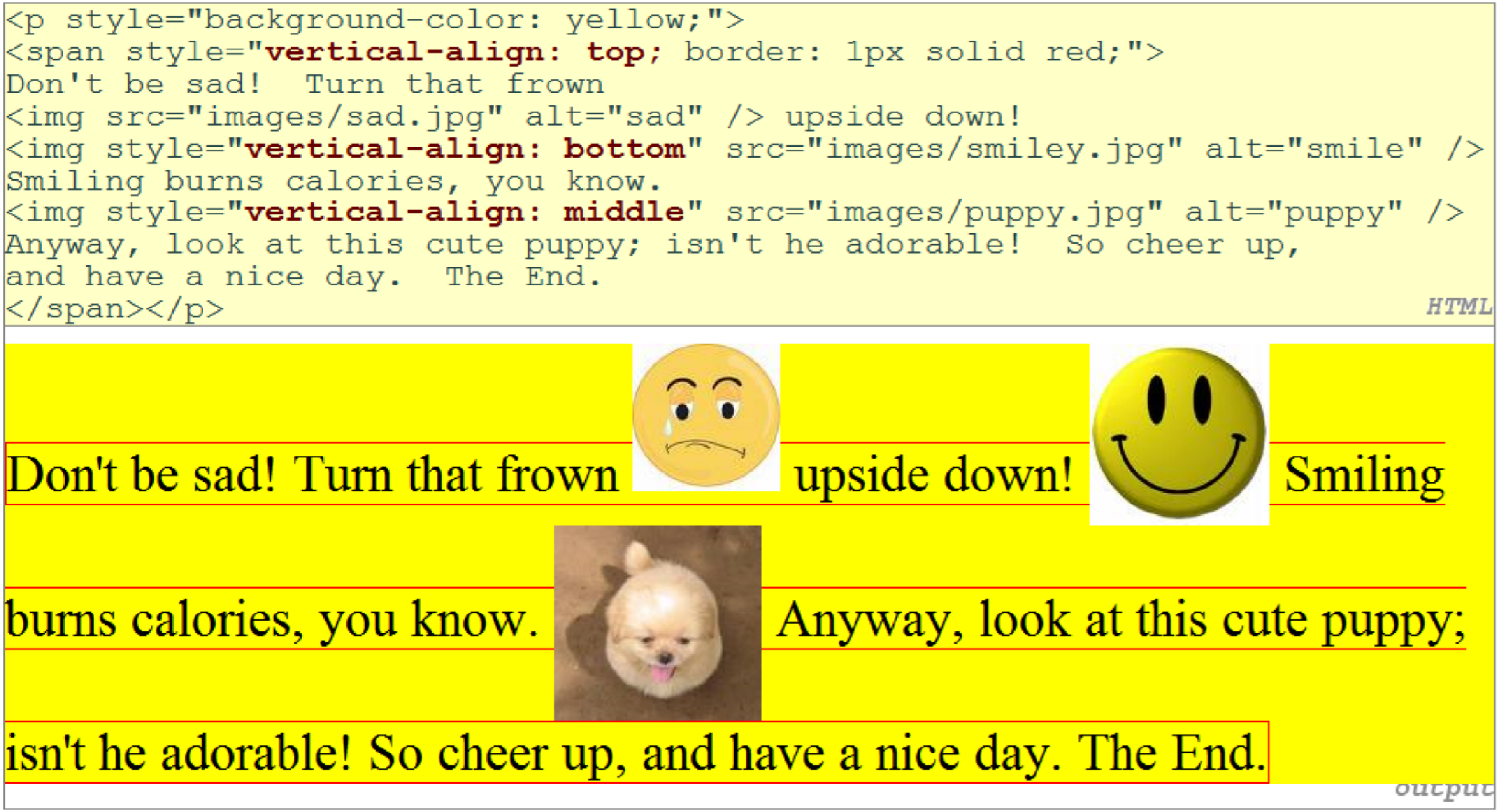
The **vertical-align** Property

property	description
vertical-align	specifies where an inline element should be aligned vertically, with respect to other content on the same line within its block element's box

- Can be top, middle, bottom, baseline (default), sub, super, text-top, text-bottom, or a length value or %
  - Baseline means aligned with bottom of nonhanging letters



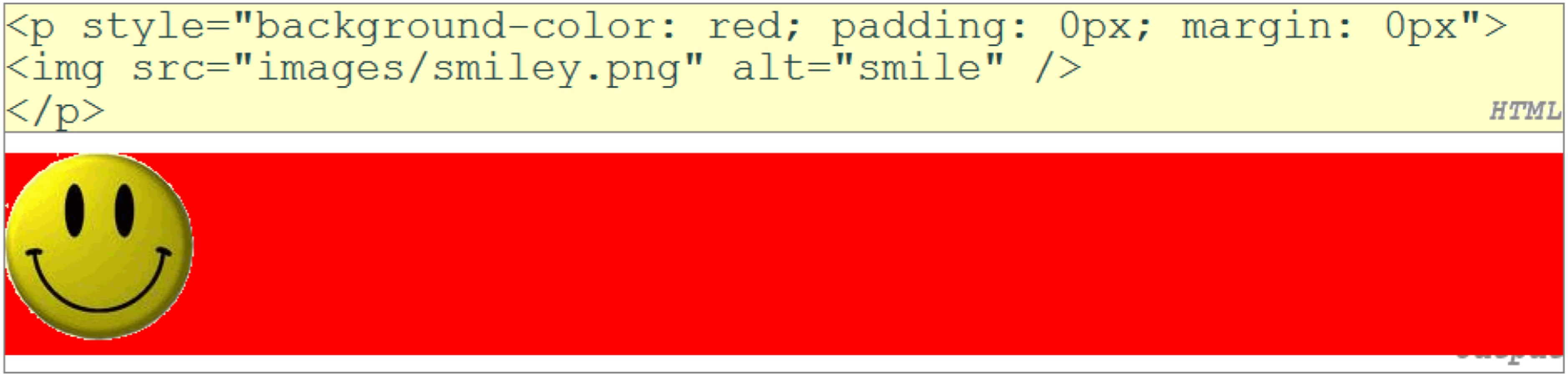
vertical-align Example



```
<p style="background-color: yellow;">
<span style="vertical-align: top; border: 1px solid red;">
Don't be sad!  Turn that frown
<img src="images/sad.jpg" alt="sad" /> upside down!
<img style="vertical-align: bottom" src="images/smiley.jpg" alt="smile" />
Smiling burns calories, you know.
<img style="vertical-align: middle" src="images/puppy.jpg" alt="puppy" />
Anyway, look at this cute puppy; isn't he adorable!  So cheer up,
and have a nice day.  The End.
</span></p>
```

Don't be sad! Turn that frown upside down! Smiling burns calories, you know. Anyway, look at this cute puppy; isn't he adorable! So cheer up, and have a nice day. The End.

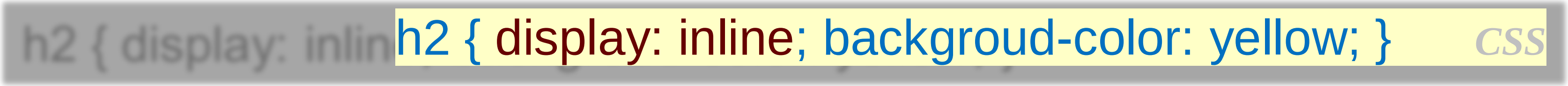
Common bug: Space under Image



```html
<p style="background-color: red; padding: 0px; margin: 0px">
<img src="images/smiley.png" alt="smile" />
</p>
```

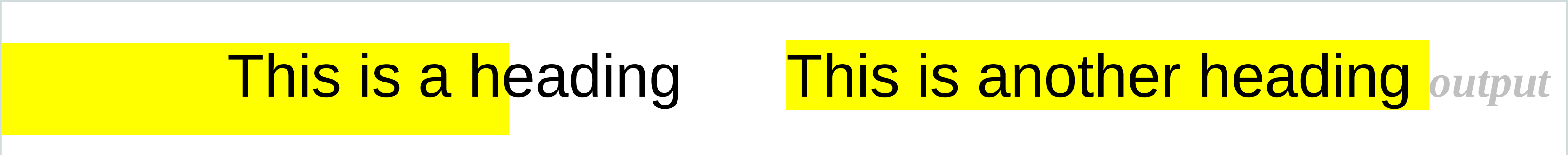
- Red space under the image, despite padding and margin of 0
- This is because the image is vertically aligned to the baseline of the paragraph (not the same as the bottom)
- Setting vertical-align to bottom fixes the problem (so does setting line-height to 0px)

The display Property



```
h2 { display: inline; backgroud-color: yellow; }
```

CSS



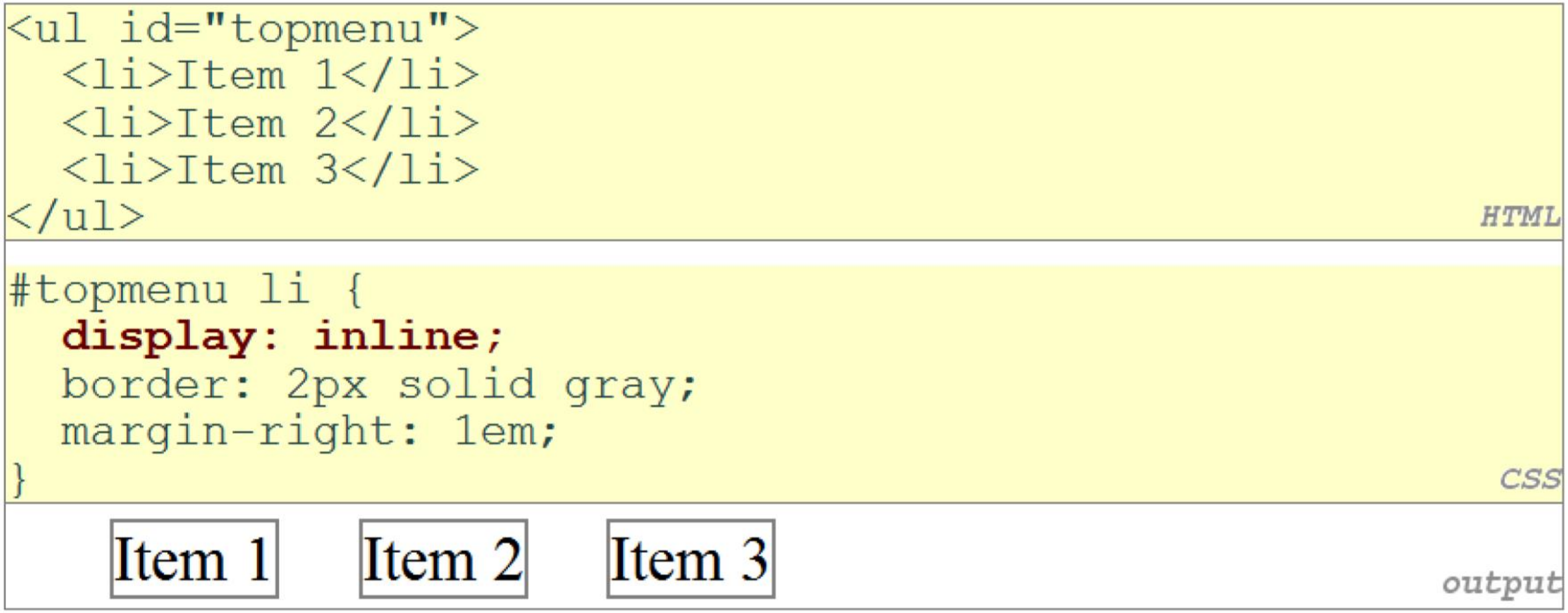
This is a heading This is another heading

output

Property	Description
display	sets the type of CSS box model an element is displayed with

- Values: none, inline, block, run-in, table, table-caption, …
  - Not all values supported by all browsers (check out at http://www.quirksmode.org/css/display.html)
- Use sparingly, because it can radically alter the page layout

Displaying Block Element as Inline



```html
<ul id="topmenu">
  <li>Item 1</li>
  <li>Item 2</li>
  <li>Item 3</li>
</ul>
```

```css
#topmenu li {
  display: inline;
  border: 2px solid gray;
  margin-right: 1em;
}
```

```
Item 1   Item 2   Item 3
```

- Lists and other block elements can be displayed inline
  - Flow left-to-right on same line
  - Width is determine by content (block elements are 100% of page width)

The visibility Property

```css
p.secret { visibility: hidden }
```

CSS

output

Property	Description
visibility	sets whether an element should be shown onscreen; can be visible (default) or hidden

- hidden elements will still take up space onscreen, but will not be shown
  - To make it not take up any space, set display to none instead

1.3: Evil IE

- Can be used to show/hide HTML content on the page in response to events

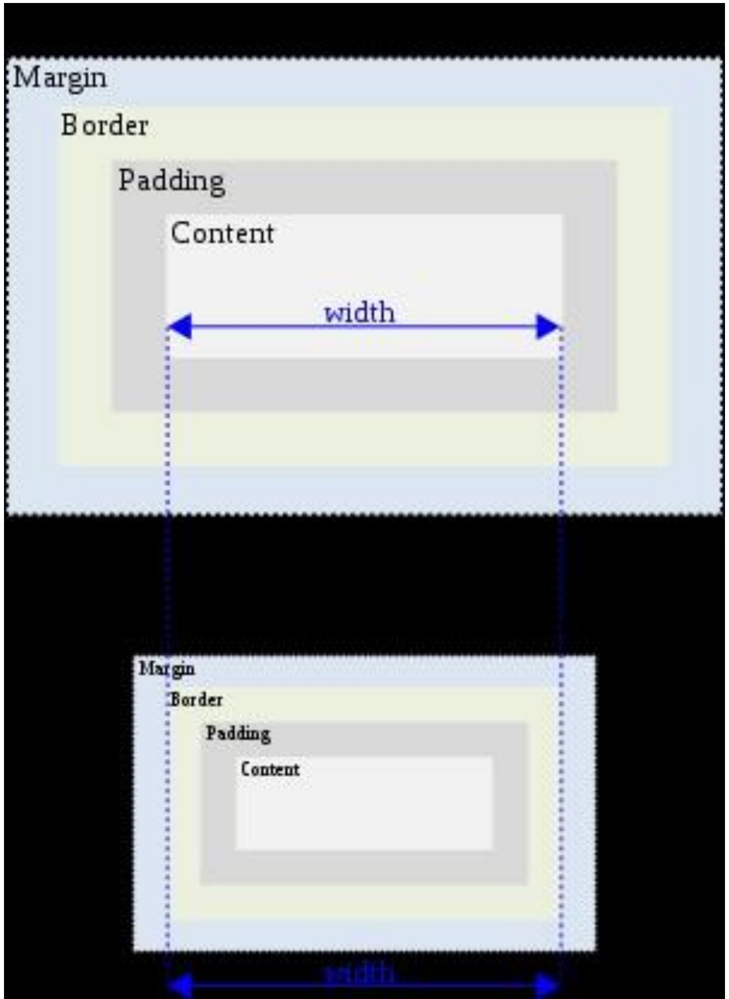
Outline

-
- Evil IE
- Thinking

…

- User Centric Design

Evil IE



- IE is painful for Web designer and developer, since it doesn’t compatible with W3C standards, and mostly deliberately …

- Weird IE Box model
- Double margin with float
- Block has width floats when beneath a float element
- Transparent png (IE 6.0)

Evil IE

- A lot of workarounds available, but the best is loading a specific style sheet for IE with conditional comment

```
<!--[if IE 7]>
  According to the conditional comment this is Internet Explorer <![endif]-->
<!--[if gte IE 5]>
  According to the conditional comment this is Internet Explorer 5 and up
                                                              <![endif]-->    XHTML
```

Outline

- Evil IE
- **Thinking**

…

  - User Centric Design
- Floating Elements
- Sizing and Positioning
- Evil IE ● **Thinking …**

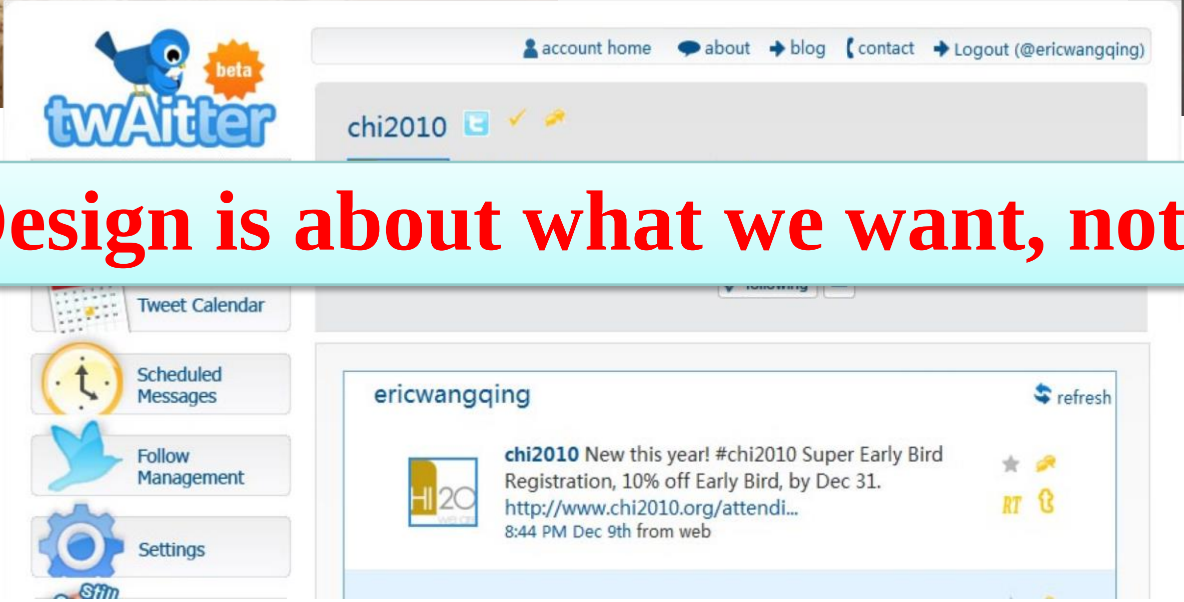
  - **User Centric Design**

1.4: User Centric Design

What’s the Design?

- **Design** is the planning that lays the basis for the making of every object or system.
  - As a verb, "to design" refers to the process of originating and developing a plan for a product, structure, system, or component with intention
  - As a noun, "a design" is used for either the final (solution) plan (e.g. proposal, drawing, model, description) or the result of implementing that plan in the form of the final product of a design process

What’s a Design?



account home about blog contact Logout (@ericwangqing)

chi2010

Tweet Calendar

Scheduled Messages

Follow Management

Settings

ericwangqing

refresh

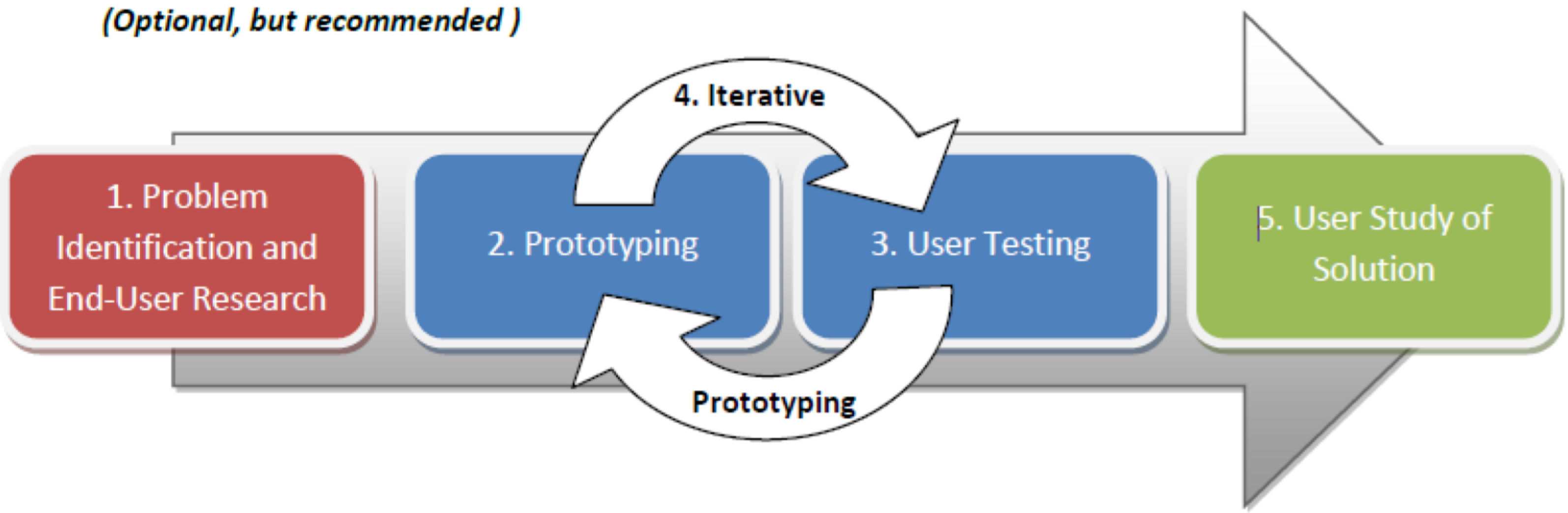
chi2010 New this year! #chi2010 Super Early Bird Registration, 10% off Early Bird, by Dec 31. http://www.chi2010.org/attendi...
8:44 PM Dec 9th from web

Design is about what we want, not how we get

User Centric Design

- In broad terms, **user-centered design (UCD)** is a design philosophy and a process in which the needs, wants, and limitations of end users of an interface or document are given extensive attention at each stage of the design process.
- User-centered design can be characterized as **a multistage problem solving process** that not only requires designers to **analyze and foresee** how users are likely to use an interface, but also to **test** the validity of their assumptions with regards to user behavior in real world tests with actual users.

Common UCD Process


(Optional, but recommended)
1. Problem Identification and End-User Research
2. Prototyping
4. Iterative
Prototyping
3. User Testing
5. User Study of Solution

- 1) Spend time with actual users or potential end-users to identify challenges they face, often with respect to a particular issue.
- 2) Prototype potential solutions.
- 3) User-test to see how the prototypes work or don’t work.
- 4) Iteratively prototype and test, repeating steps 2 and 3.
-

- 5) Conduct a rigorous user study of your best solution. (Optional, but recommended)

UCD – Web Page: Purpose

- Who are the **users** of the Web page?
- What are the users' **tasks** and **goals**?
- What are the users' **experience** levels with the Web page, and Web page like it?
- What **functions** do the users need from the Web page?
- What **information** might the users need, and in what form do they need it?
- How do users think the Web page should work?

UCD – Web Page: Elements

- **Visibility**
  - Mental model of the Web page
  - Important elements should be emphatic
  - User should be able to tell from a glance what they can do and cannot do with the document
- **Accessibility**
  - Users should be able to find information quickly and easily throughout the Web page (navigation, search, table of content, clear labeled sections, page numbers, color coding, etc.)
- **Legibility**
  - Text should be easy to read (i.e. not too big or too small)
- **Language**
  - Clear, active

Self-Review Questions (SRQ) For Study Session 5

Now that you have completed this study unit, you can assess how well you have achieved its Learning Outcomes by answering these questions. Write your answers in your Study Diary and discuss them with your Tutor at the next Study Support Meeting or Online interactive sessions. You can also check your answers at the Self-Review Answers section which is located at the end of this Module.

1: what is floating element in CSS? Create an external css with div layout and make 3 column in a webpage?
2: what is UCD and What is the common UCD Process?

Self-Review Answers (SRA) for Study Unit 5

1: what is floating element in CSS?

The CSS float property specifies how an element should float. The CSS clear property specifies what elements can float beside the cleared element and on which side.

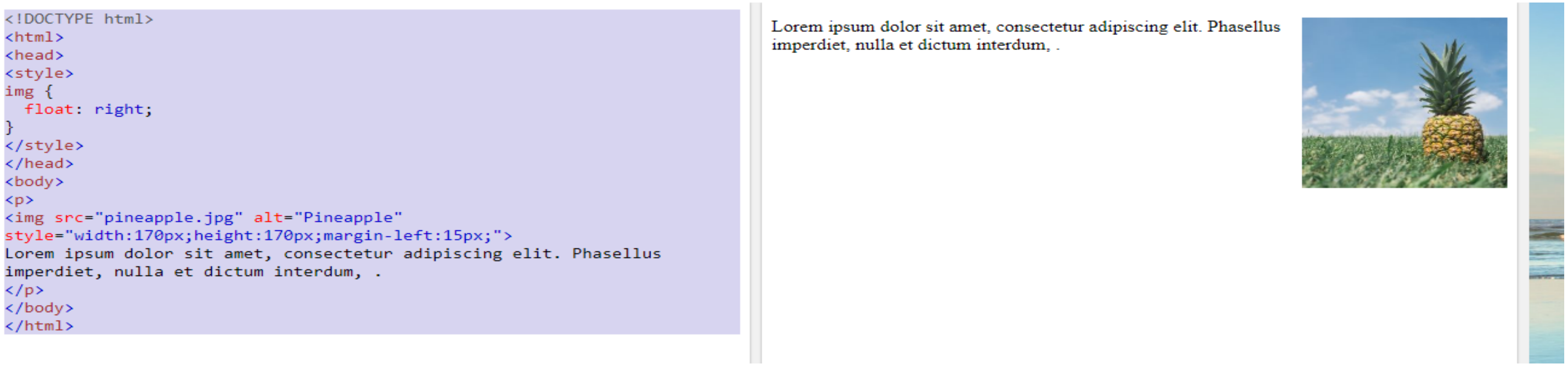
The float Property

The `float` property is used for positioning and formatting content e.g. let an image float left to the text in a container.

The `float` property can have one of the following values:

- left - The element floats to the left of its container
- right - The element floats to the right of its container
- none - The element does not float (will be displayed just where it occurs in the text). This is default
- inherit - The element inherits the float value of its parent

In its simplest use, the `float` property can be used to wrap text around images.



```
<!DOCTYPE html>
<html>
<head>
<style>
img {
  float: right;
}
</style>
</head>
<body>
<p>
<img src="pineapple.jpg" alt="Pineapple"
style="width:170px;height:170px;margin-left:15px;">
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Phasellus
imperdiet, nulla et dictum interdum, .
</p>
</body>
</html>
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Phasellus imperdiet, nulla et dictum interdum, .

5: What is the common UCD Process?

User-centered design (**UCD**) is an iterative design **process** in which designers focus on the users and their needs in each phase of the design **process**. In **UCD**, design teams involve users throughout the design **process** via a variety of research and design techniques, to create highly usable and accessible products for them

Exercises

- Generally speaking, what’s the first step to build a Web site/app ?
- And how and by what means we are able to evaluate a design of a Web page, and which attributes of it are the most significant?

References and Additional Reading Materials

- W3C CSS2 Specification: http://www.w3.org/TR/REC-CSS2/
- W3Schools CSS Tutorial: http://www.w3schools.com/css/default.asp
- http://www.barelyfitz.com/screencast/html-training/css/positioning/
- http://www.quirksmode.org/css/display.html
- http://en.wikipedia.org/wiki/User-centered_design
- http://www.barelyfitz.com/screencast/html-training/css/positioning/