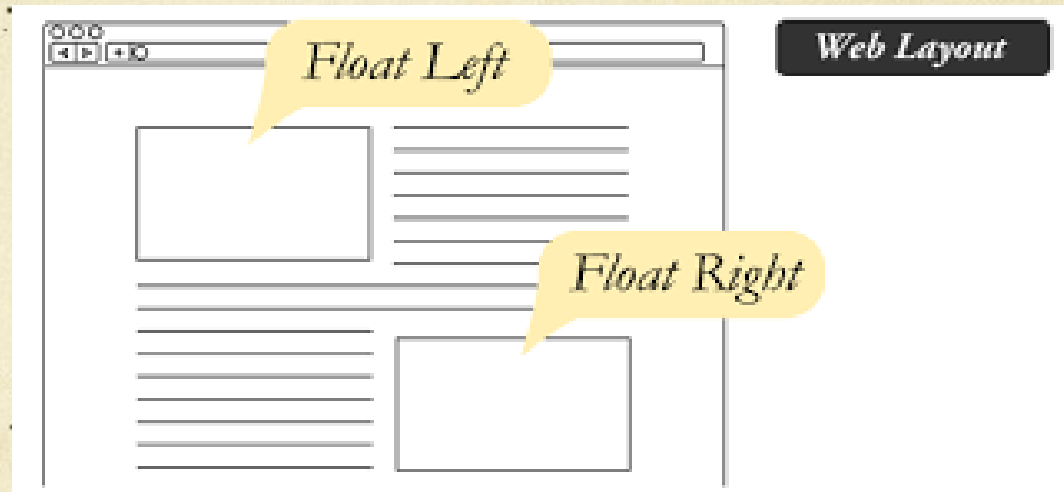# Web Development Client

ReCap – CSS/Box Model and Creating Page Layout in HTML
Floating elements
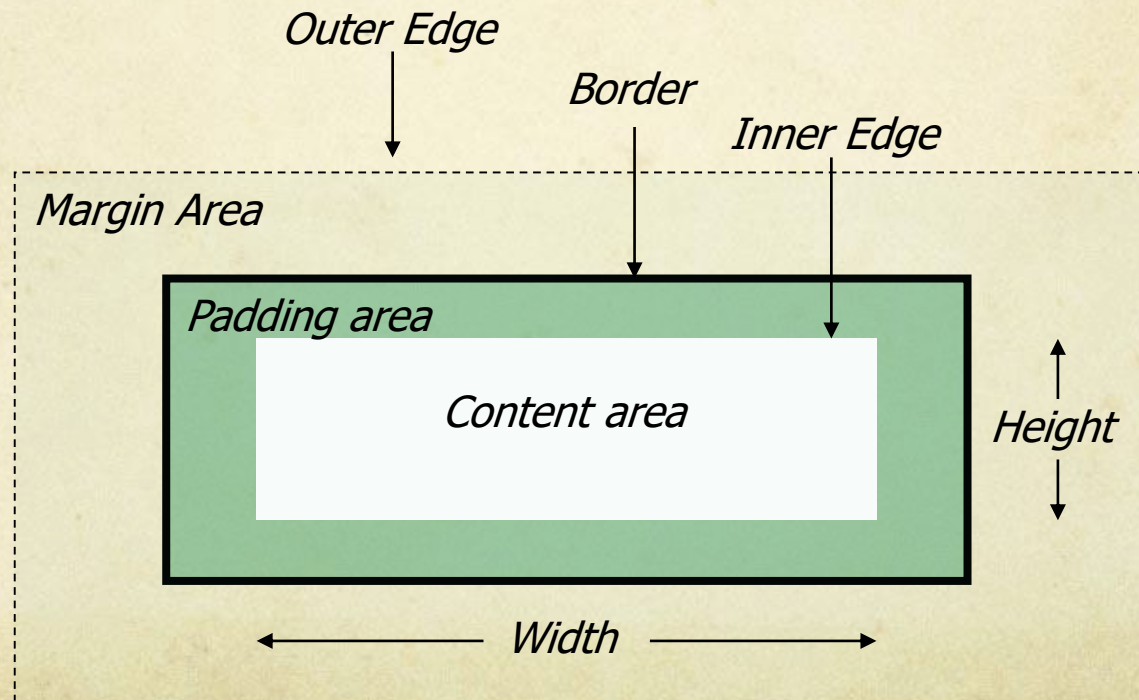Multi-column layouts
Lecturer: Marie Brennan
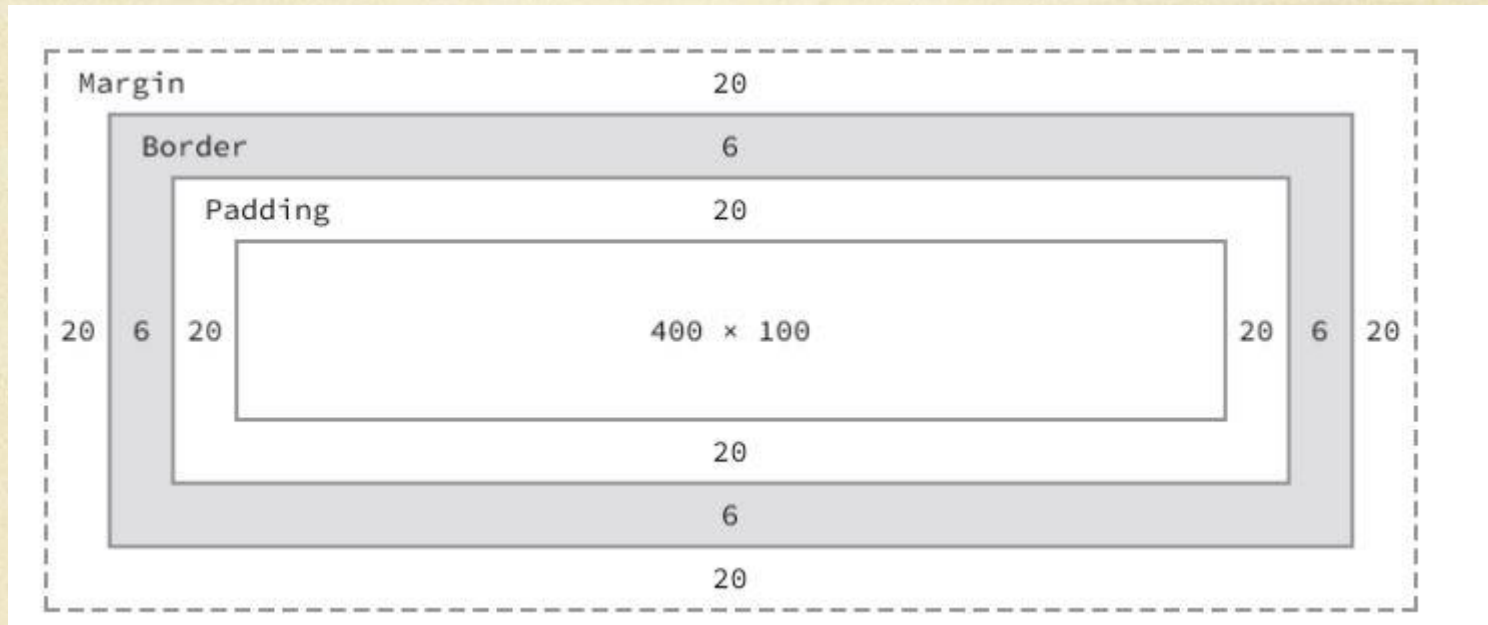Autumn 2017

RECAP: The Element Box

○ Ensure you are happy with the **Box Model** as shown below before working on the new material of FLOATs in this lecture …

Outer Edge

Border

Inner Edge

Margin Area

Padding area

Content area

Height

Width

The Box Model

The box model broken down, including a base height and width plus paddings, borders, and margins
Using the formulas, we can find the total height and width of our example code.

• **Width:** 492px = 20px + 6px + 20px + 400px + 20px + 6px + 20px

• **Height:** 192px = 20px + 6px + 20px + 100px + 20px + 6px + 20px

The Box Model

We set a width property value of 400 pixels, but the actual width of our element is 492pixels.

- By default the box model is additive

- To determine the actual size of a box we need to take into account padding, borders, and margins for all four sides of the box.

- Our width not only includes the width property value, but also the size of the left and right padding, left and right borders, and left and right margins.

- So far a lot of these properties might not make a whole lot of sense, and that's all right.

To clarify things, let's take a close look at all of the properties—width, height, padding, border, and margin—that go into forming the box model.

Width AND Height

- The default width of an element depends on its display value.

- Block-level elements have a default width of 100%, consuming the entire horizontal space available.

- Inline and inline-block elements expand and contract horizontally to accommodate their content.

- Inline-level elements cannot have a fixed size, thus the width and height properties are only relevant to non-inline elements.

- To set a specific width for a non-inline element, use the width property:

```
div {
    width: 400px;
}
```

```
div
{
height:100px;
}
```

Border, Padding, Margins

○ Border-top, border-bottom...left and right

```
div {
border-top-right-radius: 5px; }
```

…And same applies for border-top-left-radius…..etc

Border, Padding, Margins

Border, Padding, Margins

○ Margin-top, margin-bottom....left and right

○ Padding-top, bottom, left and right

New

Padding-box

- The **padding-box** value alters the box model by including any **padding** property values within the width and height of an element.

- When using the padding-box value, if an element has a width of 400 pixels and a padding of 20 pixels around every side, the actual width will remain 400 pixels.

- As any padding values increase, the content size within an element shrinks proportionately.

- If we add a border or margin, those values will be added to the width or height properties to calculate the full box size.

Padding-box

For example, if we add a border of 10 pixels and a padding of 20 pixels around every side of the element with a width of 400 pixels,
……..the actual full width will become 420 pixels.

div { box-sizing: padding-box; }

So to have this in your site use this code in the css

Box Sizing

```
div { -webkit-box-sizing:  content-box;
-moz-box-sizing:   content-box;
box-sizing: content-box; }
```

- If you set the width of an element to 400 pixels and then add 20 pixels of padding and a border of 10 pixels on every side, the actual full width of the element becomes 460 pixels.
- Remember, we need to add the width, padding, and border property values together to get the actual, full width of an element.
- The box model may, however, be changed to support different calculations. CSS3 introduced the box-sizing property, which allows us to change exactly how the box model works and how an element's size is calculated.
- The property accepts three primary values—content-box, padding-box, and border-box—each of which has a slightly different impact on how the box size is calculated.

Border-Box

- Lastly, the <u>border-box</u> value alters the box model so that any border or padding property values <u>are included within the width and height of an element</u>.

- When using the border-box value, if an element has a width of 400 pixels, a padding of 20 pixels around every side, and a border of 10 pixels around every side, the actual width will remain <u>400 pixels</u>.

- If we add a margin, those values will need to be added to calculate the full box size.

- <u>No matter which box-sizing property value is used, any margin values will need to be added to calculate the full size of the element</u>.

border-box

padding-box

content-box

div { box-sizing: border-box; }

Layout of web page

- 2 ways

- First = divs, ids and classes

- Second = HTML 5 sections

Divs, ids in HTML

<div id = "header">CONTENT of HEADER HERE</div>

<div id ="nav"> NAVIGATION BAR HERE </div>

<div id ="main"> MAIN PAGE CONTENT HERE </div>

<div id ="section"> SOME MORE CONTENT HERE</div>

<div id = "footer"> FOOTER STUFF HERE</div>

Formatted in CSS

#header { .....}

#nav { .....}

#section { .....}

#main { .....}

#footer { .....}

Html Sections in html

HTML sections formatted in css as

header { .....}

nav { .....}

section { .....}

aside {...}

Section {....}

main { .....}

footer { .....}

Layout continued

- Next we might want to create a class that will serve as a container for our elements.
- We can use this container class on different elements to set a common width, center the elements on the page, and apply some common horizontal padding.

- Setting a width tells the browser definitively how wide any element with the class of container should be.

- Using a left and right margin of auto in conjunction with this width lets the browser automatically figure out equal left and right margins for the element, thus centering it on the page.
- Lastly, the left and right padding ensures that our content isn't sitting directly on the edge of the element and provides a little breathing room for the content.

```
<div class ="container">
```

```
.container {
margin: 0 ;
padding-left: 30px;
padding-right: 30px;
width: 960px; }
```

Summary so far

- Learning all the different parts of the box model is challenging

- These concepts, although briefly introduced, take quite a bit of time to fully master

- How different elements are displayed

- What the box model is and why it's important

- How to change the size, including the height and width, of elements

- How to add margins, padding, and borders to elements

- How to change the box sizing of elements and the effects this has on the box model

- Now that we have a better understanding of how elements are displayed and sized, it's time to move into positioning these elements...lets firstly look at floats

Introduction – to FLOATs

○ In this week's class we are going to learn about how to use "floats" to control where boxes appear within the browser window…for now

○ **Floating – introduction**

○ **Clearing floats**

○ **Multi-column page layouts using Floats**

○ We'll start by reviewing how elements behave with normal flow.
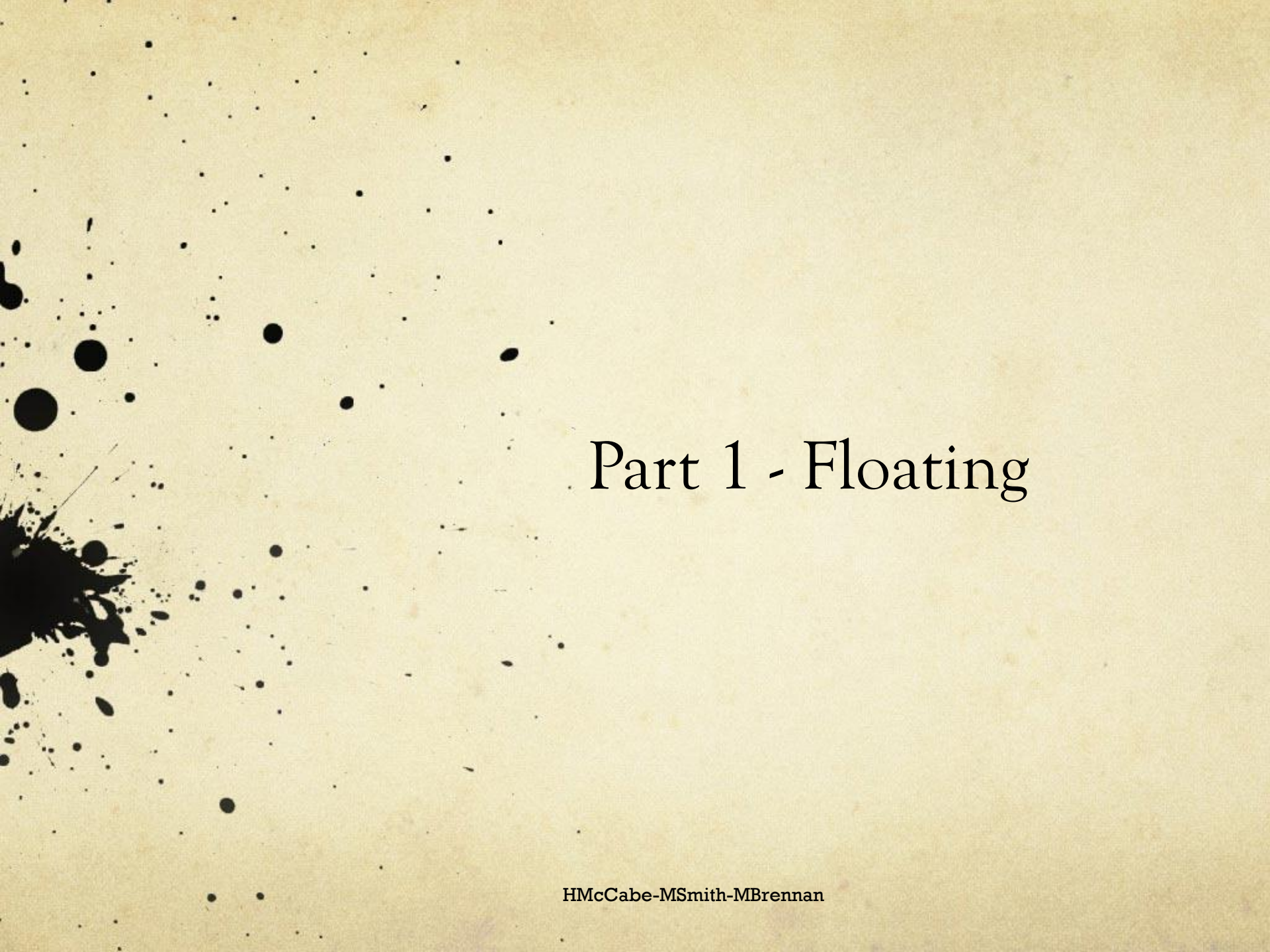
"Normal" Flow

- In the CSS layout model, text elements are laid out from top to bottom in the order in which they appear in the HTML source.

- *BLOCK elements*: stack up TOP-to-BOTTOM <u>vertically</u>
  - They fill the available width of the browser window (or other containing elements if inside one)

- *INLINE elements* line up to each other LEFT-to-RIGHT
  - they line <u>horizontally</u> to fill block elements.
  - When the browser window is resized the block elements expand or contract and the inline elements <u>reflow</u> to fit

Normal Flow

Inline content reflows to fit the width of the block.

abcdefghijklmnopqrstuvwxyz
`<p>`

`<h1>`

`<p>`

`<p>`

abcdefghijkl
mnopqrstuv
wxyz
`<p>`

`<h1>`

`<p>`

`<p>`

Blocks fill the available width.
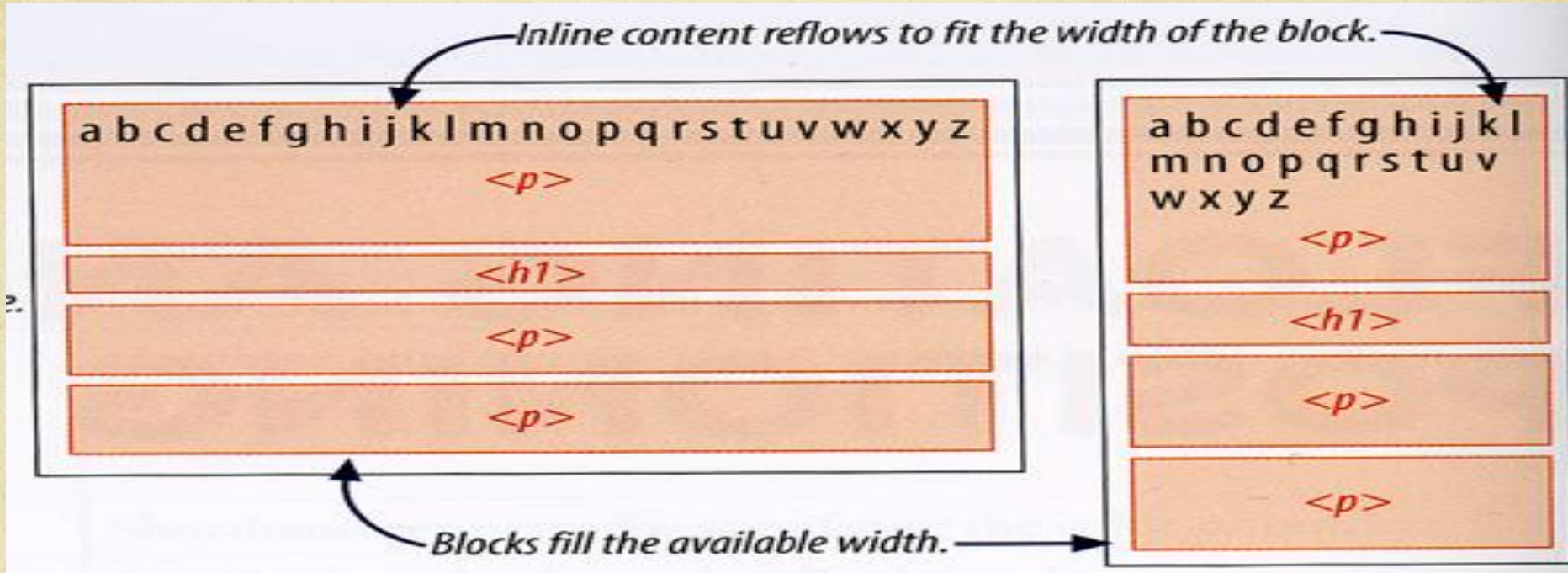
- Blocks are laid out in the order they appear in HTML source.

- Each block starts on a new line.

- Each block expands horizontally to fill as much space as it can.

HMcCabe-MSmith-MBrennan

Part 1 - Floating

HMcCabe-MSmith-MBrennan

Floating

- *Floated elements* (or *floats*) can be used to
  - Move images or text blocks to the LEFT or RIGHT and have main text 'flow' around the side box
  - create navigation toolbars from lists
  - create table-like alignment without tables
  - create multicolumn layouts

- We start by looking at the **float** property itself.

> **float**
> *values:* `left|right|none|inherit`
> *default:* `none`
> *applies to: all elements*
> *inherits: no*
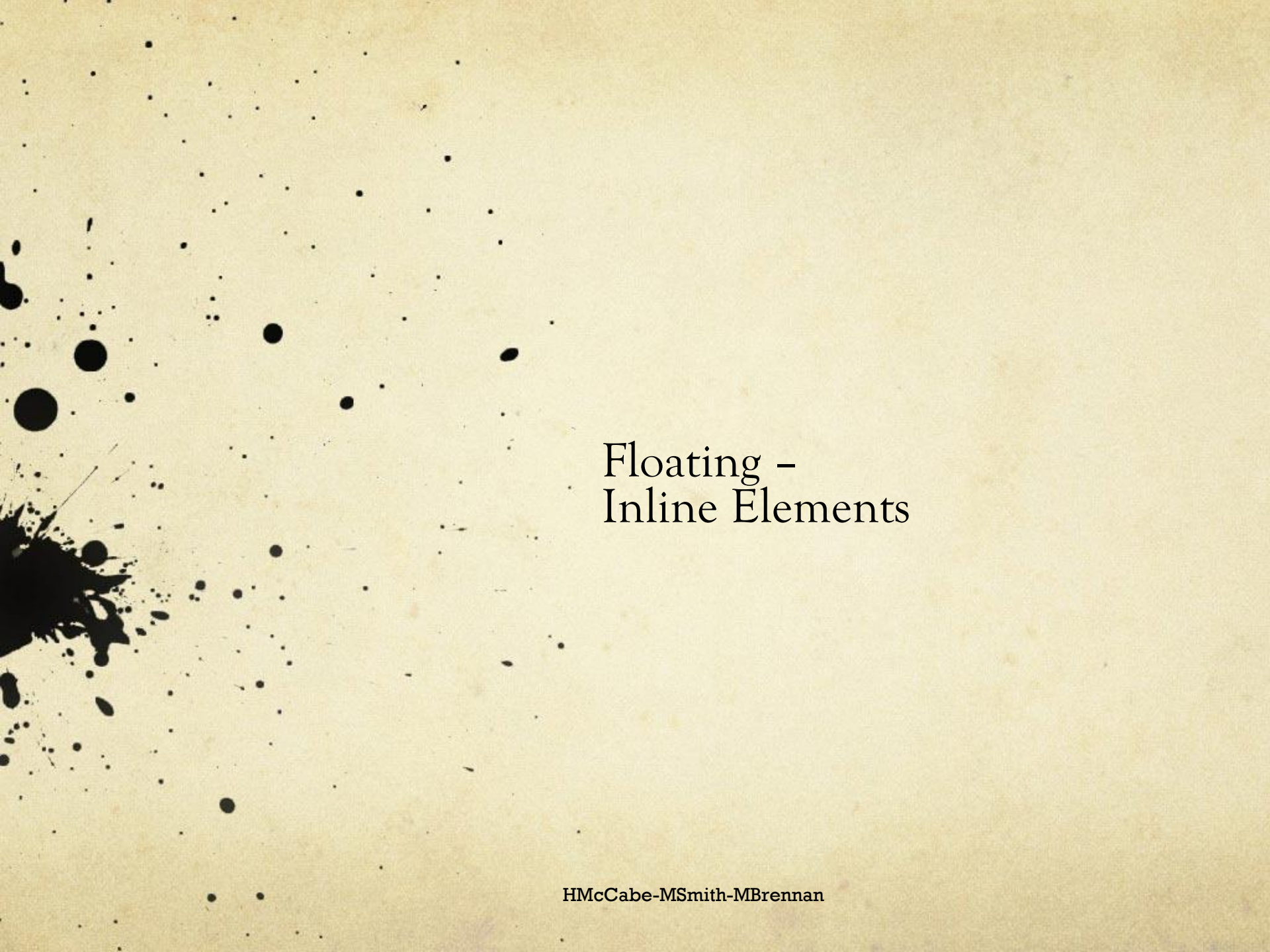
Floating

- The **float** property moves an element as far as possible to the <u>left</u> or <u>right</u>
  - Elements are moved as far as possible left/right in their '**container**'…whatever that may be
    - which may be the <body> element, or it may be inside a <div> or <p> etc.

- The content <u>following</u> the FLOATed element is allowed to wrap around it
  - i.e. the HTML elements that appear AFTER the FLOATed element will be the ones that attempt to flow into the space '<u>vacated</u>' by the FLOATed element

Floating – Inline Elements

Floating

- Let's look at a simple FLOAT example.

- We are going to apply the **float** property to an <img> element to float it to the right.

  ○ First we will see how things look with no float applied

  ○ Then we'll see the mark-up and results of 'floating' the image to the right…

No float applied to IMG

- The style sheet
  ```
  p {
      padding: 15px;
      background-color: #FFF799;
      border: 2px solid #6C4788;
  }
  ```
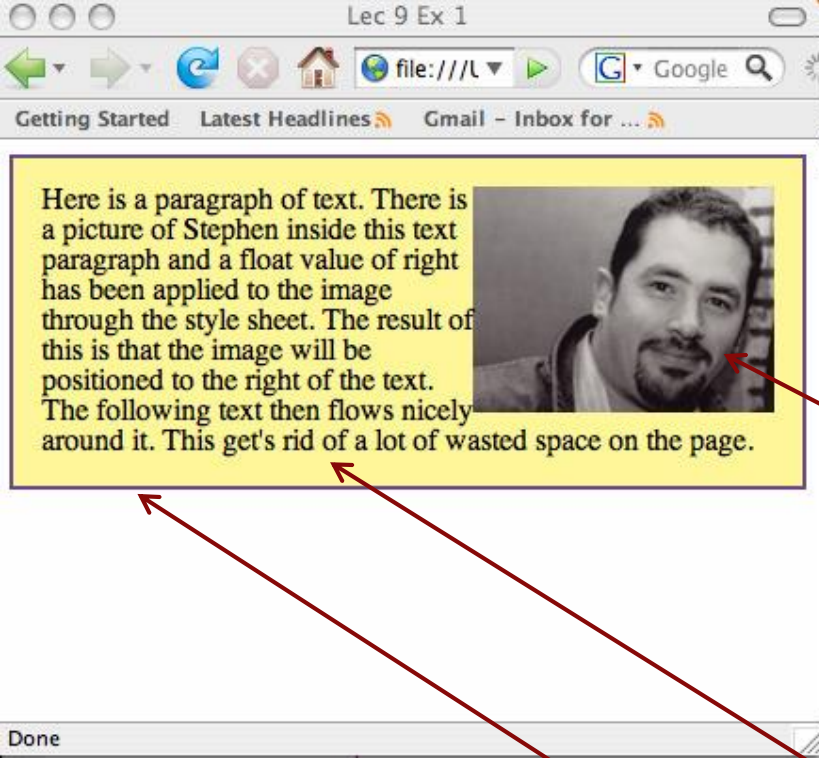
- The markup
  ```
  <p>
  <img src="pic.gif" alt=""/> Here is a paragraph ...
  </p>
  ```

- The image appears in-line just like a large character ...

The Floated image
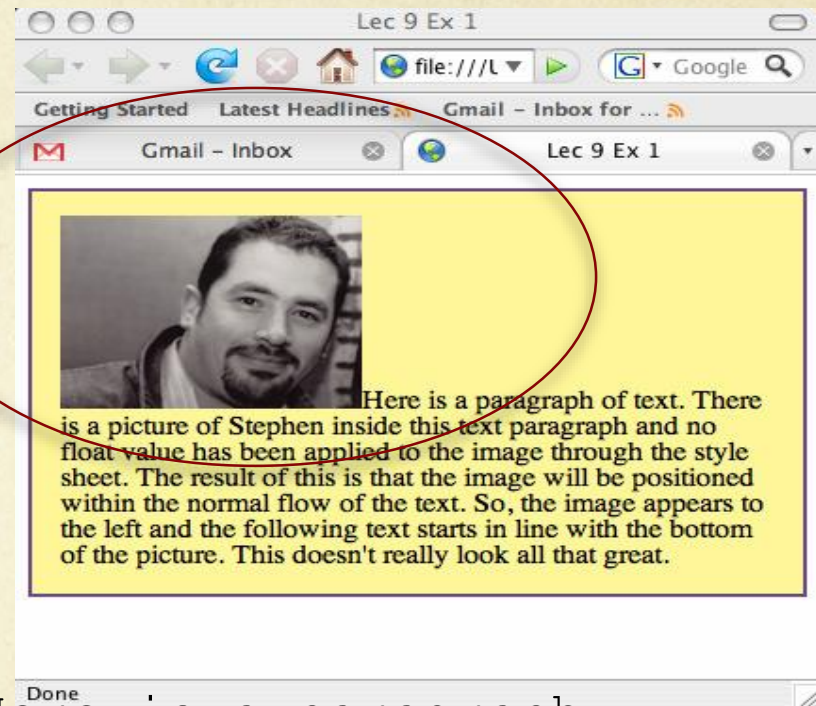
Here is a paragraph of text. There is a picture of Stephen inside this text paragraph and a float value of right has been applied to the image through the style sheet. The result of this is that the image will be positioned to the right of the text. The following text then flows nicely around it. This get's rid of a lot of wasted space on the page.

- The style sheet:

```
img
{
    float: right;
}


p
{
    padding: 15px;
    background-color: #FFF799;
    border: 2px solid #6C4788;
}
```

- The image has been FLOATed to the right, other text 'flows' around it

Margin around image

- We can create a bit of space around the image and stop the text bumping into it by adding a margin.

```
img

{

    float: right;

    margin: 10px;

}
```

- NOTE: Images have an inherent width and height
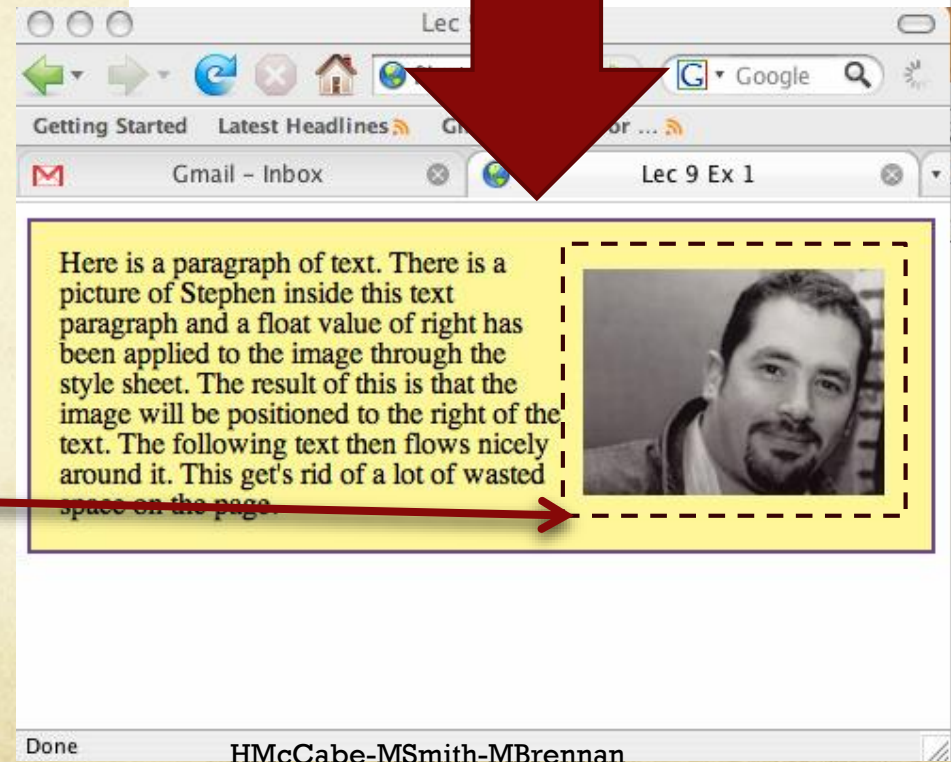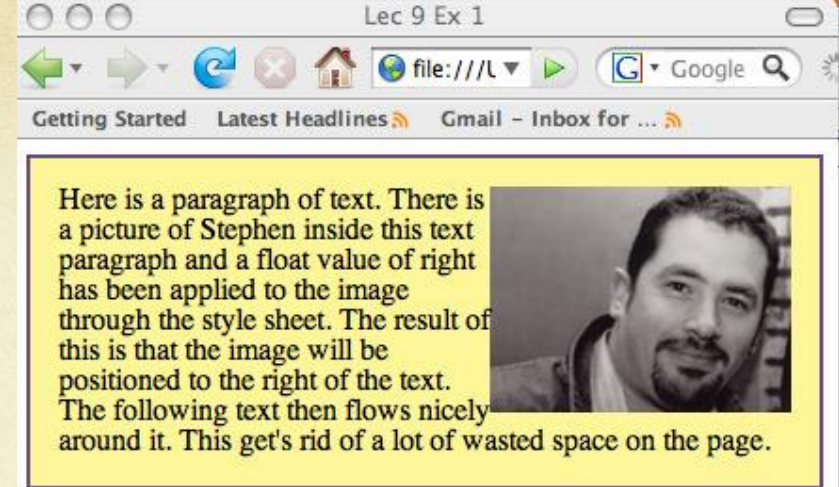
Floats: 4 IMPORTANT NOTES

1. *A floated element is like an island in a stream.*
   - The image was removed from its position in the normal flow but it still affects the position of the other elements.
   - A common analogy is that a float is like an island in a stream - everything else has to flow around it.

2. *Floats stay in content area of the containing element.*
   - In this case the paragraph.

3. *Margins are maintained.*
   - The entire element is floated!

4. *Margins* on floated elements *do not* collapse however. NB

5. Floated in-line elements behave like blocks with margins on all 4 sides ...

Floating Inline Elements

- Let's look at some more examples.

- We'll start by looking at what happens when we float an inline text element.
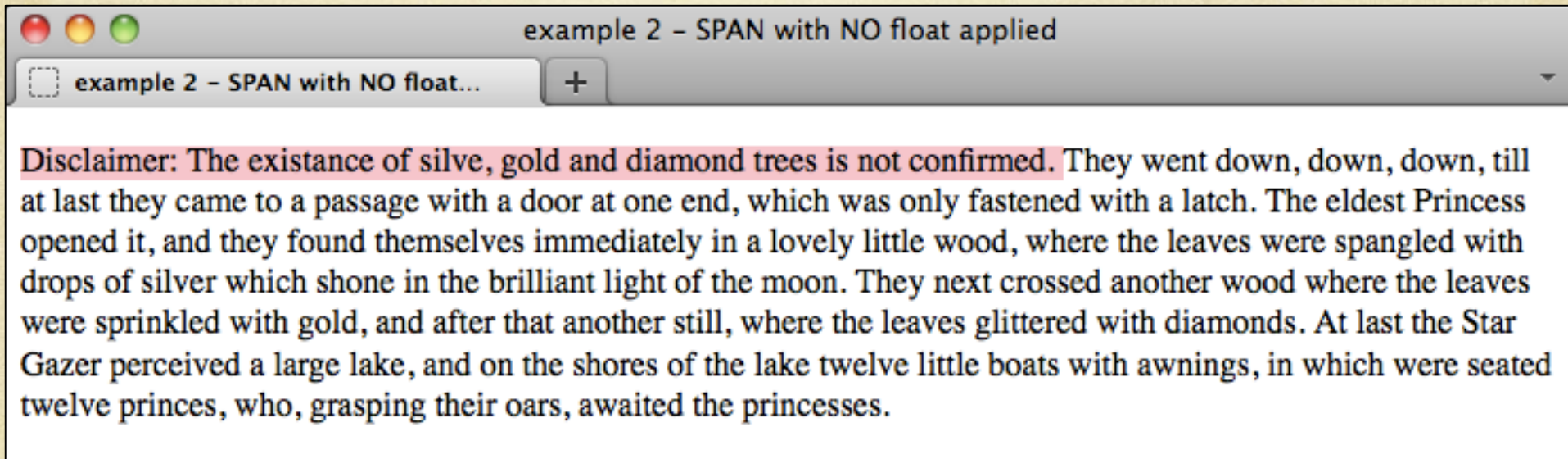
- The markup

How do we format a class in css?

```
<p>
<span class="disclaimer">
  Disclaimer: The existence of silver, gold and diamond
  trees is not confirmed.
</span>
They went down, down, till at last they came to a
  passage …
</p>
```
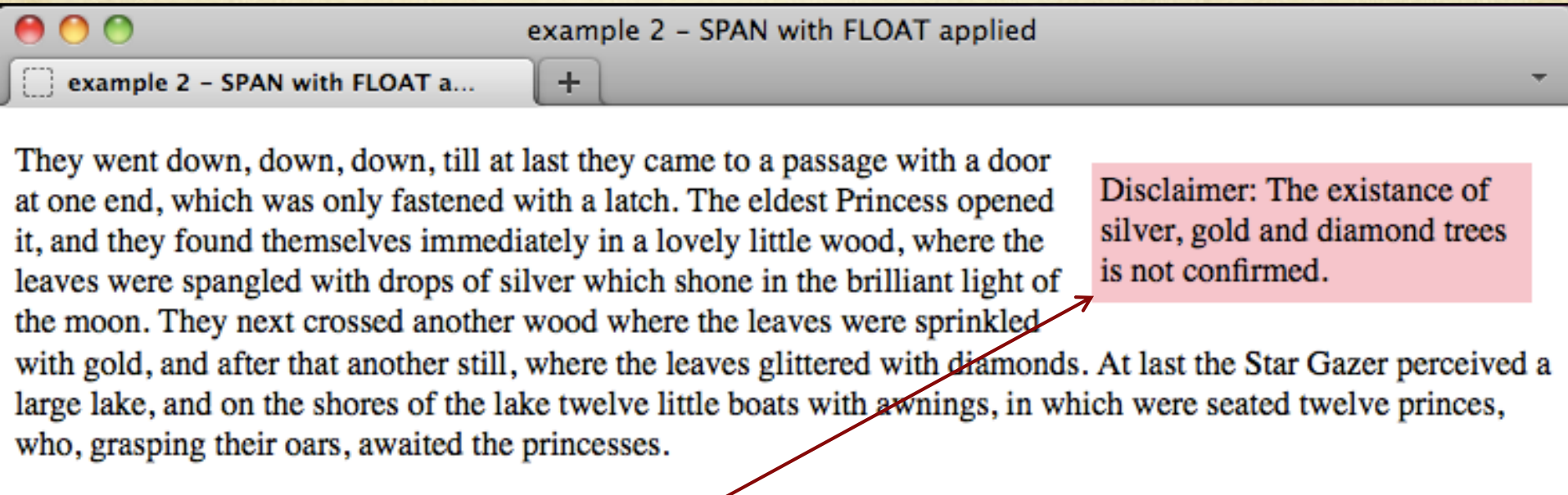
No float applied to SPAN

example 2 – SPAN with NO float applied

example 2 – SPAN with NO float... +

Disclaimer: The existance of silve, gold and diamond trees is not confirmed. They went down, down, down, till at last they came to a passage with a door at one end, which was only fastened with a latch. The eldest Princess opened it, and they found themselves immediately in a lovely little wood, where the leaves were spangled with drops of silver which shone in the brilliant light of the moon. They next crossed another wood where the leaves were sprinkled with gold, and after that another still, where the leaves glittered with diamonds. At last the Star Gazer perceived a large lake, and on the shores of the lake twelve little boats with awnings, in which were seated twelve princes, who, grasping their oars, awaited the princesses.

- Some CSS markup to give a PINK background to the span

```
.disclaimer
{
   background-color: pink;
}
```

FLOAT applied to SPAN

example 2 – SPAN with FLOAT applied

example 2 – SPAN with FLOAT a...   +

They went down, down, down, till at last they came to a passage with a door at one end, which was only fastened with a latch. The eldest Princess opened it, and they found themselves immediately in a lovely little wood, where the leaves were spangled with drops of silver which shone in the brilliant light of the moon. They next crossed another wood where the leaves were sprinkled with gold, and after that another still, where the leaves glittered with diamonds. At last the Star Gazer perceived a large lake, and on the shores of the lake twelve little boats with awnings, in which were seated twelve princes, who, grasping their oars, awaited the princesses.

Disclaimer: The existance of silver, gold and diamond trees is not confirmed.

```
.disclaimer   {
   float: right;
   width: 200px;
   background-color: pink;
   margin: 10px;
   padding: 4px;}
```

HMcCabe-MSmith-MBrennan

More CSS to Para and SPAN for pretty effect

They went down, down, down, till at last they came to a passage with a door at one end, which was only fastened with a latch. The eldest Princess opened it, and they found themselves immediately in a lovely little wood, where the leaves were spangled with drops of silver which shone in the brilliant light of the moon. They next crossed another wood where the leaves were sprinkled with gold, and after that another still, where the leaves glittered with diamonds. At last the Star Gazer perceived a large lake, and on the shores of the lake twelve little boats with awnings, in which were seated twelve princes, who, grasping their oars, awaited the princesses.

Disclaimer: The existance of silver, gold and diamond trees is not confirmed.

```
.disclaimer {
    float: right;
    width: 200px;
    margin: 10px;
    padding: 4px;

    color: white;
    background-color: darkred;
}
```

```
/* yellow background,
grayish border with some
padding space */

p {
    padding: 15px;
    background-color: #FFF799;
    border: 2px solid #6C4788;
}
```

Floating Inline Elements

- The FLOATed <span> behaves mostly like the floated image, but with a few subtle differences…

1. **Always provide a <u>width</u> for floated text elements.**
   - You don't have to do this for images as they have an inherent width already.

2. **Floated inline elements behave like block elements.**
   - For example, margins are rendered on all four sides.

HMcCabe-MSmith-MBrennan

Floating – Block Elements

Floating Block Elements

- We will now try to float an entire paragraph to left.

- Here is how the 3 paragraphs look with NO FLOAT applied:

example 3 – PARAGRAPH with no float applied

example 3 – PARAGRAPH with n...   +

ONCE upon a time there lived in the village of Montignies-sur-Roc a little cow-boy, without either father or mother. His real name was Michael, but he was always called the Star Gazer, because when he drove his cows over the commons to seek for pasture, he went along with his head in the air, gaping at nothing.

As he had a white skin, blue eyes, and hair that curled all over his head, the village girls used to cry after him, "Well, Star Gazer, what are you doing?" and Michael would answer, "Oh, nothing," and go on his way without even turning to look at them.

The fact was he thought them very ugly, with their sun-burnt necks, their great red hands, their coarse petticoats and their wooden shoes. He had heard that somewhere in the world there were girls whose necks were white and whose hands were small, who were always dressed in the finest silks and laces, and were called princesses, and while his companions round the fire saw nothing in the flames but common everyday fancies, he dreamed that he had the happiness to marry a princess.

HMcCabe-MSmith-MBrennan

Floating Block Elements

- We have 3 paragraphs, two have ID attributes:

- The HTML markup:

```
<p>ONCE upon a time ... </p>


<p id="para2">
  As he had a white skin, blue eyes ...
</p>


<p id="para3">
The fact was he thought them very ugly...
</p>
```

The initial CSS markup

- All paragraphs have <u>dashed red border</u>.

```
p{
    border: 1px red dashed;
}
```

- Para2 has (light)<u>blue</u> background.
Para3 has <u>yellow</u> background.

```
#para2{
    background-color: lightblue;
}
```

```
#para3{
    background-color: yellow;
}
```

FLOAT para2 to the left (width of 30%) – but PROBLEM with margins ...

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by inj to use a passage of Lorem Ipsum, you need to be sure there isn't anything embarrassing hidden in the middle of text. All the Lor this the first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model sente

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable. If you are going to use a passage of Lorem Ipsum, you need to be sure there isn't anything embarrassing hidden in the middle of text. All the Lorem Ipsum generators on the Internet tend to repeat predefined chunks as necessary, making this the first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model sentence structures, to generate Lorem Ipsum which looks reasonable.

There are many variations of passages of Lorem Ipsum avail randomised words which don't look even slightly believable. embarrassing hidden in the middle of text. All the Lorem Ips first true generator on the Internet. It uses a dictionary of ove Ipsum which looks reasonable.

```
#para2 {
     float: left;
     width: 30%  }
```

HMcCabe-MSmith-MBrennan

ONCE upon a time there lived in the village of Montignies-sur-Roc a little cow-boy, without either father or mother. His real name was Michael, but he was always called the Star Gazer, because when he drove his cows over the commons to seek for pasture, he went along with his head in the air, gaping at nothing.

As he had a white skin, blue eyes, and hair that curled all over his head, the village girls used to cry after him, "Well, Star Gazer, what are you doing?" and Michael would answer, "Oh, nothing," and go on his way without even

The fact was he thought them very ugly, with their sun-burnt necks, their great red hands, their coarse petticoats and their wooden shoes. He had heard that somewhere in the world there were girls whose necks were white and whose hands were small, who were always dressed in the finest silks and laces, and were called princesses, and while his companions round the fire saw nothing in the flames but common everyday fancies, he dreamed that he had the happiness to marry a princess.

- FLOATed elements do NOT collapse margins
  - So the margin-bottom of "para1" (white background) touches, but does not overlap, the margin-top of FLOATed "para2"
- This is usually NOT the layout we desire

SOLUTION 1 – remove margin-top
for the FLOATed paragraph

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by in to use a passage of Lorem Ipsum, you need to be sure there isn't anything embarrassing hidden in the middle of text. All the L this the first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model ser

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable. If you are going to use a passage of Lorem Ipsum, you need to be sure there isn't anything embarrassing hidden in the middle of text. All the Lorem Ipsum generators on the Internet tend to repeat predefined chunks as necessary, making this the first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model sentence structures, to generate Lorem Ipsum which looks reasonable.

There are many variations of passages of Lorem Ipsum ava randomised words which don't look even slightly believabl embarrassing hidden in the middle of text. All the Lorem I first true generator on the Internet. It uses a dictionary of o Ipsum which looks reasonable.

```
#para2 {
     float: left;
     width: 30%;
     margin-top: 0px;
}
```

That's better!

SOLUTION 2 – FLOAT both paragraphs to the LEFT (so have same non-collapsed margins)

```
#para2
{
      float: left;
      width: 30%;
}


#para3
{
      float: left;
      width: 70%;
}
```

ONCE upon a time there lived in the village of Montignies-sur-Roc a little cow-boy, without either father or mother. His real name was Michael, but he was always called the Star Gazer, because when he drove his cows over the commons to seek for pasture, he went along with his head in the air, gaping at nothing.

As he had a white skin, blue eyes, and hair that curled all over his head, the village girls used to cry after him, "Well, Star Gazer, what are you doing?" and Michael would answer, "Oh, nothing," and go on his way without even turning to look at them.

The fact was he thought them very ugly, with their sun-burnt necks, their great red hands, their coarse petticoats and their wooden shoes. He had heard that somewhere in the world there were girls whose necks were white and whose hands were small, who were always dressed in the finest silks and laces, and were called princesses, and while his companions round the fire saw nothing in the flames but common everyday fancies, he dreamed that he had the happiness to marry a princess.

- But for some reason, 30% + 70% doesn't seem to fit

- Why doesn't 30 + 70 = 100???

- The problem relates to margins/border/padding of paragraphs
  - The "box model" of what makes up TOTAL width of an element …

HMcCabe-MSmith-MBrennan

SOLUTION 3 – float 2 DIVs, created around each paragraph (&no spacing/border for DIVs)

- The new HTML markup for the 2 paragraphs to be FLOATed:

```
<div id="column_left">
       <p id="para2">
       As he had a white skin, blue eyes, ...
       </p>
</div>


<div id="column_right">
       <p id="para3">
       The fact was he thought them very ugly, ...
       </p>
</div>
```

SOLUTION 3 – float 2 DIVs, created around each paragraph (&no spacing/border for DIVs)

- The new CSS markup for the 2 paragraphs to be FLOATed:

```
#column_left
{
      float: left;
      width: 30%;
}


#column_right
{
      float: left; /* or right! The result is the
same */
      width: 70%;
}
```

SOLUTION 3 – float 2 DIVs, created around each paragraph (&no spacing/border for DIVs)

example 3 – PARAGRAPHs inside DIVs with FLOAT applied to DIVs

example 3 – PARAGRAPHs insid…

ONCE upon a time there lived in the village of Montignies-sur-Roc a little cow-boy, without either father or mother. His real name was Michael, but he was always called the Star Gazer, because when he drove his cows over the commons to seek for pasture, he went along with his head in the air, gaping at nothing.

As he had a white skin, blue eyes, and hair that curled all over his head, the village girls used to cry after him, "Well, Star Gazer, what are you doing?" and Michael would answer, "Oh, nothing," and go on his way without even turning to look at them.

The fact was he thought them very ugly, with their sun-burnt necks, their great red hands, their coarse petticoats and their wooden shoes. He had heard that somewhere in the world there were girls whose necks were white and whose hands were small, who were always dressed in the finest silks and laces, and were called princesses, and while his companions round the fire saw nothing in the flames but common everyday fancies, he dreamed that he had the happiness to marry a princess.

- It works! Why? Because........
  - **<u>The DIVs have no associated margin/border/padding</u>**
  - And so 30% + 70% really does add up to 100%

HMcCabe-MSmith-MBrennan

Forcing content to start BELOW a FLOAT
- "CLEARing" floats ...

Clearing Floated Elements

- Suppose you want to turn text wrapping off and get back to layout as normal.

- Apply the clear property to the element you want to start *below* the floated element.

clear
values: `left|right|both|none|inherit`
default: `none`
applies to: block level elements only
inherits: no

Consider page header and footer (gray) padded paragraphs added to our story page …PROBLEM – the (gray) page footer block gets mixed up with the 2 floated paragraphs …

Title here

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable. If you are going to use a passage of Lorem Ipsum, you need to be sure there isn't anything embarrassing hidden in the middle of text. All the Lorem Ipsum generators on the Internet tend to repeat predefined chunks as necessary, making this the first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model sentence structures, to generate Lorem Ipsum which looks reasonable.

There are many variations of passages of Lorem Ipsum available, but the majority have suff randomised words which don't look even slightly believable. If you are going to use a passa embarrassing hidden in the middle of text. All the Lorem Ipsum generators on the Internet t first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined w Ipsum which looks reasonable.

Created by WebFoot Designs

SOLUTION – the page footer must CLEAR floats before it is displayed (so on new line ...)

```
 #header, #footer
{
        background-color: #CCCCCC;
        padding: 15px;

}
```

The layout CSS markup for the page footer:
```
#page_footer
{
        clear: both;
        /* that's it – floats are stopped
           and footer starts on new line */

}
```

The CLEAR solution for the page footer ...

Title here

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable. If you are going to use a passage of Lorem Ipsum, you need to be sure there isn't anything embarrassing hidden in the middle of text. All the Lorem Ipsum generators on the Internet tend to repeat predefined chunks as necessary, making this the first true generator on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model sentence structures, to generate Lorem Ipsum which looks reasonable.

There are many variations of passages of Lorem Ipsum available, randomised words which don't look even slightly believable. If yo embarrassing hidden in the middle of text. All the Lorem Ipsum g first true generator on the Internet. It uses a dictionary of over 200 Ipsum which looks reasonable.

Created by WebFoot Designs

2-colum page template …

2-column template:

Mount Olympus News

Prometheus Heats Things Up

Prometheus did not care to live amid the clouds on the mountain top. He was too busy for that. While the Mighty Folk were spending their time in idleness, drinking nectar and eating ambrosia, he was intent upon plans for making the world wiser and better than it had ever been before.

He went out amongst men to live with them and help them. Ah, how very poor and wretched they were! He found them living in caves and in holes of the earth, shivering with the cold because there was no fire, dying of starvation, hunted by wild beasts and by one another-the most miserable of all living creatures.

"If they only had fire," said Prometheus to himself, "they could at least warm themselves and cook their food; and after a while they could learn to make tools and build themselves houses. Without fire, they are worse off than the beasts."

Then he went boldly to Jupiter and begged him to give fire to men, that so they might have a little comfort through the long, dreary months of winter.

"Not a spark will I give," said Jupiter. "No, indeed! Why, if men had fire they might become strong and wise like ourselves, and after a while they would drive us out of our kingdom. It is best for them to be poor and ignorant, that so we Mighty Ones may thrive and be happy."

Prometheus made no answer; but he had set his heart on helping mankind, and he did not give up. He turned away, and left Jupiter and his mighty company forever.

As he was walking by the shore of the sea he found a reed, or, as some say, a tall stalk of fennel, growing; and when he had broken it off he saw that its hollow center was filled with a dry, soft pith which would burn slowly and keep on fire a long time. He took the long stalk in his hands, and started with it towards the dwelling of the sun in the far east.

"Mankind shall have fire in spite of the tyrant who sits on the mountain top," he said.

He reached the place of the sun in the early morning just as the glowing, golden orb was rising from the earth and beginning his daily journey through the sky. He touched the end of the long reed to the flames, and the dry pith caught on fire and burned slowly. He called some of the shivering men from their caves and built a fire for them, and showed them how to warm themselves by it and how to build other fires from the coals. Soon there was a cheerful blaze in every rude home in the land, and men and women gathered round it and were warm and happy, and thankful to Prometheus for the wonderful gift which he had brought to them from the sun.

It was not long until they learned to cook their food and so to eat like men instead of like beasts. They began at once to leave off their wild and savage habits; and instead of lurking in the dark places of the world, they came out into the open air and the bright sunlight, and were glad because life had been given to them.

Links to Stories

Jupiter & His Mighty Company
The Golden Age
The Story of Prometheus
The Flood
The Story of Io
The Wonderful Weaver
Cadmus and Europa
The Quest for Medusa's Head
The Story of Atlanta
The Horse and the Olive

News

Pandora opens the box!
Disease and sorrow released to plague mankind for eternity. More...

Welcome to Hellenes.
Son of Prometheus escapes the great flood and creates a new society from tossed stones. More...

A Tangled Web
Arachne loses weave-off; is changed into a spider. More...

HMcCabe-MSmith-MBrennan

Content taken from *Old Greek Stories* by James Baldwin (1914). It is a copyright free text available at Project Gutenberg.

2-column template – mostly seen already

- Header and footer, as for previous example, i.e.:
  - Nothing special for page heading – since BEFORE any floats
  - FOOTER must CLEAR floats to start on new line
- DIVs for left and right columns – as for previous examples
  - i.e. content for left/right columns put into DIVs
- **Other actions: NB**
  - Remove all margin/padding/border from <body>
    - NOTE: DIVs have no default margin/padding/border
  - Put ALL content inside another DIV of fixed width 960px
    - Called a 'wrapper' DIV
    - Centered via left/right "auto" margins …

2-column template – non-layout CSS

```
#page_header, #page_footer     {
        font-family: verdana, sans-serif;
        background-color: #CCCCCC;
        padding: 15px;        }
li {
        list-style: none;
        margin-top: 0.5em;}
#main {
        padding: 1em;
        border-right: 2px black solid; }
#links {
        background-color: pink;
        padding: 1em;   }
```

2-column template – layout CSS

sum of all column widths = 960px

```css
body {
        margin: 0;
        padding: 0;
        border: none;

}


#wrapper {
        width: 960px;
        margin-left: auto;
        margin-right: auto;


}
```

```css
#column_left {
        float: left;
        width: 660px;
}


#column_right {
        float: right;
        width: 300px;
}


#page_footer {
        clear: both;

}
```

Mount Olympus News

Prometheus Heats Things Up

Prometheus did not care to live amid the clouds on the mountain top. He was too busy for that. While the Mighty Folk were spending their time in idleness, drinking nectar and eating ambrosia, he was intent upon plans for making the world wiser and better than it had ever been before.

He went out amongst men to live with them and help them. Ah, how very poor and wretched they were! He found them living in caves and in holes of the earth, shivering with the cold because there was no fire, dying of starvation, hunted by wild beasts and by one another-the most miserable of all living creatures.

"If they only had fire," said Prometheus to himself, "they could at least warm themselves and cook their food; and after a while they could learn to make tools and build themselves houses. Without fire, they are worse

Then he went boldly to Jupite   ight have a
little comfort through the lon

"Not a spark will I give," said   t become
strong and wise like ourselve   ngdom. It is
best for them to be poor and   happy."

Prometheus made no answer   e did not give
up. He turned away, and left

As he was walking by the sho   stalk of
fennel, growing; and when h   illed with a
dry, soft pith which would bu   ng stalk in his
hands, and started with it tov

"Mankind shall have fire in sp   aid.

He reached the place of the s   rb was rising
from the earth and beginning   d of the long
reed to the flames, and the d   me of the
shivering men from their cav   warm
themselves by it and how to   eerful blaze in
every rude home in the land,   rm and
happy, and thankful to Prome   them from
the sun.

It was not long until they learned to cook their food and so to eat like men instead of like beasts. They began at once to leave off their wild and savage habits; and instead of lurking in the dark places of the world, they came out into the open air and the bright sunlight, and were glad because life had been given to them.

```
#column_left {

        float: left;

        width: 660px;

}


#column_right {

        float: right;

        width: 300px;

}
```

Links to Stories

[Jupiter & His Mighty Company](#)

[The Golden Age](#)

[The Story of Prometheus](#)

[The Flood](#)

[The Story of Io](#)

[The Wonderful Weaver](#)

[Cadmus and Europa](#)

[The Quest for Medusa's Head](#)

[The Story of Atlanta](#)

[The Horse and the Olive](#)

News

Pandora opens the box!
Disease and sorrow released to plague mankind for eternity. [More...](#)

Welcome to Hellenes.
Son of Prometheus escapes the great flood and creates a new society from tossed stones. [More...](#)

A Tangled Web
Arachne loses weave-off; is changed into a spider. [More...](#)

3-colum page template …

3-column template:

Mount Olympus News

Links to Stories

Jupiter & His Mighty Company

The Golden Age

The Story of Prometheus

The Flood

The Story of Io

The Wonderful Weaver

Cadmus and Europa

The Quest for Medusa's Head

The Story of Atlanta

The Horse and the Olive

Prometheus Heats Things Up

Prometheus did not care to live amid the clouds on the mountain top. He was too busy for that. While the Mighty Folk were spending their time in idleness, drinking nectar and eating ambrosia, he was intent upon plans for making the world wiser and better than it had ever been before.

He went out amongst men to live with them and help them. Ah, how very poor and wretched they were! He found them living in caves and in holes of the earth, shivering with the cold because there was no fire, dying of starvation, hunted by wild beasts and by one another-the most miserable of all living creatures.

"If they only had fire," said Prometheus to himself, "they could at least warm themselves and cook their food; and after a while they could learn to make tools and build themselves houses. Without fire, they are worse off than the beasts."

Then he went boldly to Jupiter and begged him to give fire to men, that so they might have a little comfort through the long, dreary months of winter.

"Not a spark will I give," said Jupiter. "No, indeed! Why, if men had fire they might become strong and wise like ourselves, and after a while they would drive us out of our kingdom. It is best for them to be poor and ignorant, that so we Mighty Ones may thrive and be happy."

Prometheus made no answer; but he had set his heart on helping mankind, and he did not give up. He turned away, and left Jupiter and his mighty company forever.

As he was walking by the shore of the sea he found a reed, or, as some say, a tall stalk of fennel, growing; and when he had broken it off he saw that its hollow center was filled with a dry, soft pith which would burn slowly and keep on fire a long time. He took the long stalk in his hands, and started with it towards the dwelling of the sun in the far east.

"Mankind shall have fire in spite of the tyrant who sits on the mountain top," he said.

He reached the place of the sun in the early morning just as the glowing, golden orb was rising from the earth and beginning his daily journey through the sky. He touched the end of the long reed to the flames, and the dry pith caught on fire and burned slowly. He called some of the shivering men from their caves and built a fire for them, and showed them how to warm themselves by it and how to build other fires from the coals. Soon there was a cheerful blaze in every rude home in the land, and men and women gathered round it and were warm and happy, and thankful to Prometheus for the wonderful gift which he had brought to them from the sun.

It was not long until they learned to cook their food and so to eat like men instead of like beasts. They began at once to leave off their wild and savage habits; and instead of lurking in the dark places of the world, they came out into the open air and the bright sunlight, and were glad because life had been given to them.

News

Pandora opens the box! Disease and sorrow released to plague mankind for eternity. More...

Welcome to Hellenes. Son of Prometheus escapes the great flood and creates a new society from tossed stones. More...

A Tangled Web Arachne loses weave-off; is changed into a spider. More...

Content taken from *Old Greek Stories* by James Baldwin (1914). It is a copyright free text available HMcCabe-MSmith-MBrennan Gutenberg.

HMcCabe-MSmith-MBrennan

3-col as for 2-col, except:

- Float all 3 columns to left
  - Or leftmost and middle columns to left, and remaining to right – it really doesn't matter !

- Sum col widths = 960px

- 3 container DIVS
  - Column_left
  - Column_right
  - Column_center

- (all 3 columns within single 960px 'wrapper' DIV)

3-column template

– layout CSS
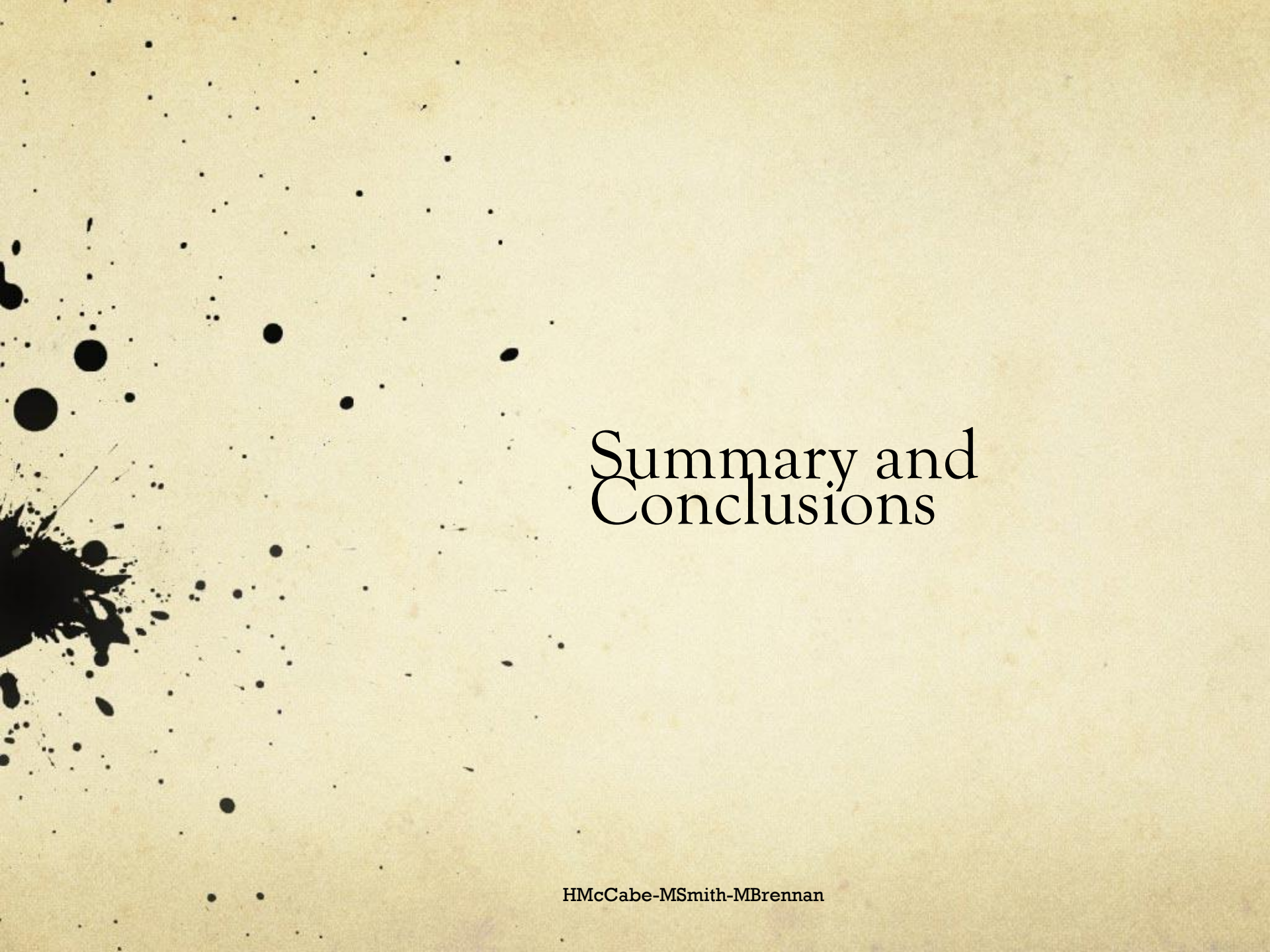
```css
body {
        margin: 0;
        padding: 0;
        border: none;
}

#wrapper {
        width: 960px;
        margin-left: auto;
        margin-right: auto;
}
#footer {
        clear: both;

}
```
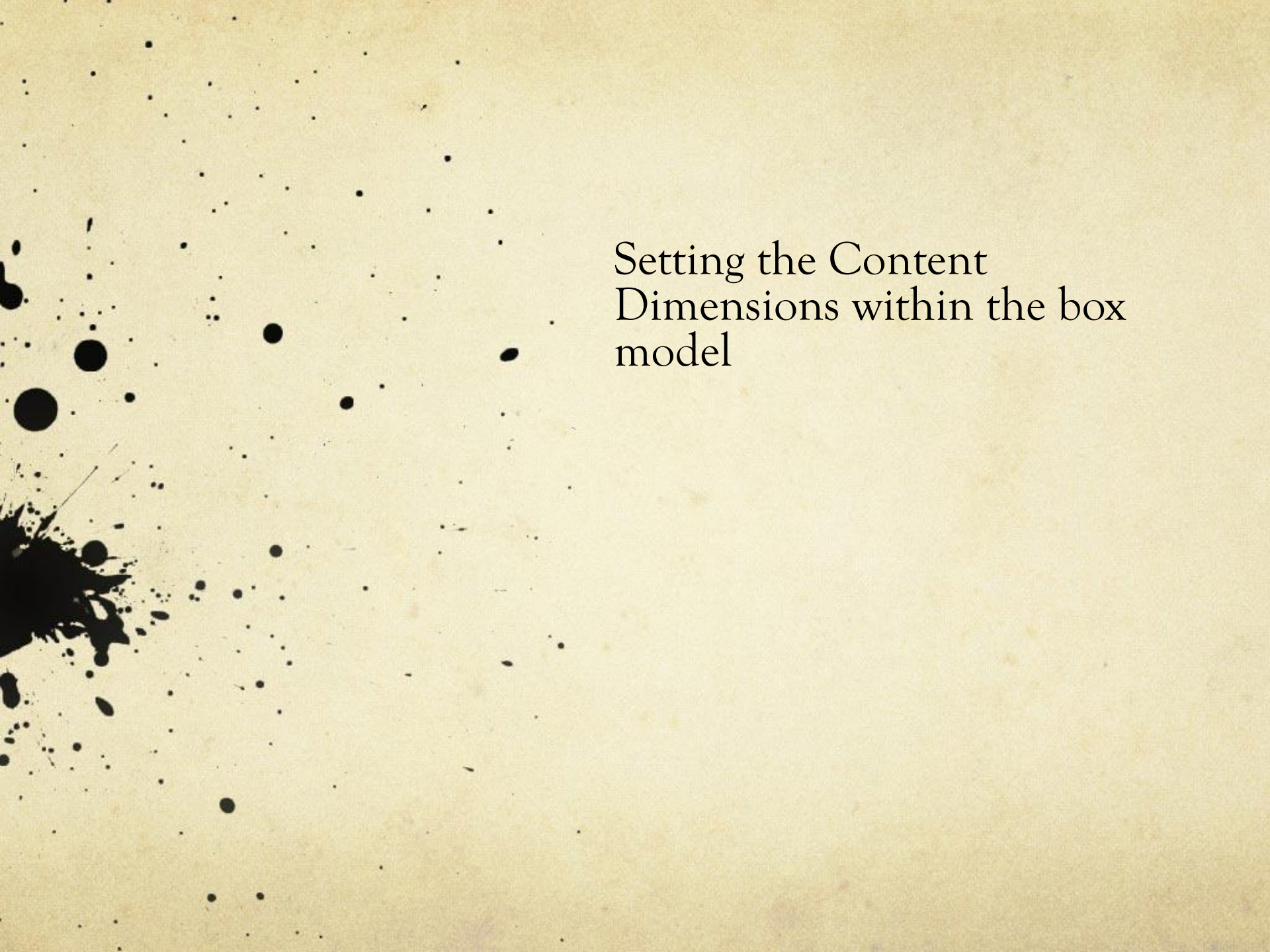
```css
#column_left {
        float: left;
        width: 200px;
}

#column_center {
        float: left;
        width: 560px;
}

#column_right{
        float: left;
        width: 200px;
}
```

HMcCabe-MSmith-MBrennan

Summary and Conclusions

Setting the Content Dimensions within the box model

Setting the element dimensions

○ Use the **width** and **height** properties to specify the width and height of the element.

○ You can specify the width and height only of block-level elements or non-text inline elements such as images.

---

width *or* height
values: length measurement | percentage | auto | inherit
default: auto
applies to: block level elements and non-text inline elements
inherits: no

• By default the width and height of an element is calculated automatically by the browser.

• Hence the default setting of auto.

Setting the element dimensions

○ However you can use the width and height properties to set this yourself – usual values to give are em, pixel or percentage values.

○ Here are some examples of using them:

.wide { width: 400px;   height: 100px; }
.narrow { width: 150px;   height: 300px; }

○ Slide overleaf shows the results of formatting the same paragraph twice with the two different style rules above. A green background has been added for clarity.

Setting the Content Dimensions
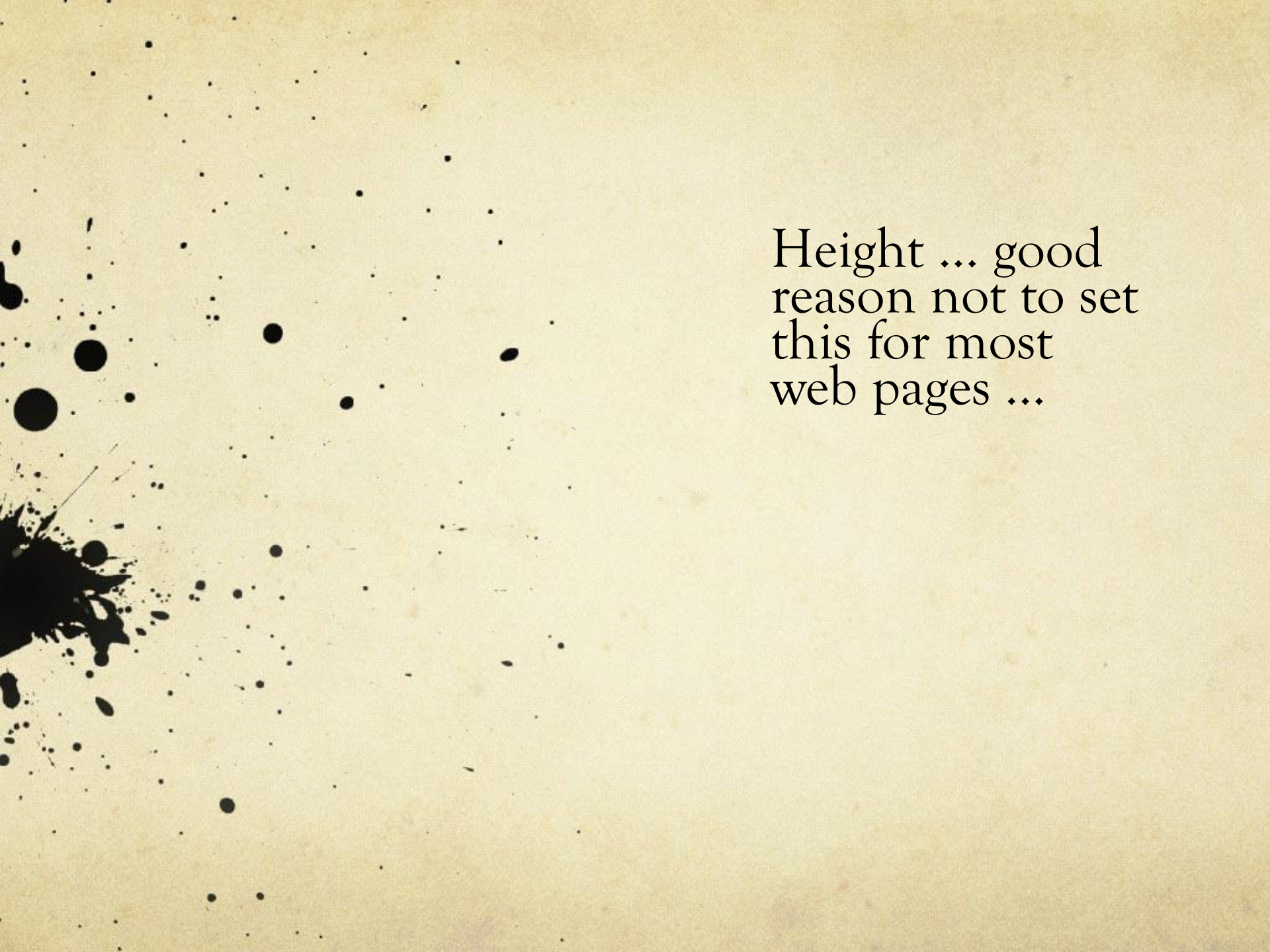
Cabbage when boiled with salt pork, as it is mostly used, is the food for strong and healthy digestive powers; but when eaten in its raw state, served with vinegar and pepper, it is considered one of the most easily digested articles of diet. In the process of cooking even with the greatest care, a large portion of the sweetness
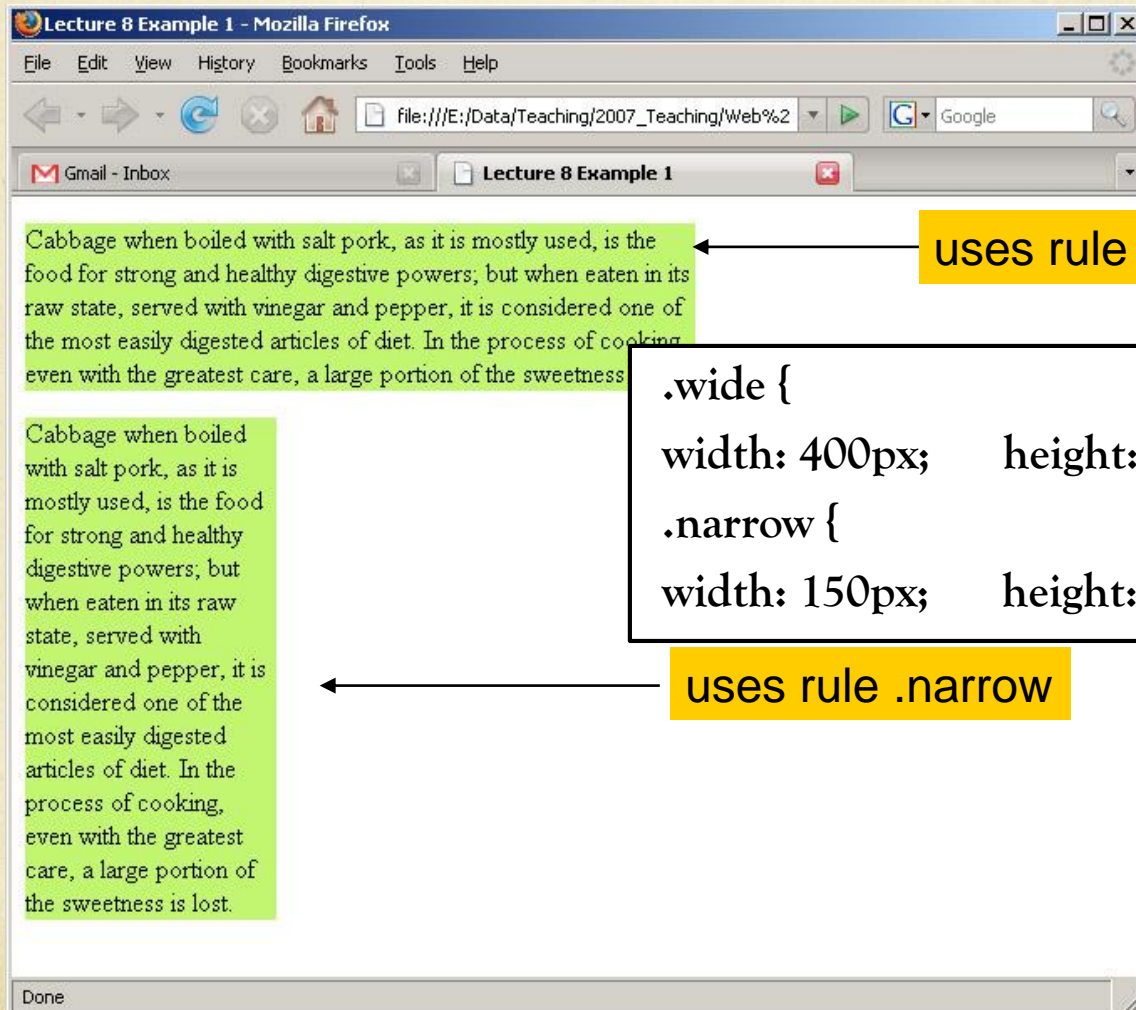
uses rule .wide

```
.wide {
width: 400px;     height: 100px; }
.narrow {
width: 150px;     height: 300px; }
```

Cabbage when boiled with salt pork, as it is mostly used, is the food for strong and healthy digestive powers; but when eaten in its raw state, served with vinegar and pepper, it is considered one of the most easily digested articles of diet. In the process of cooking, even with the greatest care, a large portion of the sweetness is lost.

uses rule .narrow

Height ... good reason not to set this for most web pages ...

Setting the Content Dimensions

○ In general you don't specify the height of elements.

○ It's usually better to let the browser figure this out based on how much content there is.

○ If you do specify height though, you must consider what happens if the content does not fit. This situation is called *overflow*.

○ There is a property called overflow which can be used to specify this. There are five predefined values it can take

   ○ visible, hidden, scroll, auto, inherit

○ Next slide shows examples ...

Setting the Content Dimensions

visible

hidden

scroll

Cabbage when boiled with salt pork, as it is mostly used, is the food for strong and healthy digestive powers; but when eaten in its raw state, served with vinegar and

Cabbage when boiled with salt pork, as it is mostly used, is the food for

Cabbage when boiled with salt pork, as it is
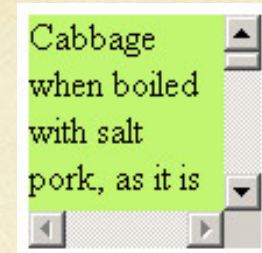
The auto option just lets the browser decide what to do … i.e. it will add Scroll-bars when overflow begins …

Margins

The box model
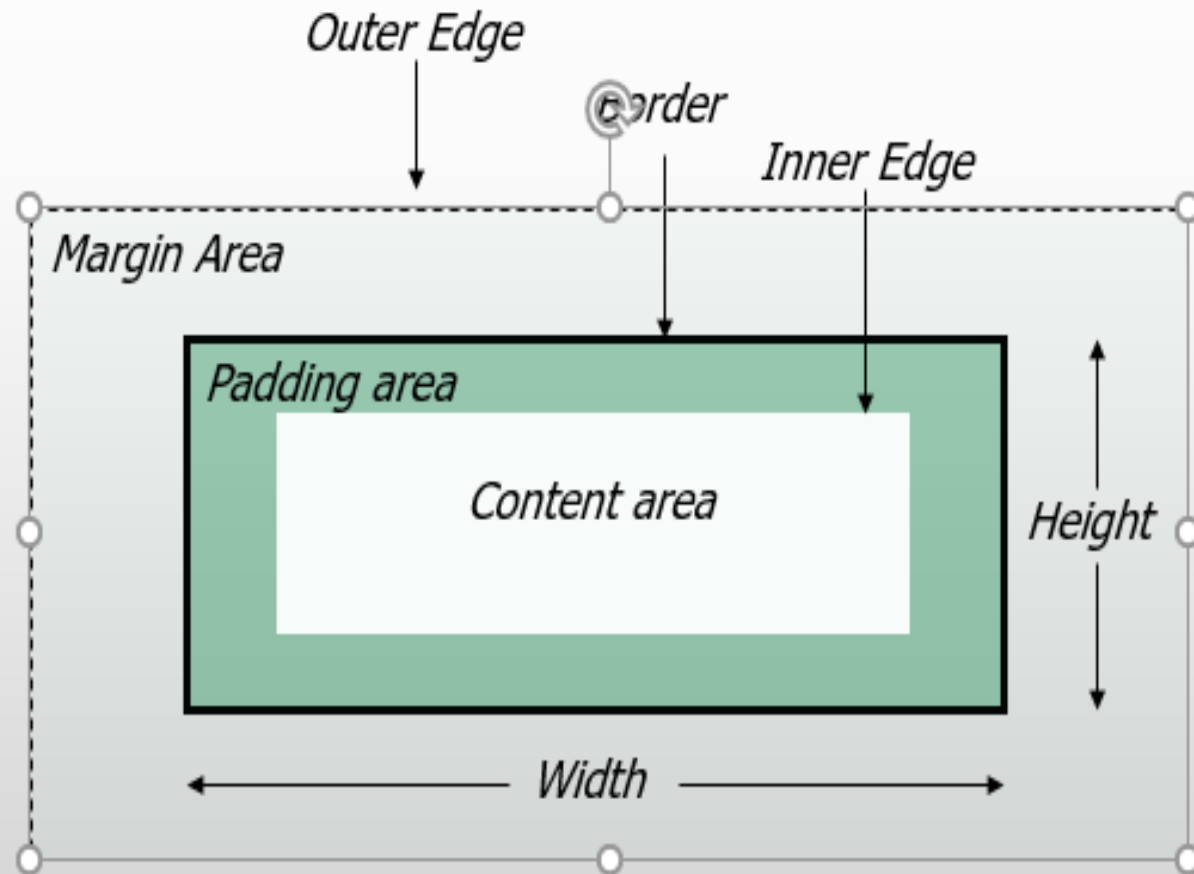
Margins:
keep elements from bumping into one another

○ Can use them to make space for another column or content

○ Margins work similarly padding ..

margin
values: length | percentage| auto | inherit
default: auto
applies to: all elements
inherits: no

margin-top, margin-right, margin-bottom, margin-left
values: length | percentage| auto | inherit
default: auto
applies to: all elements
inherits: no

Margins

- To add margin just specify an amount
  - In general tend to use **ems** or **pixels** as units of measurement

- If we use **margin** it adds the same amount on <u>all sides</u>

- If want different amounts on different sides then use **margin-left, margin-top** etc.

- Following slides show some examples of adding margins to paragraph elements.

Margins
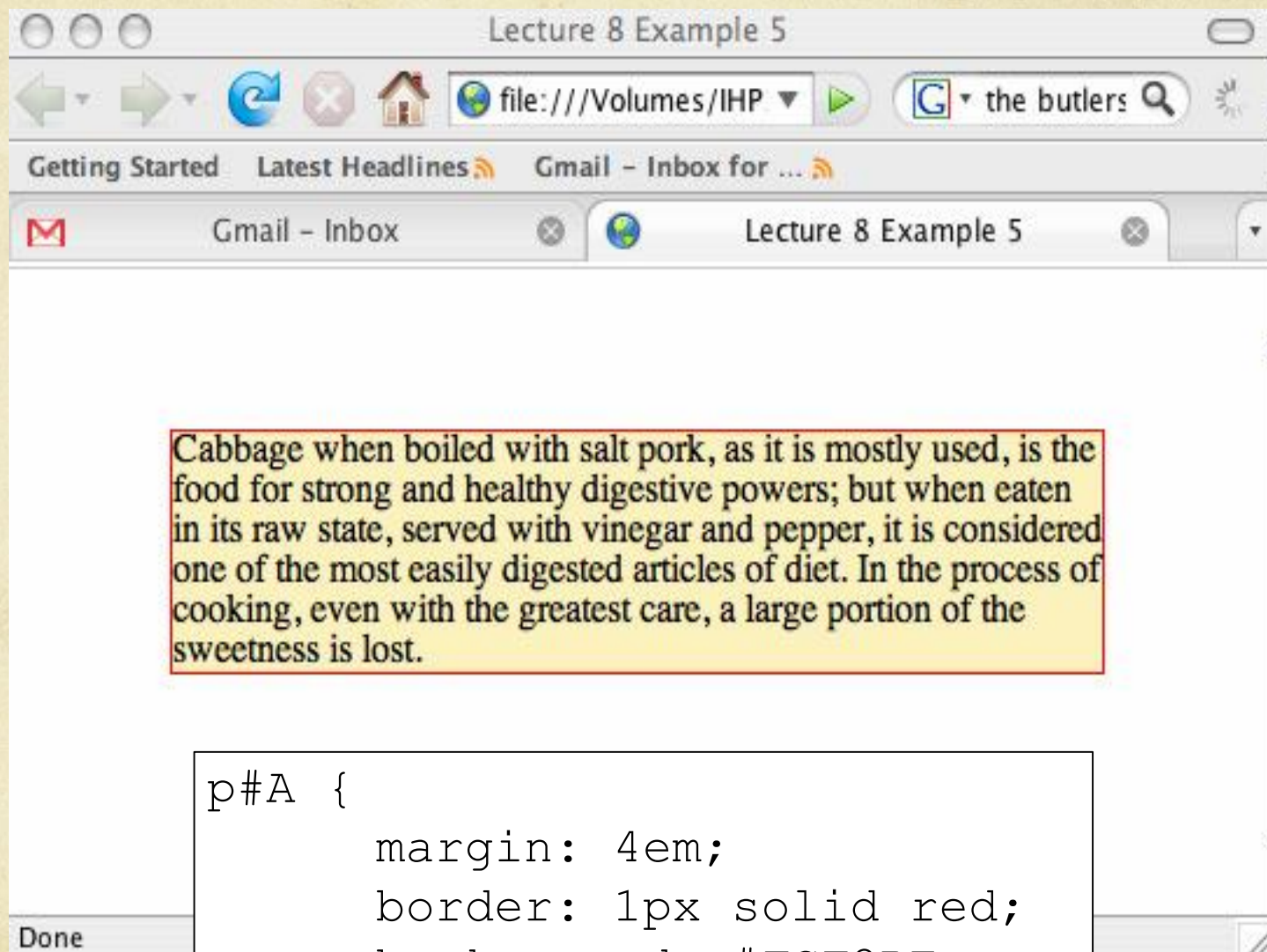

```
p#A {
        margin: 4em;
        border: 1px solid red;
        background: #FCF2BE;
}
```
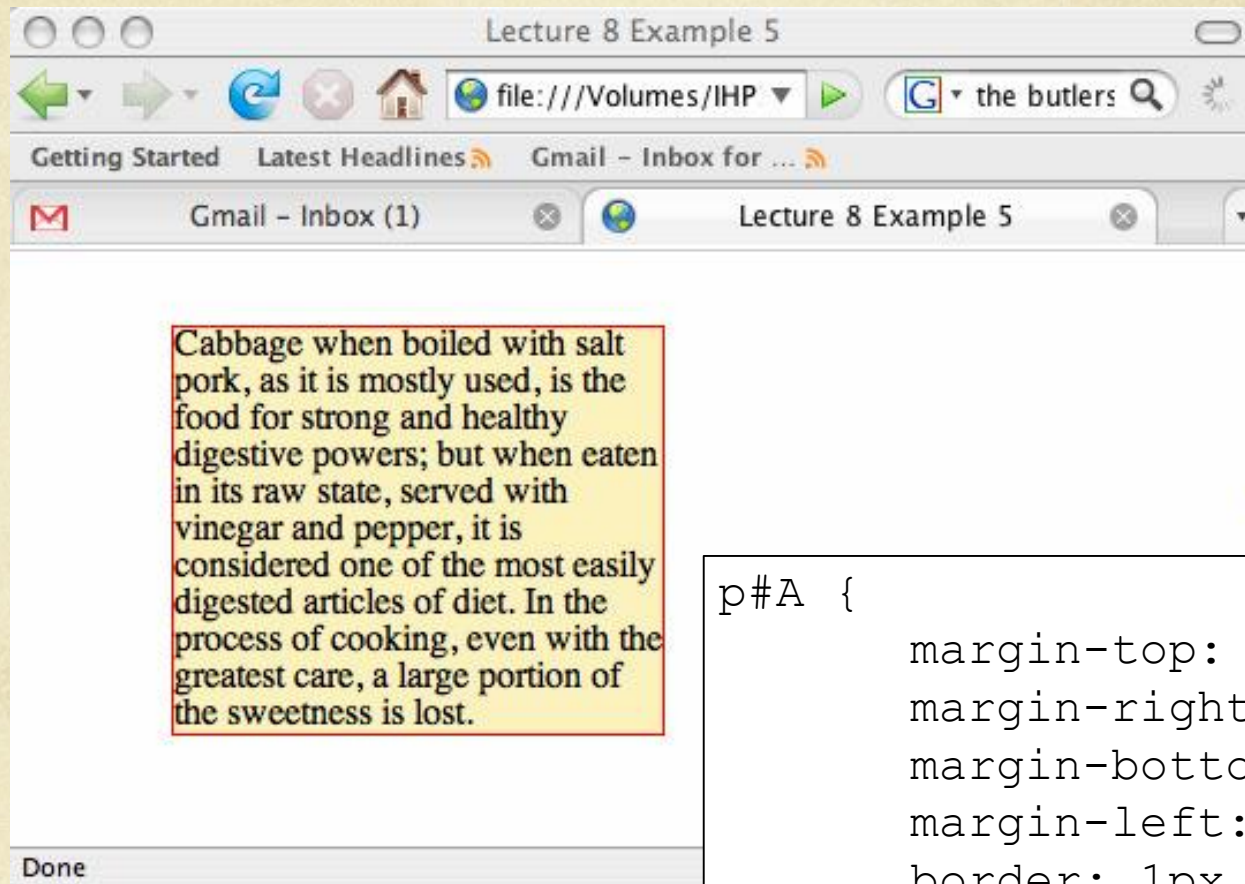
Margins


```
p#A {
        margin-top: 2em;
        margin-right: 250px;
        margin-botton: 1em;
        margin-left: 4em;
        border: 1px solid red;
        background: #FCF2BE;
}
```

Margins

O <u>Three things to be aware of with respect to margins:</u>

1. Collapsing Margins

2. Margins on inline elements

3. Negative Margins

1. Collapsing Margins

Margins

1. Collapsing Margins

- The most important one is that *neighbouring ones collapse.*

- Suppose you have two adjacent elements that both have margins, for example two paragraphs.

- The **gap** between the elements will *not* be the sum of the two margins.

- The gap between the elements is equivalent to the *larger* margin i.e. they collapse into one another.

- Example on next slide.

Margins

1st paragraph has margin of 4em all around

Gap is 4em!

2nd one has margin of 2em all around

2. Margins on inline elements

Margins

2. Margins on inline elements

- These behave a little differently to what you might expect.

- Basically, applying **top** and **bottom** margins will have no effect but applying **left** and **right** ones will.

- So suppose we make a style rule for an **em** element that includes an all round margin.
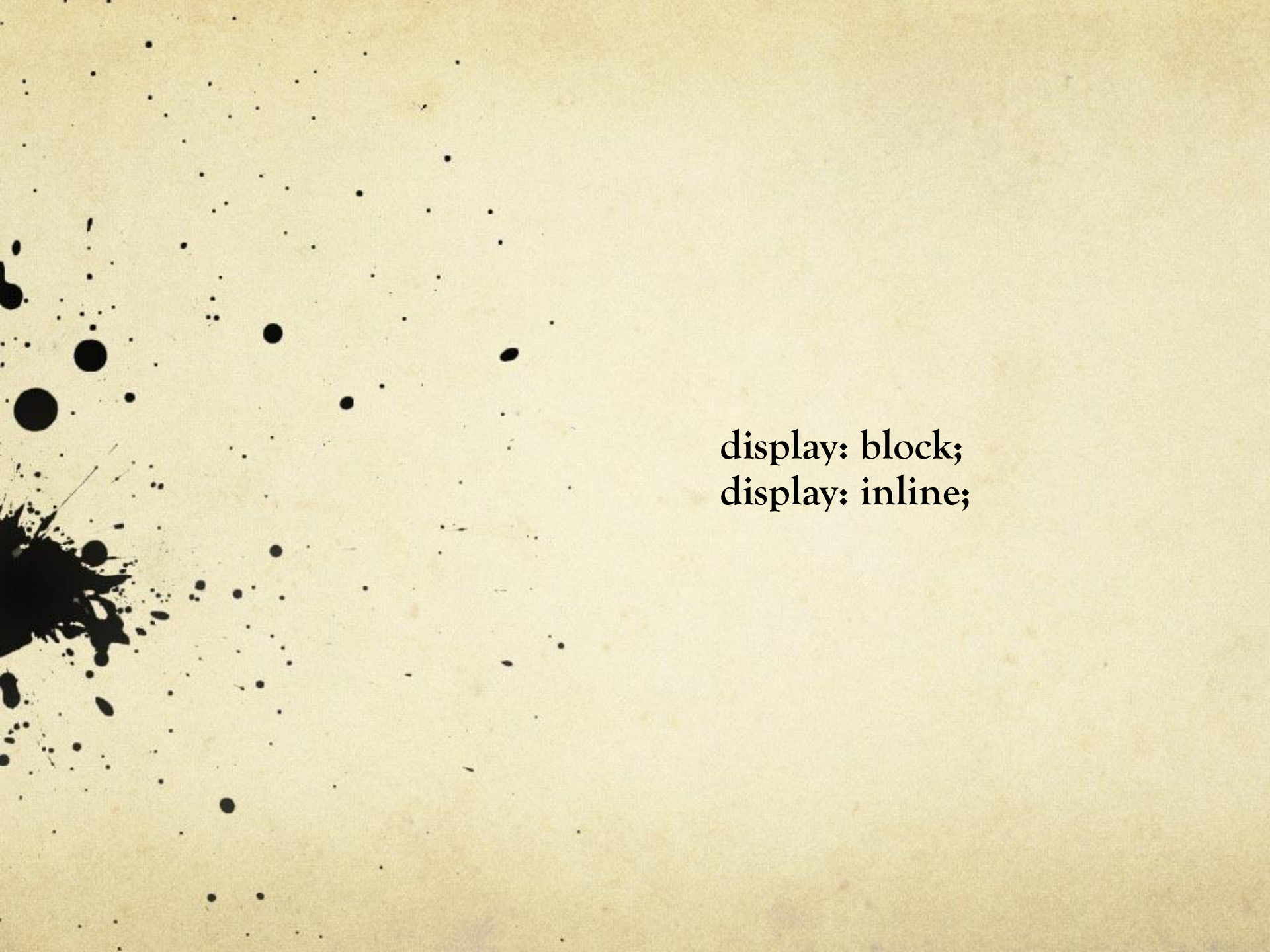
  em { margin: 2em;}

- Overleaf shows what happens to an inline **em** element styled in this way.

Margins
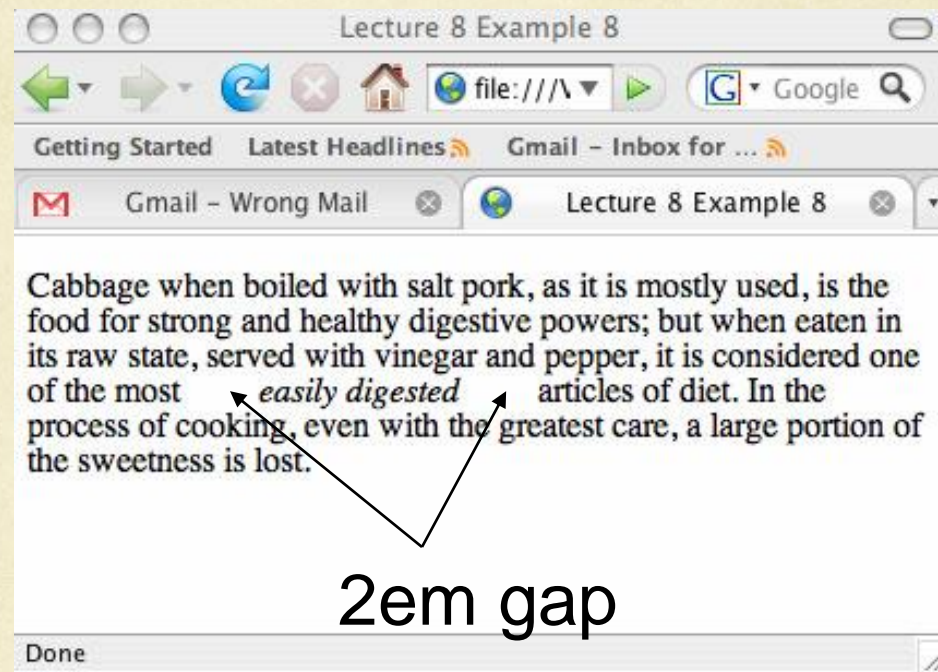
Margins

○ The exception to this behaviour is that image elements (**img**) will display margins top and bottom as well and left and right.

display: block;
display: inline;

You can CHANGE inline to be block elements and vice versa !!!!!!!!!!!

○ Sometimes we want to ensure an element is displayed a particular way

   ○ E.g. we may wish to define width and height – we can only do this if an element is displayed as a BLOCK

   ○ So we may need to declare that such elements are displayed as block rather than their default INLINE

   ○ And vice versa

      ○ E.g. a list all on the same line rather than on separate lines

```
p { display: inline; }
em { display: block; }
```
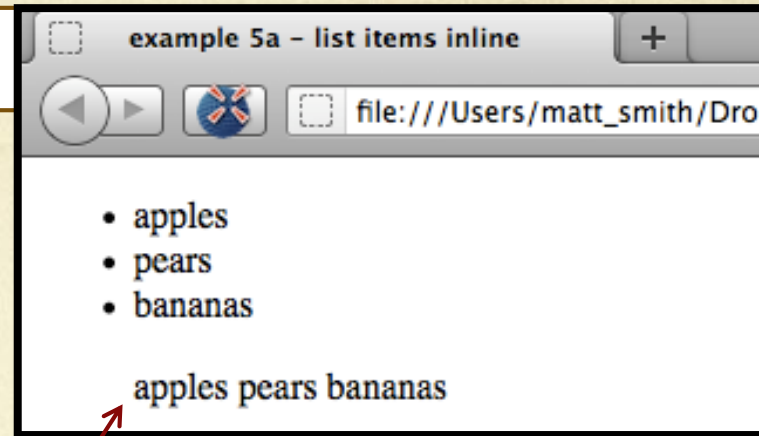
- The following 2 slides illustrate this concept
  - They are a little advanced
  - But we'll meet them soon to create nice navigation bars
  - So it's worth being aware that the BOX MODEL is important in terms of:
    - Can we set HEIGHT (BOX)
    - Can we have all on same line (INLINE)
    - Can we float (BOX)

- It will all make sense (hopefully!)

Display list items inline

```
.list2 li
{
    /*
    remove bullets from
    list items
    */
    list-style-type: none;

    /*
    make the list items
    display inline
    */
    display: inline;
}
```
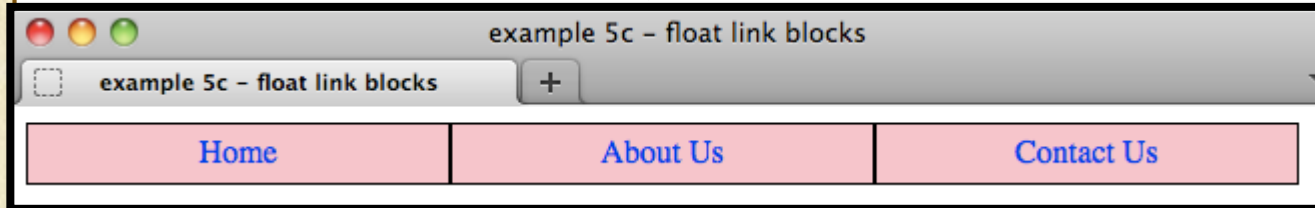
example 5a – list items inline   +

file:///Users/matt_smith/Dro

- apples
- pears
- bananas

apples pears bananas

```
<ul>
    <li>apples</li>
    <li>pears</li>
    <li>bananas</li>
</ul>
<ul class="list2">
    <li>apples</li>
    <li>pears</li>
    <li>bananas</li>
</ul>
```

HTML

Make links blocks, so can float left ....

example 5c – float link blocks

| Home | About Us | Contact Us |

CSS

```
nav a
{
    display: block;
    width: 200px;
    border: 1px solid black;
    padding: 5px;
    background-color: pink;
    text-decoration: none;
    text-align: center;
    float: left;

}
```

CSS

```
nav li
{
    list-style-type: none;
    display: inline;
}
```

We will cover more on this next week.....

Summary and Conclusions

- We have now dealt with how to *float* elements so they break out of normal flow and text can wrap around them.

- We have learned how to use FLOATs to create 2- and 3-column layouts

- FLOATs can be effective to create complex and visually interesting layouts

  - However, the issue of non-collapsing margins means that either templates must be used (and carefully adjusted) or that page layouts created from scratch must pay careful attention to the addition of top border/padding to ensure that non-floated columns line up with FLOATed ones

HMcCabe-MSmith-MBrennan

The 5 rules for effective use of Floats

1. A <u>width</u> must be defined for any Floated item

1. <u>Margins do not collapse for Floated items</u>

2. Floated in-line elements behave as <u>block-level</u> elements

3. Floated items should appear <u>first</u> in the HTML file

4. Non-floated elements need right/left margins to prevent flowing <u>underneath</u> Floated elements

2- and 3- column FLOAT templates

1. All content inside a 960px 'wrapper' DIV

2. Sum of all 2 or 3 colums = 960px

3. Internerals of each column can be individually styled, without 'breaking' the container DIVs

Useful links

- As usual, the websirte A List Apart is a good source of examples and tutorials for page layout topics, e.g.

Floating

http://www.alistapart.com/articles/css-floats-101/

Note – in many US universities, the first module in a subject has the code "101" – so many introductory articles will name themselves [TOPIC-NAME]-101

Average width of FIXED pixel width layouts:

http://www.iteracy.com/resources/build-a-better-website/size-and-layout-of-a-web-page/

Useful links

- Why make total page with 960px?

See this recent review about screen resolution of hardware 'clients' that are viewing web pages:

http://www.iteracy.com/resources/build-a-better-website/size-and-layout-of-a-web-page/

○ Also read interesting article about life "below the fold"…read some of the articles but look at the design of the sites…quite nice and very achievable at your stage ☺

http://iampaddy.com/lifebelow600/

HMcCabe-MSmith-MBrennan

I thought the layout of this site was simple and easy for new developers to create

iteracy

Work   Services   Resources   About us   Contact us   01208 226522

Resources

Troubleshooting

Bluffers guide

Build a better website

Hot topics

Web page size and layout

Most web pages follow a common set of sizes and layouts, which you'll recognise even if you aren't aware of them. For example, did you know that nine out of the top ten most popular websites in the world use a fixed-width, centre-aligned design? Maybe you should too.

Note that this article is now a little old, for more information about modern design standards, check out our Responsive Design page.

Our article on web page size and layout breaks down web design into simple concepts, and helps you decide on a format for your website. To understand what the individual elements of a page are for, and why you need them, read our anatomy of a web page.

But css3 is making life easier for us all the time with:

○ Box-sizing

○ Flex-boxes(later)

What next?

The navigation bar for your sites

Some practice with divs for layout

Some practice with the box model elements...padding, borders ,margins and width/height