The Future of CSS Layout

October 22, 2012

Future of Web Design

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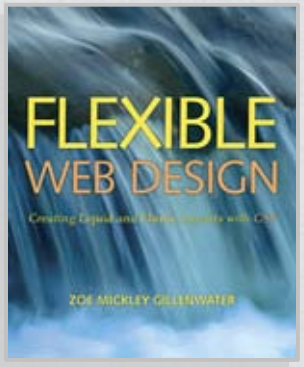
What I do

Books

Stunning CSS3:
A Project-based Guide to the Latest in CSS

www.stunningcss3.com



Flexible Web Design:
Creating Liquid and Elastic Layouts with CSS

www.flexiblewebbook.com

Web

Accessibility specialist at AT&T

Visual designer

CSS developer and consultant

the past

table layout

Problems with table layout

- Complicated/bulky markup
- Accessibility problems
- Slower browser rendering
- Rigid designs
- Spacer gifs

the present

float layout

Advantages of floats in layout

- Less HTML than tables
- More flexibility to change layout than tables
- Can change visual order to not match HTML (somewhat)
- Other content aware of floats' presence
- Can use **`clear`** to get blocks out of the way

Problems with float layout

- Visual location tied to HTML order (somewhat)
- Wrapping/float drop
- Difficulty with containment
- Difficulty with equal-height columns
- No **`float:center`**

what are the

alternatives

Alternative: display inline-block

* only partial support in IE 7 and 6

I wish my parents would stop treating me like I’m inline. Can’t they see I’m a block now?

Use: centered nav bar

```
nav ul {
   margin: 0;
   padding: 0;
   border-bottom: 3px solid #fff;
   list-style: none;
   text-align: center; }
nav li {
   display: inline-block;
   vertical-align: bottom;
   margin: 0 .2em;
   padding: .3em .5em; ... }
```

Use: centered nav bar

- List horizontally centered
- Links aligned on bottom
- Links have top and bottom padding
- Links can be different heights
- List contains links (see its bottom border)

Alternative: display table-cell

* only in IE 8 and later

How table display works

- Makes boxes act like table equivalents
  - Example: boxes with **`display:table-cell`** act like **`<td>`** and sit on same line
- Good for grid-like layouts
- Disadvantage: tied to HTML order

Use: hybrid fixed-fluid layout

```
section {
   display: table;
   table-layout: fixed;
   width: 100%; }
article {
   display: table-cell;
   padding: 10px;
   vertical-align: top; }
article.fixed {
   width:250px; }
```

Use: hybrid fixed-fluid layout

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Donec eu libero sit amet quam egestas semper. Aenean ultricies mi vitae est. Mauris placerat eleifend leo. Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante. Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante. Donec eu libero sit amet quam egestas semper. Aenean ultricies mi vitae est.

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the future

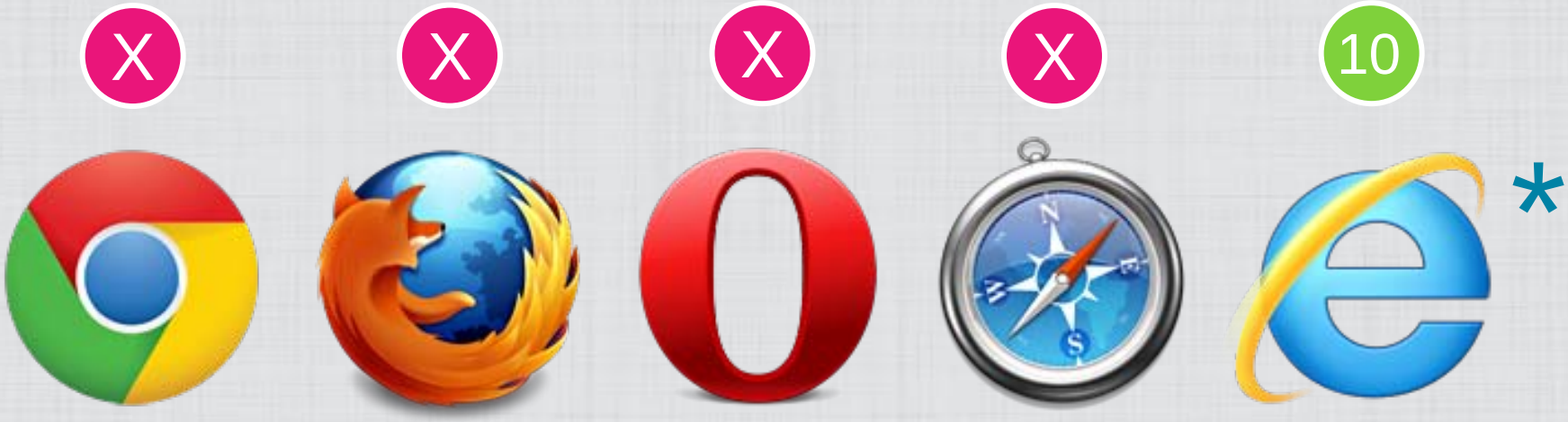
a whole bunch of CSS3

CSS3 “content-flow” modules

- Multi-column Layout: flow a box’s content into multiple columns in that box
- Regions: flow content into multiple, separate boxes
- Exclusions and Shapes: make content flow around and within areas in more intricate ways than floating

Grid Template Layout

http://dev.w3.org/csswg/css3-layout/

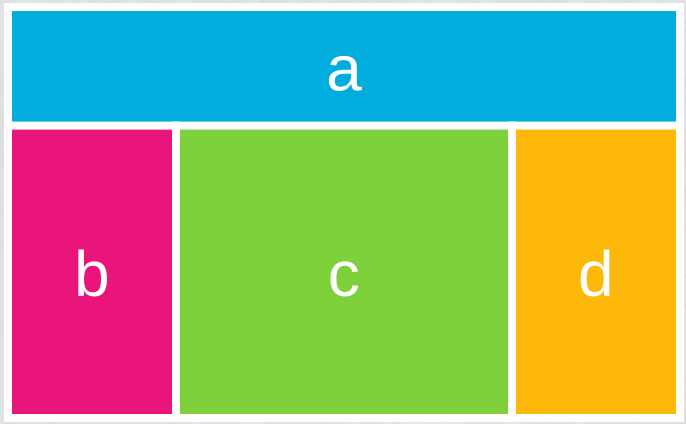


* with -ms- prefix

How grid template works

Define invisible grid of rows and columns and specify which pieces of content go into which “slot”

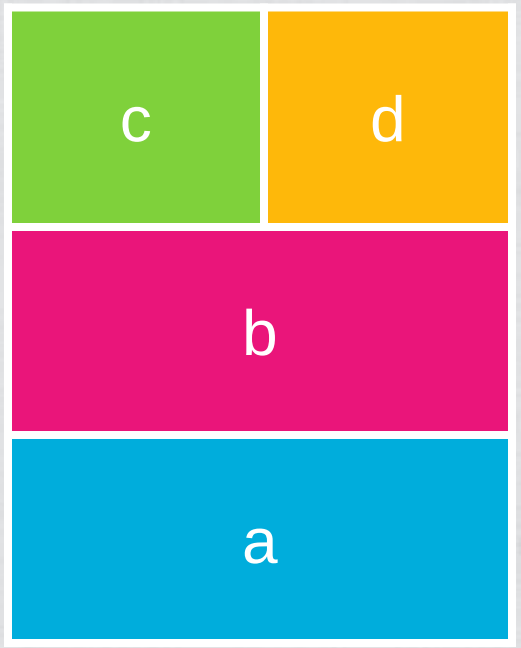
```
body {
  grid: "a a a a"
        "b c c d"
}

nav   { flow: a }
#main { flow: c }
aside { flow: d }
#news { flow: b }
```



How grid template works

Define invisible grid of rows and columns and specify which pieces of content go into which “slot”

```
body {
  grid: "c d"
        "b b"
        "a a"
}
nav   { flow: a }
#main { flow: c }
aside { flow: d }
#news { flow: b }
```



How grid template works

Use **`::slot`** to style slots with:

- **`overflow`**
- **`margin`** properties
- **`padding`** properties
- **`border`** properties
- **`box-shadow`**
- **`box-decoration-break`**
- **`background`** properties
- **`column`** properties
- **`vertical-align`**
- **`writing-mode`**
- **`direction`**

For example:

```
body::slot(c) {
  background: #7FD13B;
  vertical-align: top;
}
```

Flexible Box Layout

www.w3.org/TR/css3-flexbox/

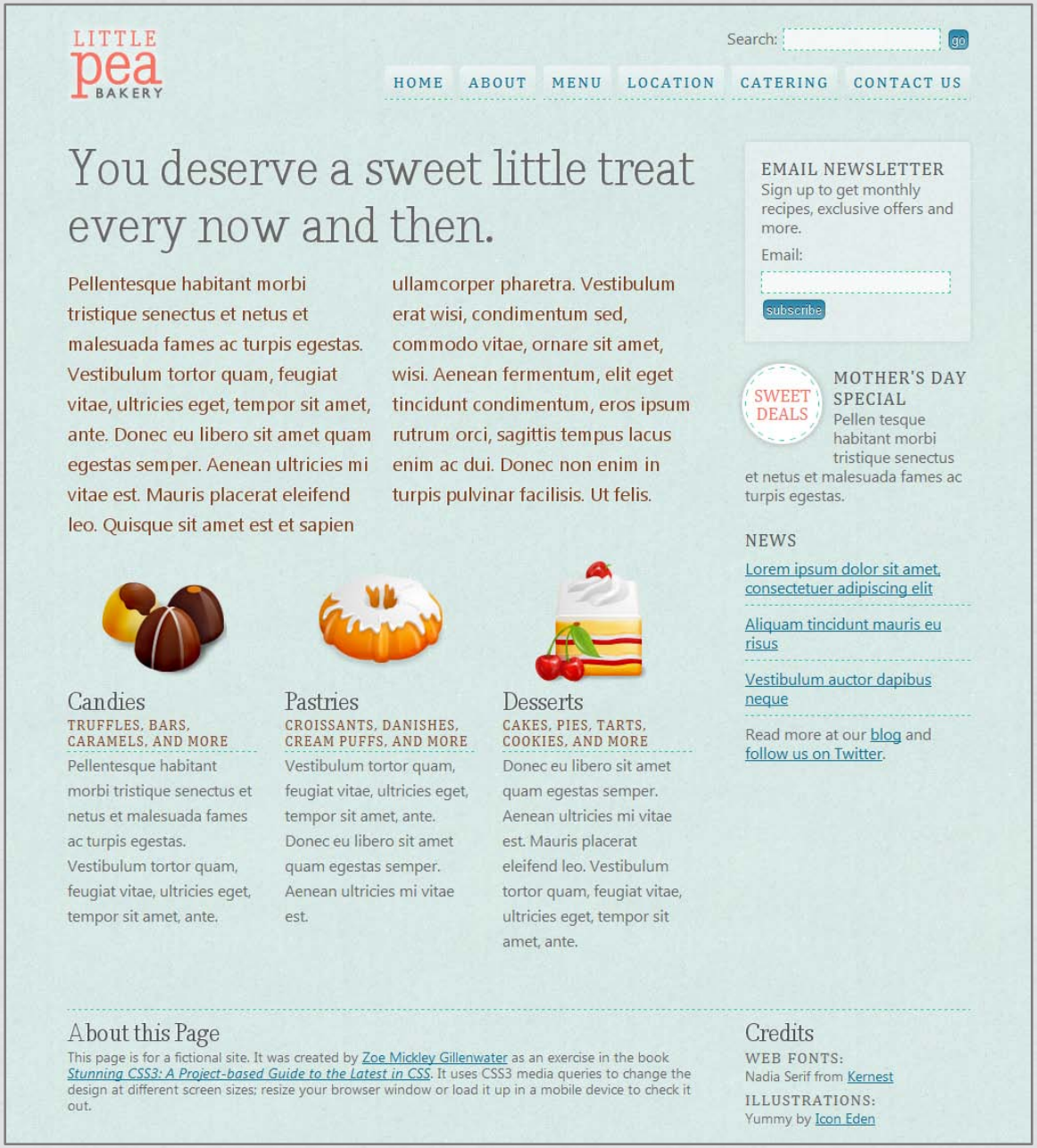
* with -webkit- prefix

† can be switched on in version 18 nightlies

How flexbox works

- Make boxes automatically grow to fill space or shrink to avoid overflow
- Give boxes proportional measurements
- Lay out boxes in any direction
- Align boxes on any side
- Place boxes out of order from HTML

Let's try flexbox out on this page

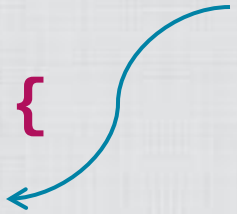


Original CSS

```
.feature {
   float: left;
   width: 30%;
   margin: 0 4.5% 0 0;
   padding: 130px 0 0 0;
}
```

Create a flex container

```
<div id="features-wrapper">
   <div class="feature" id="feature-candy">
      ...</div>
   <div class="feature" id="feature-pastry">
      ...</div>
   <div class="feature" id="feature-dessert">
      ...</div>
</div>

#features-wrapper {
   display: flex;
}
```



Make sure to add the -moz, -ms, and -webkit prefixed values and properties in real life!

Specify direction of flex items

```
#features-wrapper {
   display: flex;
   flex-direction: row;
}
```

default value

Could switch to vertical stacking in mobile/narrow-screen media query:

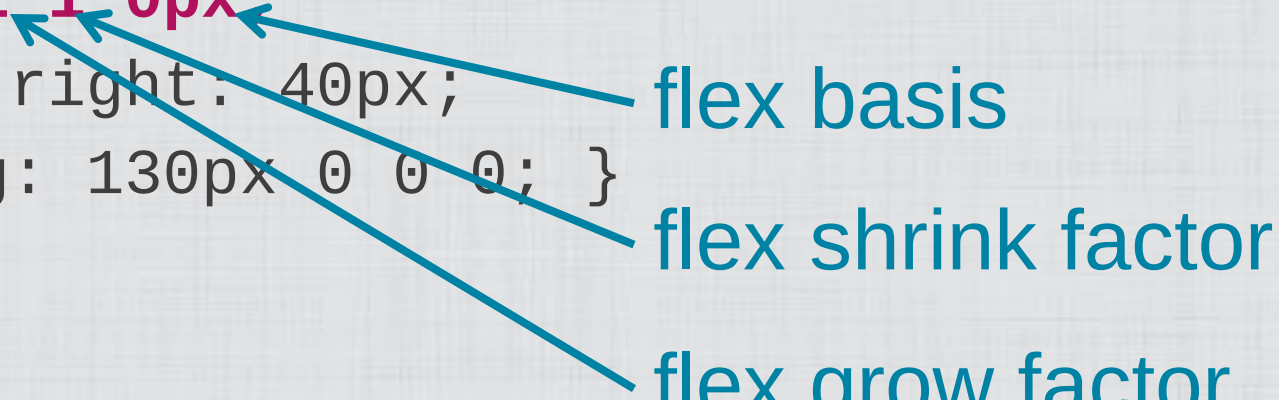
```
#features-wrapper {
   display: flex;
   flex-direction: column;
}
```

Make flex items flexible

```
.feature {
   flex: 1 1 0px;
   margin-right: 40px;
   padding: 130px 0 0 0; }
```

Make flex items flexible

```
.feature {
   flex: 1 1 0px;
   margin-right: 40px;
   padding: 130px 0 0 0; }
```



Same as:

```
.feature {
   flex: 1;
   margin-right: 40px;
   padding: 130px 0 0 0; }
```

Add a fourth feature box

```
<div id="features-wrapper">
   <div class="feature" id="feature-candy">
      ...</div>
   <div class="feature" id="feature-pastry">
      ...</div>
   <div class="feature" id="feature-dessert">
      ...</div>
  <div class="feature" id="feature-bread">
      ...</div>
</div>
```

All boxes adjust in width

Candies

TRUFFLES, BARS, CARAMELS, AND MORE

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante.

Pastries

CROISSANTS, DANISHES, CREAM PUFFS, AND MORE

Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante. Donec eu libero sit amet quam egestas semper. Aenean ultricies mi vitae est.

Desserts

CAKES, PIES, TARTS, COOKIES, AND MORE

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Breads

YEAST BREADS, FLATBREADS, ROLLS, AND MORE

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Aenean ultricies mi vitae est. Mauris placerat eleifend leo. Vestibulum tortor quam, feugiat vitae, ultricies eget, tempor sit amet, ante.

Don’t need to do this anymore

```
.2up .feature { width: 45%; ... }
.3up .feature { width: 30%; ... }
.4up .feature { width: 22%; ... }
```

Highlight a sale category

```
.sale {
   padding: 130px 20px 20px 20px;
   border-radius: 3px;
   background-color: hsla(0,0%,100%,.4);
}
```

What percentage width would I set to make this twice as wide as other boxes, if I weren't using flex?

Make sale box twice as wide

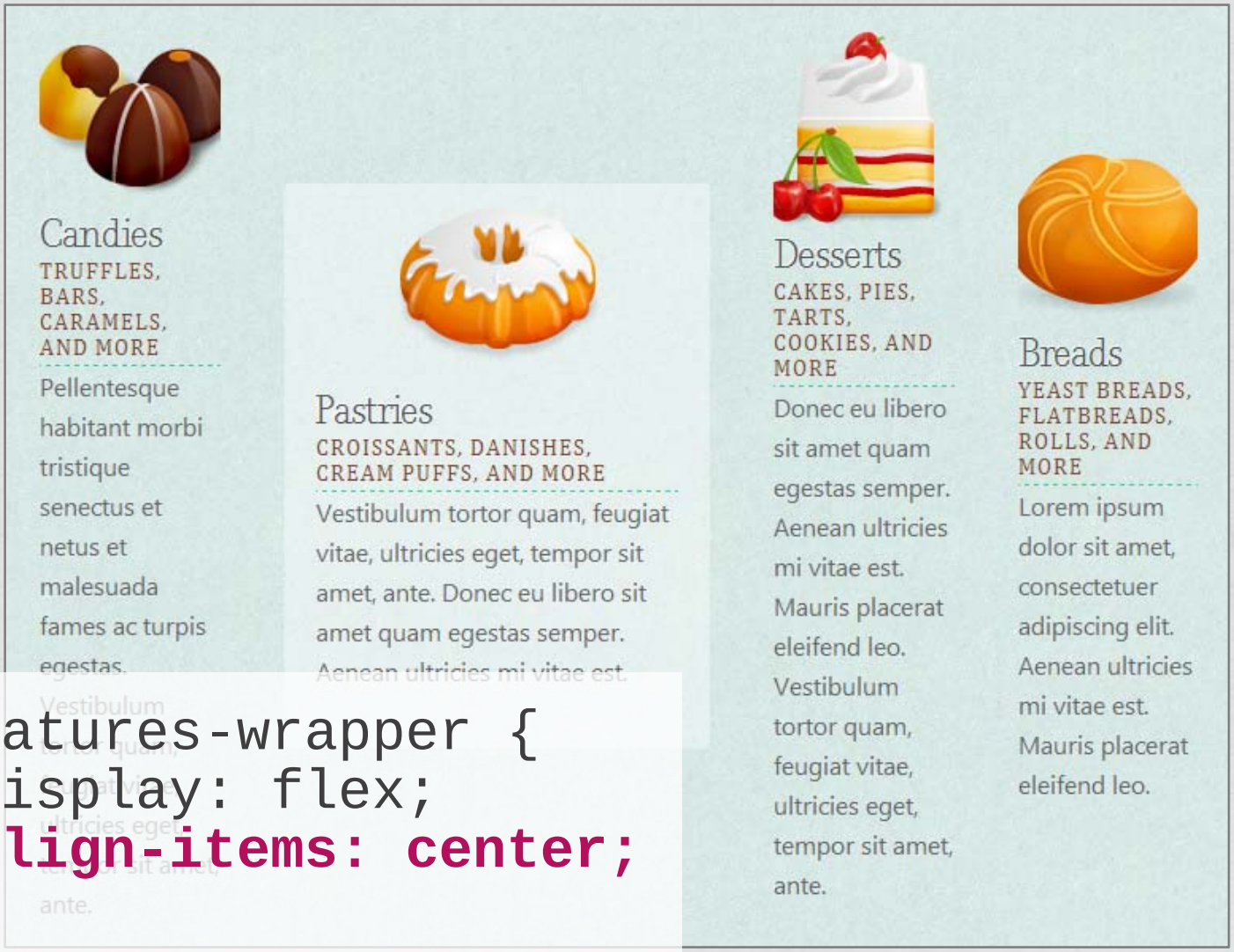
```
.sale {
  flex: 2;
  padding: 130px 20px 20px 20px;
  border-radius: 3px;
  background-color: hsla(0,0%,100%,.4);
}
```

Default equal-height columns!

```
#features-wrapper {
  display: flex;
  align-items: stretch;
}
```

This is the default value, so we don’t need to actually set this property, but this shows you what it looks like.

Vertical centering with ease!




```
#features-wrapper {
   display: flex;
   align-items: center;
}
```

Visual order = HTML order

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Move sale box to front of line

```
.sale {
  order: -1;
  flex: 2;
  padding: 130px 20px 20px 20px;
  border-radius: 3px;
  background-color: hsla(0,0%,100%,.4);
}
```

Default **`order`** value is 0 for all flex items, so -1 moves this one before others

New visual order, same HTML

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Accessibility implications

- Pro: keep content in logical order in HTML instead of structuring HTML to achieve visual layout
- Con: focus/tab order won’t always match expected order, may jump around seemingly randomly

Columns are too narrow

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Create multi-line flex container

```
#features-wrapper {
  display: flex;
  flex-wrap: wrap;
}
.sale {
  order: -1;
  flex: 1 1 100%;
  margin: 0 0 20px 0;
  padding: 130px 20px 20px 20px;
  border-radius: 3px;
  background-color: hsla(0,0%,100%,.4);
}
```

Allow children flex items to wrap to multiple lines

Make box fill line

Remove gap to right, add space below

Flex items can now wrap

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Change icon position

```
.sale {
  order: -1;
  flex: 1 1 100%;
  margin: 0 0 20px 0;
  padding: 20px 20px 1px 170px;
  border-radius: 3px;
  background-color: hsla(0,0%,100%,.4);
  background-position: 20px 0;
}
```

Final layout

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use flexbox now for

progressive enhancement

How can I make this form:

- Display on a single line with image
- Vertically centered with image
- Span full-width of container

Inline-block achieves:

- ✓ Display on a single line with image
- ✓ Vertically centered with image
- X Span full-width of container

Different units make life hard

- Pixels
- Ems
- Some mystery percentage

Make the text input flex

```
#order, #order form {
   display: flex;
   align-items: center; }
#order form {
   flex: 1; }
#order #message {
   flex: 1;
   min-width: 7em;
   margin: 0 5px; }
```

Make outer div and form into flex containers

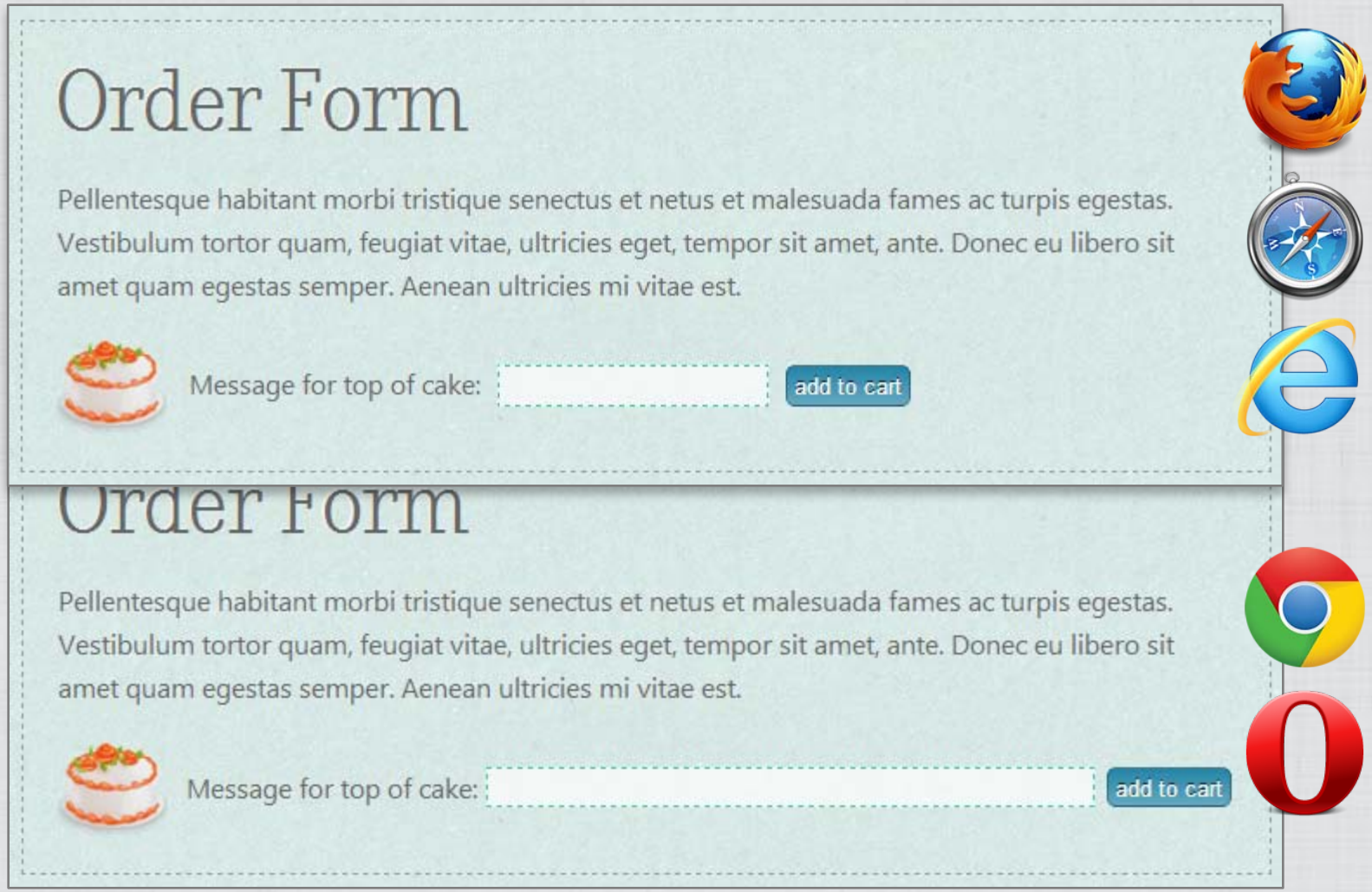
Vertically center kiddos

Make form take up all space next to image

Make text input take up all space in form left after label and button

But don’t let it get crazy-small

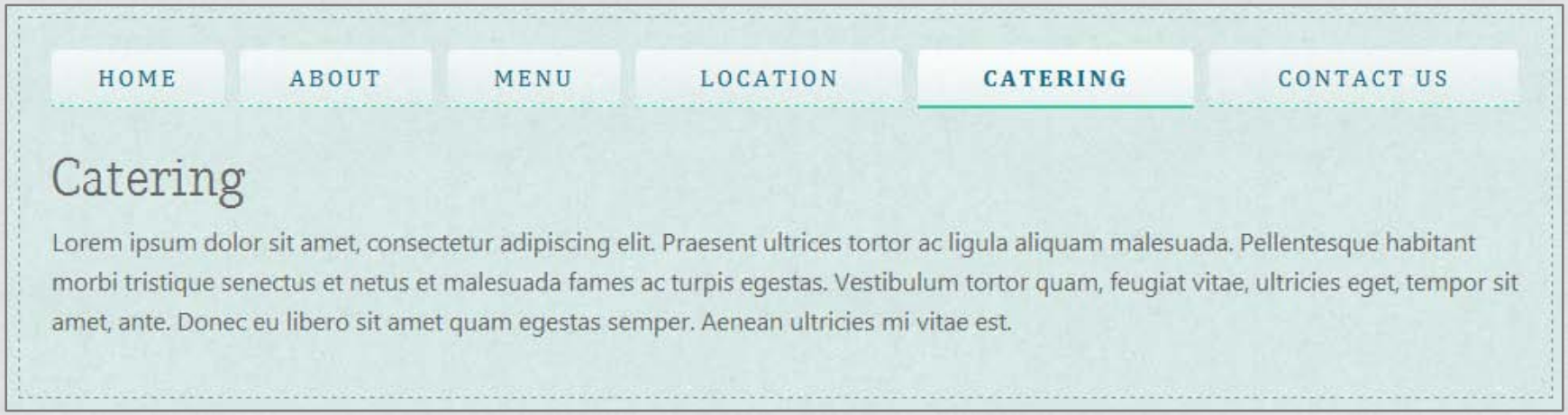
Use inline-block with flexbox



Use inline-block with flexbox

```
#order img, #order form {
  display: inline-block;
  vertical-align: middle; }
#order, #order form {
   display: flex;
   align-items: center; }
#order form {
   flex: 1; }
#order #message {
   flex: 1;
   min-width: 7em;
   margin: 0 5px; }
```

Full-width nav bar

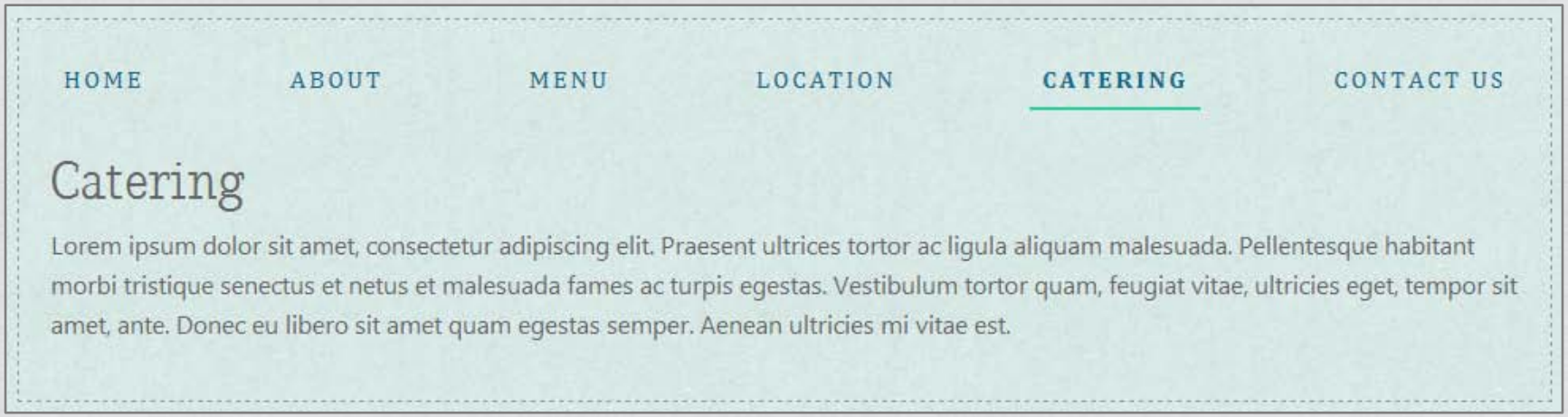



```
nav ul {
  display: table;
  width: 100%;
  margin: 0;
  padding: 0;
  list-style: none; }
```

```
nav li {
  display: table-cell;
  text-align: center; }
```

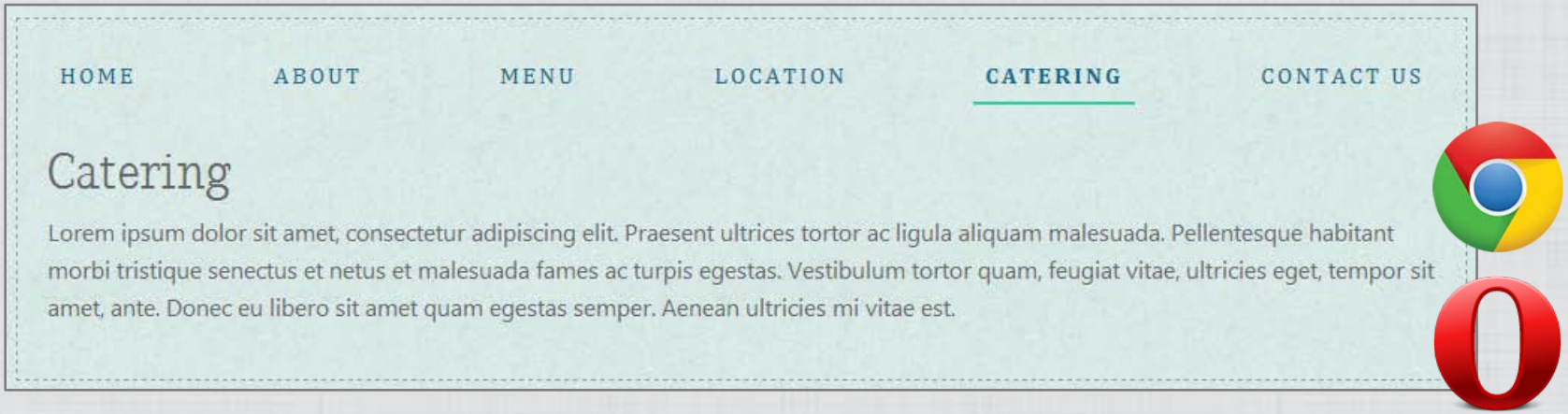
Not so hot with no backgrounds

Even spacing with flexbox




```
nav ul {
  display: flex;
  justify-content: space-between;
  margin: 0;
  padding: 0;
  list-style: none; }
```

Use inline-block with flexbox



Use inline-block with flexbox

```
nav ul {
  display: flex;
  justify-content: space-between;
  margin: 0;
  padding: 0;
  list-style: none;
  text-align: center;
}
nav li {
   display: inline-block;
}
```

Or use Modernizr script

http://modernizr.com

```
nav ul {
   display: table;
   width: 100%;
   margin: 0;
   padding: 0;
   list-style: none;
}
.flexbox nav ul {
   display: flex;
}
```

```
nav li {
   display: table-cell;
}
.flexbox nav li {
   display: list-item;
}
```

go forth and

practice

Learn more

Download slides and get links at
http://zomigi.com/blog/future-css-layout-fowd

Zoe Mickley Gillenwater

@zomigi

design@zomigi.com

zomigi.com | stunningcss3.com | flexiblewebbook.com

Title photo by Gilderic Photography (http://www.flickr.com/photos/gilderic/6885830288/)
Rocket designed by Jason Peters from The Noun Project