Floating Elements

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The CSS `float` property (reference)

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

Ghostbusters is a 1984 American science fiction comedy film written by co-stars Dan Aykroyd and Harold Ramis about three eccentric New York City parapsychologists-turned-ghost capturers.
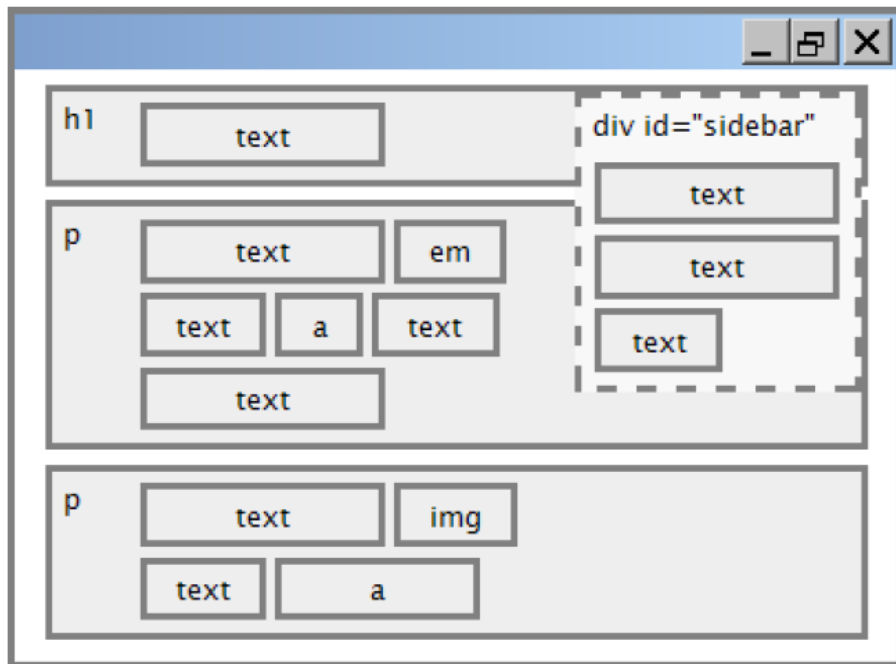
output

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

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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

☐ Let's try "floating"

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The `clear` property

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

Mario is a fictional character in his video game series. Serving as Nintendo's mascot and the main protagonist of the series, Mario has appeared in over 200 video games since his creation

Super Mario Fan Site!

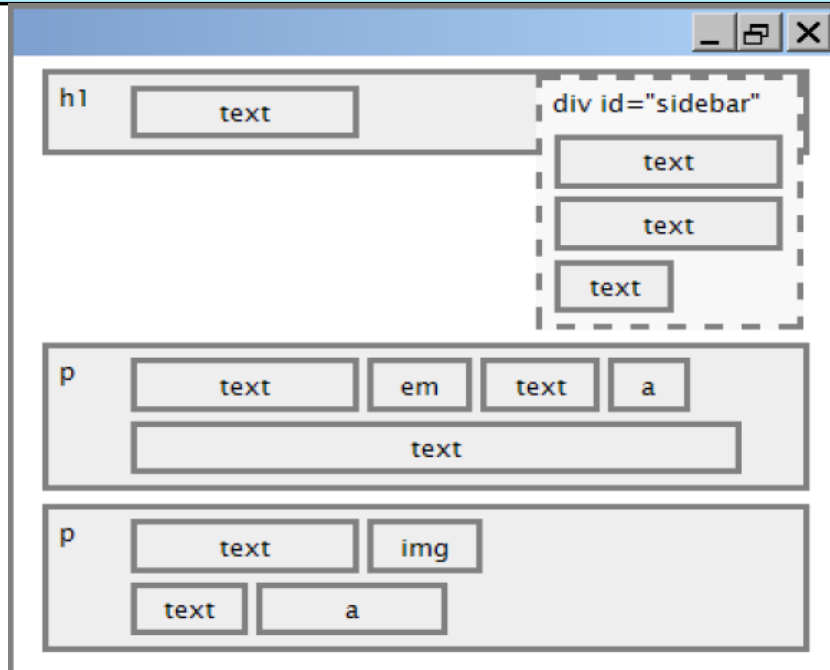*output*

The `clear` property (cont.)

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

Clear diagram

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


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Common error: container too short

```html
<p><img src="images/mario.png" alt="super mario" />
Mario is a fictional character in his video game
series.....</p>                                        HTML
```

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

Mario is a fictional character in his video game series. Serving as Nintendo's mascot and the main protagonist of the series, Mario has appeared in over 200 video games since his creation.

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output

The `overflow` property

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

Mario is a fictional character in his video game series.
Serving as Nintendo's mascot and the main protagonist
of the series, Mario has appeared in over 200 video
games since his creation.

output

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The `overflow` property (cont.)

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

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Multi-column layouts

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

```css
p { float: right; width: 25%; margin: 0.5em;
border: 2px solid black; }
div { border: 3px dotted green; overflow: hidden; }
```
CSS

Some other text that is important

| third paragraph | second paragraph | first paragraph |

output

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Sizing and Positioning

The position property (examples)

```
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	

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Absolute positioning
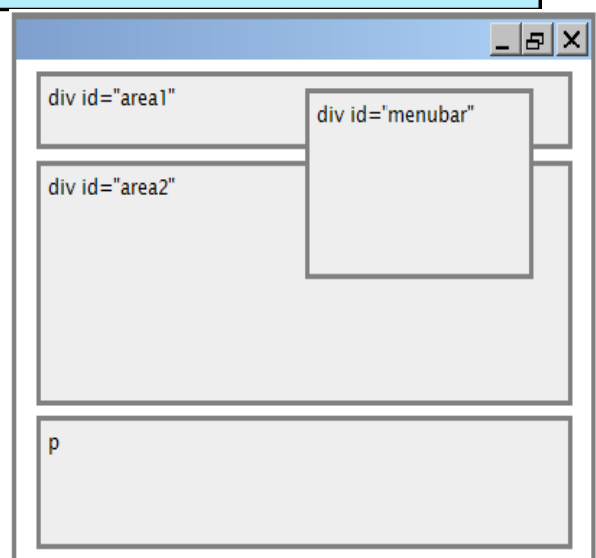
```
#sidebar {
position: absolute;
left: 400px;
top: 50px;
}                                                    CSS
```

- □ removed from normal flow
- □ positioned relative to the block element containing them
- □ actual position determined by `top, bottom, left, right`
- □ should often specify a `width` property as well

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Relative positioning
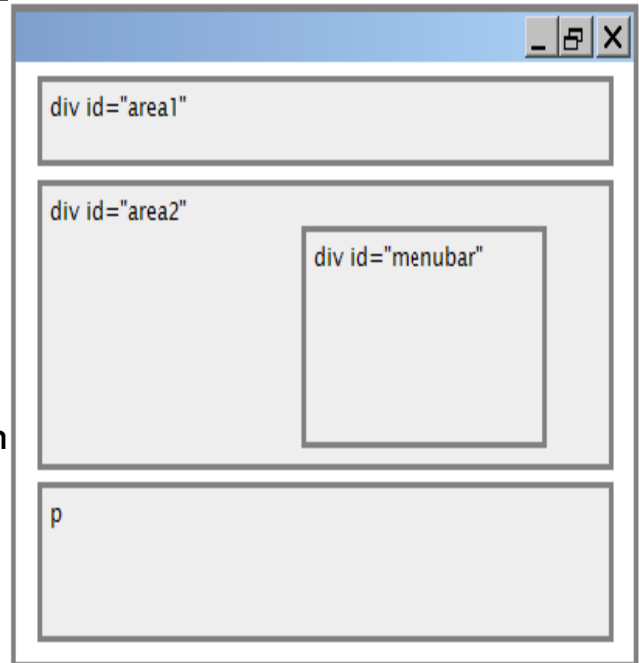
```
#area2 { position: relative; }
                                                        CSS
```

- absolute-positioned elements are normally positioned at an offset from the corner of the overall web page
- to make the absolute element to position itself relative to some other element's corner, wrap the absolute element in an element whose position is relative

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```
┌─────────────────────────── _ 🗗 X ┐
│ ┌──────────────────────────────┐ │
│ │ div id="area1"               │ │
│ └──────────────────────────────┘ │
│ ┌──────────────────────────────┐ │
│ │ div id="area2"               │ │
│ │        ┌─────────────────┐   │ │
│ │        │ div id="menubar"│   │ │
│ │        │                 │   │ │
│ │        └─────────────────┘   │ │
│ └──────────────────────────────┘ │
│ ┌──────────────────────────────┐ │
│ │ p                            │ │
│ │                              │ │
│ └──────────────────────────────┘ │
└──────────────────────────────────┘
```

Fixed positioning
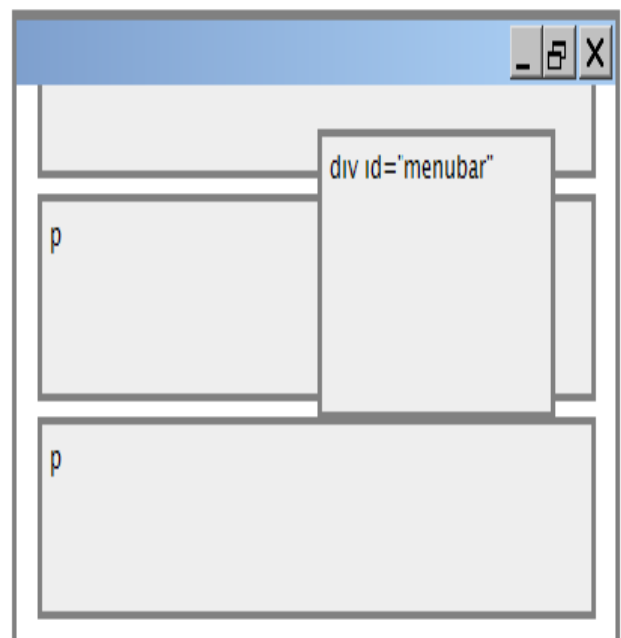
```
#area2 { position: relative; }
                                                        CSS
```

- removed from normal flow
- positioned relative to the browser
  window even when the user scrolls the window, element will remain in the same place

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Alignment vs. float vs. position

1. 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 the block element itself)
   - ◘ vertical alignment: vertical-align
     - ■ set this on an inline element, and it aligns it vertically within its containing element
2. If alignment won't work, try *floating* the element
3. If floating won't work, try *positioning* the element
   - ◘ absolute/fixed positioning are a last resort and should not be overused

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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 ignored

Details about inline boxes

- ☐ 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
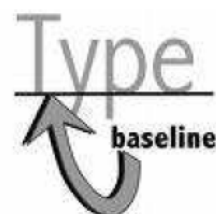- ☐ each inline box's `vertical-align` property aligns it vertically within its block box

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 non-hanging 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>                                                    HTML
```

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vertical-align example (cont.)

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Common bug: space under image

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


- □ 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)

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The `display` property

```
h2 { display: inline; background-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, compact,` ...

- □ use sparingly, because it can radically alter the page layout

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The `display` property (cont.)

```
p.secret {
        visibility: hidden;
}                                                      CSS
```

output

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

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The display property

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

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

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

- lists and other block elements can be displayed inline
- flow left-to-right on same line
- width is determined by content

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