CSS

CSS FUNDAMENTALS

Units

IN A ROCKET
Learn front-end development at *rocket speed*

ABSOLUTE UNITS

RELATIVE UNITS

ABSOLUTE
UNITS

`px`	pixel	1/96 of 1 inch (96px = 1 inch)
`pt`	point	1/72 of 1 inch (72pt = 1 inch)
`pc`	pica	12pt = 1pc
`mm`	millimeter	1cm = 10mm
`cm`	centimeter	10mm = 1cm
`in`	inch	2.54 cm = 1 inch

GOOD PRACTICE

AVOID PIXELS

Pixels are bad for usability:

- they don't scale,
- they don't help other elements to scale proportionally.

Use them only when you really need an exact and fixed size.

EXAMPLE

```
border: 1px solid #000;
```

ABSOLUTE UNITS

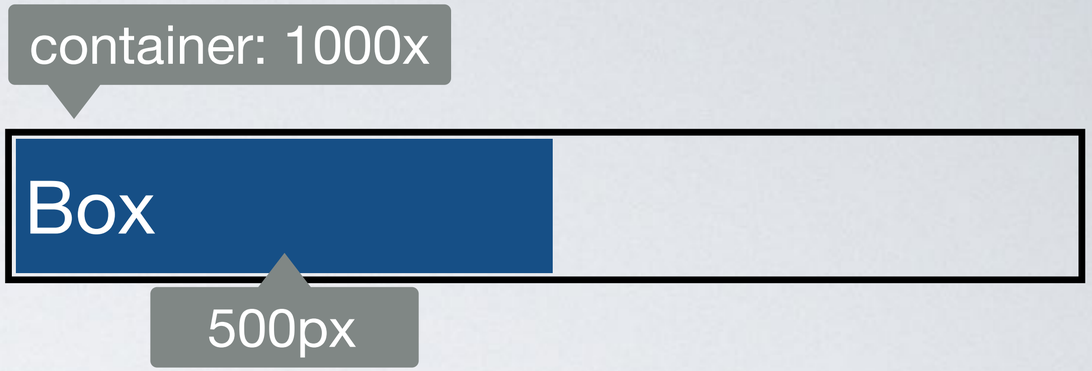
RELATIVE UNITS

RELATIVE UNITS

`%`	Percentage	Relative to the parent element's value for that property.
`em`	Em	Relative to the current font-size of the element.
`rem`	Root em	Relative to the font-size of the root.
`ch`	Character	Relative to width of the "0".
`vw`	Viewport width	Relative to the width of viewport. 1vw = 1/100 of the viewport's width.
`vh`	Viewport height	Relative to the height of viewport. 1vw = 1/100 of the viewport's height.
`vmin`	Smaller dimension	1vmin = 1/100 of viewport's smaller dimension.
`vmax`	Larger dimension	1vmax = 1/100 of viewport's larger dimension.
`ex`	x-height	Relative to the height of a lower-case x.

RELATIVE UNITS / PERCENTAGE

```
.box { width: 50%; }
```

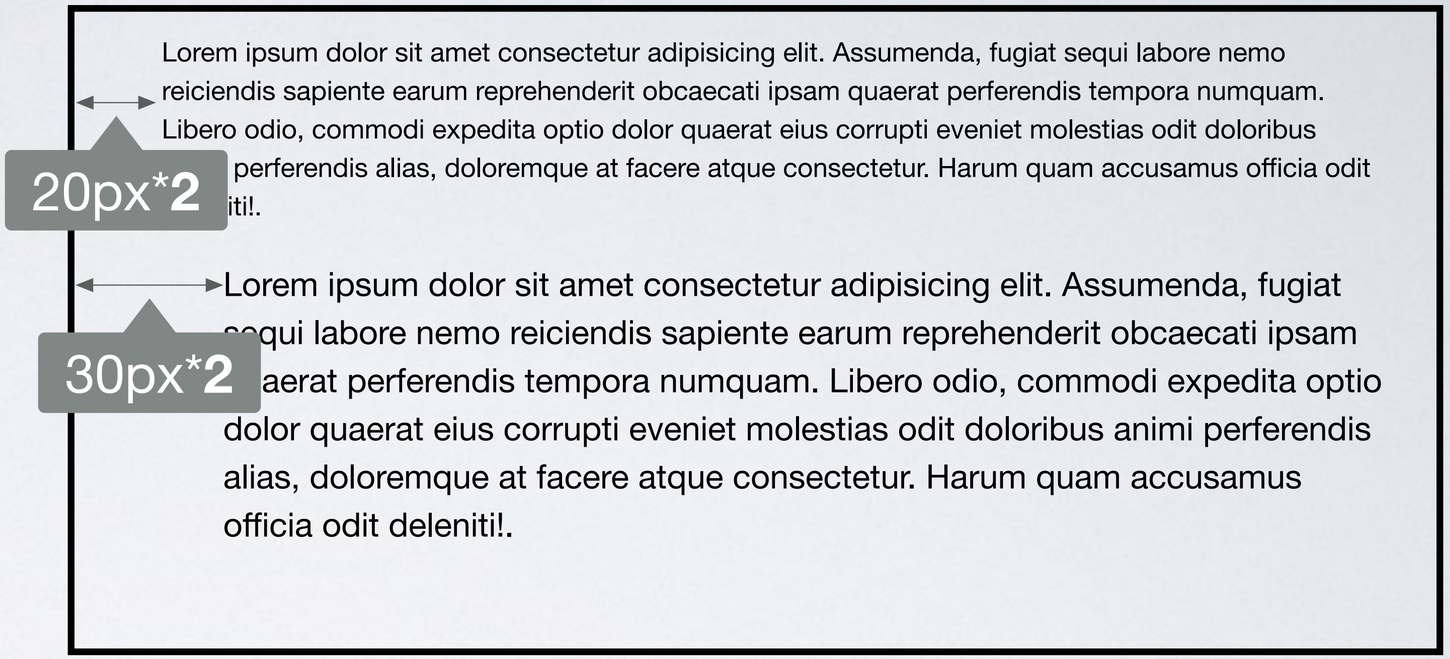


RELATIVE UNITS / EM

READY TO USE CODE

```
.box1 {
  font-size: 20px;
  margin-left: 2em;
}

.box2 {
  font-size: 30px;
  margin-left: 2em;
}
```



The em is simply the font size. In an element with a 16px font, 1em thus means 16px. Expressing sizes, such as margins and paddings, in em means they are related to the font size, and if the user has a big font (e.g., on a big screen) or a small font (e.g., on a handheld device), the sizes will be in proportion.

SOURCE: CSS units by W3C.

RELATIVE UNITS / EM

READY TO USE CODE

HTML

```
<div class="box1">
  Box 1.
  <div class="box2">
    Box 2.
    <div class="box3">
      Box 3.
    </div>
  </div>
</div>
```

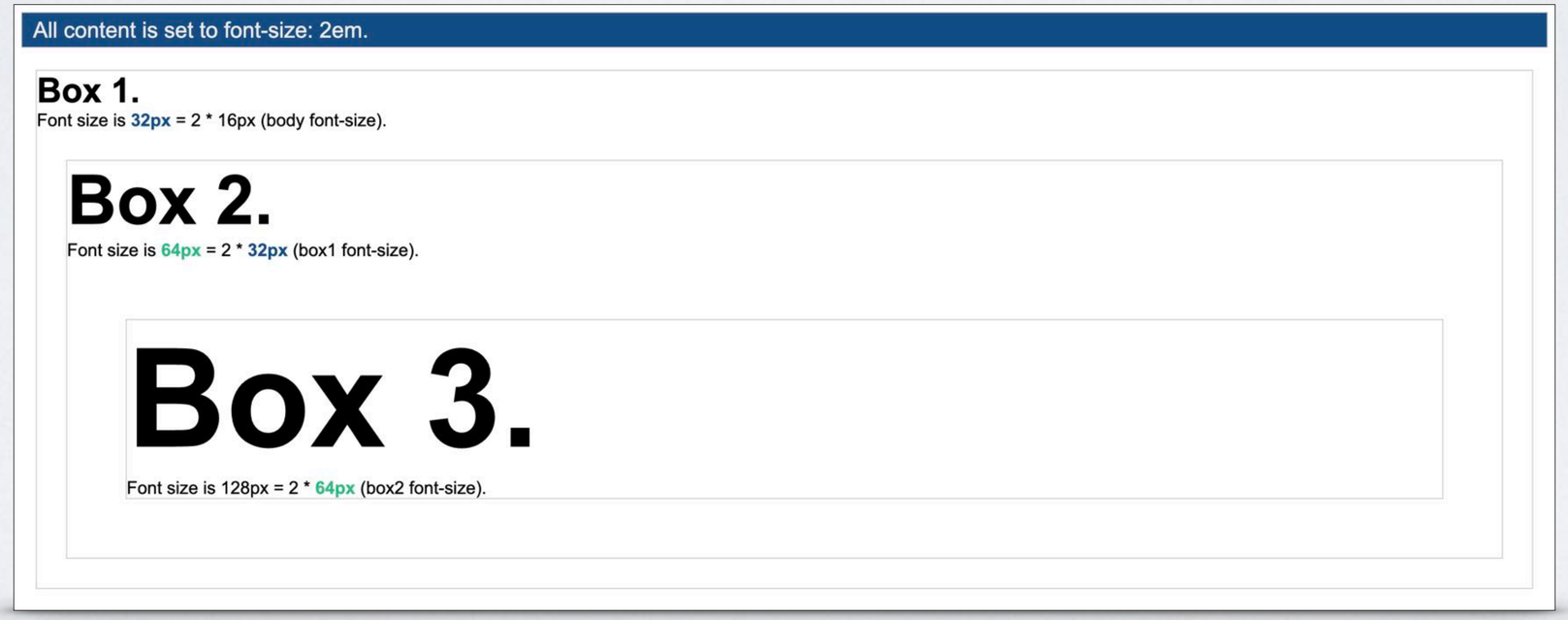
CSS

```
.box1 { font-size: 2em; }
.box2 { font-size: 2em; }
.box3 { font-size: 2em; }
div { margin: .5em; }
```

32px = 2*16px

64px = 2*32px

128px = 2*64px



RELATIVE UNITS / REM

```
:root { font-size: 15px; }

.box {
  font-size: 3rem;
  width: 6rem;
}
```

RELATIVE UNITS / REM vs EM

EM

```
html {font-size: 100%}  16px

h1 {
  font-size: 2em;       1em(16px)*2 = 32px
  margin-bottom: 1em;   1em(32px)*1 = 32px
}

p {
  font-size: 1em;       1em(16px)*1 = 16px
  margin-bottom: 1em;   1em(16px)*1 = 16px
}
```

REM

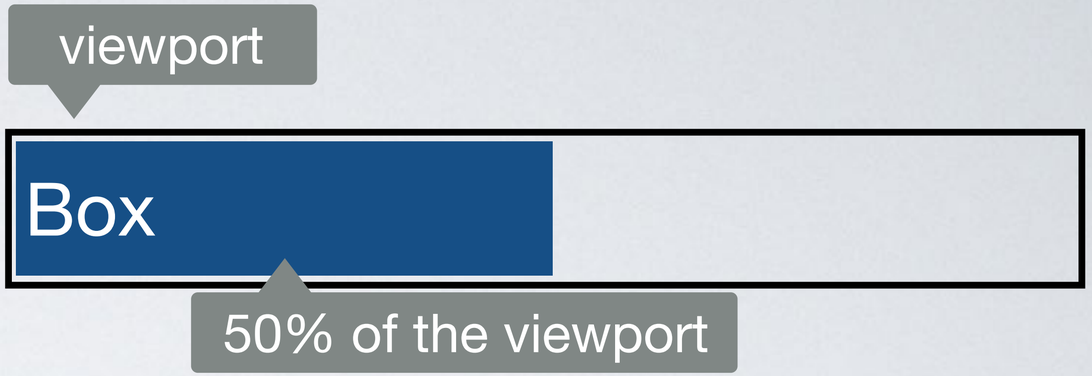
```
html {font-size: 100%}  16px

h1 {
  font-size: 2rem;      1rem(16px)*2 = 32px
  margin-bottom: 1rem;  1rem(16px)*1 = 16px
}

p {
  font-size: 1rem;      1rem(16px)*1 = 16px
  margin-bottom: 1rem;  1rem(16px)*1 = 16px
}
```

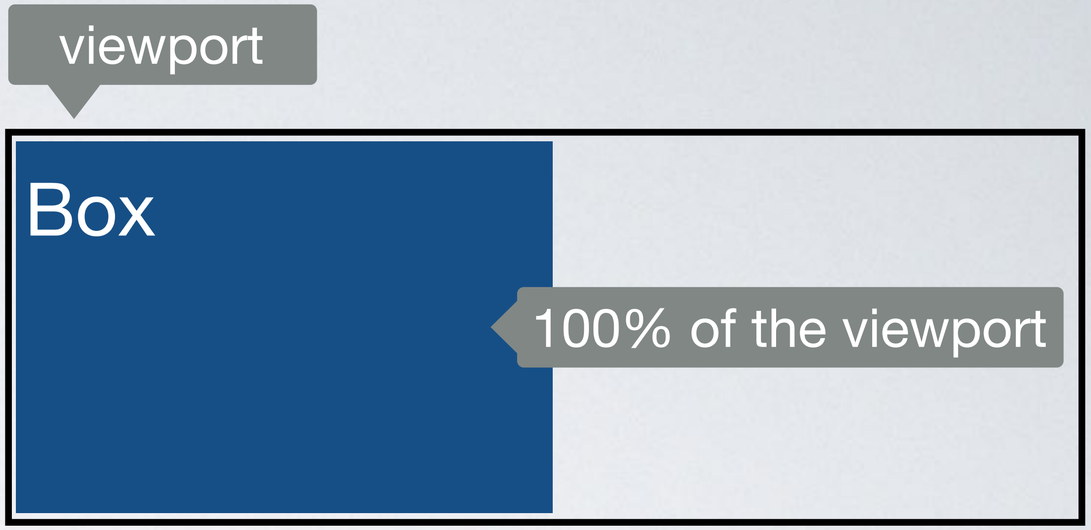
RELATIVE UNITS / VW

```
.box {
  width: 50vw;
}
```



RELATIVE UNITS / VH

```
.box {
  height: 100vh;
}
```



RELATIVE UNITS / VH

HOW TO SET HEIGHT FOR FULL PAGE SIZE

PAST

```
html { height: 100%; }
body { min-height: 100%; }
```

Problem: the HTML element does not grow beyond the height of the visible viewport.

NOW

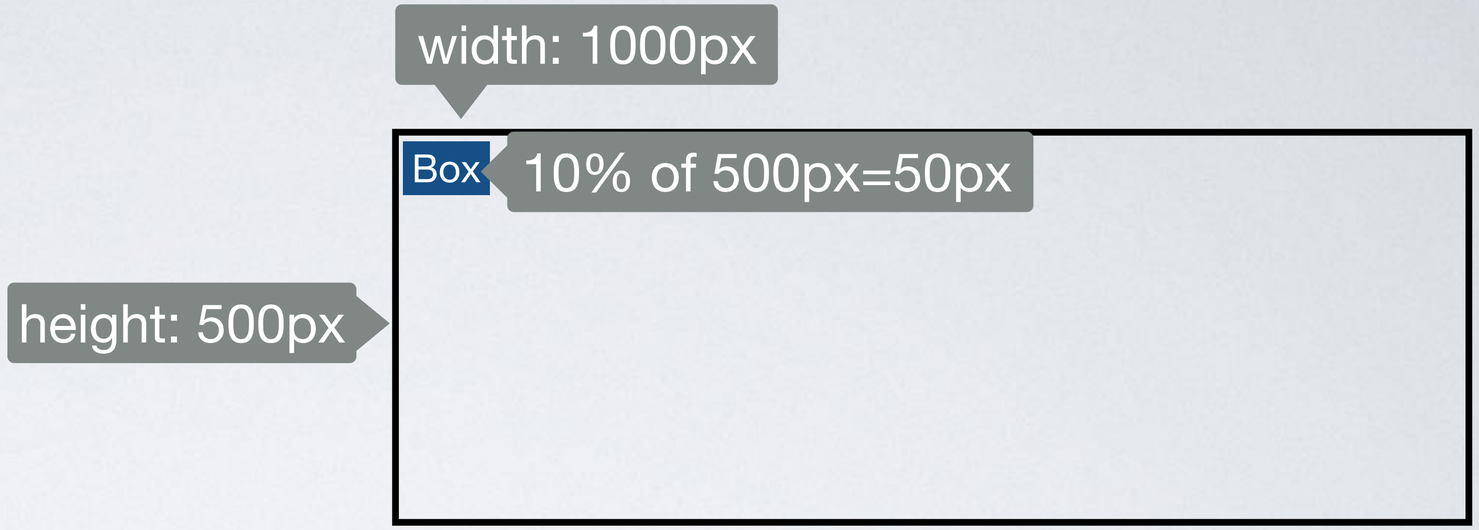
```
body { min-height: 100vh; }
```

GOOD PRACTICE

RELATIVE UNITS / VMIN

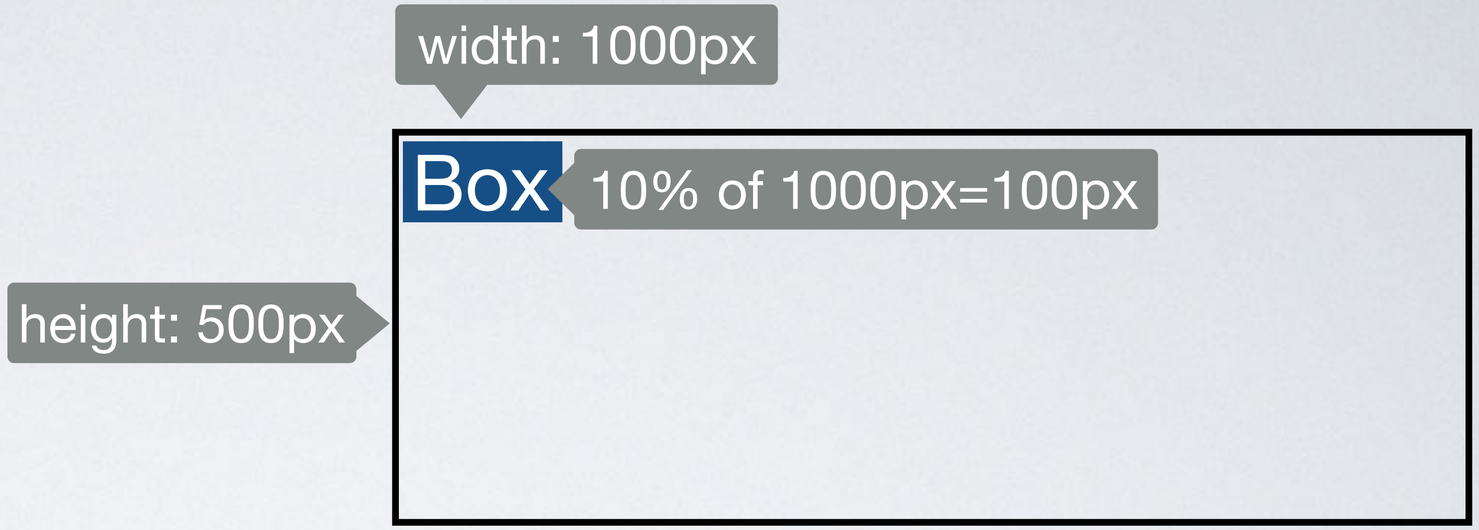
```
.box {
  font-size: 10vmin;
}
```

1vmin = 1vw or 1vh, whichever is smaller.



RELATIVE UNITS / VMAX

```
.box {
  font-size: 10vmax;
}
```



1vmax = 1vw or 1vh, whichever is larger.

HOW TO CHOOSE A CSS UNIT

Do I need to scale an element when the viewport size changes?

What do I want it to scale relative to?

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