Building Responsive Websites

Your web page should look good, and be easy to use, regardless of the device

Responsive Web Development

Building web page templates in a fluid manner so that they will automatically adjust to fit variable widths on desktop, tablet and phone screens…. aka making a website look good on any device.

Understanding Viewport

- The viewport is the user's visible area of a web page

- Viewport size varies with the device (smaller on a mobile phone than desktop)

- Most websites were built with fixed sizes that were too large to fit the viewport; to fix this, browsers on phones/tablets scaled down the entire web page to fit the screen

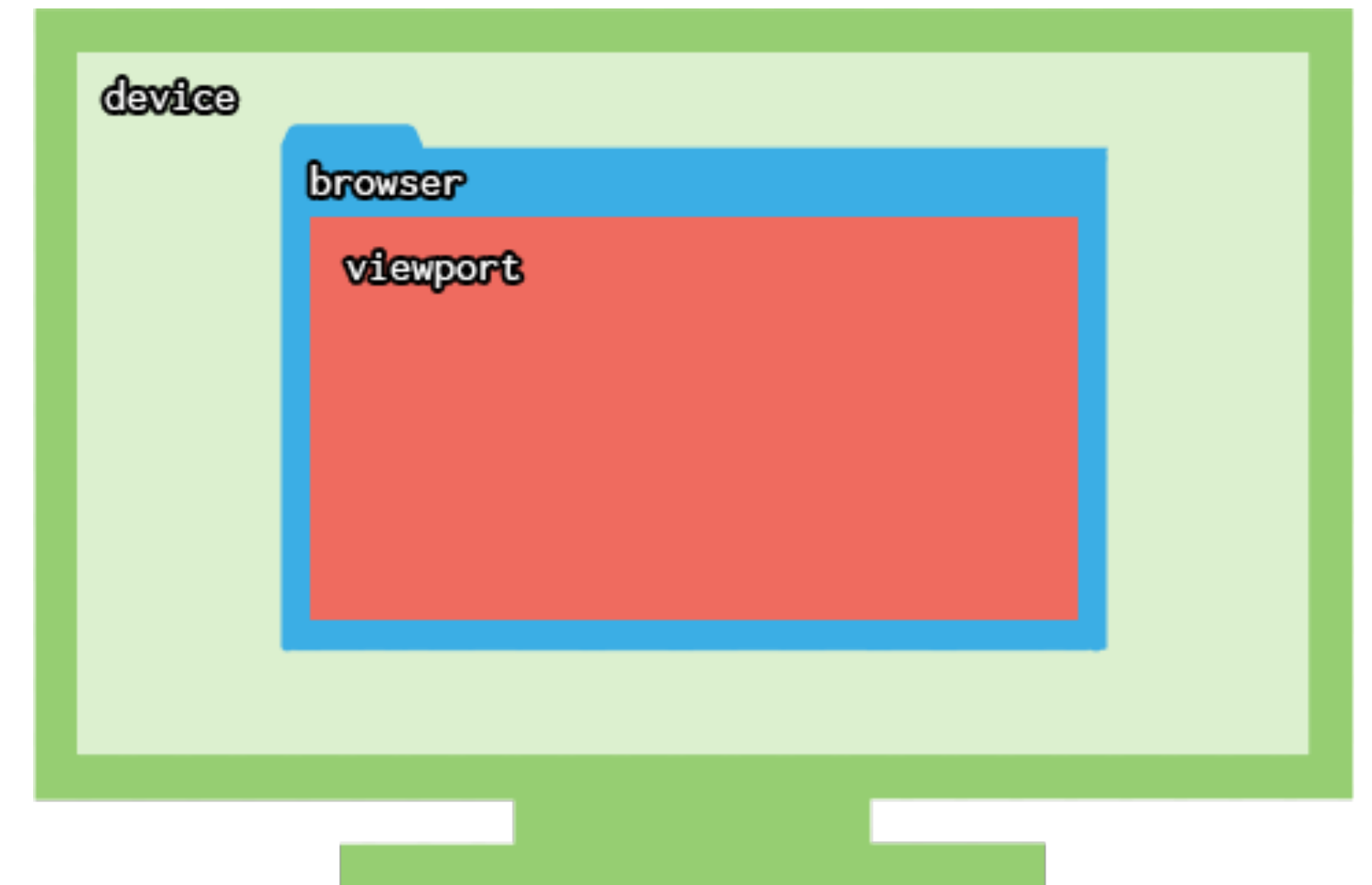**Without the viewport meta tag**

Setting Viewport

- HTML5 introduced a method to take control over the viewport, through the *‹meta›* tag

- A *‹meta›* viewport element gives the browser instructions on how to control the page's dimensions and scaling

- *width=device-width* sets the width of the page to follow the screen width of any device

- *initial-scale=1.0* sets the initial zoom level when the page is first loaded by the browser
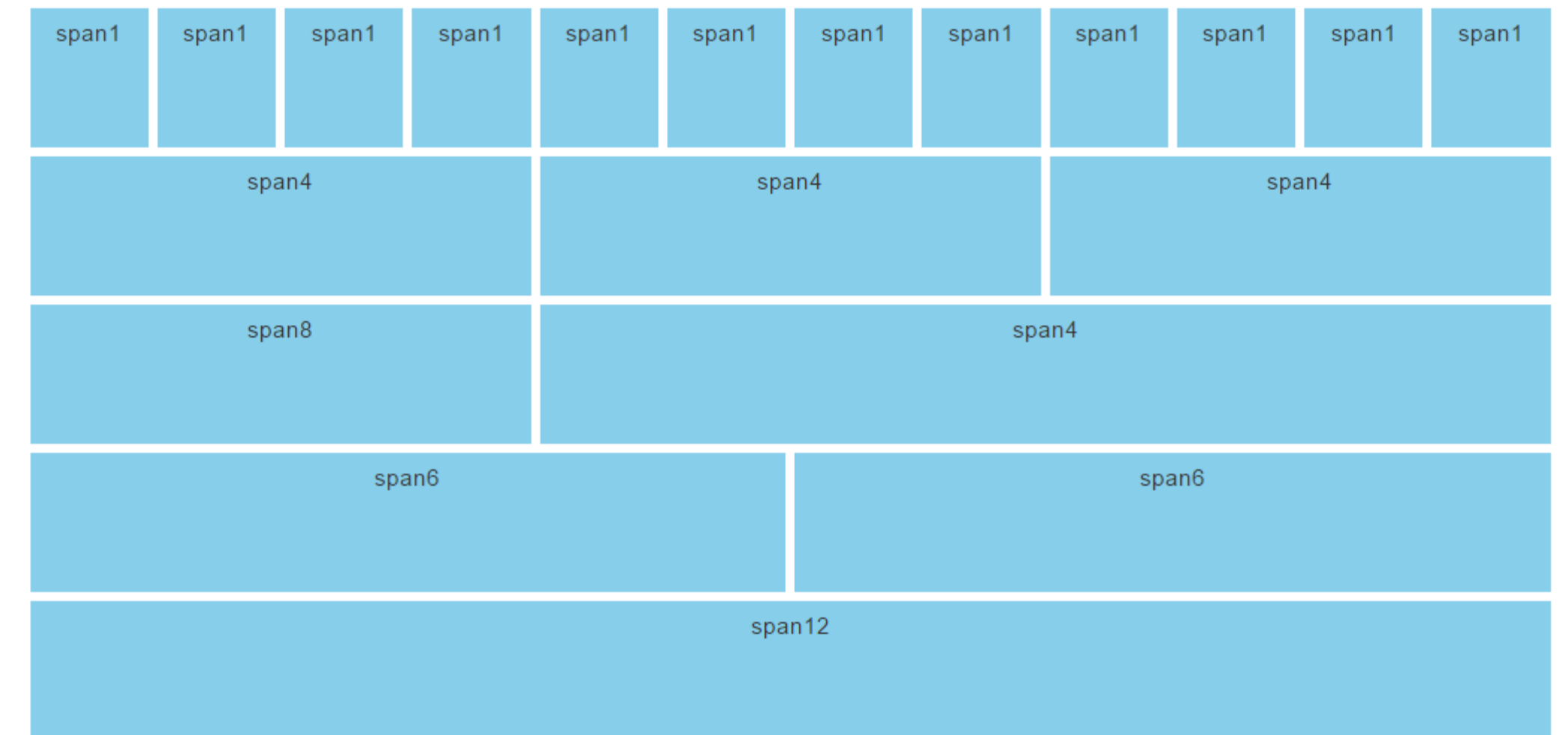

With the viewport meta tag

Fitting Content to Viewport

- Do **NOT** use large fixed width elements

- Do **NOT** let the content rely on a particular viewport width to render well

- Use CSS media queries to apply different styling for small and large screens

12 Column Grid

- Many web pages are based on a grid-view, which means that the page is divided into columns

- A responsive grid-view often has 12 columns, and has a total width of 100%, and will shrink and expand as you resize the browser window
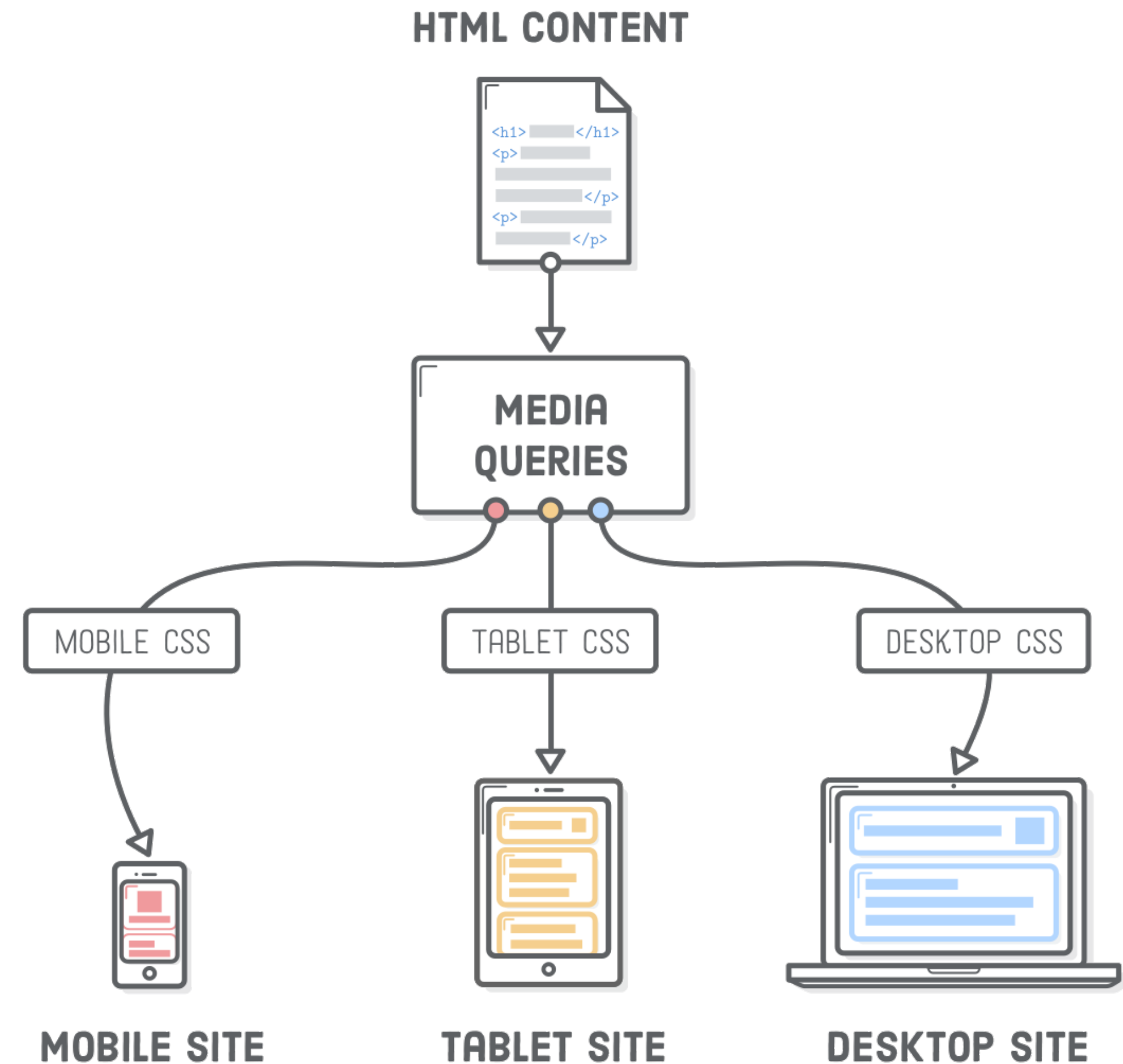
What is a Media Query?

Media query is a CSS technique that uses the @*media* rule to include a block of CSS properties only if a certain condition is true

Media queries can be used to check:

- Width and height of viewport

- Width and height of the device

- Orientation (is the tablet/phone in landscape or portrait mode?)

- Resolution

HTML CONTENT

MEDIA QUERIES

MOBILE CSS

TABLET CSS

DESKTOP CSS

MOBILE SITE

TABLET SITE

DESKTOP SITE

Media Query Syntax

- Consists of a media type and can contain one or more expressions, which resolve to either **true or false**

- Result of the query is **true** if the media type matches the type of device the page is being displayed on and all expressions in the media query are true

- When true, corresponding style sheet or style rules are applied following normal cascading rules

```
@media not|only mediatype and (expressions) {
    CSS-Code;
}
```

Media Types

Value	Description
all	Used for all media type devices
print	Used for printers
screen	Used for computer screens, tablets, smart-phones etc.
speech	Used for screenreaders that "reads" the page out loud

Media Query Examples

1. Turns the body background light green for screens 480px and larger

2. Displays sidebar on left side of page for screens 480px and large

Example

```css
@media screen and (min-width: 480px) {
    body {
        background-color: lightgreen;
    }
}
```

Example

```css
@media screen and (min-width: 480px) {
    #leftsidebar {width: 200px; float: left;}
    #main {margin-left:216px;}
}
```

Mobile First Breakpoints

```
1    // Small devices (landscape phones, 576px and up)
2    @media (min-width: 576px) { ... }
3
4    // Medium devices (tablets, 768px and up)
5    @media (min-width: 768px) { ... }
6
7    // Large devices (desktops, 992px and up)
8    @media (min-width: 992px) { ... }
9
10   // Extra large devices (large desktops, 1200px and up)
11   @media (min-width: 1200px) { ... }
```

Desktop First Breakpoints

```
1   // Large devices (desktops, less than 1200px)
2   @media (max-width: 1199px) { ... }
3
4   // Medium devices (tablets, less than 992px)
5   @media (max-width: 991px) { ... }
6
7   // Small devices (landscape phones, less than 768px)
8   @media (max-width: 767px) { ... }
9
10  // Extra small devices (portrait phones, less than 576px)
11  @media (max-width: 575px) { ... }
```

References

- http://www.w3schools.com/

- http://css-tricks.com/

- http://getbootstrap.com/

- http://stackoverflow.com/

- https://www.google.com/