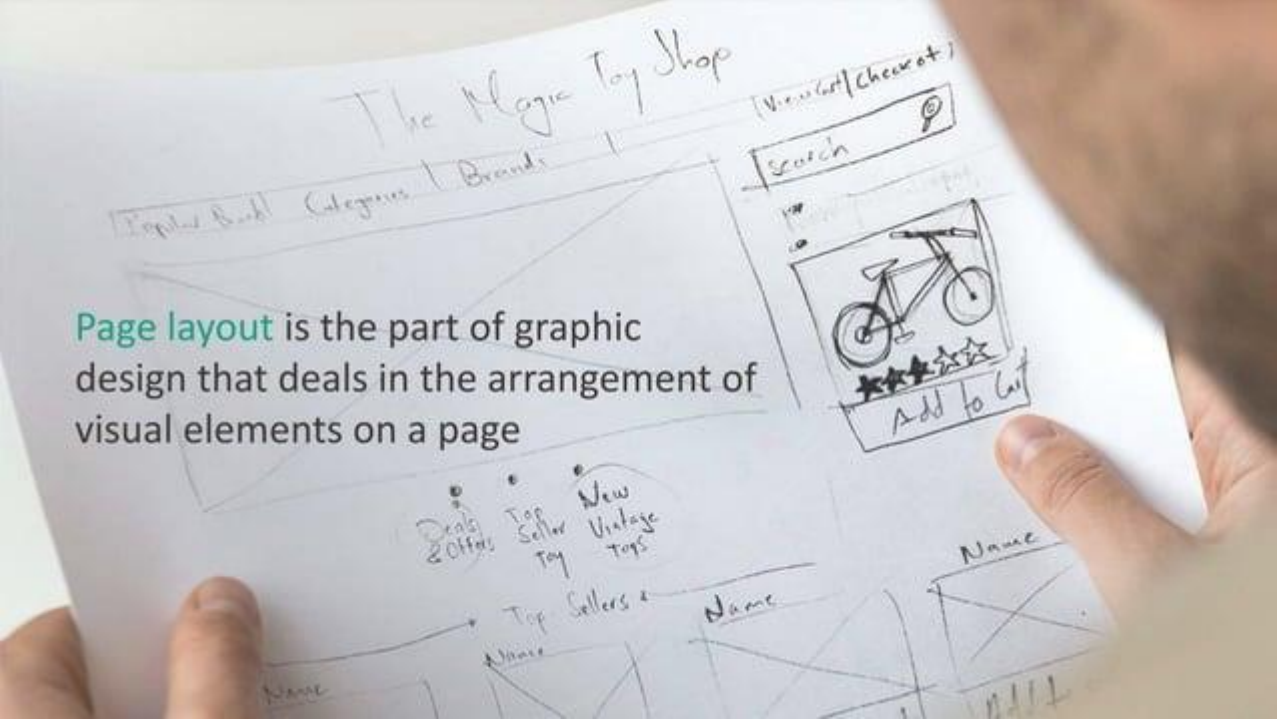
Web Technologies

CSS3-media-queries-and-responsive-design

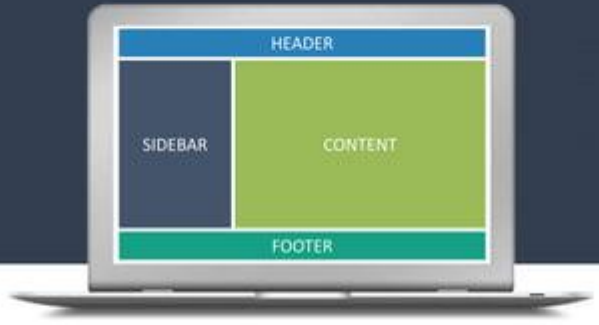
Kamran

Lecture 11

"As a ~~web~~ developer you should target multiple (all) devices"



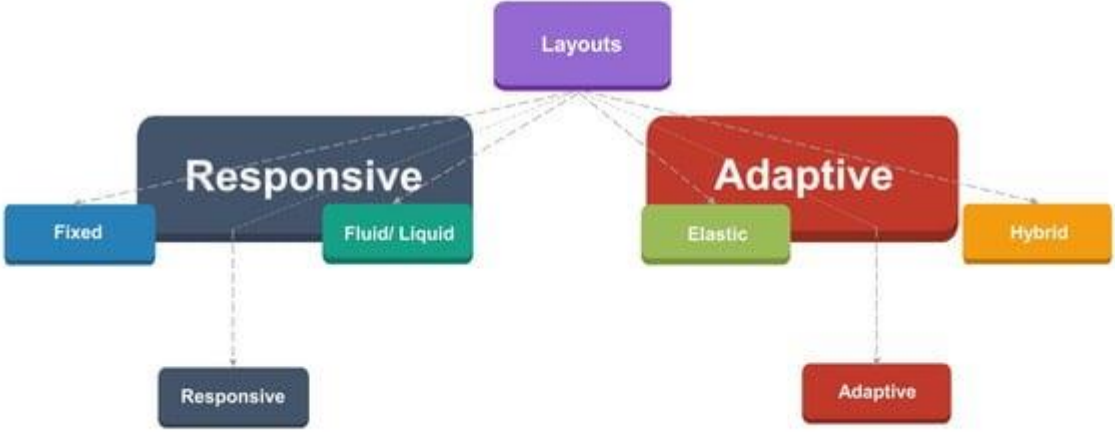
Page layout is the part of graphic design that deals in the arrangement of visual elements on a page



Each page layout name describes how the layout behaves when the page is viewed at different browser widths

TYPE OF LAYOUTS

Main types of page layouts



AWD & RWD

Adaptive Web Design & Responsive Web Design is the modern solution to the fixed-width problems of the past

ADAPTIVE LAYOUT

Adaptive Web Design

"**Adaptive web design** (**AWD**) is different from Responsive Design in that there isn't one layout that always changes. Instead, there are a series of static layouts based on breakpoints for multiple screen sizes, and the layout used depends on the screen size used. Unlike responsive (where the design responds while you adjust a browser window), adaptive files don't respond once they are loaded. It detects It wait on standby until someone visits the site, detects the type of device used, and delivers the properly sized layout to view for that device. "

Activate Windo
Go to Settings to ac

Adaptive and desktop

Adaptive layout

Targets specific screen resolutions

Uses either fluid or fixed layout

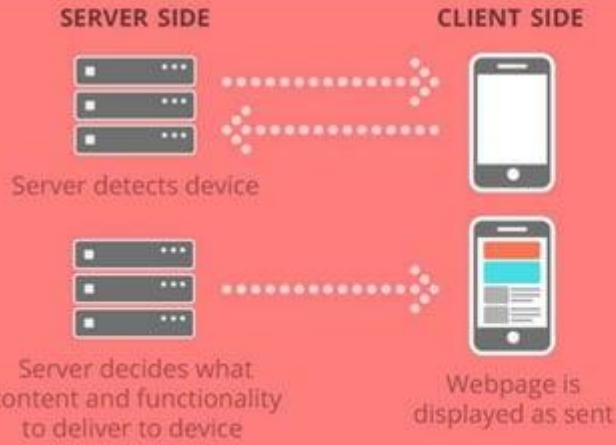
Uses CSS3 media queries is require

Device is served the layout with the closest possible match

Adaptive Web Design

How adaptive design works?

In adaptive design, the web server detects the device and then determines which content to send to the relevant device



ADAPTIVE

AWD benefits

Reach the maximum mobile universe including non-smartphones

If developing markets are important to your business this is the most inclusive globally robust approach.

Optimized media content for specific devices

As is the case with AWD, this approach reduces the need to maintain two content management systems with the mobile-specific site development approach.

Super-efficient page loads

Adaptive websites are much better for load time performance and overall user experience

Allows you to tailor the experience based on user intent and context

The experience on an adaptive site can be finely tuned to the device

No need to scratch your existing website completely

Developers don't have to go back to the drawing board and re-code the existing website from scratch.

Adaptive Layout Usage

Pros

Allows for a good user experience on multiple devices

Can tailor a design to a specific device

Cons

Takes longer to build

Isn't optimal for more niche devices with unique screen resolutions

RESPONSIVE LAYOUT

Responsive Web Design

"**Responsive web design** (**RWD**) is a web design approach aimed at crafting sites to provide an optimal viewing experience – easy reading and navigation with a minimum of resizing, panning, and scrolling – across a wide range of devices (from mobile phones to desktop computer monitors), based on screen size, platform and orientation. True responsive design is fluid, using CSS3 media queries to respond to any screen sizes. With the use of this CSS3 module, you can create a flexible grid where text can wrap and images can shrink to adjust along with your browser."

Activate Windo
Go to Settings to ac

Responsive Web Design

Responsive and desktop

FILLS ALL SCREEN WIDTH

BOTH COLUMNS BECAME TIGHT

COLUMNS BECAME ROWS

Responsive layout

No specific screen resolutions

Entire page is free to flow and consume space

Mostly uses fluid layouts ideology

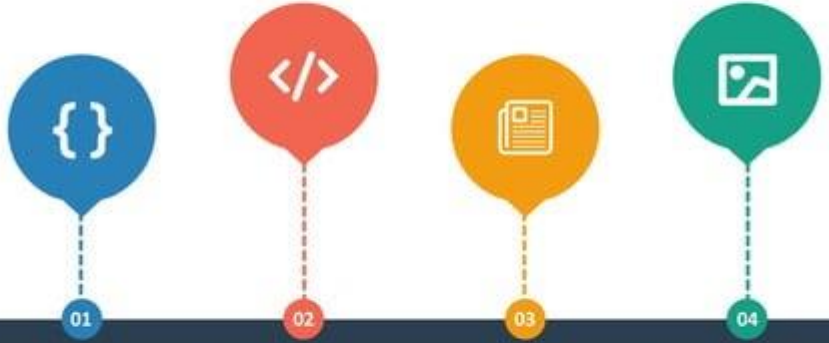
Uses CSS3 media queries to solve the problem

How responsive design works?

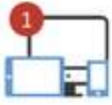
Responsive design is client side, meaning that the whole webpage is delivered to the device browser (the client), and the layout is adjusted to respond to the screen display.

RESPONSIVE

Main principles RWD



Benefits of RWD



Functions on all devices

One codebase

Adapts to all screen sizes

One universal URL

Higher search rankings (SEO)

Responsive Layout Usage

Pros

Optimal user experience on all devices

Future proof and easily manageable

Cons

Requires more though and preparation at the design stage

Takes longer to build

HOW TO

MEDIA QUERIES

"**Media Queries** is a CSS3 module allowing content rendering to adapt to a specific range of output devices without having to change the content itself."

DECLARE MEDIA QUERY

As in media types, there are three ways to invoke media-query-dependent styles:

- First of all, as stylesheets in the link element of HTML:

```
<link rel="stylesheet" type="text/css" media="all and (color)" href="/style.css">
```

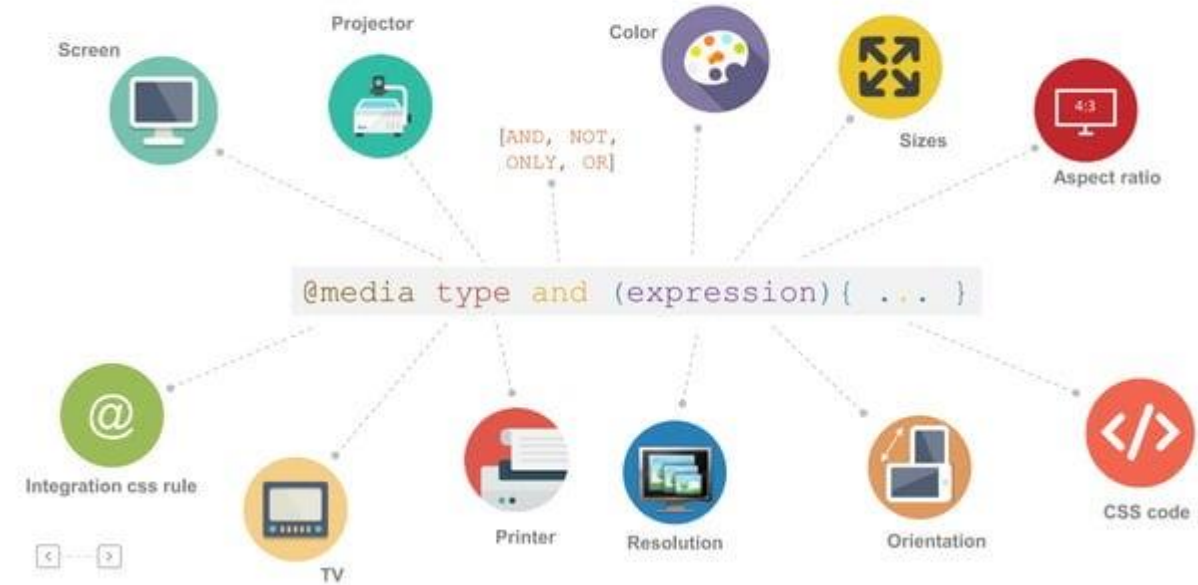
- In CSS stylesheets using @import rules:

```
@import url("/style.css") all and (color);
```

- And finally, using @media rules:

```
@media all and (color) { /* one or more css rule here… */ }
```

Media Query Syntax



MEET THE MEDIA TYPES: ALL

- Description: All devices listen to this

MEDIA TYPE: SCREEN

- Description: Used primary for color computer screens and smartphones.

MEDIA TYPE: PRINT

- Description: Used for paged material and for documents viewed on screen in print preview mode.

MEDIA TYPE: TV

- Description: Used for television-type devices (low resolution, color, limited-scrollability screens, sound available)

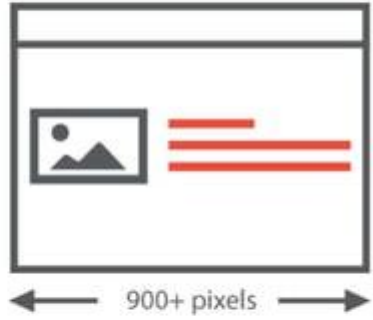
ADDITIONAL MEDIA TYPES

- handheld
- projection
- braille
- embossed
- speech
- tty

Media queries

Media queries provide different instructions for different size screens.

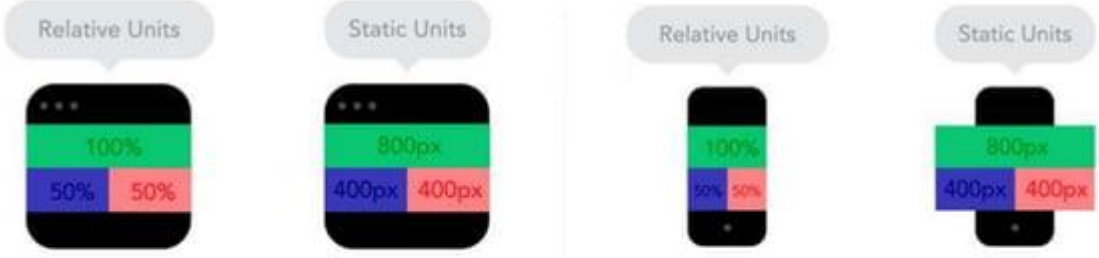
- If screen is less than 900 pixels wide nothing special happens so the text is green



- If screen is wider than 900 pixels, make text red

Relative units

The canvas can be a desktop, mobile screen or anything in between. Pixel density can also vary, so we need units that are flexible and work everywhere.

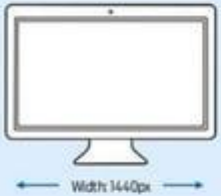


Breakpoints

Breakpoint – point where the design breaks and were the design breaks.

Adaptive: Breakpoints oriented on the Viewport

Responsive: Breakpoints oriented on the layout



Break point & resolutions

320 (Phone – portrait)
480 (Phone – landscape + portrait)
600 (Small tablet – portrait)
768 (Large Tablet – portrait)
800 (Phone + Small tablet – landscape)
1024 (Large Tablet– landscape)`
1280 (Desktop)
1440› (Wide screen desktop)

Breakpoints: horizontal widths we'll need to accommodate in our responsive design.

Breakpoints

Breakpoints allow the layout to change at predefined points, i.e. having 3 columns on a desktop, but only 1 on mobile device. Most CSS properties can be changed from one breakpoint to another

With Breakpoints

Without Breakpoints

With Breakpoints

Without Breakpoints

Adaptive layout CSS

CSS

```css
.wrapper {
  width: 600px;
  margin: 0 auto;
}
section {
  height: 365px;
}
aside {
  height: 200px;
}
```

CSS

```css
@media (min-width: 767px) {
  .wrapper {
    width: 750px;
  }
  section {
    float: right;
    width: 500px;
    height: 565px;
  }
  aside {
    float: left;
    width: 240px;
    height: 565px;
  }
}
```

CSS

```css
@media (min-width: 1000px) {
  .wrapper {
    width: 960px;
  }
  section {
    width: 700px;
  }
  aside {
    width: 250px;
  }
}
```

Responsive layout CSS

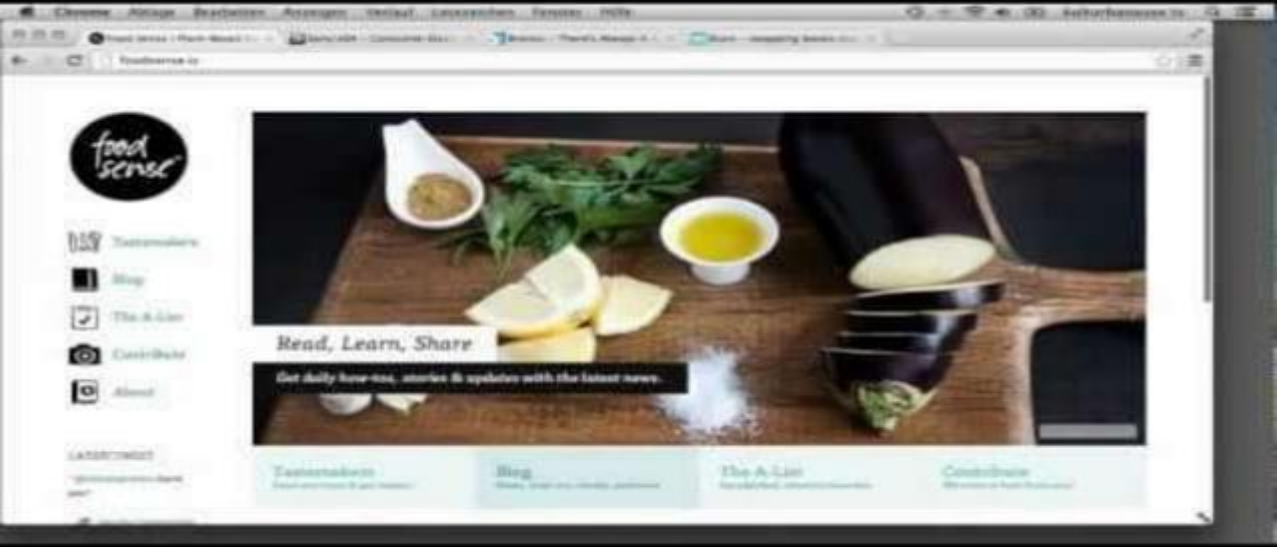
CSS

```css
section {
  height: 365px;
  margin-bottom: 10px;
}

aside {
  height: 200px;
}
```

CSS

```css
@media (min-width: 767px) {
  section {
    float: right;
    width: 66%;
    height: 565px;
  }
  aside {
    float: left;
    width: 33%;
    height: 565px;
  }
}
```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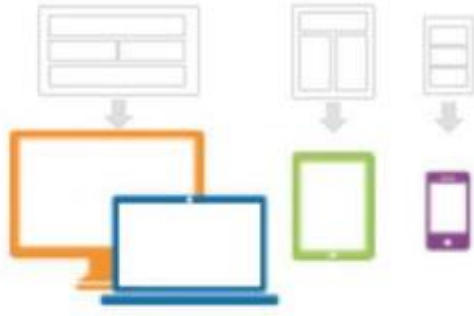
AWD vs RWD

Responsive

Single design that reflows across displays

Adaptive

Creates templates that are optimum and unique for each device class



The hardest thing to learn about new tools

is not how to use them, but when to use them.

Any Questions ???