

FinTech Software Developer

Programmazione WEB - HTML | CSS | Javascript

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Responsive web pages

Media queries

Shadi Lahham - Web development

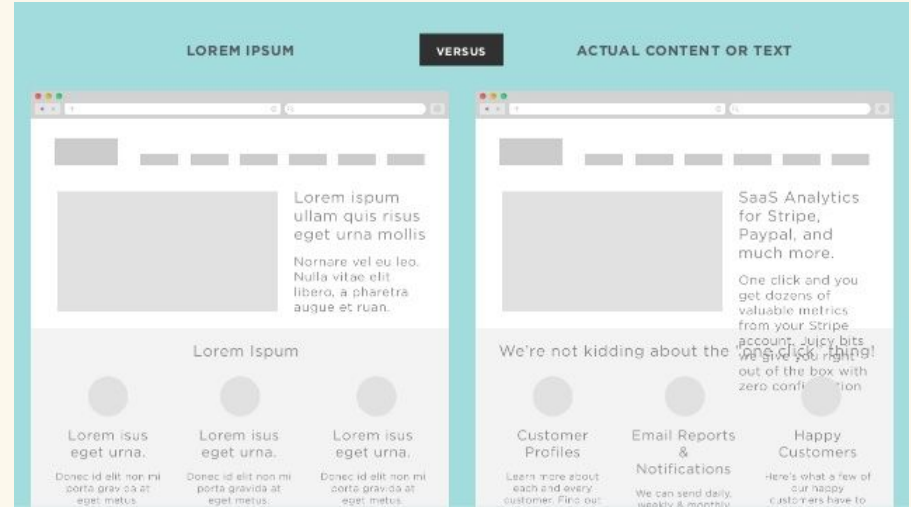
Content first

What is content

- Content is the reason users
 - Visit website
 - Downloads app
 - Provides email address
- Content encompasses a variety of media
 - Graphics, video, audio,
 - Social media communication
 - Anything used to tell a story or communicate an idea
- Content is storytelling
 - A user-friendly digital framework enables users to make a series of choices that helps them tell their story

Why content-first

- A non content design approach
 - Risks creating useless templates
 - Requires more reworks
 - Increases project costs
 - Risks miscommunications with clients
 - Impacts the User Experience



How to work content-first

1. Perfect the user experience

- Think about the whole user experience rather than content in terms of individual pages.
- Considering the content early the process can yield a better experience

2. Consider all channels upfront

- Aim to have unified and consistent content across all channels & devices
- Helps to spot opportunities and problems early on

3. Use content to define the layout and design

- Understand how content can inform design
- Don't spend time creating templates you won't use
- Focus on problem-solving for your users

How to work content-first

4. Use proto-content

- Focus on getting the writing done
- Work with a prototype
- Use proto-content instead of non-contextual placeholders such as Lorem Ipsum
- Use existing content, draft content, or sample content

5. Understand content and technological requirements early

- Start discussions early across different disciplines: content, UX, design and development
- Have discussions around the required technology to deliver content
- Modify the development platform to accommodate the content or design the content with the limitations of the development platform in mind

Mobile first

Why mobile-first

- Mobile phones are an integral part of our lives
- More than 50% of all global web traffic comes from mobile phones
- Google looks at the mobile version before the desktop when ranking a site
- Users have a higher trust in websites that have an excellent mobile UX
- Easier to progress from more straightforward outline and functionality to complex solutions
- Mobile-first means being modern, useful and straightforward

How to work mobile-first

- Mobile-first coding
 - If you use a framework, make sure it's mobile-first
 - If you write custom code, always prioritize mobile
 - Code elements as mobile-first
- Intuitive and user-friendly interactions
 - Clear CTAs (Call to Action)
 - Super quick loading
- Optimise your content (mobile first usually implies content-first)
 - Relevant, easy to read quickly content (divide long text)
 - Scroll rather than click
 - Help users find what they are looking for quickly
 - Use fonts that display well on mobile

Responsive design

What is responsive design

- A website or application that automatically adjusts to the screen and adapts to any device
- Responsiveness is a feature of a web page
 - Is an outcome of specific web development techniques
 - Usually implies mobile-first but does not require it
- Achieved by deploying media queries that
 - Change the default CSS styles
 - Modify the layout

Responsive design and development

- Designers
 - Used to start from the desktop version
 - The mobile version was an afterthought
 - Today it's common to design for mobile-first
 - Design the desktop version by scaling up and adding features
- Developers
 - Used to develop for the desktop first
 - Mobile development is more painful and requires more knowledge, more testing and more creativity in problem solving
- Teams
 - More collaboration between multiple disciplines: Copy, UI, UX, developers
 - More coordination, adaptation and iteration

Breakpoints

Common breakpoints

- Breakpoints are often defined in collaboration with UI/UX designers
- There are no defined standard for widths to target in media queries
- Any reasonable set of increments is enough to target most devices
- The aim is to have sufficient breakpoints to target smartphones, tablets, laptops, and desktops

Some of the most common widths used:

320px

480px

576px

768px

992px

1024px

1200px

Example: Bootstrap breakpoints

```
/* Extra small devices (portrait phones, less than 576px) */  
/* No media query for `xs` since this is the default in Bootstrap */
```

```
/* Small devices (landscape phones, 576px and up) */  
@media (min-width: 576px) {}
```

```
/* Medium devices (tablets, 768px and up) */  
@media (min-width: 768px) {}
```

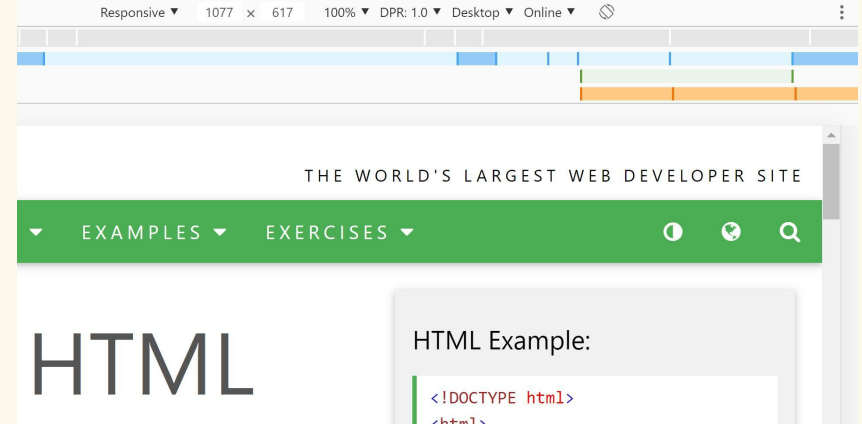
```
/* Large devices (desktops, 992px and up) */  
@media (min-width: 992px) {}
```

```
/* Extra large devices (large desktops, 1200px and up) */  
@media (min-width: 1200px) {}
```

Bootstrap is a front-end framework, shown here just as an example of breakpoint usage

Debugging with breakpoints

- Browser devtools have built-in support for media query breakpoints
- Easy to see which breakpoints are defined in the stylesheets and to test the page
- Also allow to simulate target devices
 - this is only an approximation
 - test on actual devices



Viewport meta tag

Viewport meta tag

- Located in the <head> of the HTML document
- Defines how a site should render in a web browser for mobile devices
- Makes media queries will work as intended
- Should always include the following line of HTML in the head of all documents

```
<meta name="viewport" content="width=device-width, initial-scale=1">
```

device-width

indicates the width should match with the viewport of the device

initial-scale

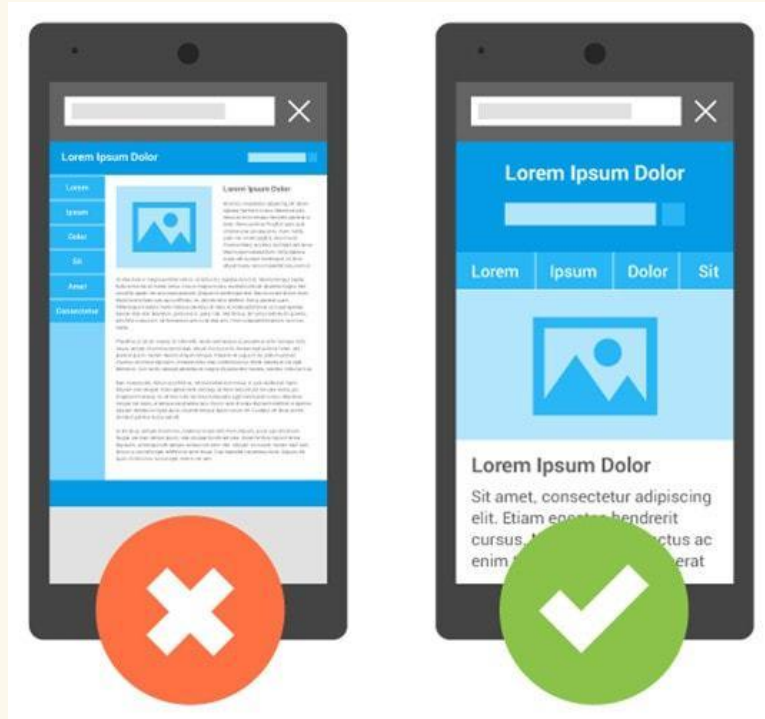
ensure the zoom will not be applied and the layout will always show on a 1:1 scale

Other settings can be used in the viewport tag but it is **not recommended** to change them

[More details](#)

[Responsive Web Design Viewport](#)

Viewport meta tag



Media queries

Media queries

- Allow the customization of web pages for specific devices
 - mobile phones, tablets, desktops, etc
- The HTML code is not changed, only the CSS style
- A media query is a logical expression: true or false
- If a media query is true, the related rules are applied to the target device

Media queries - breakdown

Media type

all, screen, print, speech

Media features

width, min-width, max-width, orientation, height, min-height, max-height, etc

There are many, but most are not used

The most used ones are min-width, max-width and orientation

Logical operators

Logically represent and, or, not

The 'or' logic is represented by a comma (just like in CSS selectors)

Media Queries

```
@media screen and (min-width: 480px) {  
  div {  
    float: left;  
    background: red;  
  }  
}
```


Media Queries - logical operators

AND logic: Both conditions must be true

```
@media screen and (min-width: 400px) and (orientation: landscape) {  
  body {  
    color: #31c78d;  
  }  
}
```

OR logic: At least one conditions should be true

```
@media screen and (min-width: 400px), screen and (orientation: landscape) {  
  body {  
    color: #00c3ff;  
  }  
}
```

Media Queries - logical operators

Not logic: The 'not' operator negates the entire condition

```
@media not all and (orientation: landscape) {  
  body {  
    color: #dab928;  
  }  
}
```

Media Queries - columns example

```
.column {  
  width: 48%;  
  padding: 0 15px;  
  box-sizing: border-box;  
  background: #97ddff;  
  float: left;  
  font-size: 1.1em;  
}
```

```
.container .column:first-child {  
  margin-right: 4%;  
}
```

HTML:

```
<div class="container">  
  <div class="column">Lorem ipsum ..</div>  
  <div class="column">Lorem ipsum ..</div>  
</div>
```

```
@media screen and (max-width: 767px) {  
  
  .column {  
    width: 100%;  
    padding: 5px 20px;  
    float: none;  
    font-size: 1.8em;  
  }  
  
  .container .column:first-child {  
    margin-right: 0;  
    margin-bottom: 20px;  
  }  
  
}
```

Media Queries - columns example

Lorem ipsum dolor sit amet consectetur accumsan Sed vitae mauris risus. Magna eget a Phasellus a nibh nisl risus netus mauris nec. Mus nibh non scelerisque Curabitur et Lorem Nunc lacus Vivamus nibh. Pharetra Nam sagittis.

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Media attribute

- It's possible to specify a media attribute in the link element
- This applies a whole stylesheet when the condition is true
- Possible to do but preferable to specify a single stylesheet with individual media queries

Example

```
<link rel="stylesheet" media="screen and (min-width: 900px)" href="widescreen.css">  
<link rel="stylesheet" media="screen and (max-width: 600px)" href="smallscreen.css">
```

- It's also possible to have different stylesheets based on media type
- This might make sense for some use cases

Example

```
<link rel="stylesheet" type="text/css" href="screen.css" media="screen">  
<link rel="stylesheet" type="text/css" href="print.css" media="print">
```

Responsive images

Resolution switching

```

```

srcset

accepts multiple images and widths
the browser chooses the most appropriate image

sizes

defines the space that the image will take up on the screen

Art direction

```
<picture>
  <source media="(min-width:1024px)" srcset="image-large.jpg">
  <source media="(min-width:768px)" srcset="image-medium.jpg">
  
</picture>
```

Notes:

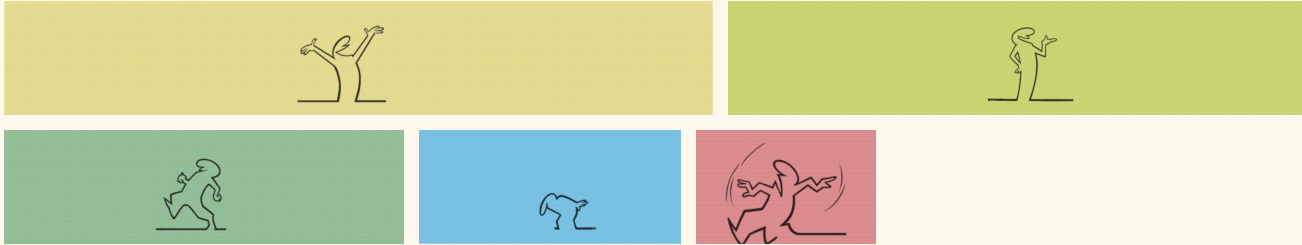
`<picture>` is supported by [modern browsers](#)

`<source>` allows for fine control on when and which image is used

Your turn

1.Boxed in

- Requirements
 - Create a fully responsive page
 - The page should show a different image at each breakpoint
 - Pick 5 good breakpoints and change images using media queries
 - Make interesting changes at each breakpoint using the CSS properties that you know
 - Be creative and make a cool sequence of images
 - One idea would be to create a sequence of pictures showing a person in a shrinking space
 - **note:** you don't need the "Responsive images" section to solve this



2.Responsive menu

- Requirements

- In *02-responsive-menu* create 2 subfolders called *responsive-menu-a* and *responsive-menu-b*
- Each folder should have a *readme.md*, *style/style.css* and *index.html*
- For *responsive-menu-a*, use max-width media queries only
- For *responsive-menu-b*, use min-width media queries only
- Ensure the menus are semantic, responsive, and include at least 7 items

- References

- [How To Create a Responsive Top Navigation Menu](#)
- [How to make a responsive navigation menu](#)
- [Responsive Menu Concepts](#)
- Learn from these but write your own code, don't copy
- Your menu can be with or without Javascript, but it must work

Bonus

3.Full responsive page

- Create a page that has
 - A header, footer, an aside sidebar, and at least two main columns
 - A responsive menu with at least 5 items
 - The header and menu should stay in place when the page scrolls
- Requirements
 - The page should be fully responsive
 - It should use semantic HTML5 elements
 - The page should contain meaningful content
 - Design the page content-first
 - Don't use placeholder text
 - Try to add as many responsive elements as you can
 - Test the page on Chrome, Edge, Firefox and a few mobile browsers (iOS or android)

References

Viewport and media queries

[Responsive Web Design Viewport](#)

[Responsive Web Design Basics | Web Fundamentals](#)

[Beginner's guide to media queries - Learn web development](#)

[CSS Media Queries](#)

[CSS3 Media Queries - Examples](#)

[Responsive images](#)

References

Content first, mobile first, responsive design

[Content First, Design Second](#)

[Why content-first design makes better websites](#)

[Why you should design the content first for better experiences?](#)

[What is Mobile First Design?](#)

[50 Examples of Responsive Web Design](#)