

# Lesson:

# Introduction to Media Queries



# Topics Covered

- What is the media query in CSS?
- Anatomy of a Media Query
- Do we really need media queries?

Media queries in CSS allow you to define different styles for different device types, screen sizes, and orientations. This is particularly useful for creating responsive web designs that adapt to different devices and screen sizes.

Media queries are written using the **@media** rule, followed by one or more conditions in parentheses. The conditions can be based on various criteria, including the device width, device height, orientation, and pixel density.

## Anatomy of a Media Query

**@media** **screen** **(min-width: 320px)** **and** **(max-width: 768px)**

AT-RULE      MEDIA TYPE      MEDIA FEATURE      OPERATOR      MEDIA FEATURE

### Media:

The @media rule is the starting point for defining media queries in CSS. It is used to define a block of styles that should only be applied under certain conditions (i.e. based on media query conditions).

```
@media [media-type] ([media-feature]) {
  /* Styles! */
}
```

### Media type:

The media type is a keyword that specifies the type of device or media being targeted. There are several media types that can be used in a media query, including

- **all:** The media type targets all devices and media types.
- **screen:** This media type targets devices with a screen, such as desktops, laptops, tablets, and smartphones.
- **print:** This media type targets device that are used for printing, such as printers and PDF generators.
- **speech:** This media type targets speech-based devices, such as screen readers.

Here is an example of a media query that targets screens with a maximum width of 600 pixels:

```
@media screen and (max-width: 600px) {
  /* Styles for screens with a maximum width of 600px */
}
```

## Media feature:

A media feature is used to test specific characteristics of the device or viewport, such as width, height, orientation, and resolution.

Here are some common media features that can be used in a media query:

- **width:** specifies the width of the viewport.
- **height:** specifies the height of the viewport.
- **Orientation:** Specifies the orientation of the device.
- **Aspect-ratio:** specifies the aspect ratio of the viewport.
- **Resolution:** specifies the resolution of the device.
- **Color:** Specifies the number of bits per color channel.
- **hover:** specifies whether the device has a pointing device or not.
- **pointer:** specifies the type of pointing device available.

## Operators

Logical operators such as and, or, and not can be used to combine multiple media features or media types to create more complex conditions for when styles should be applied.

Here's a brief overview of the logical operators:

**“and”:** This operator combines two or more media features or media types and requires that all conditions be true for the styles to apply.

**Matches screen between 320px AND 768px**

```
@media screen (min-width: 320px) and (max-width: 768px) {
  .element {
    /* Styles! */
  }
}
```

**“or”:** This operator combines two or more media features or media types and requires that at least one condition must be true for the styles to apply.

**matches screens where either the user prefers dark mode or the screen is at least 1200px wide**

```
@media screen (prefers-color-scheme: dark), (min-width 1200px) {
  .element {
    /* Styles! */
  }
}
```

**“not”:** This operator negates the condition that follows it, and requires that the condition be false for the styles to apply

```
@media print and ( not(color) ) {  
  body {  
    background-color: none;  
  }  
}
```

## Do we really need media queries?

Media queries are an essential part of creating a responsive web design that can adapt to different screen sizes and devices.

Without media queries, web pages would look the same regardless of the device they're being viewed on, which would result in a poor user experience, especially on smaller screens like smartphones and tablets.

For example, you might use media queries to:

- Change the layout of a page from a multi-column format to a single-column format on smaller screens
- Adjust the font size and line spacing to make the text easier to read on smaller screens.
- Hide or show certain elements, such as navigation menus or sidebars, depending on the screen size.

By using media queries, you can create a website that is optimized for all devices, which will improve the user experience and help to increase engagement and conversions.