Responsive Design & Media

Software Development Bootcamp

Topic

What Is Responsive Design?

What Is Responsive Design?

Responsive design is an approach to web design that makes web pages render well on a variety of devices and window or screen sizes.

It adapts based on screen width, pixel density, and orientation.

Why Use Responsive Design?

- Ensures content is accessible on all devices
- Over 50% of web traffic comes from mobile devices
- Supports mobile phones, tablets, and screen readers
- Improves user experience across different devices

Responsive Design Is...

- Responsive Units
  - Fluid grids
  - Flexible images
- Media queries

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Responsive Units

Why Responsive Units?

Fixed units (like pixels) don't scale well across devices, but **responsive units** can help make sure your layouts adapt to different screen sizes.

- Improve accessibility and user experience
- Make maintenance and updates easier

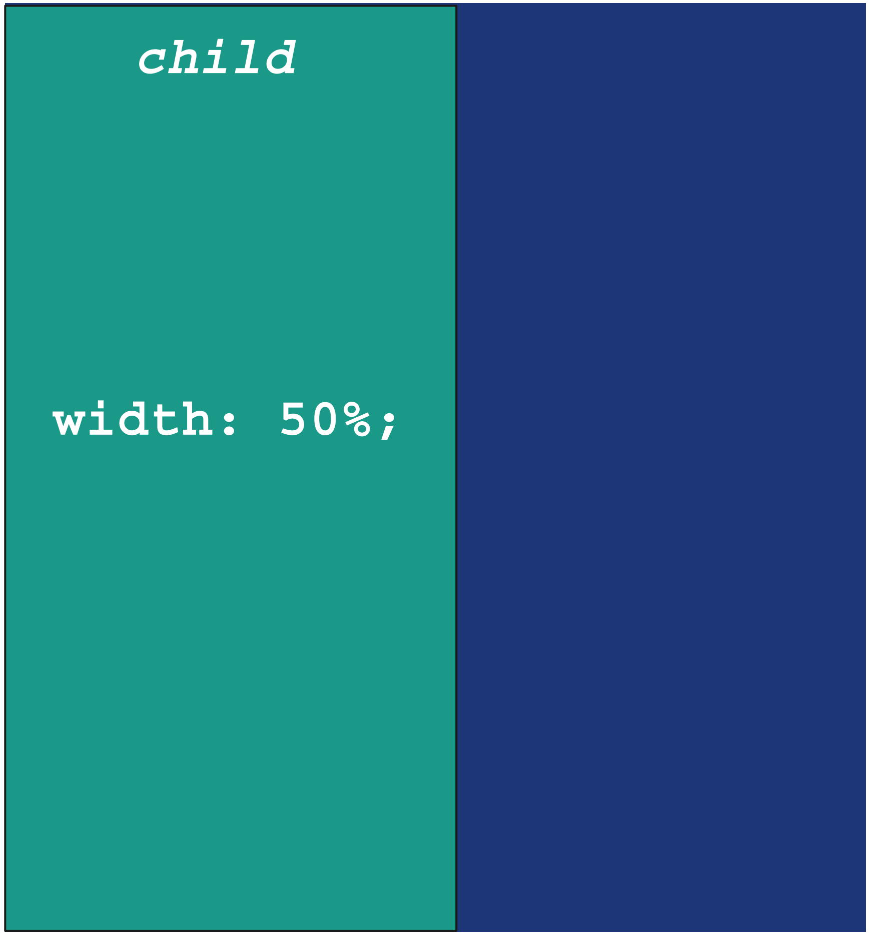
What Are Responsive Units?

Responsive units dynamically adjust based on their reference point to allow elements to scale proportionally across different screen sizes.

- Percentages (e.g., 50%)
- Viewport width (vw)
- Viewport height (vh)

Responsive Unit: Percent %

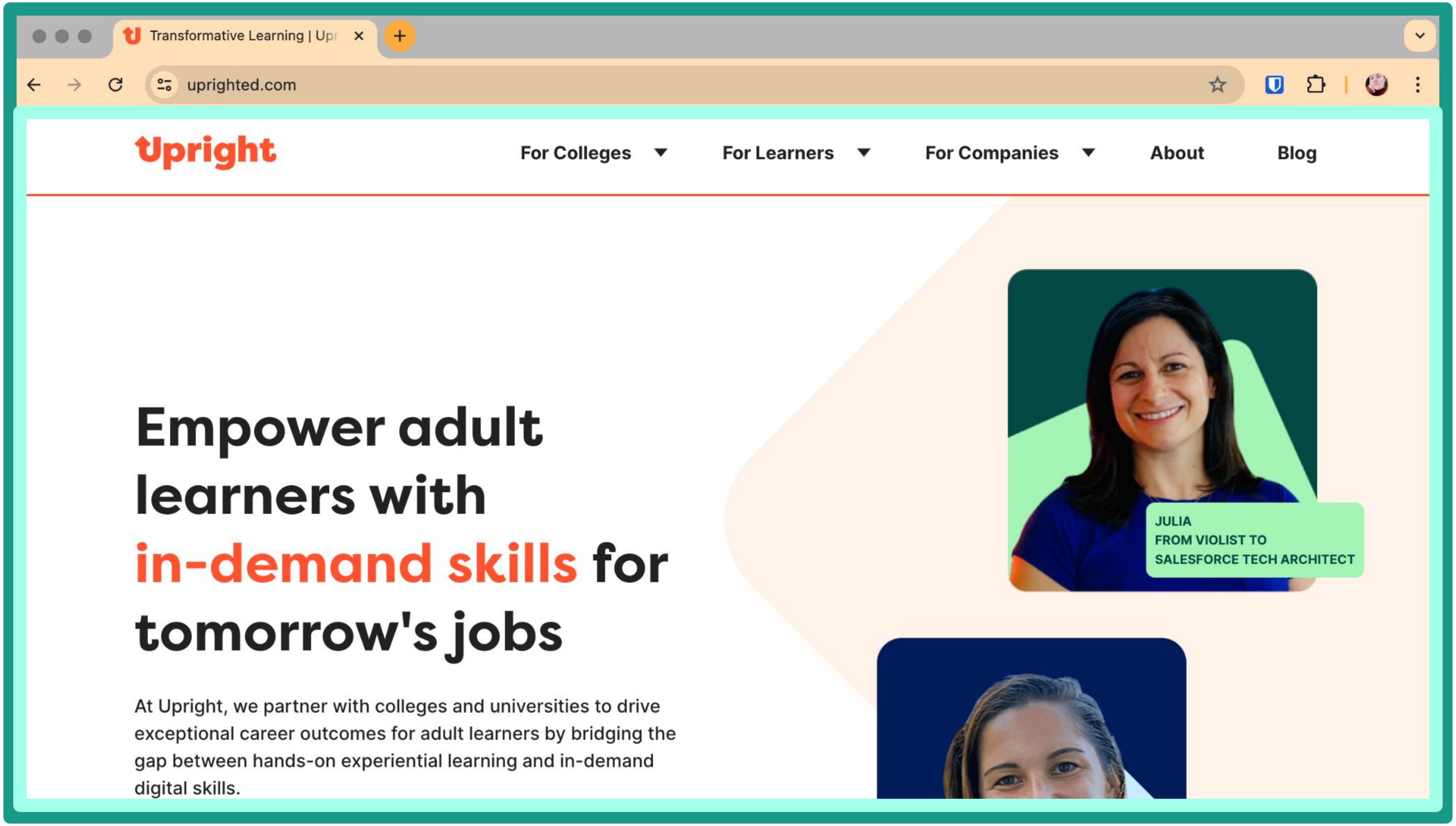
Relative to the parent element's size.



Responsive Unit:
Viewport Width & Height (vw, vh)

Percentage of the viewport width and height.

- The viewport is visible area of a web page in a browser window.
- End users completely control the viewport.



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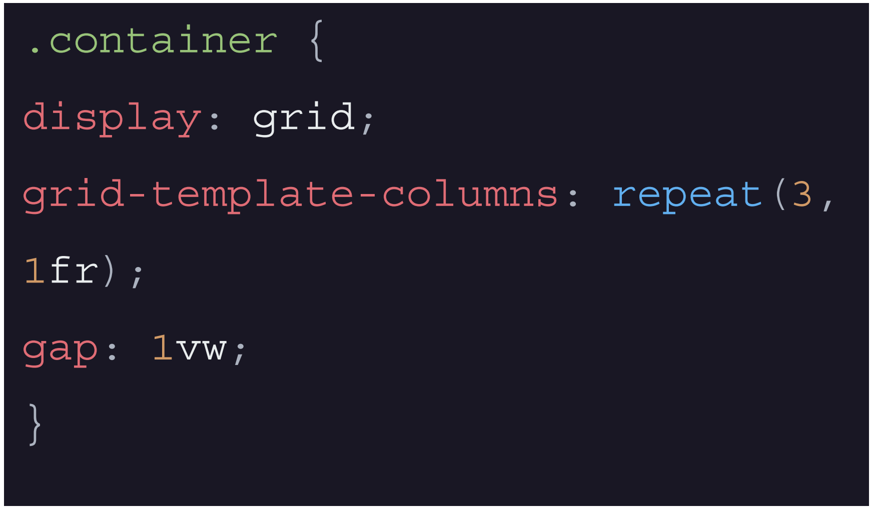
At Upright, we partner with colleges and universities to drive exceptional career outcomes for adult learners by bridging the gap between hands-on experiential learning and in-demand digital skills.

Viewport Vs Browser Window

Fluid Grids

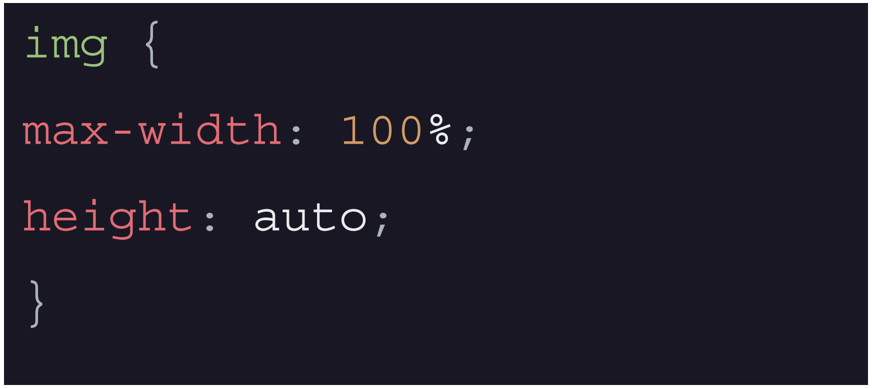
- Use relative units instead of fixed pixels
- Layout adjusts proportionally to screen size



```
.container {
display: grid;
grid-template-columns: repeat(3,
1fr);
gap: 1vw;
}
```

Flexible Images

- Images that scale with their containing element
- Prevent images from overflowing their container



```css
img {
max-width: 100%;
height: auto;
}
```

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Media Queries

What Are Media Queries?

Media queries use rules to check things like the size of the screen, and based on these rules different styles can be applied.

```
/* Basic syntax */
@media media_type and (media_feature) {
 /* CSS rules */
}
```

Media Features

Media queries reference various media features.

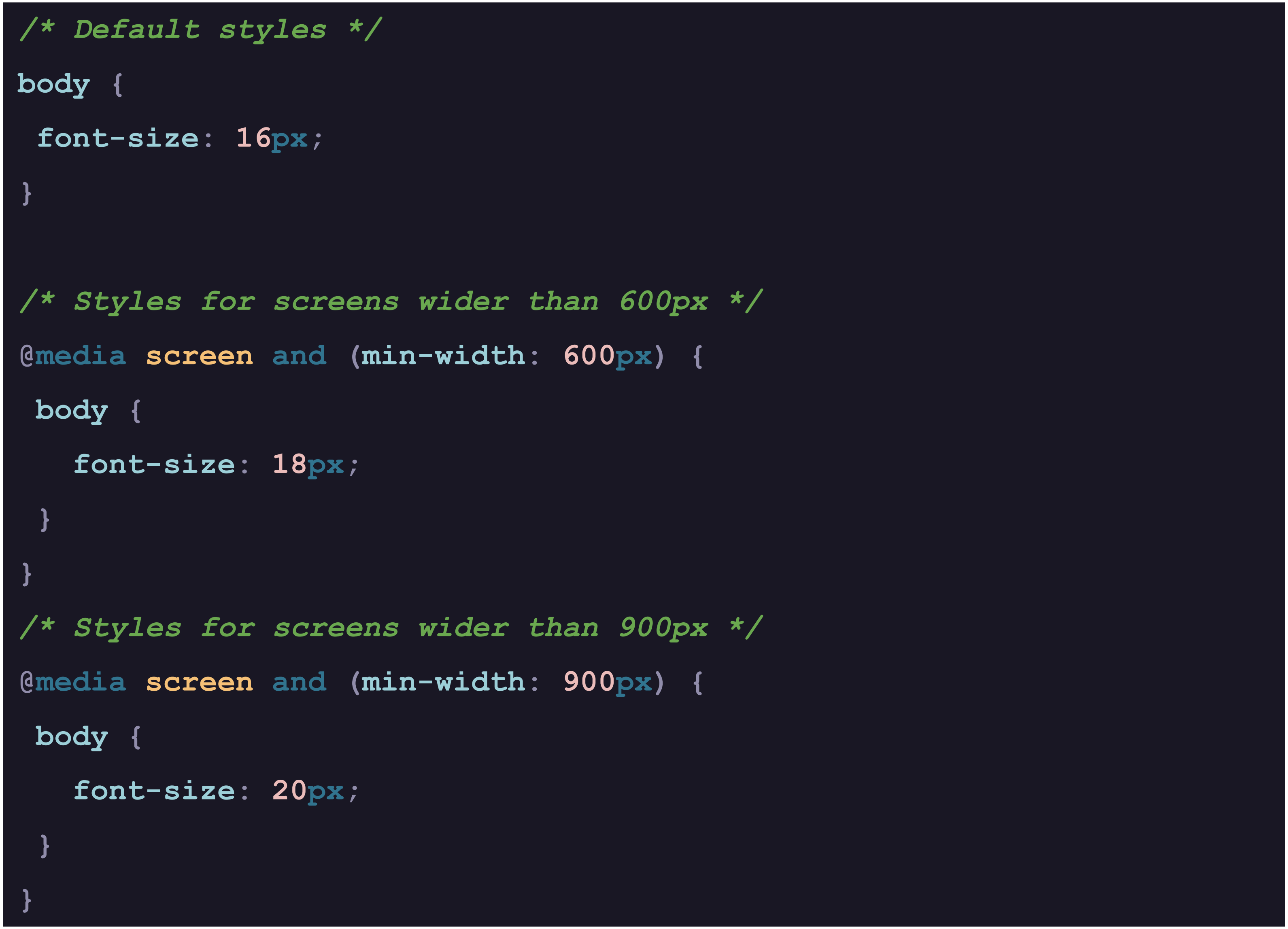
Media features are characteristics of the end user's browser like:

- **Width:** Viewport width
- **Resolution:** Pixel density
- **Hover:** Ability to hover

Media Conditionals

Media queries can be made more specific with media conditionals:

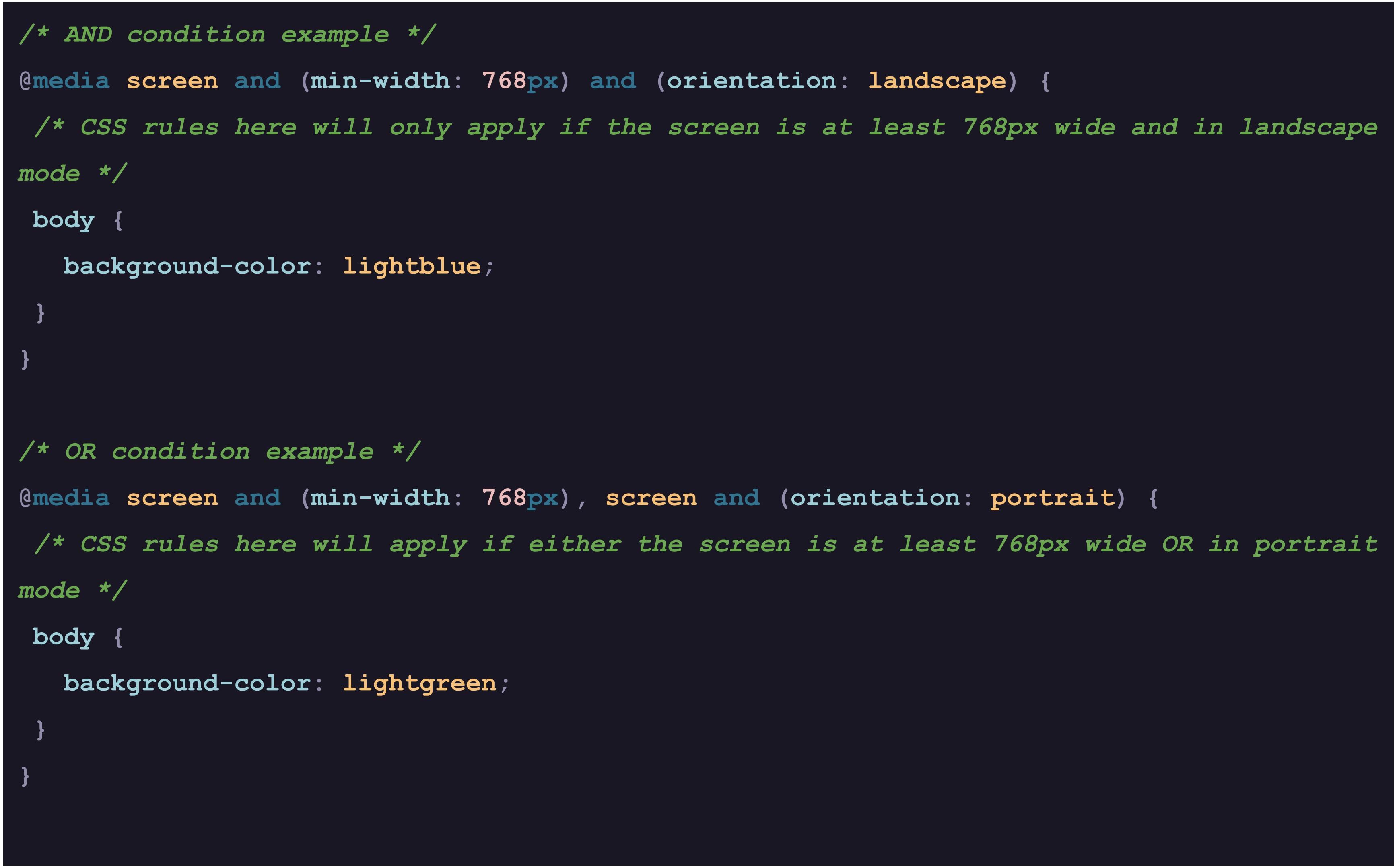
- **AND condition**
  - Allows you to combine multiple rules, meaning all conditions must be true for the style to be applied
- **OR condition**
  - Allows you to specify multiple conditions where any one of them being true will apply the styles.



```css
/* Default styles */
body {
 font-size: 16px;
}

/* Styles for screens wider than 600px */
@media screen and (min-width: 600px) {
 body {
   font-size: 18px;
 }
}
/* Styles for screens wider than 900px */
@media screen and (min-width: 900px) {
 body {
   font-size: 20px;
 }
}
```

Media Query Example



```css
/* AND condition example */
@media screen and (min-width: 768px) and (orientation: landscape) {
 /* CSS rules here will only apply if the screen is at least 768px wide and in landscape mode */
 body {
   background-color: lightblue;
 }
}

/* OR condition example */
@media screen and (min-width: 768px), screen and (orientation: portrait) {
 /* CSS rules here will apply if either the screen is at least 768px wide OR in portrait mode */
 body {
   background-color: lightgreen;
 }
}
```

Media Conditional Examples

Topic

Embedded Media

What Is Media?

Media refers to various types of content that can be **embedded** or displayed on a web page, enhancing the user experience beyond text.

- Media files
- Images, audio, and video
- HTML snippets
- Advertisements
- Maps, graphs, and charts
- Search boxes (e.g., Google Custom Search)

Embedding Media

Embedding media involves incorporating content from other sources into your website.

Different types of media require different methods to embed.

Embedding Images

To embed images, use the <img src=''> tag. Here are common image sources:

- Your web server
- Free or paid hosting sites (e.g., Flickr, Imgur, 500px for images; YouTube, Vimeo, Wistia for videos; SoundCloud for audio)
- Content Delivery Networks (CDNs) like Amazon AWS, CloudFront, CloudFlare, and Akamai

Embedding Video

Use the HTML5 <video> tag for hosting your own video files.

```
<video width="320" height="240" src="movie.mp4" type="video/mp4">
      Your browser does not support the video tag.
</video>
```

Embedding Audio

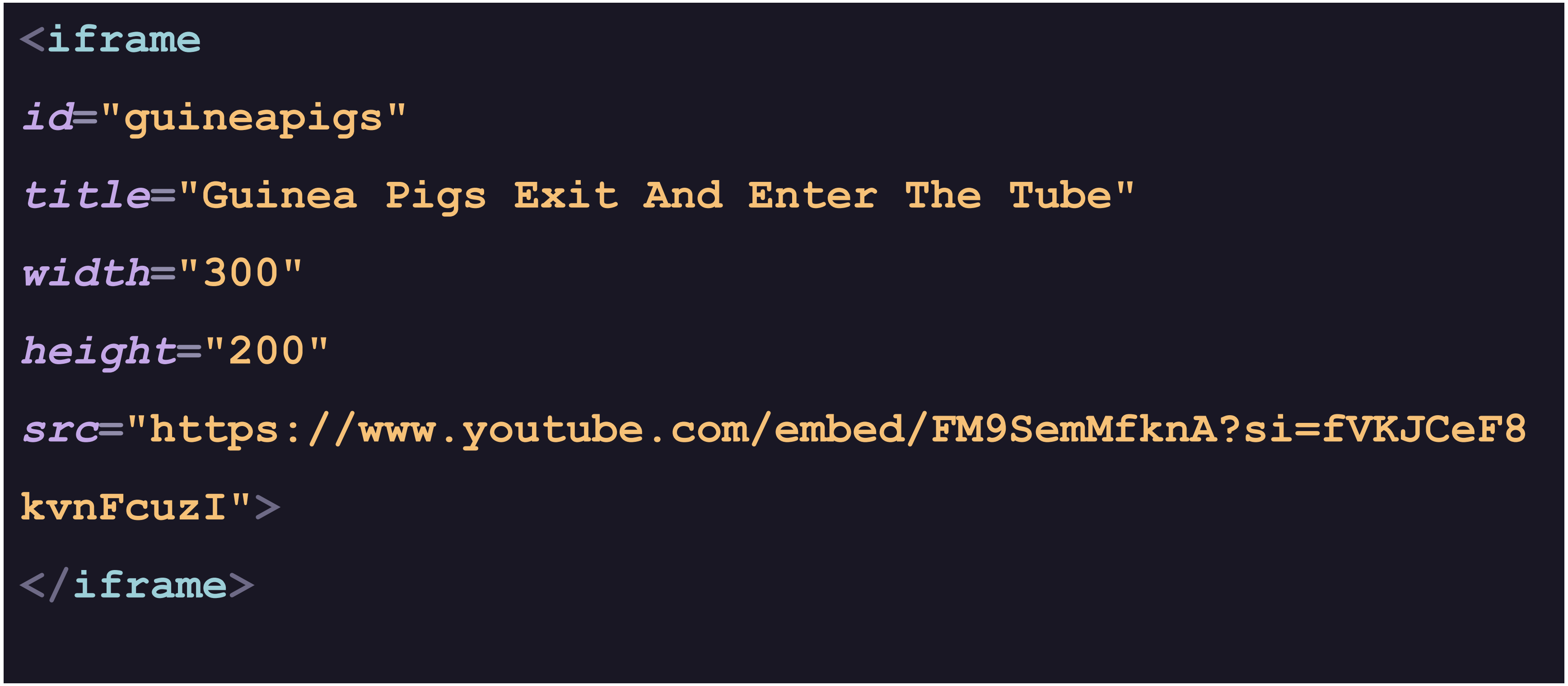
Use the HTML5 <audio> tag for embedding audio files.

```html
<audio src="myAudio.mp3" type="audio/mpeg" controls>
    <p>Your browser doesn't support HTML5 audio. Here is a
    <a href="myAudio.mp3">link to the audio</a> instead.</p>
</audio>
```

Embedding The Internet: iframes

An iframe (Inline Frame) is an HTML element that allows you to embed another HTML document within the current web page.

- Creates a window within a web page
- Loads content from a different source
- Acts like a mini-browser within your page



```
<iframe
id="guineapigs"
title="Guinea Pigs Exit And Enter The Tube"
width="300"
height="200"
src="https://www.youtube.com/embed/FM9SemMfknA?si=fVKJCeF8
kvnFcuzI">
</iframe>
```

iframe Example: YouTube

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Project

Jeopardy (Part 1)