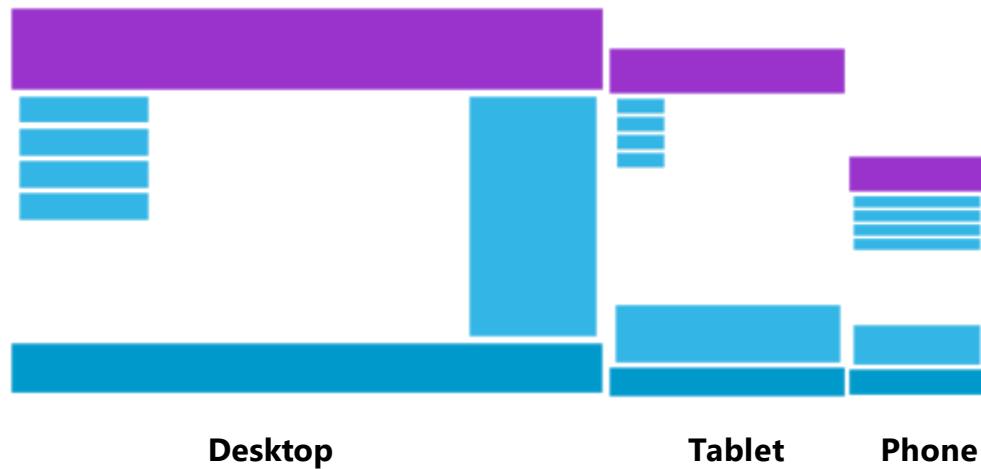


Responsive Web Design

- Responsive web design is about creating web pages that look good on all devices!
- A responsive web design will automatically adjust for different screen sizes and viewports.
- Responsive web design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge a website, to make it look good on all devices.
- Key components in responsive web design are:
 - Viewport <meta> tag
 - Flexible layout (grid and flex)
 - Mediaqueries



Setting The Viewport

- The viewport is the user's visible area of a web page.
- The viewport varies with the device (will be a lot smaller on a mobile phone than on a computer screen).

- You should include the following <meta> element in the <head> section of all your web pages:
- **<meta name="viewport" content="width=device-width, initial-scale=1.0">**
- This gives the browser instructions on how to control the page's dimensions and scaling.
- The width=device-width part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).
- The initial-scale=1.0 part sets the initial zoom level when the page is first loaded by the browser.



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Without Viewport

With Viewport

CSS Media Queries

- CSS media queries allow you to apply styles based on the characteristics of a device or the environment displaying the web page.
- CSS media queries are essential for creating responsive web pages.
- The CSS @media rule is used to add media queries to your style sheet.

Media Query Syntax

```
@media [not] media-type and (media-feature: value) and (media-feature: value) {  
    /* CSS rules to apply */  
}
```

- **not:** This optional keyword inverts the meaning of the entire media query.
- **and:** This keyword combines a media-type and one or more media-features.

CSS Media Types: The optional media type specifies the type of media the styles are for. If media type is omitted, it will be set to "all".

Value	Description
all	Used for all media type devices
print	Used for print preview mode
screen	Used for computer screens, tablets, and smartphones

CSS Media Features: The media feature specifies a specific characteristic of the device.

Value	Description
max-height	Maximum height of the viewport
min-height	Minimum height of the viewport
height	Height of the viewport (including scrollbar)
max-width	Maximum width of the viewport
min-width	Minimum width of the viewport
width	Width of the viewport (including scrollbar)
orientation	Orientation of the viewport (landscape or portrait)
resolution	Screen resolution
prefers-color-scheme	User's preferred color scheme (light or dark)

CSS Media Queries Examples:

```
body{  
    background-color: olive;  
    color: white;  
}  
  
@media screen and (min-width: 768px){  
    body {  
        background-color: blue;  
        color: white;  
    }  
}  
  
@media screen and (min-width: 992px){  
    body{  
        background-color: tan;  
        color: black;  
    }  
}
```

Media Queries For Columns:

```
body{  
    background-color: whitesmoke;  
    text-align: center;  
}  
  
img{  
    border: 3px solid black;  
    border-radius: 5px;  
    width: 300px;  
    height: auto;  
}
```

```
.container{
```

```
    display: flex;
```

```
flex-direction: row;  
flex-wrap: wrap;  
gap: 10px;  
justify-content: center;  
align-content: center;  
}  
  
@media screen and (max-width: 1000px) {  
    .container {  
        flex-direction: column;  
    }  
    img {  
        width: 700px;  
    }  
}
```

Media Queries For Menus:

```
ul {  
    list-style-type: none;  
    margin: 0;  
    padding: 0;  
    background-color: #333333;  
    display: flex;  
}  
ul li a {  
    display: block;  
    color: white;  
    padding: 14px 16px;  
    text-decoration: none;  
}  
ul li a:hover {
```

```
background-color: #111111;  
}  
  
@media screen and (max-width: 600px) {  
    ul {flex-direction: column;}  
}
```

Hide Elements with Media Queries:

```
@media screen and (max-width: 600px) {  
    #div1 {  
        display: none;  
    }  
}
```

Change Font Size with Media Queries:

```
@media screen and (min-width: 600px) {  
    #div1 {  
        font-size: 80px;  
    }  
}
```

Media Queries for Screen Orientation:

```
@media only screen and (orientation: landscape) {  
    body {  
        background-color: lightblue;  
    }  
}
```