

# *Responsive Web Design and Bootstrap*

*the beginning of a new era in the Web*

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*SD & Gaming CoE*  
*iTi*

The background features a large, dark blue trapezoidal shape on the left side, which tapers towards the right. To the right of this shape is a white area. At the bottom, there is a horizontal orange bar that also tapers towards the right. The overall design is minimalist and geometric.

*Day 1*

# Responsive Web Design

Responsive Web Design is an art,  
its core concept is making web application  
content works across any device

Responsive Web Design is where website created  
redesign itself according to device size change.

# Responsive Web Design

- Responsive Web Design was first introduced by Ethan Marcotte in 2009

<https://ethanmarcotte.com/>

- An approach to web design that provides an optimal viewing experience across a wide range of devices.

<https://responsivewebdesign.com/about/>

**Think responsively.. Think Mobile First**

# Responsive Web Design

There are many sites for testing responsive designs

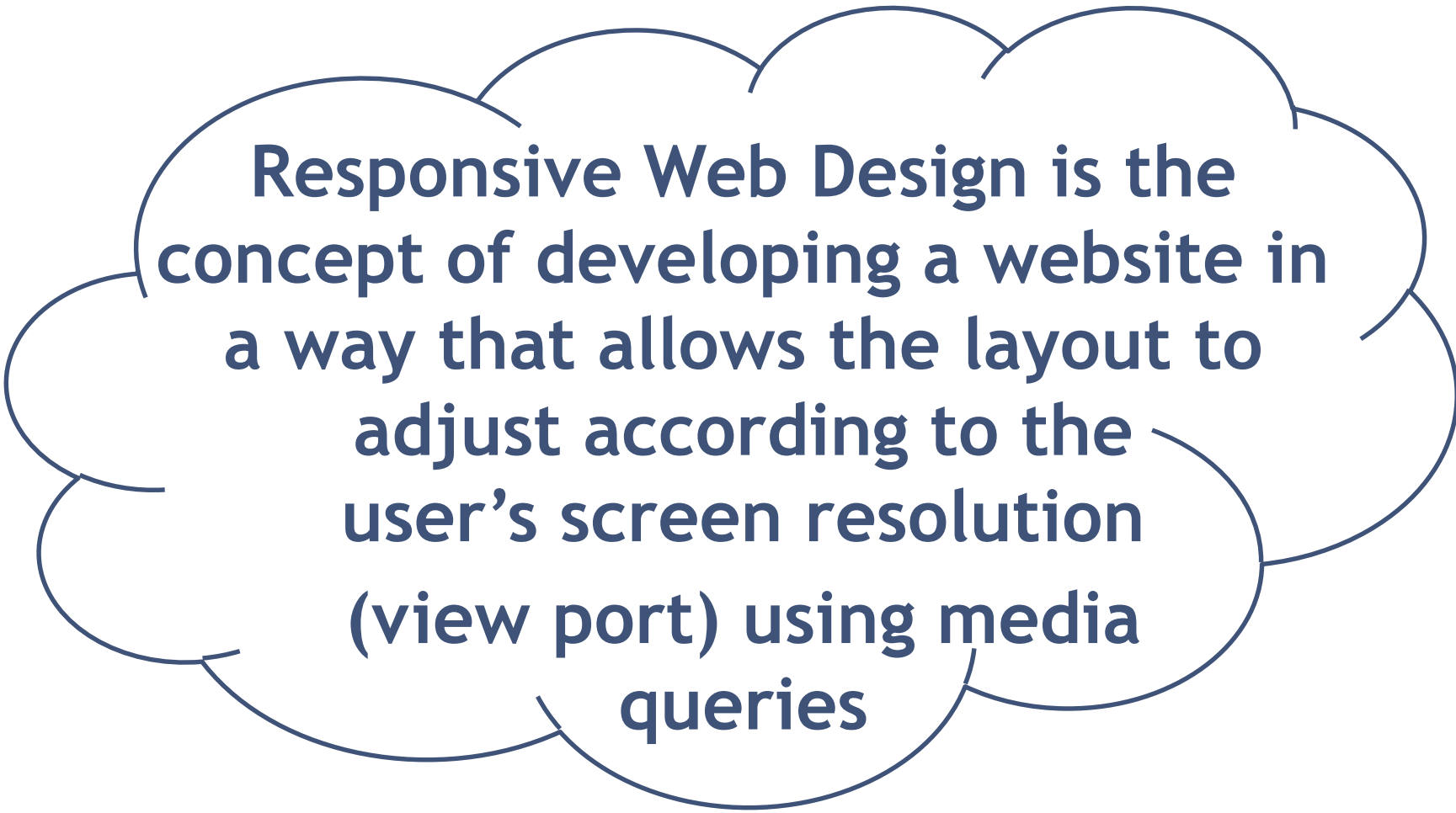

<http://mattkersley.com/responsive/>  
[www.responsinator.com](http://www.responsinator.com)

Inspiring responsive sites


<https://www.thinkwithgoogle.com/>  
<http://alistapart.com/>  
<http://gizmodo.com/>  
<http://foodsense.is>



Designing a different interface for every device is impossible.



**Responsive Web Design is the concept of developing a website in a way that allows the layout to adjust according to the user's screen resolution (view port) using media queries**



# Viewport

- Viewport is defined area to display website independent on device screen
- Identify and control viewport and its initial scale factor to override useragent

<http://viewportsizes.com/>

- Syntax

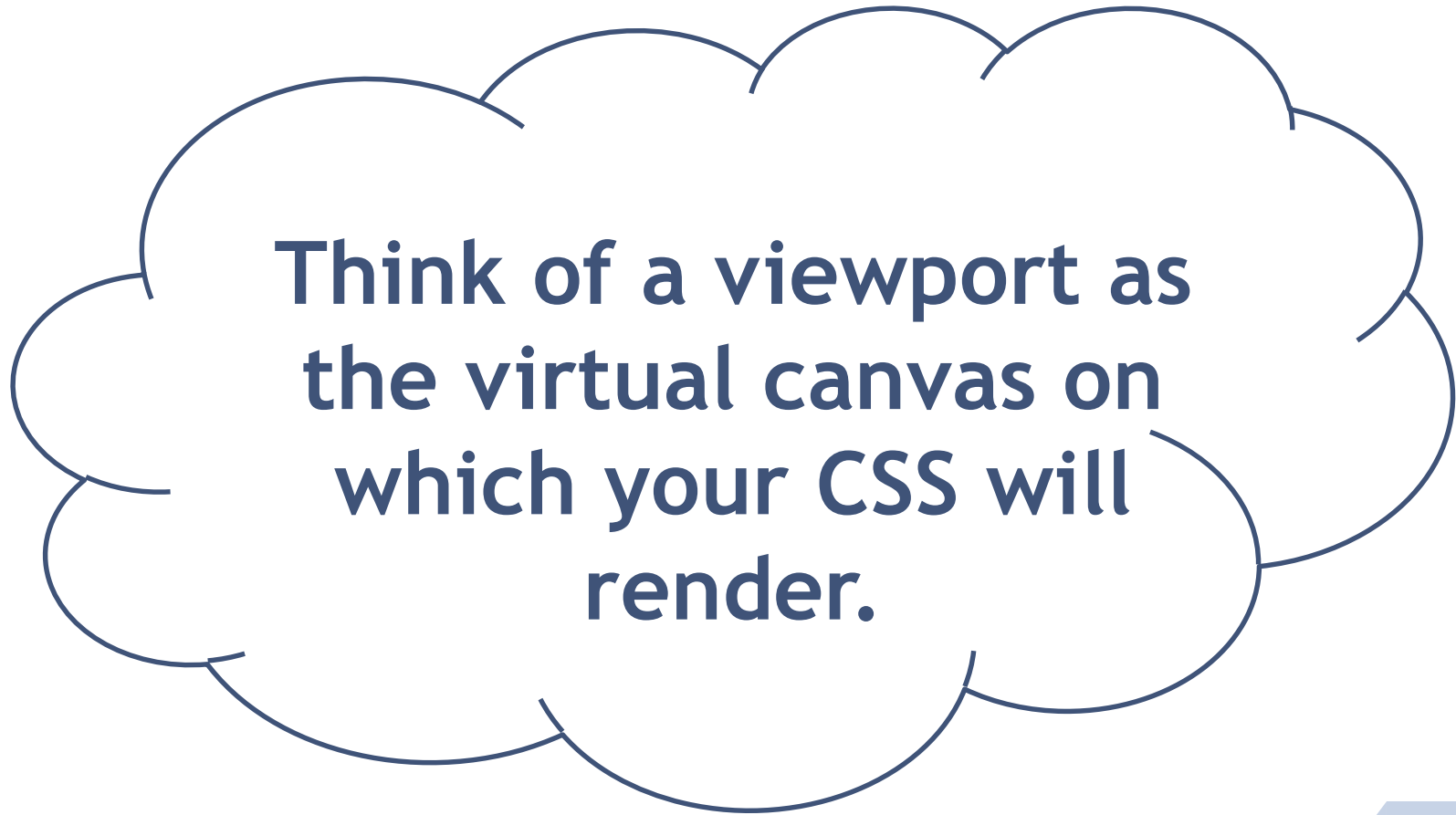

1. Using meta tag

`<meta name="viewport" content="" />`


2. **@viewport** CSS syntax

recommended to be prior to any media query style

- Its recommended to use **<meta>** since it is supported by all browsers while @viewport needs vendor prefix



**Think of a viewport as  
the virtual canvas on  
which your CSS will  
render.**





# Viewport

- A viewport is under your control.
  - ▷ It lets you set pixel values in “CSS pixels” regardless of the device pixels.
- At 100% zoom,  
device pixels = CSS pixels
- As users zoom,
  - ▷ the zooming effect is created by expanding CSS pixels as much as is needed.
  - ▷ less CSS pixels fit in the viewport
  - ▷ the layout does not reflow

# Viewport properties

- **width** = device-width
  - ▷ Tells the browser to set the viewport to exact size as the available screen px
- height = device-height (if needed)
- initial-scale=1 → zoom:1
  - ▷ Control the zoom content of the page
  - ▷ independent on viewport width
  - ▷ Its = 1 when **width** = device-width
- minimum-scale=1 → min-zoom:1
- maximum-scale=2 → max-zoom:2
- user-scalable=no → user-zoom : fixed

## Note:

A zoom factor of **1.0** or **100%** corresponds to **no** zooming  
Larger values zoom in.  
Smaller values zoom out

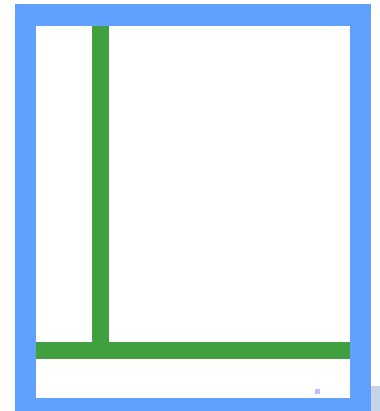
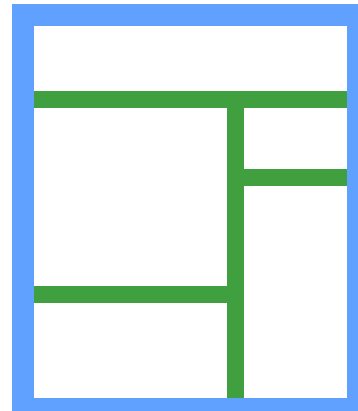
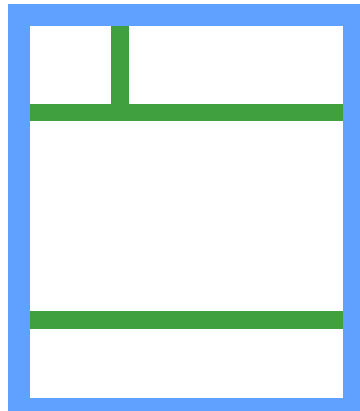
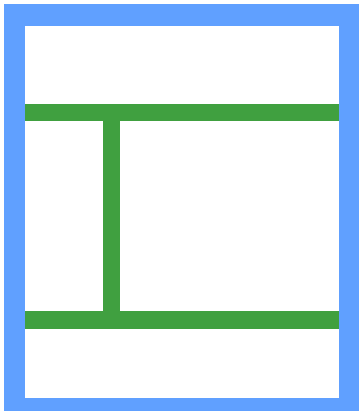
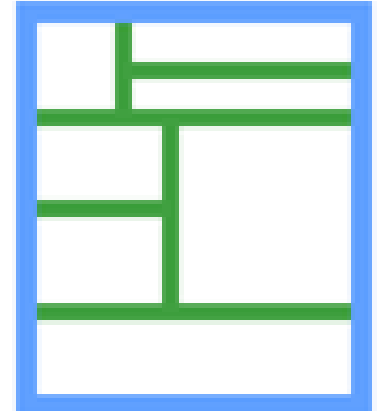
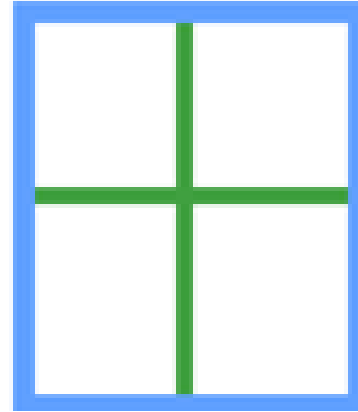
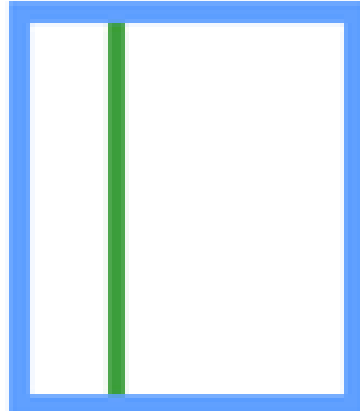
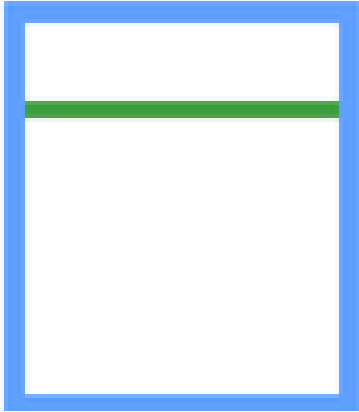
## Note:

Zooming attributes should be avoided as it negatively impact accessibility

# Terminologies

- **Responsive design** is where website isn't fixed with single size, It responds to users' device automatically
- **Adaptive design** is where created website redesign itself as per the device size
- **Negative space** is empty space between elements to it more readable & standout
  - ▷ padding or margins are great strategy to create it

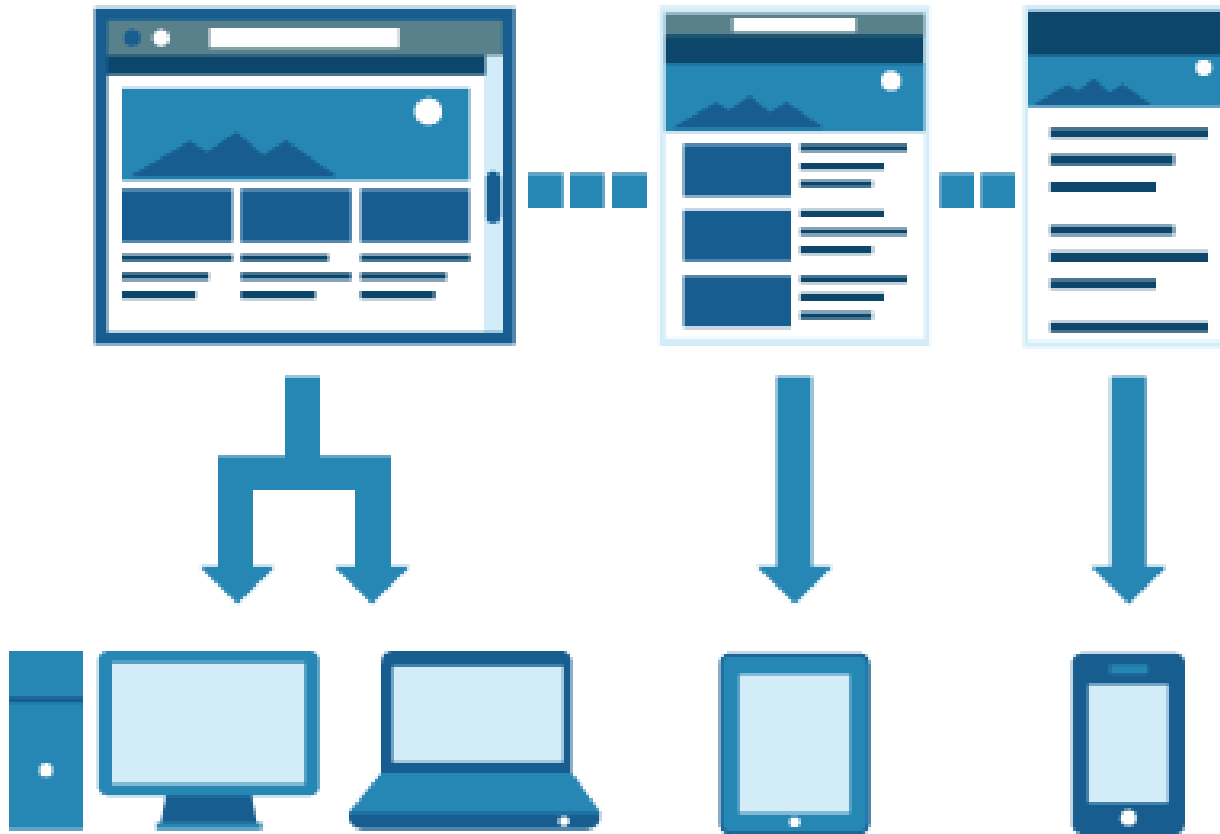
# Different Web layout



# Responsive WebSite



# Adaptive WebSite



# Responsive web design Fundamentals

- Grid-based layout

- Flexible layout

- Media Queries

- Adapt content to different screen size

- Flexible resizable Images & Media

- Responding to screen size change

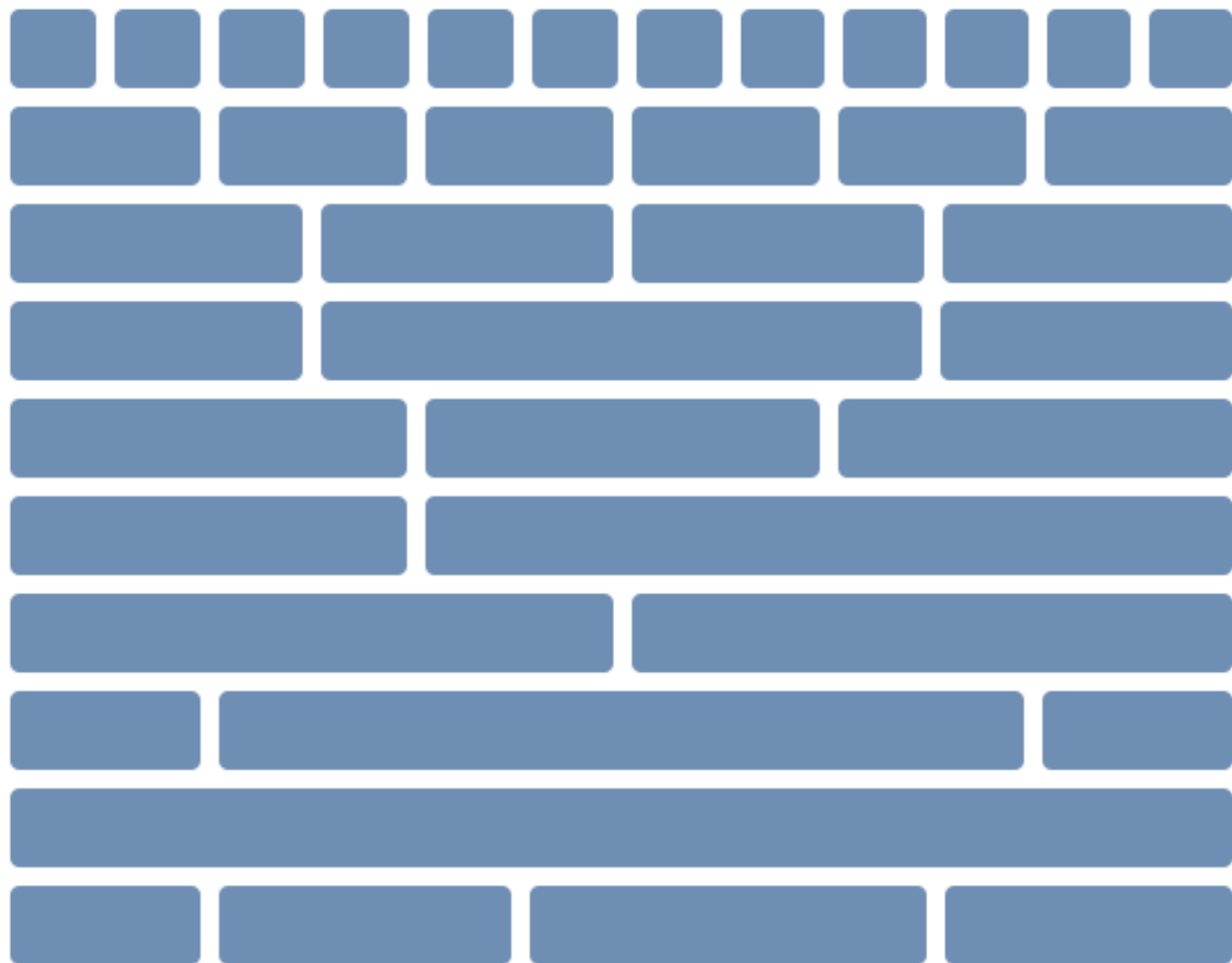
# Grid-based layout

12 cols is a  
guideline for  
developing  
responsive css  
framework

1col→8.33%

2col→16.66%

12col→100%





# Blog design recommendation

[illegible]

# Responsive Images

- Images should change size, based on screen resolution
- Image consume bytes
- To improve performance
  - ▷ Keep image as small as possible
  - ▷ Compressed as high as possible

# Media Queries

[https://developer.mozilla.org/en-US/docs/Web/CSS/Media\\_Queries/Using\\_media\\_queries](https://developer.mozilla.org/en-US/docs/Web/CSS/Media_Queries/Using_media_queries)

- Media queries allow us to apply different sets of styles based on factors like screen size, orientation, resolution..
- Based on current width, a stylesheet is applied

<https://developer.mozilla.org/en-US/docs/Web/CSS/@media#media-query-list>

- Syntax

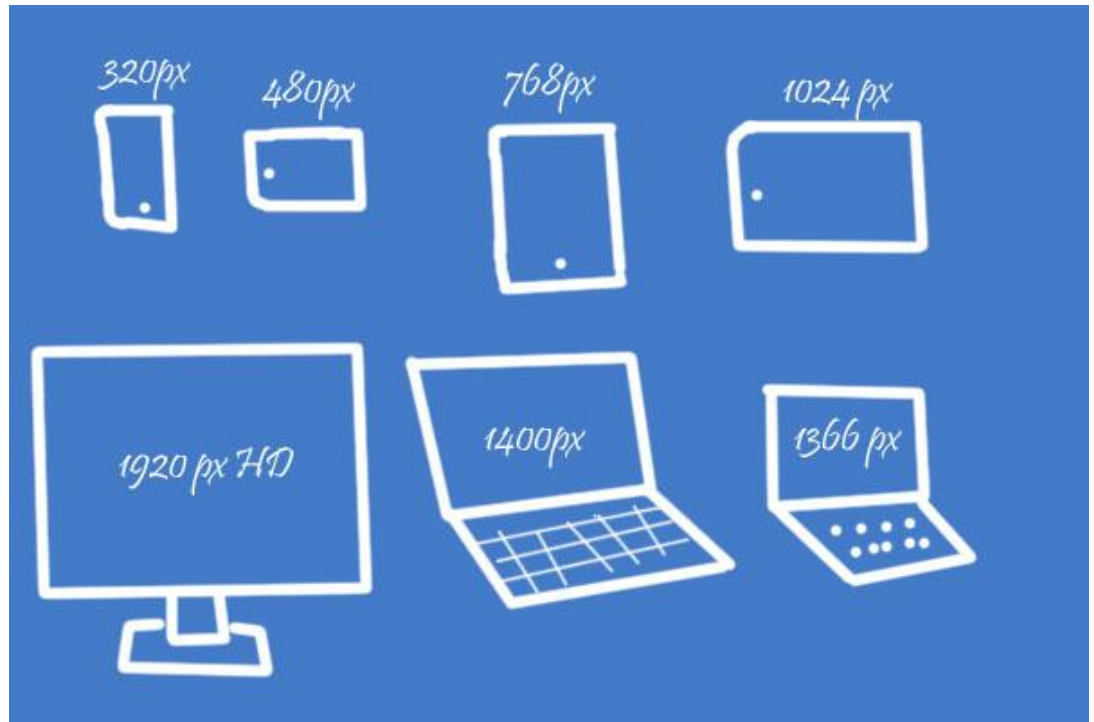
`<link rel="" media="screen and (exp)" href=".css" />`

`@media [not|only] screen [and] (exp) { }`

<https://chrome.google.com/webstore/detail/viewport-dimensions/kchdfagljmhgapoonapmfngpadcjkhk?hl=en-US>

# Media features

- width\*
- height\*
- device-width
- device-height
- orientation
- ...



\* → min or max



# *Assignments*