

CSS

Cascading Style Sheets

Grzegorz Ostrek

g.ostrek@mini.pw.edu.pl

Wydział Matematyki i Nauk Informacyjnych

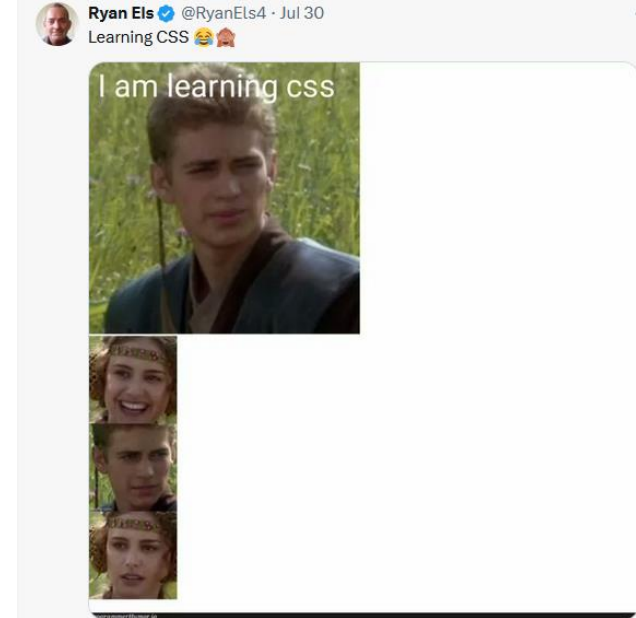
00-662 Warszawa

ul. Koszykowa 75

CSS features

declarative- suggesting result

- relative sizes
- resilient - backward compatible, skipped if not known
- contextual
- use width or height, not both
- assume unknown canvas access on various devices
- CSS - for web of documents not applications
- overflow by default

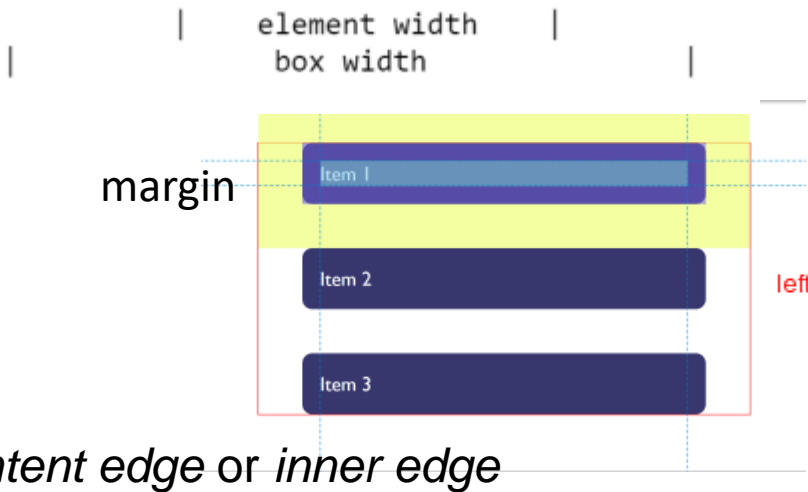
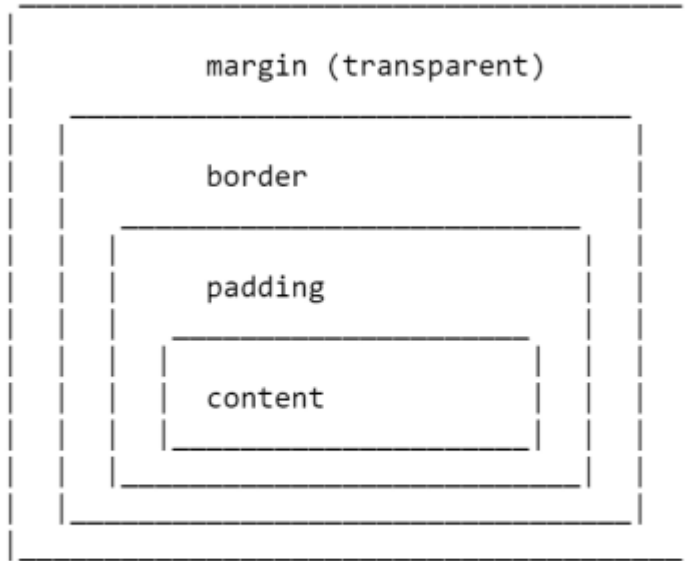


CSS
IS
AWESOME

CSS is not a programming language. It's not a markup language either.

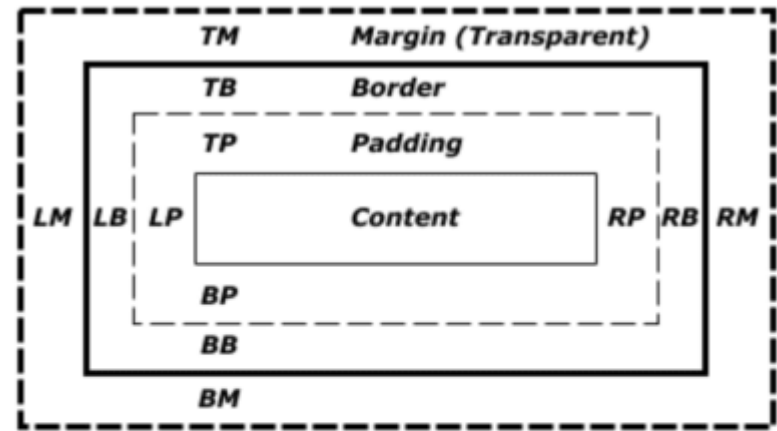
CSS is a style sheet language

CSS1

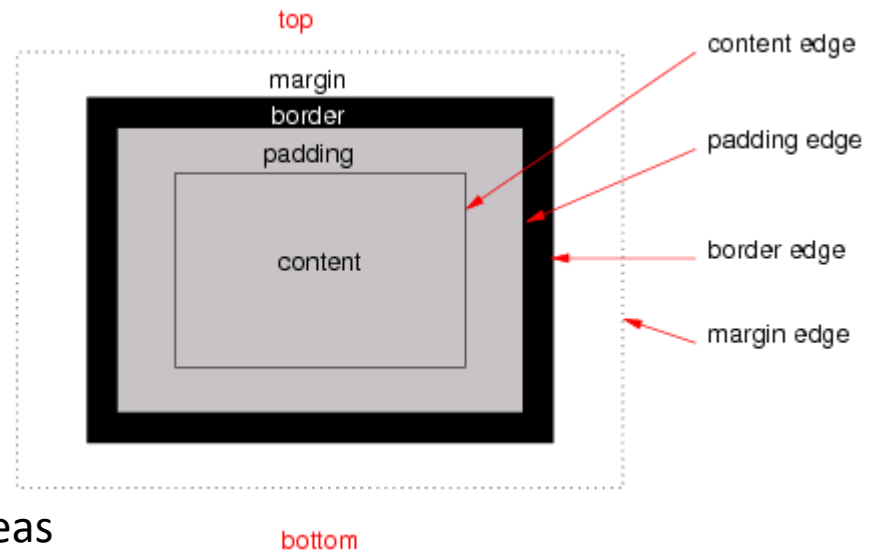


The perimeter of each of the four areas (content, padding, border, and margin) is called an *edge*

CSS2



- Margin edge
- Border edge
- - - Padding edge
- Content edge

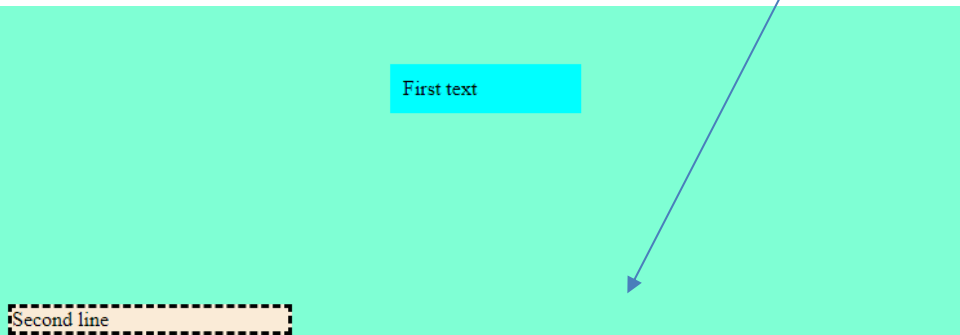


CSS3

```
<link rel="stylesheet" href="style.css">
```

```
<div class="first"> <span>First</span> text </div>
```

```
<div id="second" style="margin-right: 520px;">Second line</div>
```

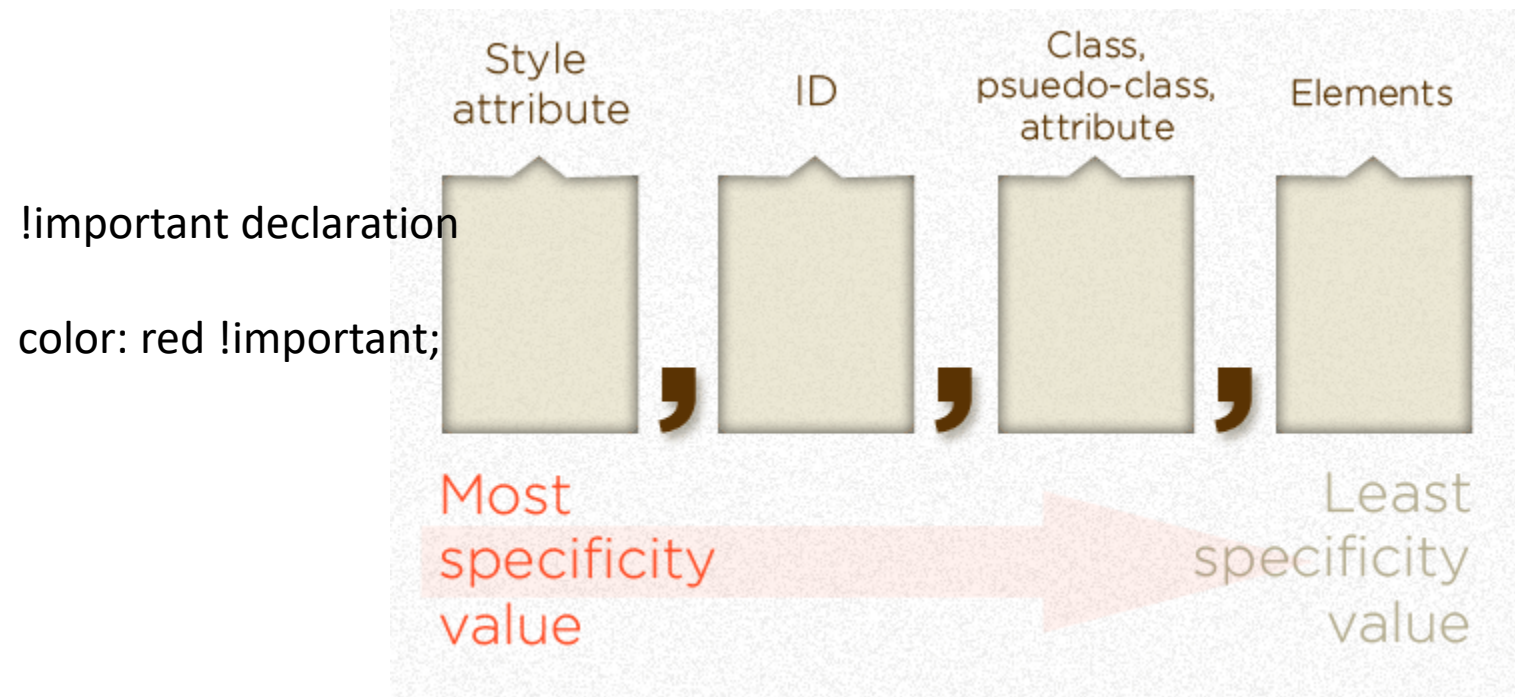


```
body{  
    background-color: aquamarine;  
}
```

```
.first{  
    margin: 20% 40%;  
    background-color: aqua;  
}
```

```
#second{  
    border: dashed;  
    background-color:  
antiquewhite;  
}
```

CSS Specificity



<https://css-tricks.com/specifics-on-css-specificity/>

CSS selector

```
selector {  
  style: value;  
}
```

Selector	Function
element	Selects all: <element>
.className	Selects all: <element class="className">
#identifier	Selects all: <element id="identifier">
:pseudo-class	Selects all with context (e.g. :first-of-type)
[filter=value]	Selects all: <element filter="value">

https://www.w3schools.com/cssref/css_selectors.asp

Position property

position values: positioned using the top, bottom, left, and right properties

- **static** - default, don't use top, bottom, etc.
- **relative** - like static, top, bottom – relative to calculated position
- **fixed** - like absolute, based on viewport, doesn't move while scroll
- **absolute** - „extract” element from flow, positive relative to nearest “positioned” ancestor, move with resize, doesn't move while scroll
- **sticky** - combined relative and fixed, toggle relative (while in viewport) to fixed

A "positioned" element is one whose position is anything except static

- https://www.w3schools.com/css/css_positioning.asp

Viewport

- part of the document you are viewing (currently visible)
 - Desktop ~ browser window
 - Mobile = full screen

Document may be wider than viewport

initial-scale property controls the zoom level
when the page is first loaded

CSS variables

- CSS variables have access to the DOM

var(--name, value)

```
:root {  
  --blue: #1e90ff;  
  --white: #ffffff;  
}
```

```
body { background-color: var(--blue); }
```

https://www.w3schools.com/css/css3_variables.asp

Font size

name	
1 em	Font-size equivalent of the element's parent, margin/padding base on it
1 rem	Root element, relative
1 px	96ppi 100% zoom = 1 device pixel
1pt	Print, NOT WWW
1ch	Character width = ~120% normal character
1 vh	1-100% viewport
1 fr	Fraction, ie. <iframe>

```
.parent { font-size: 15px; }  
.child { font-size: 2em; }  
<div class="parent"> I'm 15px  
  <div class="child"> I'm 30px, as expected  
    <div class="child"> I'm 60px, trouble starts!  
      <div class="child"> I'm 120px, now we're really in trouble!  
    </div>  </div> </div></div>
```

Fontsize

72 (12px/72ppi Mac)

75 ?

96 (16px/96ppi Win)

- User accessibility
- Display ppi
- System scaling
- Mobile scaling

RWD - flex

- Flexible Box Layout Module, makes it easier to design flexible responsive layout structure without using float or positioning.
- **flex** together with **media queries** to create a different layout for different screen sizes/devices
 - [flex-direction](#)
 - [flex-wrap](#)
 - [flex-flow](#)
 - [justify-content](#)
 - [align-items](#)
 - [align-content](#)

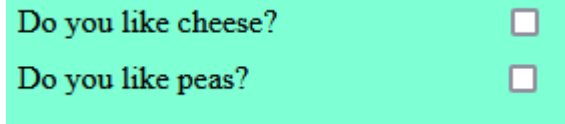
https://www.w3schools.com/css/css3_flexbox_container.asp

Flex example

```
<div class="preference">  
  <label for="cheese">Do you like cheese?</label>  
  <input type="checkbox" name="cheese" id="cheese">  
</div>
```

```
<div class="preference">  
  <label for="peas">Do you like peas?</label>  
  <input type="checkbox" name="peas" id="peas">  
</div>
```

```
.preference {  
  display: flex;  
  justify-content: space-between;  
  width: 60%;  
  margin: .5rem;  
}
```



Do you like cheese? ☐

Do you like peas? ☐

RWD - grid

- CSS Grid Layout Module offers a grid-based layout system, with rows and columns, making it easier to design web pages without having to use floats and positioning.
- `grid-template-columns: auto auto auto auto;`
 - `grid-template-columns: repeat(4,auto);`
- `grid-template-rows: 80px 200px;`
- `justify-content`
- `align-content`

Style Reset

- Unknown elements are styled as display: inline by default, so you'll want to set them to display: block:

```
article, aside, footer, header, nav, section {  
    display: block;  
}
```

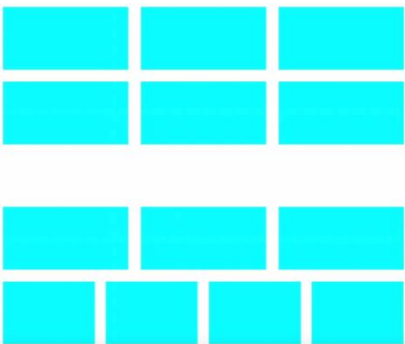
Most browsers will display the <q> element with the following default values:

```
q { display: inline; writing-mode: vertical-lr; }  
q:before { content: open-quote;}  
q:after { content: close-quote;}
```

Media query – device dependent layout

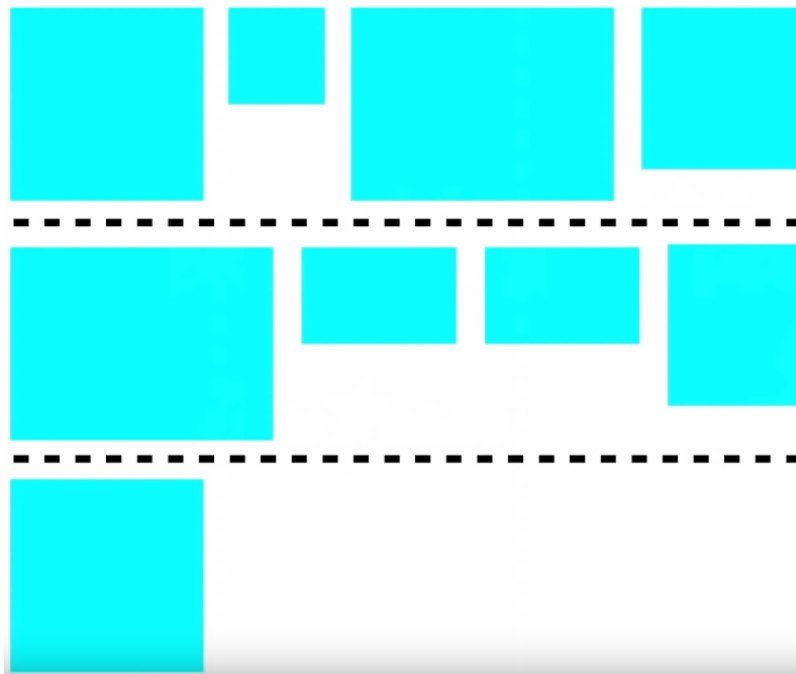
CSS at-rule

```
@media (max-device-width: 640px) {  
    body {  
        background: white;  
    }  
    div {  
        border: 0px solid #003399;  
        position: static;  
        background: #ffffff;  
        margin: 5px;  
        color: #000000;  
        width: 90%;  
    }  
}
```

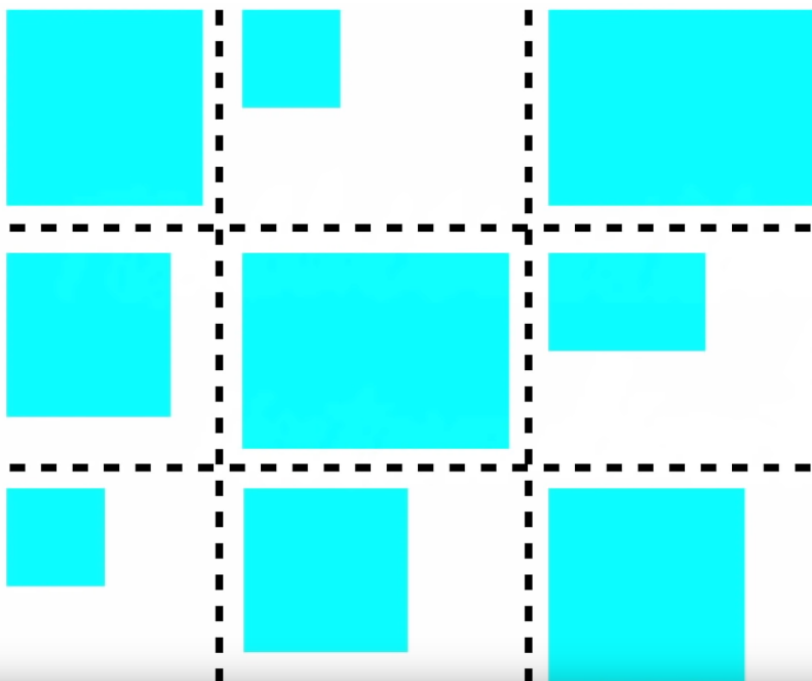


Grid

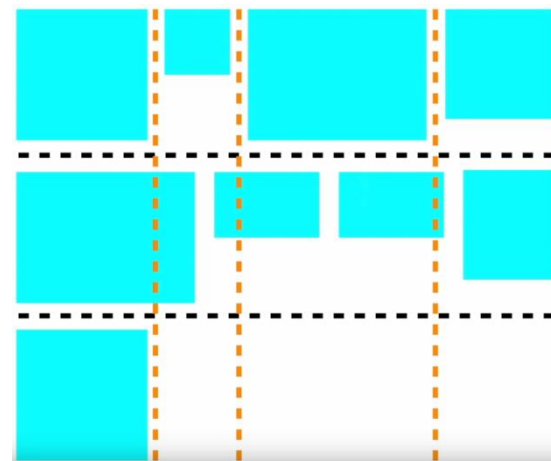
Flexbox

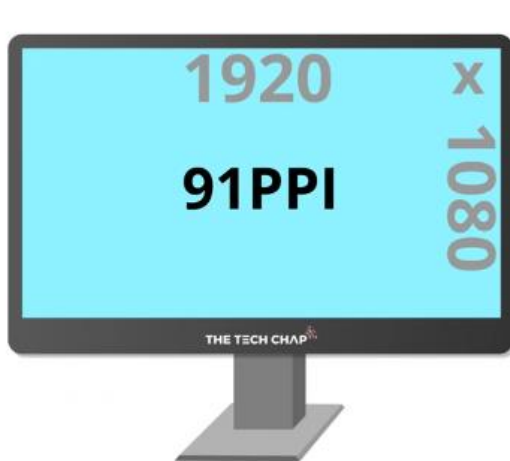


Flexbox

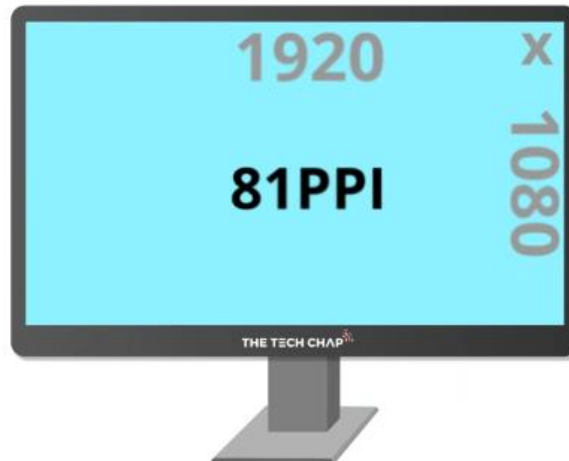


Grid





24" Full HD



27" Full HD



27" Quad HD



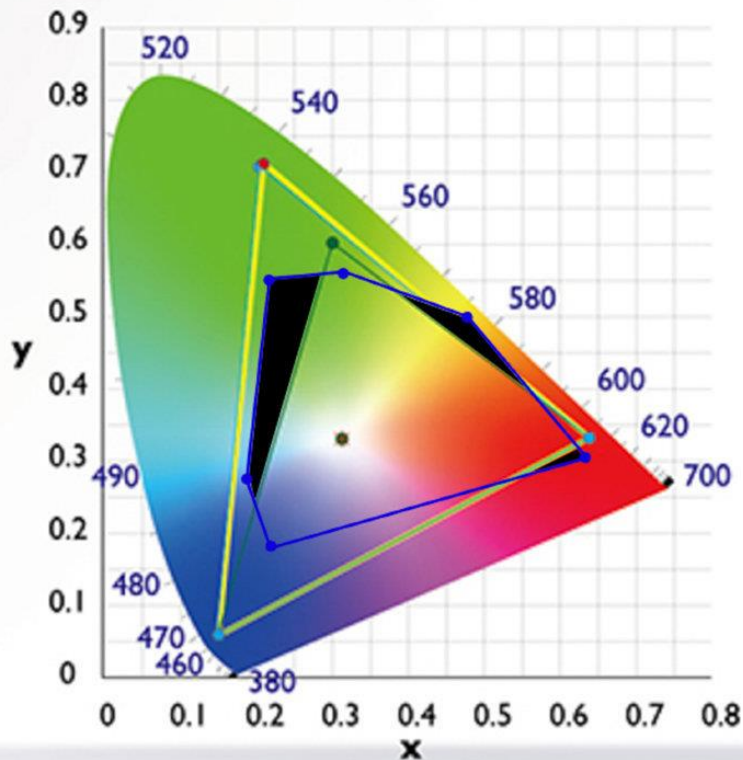
Common sizes for Windows 8



	odległość albumowa (prace oglądane z bliska, ok. 40 cm)	odległość galeryjna (stoimy przed obrazem zawieszonym na ścianie, ok. 130 cm)	odległość fotelowa (obrazy powieszone na ścianie salonu, kilka metrów)
jakość idealna	251 - 300 ppi	201 - 300 ppi	151 - 300 ppi
jakość dobra	201 - 250 ppi	101 - 200 ppi	71 - 150 ppi
jakość dostateczna	151 - 200 ppi	70 - 100 ppi	40 - 70 ppi

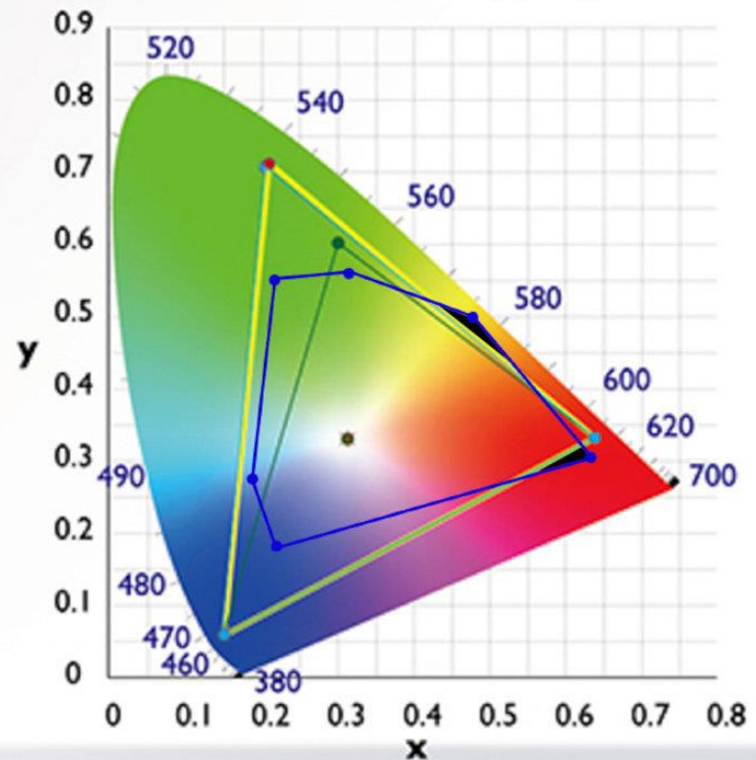
Gamut

sRGB to CMYK



● sRGB ● Adobe RGB × Adobe RGB White
 ● Measured values ● sRGB White ● CMYK

Adobe RGB to CMYK



● sRGB ● Adobe RGB × Adobe RGB White
 ● Measured values ● sRGB White ● CMYK

COLOR PSYCHOLOGY

WHAT COLORS COMMUNICATE

INFLUENCE

COLOR IS THE FIRST THING PEOPLE WILL NOTICE ABOUT YOUR WORK OR PRODUCT.

STUDIES HAVE SHOWN THAT



OF THE SNAP JUDGEMENTS ARE INFLUENCED BY THE COLOR ALONE.

FACTS

FIRST COLOR THAT WE DISTINGUISH AFTER BIRTH IS COLOR RED, HOWEVER, COLOR BLUE IS THE FAVORITE ONE AMONG HUMANS WORLDWIDE.

PEOPLE WHO ARE COLD PREFER WARM COLORS LIKE RED AND YELLOW WHILE PEOPLE WHO ARE HOT PREFER COOL COLORS LIKE BLUE AND GREEN.

THE LOWER THE MEAN SATURATION OF SUBJECT, THE MORE COMFORT IS FELT WHEN BEING AROUND IT.

PROPERTIES

COLOR

COLOR IS PROPERTY POSSESSED BY ANY OBJECT. EACH OBJECT REFLECTS OR EMITS LIGHT AND IS PRODUCING DIFFERENT SENSATIONS ON THE EYE. OBJECTS REFLECT LIGHT IN DIFFERENT WAVELENGTHS WHICH WE RECOGNIZE AS COLOR.

COLOR	WAVELENGTH
RED	700 - 635 nm
ORANGE	635 - 590 nm
YELLOW	590 - 560 nm
GREEN	560 - 520 nm
CYAN	520 - 490 nm
BLUE	490 - 450 nm
VIOLET	450 - 400 nm

COLOR PROPERTIES

COLOR PROPERTIES ALLOW US TO DISTINGUISH AND DEFINE COLORS.

HUE IS ACTUAL COLOR OR COMBINATION OF COLORS (RED, YELLOW, ORANGE)



VALUE IS HOW LIGHT OR DARK IS IT (TINTS AND SHADES)



CHROMA POINTS TO THE COLOR'S INTENSITY OR SATURATION.

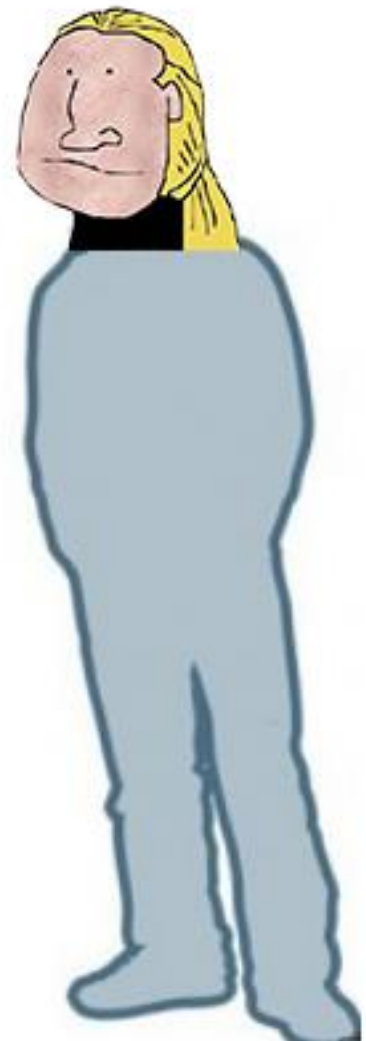


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COLORS AFFECT HOW WE ACT AND FEEL SUBCONSCIOUSLY. PROVIDED ARE 12 HUES WITH MEANINGS AND USES IN ART, DESIGN AND LIFE.

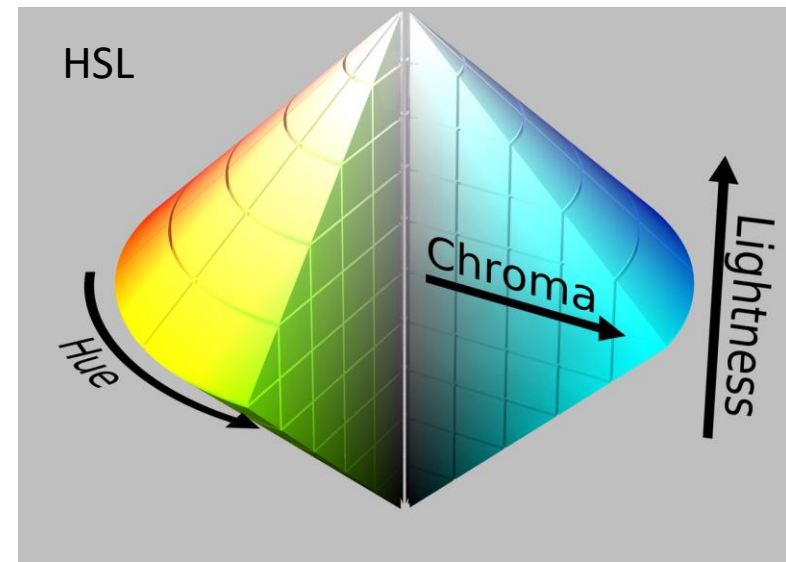
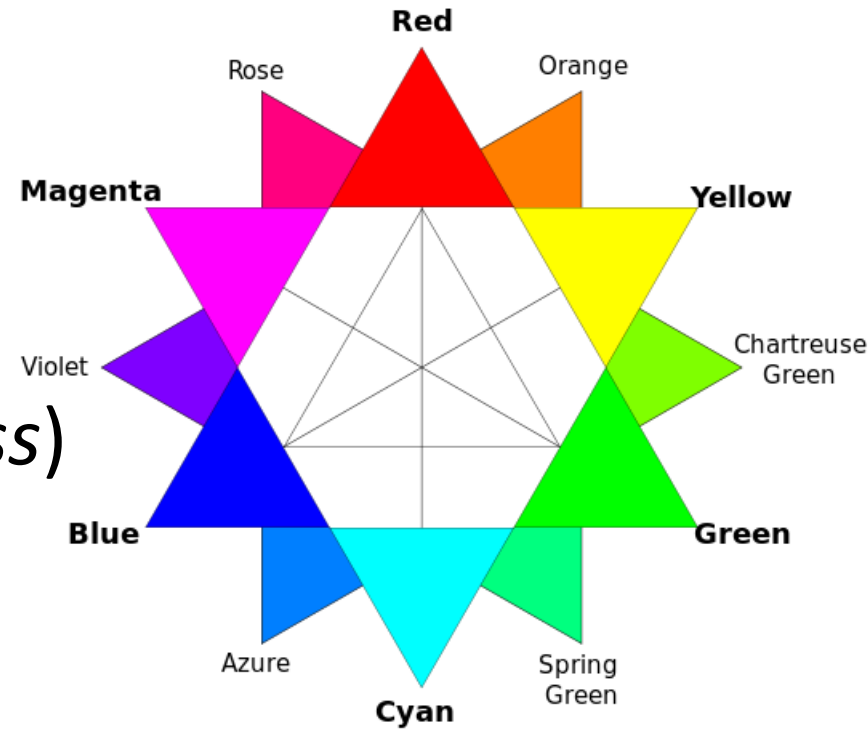
	EMOTION	INDUSTRY	USED TO
RED	EXCITEMENT ENERGY PASSION COURAGE ATTENTION	ENTERTAINMENT FOOD SPORT FIRE PROTECTION CHILDREN PRODUCTS	STIMULATE CREATE URGENCY DRAW ATTENTION CAUTION ENCOURAGE
ORANGE	OPTIMISTIC INDEPENDENT ADVENTUROUS CREATIVITY FUN	ART ENTERTAINMENT FOOD SPORTS TRANSPORTATION	STIMULATE COMMUNICATE FUN DRAW ATTENTION EXPRESS FREEDOM FASCINATE
YELLOW	ENTHUSIASM OPPORTUNITY SPONTANITY HAPPINESS POSITIVITY	FOOD SPORTS TRANSPORTATION TRAVEL LEISURE	STIMULATE ENCOURAGE RELAXATION AWAKE AWARENESS ENERGIZE AFFECT MOOD
LIME GREEN	GROWTH HARMONY FERTILITY KINDNESS DEPENDABILITY	ENVIRONMENT LEISURE ALTERNATIVE ENERGY ENTERTAINMENT EDUCATION	RESTORE ENERGY PROMOTE GROWTH NUTURE REJUVENATE
KELLY GREEN	SAFETY HARMONY STABILITY RELIABILITY BALANCE	ENVIRONMENT BANKING REAL ESTATE FARMING NON PROFIT	RELAX BALANCE REVITALIZE ENCOURAGE POSSESS
SKY BLUE	FREEDOM SELF EXPRESSION TRUSTWORTHY WISDOM JOY	ENTERTAINMENT COMMUNICATION CHILDRENS PRODUCTS TECHNOLOGY AEROSPACE	DRAW ATTENTION INSPIRE TRUST SUGGEST PRECISION COMMUNICATE CONSCIOUSNESS STIMULATE PRODUCTIVITY
ROYAL BLUE	TRUST RESPONSIBILITY HONESTY LOYALTY INNER SECURITY	SECURITY FINANCE TECHNOLOGY HEALTH CARE ACCOUNTING	REDUCE STRESS CREATE CALMNESS RELAX SECURE CREATE ORDER
VIOLET	IMAGINATION SPIRITUALITY COMPASSION SENSIVITY MYSTERY	HUMANITARIAN PSYCHIC RELIGION	ENCOURAGE CREATIVITY INSPIRE COMBINE WISDOM AND POWER CREATE IMPRESSION OF LUXURY INTUITION
PINK	COMPASSION LOVE IMMATURE PLAYFUL ADMIRATION	CHILDRENS PRODUCTS WOMANS PRODUCTS BEAUTY FASHION	COMMUNICATE ENERGY INCREASE PULSE MOTIVATE ACTION FASCINATE ENCOURAGES CREATIVITY
BROWN	RELIABILITY STABILITY HONESTY COMFORT NATURAL	AGRICULTURE CONSTRUCTION TRANSPORTATION LEGAL FOOD	STABILIZE IMPLY COMMON SENSE SUPPRESS EMOTIONS CREATE WARMTH
GRAY	NEUTRAL PRACTICAL CONSERVATIVE FORMAL QUIET	ALL INDUSTRIES * MOSTLY USED IN COMBINATION WITH OTHER COLORS	CREATE SENSE OF COMPOSURE DEPRESS ENERGY ASSOCIATE TIMELESS COMMUNICATE MATURATION
BLACK	POWER CONTROL AUTHORITY DISCIPLINE ELEGANCE	ALL INDUSTRIES * MOSTLY USED IN COMBINATION WITH OTHER COLORS	HIDE FEELINGS INTIMIDATE RADIATE AUTHORITY CREATE FEAR ASSOCIATE WITH MYSTERY





Colors

- `rgb(red, green, blue)`
0-255
- `hsl(hue, saturation, lightness)`
 - Hue 0-360°
 - Saturation 0-100%
 - lightness 0-100%
- HEX `#rrggbb`
- `colorname`



- <http://jigsaw.w3.org/css-validator/>
- Regex <http://www.py4inf.com/> Chapter 11
- <https://developer.mozilla.org/en-US/docs/Learn/CSS>
- <https://juiceboxinteractive.com/blog/a-pixel-is-not-a-pixel-designing-for-a-new-generation-of-mobile-devices/>
- <https://voidmedia.hashnode.dev/relative-units-vs-absolute-units-em-and-rem-vs-px>