

# CSS Transitions, Animations & Grids

## Beautiful Effects with CSS



**SoftUni Team**  
Technical Trainers  
Software University  
<http://softuni.bg>



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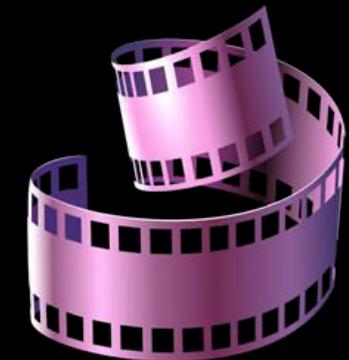
- Delay, duration, property, timing-function

## 2. CSS Animations

- Delay, direction, duration
- Iteration - count, name, play-state, timing-function

## 3. CSS Grids

- Basics & Browser Support
- Grid Properties
- Important Terminology



Have a Question?



sli.do

#front-end

BUTTON

# CSS Transitions

## CSS Transitions and Transforms

# What is CSS Transition?

- CSS transitions animate elements when changing CSS properties
  - :hover, :focus, :active, :target

- Transition **syntax**:

```
div {  
    transition: [property][duration][timing-function][delay]  
}
```



- Transition example:

```
div {  
    transition: width 2s;  
}
```



```
div:hover {  
    width: 300px;  
}
```

# Problem: Button Transition

```
.btn {  
    width: 100px;  
    height: 50px;  
    border: none;  
    background: #F3BE60;  
    color: white;  
    border-radius: 4px;  
    transition: all 0.5s linear 0s;  
}  
.btn:hover {  
    width: 200px;  
    height: 100px;  
    background: #234465;  
    font-size: 25px;  
    cursor: pointer; }
```

```
<button class="btn">  
    BUTTON  
</button>
```

BUTTON

# Transition Timing Function

- Timing function defines how the transitions speed changes over the time (e.g. start fast, end slow)

```
#div1 {  
    transition-timing-function:  
        linear / ease / ease-in / ease-out / ease-in-out  
}
```

```
.btn {  
    ...  
    transition: all 2s ease;  
}
```

BUTTON

# CSS Transform

- Transform: **skewX (deg), skewY(deg)**

```
transform: skewY(20deg);
```



- Transform: **scale**

```
transform: scaleX(1.2);
```



- Transform: **rotate**

```
transform: rotateX(-20deg);
```



- Transform: **translate**

```
transform: translateX(30%);
```



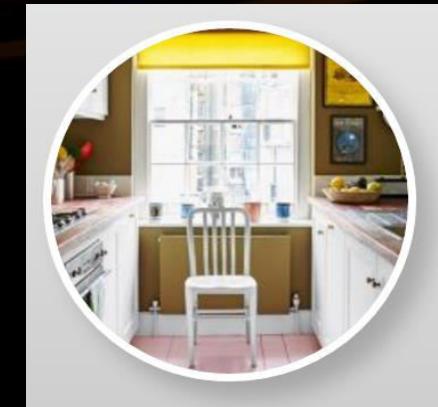
# Problem: Kitchens Design

- You are given an HTML file + CSS styles (unfinished)
  - Write the missing CSS transitions



# Solution: Kitchen Design CSS (Effect 1)

```
.effect-1 p {  
    transition: opacity 0.5s;  
}
```



```
.effect-1 p:hover {  
    transition: opacity 0.5s;  
    opacity: 0.8;  
    cursor: pointer;  
}
```



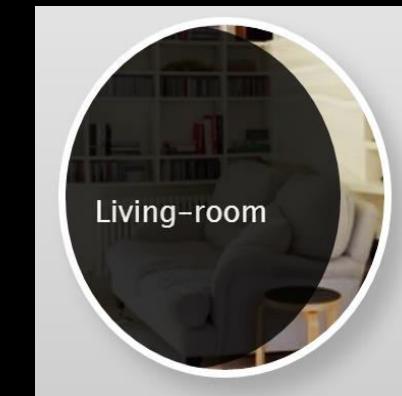
# Solution: Kitchen Design CSS (Effect 2)

```
.effect-2 img {  
    transition: margin-left 1.2s;  
}  
.effect-2:hover img {  
    margin-left: 200px;  
}  
.effect-2 p:hover {  
    cursor: pointer;  
}
```



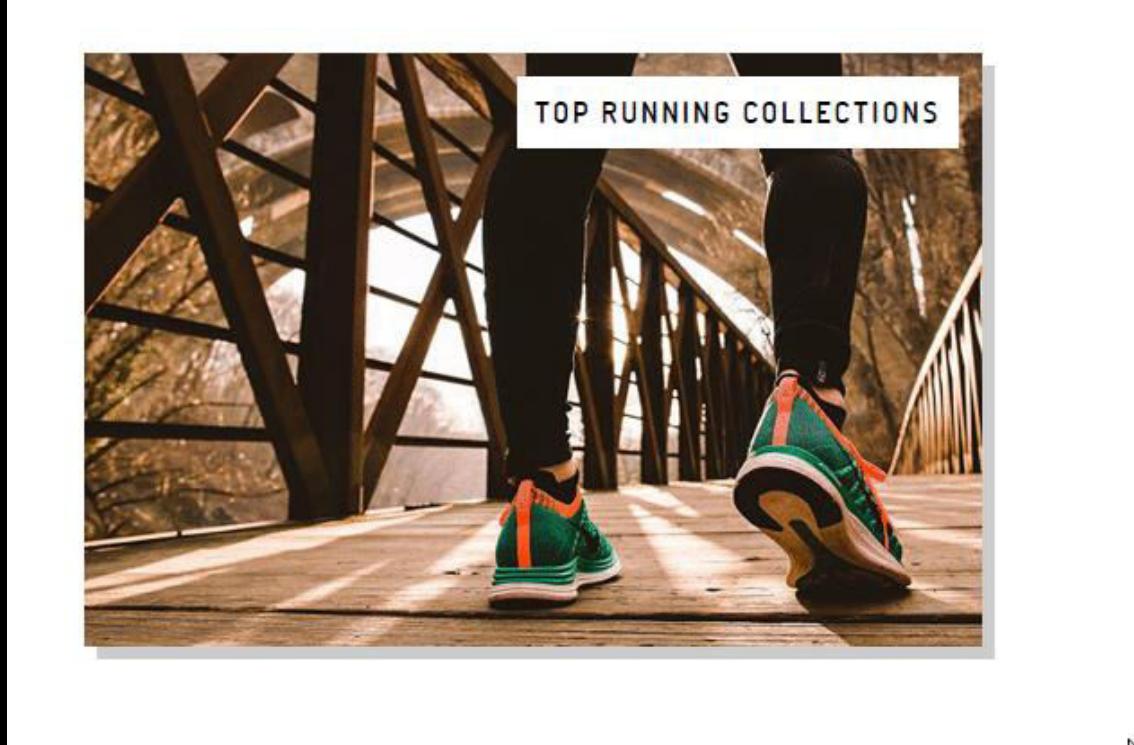
# Solution: Kitchen Design CSS (Effect 3)

```
.effect-3 p {  
    transition: margin-left 0.7s 0.5s;  
}  
  
.effect-3:hover p {  
    margin-left: 0;  
    cursor: pointer;  
}
```



# Problem: Sport Trainers

- You are given an HTML file + CSS
  - Write the missing CSS transitions



# Solution: Sport Trainers CSS

```
.box {  
    transition: all 0.7s;  
}  
.box:hover {  
    padding-left: 100px;  
}
```



```
.box:before {  
    transition: all 0.45s;  
}  
.box:hover:before {  
    right: -300px;  
}
```



# Solution: Sport Trainers CSS (2)

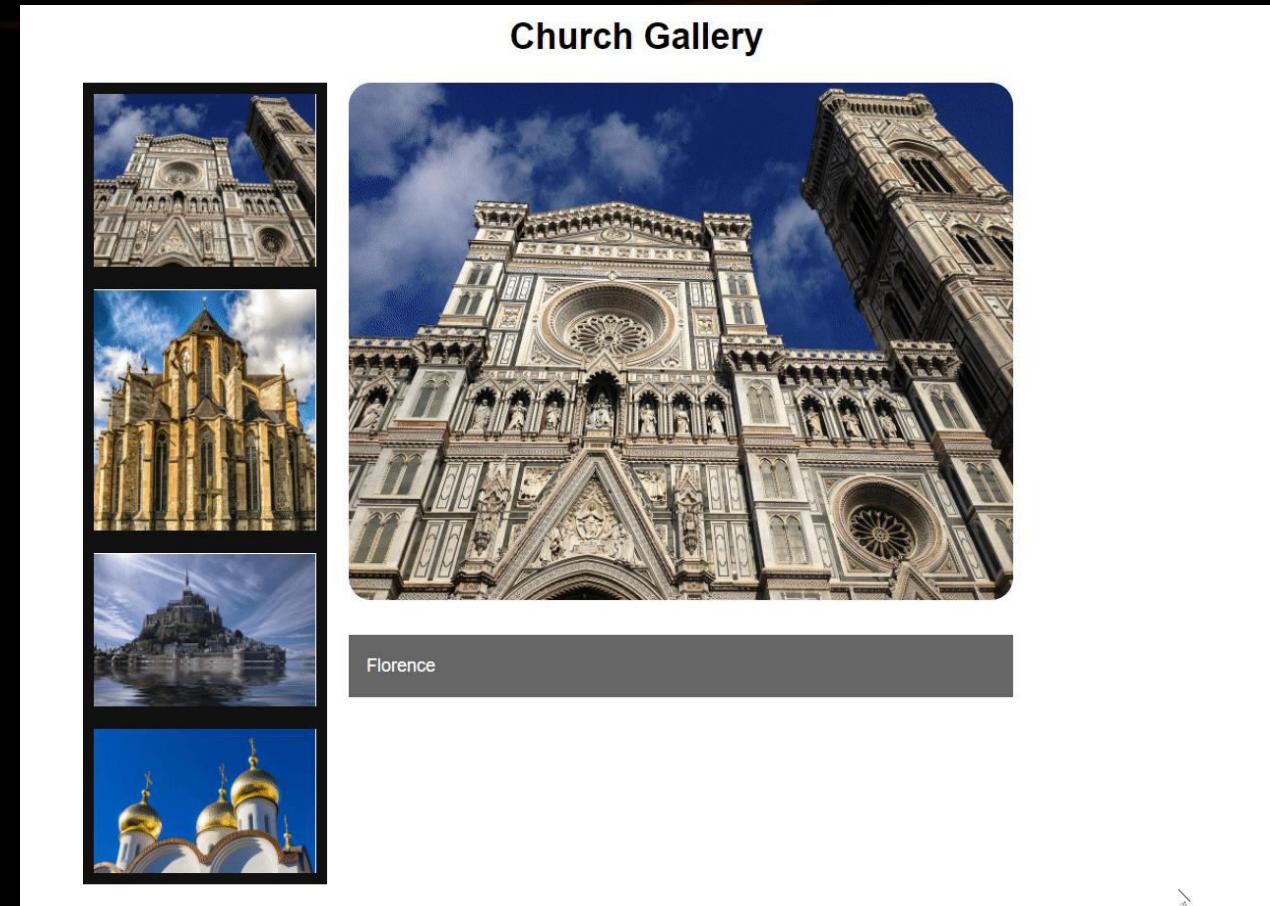
```
.menu {  
    transition: all 0.45s;  
}  
.menu:hover { left: 0; }
```

```
ul li a {  
    transition: all 0.3s;  
}  
ul li a:hover {  
    padding-left: 5px;  
    font-weight: bold;  
}
```



# Problem: Church Gallery

- You are given:
- HTML file + CSS styles
  - Write the missing CSS and CSS transitions



# Solution: Church Gallery CSS

```
body {  
    background: #ffffff;  
    font-family: 'Avenir', 'Arial';  
}  
  
h1 {  
    text-align: center;  
    color:#000;  
}  
  
#church-container {  
    background: #ffffff;  
    overflow: hidden;  
    position: relative;  
    width: 80%;  
    margin: 0 auto;  
    max-width: 1000px;  
}
```

```
#church-container input[type="radio"] {  
    display: none;  
}  
  
#church-container label img {  
    width: 20%;  
    display: block;  
    float: left;  
    clear: left;  
    border-right: 10px solid #111;  
}  
  
#church-container label:hover {  
    cursor: pointer;  
}
```

# Solution: Church Gallery CSS

```
#churches {  
    width: 90%;  
    position: relative;  
    margin-left: 240px; }  
  
#churches figure {  
    margin: 0;  
    position: absolute;  
    opacity: 0;  
    transform: scale(0.8);  
    transition: 0.5s all linear; }  
  
#churches figure img {  
    width: 450px;  
    border-radius: 20px; }
```

```
#churches figure figcaption {  
    position: relative;  
    background: rgba(0,0,0,.6);  
    color: #fff;  
    font-size: 1rem;  
    padding: 1rem;  
    margin-top: 1.6rem;  
    line-height: 1.4;  
    text-align: left;  
}
```

# Solution: Church Gallery CSS



```
#florence:checked~#churches #florence-fig,  
#altenberger:checked~#churches #altenberger-fig,  
#saint-michel:checked~#churches #saint-michel-fig,  
#moscow:checked~#churches #moscow-fig  
{  
    opacity: 1;  
    transform: scale(1);  
}
```



# CSS Animations

# CSS Animations Syntax

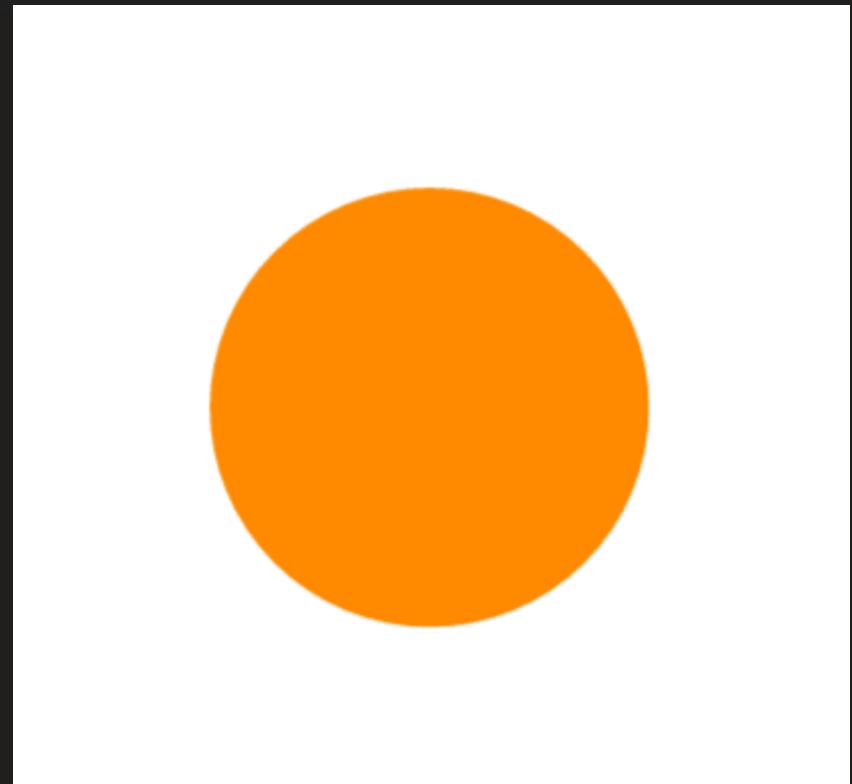
```
.example {  
    animation-name: example;  
    animation-duration: 1.5s; /* or: Xms */  
    animation-timing-function:ease-out; /*or:ease, ease-in,  
    ease-in-out,linear*/  
    animation-delay: 0s; /* or: Xms */  
    animation-direction: alternate; /* or: normal */  
    animation-iteration-count: infinite;  
    animation-fill-mode: none; /* or: backwards, both, forwards */  
    animation-play-state: running;} /* paused, running, running */
```

- Shorthand syntax:

```
animation: example 1s 2s 3 alternate backwards
```

# CSS Animations Syntax

```
@keyframes example {  
0% {  
    transform: scale(.3);  
    background-color: red;  
    border-radius: 100%; }  
50% {  
    background-color: orange; }  
100% {  
    transform: scale(1.5);  
    background-color: yellow; }  
}
```



# Problem: Scroll Animation

- You are given the **HTML** file
- Write the missing **CSS** file

**Slide in from the left**

This animation will focus on sliding an element from the left once it enters the view of the user

### Our Testimonials

We have worked in the industry for 15 years and have provided services to a wide range of clients.  
Come and see what our clients are saying about our services.



**Johnathon Richard Smith**  
CEO / Manager - Auto Incorporated

When I started using their service I was skeptical. They promised me a 300% return on my initial investment. However they came through on their word and now my business is flourishing..



**Joanna Hammerton**  
Marketing Manager - Omega Creative

Our company first enlisted their services when we had a down-turn in sales and revenue. They outlined a series of steps we could take to improve our position and within a year we are making significant improvements..



**Mark Jamerson**  
CEO - Generic Business

We entered into a 12 month period of service with this company in the hopes to improve our returns. After this



**Susan Hilton**  
Financial Officer - People Tech

Our involvement in this company has been mutually beneficial. We were hoping for slightly higher returns.

# Solution: Scroll Animation CSS

```
body {  
    font-size: 16px;  
    font-family: 'Open Sans', sans-serif;  
    font-weight: 400;  
    background: #efefef;  
}  
  
strong, b {  
    font-weight: 600;  
}  
  
h1, h2, h3, h4, h5, h6 {  
    font-weight: 300;  
}  
  
i.fa {  
    color: #333;  
}
```

```
* {  
    box-sizing: border-box;  
}  
.cf:before, .cf:after {  
    content: " ";  
    display: block;  
}  
.cf:after {  
    clear: both;  
}  
.main-container {  
    background: #fff;  
    max-width: 1000px;  
    margin: 25px auto 25px auto;  
    position: relative;  
}
```

# Solution: Scroll Animation CSS

```
.container {  
    position: relative;  
    padding: 25px;  
}  
  
.animation-element {  
    opacity: 0;  
}  
  
.animation-element.slide-left {  
    opacity: 0;  
    transition: all 900ms linear;  
    transform: translate(-100px,0px);  
}
```

```
.animation-element.slide-left.in-view {  
    opacity: 1;  
    transform: translate(0px,  
    0px);  
}  
  
.animation-element.slide-left.testimonial:hover {  
    position: relative;  
    transform: scale(1.1,1.1);  
    z-index: 5;  
}
```

# Solution: Scroll Animation CSS

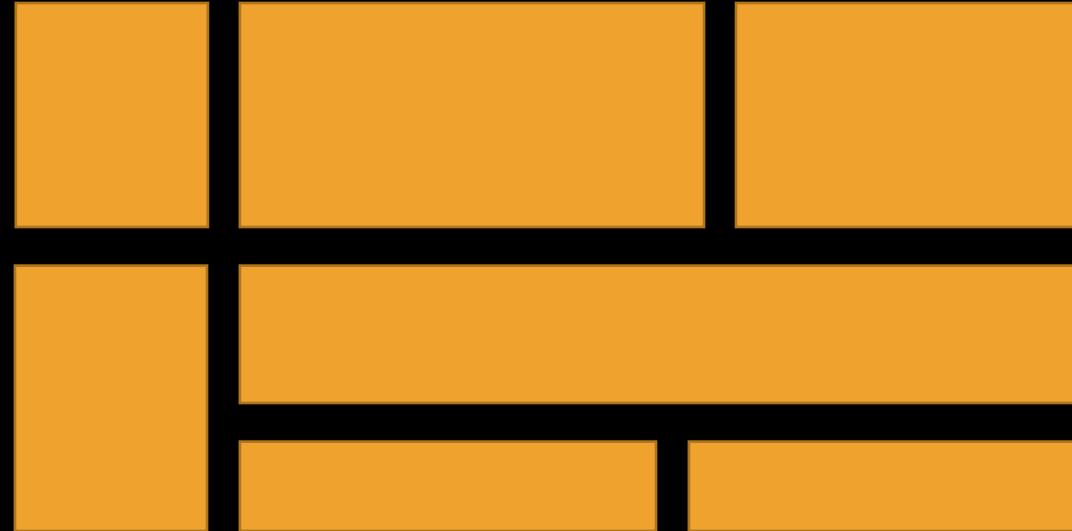
```
.animation-element.slide-left.testimonial {  
    float: left;  
    width: 47%;  
    margin: 0 1.5% 3% 1.5%;  
    background: #F5F5F5;  
    padding: 15px;  
    box-shadow: 0 1px 1px 0  
    rgba(0,0,0,0.2);  
    border: solid 1px  
    #EAEAEA;  
}
```

```
.animation-element.slide-left.testimonial:nth-of-type(odd) {  
    width: 48.5%;  
    margin: 0 1.5% 3.0% 0;  
}  
.animation-element.slide-left.testimonial:nth-of-type(even) {  
    width: 48.5%;  
    margin: 0 0 3.0% 1.5%;  
}
```

# Solution: Scroll Animation CSS

```
.animation-element.slide-left.testimonial .header {  
    width: 100%;  
    margin-bottom: 10px; }  
.animation-element.slide-left.testimonial .left {  
    float: left;  
    margin-right: 15px;  
}  
.animation-element.slide-left.testimonial .right {  
    float: left;  
}
```

```
.animation-element.slide-left.testimonial img {  
    width: 65px;  
    height: 65px;  
    border-radius: 50%;  
    box-shadow: 0 1px 3px rgba(51,  
51,51,0.5); }  
.animation-element.slide-left.testimonial .content {  
    float: left;  
    width: 100%;  
    margin-bottom: 10px;  
}
```

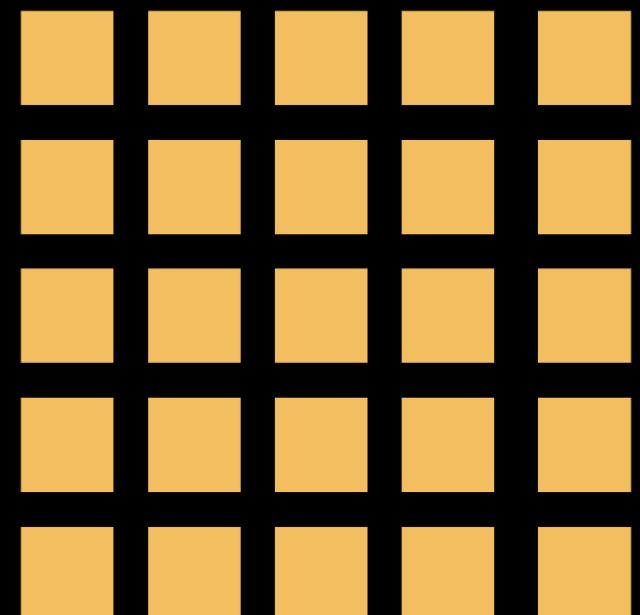


# CSS Grids

Diving into the Depths of CSS Grids

# What is CSS Grid & Grid Layout?

- CSS Grid – a system for structuring layouts using CSS
- CSS Grid Layout
  - A 2-dimensional grid-based layout system
  - Divides a page into major regions
  - Size, position and layers between the different parts can be easily customized



<https://css-tricks.com/snippets/css/complete-guide-grid/>

# CSS Grid Syntax

- CSS Grid is defined using the grid value of the display

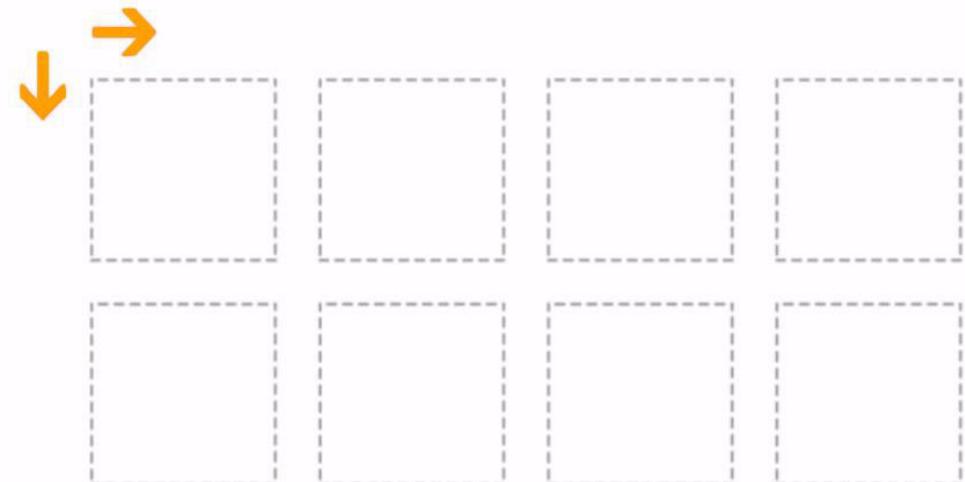
Grid syntax:

```
.grid-container {  
  display: grid | inline-grid;  
}
```

block-level grid

inline-level grid

CSS Grid: Two Dimensional



# CSS Grid – Browser Compatibility

- The **CSS Grid** is 76% supported

- ✓ Internet Explorer 11+
- ✓ Edge 16+
- ✓ Firefox 52.0+
- ✓ Chrome 57.0+
- ✓ Safari 10.1+
- ✓ Opera 44+
- ✓ Chrome for Android 66+



# Grid Columns & Rows

## ■ Column and Row properties

- Pixels (px)
- Percentage (%)
- Fractions (fr)

```
.grid-container {  
    grid-template-columns: 30px 50% auto;  
    grid-template-rows: 1fr 1.5fr;  
}
```

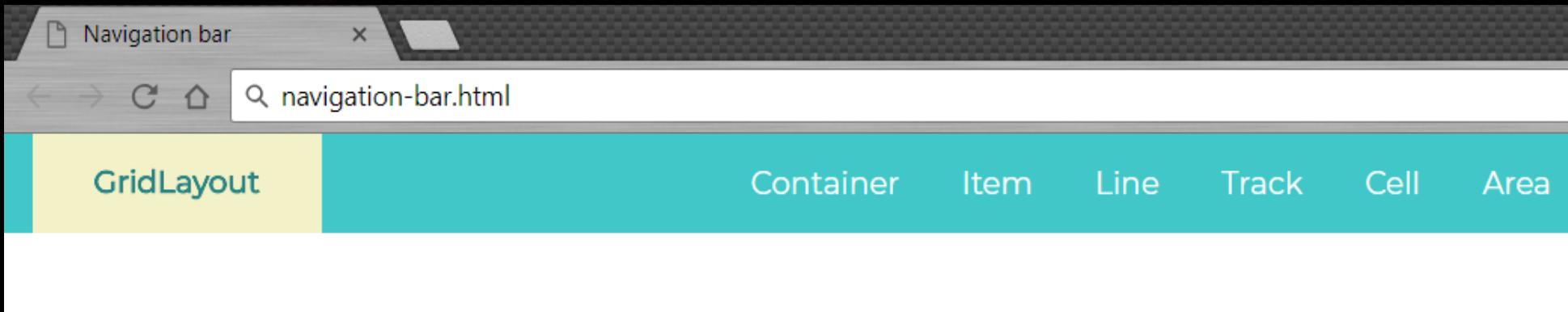
## ■ Repeating Columns or Rows

```
.grid-container {  
    grid-template-columns: repeat(3, 20%) auto;  
}
```

Different units for defining

# Problem: Navigation Bar

- Create a Web page like the screenshot



- Constraints:
  - Use header with `display: grid;` property and value
  - Use `grid-template-columns`

Check your solution here: <https://judge.softuni.bg/Contests/608>

# Solution: Navigation Bar

```
<html>
  <head> ... </head>
  <body>
    <header>
      <a href="#" id="logo">GridLayout</a>
      <nav>
        <ul>
          <li><a href="#">Container</a></li>
          <!-- TODO: put the next list items here -->
        </ul>
      </nav>
    </header>
  </body>
</html>
```

# Solution: Navigation Bar

```
@import  
url('https://fonts.googleapis.com/css?family=Montserrat');  
body {  
    margin: 0;  
    font-family: 'Montserrat', sans-serif;  
}
```

```
ul {  
    list-style-type: none;  
    float: right; }
```

```
ul li {  
    display: inline;  
}
```

# Solution: Navigation Bar

```
ul li a {  
    color: #fff;  
    padding: 15px;  
}  
  
a {  
    text-decoration: none;  
}  
  
#logo {  
    padding: 15px;  
    margin-left: 15px;  
    background: #f3f1c7;
```

```
        color: #298383;  
        text-align: center;  
        font-weight: bold;  
        display: inline-block;  
    }  
  
header {  
    background: #41c7c7;  
    display: grid;  
    grid-template-columns:  
    20% auto;  
}
```

# Grid Container

- Element containing a grid, defined by setting
- Set the display property to **grid** or **inline-grid**

```
.site {  
display: grid | inline-grid;  
}
```

- Containers consist of grid items,  
placed inside columns and rows.

```
<div class="site">  
  <header></header>  
  <h1></h1>  
  <main></main>  
  <aside></aside>  
  <footer></footer>  
</div>
```

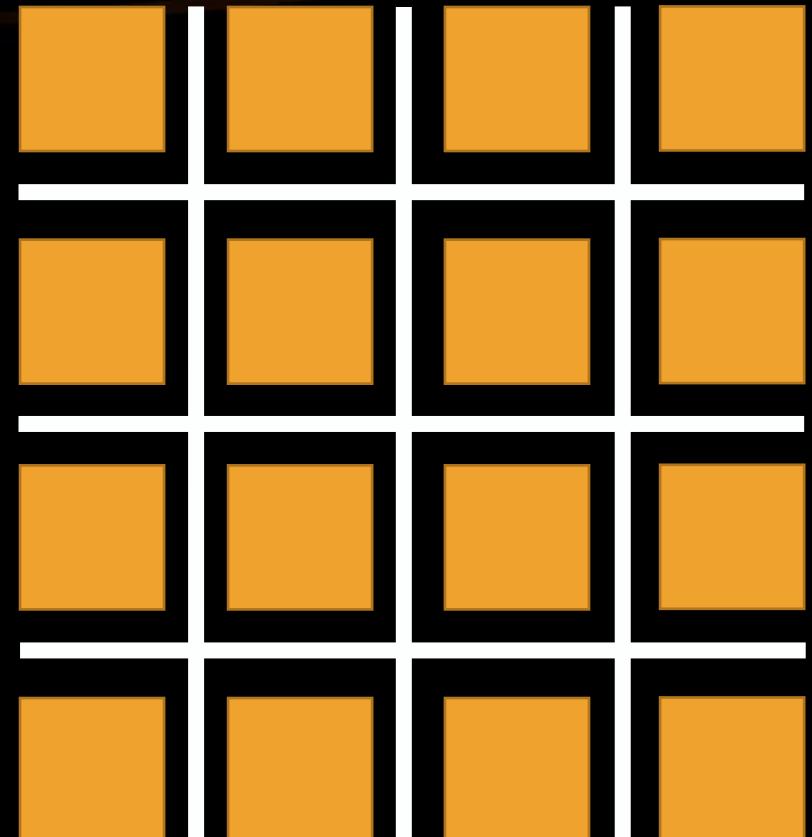
# Grid Item

- A grid container contains grid items
- A container has one grid item for each column, in each row
- Child Elements ( Items ) is a direct descendant of the grid container

```
<div class="site">
  <header></header>
  <h1></h1>
  <main></main>
  <aside></aside>
  <footer></footer>
</div>
```

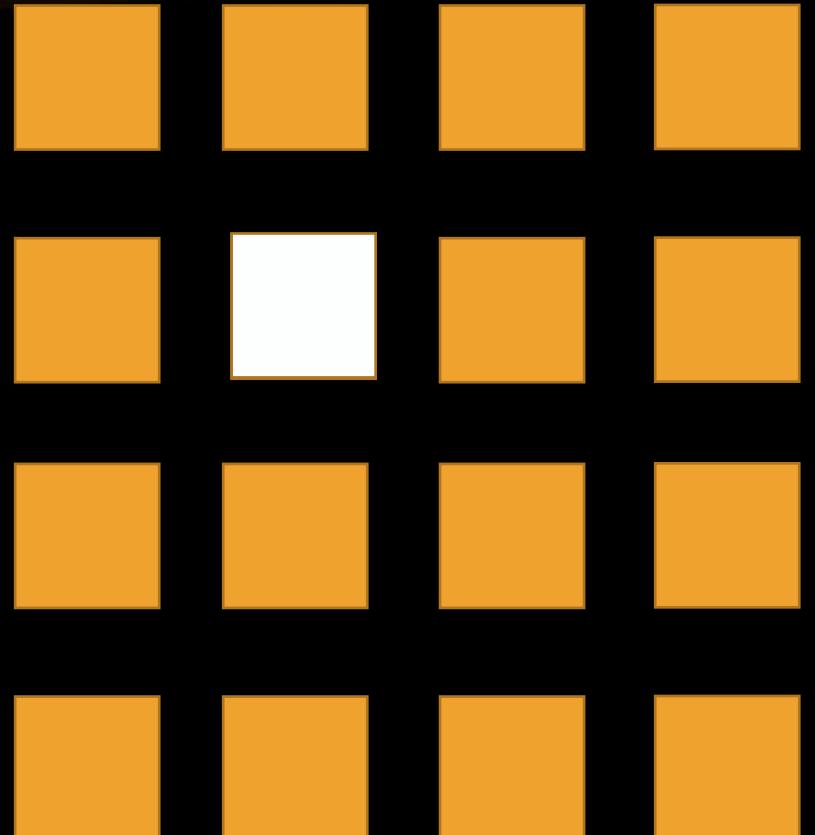
# Grid Line

- Horizontal (**row**) or vertical (**column**) line separating the grid into sections.
- Items can be placed onto the grid with **line number**
- The lines can be **named**, by adding the name in square brackets



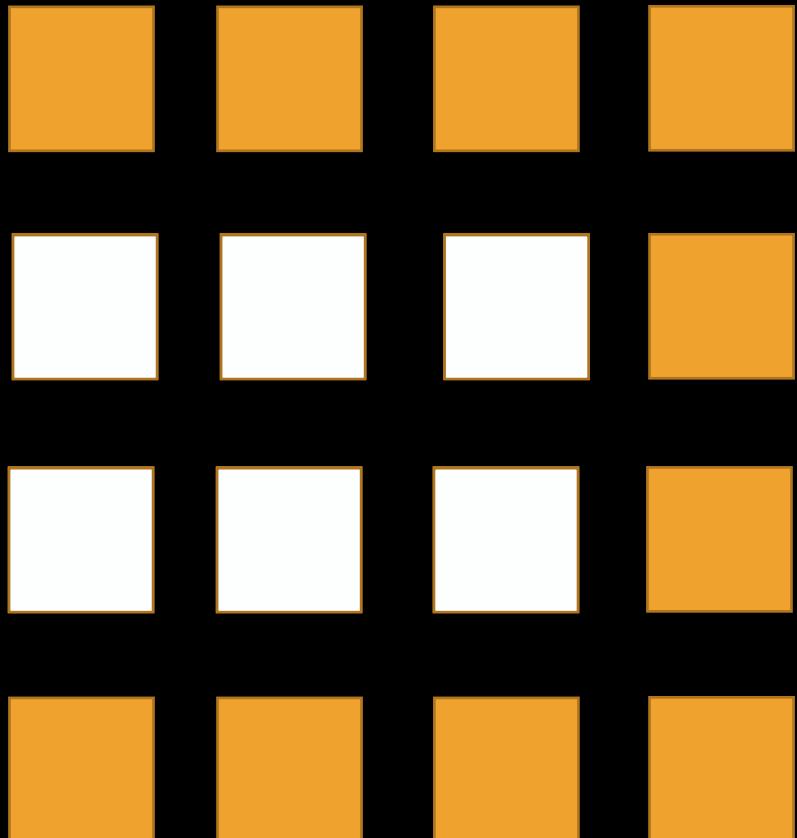
# Grid Cell

- The **intersection** between a grid row and a grid column
- Effectively the same as a table cell
- More than one **item** can be placed into a **grid cell**



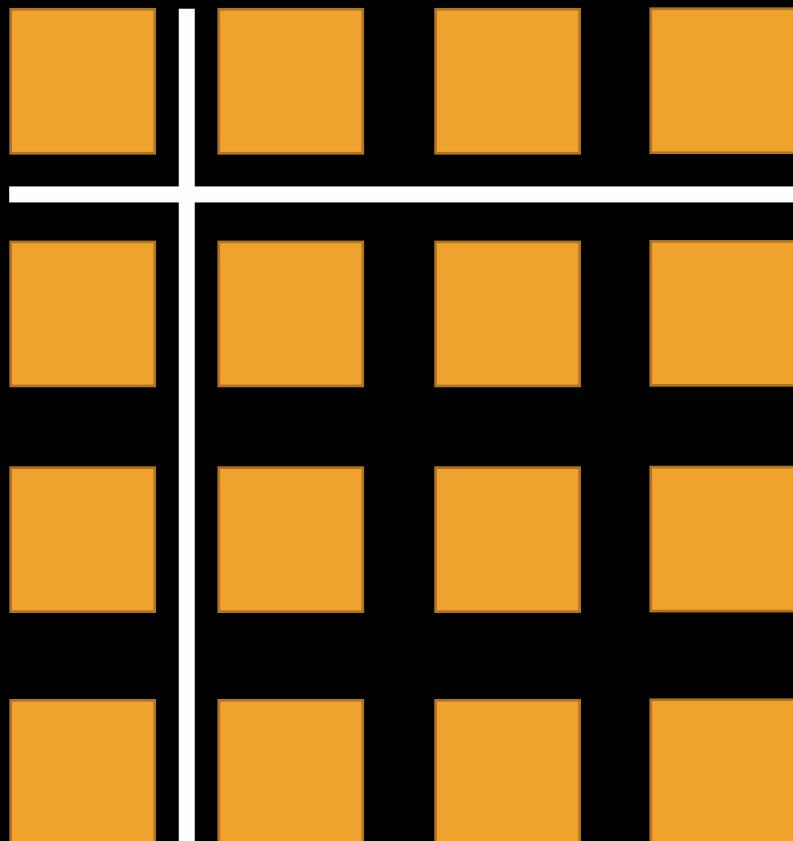
# Grid Area

- Grid areas can cover **one or more cells**
- Specifies a grid item's **size** and **location** in a grid layout
- Have the following **properties**:
  - `grid-row-start`
  - `grid-column-start`
  - `grid-row-end`
  - `grid-column-end`



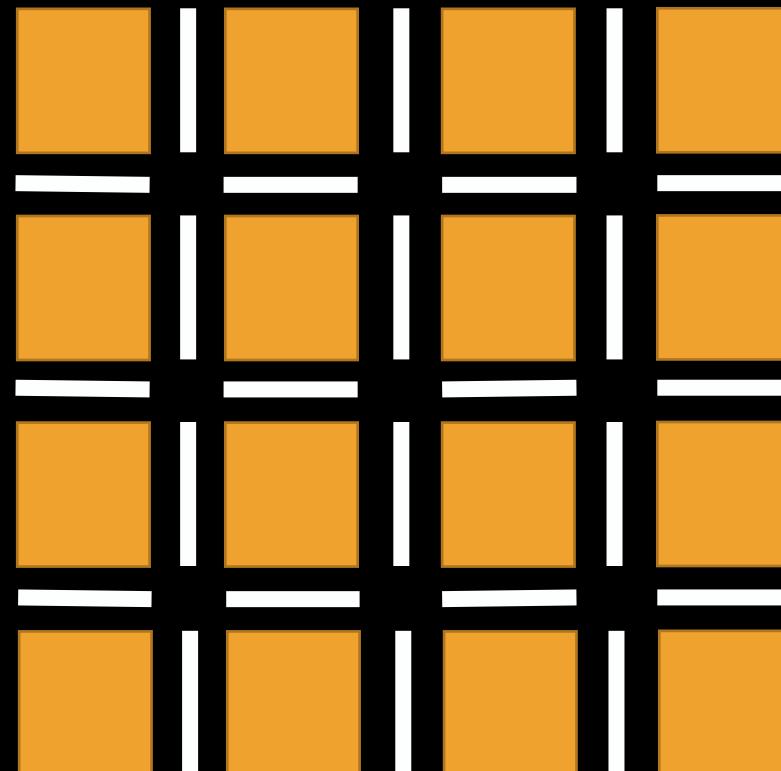
# Grid Track

- The **space** between two or more grid lines
- Row tracks are horizontal
- Columns tracks are vertical
- Have the following properties:
  - `grid-template`
  - `grid-template-columns`
  - `grid-template-rows`



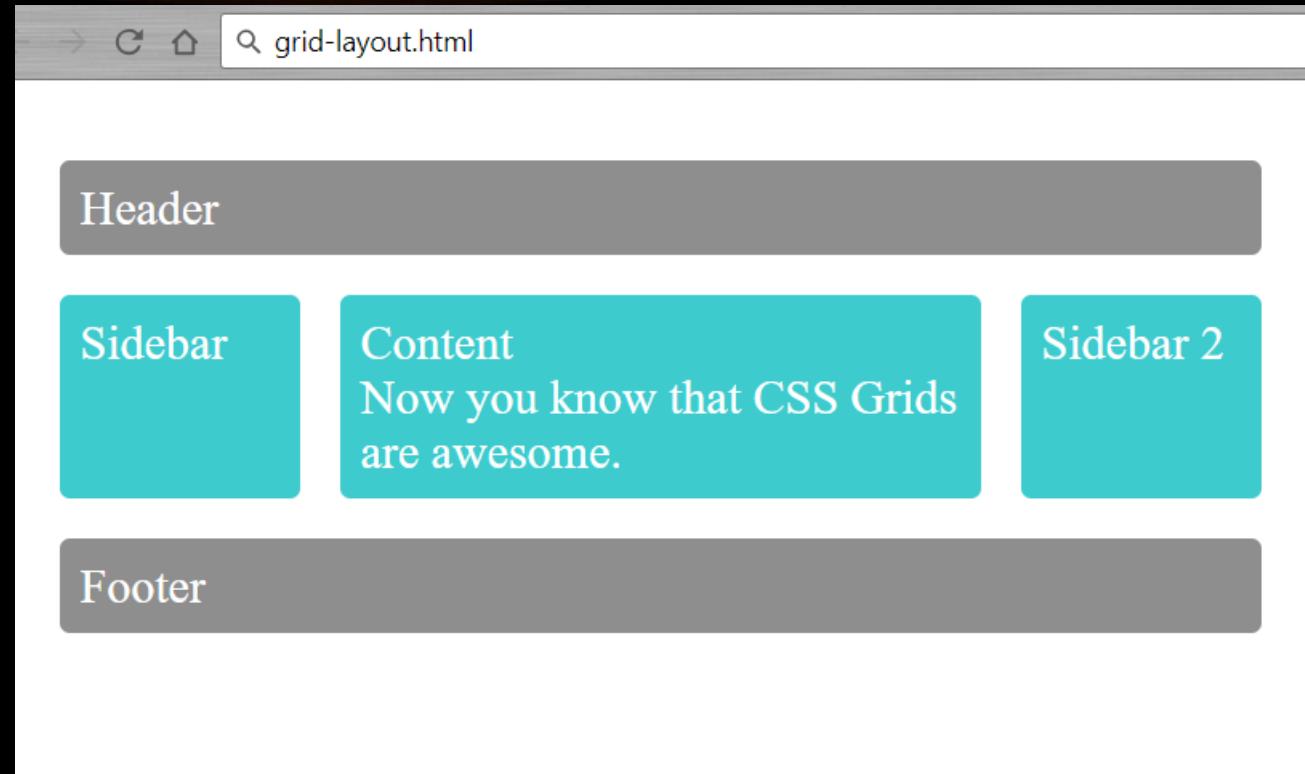
# Grid Gap

- The space between grid tracks
- CSS Grid Layout initially defined the grid-gap property
- Have the following properties:
  - gap
  - row-gap
  - column-gap



# Problem: Simple Grid Layout

- Create a Web page like the screenshot
- You are NOT allowed to change the HTML
- Constraints:
  - Use grid-template-areas



Check your solution here: <https://judge.softuni.bg/Contests/608>

# Solution: Simple Grid Layout

```
body {  
    margin: 40px; }  
.sidebar {  
    grid-area: sidebar;  
}  
.sidebar2 {  
    grid-area: sidebar2;  
}  
.content {  
    grid-area: content;  
}  
.header {  
    grid-area: header; }
```

```
.footer {  
    grid-area: footer; }  
.wrapper {  
    background-color: #fff;  
    color: #444; }  
.wrapper {  
    display: grid;  
    grid-gap: 1em;  
    grid-template-areas:  
        "header" "sidebar"  
        "header" "sidebar"  
        "content" "sidebar2"  
        "footer"; }
```

# Solution: Simple Grid Layout

```
@media only screen and (min-width: 500px) {  
    .wrapper {  
        grid-template-columns: 20% auto;  
        grid-template-areas:  
            "header header"  
            "sidebar content"  
            "sidebar2 sidebar2"  
            "footer footer"; } }  
  
@media only screen and (min-width: 600px) {  
    <!-- TODO: align grid template areas  
here -->  
}
```

```
.box {  
    background: #3ecbce;  
    color: #fff;  
    border-radius: 5px;  
    padding: 10px;  
    font-size: 150%;  
}  
  
.header, .footer {  
    background: rgba(140,  
    140, 140, 0.98);  
}
```

Check your solution here: <https://judge.softuni.bg/Contests/608>

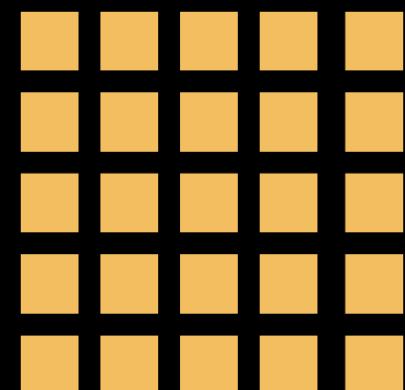
# Summary

- CSS Transitions change slowly properties

```
div {  
    transition: all ease 0.5s;  
}
```

- CSS Animations provide sequence of changes
- CSS Grids is the most powerful layout system available in CSS

Summary



# Web Fundamentals – Course Introduction



## Questions?



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