SECTION 1 – WELCOME, WELCOME, WELCOME!

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WELCOME, WELCOME, WELCOME!

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NATOURS PROJECT - SETUP AND FIRST STEPS (PART 1)

LECTURE

BUILDING THE HEADER - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- The best way to perform a basic reset using the universal selector;
- How to set project-wide font definitions.
- How to clip parts of elements using `clip-path`.

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NATOURS PROJECT - SETUP AND FIRST STEPS (PART 1)

LECTURE

BUILDING THE HEADER - PART 2

WHAT YOU WILL LEARN IN THIS LECTURE

- The easiest way to center anything with the `transform`, `top` and `left` properties.

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NATOURS PROJECT – SETUP AND FIRST STEPS (PART 1)

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CREATING COOL CSS ANIMATIONS

WHAT YOU WILL LEARN IN THIS LECTURE

- How to create CSS animations using `@keyframes` and the `animation` property.

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NATOURS PROJECT - SETUP AND FIRST STEPS (PART 1)

LECTURE

BUILDING A COMPLEX ANIMATED BUTTON - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- What pseudo-elements and pseudo-classes are;
- How and why to use the `::after` pseudo-element;
- How to create a creative hover animation effect using the `transition` property.

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SECTION 3 – HOW CSS WORKS

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HOW CSS WORKS: A LOOK BEHIND THE SCENES

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THREE PILLARS OF WRITING GOOD HTML AND CSS (NEVER FORGET THEM!)

THREE PILLARS TO WRITE GOOD HTML AND CSS... AND BUILD GOOD WEBSITES

- Fluid layouts
- Media queries
- Responsive images
- Correct units
- Desktop-first vs mobile-first

- Clean
- Easy-to-understand
- Growth
- Reusable
- How to organize files
- How to name classes
- How to structure HTML

- Less HTTP requests
- Less code
- Compress code
- Use a CSS preprocessor
- Less images
- Compress images

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HOW CSS WORKS BEHIND THE SCENES: AN OVERVIEW

WHAT HAPPENS TO CSS WHEN WE LOAD UP A WEBPAGE?

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HOW CSS WORKS: A LOOK BEHIND THE SCENES

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HOW CSS IS PARSED, PART 1: THE CASCADE AND SPECIFICITY

QUICK REVIEW: CSS TERMINOLOGY

A CSS RULE

Selector

Declaration block

```
.my-class {
    color: blue;
    text-align: center;
    font-size: 20px;
}
```

Declaration

Property

Declared value

THE CASCADE (THE "C" IN CSS)

Parse CSS

Resolve conflicting CSS declarations (cascade)

Process final CSS values

CASCADE

Process of combining different stylesheets and resolving conflicts between different CSS rules and declarations, when more than one rule applies to a certain element.

- Author
- User
- Browser (user agent)

IMPORTANCE (WEIGHT) > SPECIFICITY > SOURCE ORDER

IMPORTANCE > SPECIFICITY > SOURCE ORDER

1. User `!important` declarations
2. Author `!important` declarations
3. Author declarations
4. User declarations
5. Default browser declarations

Same importance?

```
.button {
    font-size: 20px;
    color: white;
    background-color: blue !important;
}

#nav .pull-right .button {
  background-color: green;
}
```

Don't click here!

IMPORTANCE > SPECIFICITY > SOURCE ORDER

1. User `!important` declarations
2. Author `!important` declarations
3. Author declarations
4. User declarations
5. Default browser declarations

Same importance?

1. Inline styles
2. IDs
3. Classes, pseudo-classes, attribute
4. Elements, pseudo-elements

Same specificity?

The last declaration in the code will override all other declarations and will be applied.

1
2
3
4

```
.button {
    font-size: 20px;
    color: white;
    background-color: blue;
}

nav#nav div.pull-right .button {
    background-color: green;
}

a {
  background-color: purple;
}

#nav a.button:hover {
  background-color: yellow;
}
```

	Inline	IDs	Classes	Elements
1	0	0	1	0
2	0	1	2	2
3	0	0	0	1
4	0	1	2	1

Don't click here!

CASCADE AND SPECIFICITY: WHAT YOU NEED TO KNOW

- CSS declarations marked with `!important` have the highest priority;
- But, only use `!important` as a last resource. It's better to use correct specificities — **more maintainable code**!
- Inline styles will always have priority over styles in external stylesheets;
- A selector that contains **1** ID is more specific than one with **1000** classes;
- A selector that contains **1** class is more specific than one with **1000** elements;
- The universal selector `*` has no specificity value (0, 0, 0, 0);
- Rely more on **specificity** than on the **order** of selectors;
- But, rely on order when using 3rd-party stylesheets — always put your author stylesheet last.

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SPECIFICITY IN PRACTICE

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HOW CSS IS PARSED, PART 2: VALUE PROCESSING

HOW CSS VALUES ARE PROCESSED

	width (paragraph)	padding (paragraph)	font-size (root)	font-size (section)	font-size (paragraph)
1. Declared value (author declarations)	140px 66%	–	–	1.5rem	–
2. Cascaded value (after the cascade)	66%	–	16px (Browser default)	1.5rem	–
3. Specified value (defaulting, if there is no cascaded value)	66%	0px (Initial value)	16px	1.5rem	24px
4. Computed value (converting relative values to absolute)	66%	0px	16px	24px (1.5 * 16px)	24px
5. Used value (final calculations, based on layout)	184.8px	0px	16px	24px	24px
6. Actual value (browser and device restrictions)	185px	0px	16px	24px	24px

(66% of 280px)

INHERITANCE

```html
<div class="section">
  <p class="amazing">CSS is absolutely amazing</p>
</div>
```

```css
.section {
  font-size: 1.5rem;
  width: 280px;
  background-color: orangered;
}

p {
  width: 140px;
  background-color: green;
}

.amazing {
  width: 66%;
}
```

(Let's analyse the green paragraph)

HOW UNITS ARE CONVERTED FROM RELATIVE TO ABSOLUTE (PX)

		Example (x)	How to convert to pixels	Result in pixels
	% (fonts)	150%	x% * parent's computed font-size	24px
	% (lengths)	10%	x% * parent's computed **width**	100px
Font-based	em (font)	3em	x * **parent** computed font-size	72px (3 * 24)
Font-based	em (lengths)	2em	x * **current element** computed font-size	48px
Font-based	rem	10rem	x * **root** computed font-size	160px
Viewport-based	vh	90vh	x * 1% of viewport height	90% of the current viewport height
Viewport-based	vw	80vw	x * 1% of viewport width	80% of the current viewport width

4. Computed value
(converting relative values to absolute)

```
html, body {
  font-size: 16px;
  width: 80vw;
}

header {
  font-size: 150%;
  padding: 2em;
  margin-bottom: 10rem;
  height: 90vh;
  width: 1000px;
}

.header-child {
  font-size: 3em;
  padding: 10%;
}
```

CSS VALUE PROCESSING: WHAT YOU NEED TO KNOW

- Each property has an initial value, used if nothing is declared (and if there is no inheritance — see next lecture);
- Browsers specify a **root `font-size`** for each page (usually `16px`);
- Percentages and relative values are always converted to pixels;
- Percentages are measured relative to their parent's **`font-size`**, if used to specify `font-size`;
- Percentages are measured relative to their parent's **`width`**, if used to specify lengths;
- `em` are measured relative to their **parent** `font-size`, if used to specify `font-size`;
- `em` are measured relative to the **current** `font-size`, if used to specify lengths;
- `rem` are always measured relative to the **document's root** `font-size`;
- `vh` and `vw` are simply percentage measurements of the viewport's `height` and `width`.

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HOW CSS IS PARSED, PART 3: INHERITANCE

INHERITANCE IN CSS

Every CSS property must have a value

Is there a cascaded value?

YES → Specified value = Cascaded value

NO → Is the property inherited? (*specific to each property*)

NO → Specified value = Initial value (*specific to each property*)

YES → Specified value = Computed value of parent element → 30px

THIS IS INHERITANCE!

EXAMPLE

Let's analyse `line-height` on `.child`

```
.parent {
  font-size: 20px;
  line-height: 150%;
}

.child {
  font-size: 25px;
}
```

`line-height` property specification

Initial value	`normal`
Applies to	all elements. It also applies to `::first-letter` and `::first-line`.
Inherited	yes
Percentages	refer to the font size of the element itself
Media	visual
Computed value	for percentage and length values, the absolute length, otherwise as specified
Animation type	either number or length
Canonical order	the unique non-ambiguous order defined by the formal grammar

Source: https://developer.mozilla.org/en/docs/Web/CSS/line-height

INHERITANCE: WHAT YOU NEED TO KNOW

- Inheritance passes the values for some specific properties from parents to children — **more maintainable code**;
- Properties related to text are inherited: `font-family`, `font-size`, `color`, etc;
- The computed value of a property is what gets inherited, **not** the declared value.
- Inheritance of a property only works if no one declares a value for that property;
- The `inherit` keyword forces inheritance on a certain property;
- The `initial` keyword resets a property to its initial value.

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HOW CSS WORKS: A LOOK BEHIND THE SCENES

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CONVERTING PX TO REM: AN EFFECTIVE WORKFLOW

WHAT YOU WILL LEARN IN THIS LECTURE

- How and why to use `rem` units in our project;
- A great workflow for converting `px` to `rem`.

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HOW CSS WORKS: A LOOK BEHIND THE SCENES

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HOW CSS RENDERS A WEBSITE: THE VISUAL FORMATTING MODEL

REMEMBER...?

Load HTML
Parse HTML
Document Object Model (DOM)
Parse CSS
Load CSS
Resolve conflicting CSS declarations (cascade)
CSS Object Model (CSSOM)
Process final CSS values
Final rendered website
Website rendering: the visual formatting model
Render tree

THE VISUAL FORMATTING MODEL

DEFINITION

Algorithm that calculates boxes and determines the layout of theses boxes, for each element in the render tree, in order to determine the final layout of the page.

- **Dimensions of boxes**: the box model;
- **Box type**: inline, block and inline-block;
- **Positioning scheme**: floats and positioning;
- **Stacking contexts**;
- Other elements in the render tree;
- Viewport size, dimensions of images, etc.

1. THE BOX MODEL

- **Content**: text, images, etc;
- **Padding**: transparent area around the content, inside of the box;
- **Border**: goes around the padding and the content;
- **Margin**: space between boxes;
- **Fill area**: area that gets filled with background color or background image.

1. THE BOX MODEL: HEIGHTS AND WIDTHS

total width = right border + right padding + specified width + left padding + left border

total height = top border + top padding + specified height + bottom padding + bottom border

Example: height = 0 + 20px + 100px + 20px + 0 = 140px

1. THE BOX MODEL WITH BOX-SIZING: BORDER-BOX

total width = ~~right border~~ + ~~right padding~~ + specified width + ~~left padding~~ + ~~left border~~

total height = ~~top border~~ + ~~top padding~~ + specified height + ~~bottom padding~~ + ~~bottom border~~

Example: height = 0 + ~~20px~~ + 100px + ~~20px~~ + 0 = 100px

2. BOX TYPES: INLINE, BLOCK-LEVEL AND INLINE-BLOCK

Block-level boxes

- Elements formatted visually as blocks
- 100% of parent's width
- Vertically, one after another
- Box-model applies as showed

```
display: block
(display: flex)
(display: list-item)
(display: table)
```

Inline-block boxes

- A mix of block and inline
- Occupies only content's space
- No line-breaks
- Box-model applies as showed

```
display: inline-block
```

Inline boxes

- Content is distributed in lines
- Occupies only content's space
- No line-breaks
- No heights and widths
- Paddings and margins only horizontal (left and right)

```
display: inline
```

3. POSITIONING SCHEMES: NORMAL FLOW, ABSOLUTE POSITIONING AND FLOATS

Normal flow

- Default positioning scheme;
- **NOT** floated;
- **NOT** absolutely positioned;
- Elements laid out according to their source order.

```
Default
position: relative
```

Floats

- **Element is removed from the normal flow;**
- Text and inline elements will wrap around the floated element;
- The container will not adjust its height to the element.

```
float: left
float: right
```

=

≠

Absolute positioning

- **Element is removed from the normal flow**
- No impact on surrounding content or elements;
- We use `top`, `bottom`, `left` and `right` to offset the element from its relatively positioned container.

```
position: absolute
position: fixed
```

4. STACKING CONTEXTS

```
z-index: 3
position: relative
```

```
z-index: 2
position: absolute
```

```
z-index: 1
position: relative
```

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CSS ARCHITECTURE, COMPONENTS AND BEM

THE THINK - BUILD - ARCHITECT MINDSET

- Clean
- Modular
- Reusable
- Ready for growth

THINK

Think about the layout of your webpage or web app before writing code.

BUILD

Build your layout in HTML and CSS with a consistent structure for naming classes.

ARCHITECT

Create a logical **architecture** for your CSS with files and folders.

THINKING ABOUT THE LAYOUT

THINK → BUILD → ARCHITECT

COMPONENT-DRIVEN DESIGN

- **Modular building blocks** that make up interfaces;
- Held together by the **layout** of the page;
- **Re-usable** across a project, and between different projects;
- **Independent**, allowing us to use them anywhere on the page.

ATOMIC DESIGN

COMPONENT

[Image taken from bradfrost.com]

BUILDING WITH MEANINGFUL CLASS NAMES

THINK → **BUILD** → ARCHITECT

BEM

- **B**lock **E**lement **M**odifier
- **BLOCK**: standalone component that is meaningful on its own.
- **ELEMENT**: part of a block that has no standalone meaning.
- **MODIFIER**: a different version of a block or an element.

```
.block {}
.block__element {}
.block__element--modifier {}
```

Low-specificity BEM selectors

```
<figure class="recipe">
  <div class="recipe__hero">
    <img class="recipe__img" src="
  </div>
  <div class="recipe__info">
    <div class="recipe__category">
      Veggie
    </div>
    <figcaption class="recipe__details">
      <h2 class="recipe__title">Pizza Vegetale 👌</h2>
      <p class="recipe__description">
        Yummy veggie pizza with tasty olives
      </p>
    </figcaption>
    <div class="recipe__stats-box">
      <div class="recipe__stat">
        <span class="recipe__stat-value">4.9</span>
        <span class="recipe__stat-name recipe__stat-name--1">Stars</span>
      </div>
      <div class="recipe__stat">
        <span class="recipe__stat-value">45</span>
        <span class="recipe__stat-name recipe__stat-name--2">Minutes</span>
      </div>
      <div class="recipe__stat">
        <span class="recipe__stat-value">2</span>
        <span class="recipe__stat-name recipe__stat-name--3">Persons</span>
      </div>
    </div>
  </div>
  <a class="recipe__btn btn btn--round" href="#">Try</a>
</figure>
```

ARCHITECTING WITH FILES AND FOLDERS

THINK → BUILD → ARCHITECT

THE 7-1 PATTERN

7 different folders for partial Sass files, and
1 main Sass file to import all other files into
a compiled CSS stylesheet.

THE 7 FOLDERS

- base/
- components/
- layout/
- pages/
- themes/
- abstracts/
- vendors/

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HOW CSS WORKS: A LOOK BEHIND THE SCENES

LECTURE

IMPLEMENTING BEM IN THE NATOUR PROJECT

WHAT YOU WILL LEARN IN THIS LECTURE

- How to use the BEM method in practice.

SECTION 4 – INTRODUCTION TO SASS AND NPM

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INTRODUCTION TO SASS AND NPM

LECTURE

WHAT IS SASS?

WHAT IS SASS AND HOW DOES IT WORK?

SASS

Sass is a CSS preprocessor, an extension of CSS that adds power and elegance to the basic language.

SASS SOURCE CODE → (Sass compiler) → COMPILED CSS CODE

MAIN SASS FEATURES

- **Variables**: for reusable values such as colors, font-sizes, spacing, etc;
- **Nesting**: to nest selectors inside of one another, allowing us to write less code;
- **Operators**: for mathematical operations right inside of CSS;
- **Partials and imports**: to write CSS in different files and importing them all into one single file;
- **Mixins**: to write reusable pieces of CSS code;
- **Functions**: similar to mixins, with the difference that they produce a value that can than be used;
- **Extends**: to make different selectors inherit declarations that are common to all of them;
- **Control directives**: for writing complex code using conditionals and loops (not covered in this course).

SASS AND SCSS: CLEARING UP THE CONFUSION

Sass syntax

```
.navigation
  list-style: none
  float: left

  & li
    display: inline-block
    margin-left: 30px
```

SCSS syntax

```
.navigation {
  list-style: none;
  float: left;

  & li {
    display: inline-block;
    margin-left: 30px;
  }
}
```

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A BRIEF INTRODUCTION TO THE COMMAND LINE

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NPM PACKAGES: LET'S INSTALL SASS LOCALLY

A BRIEF INTRODUCTION TO NPM AND THE NODE ECOSYSTEM

Allows developers to write and run JavaScript applications on the server. Developers started using node.js to also write tools to help them with **local web development**.

NPM is a simple command line interface that allows developers to **install and manage packages** on their local computers. There are all kinds of open-source **tools, libraries and frameworks** needed for modern development. Modern web development could simply not exist without a package manager.

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NPM SCRIPTS: LET'S WRITE AND COMPILE SASS LOCALLY

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THE EASIEST WAY OF AUTOMATICALLY RELOADING A PAGE ON FILE CHANGES

SECTION 5 – NATOURS PROJECT PART 2

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CONVERTING OUR CSS CODE TO SASS: VARIABLES AND NESTING

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IMPLEMENTING THE 7-1 CSS ARCHITECTURE WITH SASS

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REVIEW: RESPONSIVE DESIGN PRINCIPLES AND LAYOUT TYPES

REVIEW: BASIC RESPONSIVE DESIGN PRINCIPLES

1 FLUID LAYOUTS

- To allow webpage to adapt to the current viewport width (or even height)
- Use `%` (or `vh` / `vw`) unit instead of `px` for elements that should adapt to viewport (usually layout)
- Use `max-width` instead of `width`

2 RESPONSIVE UNITS

- Use `rem` unit instead of `px` for most lengths
- To make it easy to scale the entire layout down (or up) automatically

3 FLEXIBLE IMAGES

- By default, images don't scale automatically as we change the viewport, so we need to fix that
- Always use `%` for image dimensions, together with the `max-width` property

4 MEDIA QUERIES

- To change CSS styles on certain viewport widths (called breakpoints)

LAYOUT TYPES

THIS PROJECT

FLOAT LAYOUTS

The **old way of building layouts** of all sizes, using the float CSS property. Still used, but getting outdated.

2ND PROJECT

FLEXBOX

Modern way of laying out elements in a **1-dimensional row** without using floats. Perfect for **component layouts**.

3RD PROJECT

CSS GRID

For laying out element in a fully-fledged **2-dimensional grid**. Perfect for **page layouts and complex components.**

WHY USE A FLOAT LAYOUT IN THIS PROJECT?

- **The focus of this project is on using modern CSS properties and techniques**: clips, transforms, animations, background video, etc.
- Even though flexbox and CSS Grid are more modern, **every web developer should still know how float layouts work**
- As a professional developer, **your job will include working with older CSS codebases**, which will contain float layouts

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LECTURE

BUILDING A CUSTOM GRID WITH FLOATS

WHAT YOU WILL LEARN IN THIS LECTURE

- How to architect and build a simple grid system;
- How the attribute selector works;
- How the `:not` pseudo-class works;
- How `calc()` works, and what's the difference between `calc()` and simple Sass operations.

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LECTURE

BUILDING THE ABOUT SECTION – PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- Thinking about components;
- How and why to use utility classes;
- How to use the `background-clip` property;
- How to `transform` multiple properties simultaneously;
- How to use the `outline-offset` property together with `outline`;
- How to style elements that are NOT hovered while others are.

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LECTURE

BUILDING THE FEATURES SECTION

WHAT YOU WILL LEARN IN THIS LECTURE

- How to include and use an icon font;
- Another way of creating the “skewed section” design;
- How and when to use the direct child selector.

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LECTURE

BUILDING THE TOURS SECTION - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to build an amazing, rotating card;
- How to use `perspective` in CSS;
- How to use the `backface-visibility` property;
- Using background blend modes;
- How and when to use `box-decoration-break`;

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LECTURE

BUILDING THE STORIES SECTION - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to make text flow around shapes with `shape-outside` and `float`;
- How to apply a `filter` to images;
- How to create a background video covering an entire section;
- How to use the `<video>` HTML element;
- How and when to use the `object-fit` property.

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LECTURE

BUILDING THE BOOKING SECTION - PART 1

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WHAT YOU WILL LEARN IN THIS LECTURE

- How to implement “solid-color gradients”;
- How the general and adjacent sibling selectors work and why we need them;
- How to use the `::input-placeholder` pseudo-element;
- How and when to use the `:focus`, `:invalid`, `placeholder-shown` and `:checked` pseudo-classes;
- Techniques to build custom radio buttons.

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BUILDING THE FOOTER

WHAT YOU WILL LEARN IN THIS LECTURE

- How to design a simple website footer.

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LECTURE

BUILDING THE NAVIGATION – PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- What the “checkbox hack” is and how it works;
- How to create custom animation timing functions using cubic bezier curves;
- How to animate “solid-color gradients”;
- How and why to use `transform-origin`;
- In general: create an amazingly creative effect!

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LECTURE

BUILDING A PURE CSS POPUP - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to build a nice popup with only CSS;
- How to use the `:target` pseudo-class;
- How to create boxes with equal height using `display: table-cell`;
- How to create CSS text columns;
- How to automatically hyphenate words using `hyphens`.

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BUILDING A PURE CSS POPUP - PART 2

SECTION 6 – NATOURS PROJECT PART 3

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NATOURS PROJECT - ADVANCED RESPONSIVE DESIGN (PART 3)

LECTURE

MOBILE-FIRST VS DESKTOP-FIRST AND BREAKPOINTS

RESPONSIVE DESIGN STRATEGIES

```
html { font-size: 20px; }
@media (max-width: 600px) {
  html { font-size: 16px; }
}
```

DESKTOP-FIRST

- Start writing CSS for the desktop: large screen;
- Then, media queries shrink design to smaller screens.

MOBILE-FIRST

- Start writing CSS for mobile devices: small screen;
- Then, media queries expand design to a large desktop screen;
- Forces us to reduce websites and apps to the absolute essentials.

```
html { font-size: 16px; }
@media (min-width: 600px) {
  html { font-size: 20px; }
}
```

RESPONSIVE DESIGN STRATEGIES: MAX-WIDTH AND MIN-WIDTH

Media queries don't add any importance or specificity to selectors, so code order matters — **media queries at the end**

IS MOBILE-FIRST RIGHT FOR YOU?

PROS

- 100% optimised for the mobile experience;
- Reduces websites and apps to the absolute essentials;
- Results in smaller, faster and more efficient products;
- Prioritizes content over aesthetic design, which may be desirable.

CONS

- The desktop version might feel overly empty and simplistic;
- More difficult and counterintuitive to develop;
- Less creative freedom, making it more difficult to create distinctive products;
- Clients are used to see a desktop version of the site as a prototype;
- Do your users even use the mobile internet? What's the purpose of your website?

NO MATTER WHAT YOU DO, ALWAYS KEEP BOTH DESKTOP AND MOBILE IN MIND

SELECTING OUR BREAKPOINTS: THE OPTIONS

BAD

GOOD

PERFECT

SELECTING OUR BREAKPOINTS: A GOOD APPROACH

[http://gs.statcounter.com/screen-resolution-stats#monthly-201608-201708-bar]

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LECTURE

LET'S USE THE POWER OF SASS MIXINS TO WRITE MEDIA QUERIES

WHAT YOU WILL LEARN IN THIS LECTURE

- How to use a powerful Sass mixing to write all our media queries;
- How to use the `@content` and `@if` Sass directives;
- Taking advantage of Chrome DevTools for responsive design.

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WRITING MEDIA QUERIES – BASE, TYPOGRAPHY AND LAYOUT

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WRITING MEDIA QUERIES - LAYOUT, ABOUT AND FEATURES SECTIONS

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NATOURS PROJECT – ADVANCED RESPONSIVE DESIGN (PART 3)

LECTURE

AN OVERVIEW OF RESPONSIVE IMAGES

WHAT ARE RESPONSIVE IMAGES ANYWAY?

Responsive design

Maintainable and scalable code

Web performance

RESPONSIVE IMAGES

The goal of responsive images is to serve the **right image** to the **right screen size** and device, in order to avoid downloading unnecessary large images on smaller screens.

WHEN TO USE RESPONSIVE IMAGES: THE 3 USE CASES

RESOLUTION SWITCHING

Large screen

Small screen

(Decrease image resolution on smaller screen)

DENSITY SWITCHING

@2x screen (high-res)

@1x screen (low-res)

(Half the image resolution on @1x screen)

ART DIRECTION

Large screen

Small screen

Image details were preserved, but the image is different

(Different image on smaller screen)

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LECTURE

RESPONSIVE IMAGES IN HTML - ART DIRECTION AND DENSITY SWITCHING

WHAT YOU WILL LEARN IN THIS LECTURE

- How to use the `srcset` attribute on the `<img>` and `<source>` elements, together with density descriptors;
- How and why to use the `<picture>` element for art direction;
- How to write media queries in HTML.

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LECTURE

RESPONSIVE IMAGES IN HTML - DENSITY AND RESOLUTION SWITCHING

WHAT YOU WILL LEARN IN THIS LECTURE

- How to allow the browser to decide the best image to download, using the `srcset` attribute, width descriptors, and the `sizes` attribute of the `<img>` element.

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NATOURS PROJECT – ADVANCED RESPONSIVE DESIGN (PART 3)

LECTURE

RESPONSIVE IMAGES IN CSS

WHAT YOU WILL LEARN IN THIS LECTURE

- How to implement responsive images in CSS;
- How to use resolution media queries to target high-resolution screens with `2x`.
- How to combine multiple conditions in media queries.

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NATOURS PROJECT – ADVANCED RESPONSIVE DESIGN (PART 3)

LECTURE

TESTING FOR BROWSER SUPPORT WITH @SUPPORTS

WARNING!

MANY OF THE NEW CSS FEATURES I SHOWED YOU ARE HIGHLY EXPERIMENTAL AND ONLY WORK IN TOP MODERN BROWSERS

ALWAYS CHECK CANIUSE.COM BEFORE USING A MODERN CSS PROPERTY IN PRODUCTION

USE GRACEFUL DEGRADATION WITH @SUPPORTS

WHAT YOU WILL LEARN IN THIS LECTURE

- How to use `@supports` feature queries;
- Implement graceful degradation on selected properties;
- How to use `backdrop-filter`.

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SETTING UP A SIMPLE BUILD PROCESS WITH NPM SCRIPTS

A SIMPLE BUILD PROCESS

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WRAPPING UP THE NATOURS PROJECT: FINAL CONSIDERATIONS

SECTION 7 – TRILLO PROJECT: MASTER FLEXBOX!

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TRILLO PROJECT - MASTER FLEXBOX!

LECTURE

WHY FLEXBOX: AN OVERVIEW OF THE PHILOSOPHY BEHIND FLEXBOX

A TRUE REVOLUTION

FLEXBOX

- Flexbox is a new module in CSS3 that makes it easy to align elements to one another, in different directions and orders;
- The main idea behind flexbox is to give the container the ability to expand and to shrink elements to best use all the available space;
- Flexbox replaces float layouts, using less, and more readable and logical code;
- Flexbox completely changes the way that we build one-dimensional layouts;
- A true revolution in CSS!

MAIN FLEXBOX CONCEPTS

```
display: flex
```

(display: flex-inline)

FLEXBOX PROPERTIES OVERVIEW

CONTAINER

1. **flex-direction: row** | row-reverse | column | column-reverse
2. **flex-wrap: nowrap** | wrap | wrap-reverse
3. **justify-content: flex-start** | flex-end | center | space-between | space-around | space-evenly
4. **align-items: stretch** | flex-start | flex-end | center | baseline
5. **align-content: stretch** | flex-start | flex-end | center | space-between | space-around

ITEM

1. **align-self: auto** | stretch | flex-start | flex-end | center | baseline
2. **order: 0** | <integer>
3. **flex-grow: 0** | <integer>
4. **flex-shrink: 1** | <integer>
5. **flex-basis: auto** | <length>

flex: 0 1 auto | <int> <int> <len>

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A BASIC INTRO TO FLEXBOX: THE FLEX CONTAINER

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A BASIC INTRO TO FLEXBOX: FLEX ITEMS

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A BASIC INTRO TO FLEXBOX: ADDING MORE FLEX ITEMS

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PROJECT OVERVIEW

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LECTURE

DEFINING PROJECT SETTINGS AND CUSTOM PROPERTIES

WHAT YOU WILL LEARN IN THIS LECTURE

- How and why to use CSS custom properties.

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TRILLO PROJECT - MASTER FLEXBOX!

LECTURE

BUILDING THE OVERALL LAYOUT

WHAT YOU WILL LEARN IN THIS LECTURE

- How to think about the overall layout of an app;
- Use flexbox in a real-world project for the first time.

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TRILLO PROJECT - MASTER FLEXBOX!

LECTURE

BUILDING THE HEADER - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- Why to use SVG icons vs. font icons;
- How to find, generate and use SVG sprites in HTML;
- How to change the color of an SVG icon in CSS;
- How to use more advanced flexbox alignment techniques, including `justify-content`, `align-items`, `align-self` and `flex`.

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BUILDING THE HEADER - PART 2

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TRILLO PROJECT - MASTER FLEXBOX!

LECTURE

BUILDING THE NAVIGATION - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to use `scaleY` and multiple transition properties with different settings, to create a creative hover effect;
- How and why to use the `currentColor` CSS variable;
- How to use some more advanced flexbox alignment techniques, including `flex-direction`, `justify-content` and `align-items`.

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TRILLO PROJECT - MASTER FLEXBOX!

LECTURE

BUILDING THE HOTEL OVERVIEW - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to create an infinite animation;
- How to use `margin: auto` with flexbox, and why it's so powerful;
- Continue to use flexbox properties for easy positioning and alignment.

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BUILDING THE HOTEL OVERVIEW - PART 2

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TRILLO PROJECT - MASTER FLEXBOX!

LECTURE

BUILDING THE DESCRIPTION SECTION - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- Continue to use flexbox, including `flex-wrap` to build a multi-column list;
- How and why to use CSS masks with `mask-image` and `mask-size`.

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TRILLO PROJECT - MASTER FLEXBOX!

LECTURE

BUILDING THE USER REVIEWS SECTION

WHAT YOU WILL LEARN IN THIS LECTURE

- Continue using and practicing flexbox.

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TRILLO PROJECT - MASTER FLEXBOX!

LECTURE

BUILDING THE CTA SECTION

WHAT YOU WILL LEARN IN THIS LECTURE

- Yet another creative and modern hover effect 😍

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WRITING MEDIA QUERIES - PART 2

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WRAPPING UP THE TRILLO PROJECT: FINAL CONSIDERATIONS

CHALLENGES, ANYONE?

1. Display some kind of user menu when hovering over the username in `.user-nav`;
2. Display a message menu when hovering over the chat icon in `.user-nav` (maybe like facebook);
3. Display a box with search suggestions as soon as the user starts typing in the search field;
4. Create a caption for the `.gallery__item` with a nice hover effect;
5. Make the page 100% responsive even for viewport sizes below 500px, maybe even responsive images.

SECTION 8 – CSS GRID INTRO

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A QUICK INTRODUCTION TO CSS GRID LAYOUTS

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A QUICK INTRODUCTION TO CSS GRID LAYOUTS

LECTURE

WHY CSS GRID: A WHOLE NEW MINDSET

A WHOLE NEW MINDSET

CSS GRID

- CSS Grid Layout is a brand new module that brings a two-dimensional grid system to CSS for the first time;
- CSS Grid replaces float layouts, using less, and more readable and logical CSS and HTML;
- CSS Grid works perfectly together with Flexbox, which is best to handle one-dimensional components and layouts;
- CSS Grid completely changes the way that we envision and build two-dimensional layouts.

A WHOLE NEW MINDSET

World's best luxury homes

Lorem, ipsum dolor sit amet consectetur adipisicing elit. Tenetur distinctio necessitatibus pariatur voluptatibus.

Only the best properties

Voluptatum mollitia quae. Vero ipsum sapiente molestias accusamus rerum sed a eligendi aut quia.

All homes in top locations

Tenetur distinctio necessitatibus pariatur voluptatibus quidem consequatur harum.

New home in one week

Vero ipsum sapiente molestias accusamus rerum. Lorem, ipsum dolor sit amet consectetur adipisicing elit.

Top 1% realtors

Quidem consequatur harum, voluptatum mollitia quae. Tenetur distinctio necessitatibus pariatur voluptatibus.

Secure payments on XXX

Pariatur voluptatibus quidem consequatur harum, voluptatum mollitia quae.

CSS GRID TERMINOLOGY

```
display: grid
```

(display: grid-inline)

CSS GRID TERMINOLOGY

CSS GRID PROPERTIES OVERVIEW

CONTAINER

1
- grid-template-rows
- grid-template-columns
- grid-template-areas

grid-template

2
- grid-row-gap
- grid-column-gap

grid-gap

3
- justify-items
- align-items
- justify-content
- align-content

4
- grid-auto-rows
- grid-auto-columns
- grid-auto-flow

ITEM

1
- grid-row-start
- grid-row-end

grid-row

- grid-column-start
- grid-column-end

grid-column

grid-area

2
- justify-self
- align-self

3
- order

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GRID CHALLENGE

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USING MIN-CONTENT, MAX-CONTENT AND THE MINMAX() FUNCTION

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LECTURE

BUILDING THE OVERALL LAYOUT - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to build a complex and modern layout using advanced CSS Grid techniques;
- How to choose different row and column track sizes for different types of content.

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BUILDING THE OVERALL LAYOUT - PART 2

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LECTURE

BUILDING THE FEATURES SECTION - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How and why to create grids inside of grids;
- How to create a responsive component without media queries;
- How to build a small component using CSS Grid.

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LECTURE

BUILDING THE STORY SECTION - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to deal with overlapping grid items;
- Why images are special and behave differently than other grid items;
- How to decide if flexbox is a better tool in certain situations.

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LECTURE

BUILDING THE HOMES SECTION - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to build a rather complex component using a mix of CSS Grid properties, overlapping and flexbox.

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BUILDING THE GALLERY - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to create a complex grid-looking gallery;
- Using `object-fit` together with images for grid items.

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BUILDING THE GALLERY - PART 2

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BUILDING THE FOOTER

WHAT YOU WILL LEARN IN THIS LECTURE

- Apply the concepts you already learned.

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BUILDING THE SIDEBAR

WHAT YOU WILL LEARN IN THIS LECTURE

- Apply the concepts you already learned.

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LECTURE

BUILDING THE HEADER - PART 1

WHAT YOU WILL LEARN IN THIS LECTURE

- How to manage vertical spacing in a responsive layout using CSS Grid techniques;
- How to use `::before` and `::after` as grid items.

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BUILDING THE REALTORS SECTION

WHAT YOU WILL LEARN IN THIS LECTURE

- Apply the concepts you already learned.

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SEE YOU NEXT TIME, CSS MASTER!

END