CSS - a bit more

Gradients, Shadows, Positioning, transforms && FlexBox

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CSS gradients

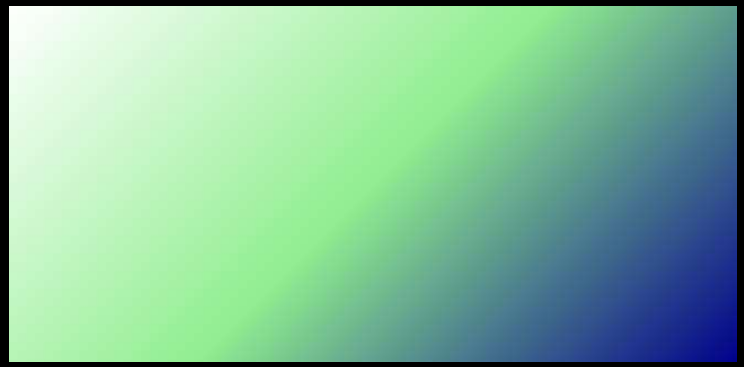
CSS gradients let you display smooth transitions between two or more specified colors.

- CSS defines three types of gradients:
  - Linear Gradients (goes down/up/left/right/diagonally)
  - Radial Gradients (defined by their center)
  - Conic Gradients (rotated around a center point)

Linear Gradient

To create a linear gradient you must define at least two color stops. Color stops are the colors you want to render smooth transitions among. You can also set a starting point and a direction (or an angle) along with the gradient effect.

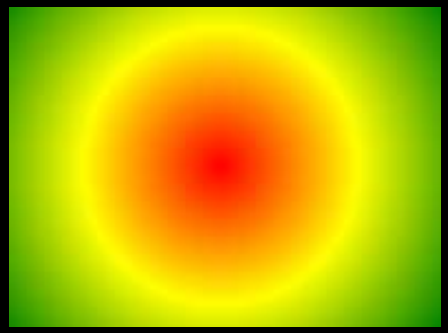
- Syntax:
  - background-image: linear-gradient(direction, color-stop1, color-stop2, …);
  - Directions:
    - Default direction
    - Specific direction
    - Using angles
    - Using transparency



Radial gradient

A radial gradient is defined by its center. To create a radial gradient you must also define at least two color stops.

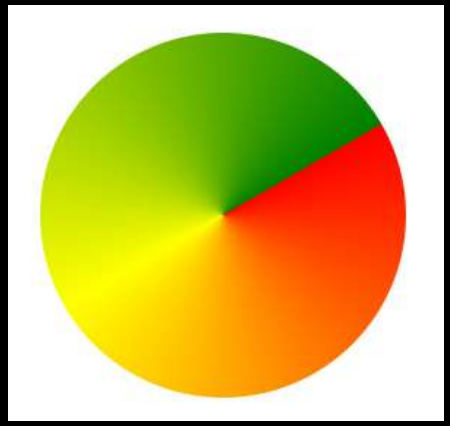
- Syntax:
  - background-image: radial-gradient(shape size at position, start-color, ..., last-color);
  - You can change spacing of colours/set pre-defined shapes/repeating gradient



Conic Gradient [explore time]

A conic gradient is a gradient with color transitions rotated around a center point. To create a conic gradient you must define at least two colors.

- Syntax:
  - background-image: conic-gradient([from angle] [at position,] color [degree], color [degree], …);



CSS Shadow Effects

With CSS you can add shadow to text and to elements.

- Text-shadow
- Box-shadow

Text-shadow

The CSS text-shadow property applies shadow to text.

- You can add horizontal/Vertical shadows.
- Color can be added
- Blur can be added
- Multiple shadows on 1 text can be added
- How can we add Border using shadows ?

```
<!DOCTYPE html>
<html>x
<head>
<style>
h1 {
  text-shadow: 3px 3px ;
}
</style>
</head>
<body>

<h1>Text-shadow effect!</h1>

</body>
</html>
```

Box-shadow

The CSS box-shadow property is used to apply one or more shadows to an element.

- Default color of shadow is text colour
- Color of shadow can be changed
- Blur can be added
- Spread-radius can be changed
- Multiple shadows can be added using comma

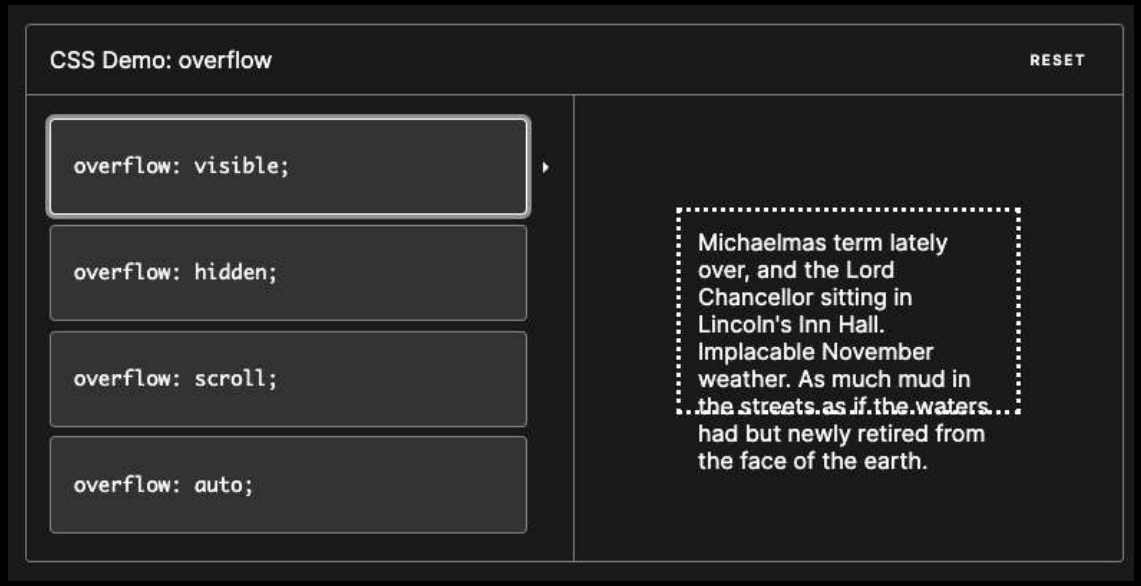
CSS Dimension properties:

- Width
- Height
- Min-height
- Min-width
- Max-height
- Max-width

Overflow Property:

The overflow CSS shorthand property sets the desired behavior for an element's overflow — i.e. when an element's content is too big to fit in its block formatting context — in both directions.

- Values:
  - Visible
  - Hidden
  - Scroll
  - Auto



CSS Position Property

The position property specifies the type of positioning method used for an element (static, relative, fixed, absolute or sticky).

- Static
- Relative
- Fixed
- Absolute
- Sticky

Position: static

HTML elements are positioned static by default.

- HTML elements are positioned static by default. An element with position: static; is not positioned in any special way; it is always positioned according to the normal flow of the page:

Position: relative

An element with position: relative; is positioned relative to its normal position.

- Setting the top, right, bottom, and left properties of a relatively-positioned element will cause it to be adjusted away from its normal position. Other content will not be adjusted to fit into any gap left by the element.
-

Position: fixed

- An element with position: fixed; is positioned relative to the viewport, which means it always stays in the same place even if the page is scrolled. The top, right, bottom, and left properties are used to position the element.

Position: absolute

- An element with position: absolute; is positioned relative to the nearest positioned ancestor (instead of positioned relative to the viewport, like fixed).
- However; if an absolute positioned element has no positioned ancestors, it uses the document body, and moves along with page scrolling.
- Note: Absolute positioned elements are removed from the normal flow, and can overlap elements.

Position: sticky

An element with position: sticky; is positioned based on the user's scroll position.

- A sticky element toggles between relative and fixed, depending on the scroll position. It is positioned relative until a given offset position is met in the viewport - then it "sticks" in place (like position:fixed).

Exercise time

Position text in all corners && centre of an image

CSS - 2D transforms

CSS transforms allow you to move, rotate, scale, and skew elements.

- With transform property you can use following methodsL
  - translate()
  - rotate()
  - scaleX()
  - scaleY()
  - scale()
  - skewX()
  - skewY()
  - skew()
  - matrix()

CSS 3D-transforms

Same operations can be performed w.r.t 3D space as discussed in previous slide.

CSS FlexBox

Flexbox is a great way to get more flexibility in your layouts and to simplify responsive layout design. It makes it easy to align elements on a 2D plane and is pretty easy to use once you get familiar with the main properties.

- The first step is to set display: flex on a “**container**” element. The “**children**” to the flex container become flex items. A set of properties can be applied to flex containers, and have an effect to all the items as a whole, and a different set of properties can be applied to flex items and have their effect on the targeted items. Flex items can in turn also be flex containers for the elements it contains, making it easy to create complex layouts.

Flex-container Properties:

The flex container becomes flexible by setting the display property to flex:

- Flex-direction
- Flex-wrap
- Flex-flow
- Justify-content
- align-items
- Align-content

Flex-items Properties:

The direct child elements of a flex container automatically becomes flexible (flex) items.

- Order
- Flex-grow
- Flex-shrink
- Flex-basis
- Flex
- Align-self