[CSS 10]

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What we learnt last time?

- Why sprites are better than a lot of icons
- How to use sprites: background-position
- HTML-forms: types of inputs, required attributes

Our targets for today

- How to create a table with header, footer and content
- How to combine table cells horizontally and vertically
- New HTML5 semantic tags
- Background color with gradient
- Difference between radial and linear gradient;
- How to add shadow for a text
- How to add colorful shadow for block elements
- calc() function

[Tables]

- An HTML table is defined with the <table> tag
- Each table row is defined with the <tr> tag
- A table header is defined with the <th> tag
  - By default, table headings are bold and centered
- A table data/cell is defined with the <td> tag

```
<table>
    <tr>
        <th>Firstname</th>
        <th>Lastname</th>
        <th>Age</th>
    </tr>
    <tr>
        <td>Jill</td>
        <td>Smith</td>
        <td>50</td>
    </tr>
    <tr>
        <td>Eve</td>
        <td>Jackson</td>
        <td>94</td>
    </tr>
    <tr>
        <td>John</td>
        <td>Doe</td>
        <td>80</td>
    </tr>
</table>
```

Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94
John	Doe	80

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Tables – Adding a Border

- If you do not specify a border for the table, it will be displayed without borders.
- A border is set using the CSS border property:

```
table, th, td {
    border: 1px solid black;
}
```

Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94
John	Doe	80

- If you want the borders to collapse into one border, use border-collapse property:

```
table, th, td {
    border: 1px solid black;
    border-collapse: collapse;
}
```

Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94
John	Doe	80

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[Tables – Adding Cell Padding]

- Cell padding specifies the space between the cell content and its borders
- If you do not specify a padding, the table cells will be displayed without padding
- To set the padding, use the CSS padding property:

```
th, td {
    padding: 5px;
}
```

Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94
John	Doe	80

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Tables – Adding a Caption

- To add a caption to a table, use the <caption> tag
  - The <caption> tag must be inserted immediately after the <table> tag

```
<table>
    <caption>Monthly savings</caption>
    <tr>
        <th>Month</th>
        <th>Savings</th>
    </tr>
    <tr>
        <td>January</td>
        <td>$100</td>
    </tr>
    <tr>
        <td>February</td>
        <td>$50</td>
    </tr>
</table>
```

Monthly savings

Month	Savings
January	$100
February	$50

[Tables – Cells That Span Many Columns]

→ To make a cell span more than one column, use the colspan attribute:

```
<table>
    <tr>
        <th>Name</th>
        <th colspan="2">Telephone</th>
    </tr>
    <tr>
        <td>Bill Gates</td>
        <td>55577854</td>
        <td>55577855</td>
    </tr>
</table>
```

Name	Telephone	
Bill Gates	55577854	55577855

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Tables – Cells That Span Many Rows

→ To make a cell span more than one row, use the rowspan attribute:

```
<table>
    <tr>
        <th>Name:</th>
        <td>Bill Gates</td>
    </tr>
    <tr>
        <th rowspan="2">Telephone:</th>
        <td>55577854</td>
    </tr>
    <tr>
        <td>55577855</td>
    </tr>
</table>
```

Name:	Bill Gates
Telephone:	55577854
	55577855

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[Exercise (1)]

→ Build the following table:

November						
Sun	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

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[HTML5]

- HTML5 is relatively new version of the HTML language
- It was issued in 2014, while previous HTML update was dated 2000
- HTML5 is defined by the following simple doctype declaration: <!DOCTYPE html>
- HTML5 introduced a list of new semantic tags like <header>, <footer>, <article>, <section>, and others
- These elements will look the same as a regular , but give more semantic meaning to the code and make it much more readable

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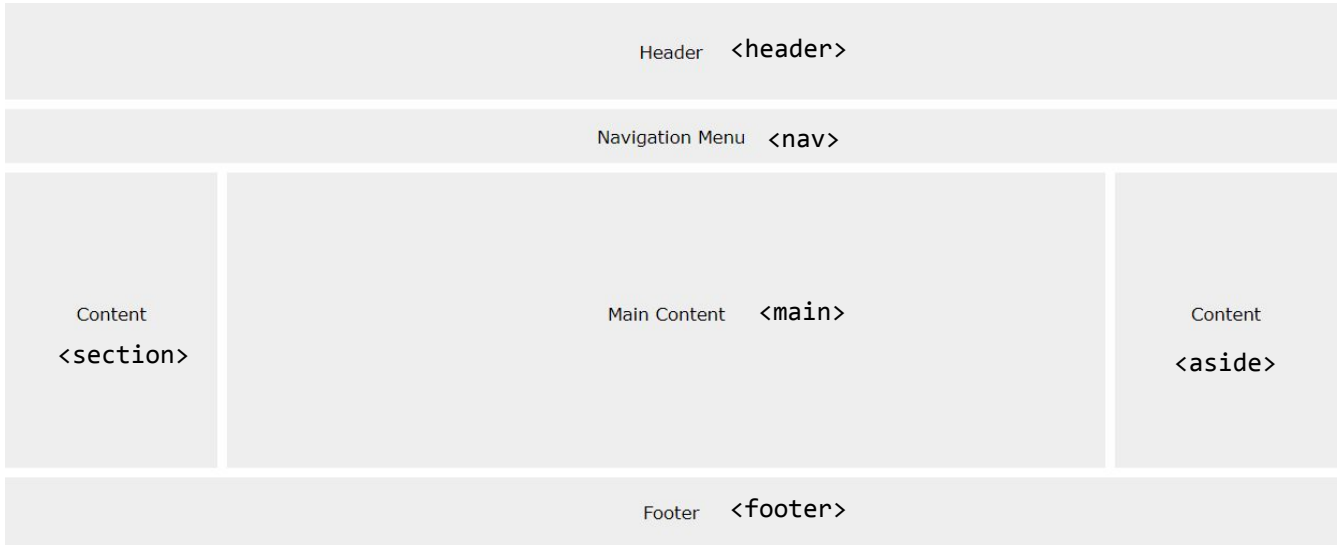
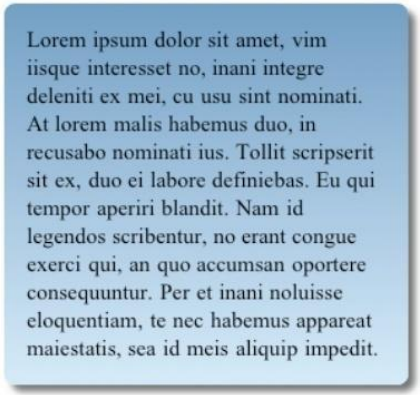
Using HTML5 tags

- A website is often divided into headers, menus, content and a footer
- These can be represented by new HTML5 tags



CSS Gradients

- CSS gradients let you display smooth transitions between two or more specified colors
- CSS defines two types of gradients:
  - **Linear Gradients** (goes down/up/left/right/diagonally)
  - **Radial Gradients** (defined by their center)
- IE9 and earlier versions do not support gradients



Linear Gradients

- 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: linear-gradient(direction, color-stop1, color-stop2, ...);`

Linear Gradients

- Top to bottom (default)

```
#grad1 {
    background: linear-gradient(blue, lightblue);
}
```

- Left to right

```
#grad2 {
    background: linear-gradient(to right, blue,
lightblue);
}
```

- Diagonal

```
#grad3 {
    background: linear-gradient(to bottom right,
blue, lightblue);
}
```

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Using Angles

- If you want more control over the direction of the gradient, you can define an angle, instead of the predefined directions
- Syntax: `background: linear-gradient(angle, color-stop1, color-stop2);`
- The angle is specified as an angle between a horizontal line and the gradient line

```
#grad4 {
    background: linear-gradient(30deg, yellow, red);
}
```

Using Transparency

- CSS gradients also support transparency, which can be used to create fading effect.
- To add transparency, we use the rgba() function to define the color stops
- The following example shows a linear gradient that starts from the left fully transparent, transitioning to full color red:

```
#grad5 {
    background: linear-gradient(to right, rgba(255,0,0,0), rgba(255,0,0,1));
}
```

Using Multiple Color Stops

→ The following example shows how to create a linear gradient (from left to right) with the color of the rainbow and some text:

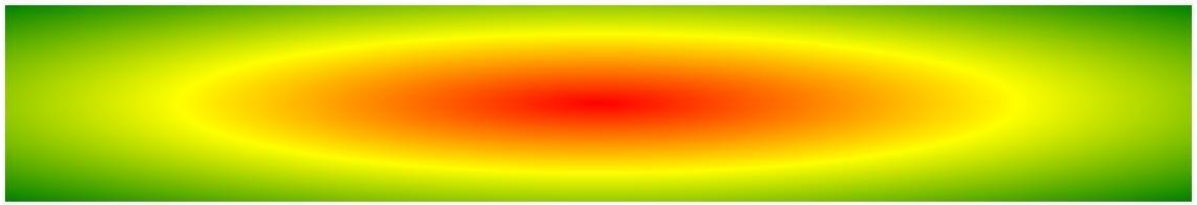
```
#grad6 {
    background: linear-gradient(to right, red, orange, yellow, green, blue, indigo, violet);
    text-align: center;
    color: #888888;
    font-size: 40px;
    font-weight: bold
}

<div id="grad6">
    Gradient Background
</div>
```

[Radial Gradients]

- A radial gradient is defined by its center
- Syntax: `background: radial-gradient(shape size at position, start-color, ..., last-color);`

- By default, shape is ellipse, size is farthest-corner, and position is center
- The following example shows a radial gradient with evenly spaced color stops:

```
#grad1 {
    background: radial-gradient(red, yellow, green);
}
```



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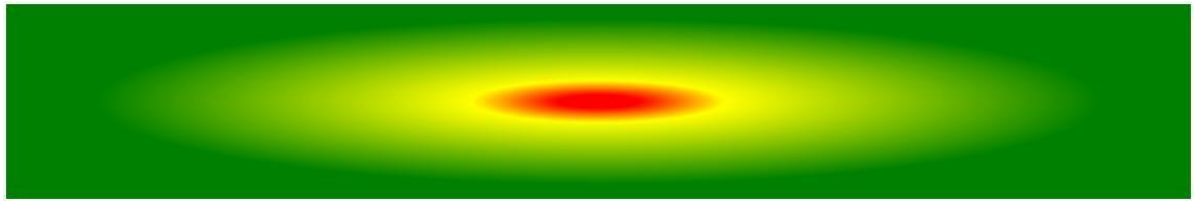
Radial Gradients - Differently Spaced Color Stops

→ The following example shows a radial gradient with differently spaced color stops:

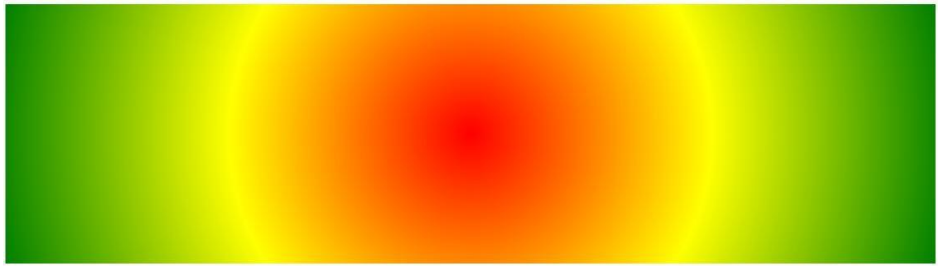
```
#grad2 {
    background: radial-gradient(red 5%, yellow 15%, green 60%);
}
```



Set Shape

- The shape parameter defines the shape. It can take the value circle or ellipse.
  - The default value is ellipse
- The following example shows a radial gradient with the shape of a circle:

```
#grad3 {
    background: radial-gradient(circle, red, yellow, green);
}
```



CSS Shadows

- With CSS you can add shadow to text and to elements
- The text-shadow property applies shadow to text
- In its simplest use, you only specify the horizontal shadow and the vertical shadow:

```
h1 {
    text-shadow: 2px 2px;
}
```

Text-shadow effect

- Next, add a color to the shadow:

```
h1 {
    text-shadow: 2px 2px red;
}
```

Text-shadow effect

- Then, add a blur effect to the shadow:

```
h1 {
    text-shadow: 2px 2px 5px red;
}
```

Text-shadow effect

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Multiple Shadows

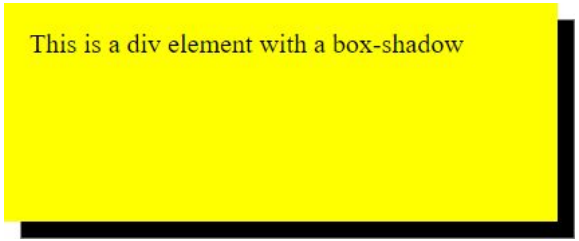
- To add more than one shadow to the text, you can add a comma-separated list of shadows
- The following example shows a white text with black, blue, and darkblue shadow:

```
h1.multiple-shadows {
    color: white;
    text-shadow: 1px 1px 2px black, 0 0 25px blue, 0 0 5px darkblue;
}
```

Box Shadow

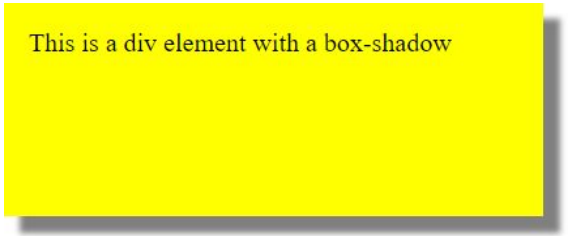
- The CSS box-shadow property applies shadow to elements
- In its simplest use, you only specify the horizontal shadow and the vertical shadow:

```
div {
    width: 300px;
    height: 100px;
    padding: 15px;
    background-color: yellow;
    box-shadow: 10px 10px;
}
```



- You can also add a color and a blur effect to the shadow:

```
div {
    width: 300px;
    height: 100px;
    padding: 15px;
    background-color: yellow;
    box-shadow: 10px 10px 5px grey;
}
```



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Exercise (2)

→ Use the box-shadow property to create a paper-like card:

Transforms

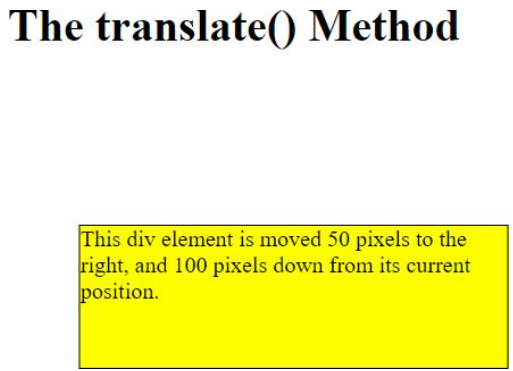
- CSS transforms allow you to translate, rotate, scale, and skew elements
- A transformation is an effect that lets an element change shape, size and position
- You can use one of the following methods for transformations:
  - translate()
  - rotate()
  - scale()
  - skewX()
  - skewY()
  - skew()
  - matrix()

The translate() Method

- The translate() method moves an element from its current position (according to the parameters given for the X-axis and the Y-axis)
- The following example moves the element 50 pixels to the right, and 100 pixels down from its current position:

```
div {
    width: 300px;
    height: 100px;
    background-color: yellow;
    border: 1px solid black;
}

div.translate {
    transform: translate(50px, 100px);
}
```

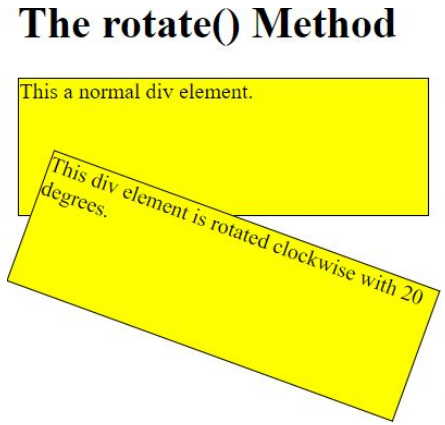


The rotate() Method

- The rotate() method rotates an element clockwise or counter-clockwise according to a given degree
  - Using negative values will rotate the element counter-clockwise
- The following example rotates the element clockwise with 20 degrees:

```
div {
    width: 300px;
    height: 100px;
    background-color: yellow;
    border: 1px solid black;
}

    div.rotate {
        transform: rotate(20deg);
    }
```

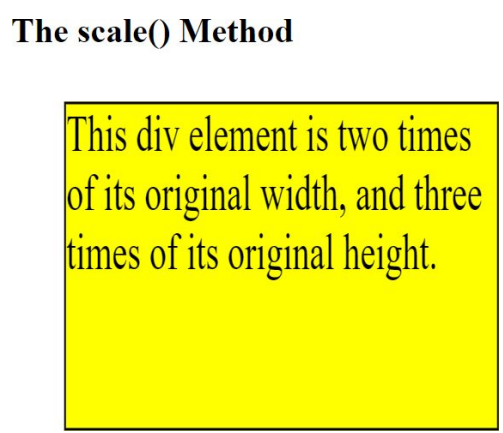


The scale() Method

- The scale() method increases or decreases the size of an element (according to the parameters given for the width and height)
- The following example increases the element to be two times of its original width, and three times of its original height:

```
div {
    margin: 150px;
    width: 200px;
    height: 100px;
    background-color: yellow;
    border: 1px solid black;
}

div.scale {
    transform: scale(2,3);
}
```

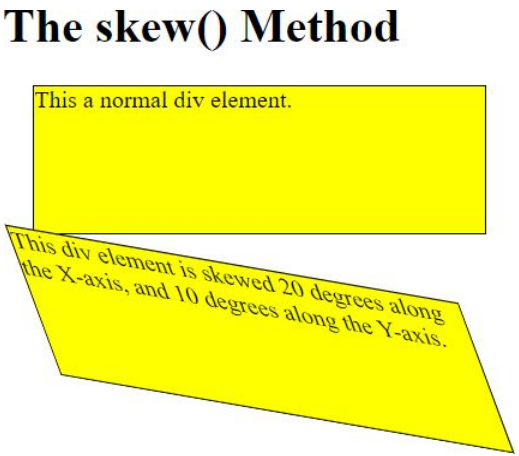


The skew() Method

- The skew() method skews an element along the X and Y-axis by the given angles.
- The following example skews the element 20 degrees along the X-axis, and 10 degrees along the Y-axis:

```
div {
    margin:   20px;
    width:   300px;
    height: 100px;
    background-color: yellow;
    border: 1px solid black;
}

div.skew {
    transform: skew(20deg,10deg);
}
```



CSS calc()

- The **calc()** function lets you perform calculations when specifying CSS property values
- The operands in the expression may be any CSS units value
- You can use different units for each value in your expression, if you wish
- calc() makes it easy to position an object with a set margin.
- For example, the CSS creates a banner that stretches across the window, with a 40-pixel gap between both sides of the banner and the edges of the window:

```
.banner {
    position: absolute;
    left: calc(40px);
    width: calc(100% - 80px);
    border: solid black 1px;
    box-shadow: 1px 2px;
    background-color: yellow;
    padding: 5px;
    text-align: center;
    box-sizing: border-box;
}
```

Control questions

1. Explain HTML Table structure and name its elements
2. Name HTML5 tags that we could use to describe page layout
3. How can we create gradient background with CSS3?
4. What types of gradient backgrounds are there?
5. How can we create shadow for text and for box-element?
6. Name some transform methods and their purpose
7. Can we calculate CSS values dynamically? How?