

Cascading Style Sheets **CSS**

CPE5013 - BACK-END PROGRAMMING

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Cascading Style Sheets (CSS)

CSS isolates “appearance/style” from “content/html”
allowing themes and templates to be used.

รูปภาพ

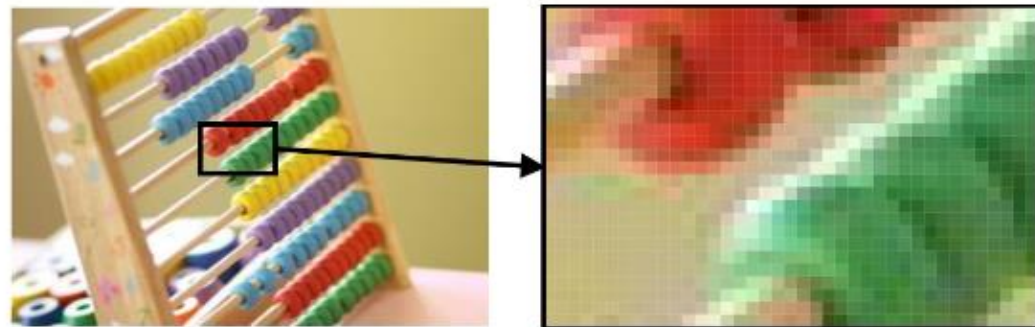
รูปภาพในสื่อออนไลน์สามารถแบ่งออกเป็น 2 ประเภทหลัก ๆ ได้แก่ ราสเตอร์กราฟิกส์ (Raster graphics) และเวกเตอร์กราฟิกส์ (Vector graphics)

ราสเตอร์กราฟิกส์ (Raster graphics)

ภาพส่วนใหญ่ที่เราพบเห็นบนอินเทอร์เน็ตมักจะเป็นราสเตอร์กราฟิก (Raster graphics) เช่น ภาพ JPG, PNG, GIF, หรือ TIF

ภาพที่ถ่ายจากกล้องดิจิทัล กล้องมือถือ หรือแคปจากหน้าจอ เป็นราสเตอร์กราฟิกส์ทั้งหมด

ราสเตอร์กราฟิกส์จะเก็บข้อมูลรูปภาพในลักษณะของตารางพิกเซล เมื่อมองจากระยะที่เหมาะสม ภาพจะดูคมชัด แต่หากขยายภาพให้ใหญ่ขึ้น ณ จุดหนึ่งภาพจะแตกหรือเบลอ เนื่องจากการขยายขนาดของภาพจะเป็นการขยายขนาดของพิกเซล ดังตัวอย่างต่อไปนี้



รูปภาพ

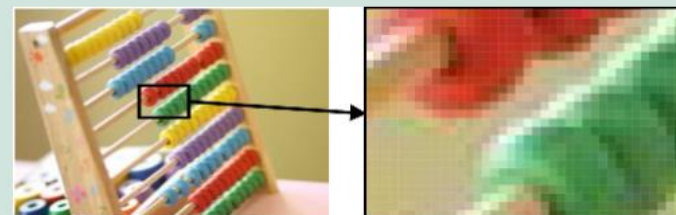
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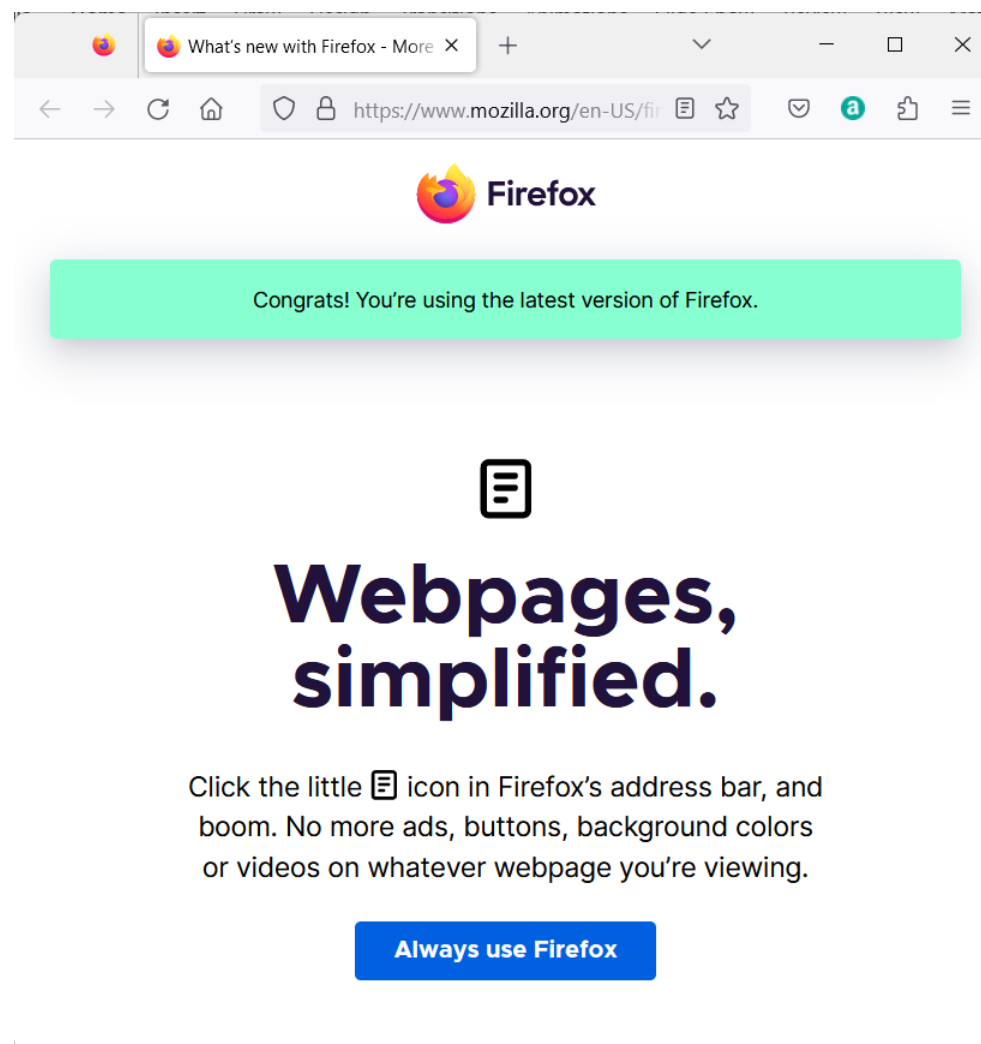
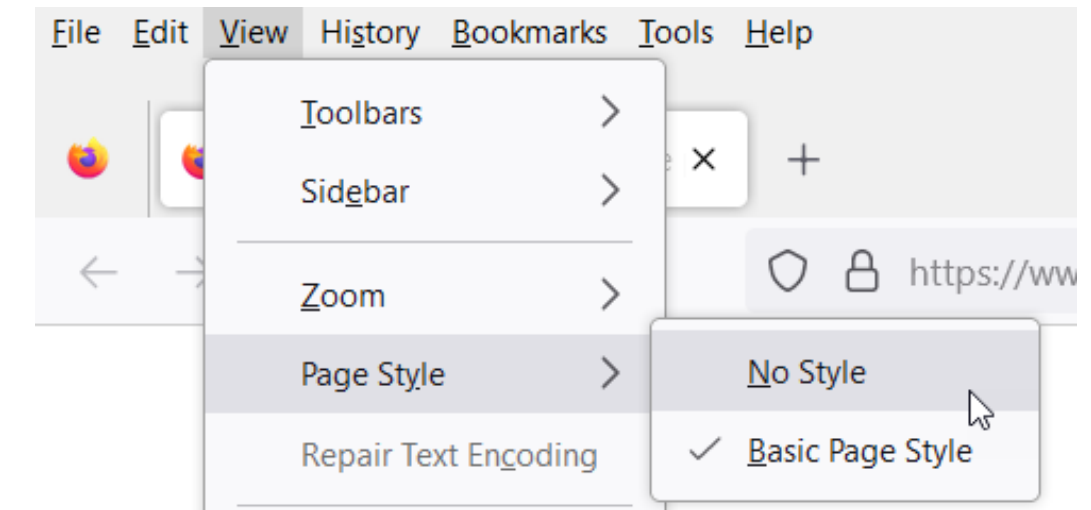
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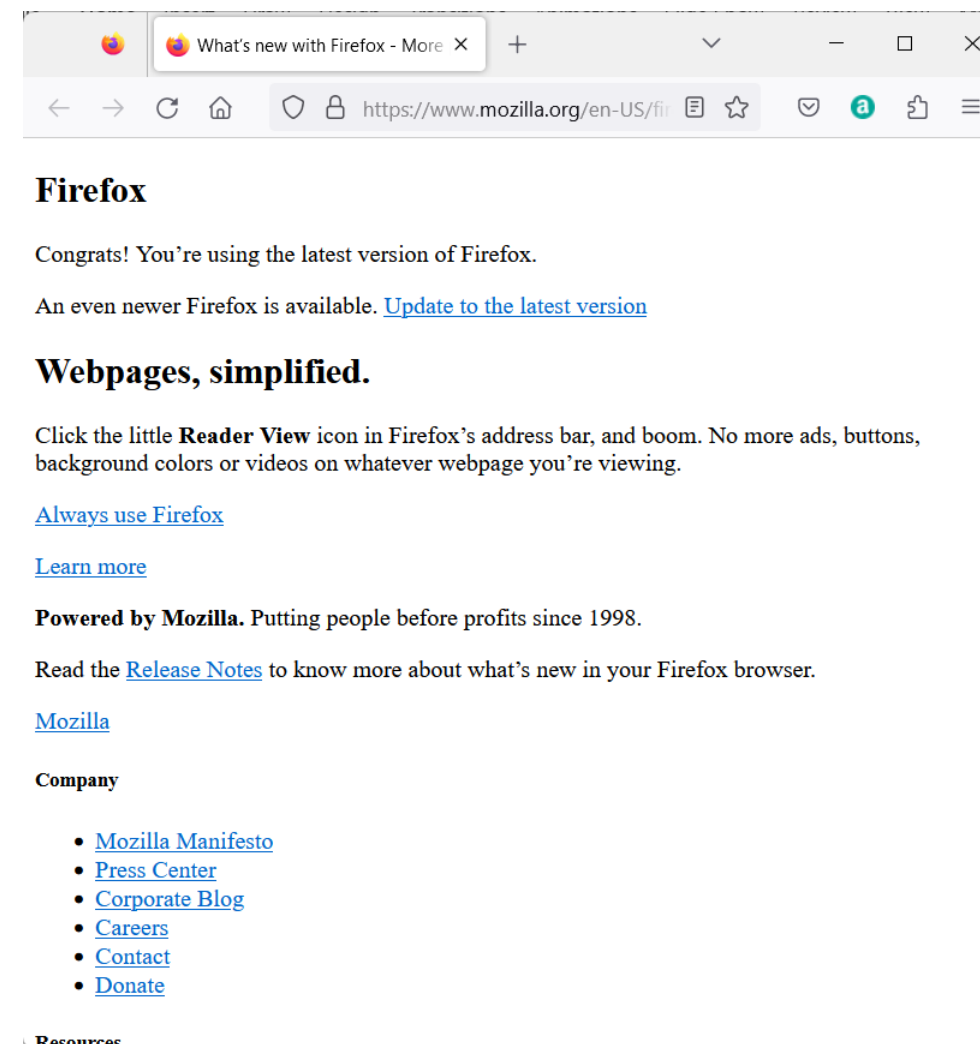
Plain HTML without styles?

Firefox can display plain HTML web pages without style.

Alt → View → Page Style → No Style



With CSS



No CSS

This shows how blind people perceive information on web pages.

No-style web pages are used as part of accessibility checking.

The website should be usable even without CSS.

CSS Syntax

CSS is a set of “rules” which include:

- **Selector** -- Which part of the document this rule applies to
- **Properties** -- Which aspect of CSS we are changing
- **Values** -- What we are setting the property to

as well as some punctuation marks.

```
body {  
    font-family: arial, sans-serif;  
}
```

Example

- This rule applies to the body part of the document.
- This rule affects the font.
- It will use Arial font first, if not installed, it will use sans-serif.

Selectors

Selectors are used to find or select the HTML elements we want to style. These are categorized as follows:

1. Universal selector

Selects all elements on the pages.

Example

```
* {  
    background-color: #D0E4F5;  
    text-align: center;  
}
```

2. Type selector

Select all HTML tag/element of given type in the document.

Examples

```
p {  
    color: white;  
}
```

```
h1 {  
    text-align: center;  
}
```

Frequently-used text properties

color

background-color

visibility (visible/hidden)

font-family (arial, sans-serif, ..)

font-size (small, 12px, 2em, ..)

font-style (italic, normal, ..)

font-weight (bold, normal, ..)

text-align (left, center, ..)

vertical-align (top, middle, ..)

text-transform (lowercase, ..)

text-decoration (underline, ..)

Question

What CSS made this result?

Chapter 1 Introduction

Travel and tourism have become the world's largest and fastest growing industry, and its growth shows a consistent year to year increase. With one billion international travelers in 2012, countries are increasingly developing tourism as part of their national development strategies as an effective driver of economic growth and inclusive development.

1.1 Definitions

Traditionally, disability has been considered a medical or biological condition attributed to a particular individual, a dysfunction that needed to be fixed by treatment or rehabilitation. According to this approach it is the disabled person that needs to be changed or altered.

1.1.1 Disability

Disability results from the interaction between people with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others.

1.1.2 People with disabilities

For the purposes of this document, the term "disabled person" means any person whose full and effective participation in society on an equal basis with others in travel, accommodation and other tourism services is hindered by the barriers in the environment they are in and by attitudinal barriers.

A.

```
h1 {  
    background-color: yellow;  
}
```

B.

```
h1 {  
    text-align: center;  
}
```

C.

```
p {  
    font-family: times;  
}
```

D.

```
body {  
    color: yellow;  
}
```

★ Multiple Choice

Question

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1.2 Accessible Tourism for All

This is a form of tourism that involves a collaborative process among stakeholders that enables people with access requirements, including mobility, vision, hearing, and cognitive dimensions of access, to function independently and with equity and dignity through the delivery of universally designed tourism products, services, and environments.

1.2.1 Urban and architectural environments

The following are the general requirements that tourism facilities and sites should comply with:

What CSS made this result?

A.

```
h1 {  
    text-align: center;  
}
```

B.

```
h2 {  
    text-align: center;  
}
```

C.

```
h2 {  
    margin-left: auto;  
}
```

D.

```
h3 {  
    color: black;  
}
```

★ Multiple Choice

3. ID selector

Select an element based on the value of its unique id attribute.

Examples

```
#mgr1 {  
    color: green;  
    text-align: center;  
}
```

} head


```
<h1 id="mgr1">Chapter 1 ..</h1>
```

} body

Chapter 1 Introduction

Travel and tourism have become the world's largest and fastest growing industry, and its growth shows a consistent year to year increase. With one billion international travelers in 2012, countries are increasingly developing tourism as part of their national development strategies as an effective driver of economic growth and inclusive development.

* Each ID must be assigned to one element only.

4. Class selector

Select all elements in the document that have the given class attribute.

Examples

```
.git {  
    color: green;  
    font-style: italic;  
}
```

} head

```
<h1 class="git">Chapter 1</h1>  
<h2 class="git">Section 1</h2>  
<div class="git">...</div>
```

} body

* Each class can be assigned to multiple elements.

Chapter 1 Introduction

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Disability results from the interaction between people with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others.

5. Attribute selector

Select an element with some specific attribute or attribute value.

Examples

Select all <p> tags in the document that have "align" attribute

```
p[align] {  
    color: red;  
}
```

} head

Selected ➡ `<p align="left">Travel and tourism have become ..</p>`

Selected ➡ `<p align="center">Traditionally, disability has been ..</p>`

Not Selected ➡ `<p>Disability results from the ..</p>`

} body

Examples

```
p[align="center"] {  
    color: red;  
}
```

} head

Not
Selected



```
<p align="left">Travel and  
tourism have become ..</p>
```

Selected



```
<p align="center">Traditionally,  
disability has been ..</p>
```

Not
Selected



```
<p>Disability results from the  
..</p>
```

} body

Question

The style was assigned as follow:

```
p[class] {  
  font-style: italic;  
}
```

Which of these paragraphs will be italic?

* Select all that apply.

A. `<p align="left"> . .</p>`

B. `<p class="top2"> . .</p>`

C. `<p class="bot5"> . .</p>`

D. `<p> . .</p>`

★ Multiple Choice

Span and div tags

```
1 <html>
2 <head>
3   <title>Test Page</title>
4 </head>
5 <body>
6   <p style="font-size:1.5em;">
7     This text is affected by the p style. <span style=
8       "font-weight:bold;">A span tag applies immediate
9       styles to a text</span>. This text is also in the
10      same paragraph.
11    </p>
12    <div style="color:red;">
13      The div tag can be nested.
14      <div style="font-weight:bold;">This is the inner
15        div (2 styles applied).
16      </div>
17      This is the outer div (one style applied).
18    </div>
19  </body>
20 </html>
```

This text is affected by the p style. **A span tag applies immediate styles to a text.** This text is also in the same paragraph.

The div tag can be nested.
This is the inner div (2 styles applied).
This is the outer div (one style applied).

6. Combinators

Complex selectors consisting of more than one selectors having some relationship between them.

General Sibling selector (~)

Select the element that follows the first selector element and also shares the same parent as the first selector element.

Examples

Apply to <p> and <p> inside </div>

```
div ~ p{  
  color: green;  
}  
div {  
  text-align: center;  
}
```

head

Center <div>..</div>

Green <p>..</p>

Center
+ Green
<div>
 <p>..</p>
</div>

body

Adjacent Sibling selector (+)

Select the element that is adjacent or the element that is next to the specified selector tag.

Examples

Apply to <p> that comes right after </div>

```
div + p{  
  color: green;  
}  
div {  
  text-align: center;  
}  
p {  
  font-style: italic;  
}
```

head

Italic	. .	body
Center	. .	
Italic + Green	. .	
Italic	. .	

Child selector (>)

Select the element that is the immediate child of the specified tag.

Examples

Apply to the immediate
<p> inside <div>

```
div > p {  
  color: green;  
}  
div {  
  text-align: center;  
}  
p {  
  font-style: italic;  
}
```

head

Italic <p>..</p>
Center <div>..</div>

 <div>
Italic + Green + Center <p>..</p>

Italic + Center <p>..</p>

 </div>

body

Descendant selector (space)

Select all the child elements of the specified tag.

Examples

Apply to all <p> inside
</div>

```
div p{  
  color: green;  
}  
div {  
  text-align: center;  
}  
p {  
  font-style: italic;  
}
```

head

Italic <p>..</p>

Center <div>..</div>

 <div>

Italic + Green + Center <p>..</p>

Italic + Green + Center <p>..</p>

 </div>

body

Question

The style was assigned as follow:

```
div ~ p{  
    font-style: italic;  
}  
div {  
    font-weight: bold;  
}
```

These elements run in this order.
Which one(s) will be bold-italic?

* Select all that apply.

A.

`<div>..</div>`

B.

`<p>..</p>`

C.

`<p>..</p>`

D.

`<div><p>..</p></div>`



Multiple Choice

Question

The style was assigned as follow:

```
div > p{  
    font-weight: bold;  
}  
div {  
    text-align: center;  
}  
p {  
    color: blue;  
}
```

These elements run in this order.
Which one(s) will be bold?

* Select all that apply.

A. `<p>..</p>`

B. `<div>..</div>`

`<div>`

C. `<p>..</p>`

`<span>`

D. `<p>..</p>`

`</span>`

`</div>`

 Multiple Choice

7. Pseudo

Define the special state of an element to add an effect to an existing element based on its states.

:hover Shows when a mouse pointer is over the selected element.

:active Shows when the user clicks on it.

:focus Shows when the user focusses on it (*e.g., typing in a text box*).

:visited Shows when the target (of a link) is already visited by the user.

:not Invert the Boolean result of a Pseudo class.

Examples

```
.box {  
    background-color: yellow;  
    width: 300px;  
    height: 200px;  
    margin: auto;  
    font-size: 40px;  
    text-align: center;  
}  
  
.box:hover {  
    background-color: orange;  
}
```

```
<div class="box">
```

My color changes if you hover over me!

```
</div>
```

My color changes
if you hover over
me!

My color changes
if you hover over
me!

Frequently-used object properties

border-width

border-style

border-color

margin

border

padding

float (left, right, none)

left / top

position (static, relative, absolute)

z-index

Inspection of a paragraph in Chrome

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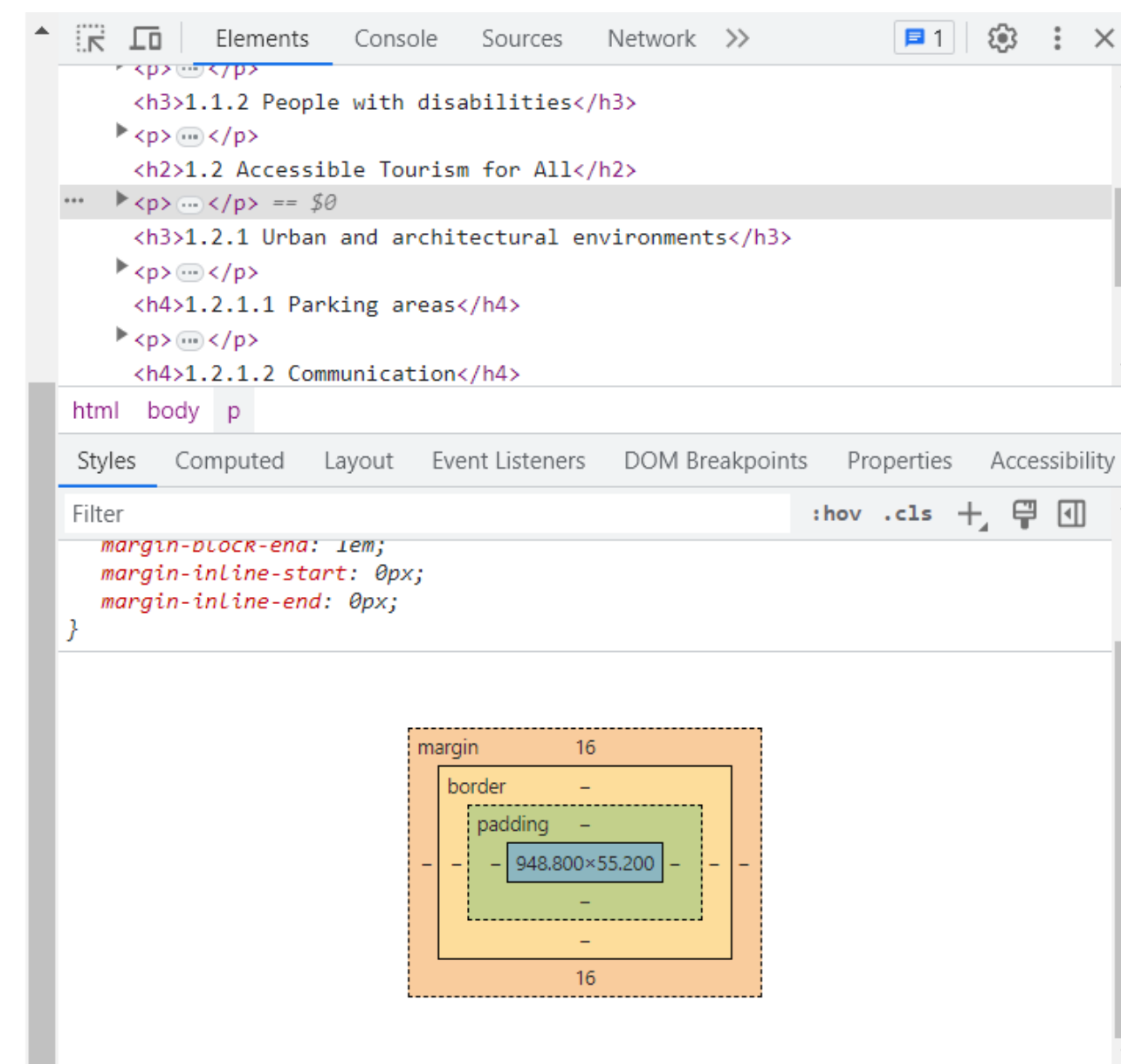
1.2.1 Urban and architectural environments

The following are the general requirements that tourism facilities and sites should comply with:

1.2.1.1 Parking areas

There should be special parking spaces with proper identification for vehicles of persons with reduced mobility, as near as possible to the entry and exit points of buildings or tourist attractions. These parking spaces should be monitored to prevent their use by non-disabled people.

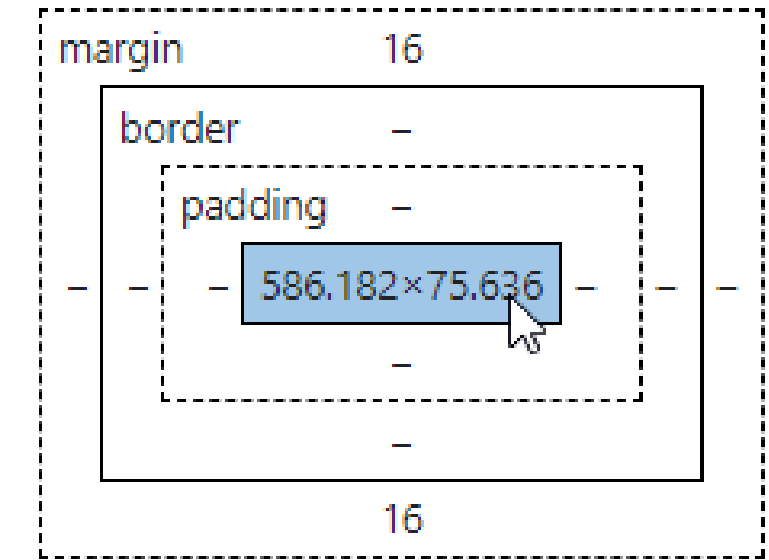
1.2.1.2 Communication



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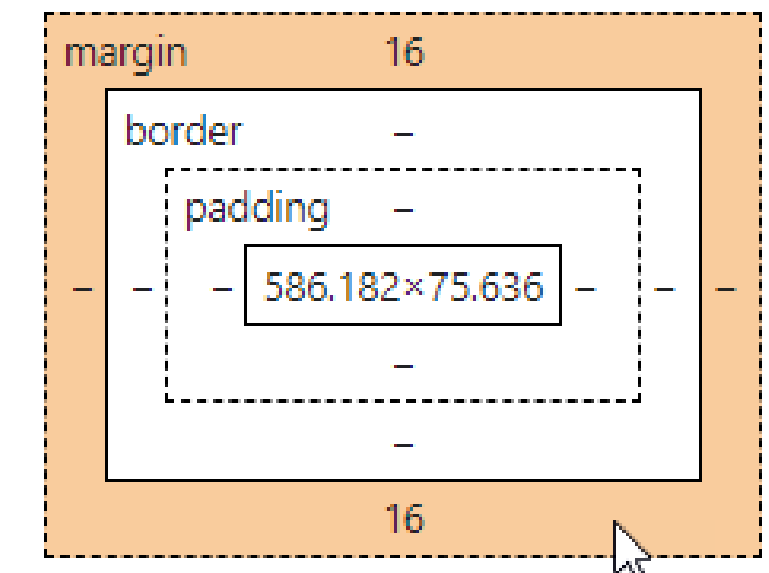
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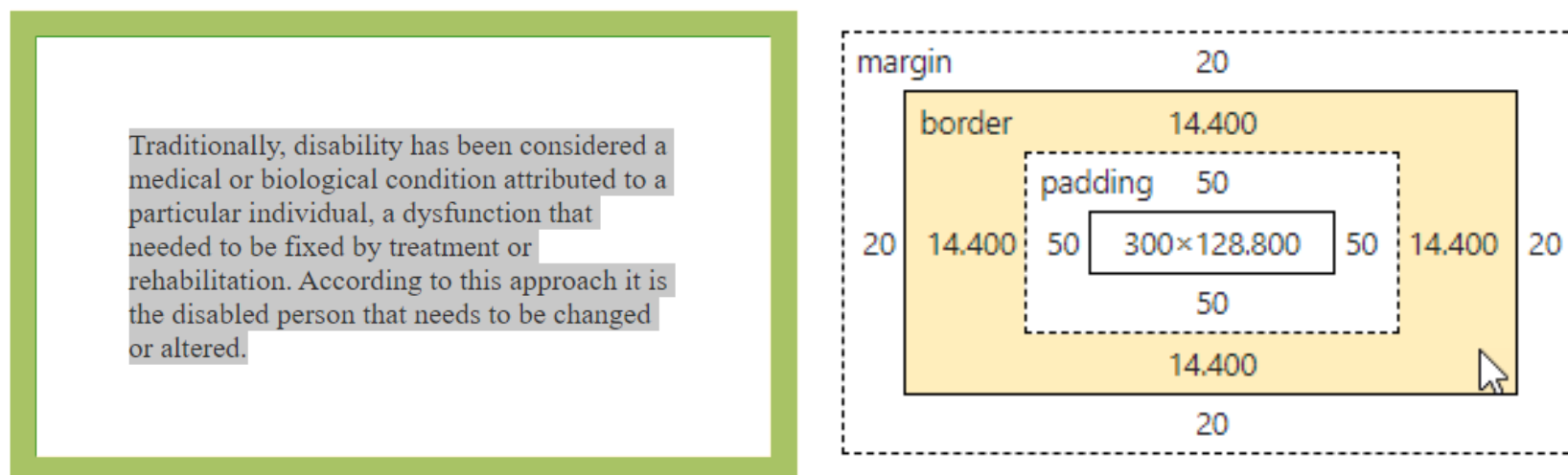


Changing CSS box

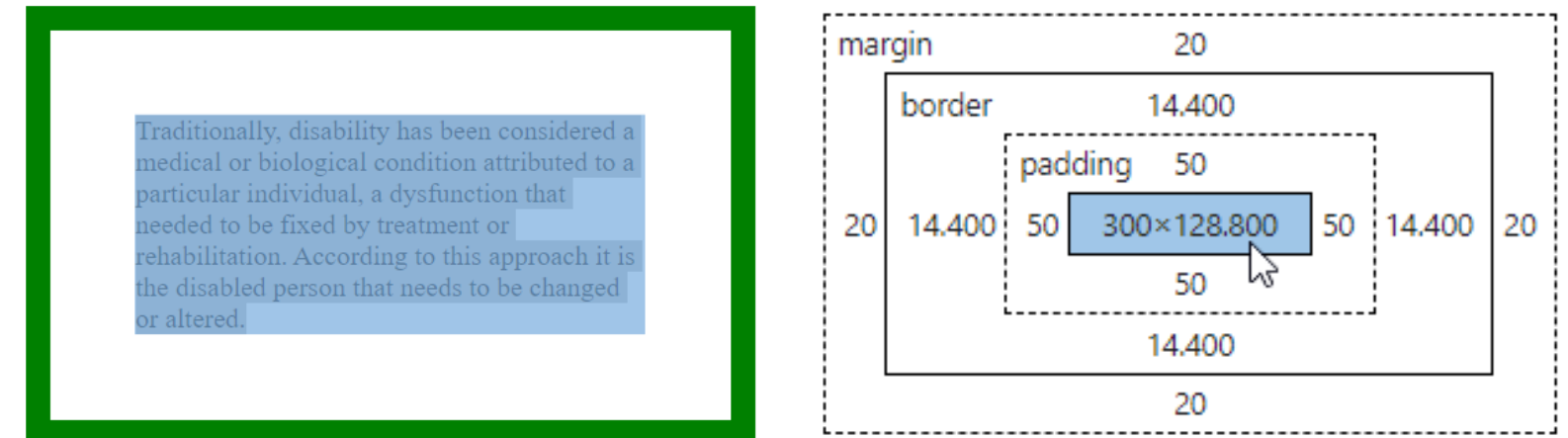
Examples

```
p {  
  width: 300px;  
  padding: 50px;  
  border: 15px solid green;  
  margin: 20px;  
}
```

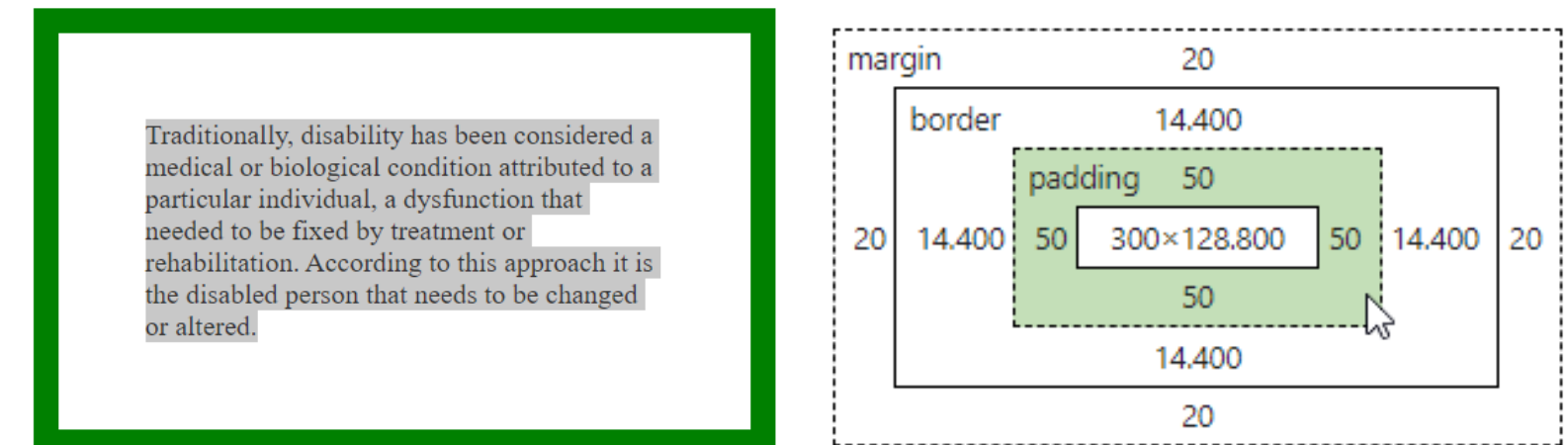
1.1 Definitions



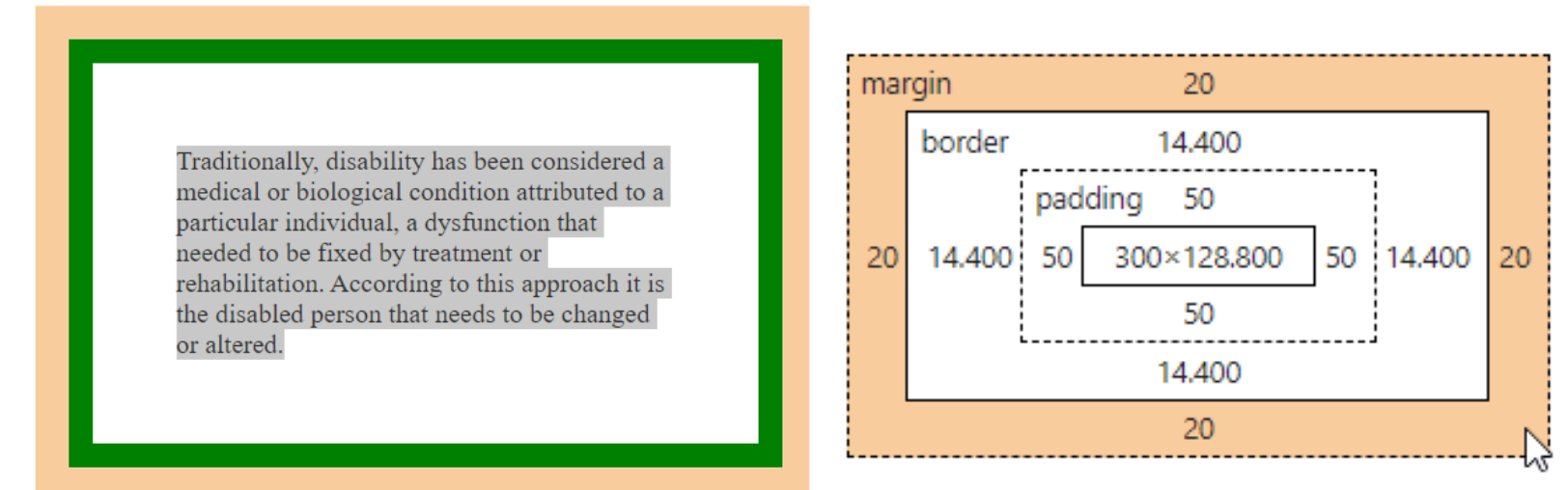
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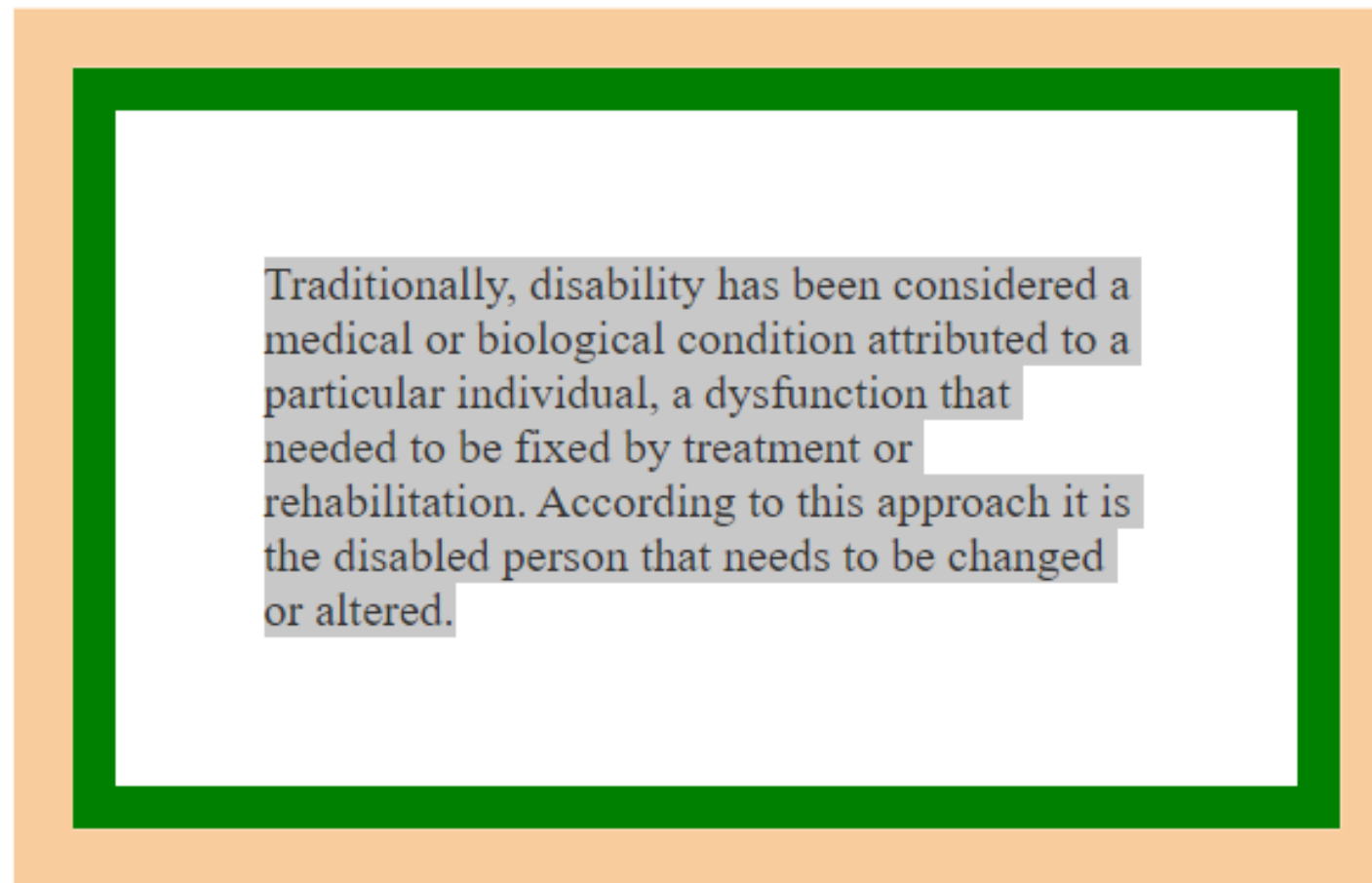


1.1.1 Disability

Question

What is the white space around the paragraph text?

1.1 Definitions



1.1.1 Disability

- A. Width
- B. Padding
- C. Border
- D. Margin

★ Multiple Choice

Applying CSS

1. Inline

Apply CSS right on an HTML tag using the `style=attribute`.

Example

```
<p style="color:red; font-family:courier; font-size:2em;">  
This is a paragraph.</p>
```

This is a paragraph.

2. Head

Embed a CSS style sheet in the head of the document.

Example

```
1 <html>
2 <head>
3   <title>Test Page</title>
4   <style>
5     p {
6       color:red;
7       font-family:courier;
8       font-size:2em;
9     }
10  </style>
11 </head>
12 <body>
13   <p>This is a paragraph.</p>
14 </div>
15 </body>
16 </html>
```

This is a paragraph.

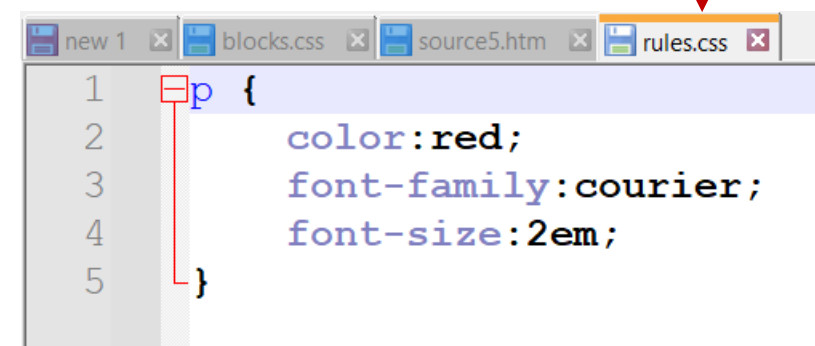
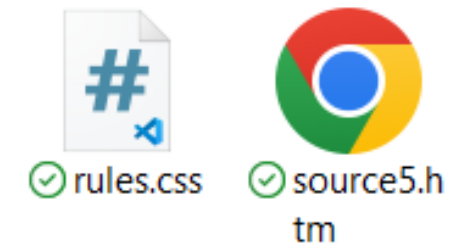
3. Separate

Add an external style sheet as a separate .css file.

Example



```
1 <html>
2 <head>
3   <title>Test Page</title>
4   <link type="text/css" rel="stylesheet" href="rules.css">
5 </head>
6 <body>
7   <p>This is a paragraph.</p>
8 </div>
9 </body>
10 </html>
```

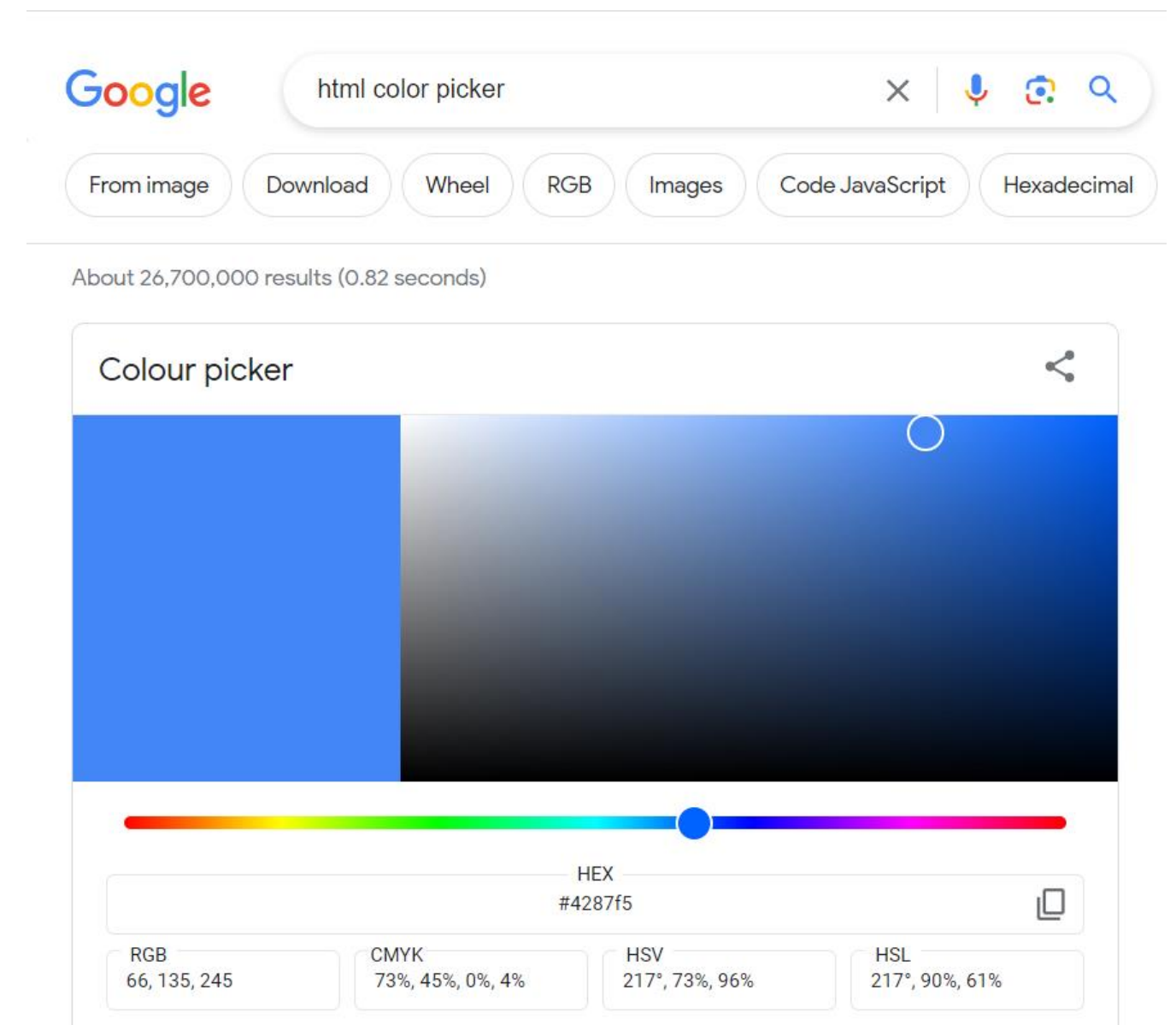


```
1 p {
2   color:red;
3   font-family:courier;
4   font-size:2em;
5 }
```

Attributes

1. Color

Color Name	Color Code	Color Name	Color Code
Red	#FF0000	White	#FFFFFF
Cyan	#00FFFF	Silver	#C0C0C0
Blue	#0000FF	Gray or Grey	#808080
DarkBlue	#00008B	Black	#000000
LightBlue	#ADD8E6	Orange	#FFA500
Purple	#800080	Brown	#A52A2A
Yellow	#FFFF00	Maroon	#800000
Lime	#00FF00	Green	#008000
Magenta	#FF00FF	Olive	#808000
Pink	#FFC0CB	Aquamarine	#7FFFD4



More colors: <https://www.computerhope.com/htmcolor.htm> (W3C = Can use color name)

Question

What is the W3C "Green" color code?

- A. #FF0000
- B. #00FF00
- C. #800000
- D. #008000

 Multiple Choice

2. Font-family

Web-safe fonts:

- Arial (sans-serif)
- Verdana (sans-serif)
- Tahoma (sans-serif)
- Trebuchet MS (sans-serif)
- Times New Roman (serif)
- Georgia (serif)
- Garamond (serif)
- Courier New (monospace)
- *Brush Script MT* (cursive)

Using a font family name

→ Browser will pick the default font for each family

Serif

Sans-serif

Monospace

Cursive

Fantasy

Question

Which of the following fonts is in the “**Serif**” family?

- A. Times New Roman
- B. Verdana
- C. Tahoma
- D. Arial

 Multiple Choice

3. Font-size

xx-small

10px

0.5em

x-small

15px

1em

small

30px

2em

medium

Constant size
in pixels

2rem

large

Size in relation to
its parent (em) or
root (rem)

x-large

10pt

50%

xx-large

12pt

100%

16pt

200%

```
.parent {  
    font-size: 20px;  
}  
.child {  
    font-size: 2em;  
}  
  
<div class="parent">  
    This is parent  
    <div class="child">  
        This is Child  
    </div>  
</div>
```

W3C font sizes

Unit in MS Word

Percent in relation to
the normal font size

Generally,
1em = 12pt = 16px = 100%

4. Element width and height

Used with images, blocks, and others.

`height: 200px;` Constant 200 pixels

`width: 50%;` 50% of the containing block *(e.g., inside a table cell)*

`height: 20cm;` Constant 20 centimeters

`width: 50%;` 50% of the containing block *(e.g., inside a table cell)*

5. Link

```
a {  
}
```

Normal (blue-underlined)

```
a:link {  
}
```

Before a visit

```
a:visited {  
}
```

After it has been visited

```
a:hover {  
}
```

When your mouse is over it but you have not clicked

```
a:active {  
}
```

You have clicked it and you have not yet seen the new page