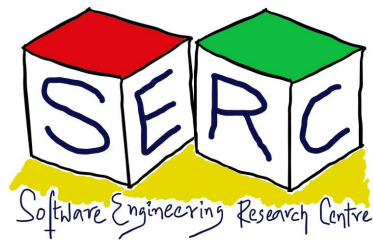


# Web Technologies

Spring 2025

CS6.201 - Introduction to Software Systems

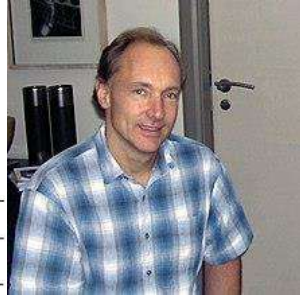
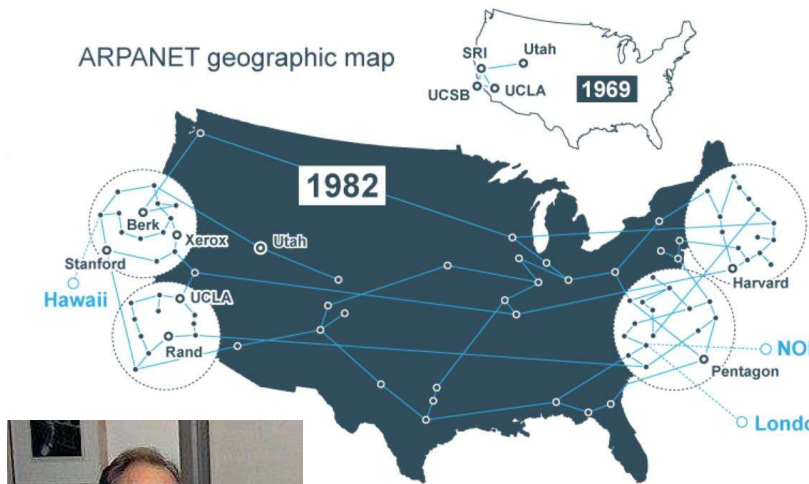
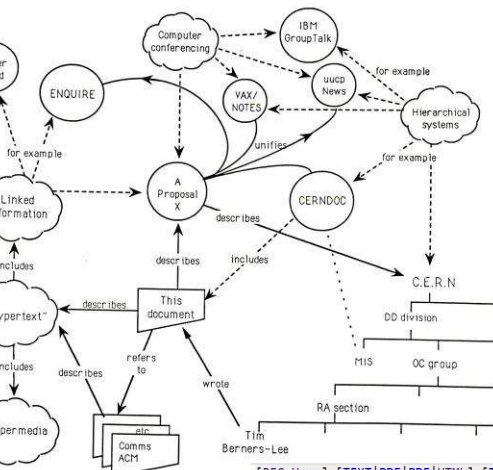


**Information Management: A Proposal**

**Abstract**

This proposal concerns the management of general information about accelerators and experiments at CERN. It discusses the problems of loss of information about complex evolving systems and derives a solution based on a distributed hypertext system.

**Keywords:** Hypertext, Computer conferencing, Document retrieval, Information management, Project control



Dot-decimal notation  
Binary numbering  
Octet's order

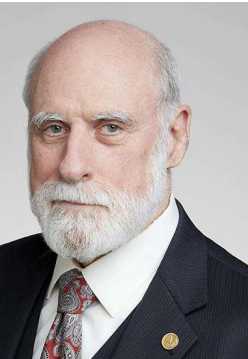
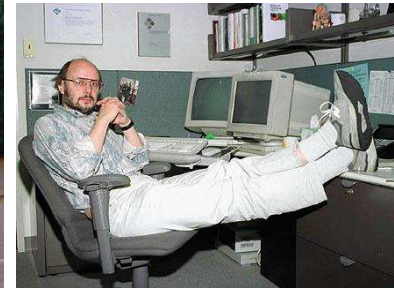
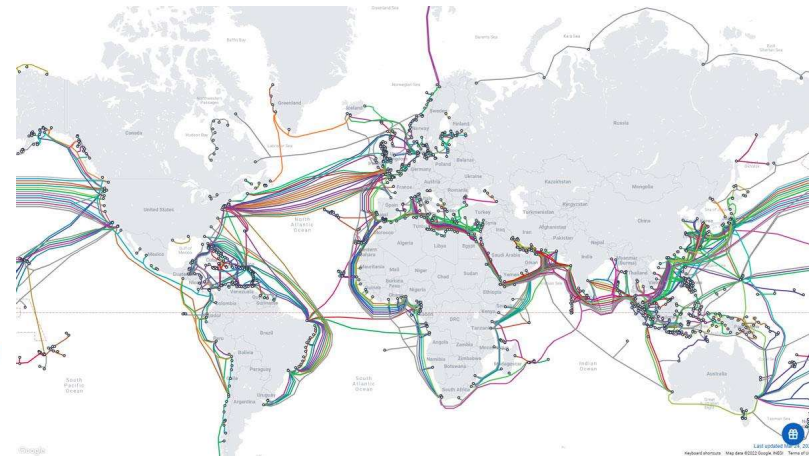
Most significant bit

172 . 16 . 254 . 1

10101100.00010000.11111110.00000001

1<sup>st</sup> 2<sup>nd</sup> 3<sup>rd</sup> 4<sup>th</sup>

32-bit (4 bytes)



[[RFC Home](#)] [[TEXT](#)] [[PDF](#)] [[PDF](#)] [[HTML](#)] [[Tracker](#)] [[IPR](#)] [[Errata](#)] [[Info page](#)]

INTERNET STANDARD  
Errata Exist  
Vint Cerf  
UCLA  
October 16, 1969

Request for Comments: 20

ASCII format for Network Interchange

For concreteness, we suggest the use of standard 7-bit ASCII embedded in an 8 bit byte whose high order bit is always 0. This leads to the standard code given on the attached page, copies from USAS X3, 4-1968. This code will be used over HOST-HOST primary connections. Break characters will be defined by the receiving remote host, e.g. SRI uses "." (ASCII X'2E' or 2/14) as the end-of-line character, where as UCLA uses X'0D' or 0/13 (carriage return).

USA Standard Code for Information Interchange

1. Scope

This coded character set is to be used for the general interchange of information among information processing systems, communication systems, and associated equipment.



<https://www.rfc-editor.org>





<https://www.whois.com>  
<https://www.datacentermap.com>

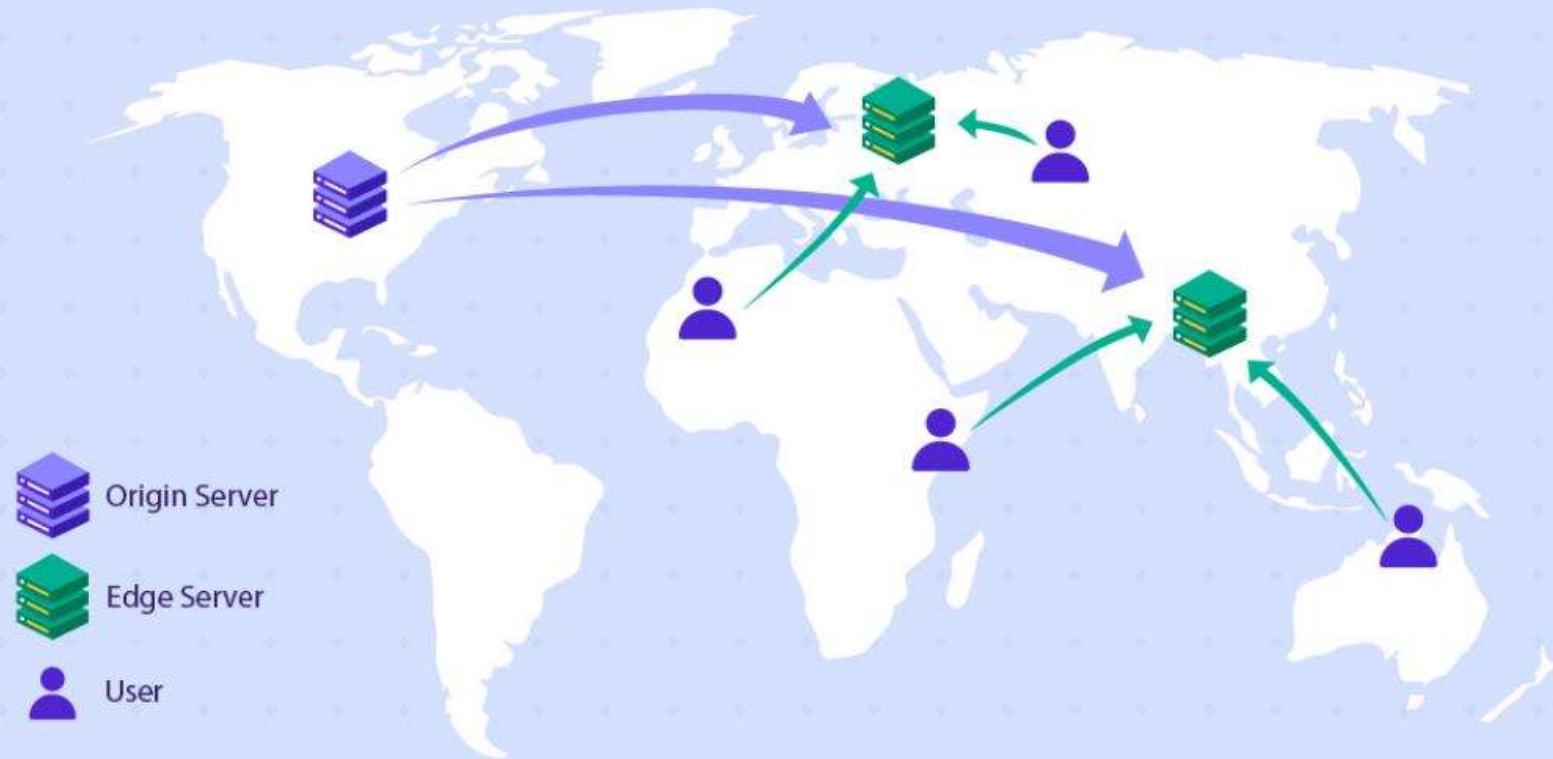




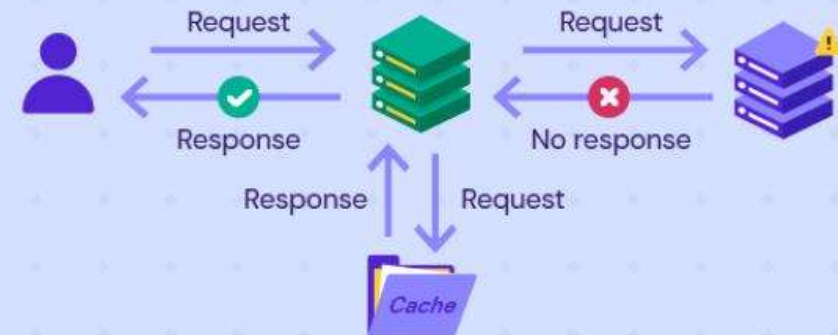
# Content Delivery Network



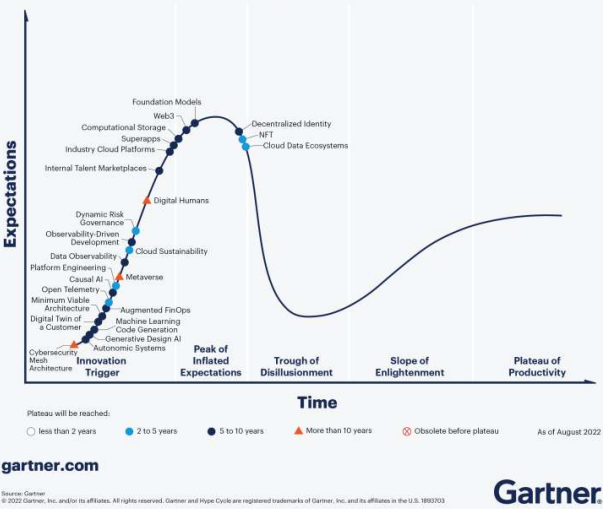
## How Does a CDN Work?



When a user visits a static website for the first time, a CDN server will transfer the files from the origin server. Note that you can access the content even when the origin server is not working since a CDN server typically stores and serves the static cached data.



Hype Cycle for Emerging Tech, 2022



Web 1.0

Web 2.0

Web 3.0

Web 4.0

**READ-ONLY**  
**Almost No-Interaction**  
**Company-Centered**

Static Web Pages,  
Encyclopedia, Phonebook,  
Static News, Information

**READ+WRITE**  
**Shared-Dynamic**  
**Community-Centered**

Email, Wikipedia, Social  
Network, Stock Market, E-  
News, Video Websites, Mobile

**READ-WRITE-OWN**  
**AI-driven Centered**  
**Individual-Centered**

Semantic Web, VR/AR/MR,  
MetaVerse, DeCentralized  
Social Networks, NFTs

??

# HTML – Hyper Text Markup Language



Instruction:  
a paragraph  
with bold text



Displays a paragraph  
with bold text

```
<!DOCTYPE html>
<html>
  <head>
    <title> My Home Page
  </title>
  </head>
  <body>
    <p>About myself.</p>
  </body>
</html>
```

← HTML declaration  
← HTML opening tag  
← Page header opening tag  
← Page title opening tag  
← Page title closing tag  
← Page header closing tag  
← Body opening tag  
← Content (inside body)  
← Body closing tag  
← HTML closing tag



Address bar

Browser



HTTP

iiit.ac.in



Give me page  
<https://intranet.iiit.ac.in/admin>

Give me the  
/admin page

HTML Validator: <http://validator.w3.org>



HTTP

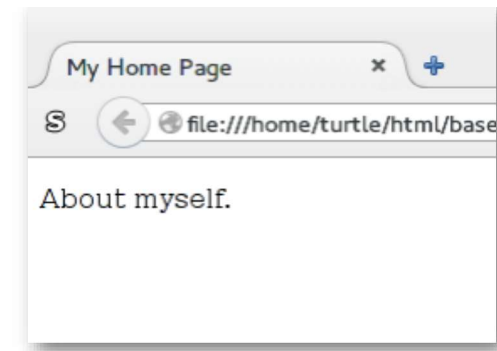
/admin  
HTML page



Rendering of  
/admin page



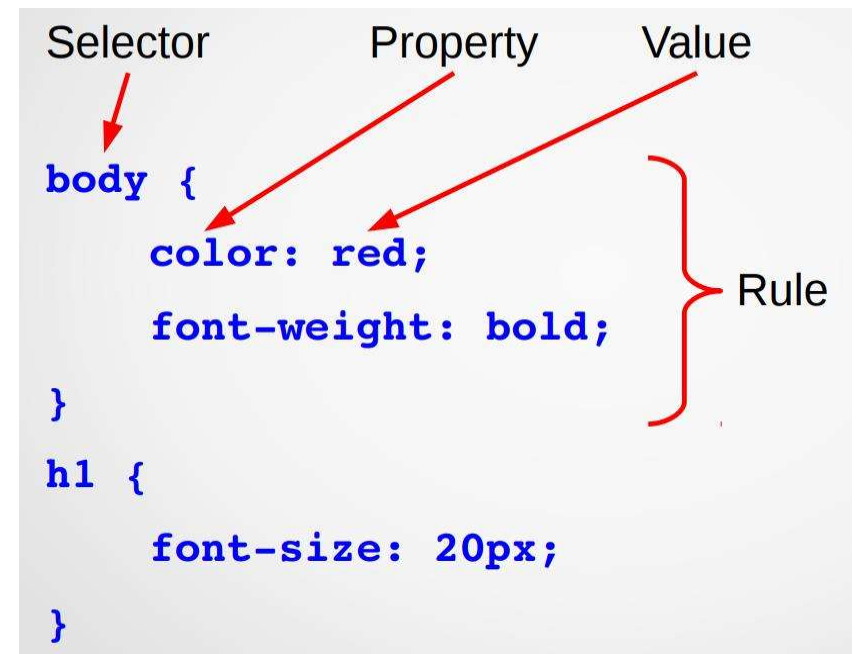
```
<!DOCTYPE html>
<html>
  <head>
    <title> My Home Page
  </title>
  </head>
  <body>
    <p>About myself.</p>
  </body>
</html>
```





# CSS – Cascading Style Sheets

- It helps beautify a website. It is considered as a make-up to website
- Color, Background and Borders, Basic Box, Flexible Box, Text, Text Decoration, Fonts, Writing Modes, Table, Lists and Counters, Animation, Transform, Transition, Basic User Interface, Multi-column, Paged Media, Generated Content, Filter Effects, Image/Replaced Content, Masking, Speech
- It is written in 3 type – Inline, Internal, External



CSS Validator: <https://jigsaw.w3.org/css-validator/>

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title> My Home Page
```

```
</title>
```

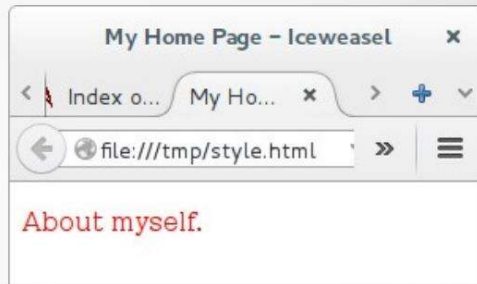
```
</head>
```

```
<body style="color: red;">
```

```
<p>About myself.</p>
```

```
</body>
```

```
</html>
```



**Inline CSS**

```
<head>
```

```
<title> My Home </title>
```

```
<style>
```

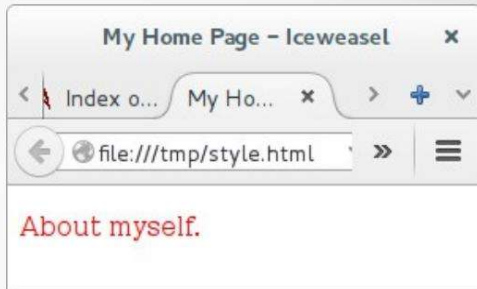
```
body {
```

```
color: red;
```

```
}
```

```
</style>
```

```
</head>
```



**Internal CSS**

```
<head>
```

```
<title> My Home </title>
```

```
<link
```

```
rel="stylesheet"
```

```
href="style.css">
```

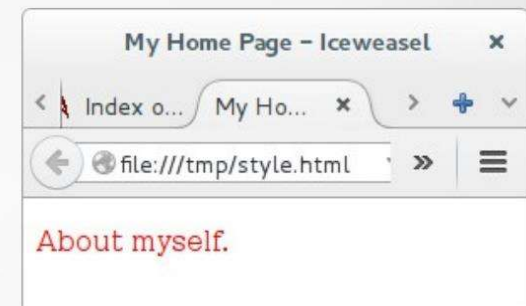
```
</head>
```

In *style.css* You Write:

```
body {
```

```
color: red;
```

```
}
```

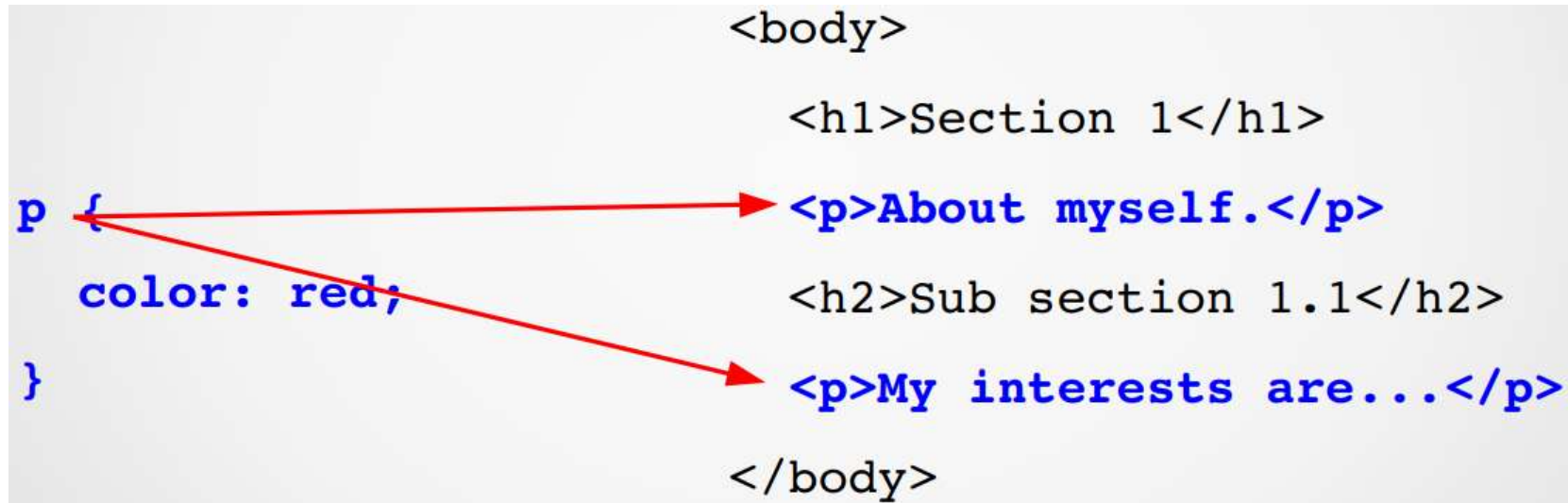


**External CSS**



## CSS Selector with Tag Name

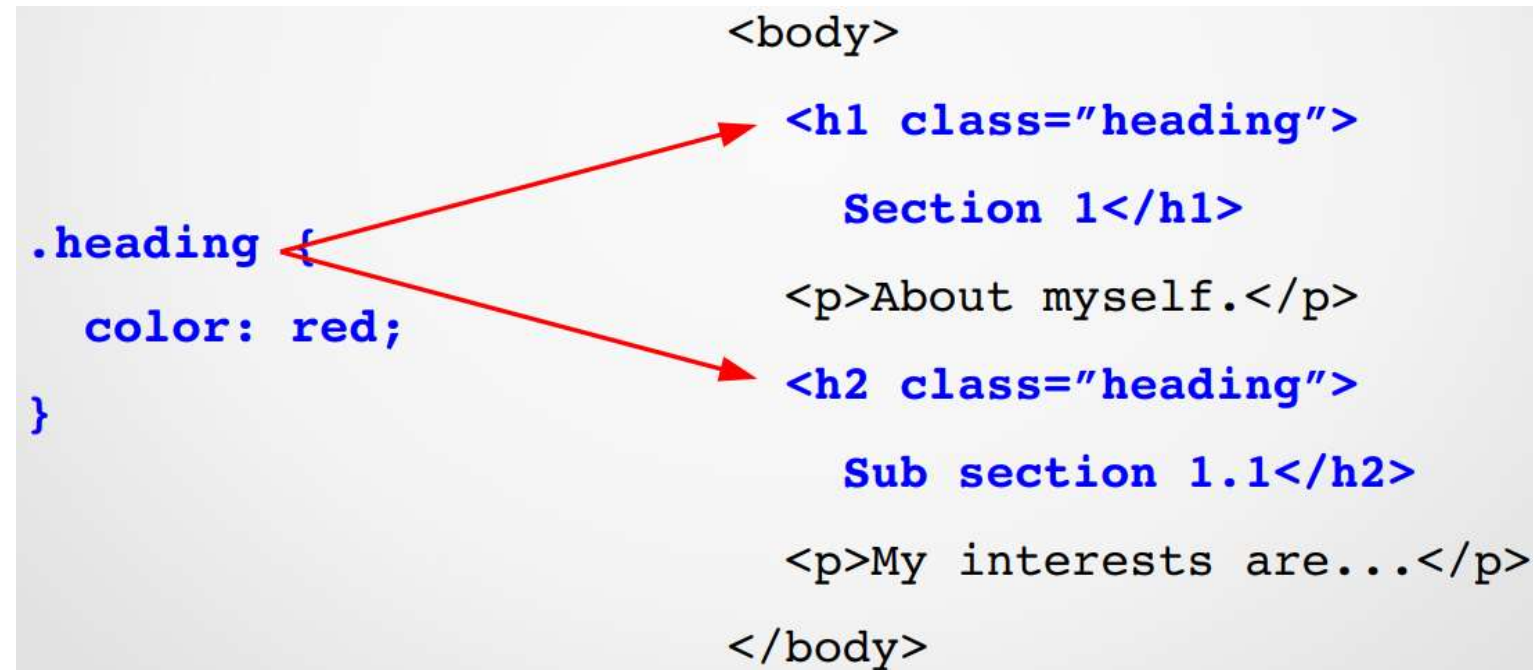
```
p {  
  color: red;  
}
```



The diagram illustrates a CSS selector targeting HTML elements. On the left, a CSS rule is shown: `p { color: red; }`. Two red arrows originate from the `p` selector. One arrow points to the first paragraph in the HTML code: `<p>About myself.</p>`. The other arrow points to the second paragraph: `<p>My interests are...</p>`. The HTML code is enclosed in `<body>` and `</body>` tags, with other elements like `<h1>Section 1</h1>` and `<h2>Sub section 1.1</h2>` also present.

```
<body>  
  <h1>Section 1</h1>  
  <p>About myself.</p>  
  <h2>Sub section 1.1</h2>  
  <p>My interests are...</p>  
</body>
```

```
.heading {  
  color: red;  
}
```



The diagram illustrates a CSS selector targeting HTML elements by class name. On the left, a CSS rule is shown: `.heading { color: red; }`. Two red arrows originate from the `.heading` selector. One arrow points to the first heading element in the HTML code: `<h1 class="heading">Section 1</h1>`. The other arrow points to the second heading element: `<h2 class="heading">Sub section 1.1</h2>`. The HTML code is enclosed in `<body>` and `</body>` tags, with other elements like `<p>About myself.</p>` and `<p>My interests are...</p>` also present.

```
<body>  
  <h1 class="heading">  
    Section 1</h1>  
  <p>About myself.</p>  
  <h2 class="heading">  
    Sub section 1.1</h2>  
  <p>My interests are...</p>  
</body>
```


## CSS Selector with Class Name

## CSS Selector with ID

```

#first-p {
  color: red;
}

<body>
  <h1>Section 1</h1>
  <p id="first-p">
    About myself.</p>
  <h2>Sub section 1.1</h2>
  <p>My interests are...</p>
</body>
```



Priority among various selectors

- Tag (low)
- Class
- ID
- Style attribute (high)

<https://developer.mozilla.org/en-US/docs/Web/CSS/Specificity>