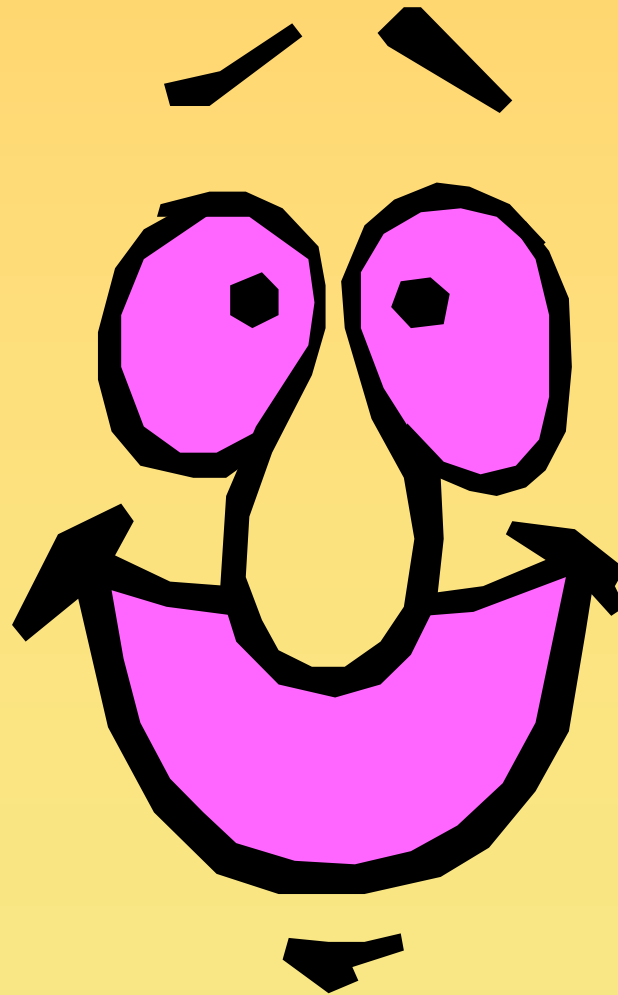


Welcome 😊



# Web & HTML



# Outline

- ➡ **Internet and World Wide Web**
  - Web Browsers and Web Servers**
  - Protocols and Standards**
  - Hyper Text Markup Language**
  - Static Content**
    - Static HTML Codes**
  - Dynamic Content**
    - Dynamic Web Pages**
    - CGI Programming**
    - Form elements in HTML**
    - Processing Data from a Form**




# Internet

- **Internet** is the collection (network) of publicly accessible series of **computers**
- **World Wide Web** (Web) is the collection of interlinked hypertext **documents** accessed via the Internet
- Hence:
  - Internet is the **collection of computers**, connected via communication channels, mostly cables
  - Web is the **collection of documents**, connected via hypertext links





# People on the Internet



World Internet Usage Statistics News and World Population Stats

<http://www.internetworldstats.com/stats.htm>

 **Internet World Stats**  
Usage and Population Statistics

 [\*Internet Coaching Library\*](#)

[World Stats](#) | [Africa Stats](#) | [America Stats](#) | [Asia Stats](#) | [Europe Stats](#) | [EU Stats](#) | [M. East Stats](#) | [Oceania Stats](#) | [Links](#)

[Ads by Google](#)   [Network Statistics](#)   [Internet Statistics](#)   [Shoutcast Live Stats](#)   [Streaming Statistics](#)   [Broadband Speed Test](#)

**INTERNET USAGE STATISTICS**  
**The Internet Big Picture**  
**World Internet Users and Population Stats**



# People on the Internet

## WORLD INTERNET USAGE AND POPULATION STATISTICS

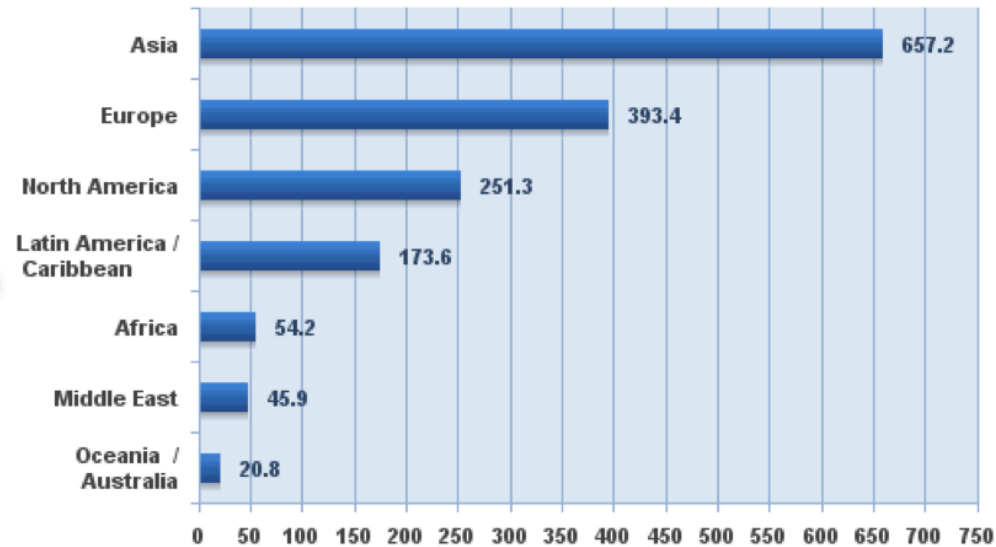
World Regions	Population ( 2008 Est.)	Internet Users Dec. 31, 2000	Internet Users Latest Data	Penetration (% Population)	Users Growth 2000-2008	Users % of Table
<a href="#">Africa</a>	975,330,899	4,514,400	54,171,500	5.6 %	1,100.0 %	3.4 %
<a href="#">Asia</a>	3,780,819,792	114,304,000	657,170,816	17.4 %	474.9 %	41.2 %
<a href="#">Europe</a>	803,903,540	105,096,093	393,373,398	48.9 %	274.3 %	24.6 %
<a href="#">Middle East</a>	196,767,614	3,284,800	45,861,346	23.3 %	1,296.2 %	2.9 %
<a href="#">North America</a>	337,572,949	108,096,800	251,290,489	74.4 %	132.5 %	15.7 %
<a href="#">Latin America/Caribbean</a>	581,249,892	18,068,919	173,619,140	29.9 %	860.9 %	10.9 %
<a href="#">Oceania / Australia</a>	34,384,384	7,620,480	20,783,419	60.4 %	172.7 %	1.3 %
<b>WORLD TOTAL</b>	6,710,029,070	360,985,492	1,596,270,108	23.8 %	342.2 %	100.0 %

NOTES: (1) Internet Usage and World Population Statistics are for March 31, 2009. (2) CLICK on each world region name for detailed regional usage information. (3) Demographic (Population) numbers are based on data from the [US Census Bureau](#) . (4) Internet usage information comes from data published by [Nielsen Online](#), by the [International Telecommunications Union](#), by [GfK](#), local Regulators and other reliable sources. (5) For definitions, disclaimer, and navigation help, please refer to the [Site Surfing Guide](#). (6) Information in this site may be cited, giving the due credit to [www.internetworldstats.com](#). Copyright © 2001 - 2009, Miniwatts Marketing Group. All rights reserved worldwide.

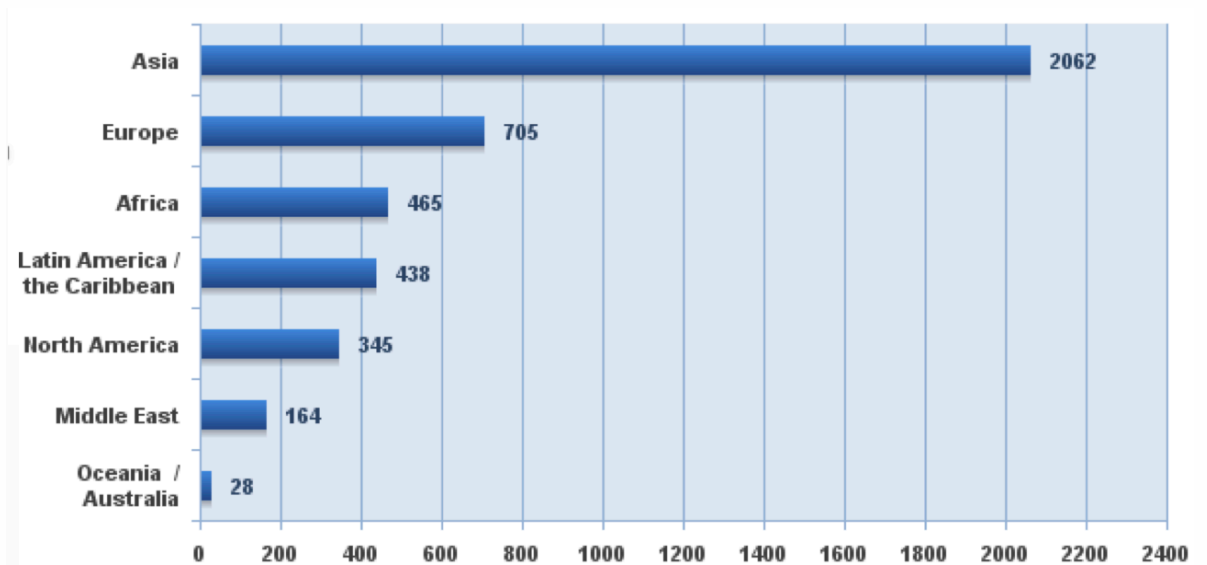


# People on the Internet

Mart 2009

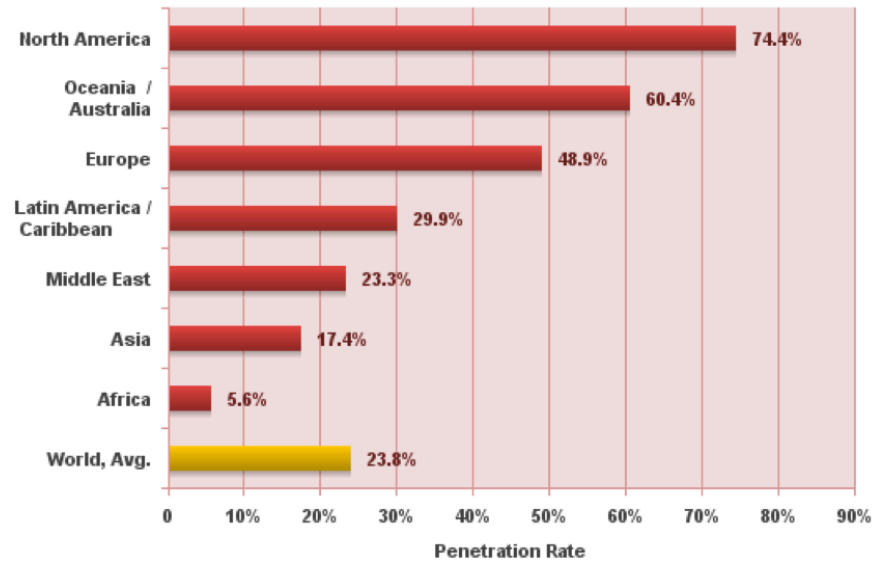


June 2017

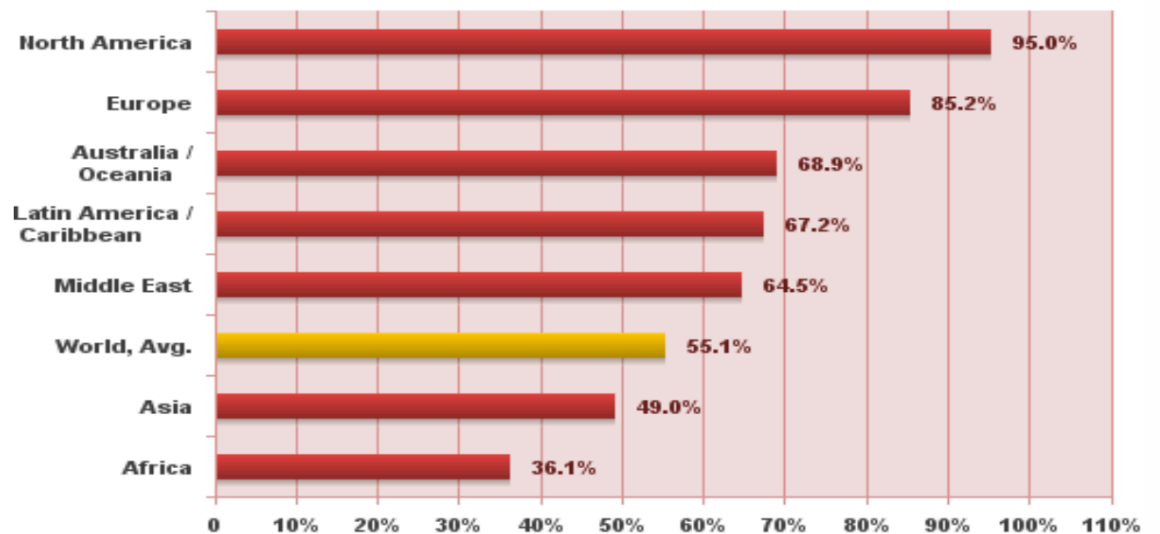


# Penetration Rate

Mart 2009



June 2017



## WORLD INTERNET USAGE AND POPULATION STATISTICS JUNE 30, 2018 - Update

World Regions	Population ( 2018 Est.)	Population % of World	Internet Users 30 June 2018	Penetration Rate (% Pop.)	Growth 2000-2018	Internet Users %
<a href="#"><u>Africa</u></a>	1,287,914,329	16.9 %	464,923,169	36.1 %	10,199 %	11.0 %
<a href="#"><u>Asia</u></a>	4,207,588,157	55.1 %	2,062,197,366	49.0 %	1,704 %	49.0 %
<a href="#"><u>Europe</u></a>	827,650,849	10.8 %	705,064,923	85.2 %	570 %	16.8 %
<a href="#"><u>Latin America / Caribbean</u></a>	652,047,996	8.5 %	438,248,446	67.2 %	2,325 %	10.4 %
<a href="#"><u>Middle East</u></a>	254,438,981	3.3 %	164,037,259	64.5 %	4,894 %	3.9 %
<a href="#"><u>North America</u></a>	363,844,662	4.8 %	345,660,847	95.0 %	219 %	8.2 %
<a href="#"><u>Oceania / Australia</u></a>	41,273,454	0.6 %	28,439,277	68.9 %	273 %	0.7 %
<a href="#"><u>WORLD TOTAL</u></a>	7,634,758,428	100.0 %	4,208,571,287	55.1 %	1,066 %	100.0 %



# Outline

**Internet and World Wide Web**

**→ Web Browsers and Web Servers**

**Protocols and Standards**

**Hyper Text Markup Language**

**Static Content**

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# Web Browser / Web Client

- With a **Web browser** (Web Client), the documents on the www can be viewed
- **Web browser** is a software application that enables a user to display and interact documents on a Web page such as:
  - text
  - Image
  - video
  - music
  - and other information
- Web browsers decide how to display the content depending on the HTML information, so the appearance of a Web page may differ between browsers



# Web Browsers

- **Some of the Web browsers (in order of descending popularity) available for personal computers:**
  - **Google Chrome**
  - **Internet Explorer**
  - **Mozilla Firefox**
  - **Safari**
  - **Opera**
  - **...**





# Web Server

- **Computer programs** responsible for:
  - accepting HTTP **requests** from clients (web browsers), and
  - serving them HTTP **responses**are called as Web Server
- HTTP response usually includes web pages such as HTML documents
- **A computer** which runs a Web Server program is also called as Web Server
- Hence, there are two terms in here:
  - Web Server Program
  - Web Server Computer



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# Protocols and Standards

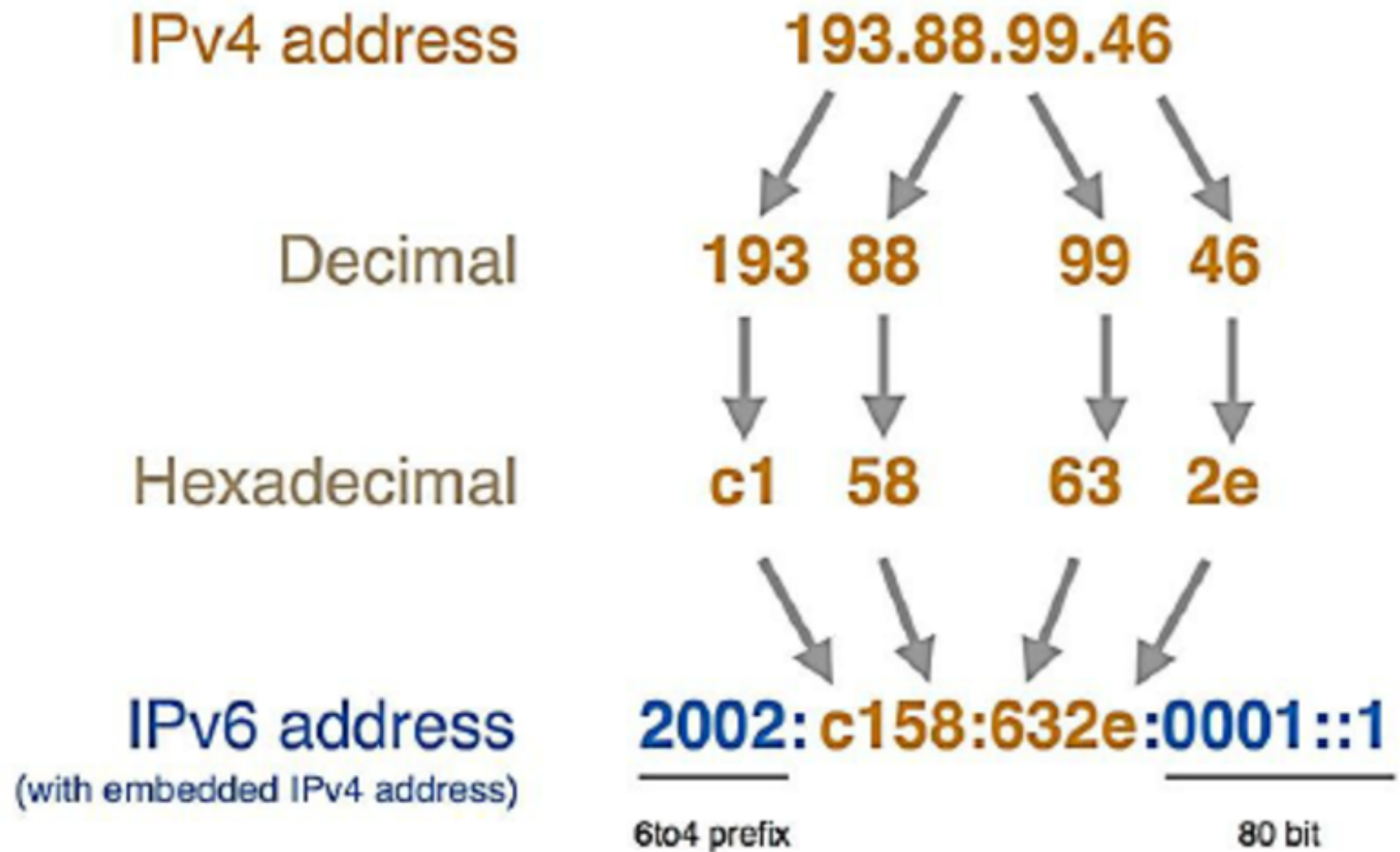
- Hypertext Transfer Protocol (**HTTP**) is a communications protocol used to transfer information on World Wide Web
- **Web browsers** communicate with **Web servers** primarily using HTTP (hypertext transfer protocol)
- HTTP is a request/response protocol between a **Client** (**Web Browser**) and a **Server** (**Web Server**)



# Who runs the Internet

- **Internet Engineering Task Force (IETF)**
  - **Internet protocol standards**
- **Internet Corporation for Assigned Names and Numbers (ICANN):**
  - **Domain names**
- **World Wide Web Consortium (W3C)**
  - **Web standards**

# Internet Protocol Number

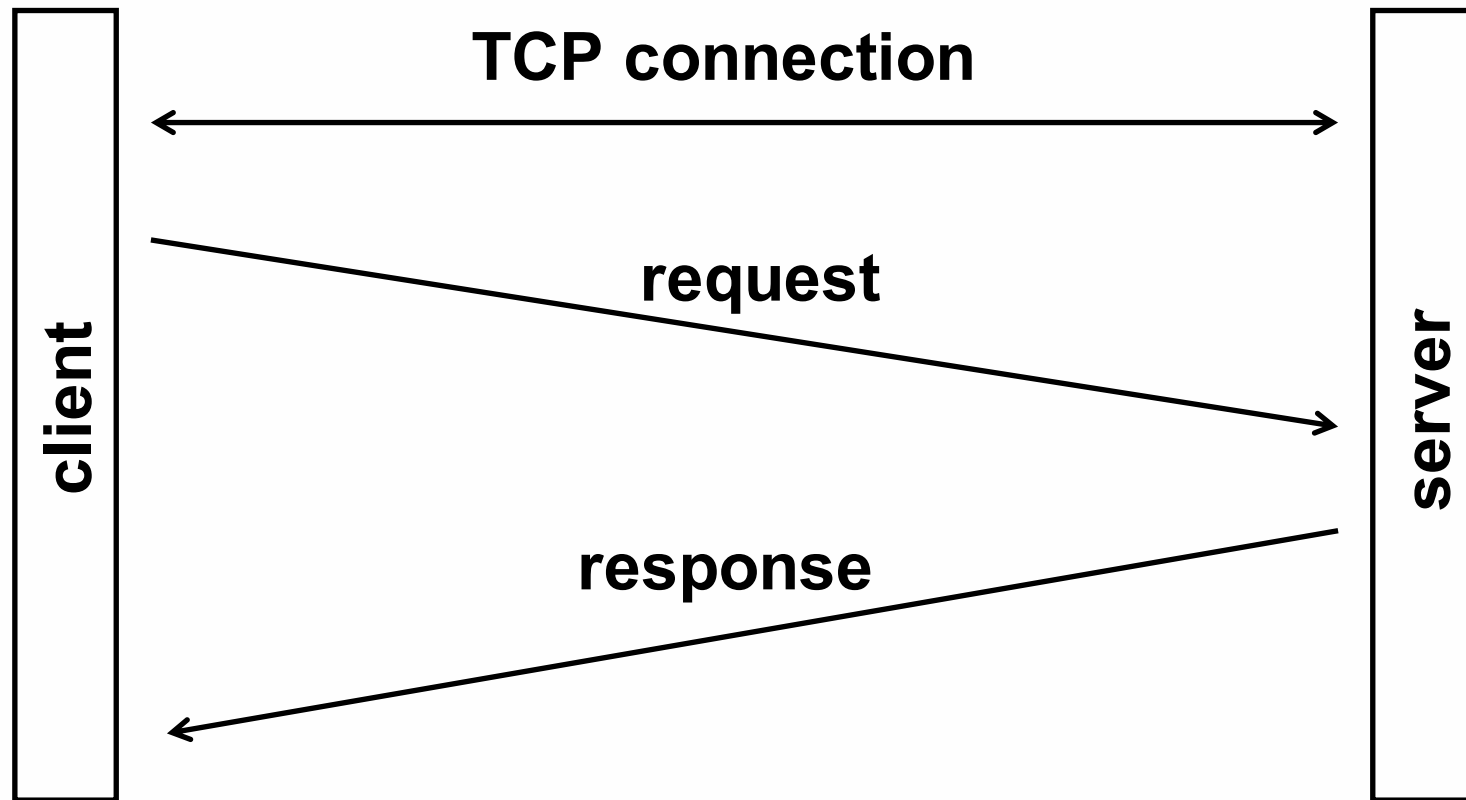




# HTTP Protocol Phases

1. HTTP **server** listens to a port and **waits** for the client to send a request message
2. HTTP **client** sends a **request** by establishing a Transmission Control Protocol (TCP) connection to that particular port on a host
3. Upon receiving the request, the **server** sends back a **response**, which generally includes a message, containing:
  - the requested file,
  - an error message,
  - or some other information.

# HTTP Protocol Phases





# URI / URL

- **Resources to be accessed by HTTP are identified using Uniform Resource Identifiers (URIs)**
- **Uniform Resource Locators (URL) is a synonym for URI**
- **URLs are entered into the address or bar of a web browser**



# URI / URL

[www.vedatcoskun.info](http://www.vedatcoskun.info)

Prof. Dr. Vedat COSKUN



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[Education](#)

[Research](#)

[Books](#)

[Publications](#)

[Teaching](#)

[Activities](#)

[Web Links](#)

## Biography

Prof. Vedat Coskun is a Computer Scientist, Academician, Researcher, Author, and Consultant. He is founder and manager of [www.NFCLab.org](http://www.NFCLab.org), the pioneer research lab on Near Field Communication (NFC) technology worldwide. He is currently Professor of Software Engineering in Beykent University (Istanbul). He believes on globalisation of science and education. He gave lectures in several universities such as University of Thessaly (Greece), Malardalen University (Sweden), Inholland University (Netherlands), Lublin University of Technology (Poland), and University of Dubrovnik (Croatia).

He is specialized in Near Field Communication (NFC), Mobile Technologies, Electronic / Mobile Payment, Information Security, and Java technology & Android.

He has many publications such as books, journal papers and conference presentations on NFC. He co-authored Near Field Communication: From Theory to Practice, published in 2012 by Wiley; and Professional NFC Application Development for Android, published in 2013 by Wrox. He co-authored A Survey on Near Field Communication. He believes on the importance of combining academic knowledge and education, as well as R & D study and industrial projects for providing higher national and international outcome.

[Curricular Vitae](#)

[Google Scholar](#)

[vedatcoskun@me.com](mailto:vedatcoskun@me.com)



# TCP

- Transmission Control Protocol (TCP) provides **reliable, in-order** delivery of messages (stream of bytes) between computers on the internet
- TCP manages individual conversations between **web servers** and **web clients**
- TCP divides HTTP messages into small pieces (**segments**) to be sent to the destination





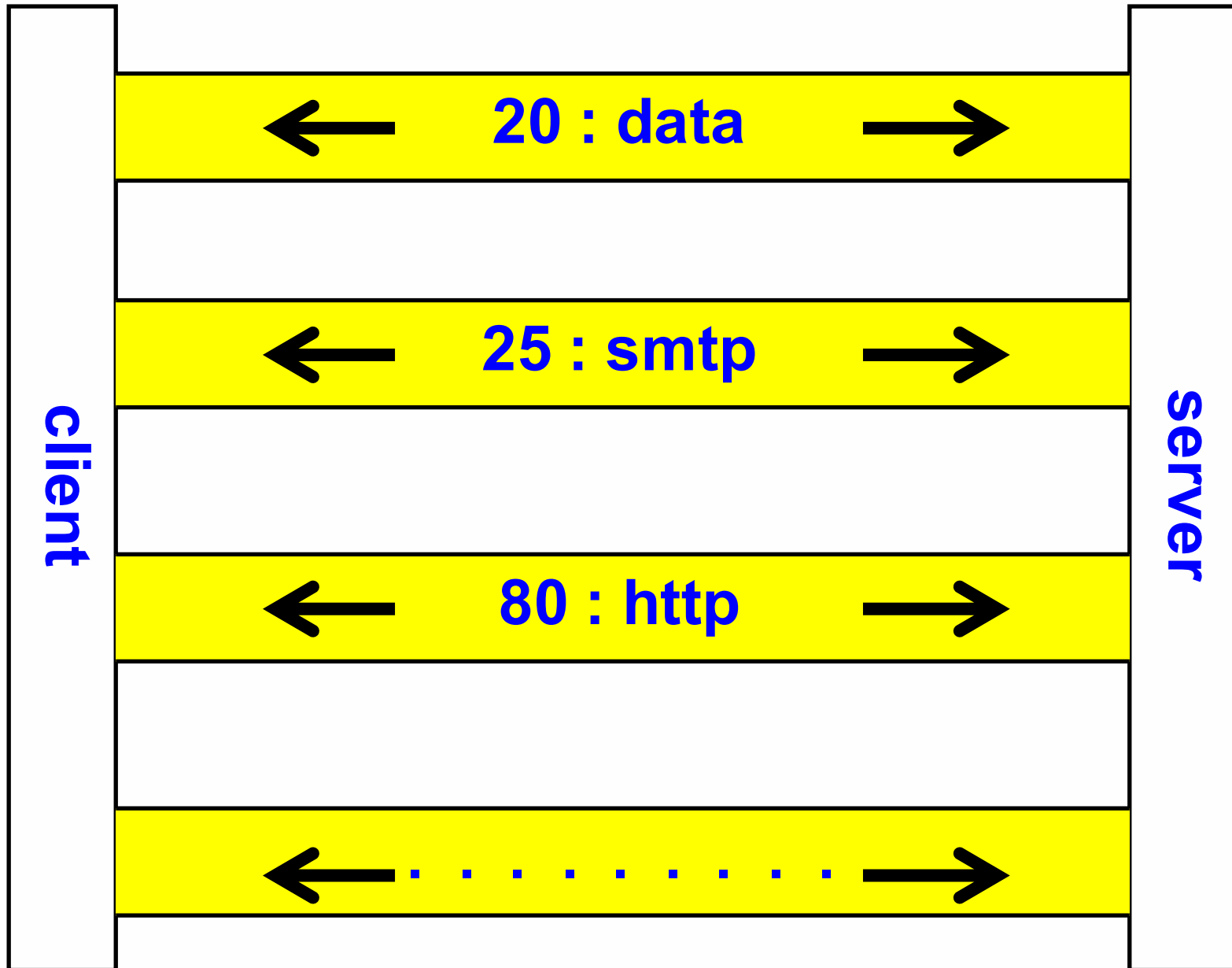
# Port

- **port** is a special number exist in the header of a data packet which is used in the TCP and UDP protocols
- You can think port as a **road to the server**, where many roads exist to reach the same server; and each road can be used for a distinct purpose

# Ports



# Ports





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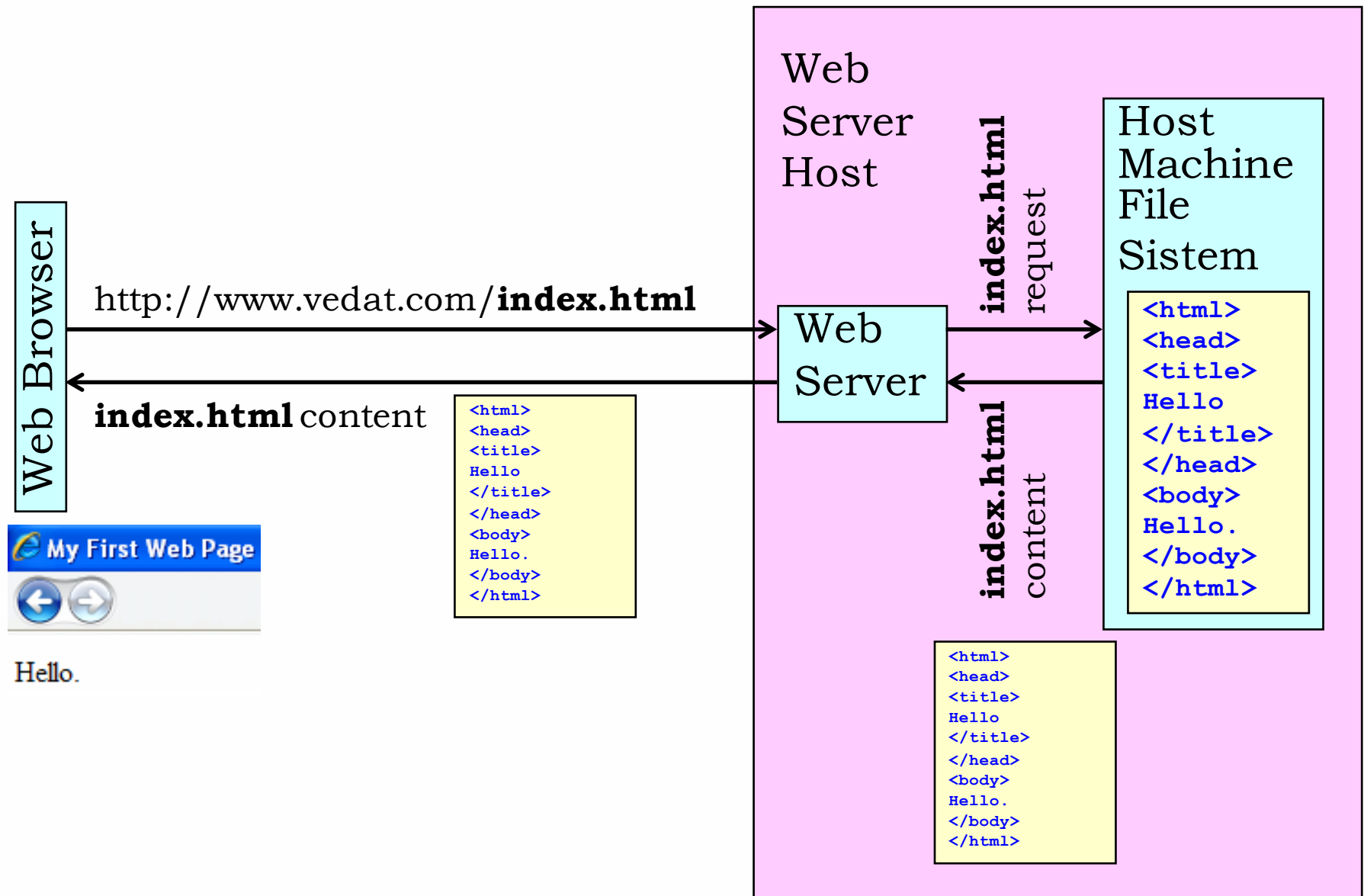




# Hypertext Markup Language (HTML)

- Web pages are to be written in **HTML language**
- Documents written in HTML language are called as **HTML documents**
- When a Web Browser **requests** a HTML document, Web Server **responds** by sending it to the Web Browser
- As Web Browser receives the HTML document, it uses the HTML codes to format and display the **content** of the document

# Running a (Static) Web Content





# HTML Document Structure

- An HTML document includes:
  1. A line containing HTML **version** information,
  2. A declarative header section (delimited by the **HEAD** element),
  3. A body, which contains the document's actual content
    - The body may be implemented by the **BODY** or the **FRAMESET** element.

# Hello.html

```
<html>
  <head>
    <title>
      My First Web Page
    </title>
  </head>
  <body>
    Hello.
  </body>
</html>
```

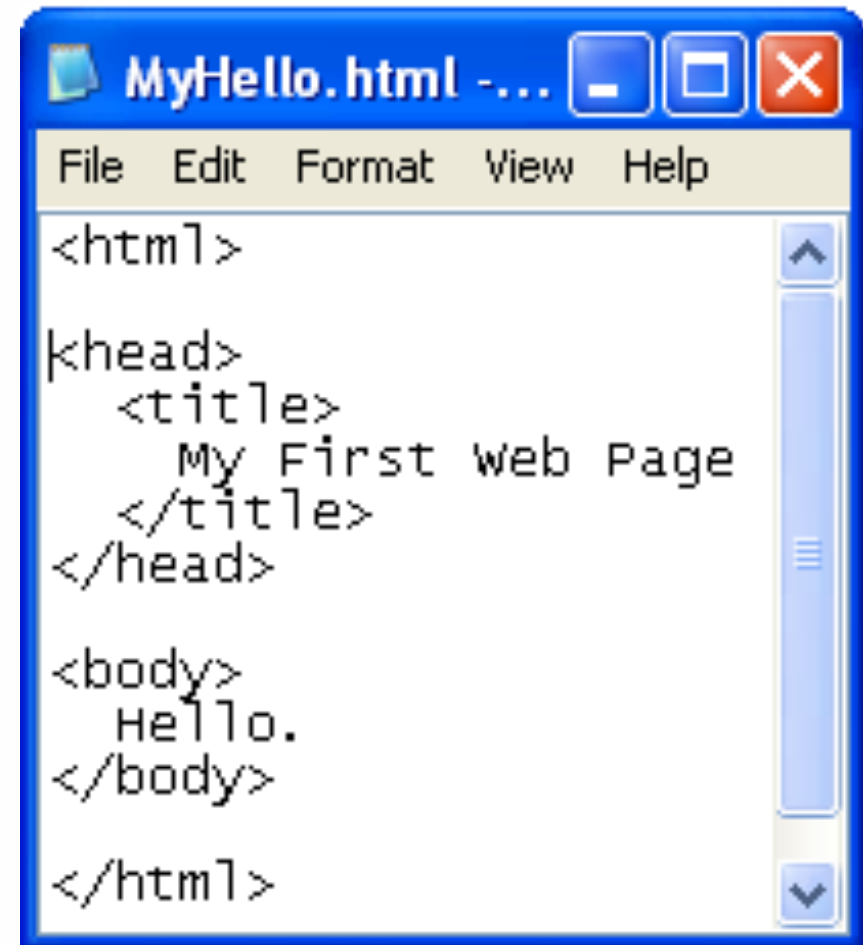
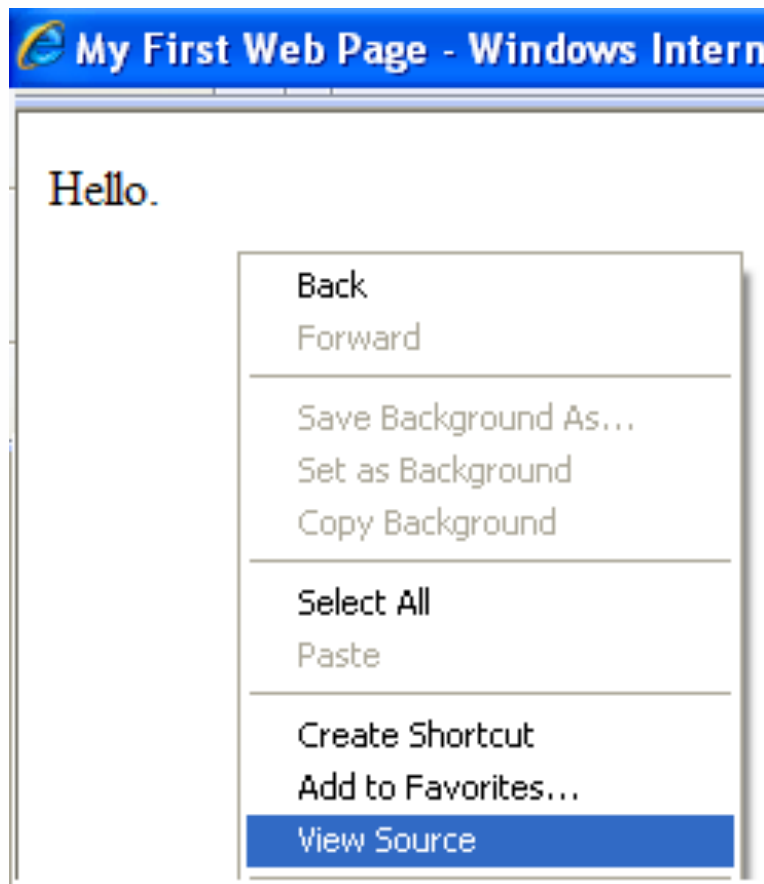


Hello.



# Viewing Source

- You can view (HTML) source of a file displayed in the Web Browser





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# Static Content

- HTML contains **static** information
- When a web page includes static content only, **same information** will be displayed each time it is viewed



# HTML Root Elements

- Root elements provide the containers enclosing all other HTML elements
- Every HTML page has these elements
  - `<html> ... </html>`
  - `<head> ... </head>`
  - `<body> ... </body>`



**<html> </html>**

- **Delimit an HTML document**
- **Two tags are inserted to <html> tag:**
  - **<head></head> tag**
  - **<body></body> tag**



## `<head> </head>`

- Delimit the **header** section of the document, which contains information such as metadata about the page
- User agents do not generally render elements that appear in the `<HEAD>` as content



**<body> </body>**

- **Delimits the body section of the document, which contains the displayed **content** of the page**





# Head elements (subset)

**<title>...</title>** defines the document title

**<link>** specifies links to other documents, such as **previous** and **next** links

**<script>...</script>** is used to add JavaScript or other scripts to the document

**<style>...</style>** specifies a style for the document:

**<style type="text/css">...</style>**

**<object>...</object>**

**<meta>**





# Body elements (subset)

`<a>...</a>` anchor

`<object>...</object>` embedding object

`<ul>...</ul>` unordered list

`<ol>...</ol>` ordered list

`<li>...</li>` list item

`<table>...</table>` table



## `<a>` Anchor

- Creates an element that becomes a **hyperlink** with the **href** attribute set to a URL

```
<a href=www.vedatcoskun.com\index.htm>  
    press here  
</a>
```



# List Elements

- **Ordered List**

```
<ol>
```

```
    <li>Item 1
```

```
    <li>Item 2
```

```
</ol>
```

- **Unordered List**

```
<ul>
```

```
    <li>Item 1
```

```
    <li>Item 2
```

```
</ul>
```



# Table Elements

- **<table>** marks the Table
- **<th>** marks Table Header
- **<tr>** marks Table Row
- **<td>** marks Table Data
- **rowspan** attribute spans the row in multiple columns
- **colspan** attribute spans the column in multiple columns

# A Simple Table

```
<table>
  <caption><h1>Caption</h1></caption>
  <tr>
    <td>1</td>
    <td>2</td>
    <td>3</td>
  </tr>
  <tr>
    <td>4</td>
    <td>5</td>
    <td>6</td>
  </tr>
</table>
```

1	2	3
4	5	6

# Using rowspan in a Table

```
<table>
  <caption><h1>Using Rowspan</h1></caption>
  <tr>
    <td rowspan=2>1</td>
    <td>2</td>
    <td>3</td>
  </tr>
  <tr>
    <td>5</td>
    <td>6</td>
  </tr>
</table>
```

1	2	3
	5	6



# Using colspan in a Table

```
<table>
  <caption><h1>Using Colspan</h1></caption>
  <tr>
    <td colspan=2>1</td>
    <td>3</td>
  </tr>
  <tr>
    <td>4</td>
    <td>5</td>
    <td>6</td>
  </tr>
</table>
```

1			3
4	5		6



# Attributes related to Table

- The attributes used in **<Table>** element are used to format the appearance of the table
- These attributes are used to format:
  - border styles
  - horizontal and vertical alignment of cell contents
  - cell margins
- Same of the attributes are:
  - **frame**
  - **rules**
  - **border**



# Special characters

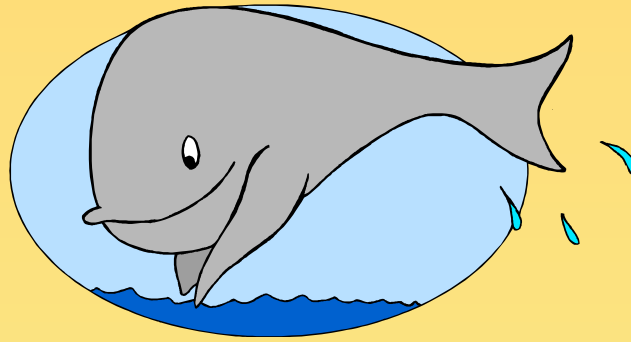
- Special characters need to be **encoded** into the html document for various purposes
  - some **can not be typed** using keyboard
  - some can not be embedded to html documents to **prevent vague implementations** (<, > etc.)
- To insert any special character, “**&**” should precede the code, and “**;**” should follow:  
**&nbsp;**



# Some Special characters

Code	Code	Character
<code>&amp;quot;</code>	<code>&amp;#034</code>	“
<code>&amp;amp;</code>		&
<code>&amp;apos;</code>	<code>&amp;#039</code>	‘
<code>&amp;lt;</code>		<
<code>&amp;gt;</code>		>
<code>&amp;nbsp;</code>		(blank)

Thank you. 😊



Teşekkürler

