



Dr. SNS RAJALAKSHMI COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)

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DEPARTMENT OF B.SC CS (GCD)

**21UCU407 – COMPUTER NETWORKS AND DATA COMMUNICATIONS
UNIT- I
TRADITIONAL INTERNET BASED APPLICATION**

Dr.SNSRCAS B.Sc CS(GCD)

Representation / Transfer

- **Data Representation**
 - Syntax of the data items
 - Form used during transfer
 - Translation of integers (*big endian/little endian*)
 - Representation of characters (*ASCII/Unicode/EBCDIC*)
- **Data Transfer**
 - Interaction between client and server
 - Syntax of the message
 - Error handling
 - Termination of the interaction

Web Protocols

- **HTML**

- HyperText Markup Language
- A representation standard used to specify the contents and layout of a web page

- **URL**

- Uniform Resource Locator
- A representation standard that specifies the format and meaning of web page identifiers

- **HTTP**

- HyperText Transfer Protocol
- A transfer protocol that specifies how a browser interacts with a web server to transfer data

HTML

- Specifies the syntax for a web page
- Scripting language --- not a programming language
- Specifies what needs to be done --- not how to do it
- The commands are general guidelines for a browser to follow
- Example: Headings

`<H1> Heading </H1>`

Heading

`<H2> Heading </H2>`

Heading

`<H3> Heading </H3>`

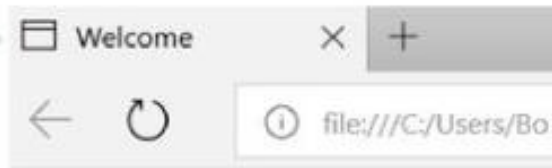
Heading

No specification as to how large an H2 heading should be – just that it should be between H1 and H3

HTML

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8" />
  <title>Welcome</title>
</head>
<body>
  <p>
    <strong>Hello</strong> world!
  </p>
</body>
</html>
```

Browser view:



Hello world!

```
<!DOCTYPE html>
```

this file is using HTML 5

```
<meta charset="utf-8" />
```

this file is using Unicode

Head contains:

- title
- meta tags (*provides info about the document*)
- links to CSS documents & embedded CSS styles
- links to import JavaScript & embedded scripts

URL

Identifies the location of a web item (*page, graphic, sound file, etc.*)

Format:

Protocol :// **ComputerName** : **Port** / **DocumentName** ? **Parameters**

The protocol
to use for
transfer
*Ex: HTTP,
HTTPS, FTP*

IP Address
or
Domain
Name

Port
where
server is
listening

Name of
the file to
retrieve

Parameters
supplied to
an executing
function

URL Examples

Visit ECU's web page

`www.ecu.edu`

`http :// www.ecu.edu : 80 / default.html`

Default
protocol
is HTTP

Default
port is
80

Usually:
default.html or index.html
This is decided by the server

HTTP

- Specifies how to handle the data transfer between the server and browser
- Four key points:
 - Uses stream transfer
 - Uses text-based control messages
 - Transfers binary data files
 - Can download or upload data
 - Incorporates caching

HTTP

- Once a connection is established, the browser sends a request to the server
- Four major request types:

Request	Description	Response
GET	Requests an item from the server	Server sends a header and a copy of the item
HEAD	Requests an item's header from the server	Server sends a header
POST	Sends data to the server	Server appends the data to a specified item
PUT	Sends data to the server	Server uses the data to replace the specified item

HTTP Example

Use GET to retrieve a web page from a web server

Format:

GET / *item* *Version*

CR

LF

The URL
for the
requested
item

Usually
version
1.0 or 1.1

The ASCII carriage return and
line feed characters.
Specifies the end of the line

HTTP POST vs PUT

- PUT is often used when you know the exact location of the item to be updated
- POST is often used when you don't know the exact location, and thus you let the server handle putting the data where it belongs

```
PUT /article/1234 HTTP/1.1
<article>
  <title>red stapler</title>
  <price currency="eur">12.50</price>
</article>
```

Notice the exact location
(including article number)

```
POST /articles HTTP/1.1
<article>
  <title>blue stapler</title>
  <price currency="eur">7.50</price>
</article>
```

Just specifies an address
of "articles", but no
specific number

```
HTTP/1.1 201 Created
Location: /articles/63636
```