HTML
(Hyper Text Markup Language)

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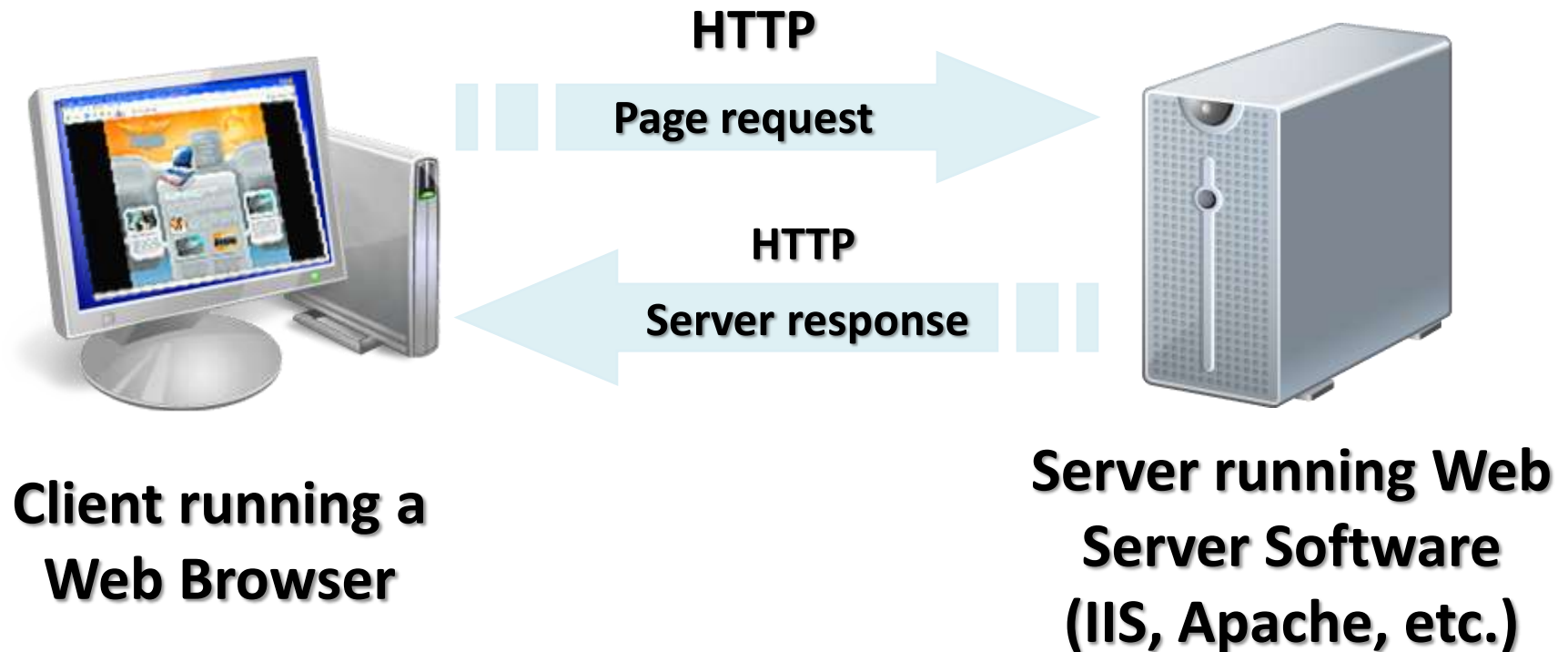
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Outline

- Basics of HTML
- Working web
- Development process
- Formatting and fonts
- Commenting code
- Hyperlink, lists, tables, images, forms, XHTML
- Meta tags, Character entities, frames and frame sets.
- Browser architecture and Web site structure
- Overview and features of HTML5

How the Web Works?

- WWW use classical client / server architecture
  - HTTP is text-based request-response protocol

HTTP

Page request

HTTP

Server response

Client running a Web Browser

Server running Web Server Software (IIS, Apache, etc.)

What is a Web Page?

- Web pages are text files containing HTML
  - HTML – Hyper Text Markup Language
- A notation for describing
  - document structure (semantic markup)
  - formatting (presentation markup)
- Looks (looked?) like:
  - A Microsoft Word document
- The markup tags provide information about the page content structure

The development Process

- Follow the proper cycle for development web site.
  - Requirements
  - Design
  - Write code
  - Test
  - Upload
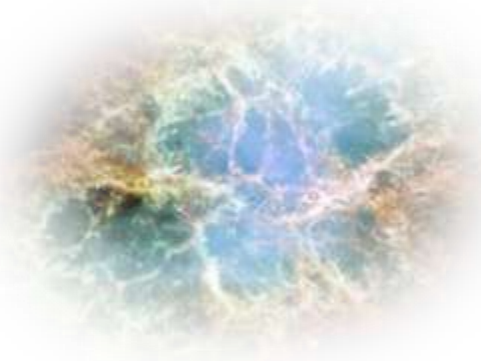 - Re-iterate (If error do again reduce bugs)

HTML Basics

Creating HTML Pages

- An HTML file must have an `.htm` or `.html` file extension
- HTML files can be created with text editors:
  - NotePad, NotePad ++, PSPad
- Or HTML editors.
  - Microsoft FrontPage
  - Macromedia Dreamweaver
  - Netscape Composer
  - Microsoft Word
  - Visual Studio

What is HTML

- HTML is the standard markup language for creating Web pages.
- HTML stands for Hyper Text Markup Language
- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

A Simple HTML Document

- `<!DOCTYPE html>` **defines this document to be HTML5**

  `<html>` **root element of an HTML page**

    `<head>` **meta information about the document**

  title for the document `<title>`Page Title`</title>`

    `</head>`

    `<body>` **visible page content**

  large heading `<h1>`My First Heading`</h1>`

   paragraph `<p>`My first paragraph.`</p>`

    `</body>`

  `</html>`

HTML Tags

- HTML tags normally come **in pairs** like <p> and </p>
- The first tag in a pair is the **start tag,** the second tag is the **end tag**
- The end tag is written like the start tag, but with a **forward slash** inserted before the tag name

Web Browsers

- The purpose of a web browser (Chrome, IE, Firefox, Safari) is to read HTML documents and display them.
- The browser does not display the HTML tags, but uses them to determine how to display the document:

HTML Document Structure

- HTML is comprised of "elements" and "tags"
  - Begins with <html> and ends with </html>
- Elements (tags) are nested one inside another:

<html>

<head></head>

<body></body>

</html>

- HTML describes structure using two main sections: <head> and <body>

HTML Page Structure

```
<html>

    <head>

        <title>Page title</title>

    </head>

    <body>

        <h1>This is a heading</h1>

        <p>This is a paragraph.</p>

        <p>This is another paragraph.</p>

    </body>

</html>
```
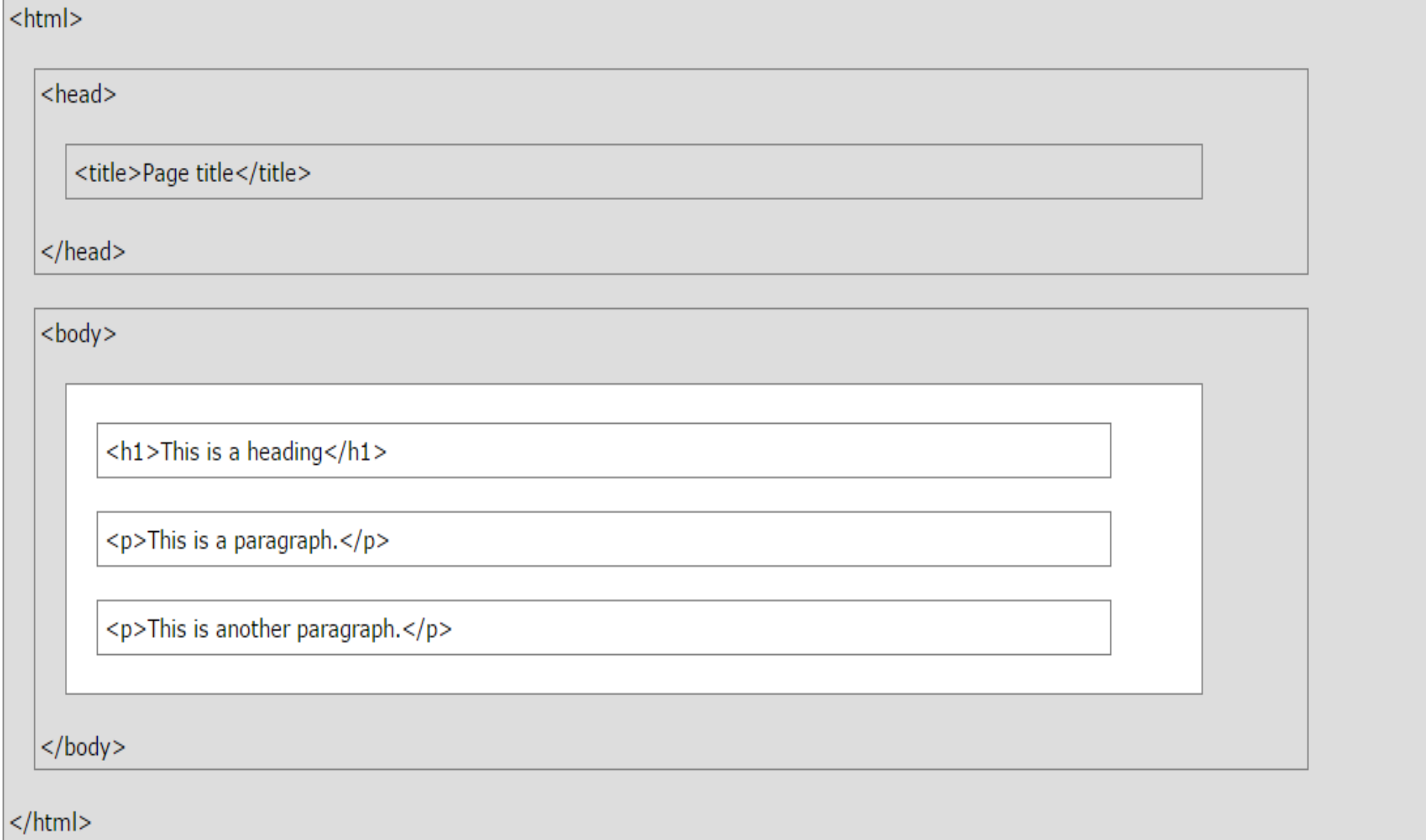
Only the content inside the <body> section (the white area above) is displayed in a browser.

HTML Versions

Version	Year
HTML	1991
HTML 2.0	1995
HTML 3.2	1997
HTML 4.01	1999
XHTML	2000
HTML5	2014
HTML5.1	2016
HTML5.2	2017

Write HTML Using Notepad or Text Edit

- Step 1: Open Notepad (PC)
- Step 2: Write Some HTML
- Step 3: Save the HTML Page
- Step 4: View the HTML Page in Your Browser

HTML Basic Examples

- ## HTML Headings

  - HTML headings are defined with the **\<h1\>** to **\<h6\>** tags.

  - ```
    <h1>This is heading 1</h1>
    <h2>This is heading 2</h2>
    <h3>This is heading 3</h3>
    ```

- ## HTML Paragraphs

- ## HTML Links

  - ```
    <a href="http://www.sips.in">This is a link click here</a>
    ```

HTML Images

- HTML images are defined with the **<img>** tag.

- The source file (src), alternative text (alt), width, and height are provided as attributes:

```
<img src="D:\WTP\XYZ.jpg"width="104" height="142">
```

Empty HTML Elements

- HTML elements with no content are called empty elements.

-
 is an empty element without a closing tag (the <br> tag defines a line break).

HTML Attributes

- All HTML elements can have **attributes**
- Attributes provide **additional information** about an element
- Attributes are always specified in **the start tag**
- Attributes usually come in name/value pairs like: **name="value"**
  - The lang Attribute
  - The title Attribute
  - The href Attribute
  - Size Attributes

Lists

- Unordered List
- Ordered List

HTML List Example

An Unordered List:

- Item
- Item
- Item
- Item

An Ordered List:

1. First item
2. Second item
3. Third item
4. Fourth item

Unordered HTML List

- An unordered list starts with the **<ul>** tag. Each list item starts with the **<li>** tag.

- The list items will be marked with bullets (small black circles) by default:

```
<ul>
    <li>Computer Engineering</li>
    <li>Information Technology</li>
    <li>Mechanical Engineering</li>
</ul>
```

Unordered HTML List

Value	Description
disc	Sets the list item marker to a bullet (default)
circle	Sets the list item marker to a circle
square	Sets the list item marker to a square
none	The list items will not be marked

```html
<ul style="list-style-type:disc">

    <li>Computer Engineering</li>

    <li>Information Technology</li>

    <li>Mechanical Engineering</li>

</ul>
```

Ordered List HTML

- The type attribute of the <ol> tag, defines the type of the list item marker:

Type	Description
type="1"	The list items will be numbered with numbers (default)
type="A"	The list items will be numbered with uppercase letters
type="a"	The list items will be numbered with lowercase letters
type="I"	The list items will be numbered with uppercase roman numbers
type="i"	The list items will be numbered with lowercase roman numbers

```
<ol type="1">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Milk</li>
</ol>
```

HTML Description Lists

- HTML also supports description lists.

- A description list is a list of terms, with a description of each term.

- The **<dl>** tag defines the description list, the **<dt>** tag defines the term (name), and the **<dd>** tag describes each term

```
<html>
<body>

<h2>A Description List</h2>

<dl>
  <dt>Coffee</dt>
  <dd>- black hot drink</dd>
  <dt>Milk</dt>
  <dd>- white cold drink</dd>
</dl>

</body>
</html>
```

Nested HTML Lists

```
<html>
<body>

<h2>A Nested List</h2>

<ol>
 <li>Coffee</li>
 <li>Tea
  <ul>
  <li>Black tea</li>
  <li>Green tea</li>
  </ul>
 </li>
 <li>Milk</li>
</ol>

</body>
</html>
```

HTML 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.

TH	TH	TH	TH
td	td	td	td
td	td	td	td
td	td	td	td

```html
<html>
<body>
<table border>
 <tr>
   <th>Firstname</th>
   <th>Lastname</th>
   <th>Age</th>
 </tr>
 <tr>
   <td>ABC</td>
   <td>XYZ</td>
   <td>24</td>
 </tr>
 <tr>
   <td>DEF</td>
   <td>PQR</td>
   <td>25</td>
 </tr>
 </table>
</body>
</html>
```

```css
<style>
table, th, td {
    border: 2px solid black;
}
</style>
```

Simple HTML Forms

- HTML Forms are required when you want to collect some data from the site visitor. For example during user registration you would like to collect information such as name, email address, credit card, etc.

- A form will take input from the site visitor and then will post it to a back-end application such as CGI, ASP Script or PHP script etc.

- There are various form elements available like text fields, text area fields, drop-down menus, radio buttons, checkboxes, etc.

- The <form> Element

- The HTML **<form>** element defines a form that is used to collect user input.

Simple HTML Forms

- HTML Form Controls
- There are different types of form controls that you can use to collect data using HTML form:
  - Text Input Controls
  - Checkboxes Controls
  - Radio Box Controls
  - Select Box Controls
  - File Select boxes
  - Hidden Controls
  - Clickable Buttons
  - Submit and Reset Button

- The **\<input\>** element is the most important form element.
- The \<input\> element can be displayed in several ways, depending on the **type** attribute.

Type	Description
\<input type="text"\>	Defines a one-line text input field
\<input type="radio"\>	Defines a radio button (for selecting one of many choices)
\<input type="submit"\>	Defines a submit button (for submitting the form)

HTML Frame

- HTML frames are used to divide your browser window into multiple sections where each section can load a separate HTML document.

- A collection of frames in the browser window is known as a frameset.

- The window is divided into frames in a similar way the tables are organized: into rows and columns.

Creating Frames

- To use frames on a page we use <frameset> tag instead of <body> tag.

- The **rows** attribute of <frameset> tag defines horizontal frames and **cols** attribute defines vertical frames.

Disadvantages of Frames

- There are few drawbacks with using frames, so it's never recommended to use frames in your web pages:
  - Some smaller devices cannot cope with frames often because their screen is not big enough to be divided up.
  - Sometimes your page will be displayed differently on different computers due to different screen resolution.
  - The browser's *back button* might not work as the user hopes.
  - There are still few browsers that do not support frame technology.

Thank-You