



# Scripting & Computer Environments

## *Basic HTML*

IIIT-H

Sep 19, 2015

# ...Previously & Today...

## ...Previously

- The Internet
  - The Genesis, Architecture
  - Basic Networking Concepts
- The World Wide Web (WWW) and key protocols

## Today...

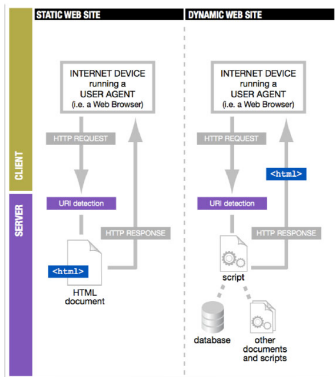
- Intro to HTML

# Brainstorm

- 1 Webpage vs Website?  
Responsive web design  
(RWD)? Static vs Dynamic  
website?

# Brainstorm

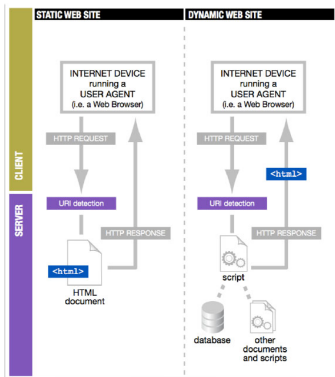
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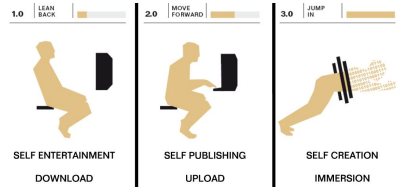
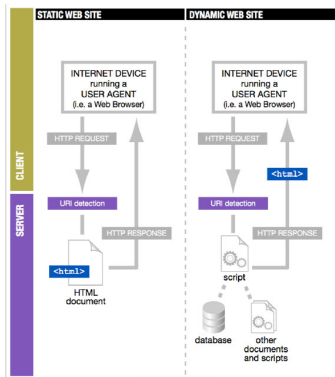
- 2 Web 1.0 / 2.0 / 3.0 / ... ?



# Brainstorm

- 1 Webpage vs Website?  
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- 2 Web 1.0 / 2.0 / 3.0 / ... ?



# Hyper Text Markup Language (HTML)

- Is a markup language i.e. a set of markup **tags**.
- Describes *content + structure* of web pages.  
(CSS - describes the appearance, Javascript - the behavior)
- Content surrounded with opening and closing tags.
- Each tag's name → **element**.
- Some tags can contain additional information → **attributes**.

```
<element> content </element>
```

```
<element attribute1="value1" attribute2="value2"> content </element>
```

Example:

```
<h1> This is heading </h1>
```

```
<p> This is paragraph </p>
```

# HTML:

# Document Structure

```
<!-- This is comment -->
```

```
<!DOCTYPE html>           <!-- defines the document type -->  
                           <!--version-dependent (HTML 4.01, HTML5...) -->
```

```
<html>
```

```
<head>
```

The header describes the page (tags: title, style, metadata ...)

```
</head>
```

```
<body>
```

The body contains the actual content of the page

```
</body>
```

```
</html>
```



## HTML:

## Lifeline

HTML	1991	
HTML+	1993	
HTML 2.0	1995	
HTML 3.2	1997	
HTML 4.01	1999	
XHTML 1.0	2000	
HTML5	2012	(ongoing)

- HTML vs XHTML

- Doc structure
- Element syntax
- Attribute syntax

# HTML:

# The Elements

## 1 Block-level Elements

- Affect a large amount of content.
  - Normally displayed with starting a new line
- e.g. `<p>`, `<table>`

## 2 Inline Elements

- A small amount of content.
  - Without starting a new line
- e.g. `<b>`, `<img>`.

Metadata:

`<meta>`

```
<meta name="description" content="SCE Lecture Notes IIIT-B" />
<meta content="text/html; charset=utf-8" />
<meta http-equiv="refresh" content="20" />
```

# HTML:

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- e.g. `<b>`, `<img>`.

- Some *head* elements:

Page Title: `<title>`

`<title> This is title of the web page </title>`

Metadata: `<meta>`

`<meta name="description" content="SCE Lecture Notes IIIT-W" />`

`<meta content="text/html; charset=utf-8" />`

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# HTML:

# The Elements

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e.g. `<p>`, `<table>`

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- Without starting a new line  
e.g. `<b>`, `<img>`.

- Some *head* elements:

Page Title: `<title>`

```
<title> This is title of the web page </title>
```

Metadata: `<meta>`

```
<meta name="description" content="SCE Lecture Notes IIIT-H" />  
<meta content="text/html; charset=utf-8" />  
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```

Headings:      `<h1>` to `<h6>`

`<h1>` This is heading 1 `</h1>`

`<h6>` This is heading 6 `</h6>`

Paragraph      `<p>`

`<p>` This is paragraph 1 `</p>`

`<p>` This is paragraph 2 `</p>`

Line Break:      `<br/>`

Forces a new line.

Horizontal Rule      `<hr/>`

A horizontal line to visually separate sections of a page.

# HTML:

## Body Elements

Headings:      `<h1>` to `<h6>`

```
<h1> This is heading 1 </h1>
```

```
<h6> This is heading 6 </h6>
```

Paragraph:      `<p>`

```
<p> This is paragraph 1 </p>
```

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<p> This is paragraph 2 </p>
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A horizontal line to visually separate sections of a page.



## Emphasis Elements: `<em>`, `<strong>`

- `<em>` for emphasis, `<strong>` for strong emphasis.
- Also, `<b>` for bold, `<i>` for italics.

## Lists: `<ul>`, `<ol>`

- Unordered lists (`<ul>`) for a bulleted list of items.
- Ordered lists (`<ol>`) for numbered list of items.
- Each item as `<li>item </li>`.
- Can be nested.

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Definition List :      <dl>, <dt>, <dd>

- <dl> for list of definition of terms
- <dt> represents each term; <dd> for the definition.

Quotations:      <blockquote>, <q>

- <blockquote> for lengthy quotations.
- <q> for inline quotes.

Code Environments:      <code>, <pre>

- Use <pre> for verbatim text.

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Hyperlinks (links):      `<a>`

- Links (anchors) to other pages.
- The *href* attribute specifies the destination URL.

Images:      `<img>`

- Inserts a graphical object into the page.
- Attributes: `src`, `alt`, `height`, `width`
- Can be links too.

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```

```

## Tables

- The `<table>` element creates tables.
- The `<tr>`, `<td>` and `<th>` elements define table rows, cells (data) and headings respectively.

- Some `<td>/<th>` attributes:

- |                        |              |                        |                  |
|------------------------|--------------|------------------------|------------------|
| • <code>align</code>   | (deprecated) | • <code>width</code>   | (in pixels or %) |
| • <code>bgcolor</code> | (deprecated) | • <code>rowspan</code> |                  |
| • <code>height</code>  | (deprecated) | • <code>colspan</code> |                  |



- Some `<table>` attributes <sup>1</sup>

- `border` (in pixels)
- `align` values: {left, right, center, justify}
- `cellspacing="value"` (in pixels or %)
- `cellpadding="value"` (in pixels or %)
- `bgcolor="color_value"` (in hex codes #rrggbb or names)
- `summary="description"` for non-visual browsers

---

<sup>1</sup>Not supported in HTML5

## Form

Group of UI controls that collect information from the user for processing.

The screenshot shows the registration page of Sharamaxim.com. It features a navigation bar with links like Register, Search, Upgrade, and Help. Below the navigation bar, there are tabs for Online Membership, Premium Membership, and Paid Membership. The main content area is titled "80% of Indians use Sharamaxim" and includes a large image of a couple. The registration form itself has fields for Name, Age, Gender, Religion, Marital Status, Caste, Caste Origin, Country, Mobile No., E-mail, and Login Password. There are also checkboxes for "I am" and "I want" and a "Register" button.

The screenshot shows the Facebook App Center sign-up page. It features the Facebook logo and the text "App Center Find great social music apps". Below this, there are logos for Spotify and Pandora. The sign-up form includes fields for First Name, Last Name, Your Email, and New Password. There are also checkboxes for "I am" and "I want" and a "Sign Up" button.

The screenshot shows the Google India search page. It features the Google logo and a search bar. Below the search bar, there are links for "Google Search" and "The Floating Library".

The UI controls: inputbox, button, checkbox, radiobox, drop-down menu, file select box ...

- The `<form>` element creates forms.

```
<form action="URL">  
  form controls  
</form>
```

- The `action` attribute specifies the page/script that will process the submitted data.
- Other attributes:
  - `method` values: {get, post}
  - `id` (unique ID for the `<form>` element)
  - `name` (deprecated)
  - `onsubmit=event`
  - `onreset=event`
  - `accept`

# HTML Form Controls

- The `<input>` element creates many of the UIs.
- Must be self-closed (XHTML).

```
<input attribute="value" />
```

- Attributes:
  - `type` of input control
  - `name` name of the control passed to server.
  - `value` caption or initial value
  - `size` width of the control.
- Some `type` values: {text, button, radio, checkbox, submit, file, reset, password ...}

- 3 text input boxes:
  - 1 Single-line text input
  - 2 Password input
  - 3 Multi-line text input (textbox) → the `<textarea>` element

Username `<input type="text" name="uname" value="" size="30" maxlength="30"/>`

Password `<input type="password" name="pw" value="" size="30" />`

`<textarea name="comment" rows="5" cols="10">` Your Comments `</textarea>`

- To submit or reset forms, to trigger events/scripts.
- Creating buttons:
  - a. Using the `<input>` element
  - b. Using the `<button>` element
  - c. Images as buttons.
- Some attributes: `{type, name, value, size, onclick}`
- `type` values: `{submit, reset, image, button}`

- **Checkbox** → created using the **checkbox** type attribute of `<input>` (**radio** for radiobox).
- When sent to server, any checked boxes will be sent with `value=on`.
- **Radiobox** → “binary checkboxes”.
- Are grouped by the `name` attribute.
- Value be specified for each.
- Related attributes: `{type, name, value, size, checked}`

## Form Controls:

## Drop-down Menu

- To select an item(s) from a list; an alternative to other controls.
- Created using the `<select>` and `<option>` elements.

```
<select name="state">
<option value="ts">Telangana</option>
<option value="gj">Gujarat</option>
<option value="kr">Kerala</option>
<option value="tn">Tamil Nadu</option>
</select>
```

- Attributes of `<select>`: {name, size, multiple}
- Attributes of `<option>`: {value, label, selected}
- The `<optgroup>` element is used to group list items.



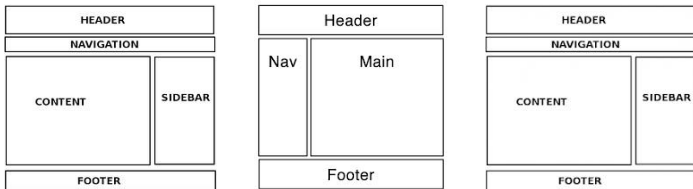
## Form Controls:

## File Select box

- A.k.a. *file upload box*
- Requirement → method attribute of `<form>` be `post`!
- Created using the `<file>` type attribute of the `<input>` element.

```
<input type="file" name="SomeName" />
```

- Some attributes: {name, value, accept}



- Some layout techniques:

some not recommended!

① Using Tables

② Using `<div>`

`<div>` is a block-level element used for grouping (X)HTML elements.

③ Using Frames

④ Using CSS (later on).

⑤ Using HTML5

- Frames divide our window into *panes*.
- Frameset: collection of frames.
- Advantages → each can be (re)loaded independently.
- Using the `<frameset>` and `<frame>` elements. The latter specifies what goes in each frame.
- The `<frameset>` element:
  - Defines rows and columns (specified in pixels, percentage or the \* wildcard).
  - Replaces the `<body>` element.