

Full stack web development

Course Code: TCS 693

Instructor: Dr. Ashwini Kumar Singh

Unit 1:

HTML

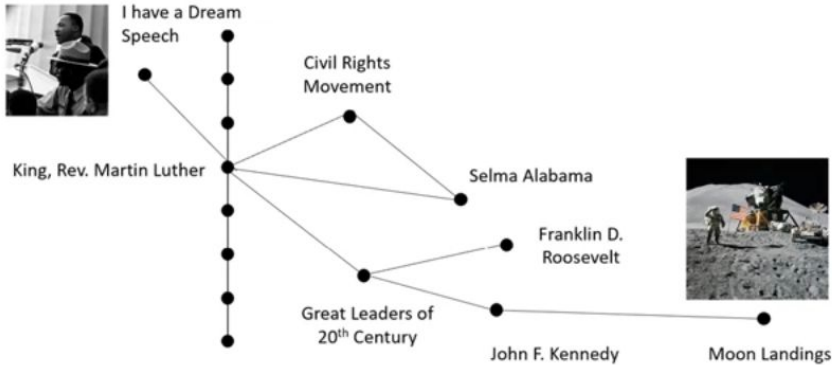
Basics of HTML, formatting and fonts, commenting code, color, hyperlink, lists, tables, images, forms, XHTML, Meta tags, Character entities, frames and frame sets, Browser architecture and Web site structure. Overview and features of HTML5.

CSS

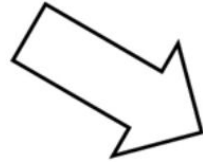
Need for CSS, introduction to CSS, basic syntax and structure, using CSS, type of CSS, background images, colors and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS, Introduction to Bootstrap.

Introduction to HTML

“Origins of the Web”

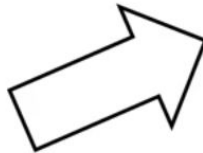


Internet



World Wide Web

Hypertext



Stanford

Presentation of Information



The Book

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Presentation of Information



Replacement for Books

Vannevar Bush
"As We May Think" 1945

Ted Nelson
Hypertext and Hpermedia 1963

Microsoft Encarta 1993-2009

World Wide Web 1989
Tim Berners-Lee, KBE

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The Book

Information is Sequential

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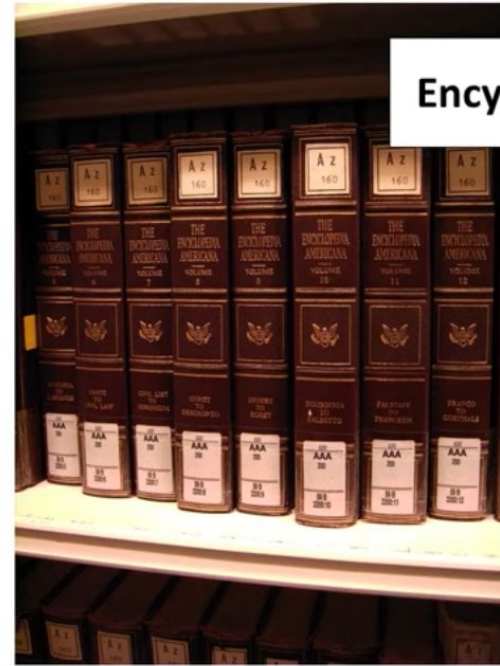
...

King George

King, Rev. Martin Luther

King Philip

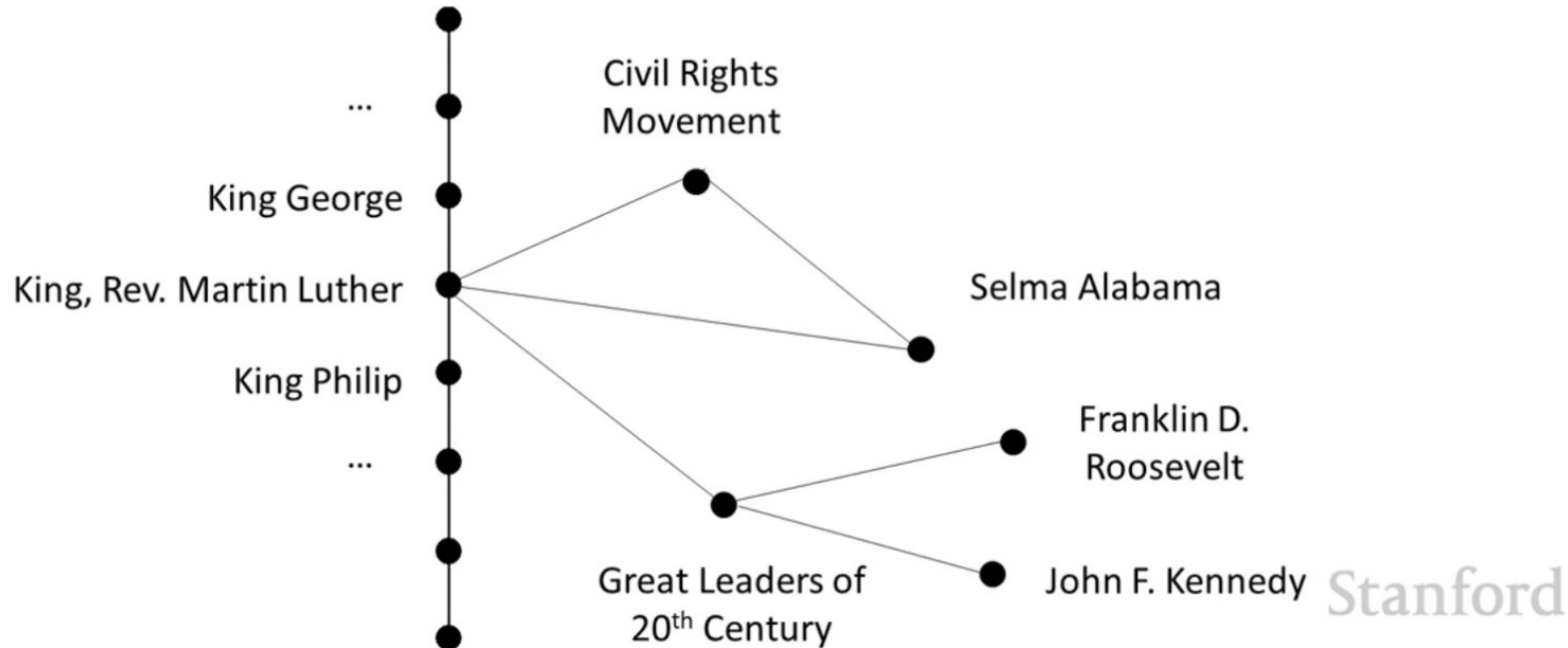
...



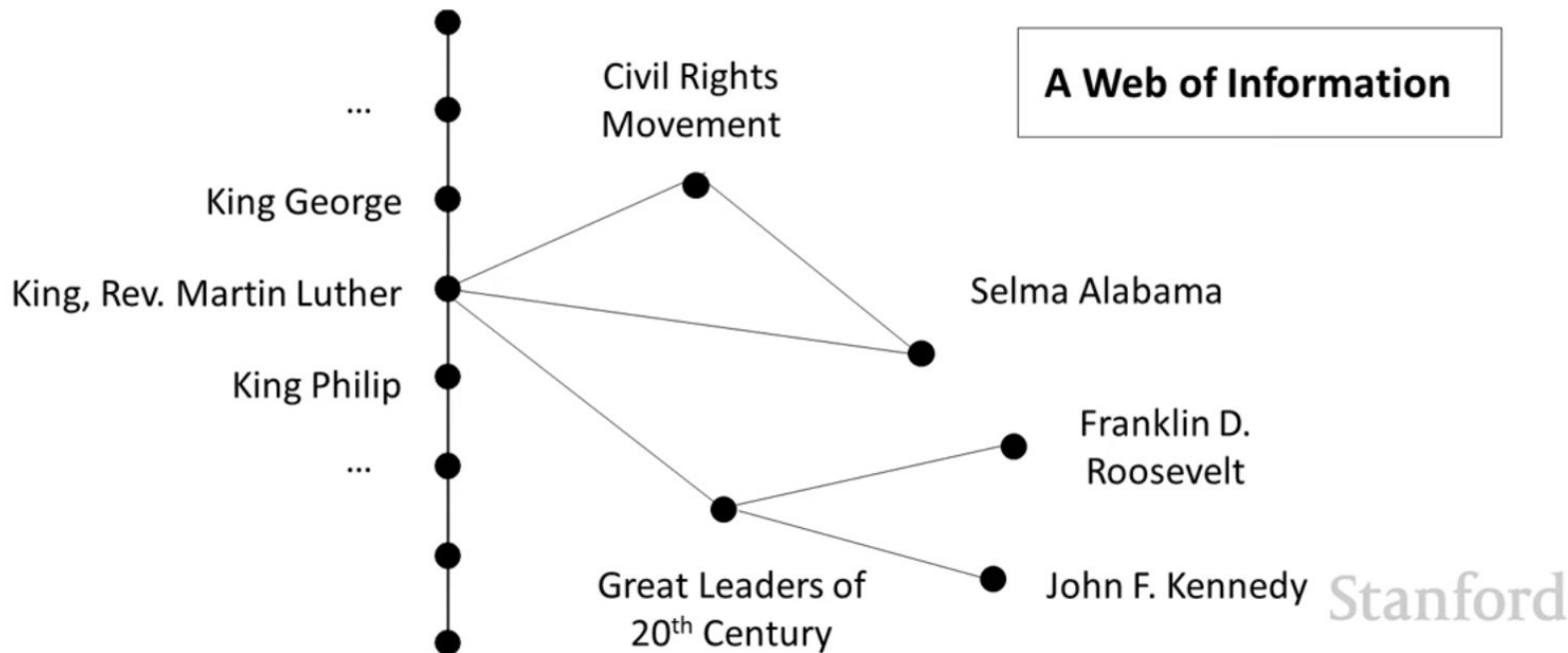
Encyclopedia

ford

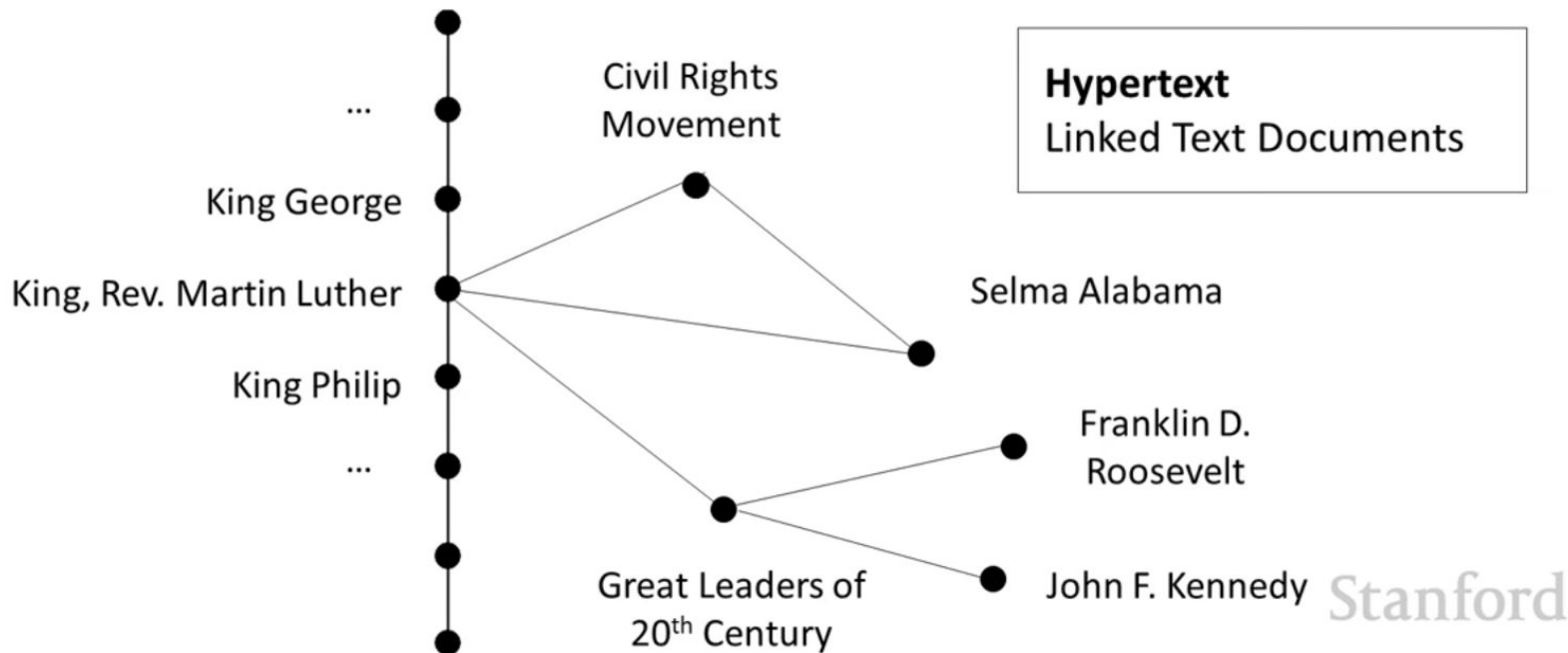
Presentation of Information



Presentation of Information



Presentation of Information



Presentation of Information



I have a Dream
Speech

Civil Rights
Movement

King, Rev. Martin Luther

Selma Alabama

Franklin D.
Roosevelt

Great Leaders of
20th Century

John F. Kennedy



Stanford

Moon Landings

Hypermedia

Linked Text and Media Documents

CERN



Physics Research Consortium

- 23 Member Countries
- Headquarters in Geneva



CERN



Tim Berners-Lee

- 1989 invents system for CERN Physicists to share information
- Origin of the World-Wide Web
- Knighted in 2004



Stanford

CERN



Tim Berners-Lee

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Internet



World Wide Web



Hypertext

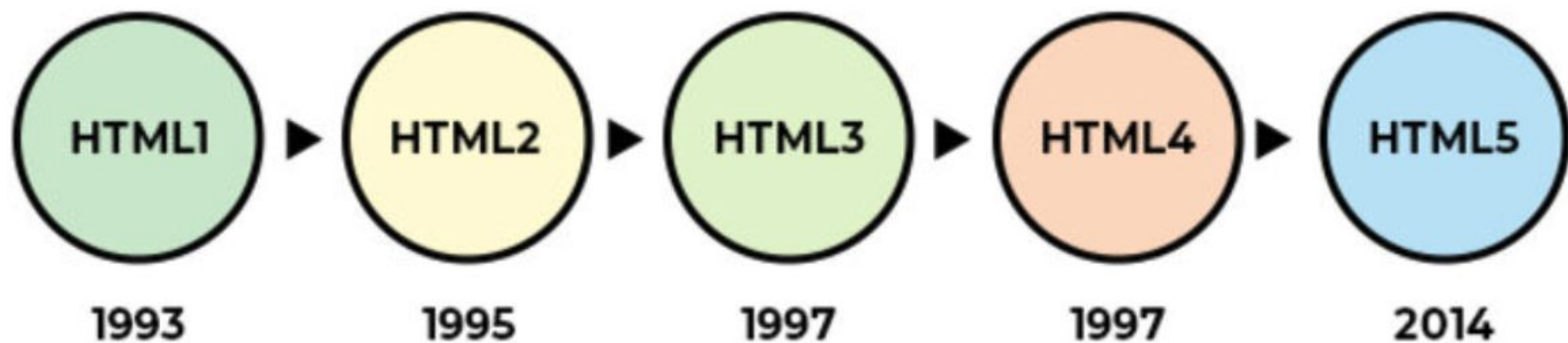
Stanford

Hypertext Markup Language (HTML) is the standard markup language for documents designed to be displayed in a web browser. It defines the content and structure of web content.

The Timeline of HTML

- *1991- Tim Berners-Lee invents HTML 1.0*
- *1993- HTML 1.0 is released. Not many developers are creating websites at this time.*
- *1995- HTML 2.0 is published. This contains the features of HTML 1.0 plus new features. This remained the standard markup language for designing and creating websites until 1997.*
- *1997- HTML 3.0 was invented. Here, Dave Raggett introduced a fresh draft on HTML, which improved new features of HTML and gave more powerful characteristics for webmasters in designing websites. Unfortunately, the powerful features slowed down the browser in applying further improvements.*
- *1999- The widely-used HTML 4.0 comes out. It is very successful.*
- *2014- HTML 5.0 is released and used worldwide. It is said to be the extended version of HTML 4.01 which was published in 2012.*

HTML Released Year



Introduction to HTML

“Hypertext Markup
Language”

<h1>

<html>

stanford

HTTP Protocol

Hypertext Transport Protocol

Status Code

200 OK

404 Not Found

403 Not Authorized

500 Server Error



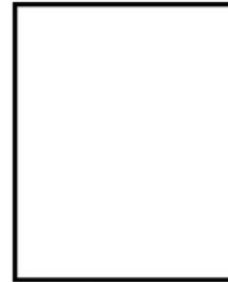
HTML File

Content-Encoding
Expires
Content-Length



My Laptop

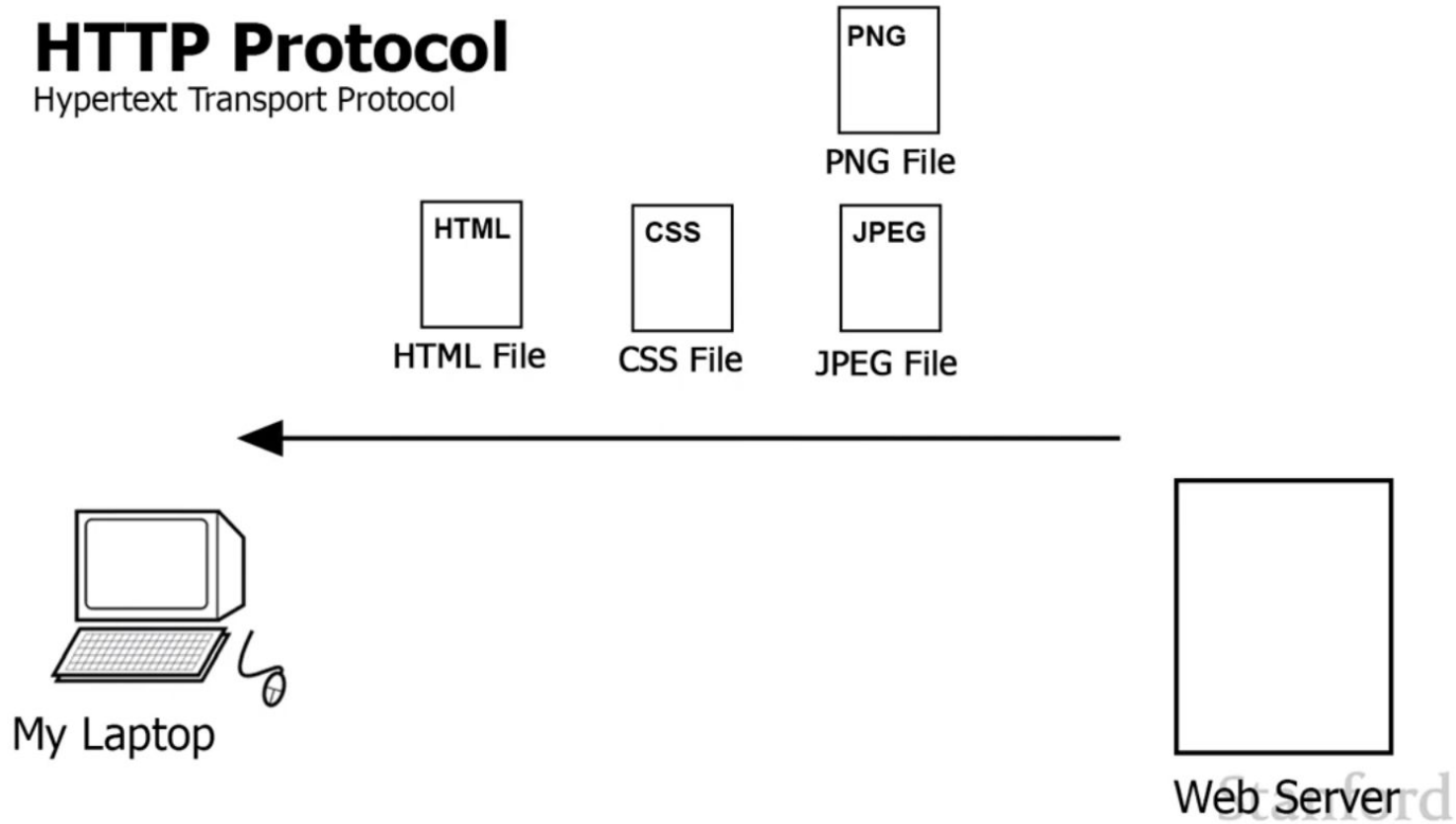
Response



Web Server

HTTP Protocol

Hypertext Transport Protocol



HTTP Protocol

Hypertext Transport Protocol

HTML

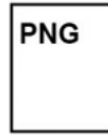
Hypertext Markup Language



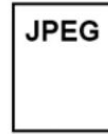
HTML File



CSS File



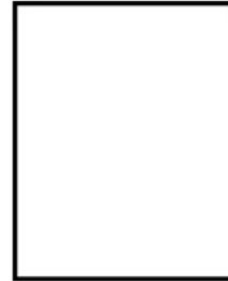
PNG File



JPEG File



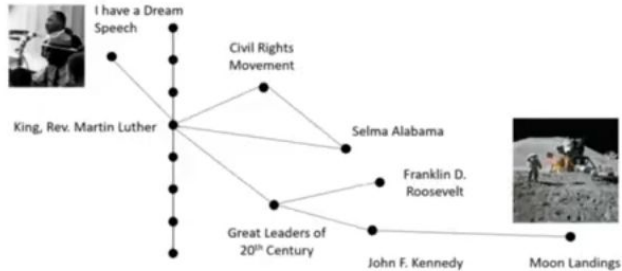
My Laptop



Web Server

HTML

Hypertext Markup Language



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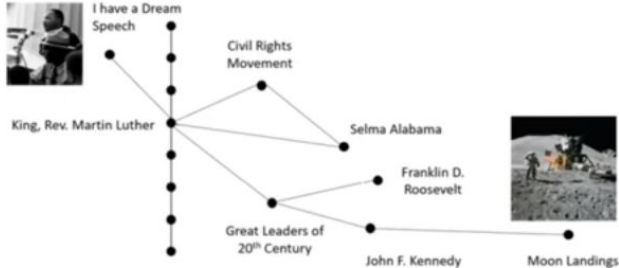
HTML

Hypertext Markup Language



**Grammar/
Vocabulary**

French
Japanese
Swahili
Tagalog



Stanford

Markup in Publishing

Stanford Daily | Football: Carried by an inspiring defensive effort, No. 21 Stanford stuns No. 2 USC in 21-14 victory - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Stanford Daily | Football: Can... X

file:///C:/Users/tyoung/Documents/

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THE STANFORD DAILY
BREAKING NEWS FROM THE FARM SINCE 1892


AMICI'S
EAST COAST PIZZERIA

NEWS SPORTS OPINIONS INTERMISSION MEDIA MONDAY OCTOBER 8, 2012

Football: Carried by an inspiring defensive effort, No. 21 Stanford stuns No. 2 USC in 21-14 victory

By George Chen September 10, 2012

Text



Captain halfback Stephen Taylor breaks out for a 58-yard touchdown run, giving Stanford its first points of the game midway through the first quarter. That scoring of the game took the series winner accounted for two of Stanford's three scores and resulted for 153 yards on 29 carries. (DANIEL QUADRY/The Stanford Daily)

It was an upset for the ages.

So much for Matt Barkley's Heisman hopes. So much for USC's title aspirations. And so much for Stanford's supposed decline after the Andrew Luck era.

In front of a sellout crowd of 50,300 tonight, No. 21 Stanford (3-0, 1-0 Pac-12) took down powerhouse No. 2 USC (2-1, 0-1 Pac-12), putting it out for a stunning 21-14 upset. When the game clock hit zero, Cardinal fans stormed the field in an uncontrollable frenzy that topped all other celebrations on the Farm in recent memory.

"We have a talented bunch," said senior inside linebacker Shayne Skow. "When you have a group of guys like that—22 guys—and they play lights out, they just give another and they play together like that, it's something special. We came out to play today, and we showed that we could do this, and that the showdown was going to be on the field."

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What to expect when you're expecting: Full Moon on the Coast 2012
Loving: Stanford debates Arizona in OT
Football: Names to stay on starting QB
Beyoncé: Princes patiently waits on the sidelines
Review: 'The Parks of Being a Wildflower'

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Markup in Publishing

Stanford Daily | Football: Carried by an inspiring defensive effort, No. 21 Stanford stuns No. 2 USC in 21-14 victory - Mozilla Firefox

File:///C:/Users/tyoung/Documents/Stanford Daily | Football Can... X

file:///C:/Users/tyoung/Documents/ X Search

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THE STANFORD DAILY
BREAKING NEWS FROM THE FARM SINCE 1892


AMICI'S
EAST COAST PIZZERIA

NEWS SPORTS OPINIONS INTERMISSION MEDIA MONDAY OCTOBER 8, 2012 Search

Football: Carried by an inspiring defensive effort, No. 21 Stanford stuns No. 2 USC in 21-14 victory

By George Chen September 10, 2012

Text



Captain halfback Stephen Taylor breaks out for a 53-yard touchdown run, giving Stanford its first points of the game midway through the first quarter. That evening of the game last, the senior senior accounted for two of Stanford's three scores and rushed for 153 yards on 29 carries. (DANIEL STANFORD/The Stanford Daily)

It was an upset for the ages.

For many Stanford fans, the victory was a long time coming. So much for USC's title aspirations. And so much for Stanford's supposed decline after the Andrew Luck era.

In front of a sellout crowd of 50,300 tonight, No. 21 Stanford (3-0, 1-0 Pac-12) took down powerhouse No. 2 USC (2-1, 0-1 Pac-12), putting it out for a stunning 21-14 upset. When the game clock hit zero, Cardinal fans stormed the field in an uncontrollable frenzy that topped all other celebrations on the Farm in recent memory.

"We have a talented bunch," said senior inside linebacker Shayne Skow. "When you have a group of guys like that—22 guys—and they play lights out, they trust one another and they play together like that, it's something special. We came out to play today, and we showed that we could do this, and that the showdown was going to be on the field."

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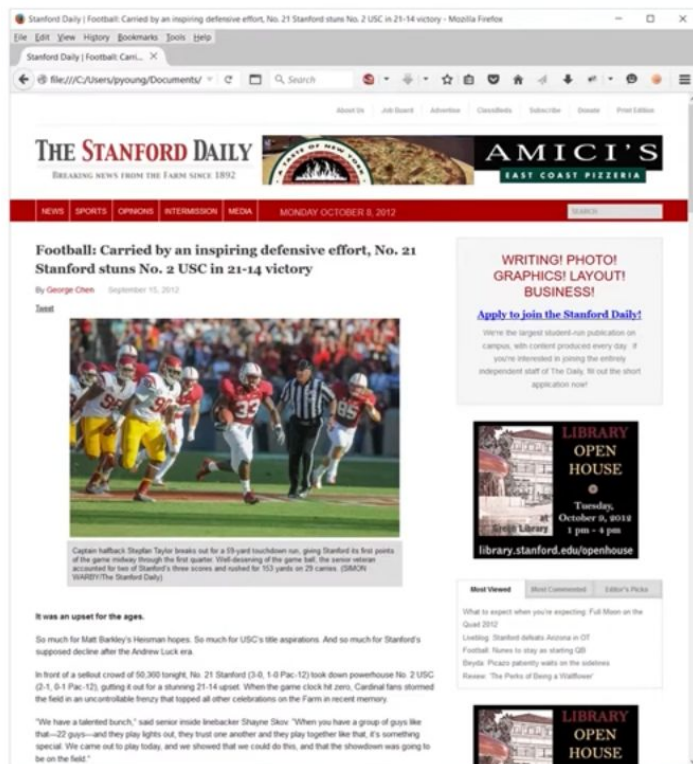
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Markup in Publishing



Football: Carried by an inspiring defensive effort, No. 21 Stanford stuns No. 2 USC in 21-14 victory

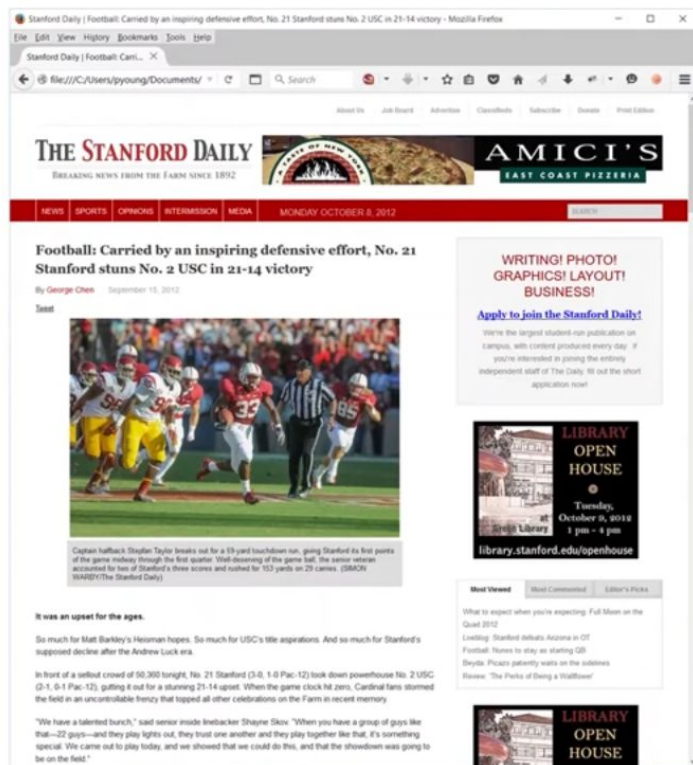
By George Chen September 15, 2012

It was an upset for the ages.

So much for Matt Barkley's Heisman hopes. So much for USC's title aspirations. And so much for Stanford's supposed decline after the Andrew Luck era.

In front of a sellout crowd of 50,360 tonight, No. 21 Stanford (3-0, 1-0 Pac-12) took down powerhouse No. 2 USC (2-1, 0-1 Pac-12), gutting it out for a stunning 21-14 upset. When the game clock hit zero, Cardinal fans stormed the field in an uncontrollable frenzy that topped all other celebrations on the Farm in recent memory.

Markup in Publishing



bold 24 pt

Football: Carried by an inspiring defensive effort, No. 21 Stanford stuns No. 2 USC in 21-14 victory

By George Chen September 15, 2012

It was an upset for the ages.

5 qns - serif font

Insert Photo

So much for Matt Barkley's Heisman hopes. So much for USC's title aspirations. And so much for Stanford's supposed decline after the Andrew Luck era.

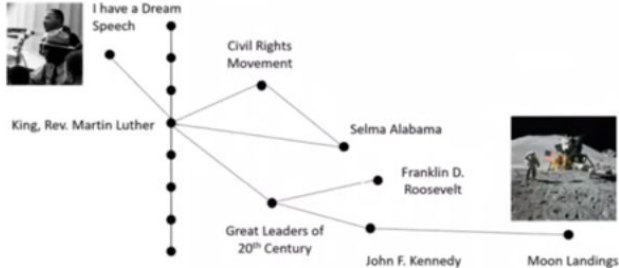
In front of a sellout crowd of 50,360 tonight, No. 21 Stanford (3-0, 1-0 Pac-12) took down powerhouse No. 2 USC (2-1, 0-1 Pac-12), gutting it out for a stunning 21-14 upset. When the game clock hit zero, Cardinal fans stormed the field in an uncontrollable frenzy that topped all other celebrations on the Farm in recent memory.

HTML

Hypertext Markup Language

Grammar/
Vocabulary

French
Japanese
Swahili
Tagalog



bold 24 pt

Football: Carried by an inspiring defensive effort, No. 21 Stanford stuns No. 2 USC in 21-14 victory

By George Chen September 15, 2012

It was an upset for the ages.

sans-serif font

Insert Photo

So much for Matt Barkley's Heisman hopes. So much for USC's title aspirations. And so much for Stanford's supposed decline after the Andrew Luck era.

What is HTML?

- *HTML stands for Hyper Text Markup Language*
- *HTML is the standard markup language for creating Web pages*
- *HTML describes the structure of a Web page*
- *HTML consists of a series of elements*
- *HTML elements tell the browser how to display the content*
- *HTML elements label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.*

Popular HTML Editors in 2025

There are several HTML editors available to the user (paid and unpaid, both). The following is the list of some popular editors:

- *Notepad*
- *TextEdit*
- *Notepad++*
- *Sublime*
- *Visual Studio Code*
- *Atom*
- *Brackets*
- *Adobe Dreamweaver CC*
- *CoffeeCup*

Example-1

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>Page Title</title>
```

```
</head>
```

```
<body>
```

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

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

```
</body>
```

```
</html>
```


Example Explained

- The `<!DOCTYPE html>` declaration defines that this document is an HTML5 document
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the HTML page
- The `<title>` element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)
- The `<body>` element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.
- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph

What is an HTML Element?

An HTML element is defined by a start tag, some content, and an end tag:

<tagname> Content goes here... </tagname>

The HTML element is everything from the start tag to the end tag:

<h1>My First Heading</h1>

<p>My first paragraph.</p>

HTML Documents

All HTML documents must start with a document type declaration: `<!DOCTYPE html>`.

The HTML document itself begins with `<html>` and ends with `</html>`.

The visible part of the HTML document is between `<body>` and `</body>`.

HTML Attributes

- *All HTML elements can have attributes*
- *Attributes provide additional information about elements*
- *Attributes are always specified in the start tag*
- *Attributes usually come in name/value pairs like: name="value"*

Visit GEU

The src Attribute

The `` tag is used to embed an image in an HTML page. The `src` attribute specifies the path to the image to be displayed:

```

```

There are two ways to specify the URL in the `src` attribute:

1. Absolute URL - Links to an external image that is hosted on another website. Example:

`src="https://www.geu.ac.in/gallery/grafest-day-2/"`.

2. Relative URL - Links to an image that is hosted within the website. Here, the URL does not include the domain name. If the URL begins without a slash, it will be relative to the current page. Example:

`src="img_girl.jpg"`. If the URL begins with a slash, it will be relative to the domain. Example:

`src="/images/img_rose.jpg"`.

The width and height Attributes

The `` tag should also contain the `width` and `height` attributes, which specify the width and height of the image (in pixels):

```

```

The alt Attribute

The required `alt` attribute for the `` tag specifies an alternate text for an image, if the image for some reason cannot be displayed. This can be due to a slow connection, or an error in the `src` attribute, or if the user uses a screen reader.

```

```

HTML Headings

HTML headings are defined with the `<h1>` to `<h6>` tags.

`<h1>` defines the most important heading. `<h6>` defines the least important heading.

`<h1>`Heading 1`</h1>`

`<h2>`Heading 2`</h2>`

`<h3>`Heading 3`</h3>`

`<h4>`Heading 4`</h4>`

`<h5>`Heading 5`</h5>`

`<h6>`Heading 6`</h6>`

Headings Are Important

- ❖ *Search engines use the headings to index the structure and content of your web pages.*
- ❖ *Users often skim a page by its headings. It is important to use headings to show the document structure.*
- ❖ *<h1> headings should be used for main headings, followed by <h2> headings, then the less important <h3>, and so on.*

For example:

- *<h1> - Page title*
- *<h2> - Section titles*
- *<h3> - Sub-sections*

HTML Paragraphs

- ❖ *The HTML `<p>` element defines a paragraph.*
- ❖ *A paragraph always starts on a new line, and browsers automatically add some white space (a margin) before and after a paragraph.*

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

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

HTML Styles

The HTML *style* attribute is used to add styles to an element, such as color, font, size, and more.

I am Red

I am Blue

I am Big

The HTML Style Attribute

Setting the style of an HTML element, can be done with the *style* attribute.

The HTML *style* attribute has the following syntax:

```
<tagname style="property:value;">
```

Background Color

*The CSS **background-color** property defines the background color for an HTML element.*

Example 1:

```
<body style="background-color:powderblue;">  
<h1>This is a heading</h1>  
<p>This is a paragraph.</p>  
</body>
```

Example 2:

```
<body>  
<h1 style="background-color:powderblue;">This is a heading</h1>  
<p style="background-color:tomato;">This is a paragraph.</p>  
</body>
```

HTML Text Formatting

HTML contains several elements for defining text with a special meaning.

This text is bold

This text is italic

*This is*_{subscript} *and*^{superscript}

HTML Formatting Elements

Tag	Description
<u></u>	Defines bold text
<u></u>	Defines emphasized text
<u><i></u>	Defines a part of text in an alternate voice or mood
<u><small></u>	Defines smaller text
<u></u>	Defines important text
<u><sub></u>	Defines subscripted text
<u><sup></u>	Defines superscripted text
<u><ins></u>	Defines inserted text
<u></u>	Defines deleted text
<u><mark></u>	Defines marked/highlighted text

HTML Comments

- ❖ *HTML comments are not displayed in the browser, but they can help document your HTML source code.*

HTML Comment Tag

- ❖ *You can add comments to your HTML source by using the following syntax:*

<!-- Write your comments here →

Add Comments

With comments you can place notifications and reminders in your HTML code:

<!-- This is a comment -->

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

<!-- Remember to add more information here →

Hide Content

Comments can be used to hide content.

This can be helpful if you hide content temporarily:

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

```
<!-- <p>This is another paragraph </p> -->
```

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


You can also hide more than one line. Everything between the `<!--` and the `-->` will be hidden from the display.

Example

Hide a section of HTML code:

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

`<!--`

`<p>Look at this cool image:</p>`

``

`-->`

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

Hide Inline Content

Comments can be used to hide parts in the middle of the HTML code.

Example:

Hide a part of a paragraph:

```
<p>This <!-- great text --> is a paragraph.</p>
```

HTML Links

- ❖ *Links are found in nearly all web pages. Links allow users to click their way from page to page.*

HTML Links - Hyperlinks

- ❖ *HTML links are hyperlinks.*
- ❖ *You can click on a link and jump to another document.*
- ❖ *When you move the mouse over a link, the mouse arrow will turn into a little hand.*

HTML Links - Syntax

The HTML `<a>` tag defines a hyperlink. It has the following syntax:

```
<a href="url">link text</a>
```

```
<a href="https://www.google.com/">Visit Google!</a>
```

```
<a href="https://www.google.com/" target="_blank">Visit Google!</a>
```

```
<h2>Absolute URLs</h2>
```

```
<p><a href="https://www.geu.ac.in/">GEU</a></p>
```

```
<p><a href="https://www.google.com/">Google</a></p>
```

```
<h2>Relative URLs</h2>
```

```
<p><a href="html_images.asp">HTML Images</a></p>
```

Thanks