CompSci 94
Creating a Web page with HTML
Sept. 3, 2019

Prof. Susan Rodger
Class Today

• Some History of web pages
• Learning HTML and creating a web page
• Use Glitch to create web pages

• Due
  – Assignment 1 is due tonight
  – QZ’s always due 8:30am day of class
• Next time – add colors with CSS
Browsers on the Web

• First browser called “WorldWideWeb”
  – Hypertext browser/editor
  – Created in 1990 by Tim Berners-Lee at CERN
  – 1991 available on internet

• Lynx
  – Textual browser, 1992, history
  – Lou Montulli, Charles Rezac, Michael Grobe
CompSci 4 Fall 2010 Webpage in Lynx

CompSci 4, Fall 2010, Home (pl of 4)

* Home
* Info
* Dates
* Assign
* Groups
* Help
* Resources
* StPages
* StProjs
* Animatns
* Bulletin
* Blackbd

Course Announcements

* You will need to put Alice 2.2 on your laptop by Thursday, Sept. 2.
* August 31 is the first day of class.

[INLINE]

CompSci 4
Introduction to Programming
Via Animation and 3D Virtual Worlds

-- press space for next page --
What it looked like in Firefox:

CompSci 4, Fall 2010
Home

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CompSci 4
Introduction to Programming
Via Animation and 3D Virtual Worlds

CompSci 4 is an introductory programming course that teaches fundamental computer science concepts. This version of CompSci 4 uses the tool Alice to create 3-D virtual worlds. You will learn programming constructs such as looping, selection, and data structures, along with how to control objects.
Other Browsers

• Mosaic
  – 1993, Univ of Illinois Urbana-Champaign
  – Last version in 1997

• Netscape
  – 1994 by Jim Clark and Marc Andreessen
  – Hired most of Mosaic Engineers and Montulli (lynx)
  – History (pdf)

• Internet Explorer
  – 1995, first version attached to Windows 95, not very popular
  – History (pdf)

• More recent: FireFox, Safari, Chrome
How do these Browsers view the same info?

- **Standards**
  - Html is HyperText Markup Language
    - NOT a programming language
  - Figure formats (gif, jpeg, tiff)
  - Scripts (javascript, cgi)

- **Plug-ins**
  - Program provided by companies that are run when specific file is downloaded
URLS

- Uniform Resource Locator
- Address of location of a web site or other Internet service
- Organized first by protocol
  - http, mailto, ftp, file
- Organized next by domains
  - .com, .edu, .org, country (.it, .fr, .de)
- Organized finally by directory on specific machine
We will create web pages using Glitch

• Create a free account at  https://glitch.com/
Glitch starts a new webpage for you

Click on new project and select hello-webpage

1) 

2)
Glitch creates a project web page for you

Name of project that Glitch creates
HTML is written in file index.html

Click on index.html

HTML shown here:

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Susan's webpage</title>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <!-- import the webpage's stylesheet -->
    <link rel="stylesheet" href="/style.css">
    <!-- import the webpage's javascript file -->
    <script src="/script.js" defer></script>
  </head>
  <body>
    <h1>Susan's Webpage for CompSci 94</h1>
    
    I love to bake <b>cookies</b> and <b>cakes</b>
  </body>
</html>
```
To See web page with code

• Click on “Show”, then “Next to the Code”
Shows all three: files, index.html, how displayed
An HTML file

- Write HTML commands in a text file
- File should have `.html` extension
- View file with browser
  - Save file and check often

- In Glitch, default file created is `index.html`
Starting– default for new project

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Hello!</title>
  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1">

  <!-- import the webpage's stylesheet -->
  <link rel="stylesheet" href="/style.css">

  <!-- import the webpage's javascript file -->
  <script src="/script.js" defer></script>
</head>
<body>
  <h1>Hi there!</h1>

  <p>
    I'm your cool new webpage. Made with <a href="https://glitch.com">Glitch</a>!
  </p>

  <!-- include the Glitch button to show what the webpage is about and
to make it easier for folks to view source and remix -->
  <div class="glitchButton" style="position:fixed;top:20px;right:20px;"></div>
  <script src="https://button.glitch.me/button.js"></script>
</body>
</html>
```
Starting HTML looks like this on a webpage

<title> tag does this

<h1> tag does this

<p> tag does this

Hi there!

I'm your cool new webpage. Made with Glitch!
HTML tags

• First tag “< >“ says, “Begin Mode”
• Second tag “</ >” says “End Mode”
  – note the “/”
• Example
  – <title>Flavor of the Week </title> means
    • Begin title mode
    • “Flavor of the Week” is in title mode
    • End title
  – Can nest several modes
Some General HTML rules
  – For tags, case doesn’t matter
    • `<html>` is equal to `<HTML>`
  – In the text, spaces don’t matter (free format)
  – `<br>` starts a new line (doesn’t need end tag)

Headings
  – Use `<h{n}>` for heading size, the smaller `n`, the larger the heading
  – `<h1>` … `<h1>` is largest heading
  – `<h4>` … `<h4>` is minor heading
Example: HTML –
Basic Page Structure

```html
<html>
<head>
<title> Susan's webpage </title>
</head>
<body>
<center>
<h1> Susan’s Webpage for CompSci 94</h1>
<p> I love to bake cookies and cakes! </p>
</center>
</body>
</html>
```
HTML tags start and end document

<html>
<head>
<title> Susan’s webpage </title>
</head>
<body>
<center>
<h1> Susan’s Webpage for CompSci 94 </h1>
</center>
<p> I love to bake cookies and cakes! </p>
</body>
</html>
Head tag with title inside
header items don’t show in body of page

<html>
  <head>
    <title>Susan’s webpage</title>
  </head>
  <body>
    <center>
      <h1>Susan’s Webpage for CompSci 94</h1>
    </center>
    <p>I love to bake cookies and cakes!</p>
  </body>
</html>
Body – part that appears in web page

<html>
<head>
<title> Susan’s webpage </title>
</head>
<body>
<center>
<h1> Susan’s Webpage for CompSci 94</h1>
</center>
<p> I love to bake cookies and cakes! </p>
</body>
</html>
<html>
<head>
<title>Susan’s webpage</title>
</head>
<body>
<center>
<h1>Susan’s Webpage for CompSci 94</h1>
</center>
<p>I love to bake cookies and cakes!</p>
</body>
</html>
I love to bake cookies and cakes!
Page on a web browser
https://reinvented-thunbergia.glitch.me/

Title here in tab
H1 header here
URL here
Paragraph (P tag) here
HTML

• Add links

\(<a \text{ HREF="http://www.duke.edu">}
The Duke web page </a>\)

• Italics or emphasis

  – <i> or <em>

• Darker or bold use

  – <strong> or <b>

• Text exactly as typed with spaces

  – <pre>
<html>
<head>
<title> Susan’s webpage </title>
</head>
<body>
<center>
<h1> Susan’s Webpage for CompSci 94 </h1>
</center>
<p> I love to bake <strong> cookies </strong> and <strong> cakes! </strong> </p>
</body>
</html>
HTML - Lists

• Bulleted list (unordered list)
  
  <ul>
    <li> item in list </li>
  </ul>

• Ordered list
  
  <ol>
    <li> first item in list </li>
    <li> second item in list </li>
  </ol>

• Can nest arbitrarily deep – lists within lists
Example of ordered list

```html
18    <p>
19        I love to bake <b>cookies</b> and <b>cakes</b>
20    </p>
21
22
23    <h2>
24        Favorite Fruit
25    </h2>
26    <ol>
27        <li> Banana </li>
28        <li> Pomegranate </li>
29        <li> Kiwi </li>
30    </ol>
```

```
I love to bake **cookies** and **cakes**

Favorite Fruit

1. Banana
2. Pomegranate
3. Kiwi
```
HTML – Table

• Tables – produces simple table

```html
<table border="1">
  <tr><td>cell 1</td><td>cell2</td></tr>
  <tr><td>cell 3</td><td>cell4</td></tr>
</table>
```

• `<tr>` - table row
• `<td>` - table data
• `<th>` - Table header
HTML –Images

• Images – displays an image
  `<img src=
   "https://users.cs.duke.edu/~rodger/shrfun.gif" />
Or  `<img src="shrfun.gif" />`
  if the file is in the same folder as this web page

• Can upload a file in Glitch into your project
  – Explained how in next few slides

• Add `width=300` other number to set the width of the image.
Example html - table and image

```html
<h2>
  My cats
</h2>
<table border="1">
  <tr><th>NAME</th><th>CHARACTERISTICS</th></tr>
  <tr><td>Keaah</td><td>Half white and half gray</td></tr>
  <tr><td>Selena</td><td>Gray with white paws</td></tr>
  <tr><td>Moe</td><td>Mostly gray with white under chin</td></tr>
</table>
<img src="https://cdn.glitch.com/21d67e4d-8e1d-4a2d-a0d5-eb973f0f39bb/300">
```
How table and image are displayed

<table>
<thead>
<tr>
<th>NAME</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keaah</td>
<td>Half White and half gray</td>
</tr>
<tr>
<td>Selena</td>
<td>Gray with white paws</td>
</tr>
<tr>
<td>Moe</td>
<td>Mostly gray with white under chin</td>
</tr>
</tbody>
</table>
How do you get a picture into Glitch?

• First find a picture you want and save it on your computer.
• Then click on New File
• Then click on Upload a File
Files are stored in assets folder

Click on assets folder

Then click on picture
Picture has URL to it in Glitch

Click on Copy to copy image URL

Then paste that URL into your html in the file index.html
Classwork - Create a Web page

• Create an animal web page – complete by next class period. (see separate handout)
• Can work with someone else on ideas, but both must create their own web page.
• We will check this off in class!