CSCI-UA-4-005

Intro to Web Design + Computer Principles

Midterm Review

Professor Emily Zhao

Agenda

- Review Topics
- Go over Practice Exam
- Assignment #5

Midterm

Midterm

Date: Tuesday, October 22nd

Format: Multiple Choice

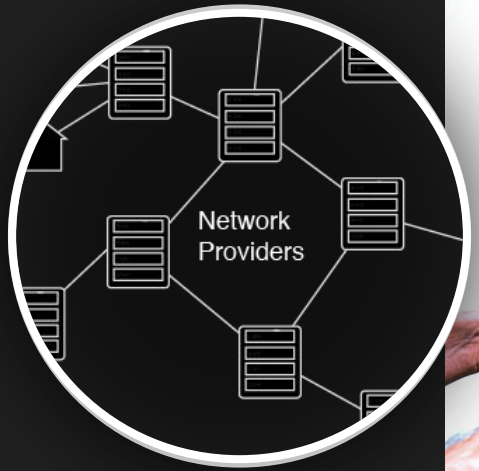
Topics Covered: Computer Principles, The Internet, Unix, HTML, CSS, Web Graphics

- Paper exam; no laptops/internet
- (1) 8.5” x 11” cheat sheet (both sides)
- 5-10 multiple choice questions per unit
- 25-35 multiple choice questions in reference to attached code

Topics for Review

- Key terms: servers, clients, ISPs, routers, IP addresses, URLs
- GUI vs CMI
- Web Permissions
- URI Fragments
- CSS Flexbox
- CSS Pseudo classes
- XML Definition
- SVG Paths

Computer Principles/The Internet



Servers

A computer connected directly to the internet

- Special computers that “serve up” documents upon request
- Web servers are called HTTP servers

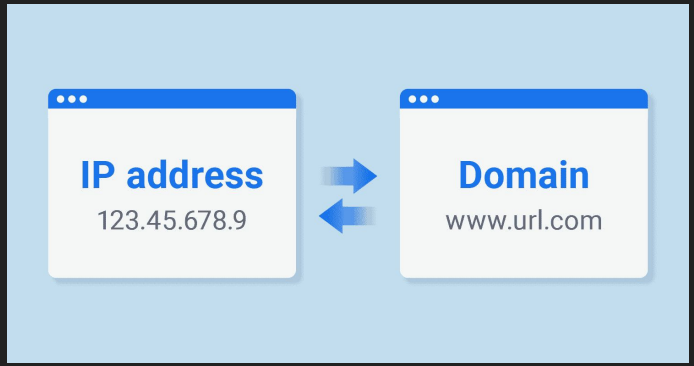
The New York Times

Internet Service Provider (ISP)

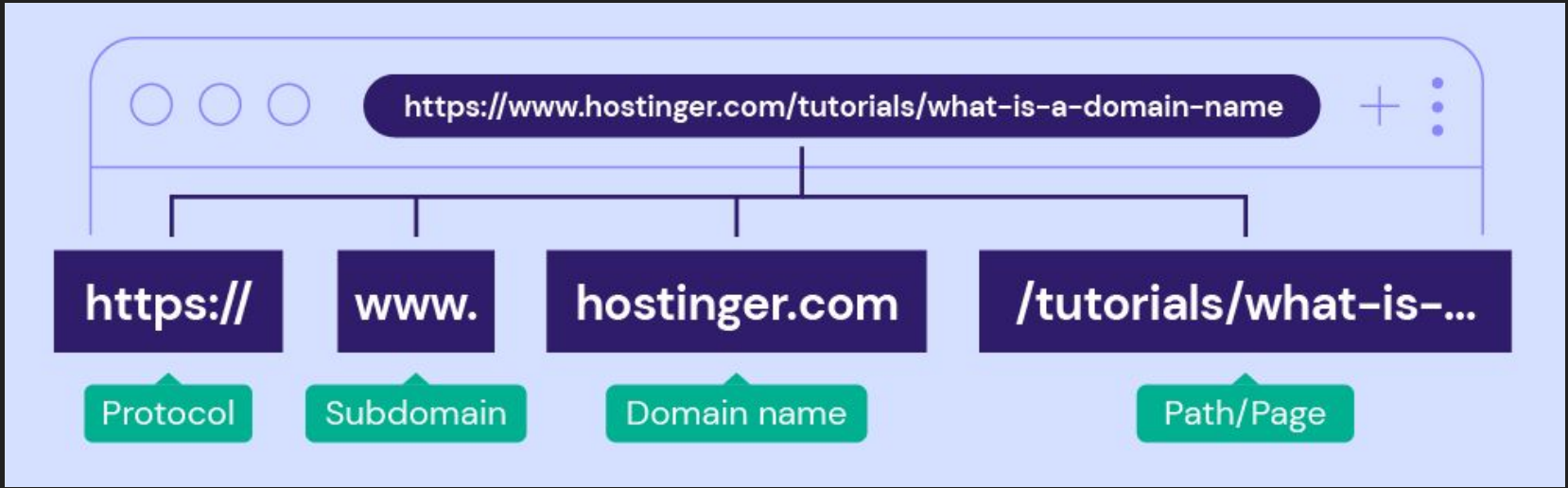
- a company that provides Internet access to users, or clients
- provides the physical infrastructure that allows users to connect to the Internet

IP Addresses

- every computer and device connected to the internet is assigned a unique IP (Internet Protocol) numeric address (i.e. 123.45.678.90)
- Domain Name System (DNS) was created so developers can refer to servers by domain names (i.e. emilydidthis.com)



URLs


https://www.hostinger.com/tutorials/what-is-a-domain-name
https://
www.
hostinger.com
/tutorials/what-is-...
Protocol
Subdomain
Domain name
Path/Page

Router

- A router is a networking device that relays data packets between computer networks
- direct the flow of Internet traffic so that packets arrive at their appropriate destination
- the address to which data is sent is normally in the form of a numeric IP address

Unix

Common Unix Commands

`% ls`	list directory files
`% pwd`	show current directory
`% cd`	change directory
`% cd ~`	go to home directory
`% cd ..`	go to parent directory
`% touch`	create, change, modify timestamp of file
`% mkdir`	create directory

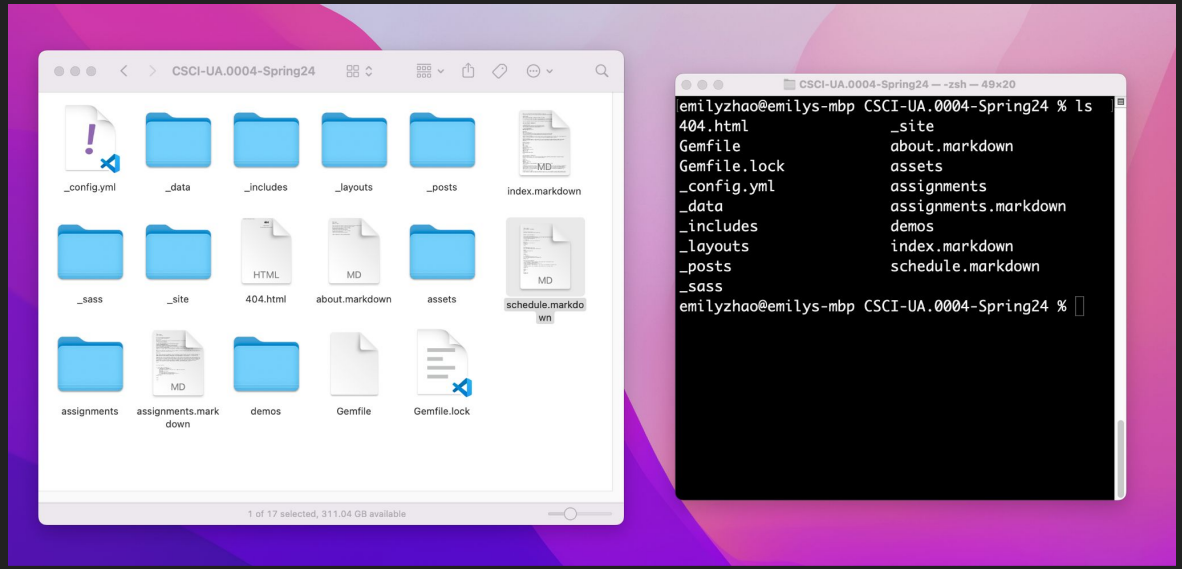
The User Interface

Portion of system software that allows you to interact with data

Two types

- Graphical (GUI)
- Command Line (CLI)

* GUI is more user-friendly, but command line is faster



chmod

Every file and directory has nine permissions associated with it

The Unix `chmod` command sets permissions of files and directories

Files and directories have three types of permissions (or none):

- r (read)
- w (write)
- x (execute)
- - (no permission)

The above permissions occur for each of the following classes

- or users:
- u (user/owner)
- g (group)
- o (other/world)

Standard Web Permissions

Permissions	Unix Commands
U G W	
rwx rwx rwx	% chmod 777 filename
rwx rwx r-x	% chmod 775 filename
rwx r-x r-x	% chmod 755 filename
rw- rw- r--	% chmod 664 filename
rw- r-- r--	% chmod 644 filename

Standard **file** permission: 644

Owner can read and write file;
group can read file;
others can read file

Standard **directory** permission: 755

Owner can read, write and execute file;
group can read and execute file;
others can read and execute file

HTML

URI Fragment

A URI (Uniform Resource Identifier) fragment is a part of a URL that follows a # symbol and is used to identify a subsection of a document. The fragment directs the browser to scroll to a specific part of the page, which is identified by an element with a matching `id` attribute.

```
http://example.com/page.html#section2
```

URI Fragment

You can create IDs in your page and then append them to the URL to navigate to different parts of pages.

```
<!-- Link to the fragment -->
<p> Click <a href="#section2">here</a> to go to Section 2 directly.</p>

<!-- Target section with a matching ID -->
<h2 id="section2">Section 2</h2>
<p>This is the content of Section 2. The URI fragment has directed the browser
to scroll to this part of the page.</p>
```

CSS

Parent + Child Elements in HTML

- A **parent** element is an HTML element that contains one or more nested elements inside of it — it contains or “holds” its **children**.
- Just like a family, there can be multiple children inside a parent, and each child can also become a parent to other elements (grandchildren).

```
<body>
    <div>
        <h1>This is a heading</h1>
        <p>This is a paragraph</p>
    </div>
</body>
```

- The `<body>` is the parent of the `<div>`.
- The `<div>` is both a child (of `<body>`) and a parent (to `<h1>` and `<p>`).
- The `<h1>` and `<p>` are children of the `<div>`.

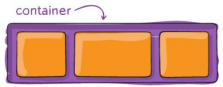
CSS Flexbox

HOME / GUIDES /

A Complete Guide to Flexbox

Our comprehensive guide to CSS flexbox layout. This complete guide explains everything about flexbox, focusing on all the different possible properties for the parent element (the flex container) and the child elements (the flex items). It also includes history, demos, patterns, and a browser support chart.

Flexbox properties



Properties for the Parent (flex container)

display

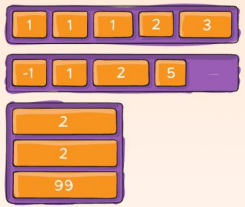
This defines a flex container; inline or block depending on the given value. It enables a flex context for all its direct children.

```css
.container {
  display: flex; /* or inline-flex */
}
```

Note that CSS columns have no effect on a flex

Properties for the Children (flex items)

order



Flexbox (Flexible Box Layout)

Flex Container:
The *parent* element that has `display: flex;` applied to it. This container manages the layout of its direct *child* elements (flex items).

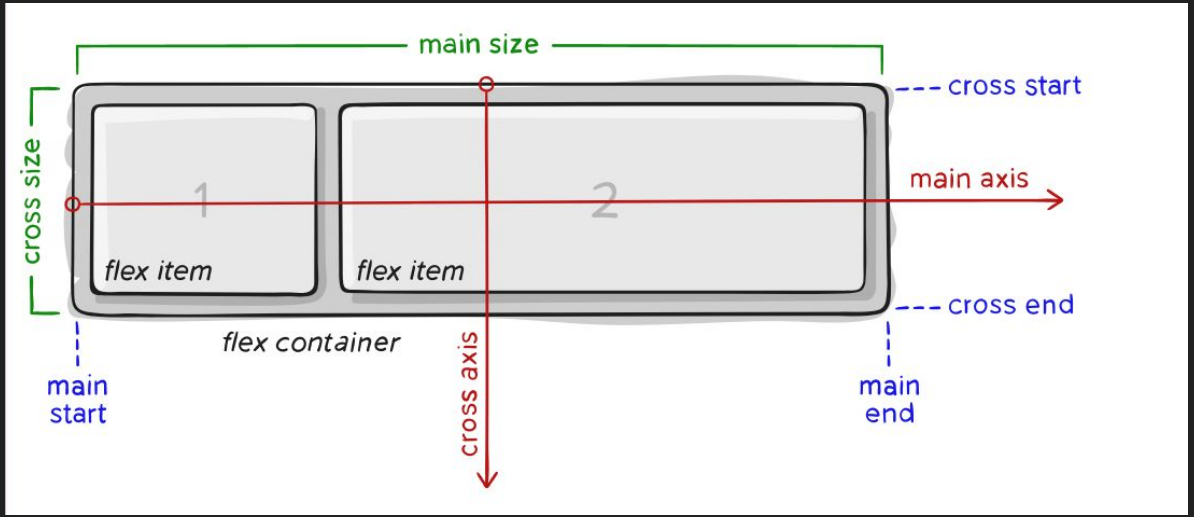
Flex Items:
The child elements inside the flex container that are laid out according to the rules of Flexbox.

HTML

```html
<div class="container">
    <div class="item">Item 1</div>
    <div class="item">Item 2</div>
    <div class="item">Item 3</div>
</div>
```

CSS

```css
.container {
    display: flex; /* This makes it a flex container */
}
```



Main Axis:
The primary direction along which flex items are laid out. By default, this is horizontal (left to right) when `flex-direction: row` is set.

Cross Axis:
The axis perpendicular to the main axis. By default, this is vertical when the main axis is horizontal.

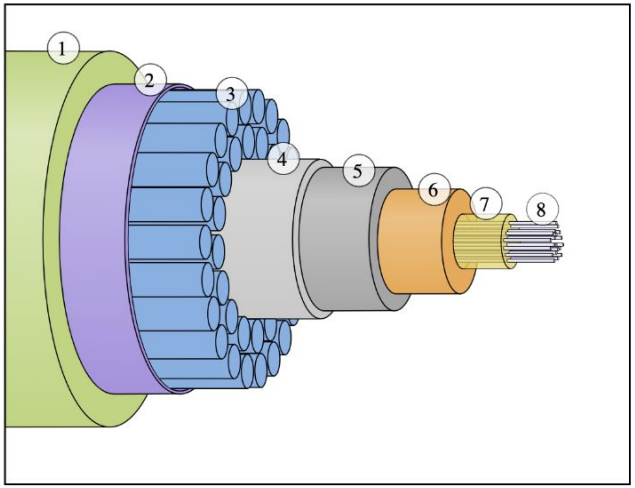
Vector Graphics

Practice Exam

Specifying colors in CSS

Named color	`background-color: red;`
Hexadecimal code	`background-color: #FF0000;`
Red, green, blue (RGB)	`background-color: rgb(255, 0, 0);`
Hue, saturation, lightness (HSL)	`background-color: hsl(0, 100%, 50%);`

Submarine Communications Cables



A cross section of the shore-end of a modern submarine communications cable.

1. Polyethylene
2. Mylar tape
3. Stranded steel wires
4. Aluminium water barrier
5. Polycarbonate
6. Copper or aluminium tube
7. Petroleum jelly
8. Optical fibers

A submarine communications cable is a cable laid on the sea bed between land-based stations to carry telecommunication signals across stretches of ocean. The first submarine communications cables—laid in the 1850s—carried telegraphy traffic. Subsequent generations of cables carried telephone traffic, then data communications traffic. Modern cables use optical fiber technology to carry digital data, which includes telephone, Internet, and private data traffic.

Modern cables are typically about 25 millimeters (0.98 in) in diameter and weigh around 1.4 kilograms per meter (0.4 lb/ft) for the deep-sea sections, which comprise the majority of the run. Larger and heavier cables are used for shallow-water sections near shore. As of 2010, submarine cables link all the world's continents except Antarctica.

Assignment #5 – Vector Graphics

What should link to my Vector Graphics assignment on my homepage?

Vector Graphics link

- Assignment #5 specifies that you should "**code the image directly into the HTML of your i6 home page**".
- For your Vector Graphics link, please link to your vector image as a standalone web page. You should just be able to copy and paste all your in-line code into a new document called `YourLogoName.svg` Make sure you include the `XML filetype header` and `xmlns` in the opening `<svg>` tag. Any styles you included can go inside `<def>` between `<style>` tags
- Remember to upload `YourLogoName.svg` and create a link to it.

```
<?xml version="1.0" encoding="UTF-8"?>
<svg xmlns="http://www.w3.org/2000/svg"
width="100" height="100">

    <defs>
        <style>
            <!-- style rules here -->
        </style>
    </defs>

    <!-- paste your svg code here -->

</svg>
```

Homework

- Assignment #5 (due midnight)
- Study for the midterm!