What is the Internet?

A computer network consisting of a worldwide network of computer networks that use standardized network protocols to facilitate data transmission and exchange.
1964, On Distributed Communications
Networks

Centralized, decentralized, and distributed

A decentralized network represents a less-hierarchical structure than a centralized network. Complete reliance on a single point is not required.

The foundational concept of decentralized networks would be deployed in tandem with what came to be known as “packet-switching,” which entails breaking up communications into small parts, sending them along, and reconstructing them at the end.
The Internet and the World Wide Web
The Internet and the World Wide Web

The Internet and the Web are separate but related things.

The Internet is a massive network of networks, a networking infrastructure that connects computers globally.

The Web is a way of accessing information over the medium of the Internet, an information sharing model that is built on top of the Internet.

The Web is just one of the ways that information can be disseminated over the Internet but it is the one we are focused on in this class.
Internet Access
1980s–Present

• Personal Computing
• Portable Computing
• Mobile Computing
• Ubiquitous Computing
• Ambient Computing
IBM 5150
1981
Apple PowerBook 540c
1993
Apple iPhone
2007
Chalayan dress
2007

Arduino Uno
2010

Apple Watch
2015
Class 1
Introduction and Overview

Ambient Computing
Postdigital Society

The digital revolution, which represented a shift from analog and electronic technology to digital, is now commonplace.

In many ways we are experiencing the afterglow of the digital revolution.

Digital tools and media still offer lots of possibilities but also problems.
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Digital Media Storage

Modern vernacular of 1s and 0s

On/Off

Electrical impulses (+5v / -5v)

• Single 0 or 1 = 1 “bit”

• A group of 8 bits = 1 “byte”

• 1 million bytes ≈ 1 “megabyte”

• 1,024 megabytes = 1 “gigabyte”

• 1,000 gigabytes = 1 “terabyte”
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Class 1
Introduction and Overview
Internet connection speed is normally measured in megabits.

Megabits (Mb) are not the same as megabytes (MB).

8 bits = 1 byte; therefore, a megabyte is 8 times the size of a megabit.

The average Internet connection speed in the United States in 2015 was 12.6 Mb/second.
curve shows transistor count doubling every two years
Moore’s Law
Describes a constant rate of change in computer processor speed

The number of transistors that can be placed inexpensively on an integrated circuit doubles every two years.

The number of transistors is closely connected to processor speed, memory, etc.

Computer processor speed has doubled approximately every two years.

Moore’s Law seems to be plateauing but has held steady for the past 40 years.

Digital media is in a constant state of flux.
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Class 1
Introduction and Overview
Course Content

Web Design and Computer Principles

- Unix command line
- HTML
- CSS
- Image editing
- Design and wireframing
- Responsive web design
- Web frameworks
- Web audio and video
- Scripting with jQuery
- Scripting with JavaScript
- Web forms
- Web hosting and domain names
Guiding Principles

Open Source

- Anyone is free to use it
- Usually free of charge
- Source code is made available
- Can be modified and redistributed
Guiding Principles

Net Neutrality

The principle that Internet service providers should enable access to all content and applications regardless of the source, and without favoring or blocking particular products or websites.
Guiding Principles

Web Standards

The formal, non-proprietary standards and technical specifications that define and describe aspects of the World Wide Web and its interoperability.

These include:
- HTML5
- CSS
- JavaScript
- SVG
- WOFF
Introductions

Me

Joshua Clayton
Clinical Assistant Professor
jclayton@cs.nyu.edu

Office hours
• Tuesday, 11:00 a.m.–12:30 p.m.
• Thursday, 12:30–2:00 p.m.

Room 420, Warren Weaver Hall

cs.nyu.edu/cs/faculty/clayton
Introductions

You

• Name

• Where you’re from (or where you identify most closely with)

• Describe your code literacy

• What interests you about this class
Syllabus

Attendance

You are expected to come to all classes and arrive on time.

Please let me know in advance if you will be out for any reason.

Please let me know if you miss class due to illness.

Computers are welcome in class but not required.

If you ever feel overwhelmed or need extra help, I will be available to you.
**Syllabus**

**Required Textbook**

*HTML and CSS: Design and Build Websites*

Jon Duckett

ISBN: 978-1-118-00818-8
Syllabus

Assignments

There will be nine assignments over the course of the semester.

Details of each assignment will be posted on the class website.

All assignments are to be submitted via NYU Classes before class on the day they are due.

Do your best to turn work in on time. 10% will be deducted for each class day after the deadline.

No assignments will be accepted after three classes or after the final exam.
Syllabus

Grading Rubric

Assignments: 40%
Midterm exam: 25%
Final exam: 35%
For Next Class

Review class website

Get access to *HTML and CSS* book and read the “Introduction” chapter