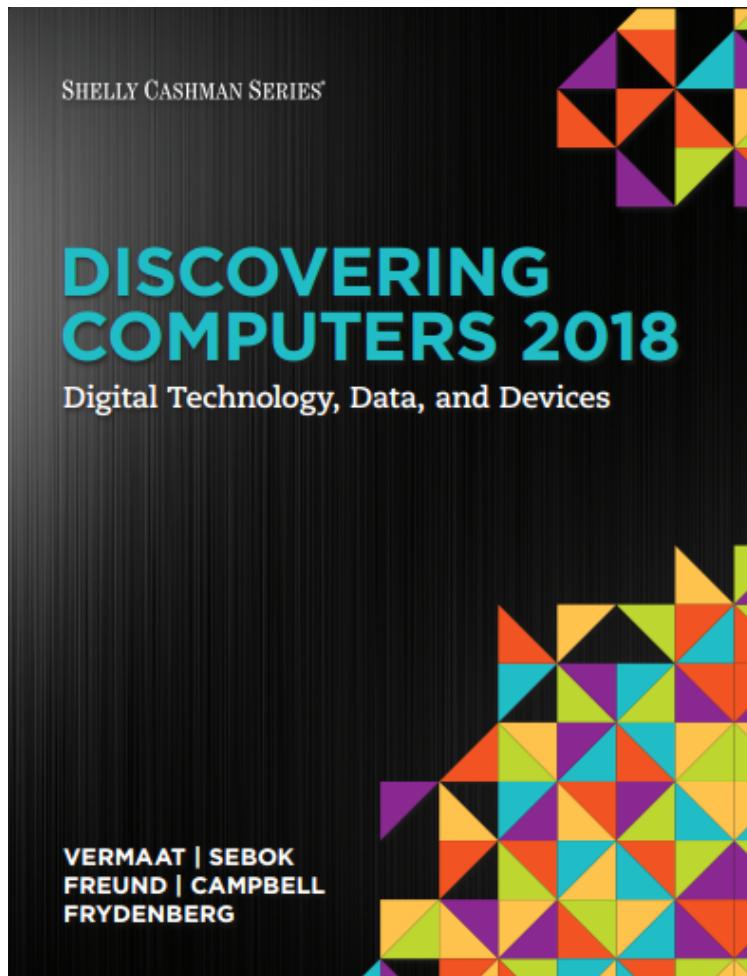


DISCOVERING COMPUTERS 2018

Digital Technology, Data, and Devices



Module 2

Connecting and Communicating Online: The Internet, Website, and Media

Objectives Overview (1 of 2)

- Discuss the evolution of the Internet.
- Briefly describe various broadband Internet connections.
- Describe the purpose of an IP address and its relationship to a domain name.
- Describe features of browsers and identify the components of a web address.
- Describe ways to compose effective search text.

IP: Internet
Protocol

Objectives Overview (2 of 2)

- Explain benefits and risks of using online social networks.
- Describe uses of various types of websites.
- Explain how the web uses graphics, animation, audio, video, and virtual reality.
- Explain how email, Internet messaging, chat rooms, online discussions, VoIP, and FTP work.
- Identify the rules of netiquette.

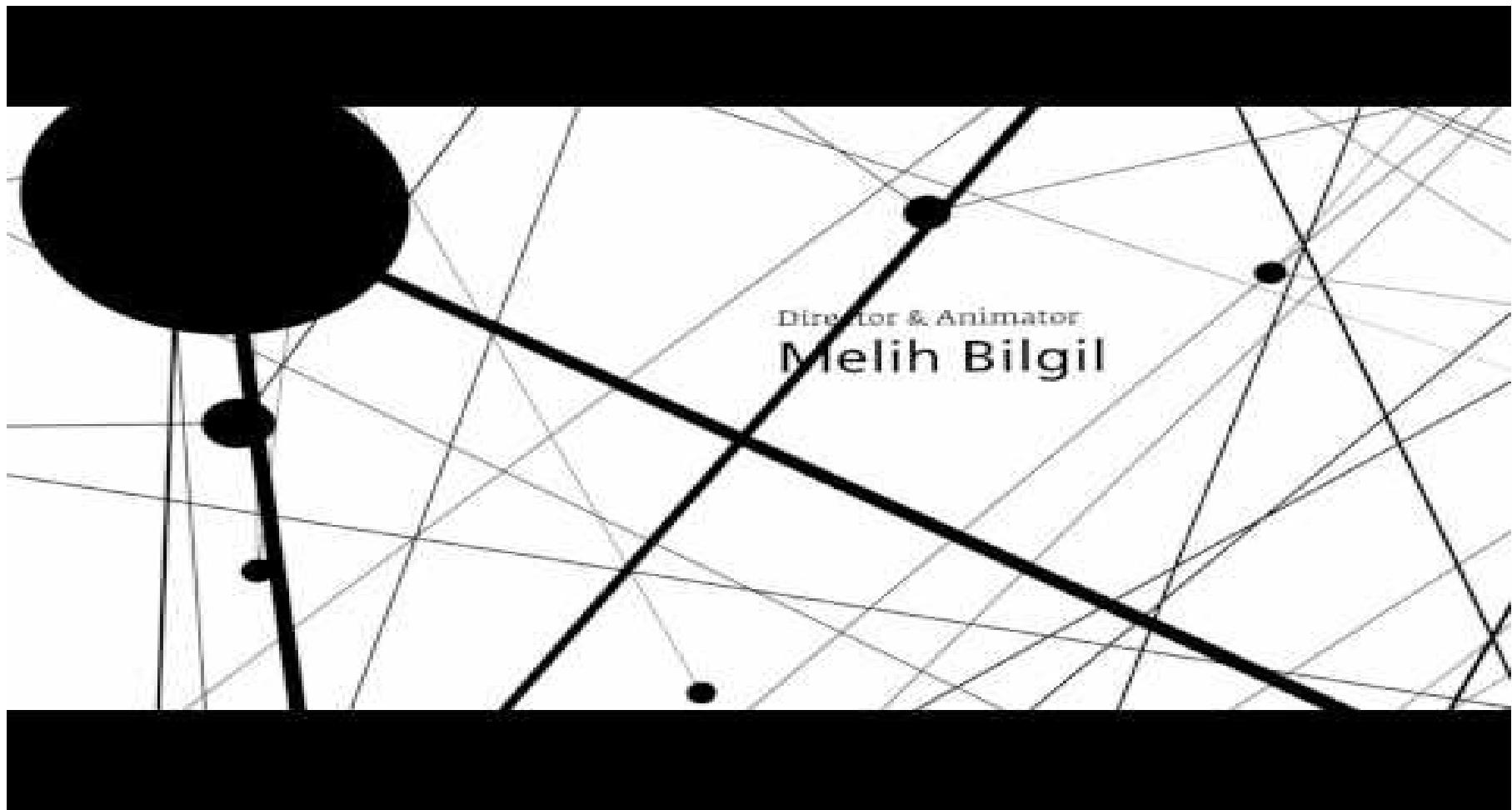
VoIP: voice over internet protocol
FTP: file transfer protocol

The Internet (1 of 3)

- The **Internet** is a worldwide collection of networks that connects millions of businesses, government agencies, educational institutions, and individuals.



The Internet (2 of 3)



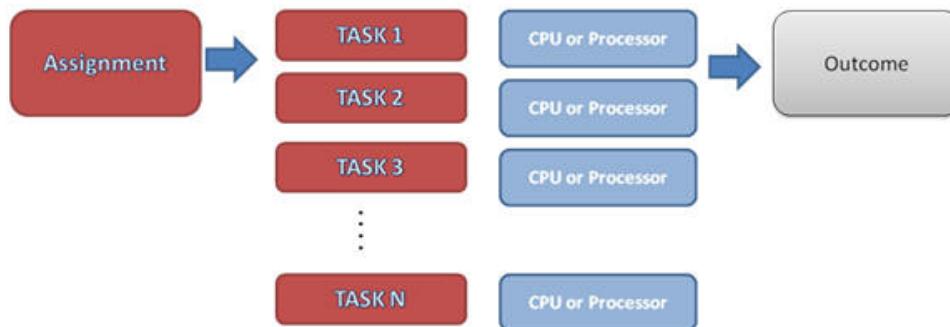
The Internet (2 of 3)

- Batch processing: 1 mission at a time
- 1957 Time sharing: multiple users using a computer at a time
- 1958 DARPA (Defense Advanced Research Projects Agency)
- 1966 ARPANET: large-scale computer network

The Internet (2 of 3)

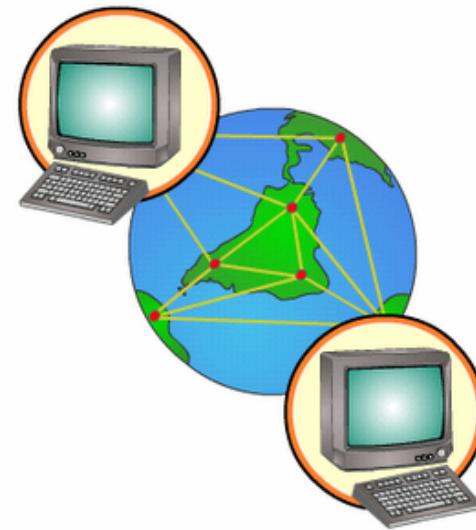
What is DARPA ?

- **Defense Advanced Research Projects Agency**
- United States Department of Defense
- Created in February 1958
- Internet , Computer Graphics, Parallel Computing, Flight Simulating



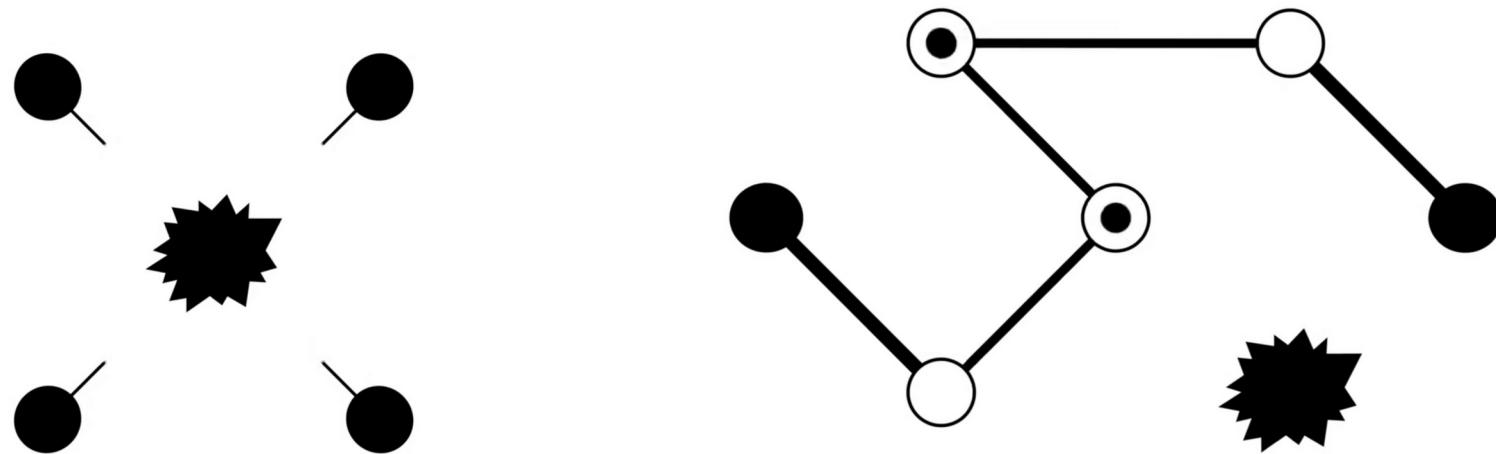
The Internet (2 of 3)

- The Internet originated as ARPANet in September 1969 and had two main goals:
 - Allow scientists at different physical locations to share information and work together
 - Function even if part of the network were disabled or destroyed by a disaster



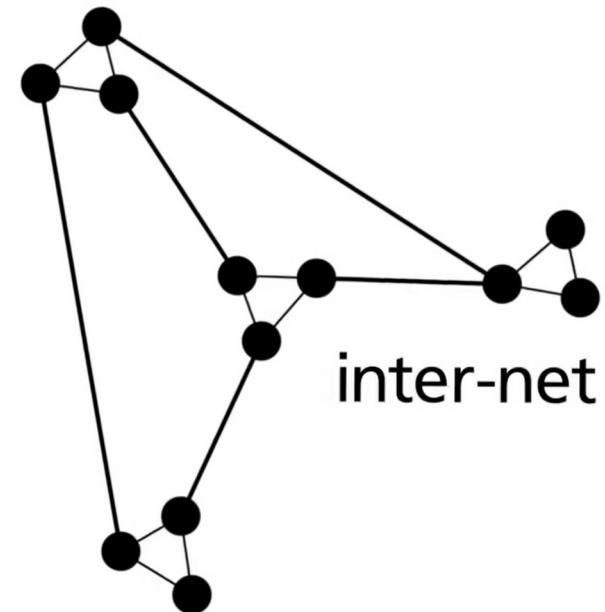
The Internet (2 of 3)

- Decentralized network



The Internet (2 of 3)

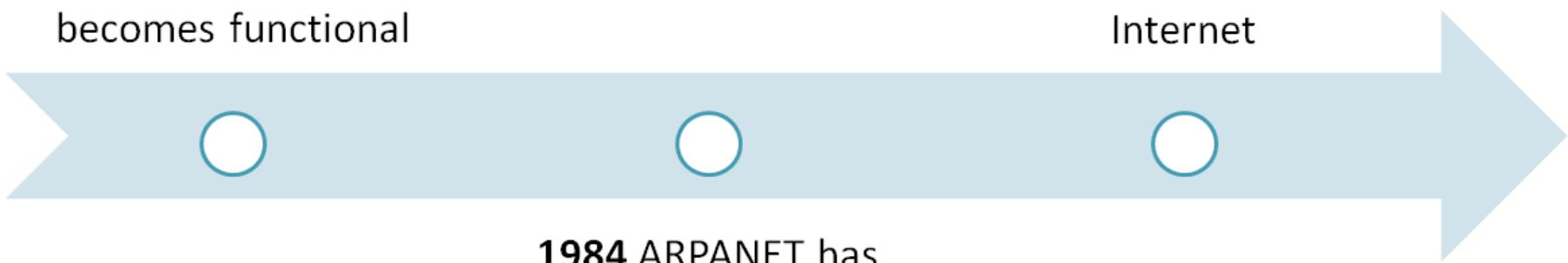
- Inter-net: connection of networks
- Other network began to go live.
- 1990 ARPANET was removed.



The Internet (3 of 3)

1969 ARPANET becomes functional

Today Millions of hosts connect to the Internet



1984 ARPANET has more than 1,000 individual computers linked as hosts

Transmission between nodes

- TCP / IP protocol
- TCP(Transmission Control Protocol) (like roads) : helps in the exchange of messages between different devices over a network
Connection-establishment process: three-way handshake
- IP(Internet Protocol) (like road signs) : a set of rules governing how data is sent and received over the internet
Every device contains a unique IP Address

FUNNY VIDEO

- <https://www.youtube.com/watch?v=D61gg5RsFdA&t=23s>

Connecting to the Internet (1 of 7)

- **Wired:** With wired connections, a computer or device physically attaches via a cable or wire to a communications device
- **Wireless:** Computers without a communications device can use a wireless modem or other communications device that enables wireless connectivity

Connecting to the Internet (1 of 7)

- **Wired**
 - Cable Internet service
 - DSL (Digital Subscriber Line)
 - Fiber to the Premises (FTTP)
- **Wireless**
 - **Wi-Fi** (Wireless Fidelity)
 - Mobile broadband
 - Fixed wireless
 - Satellite Internet Service

Connecting to the Internet (1 of 7)

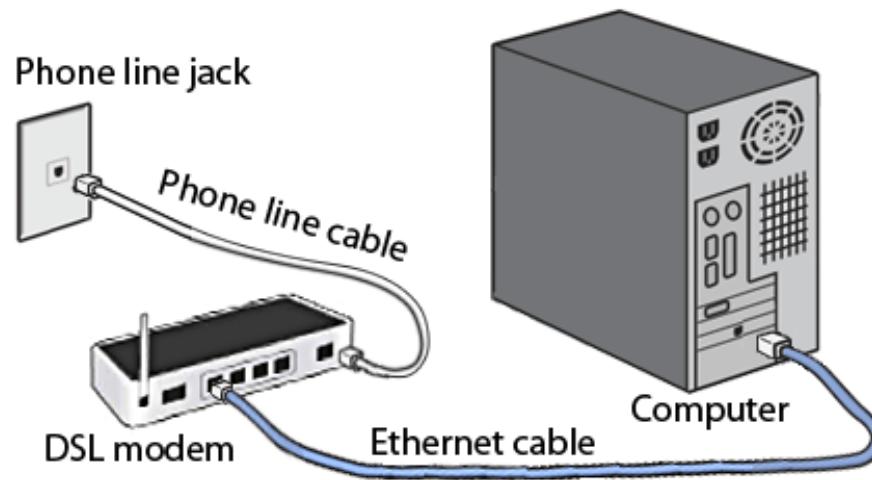
- Broadband vs Dial-up Internet connection

	Broadband	Dial-up
Feature	Dial-up	Broadband
Speed	Up to 56 Kbps	High (Mbps to Gbps)
Connection	Phone line required, needs to be "dialed"	Always-on, multiple types of technology
Security	IP address does not change	IP address changes every time
Applications	Basic web browsing, email	Streaming video, online gaming, video conferencing

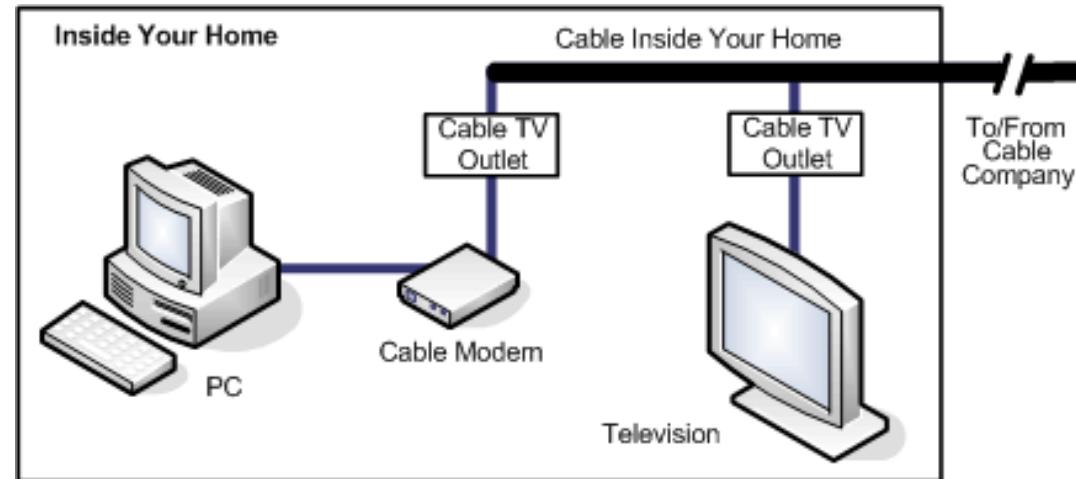
Connecting to the Internet (1 of 7)

- **Wired**

DSL



**Cable
Internet
Service**



Connecting to the Internet (1 of 7)

• **Wire** **d**

How a Home User's Request for a Webpage Might Travel the Internet Using Cable Internet Service

Step 1

You send a request to the Internet. For example, you enter the web address of a webpage you want to visit in the address bar of your browser.



Step 2

A cable modem transfers the computer's digital signals to the cable television line in your house.



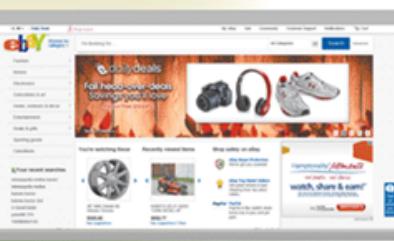
Step 3

Your request (digital signals) travels through cable television lines to a central cable system, which is shared by up to 500 homes in a neighborhood.



Step 4

The central cable system sends your request over high-speed fiber-optic lines to the cable operator, who often also is the ISP.



Step 6

The server retrieves the requested webpage and sends it back through the Internet backbone to your computer.



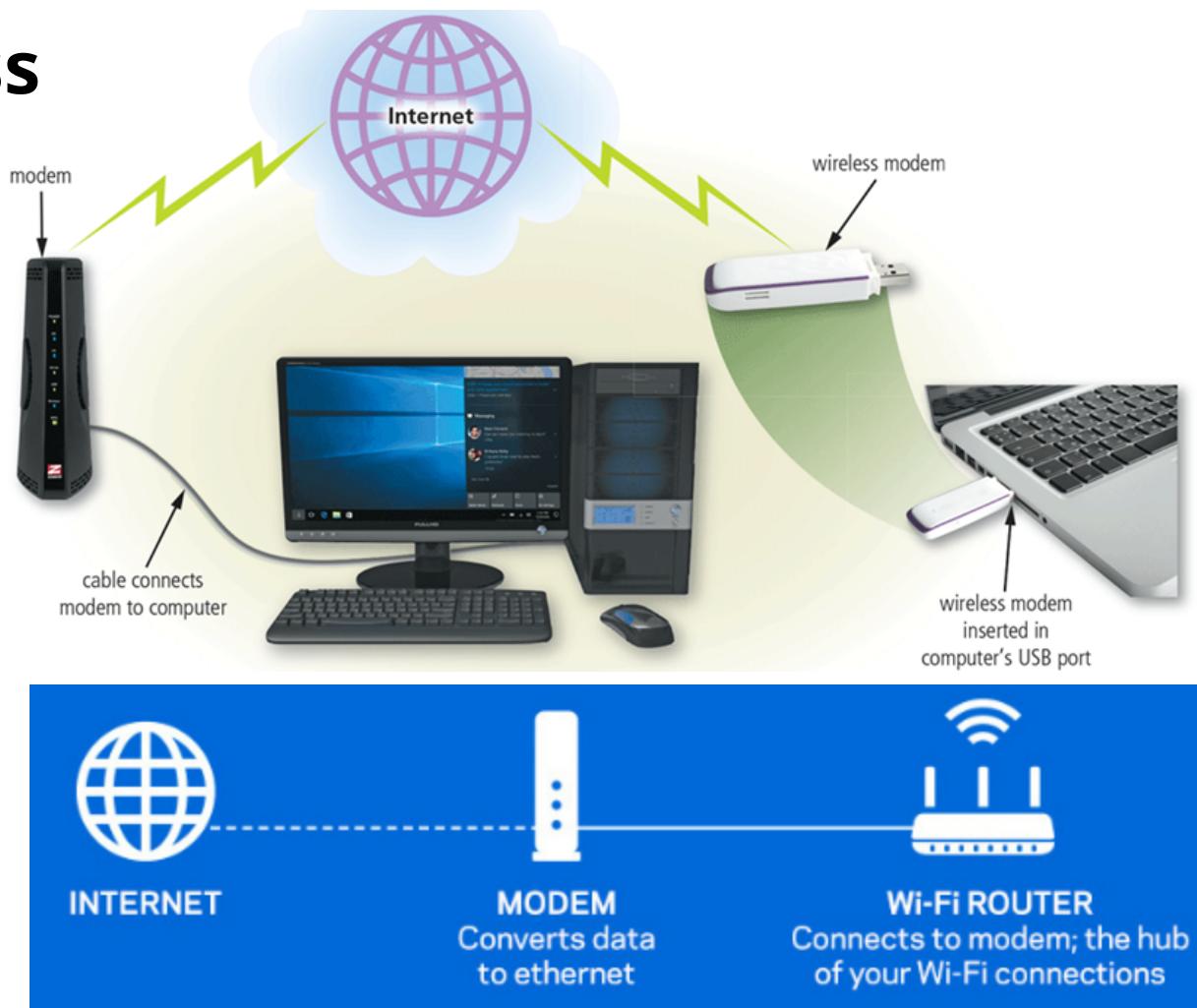
Step 5

The ISP routes your request through the Internet backbone to the destination server (in this example, the server that contains the requested webpage).



Connecting to the Internet (1 of 7)

- **Wireless**



Connecting to the Internet (2 of 7)

- A hot spot is a wireless network that provides Internet connections to mobile computers and devices



- **Figure 2-3** You can create a mobile hot spot using a communications device or by tethering a smartphone.

Connecting to the Internet (3 of 7)

- An **Internet Service Provider (ISP)** is a business that provides individuals and organizations access to the Internet free or for a fee.
- **Bandwidth** is a measure of the capability of a network to send and receive data, measured by how much data per unit of time a network connection can handle.

Connecting to the Internet (4 of 7)

Activity	Quantity	Approximate Data Usage
Send and receive email messages (with no attachments)	100 messages	3–6 MB
Post on online social networks (text only)	100 posts	25–50 MB
Upload or download photos	50 photos	50 MB
Send and receive email messages (with attachments)	100 messages	0.75–1 GB
Visit webpages	200 visits	1 GB
Talk with others using VoIP (without video)	1 hour	1.25 GB
Listen to streaming music	1 hour	1–2 GB
Play online games	1 hour	1.75 GB
Watch smaller, standard-quality streaming video	1 hour	2–5 GB
Download apps, games, music, e-books	25 downloads	3 GB
Talk with others using VoIP (with video)	1 hour	5–7.5 GB
Watch HD streaming video	1 hour	5–20 GB

Connecting to the Internet (5 of 7)

- An **IP address** is a sequence of numbers that uniquely identifies the location of each computer or device connected to the Internet or any other network
- A **domain name** is a text-based name that corresponds to the IP address of a server
- A **DNS (Domain Name System) server** translates the domain name into its associated IP address

Connecting to the Internet (5 of 7)



- **Figure 2-5** The IPv4 and IPv6 addresses, along with the domain name for Google's website.

Connecting to the Internet (5 of 7)

- 2001:0db8:0000:0000:0000:ff00:0042:8329
- 2001:db8:0:0:0:ff00:42:8329 (omit leading 0)
- 2001:db8::ff00:42:8329 (Double Colons for Consecutive Zeros)

Connecting to the Internet (5 of 7)

- IPv4: $2^{32} \approx 4.3$ billion
- 2024 Internet population: 5.35 billion

(<https://datareportal.com/reports/digital-2024-deep-dive-the-state-of-internet-adoption>)

- IPv6: $2^{128} \approx 4.3 * 10^{38}$
- Sand on the Earth: 10^{18} to 10^{24}

Connecting to the Internet (5 of 7)

TLD	Intended Purpose
.biz	Businesses
.com	Commercial organizations, businesses, and companies
.edu	Educational institutions
.gov	Government agencies
.mil	Military organizations
.museum	Museums and individual museum professionals
.name	Individuals
.net	Network providers or commercial companies
.org	Nonprofit organizations
.pro	Licensed professionals
.technology	Technology information
.travel	Entities whose primary area of activity is in the travel industry

Table 2-3: Popular TLDs

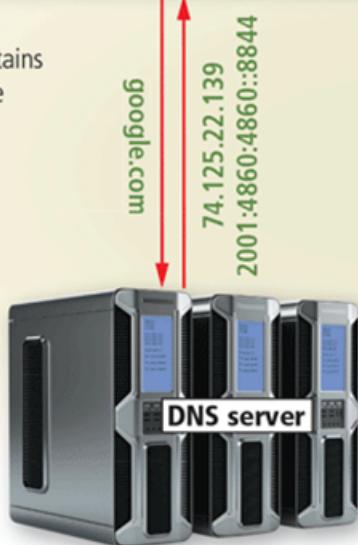
Connecting to the Internet (6 of 7)

How a Browser Displays a Requested Webpage

Step 1
Run the browser and enter the web address in the browser's address bar.



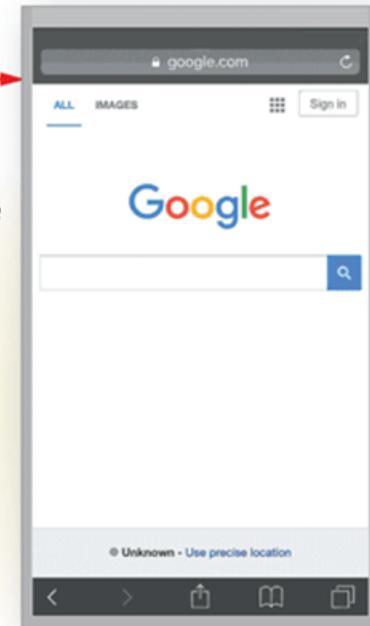
Step 2
The browser communicates with a DNS server maintained by your ISP or another provider. The DNS server looks up the domain name portion of the web address, finds its associated IP address, and then sends the IP address to your computer or mobile device.



74.125.22.139
2001:4860:4860::8844

Step 3

The browser uses the IP address to contact the web server at the specified IP address to request the content of the desired webpage. The web server fulfills the user's request by sending the desired content to the user's browser, which formats the page for display on the screen.



DNS: Domain Name Server

- **Figure 2-6** This figure shows how a user's entered domain name (google.com) uses a DNS server to display a webpage (Google, in this case).

Connecting to the Internet (6 of 7)

- Go to <https://dnschecker.org/all-dns-records-of-domain.php> to find IP addresses of websites

A

Type	Domain Name	TTL	Address
A	example.com	3567	93.184.215.14  Check IP Blacklist Owner: EdgeCast NetBlk  WHOIS AS15133

AAAA

Type	Domain Name	TTL	Address
AAAA	example.com	2445	2606:2800:21f:cb07:6820:80da:af6b:8b2c  Owner: Edgecast Inc.  WHOIS

Connecting to the Internet (6 of 7)

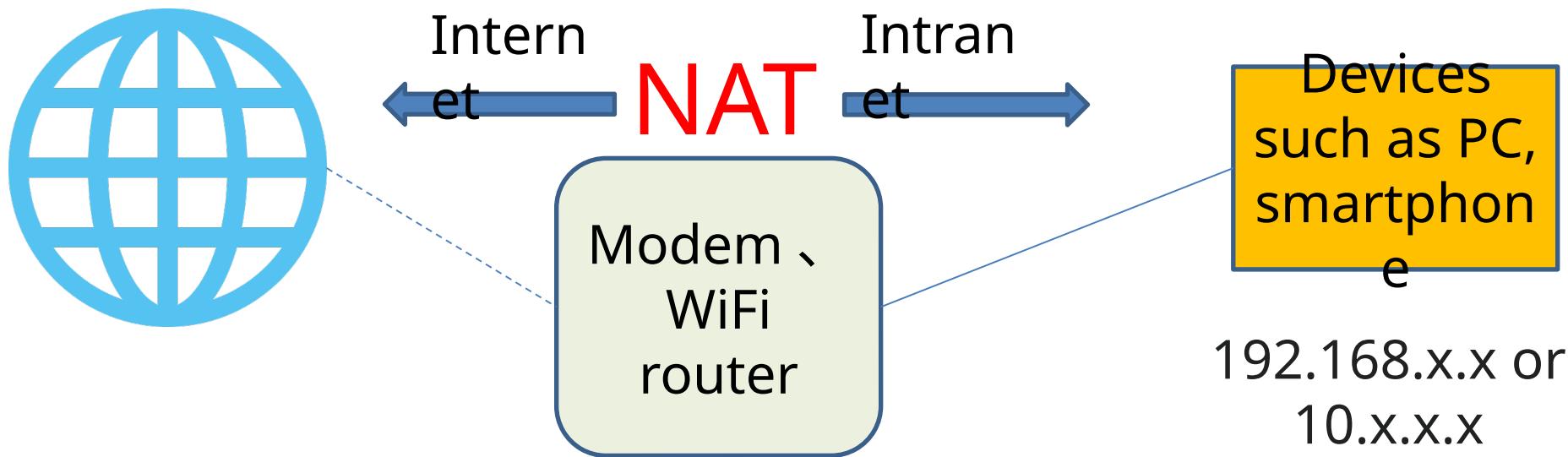
- Use `ipconfig` on windows cmd to look up your IP address.
 - Go to <https://api.ipify.org/> to find your IP address.

無線區域網路介面卡 Wi-Fi:

```
連線特定 DNS 尾碼 . . . . :  
IPv4 位址 . . . . : 192.168.12.184  
子網路遮罩 . . . . . : 255.255.255.0  
預設閘道 . . . . : 192.168.12.6
```

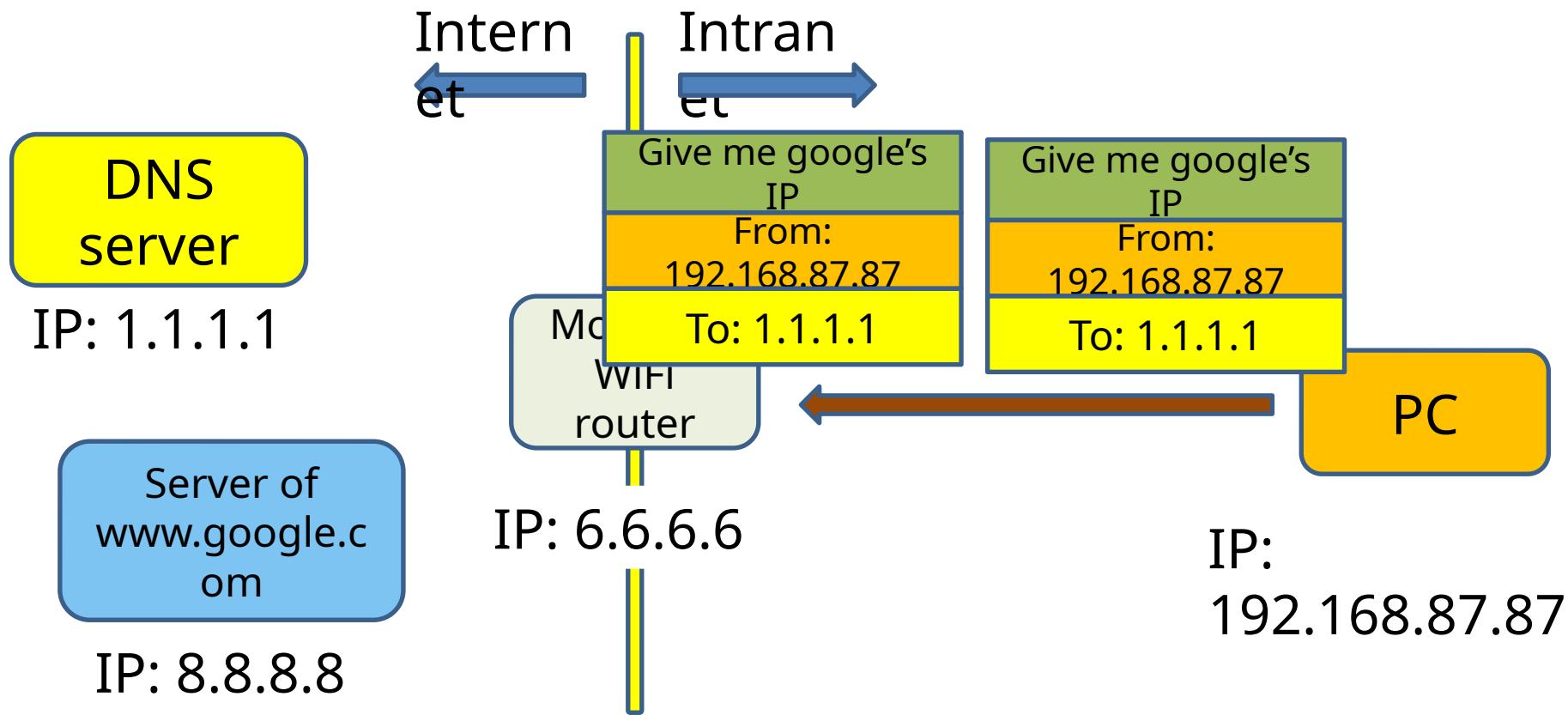
Connecting to the Internet (6 of 7)

- It is because IPv4 addresses is exhausted.
- NAT(Network Address Translation) is one of solutions to IPv4 exhaustion.



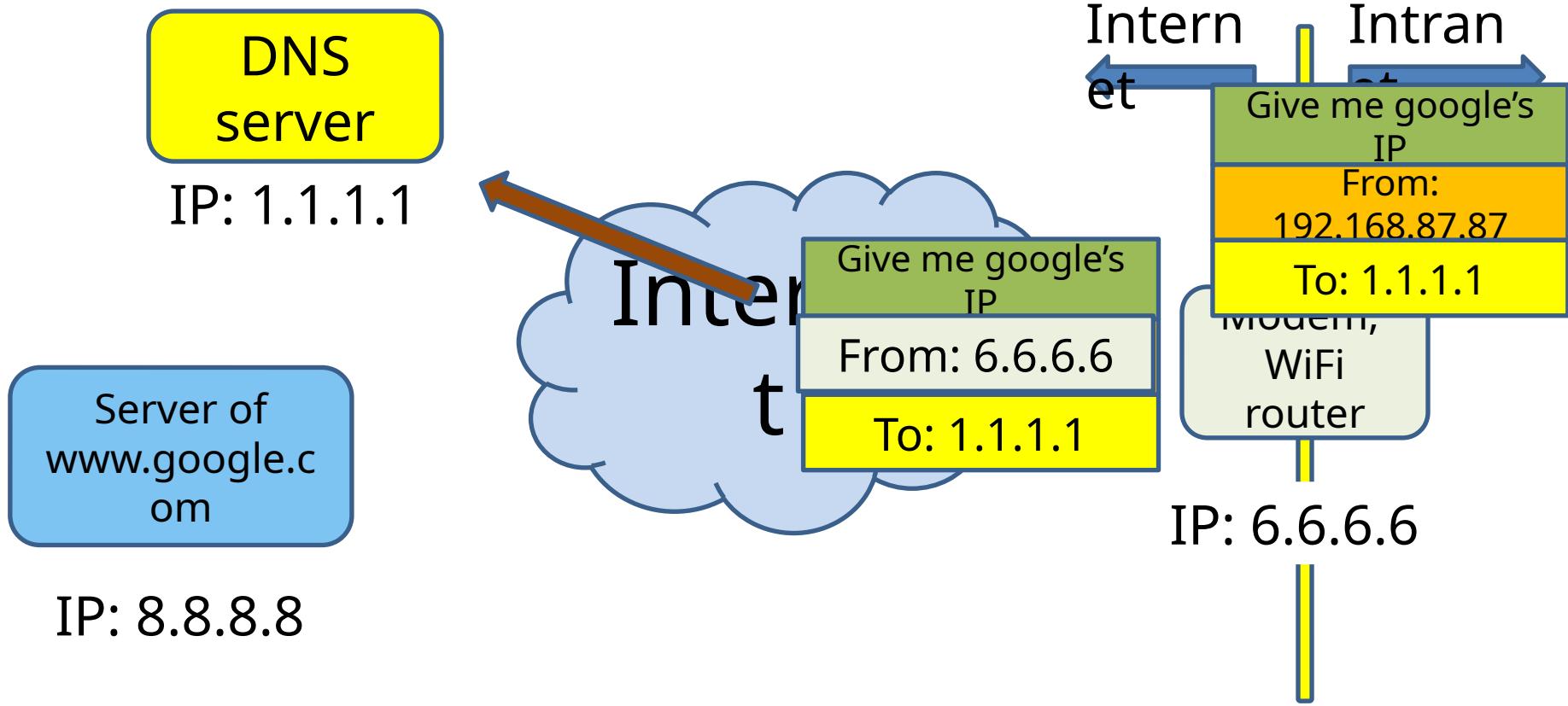
Connecting to the Internet (6 of 7)

- Complete website access process



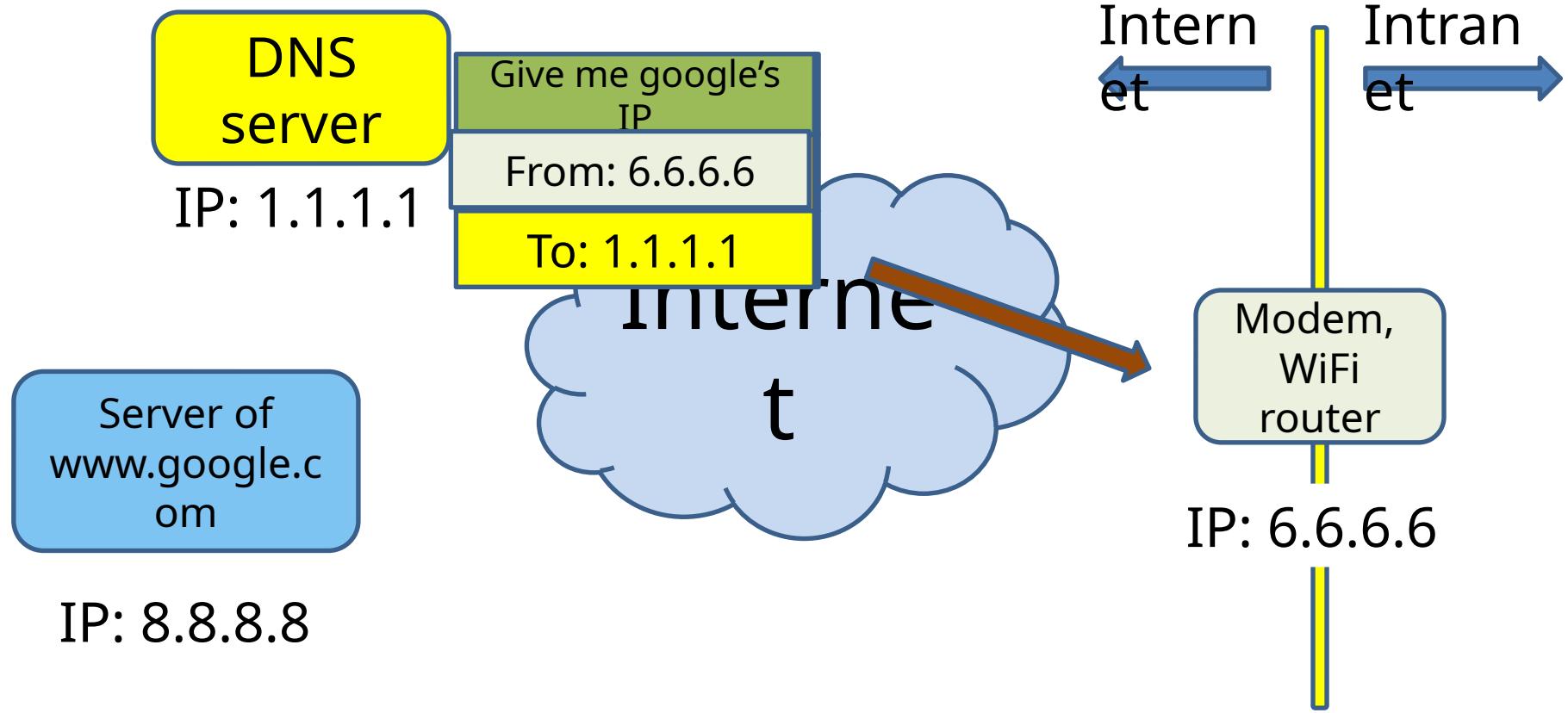
Connecting to the Internet (6 of 7)

- Complete website access process



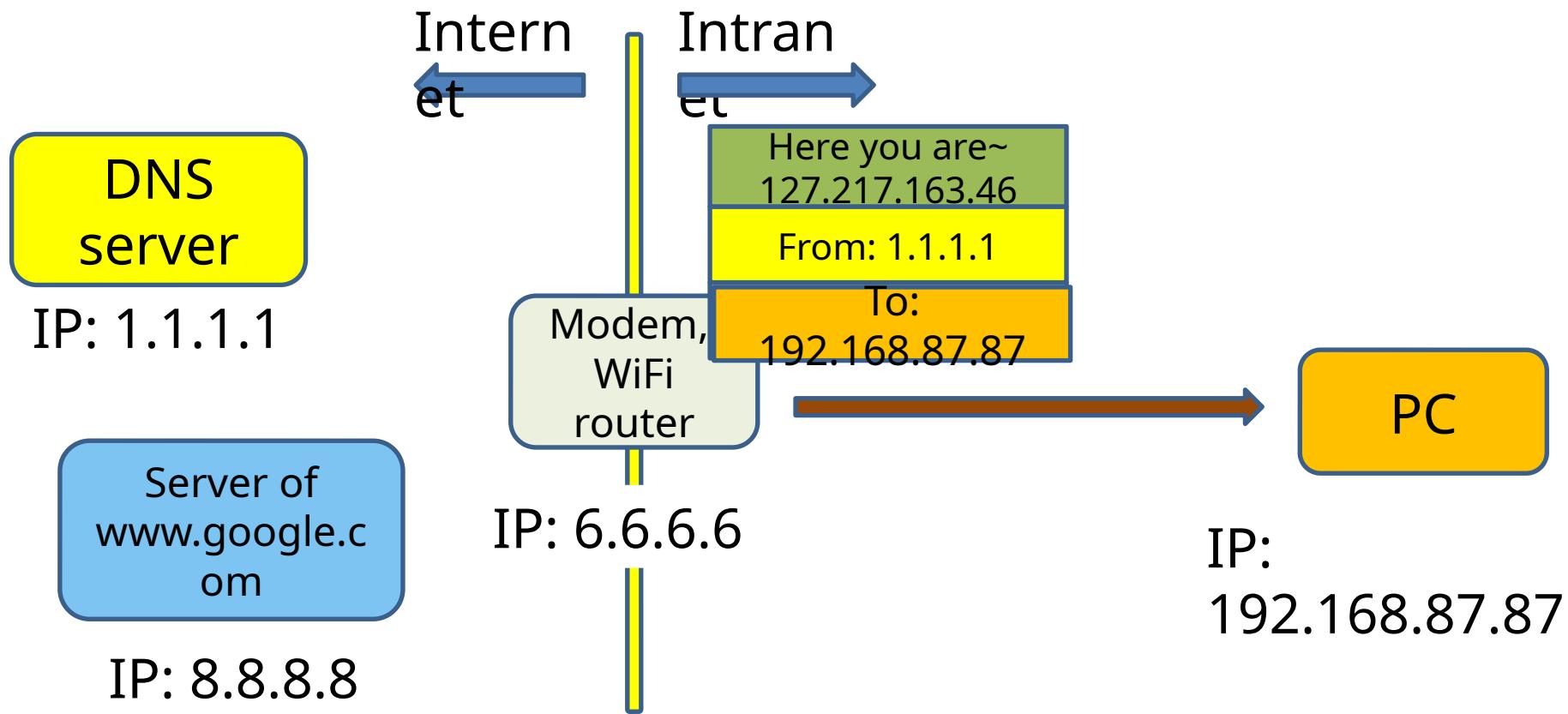
Connecting to the Internet (6 of 7)

- Complete website access process



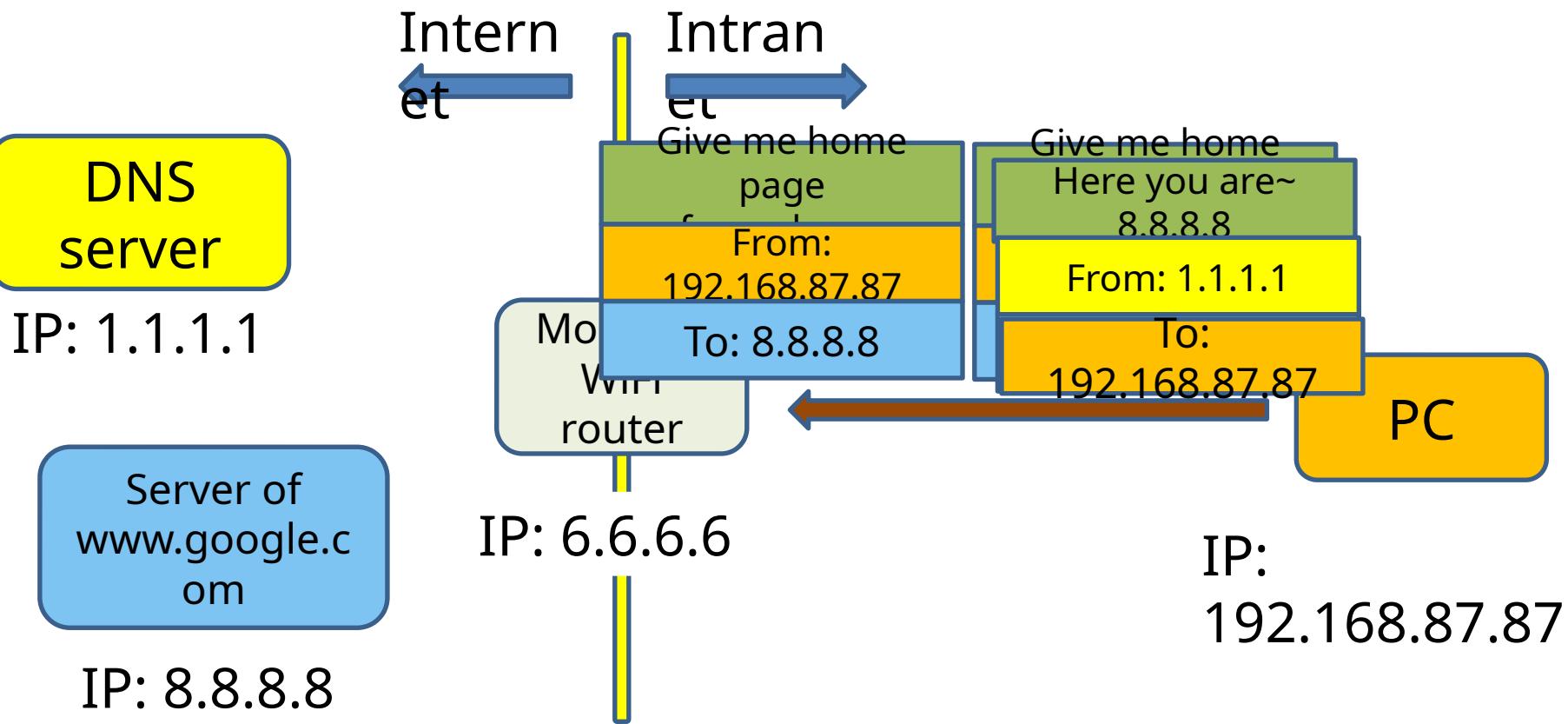
Connecting to the Internet (6 of 7)

- Complete website access process



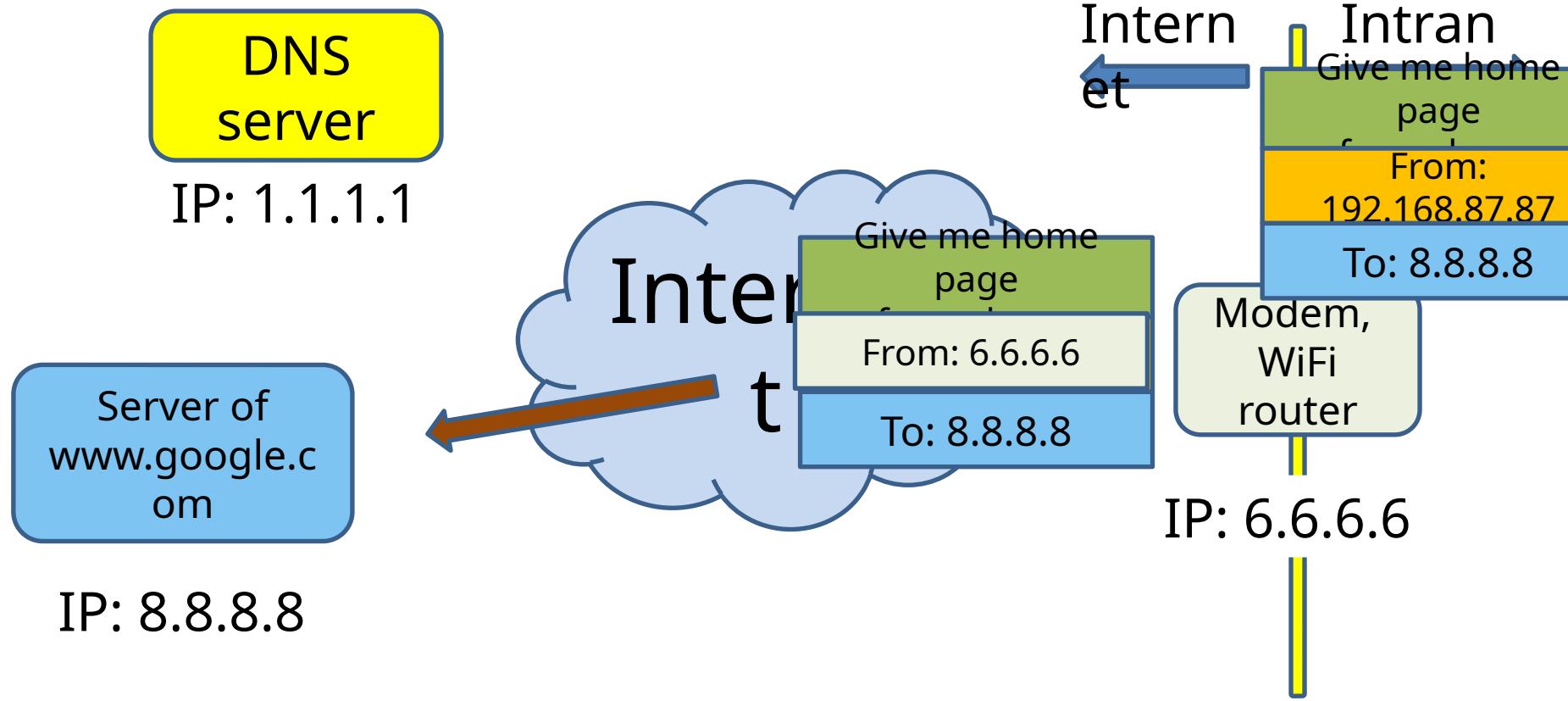
Connecting to the Internet (6 of 7)

- Complete website access process



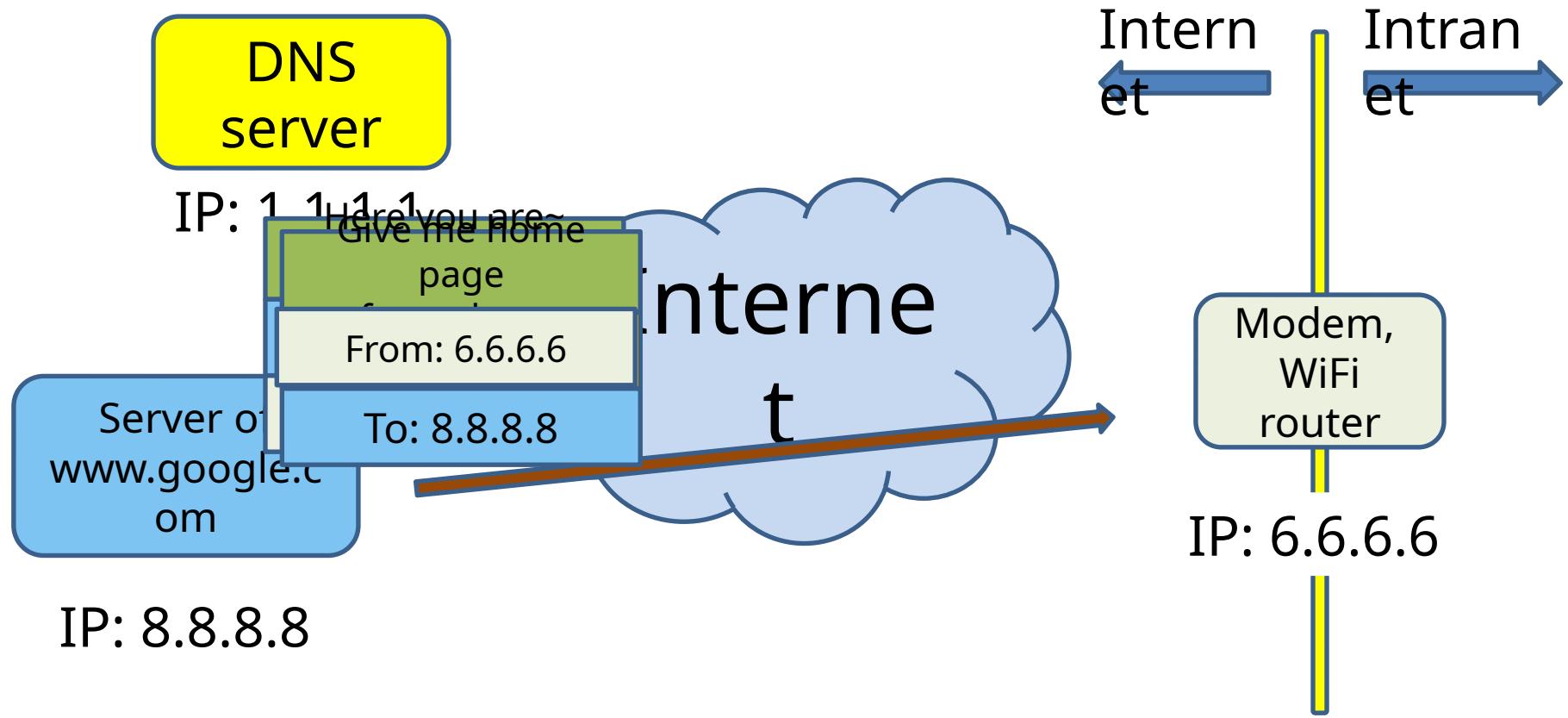
Connecting to the Internet (6 of 7)

- Complete website access process



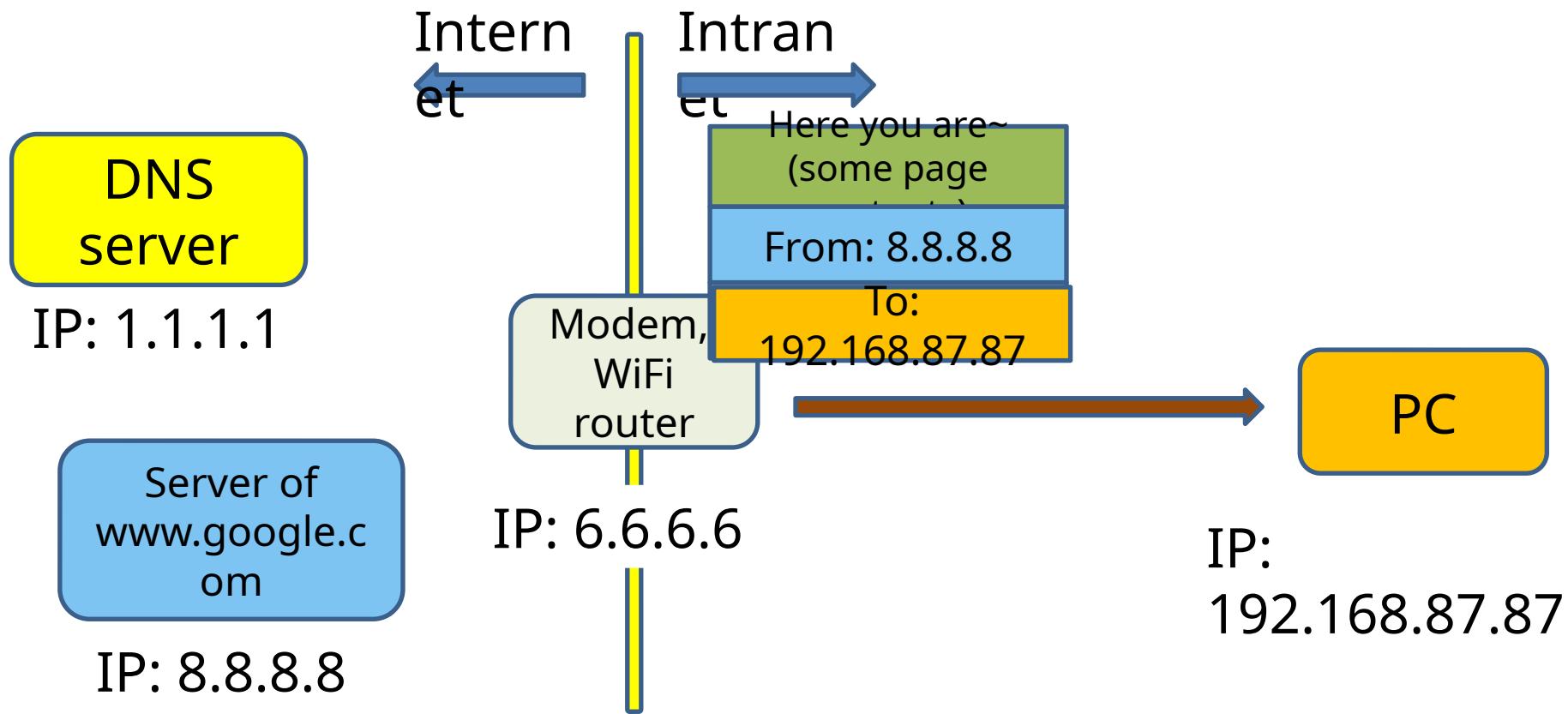
Connecting to the Internet (6 of 7)

- Complete website access process



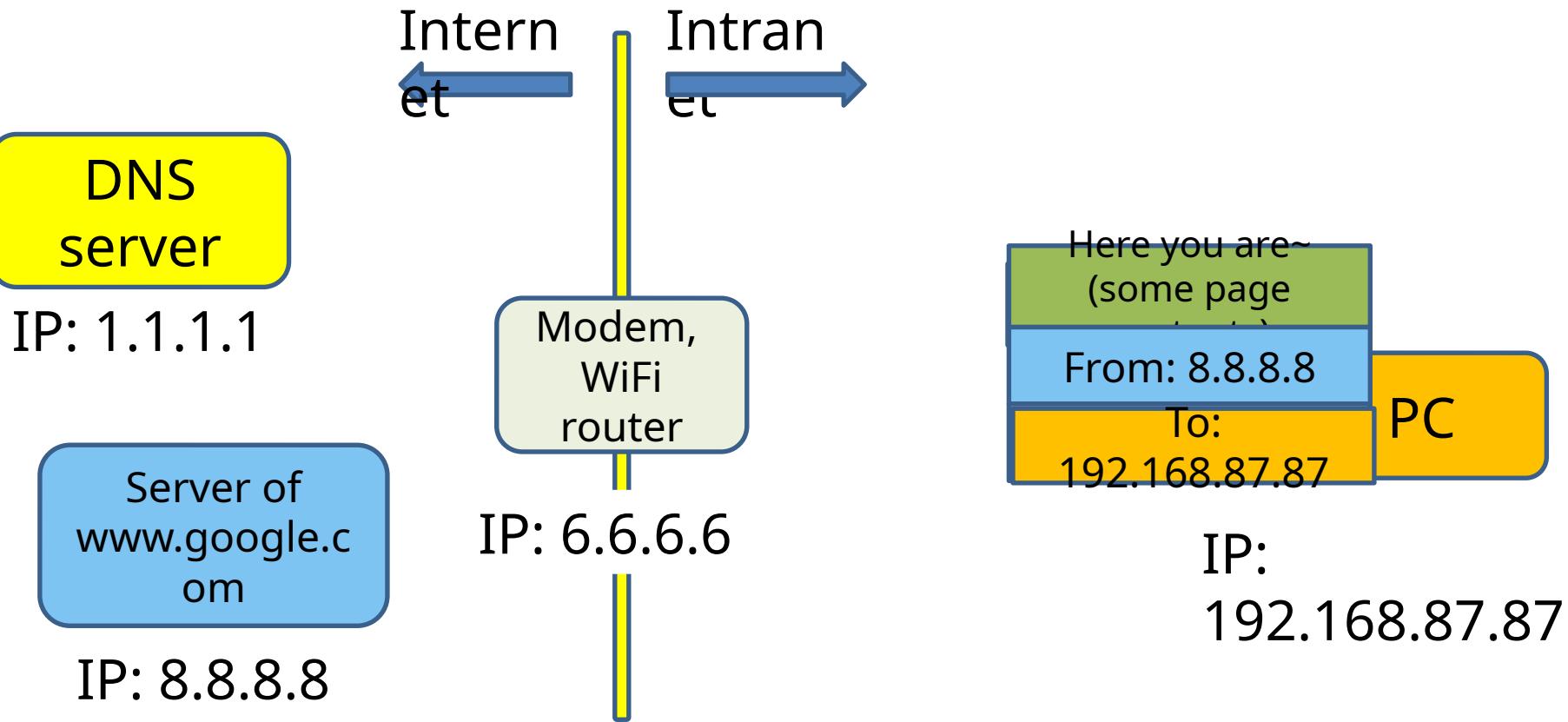
Connecting to the Internet (6 of 7)

- Complete website access process



Connecting to the Internet (6 of 7)

- Complete website access process



Connecting to the Internet (7 of 7)

- **Beware of over-the-shoulder snoopers.** The person sitting behind you may be watching or using a camera phone to record your keystrokes, read your email messages and online social network posts, and view your photos and videos.

Consider This: How will you apply these precautions the next time you use a public Wi-Fi hot spot? Should businesses post signs alerting customers about Wi-Fi security issues?



FUNNY VIDEO

- <https://www.youtube.com/watch?v=D61gg5RsFdA&t=210s>

The World Wide Web (1 of 5)

- The **World Wide Web (WWW)**, or **web**, consists of a worldwide collection of electronic documents (**webpages**)
- A **website** is a collection of related **webpages** and associated items
- A **web server** is a computer that delivers requested webpages to your computer or mobile device
- **HTML** (Hypertext Markup Language) is a set of symbols that developers use to specify the headings, paragraphs, images, links, and other content elements that a webpage contains

The World Wide Web (2 of 5)

- A **browser** is an application that enables users with an Internet connection to access and view webpages on a computer or mobile device
 - Internet-capable mobile devices such as smartphones use a special type of browser, called a **mobile browser**
- A **home page** is the first page that a website displays
- Current browsers typically support **tabbed browsing**

- A webpage has a unique address, called a **web address** or **URL** (Uniform Resource Locator)

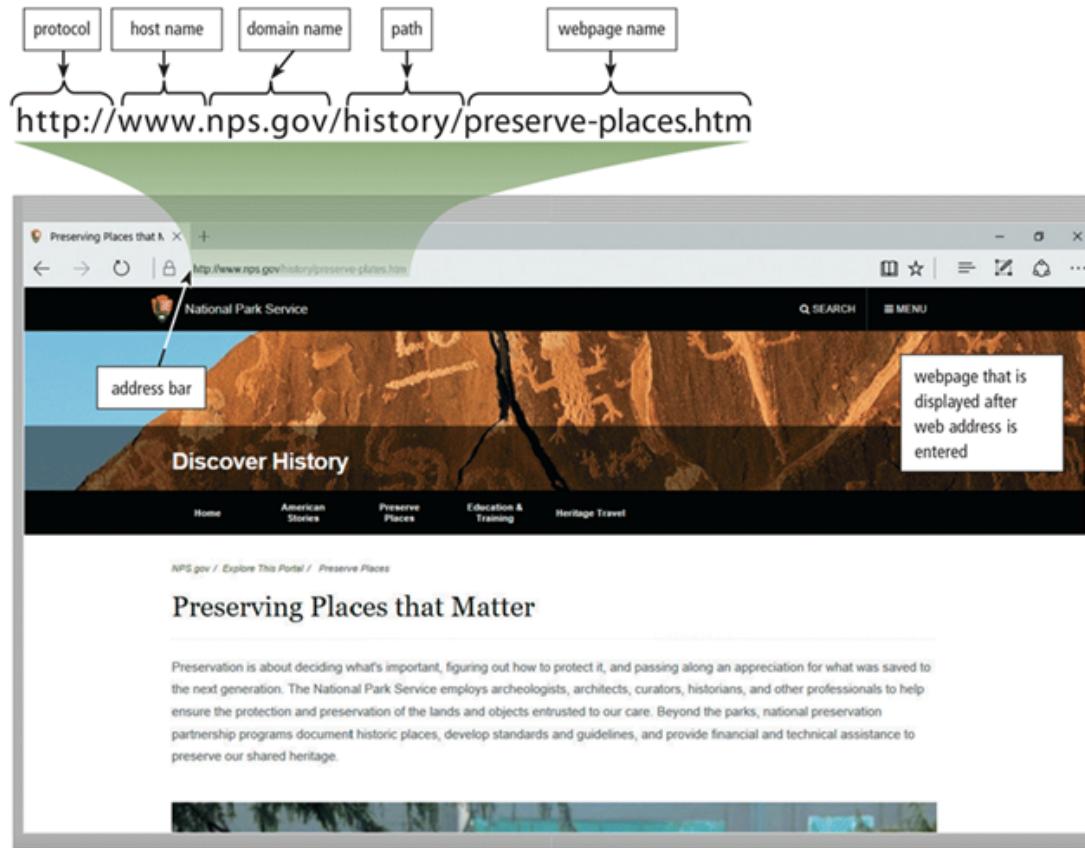


Figure 2-8 After entering `http://www.nps.gov/history/preserve-places.htm` in the address bar and then pressing the ENTER key or clicking the Search, Go, or similar button in a browser, the U.S. Department of the Interior National Park Service (NPS) home page shown here is displayed.

`https://www.example.com:8080/folder/page.html?
id=123&name=John#section2`

- Protocol
 - https (http / ftp / ftps ...)
- Hostname
 - www.example.com
- Port Number
 - :8080 (default: 80 for http, 443 for https)
- Path
 - /folder/page.html
- Query Parameters
 - ?id=123&name=John
- Fragment Identifier
 - #section2

The World Wide Web (3 of 5)



- **Figure 2-7** Many websites, such as the Centers for Disease Control and Prevention shown here, provide a mobile version that is designed specifically for display on a mobile browser.

- A web app is an application stored on a web server that you access through a browser
 - Web apps usually store users' data and information on their hosts' servers



Figure 2-9 Web and mobile apps often work together, enabling you to access your content from a variety of computers and devices.

Types of Websites (1 of 4)

- **Search engine** : is software that finds websites, webpages, images, videos, news, maps, and other information related to a specific topic
- **Subject directory** : classifies webpages in an organized set of categories, such as sports or shopping, and related subcategories

Types of Websites (1 of 4)

search engine



Web

Images

Groups

Directory

News

Google Search

[Preferences](#)
[Directory Help](#)

The web organized by topic into categories.

[Arts](#)
[Movies, Music, Television...](#)

[Home](#)
[Consumers, Homeowners, Family...](#)

[Regional](#)
[Asia, Europe, North America...](#)

[Business](#)
[Industries, Finance, Jobs...](#)

[Kids and Teens](#)
[Computers, Entertainment, School...](#)

[Science](#)
[Biology, Psychology, Physics...](#)

[Computers](#)
[Hardware, Internet, Software...](#)

[News](#)
[Media, Newspapers, Current Events...](#)

[Shopping](#)
[Autos, Clothing, Gifts...](#)

[Games](#)
[Board, Roleplaying, Video...](#)

[Recreation](#)
[Food, Outdoors, Travel...](#)

[Society](#)
[Issues, People, Religion...](#)

[Health](#)
[Alternative, Fitness, Medicine...](#)

[Reference](#)
[Education, Libraries, Maps...](#)

[Sports](#)
[Basketball, Football, Soccer...](#)

[World](#)
[Deutsch, Español, Français, Italiano, Japanese, Korean, Nederlands, Polska, Svenska...](#)

subject
directory

Types of Websites (2 of 4)

Operator	Description	Examples	Explanation
Space or +	Display search results that include specific words.	art + music art music	Results have both words, art and music, in any order
OR	Display search results that include at least one word from a list.	dog OR puppy dog OR puppy OR canine	Results have either the word, dog, or the word, Puppy. Results have the word, dog, or the word, puppy, or the word, canine.
*	Substitute characters in place of the asterisk.	writer*	Results include any word that begins with the text, writer (e.g., writer, writers, writer's)

Types of Websites (2 of 4)

Operator	Description	Examples	Explanation
-	Exclude a word from search results.	automobile-convertible	Results include the word, automobile, but do not include the word, convertible.
""	Search for an exact phrase in a certain order.	"19th century literature"	Results include the exact phrase, 19th century literature.

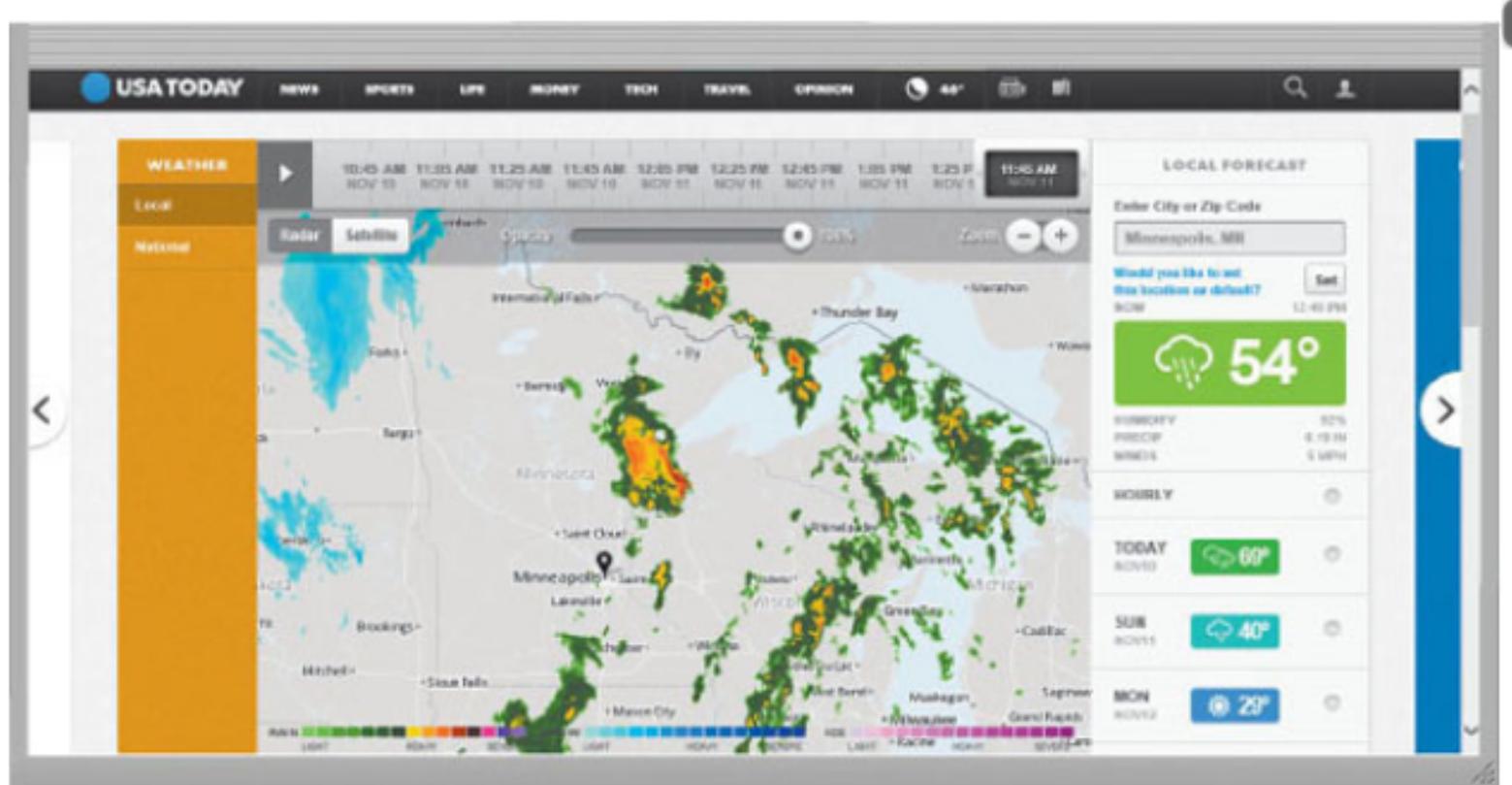
- site:
- filetype
- :
- inurl:
- intext
- :

Types of Websites (3 of 4)

- There are several types of websites
 - Informational and research
 - Online social network, Media sharing
 - Bookmarking
 - Wiki and Collaboration
 - Business, governmental, and organizational
 - Content aggregation
 - Mapping
 - Retail and auctions
 - Banking and Finance
 - Portals

● Weather Forecasts

Forecasts, radar, and other weather conditions are available on the WEATHER webpage on USA TODAY's website.



Source: Gannett

● Informational and research

You can research health conditions from your symptoms on a medical website, such as WebMD.

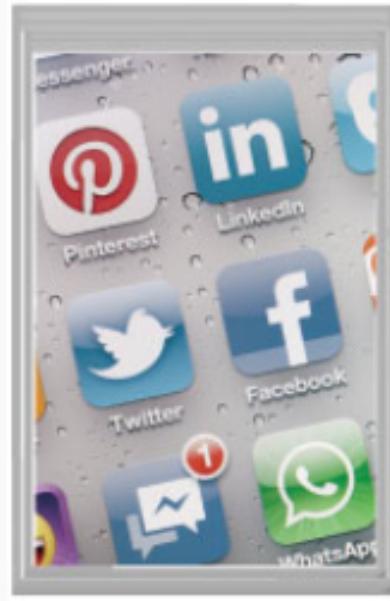
The screenshot shows the WebMD website with a focus on the Symptom Checker. At the top, there's a navigation bar with links for "Search", "Symptoms", "Doctors", "Health Care Reform", "My WebMD", "Sign In", "Sign Up", and "Why WebMD?". Below the navigation is a main menu with categories like "HEALTH A-Z", "DRUGS & SUPPLEMENTS", "LIVING HEALTHY", "FAMILY & PREGNANCY", "NEWS & EXPERTS", and social media links. The main content area features a large image of a human head with a red glow on the right side, representing symptoms. To the left of the image is a callout box with the text: "With Symptom Checker, you can: Identify possible conditions related to your symptoms, Instantly access health information based on your symptoms, Print out a Doctor's Report". Below the image is the "WebMD symptom checker" heading and a brief description: "Take the first step and see what could be causing your symptoms. Then learn about possible next steps." There are input fields for "For" (set to "Me"), "Gender" (radio buttons for "Male" and "Female" with "Male" selected), "Age" (dropdown menu set to "Choose one"), "Zip code" (text input field labeled "Optional"), and "Email" (text input field labeled "Optional"). A note at the bottom encourages users to stay informed with the latest health news via a newsletter. On the right side, there's a section titled "The Air Quality Index" with tabs for "In Your Area" and "Across the Nation", showing a map of the United States with color-coded air quality levels. A legend below the map shows a gradient from green to yellow to orange.

MD: Medical
Doctor

Source: WebMD, LLC

● Online social network

Your account on an online social network includes profile information, such as your name, location, photos, and personal and professional interests. You might create accounts on several online social networks to separate your personal and professional activities. Online social networks allow you to view the profiles of other users and designate them as your *friends* or contacts. Some sites, such as Facebook and LinkedIn, require friends to confirm a friendship, while others, such as Twitter and Google+, allow users to follow one another without confirmation.



● Media Sharing

YouTube is an example of a video sharing site. You tap or click the thumbnail to view the video.

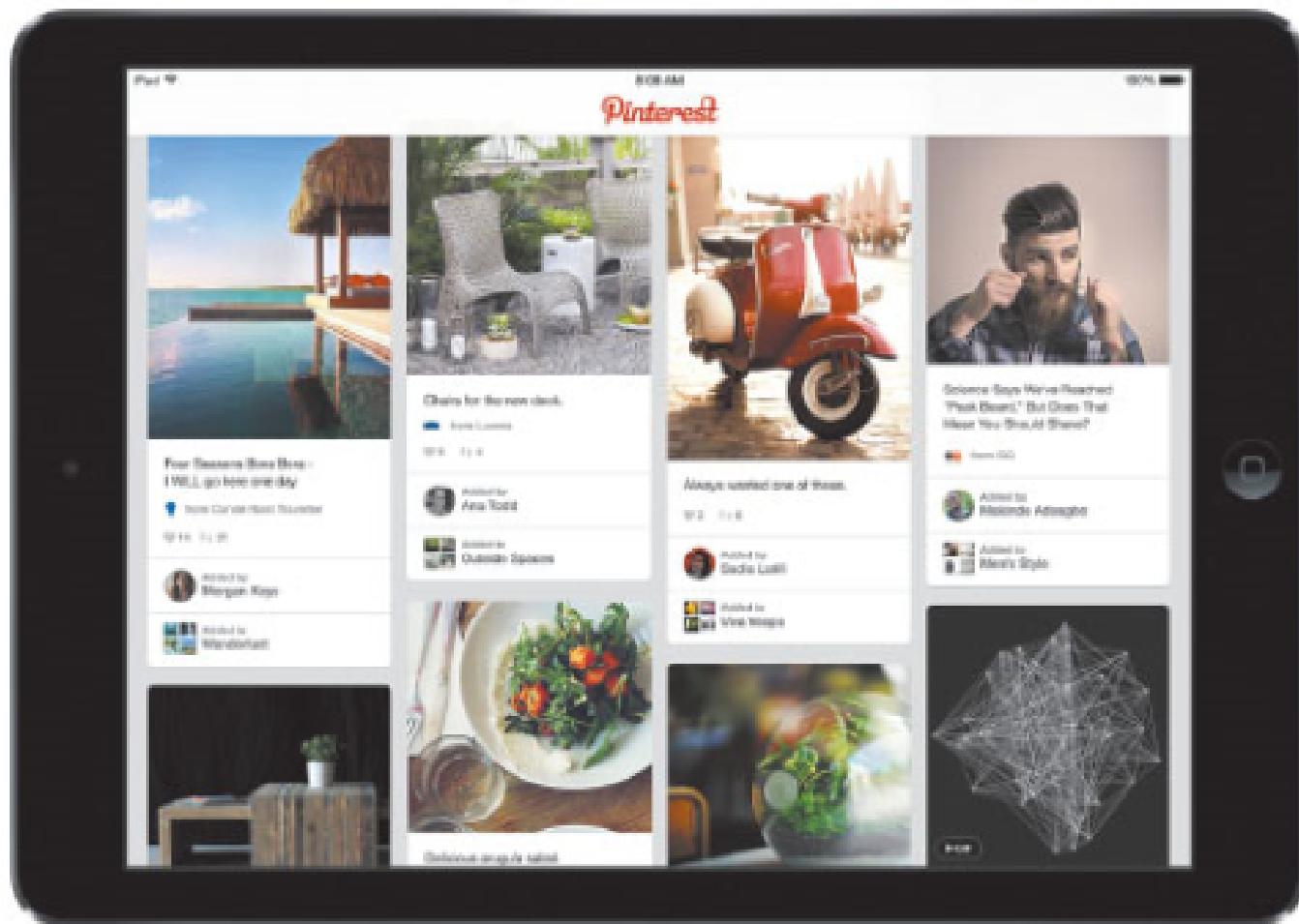
The screenshot shows the YouTube homepage with the following interface elements:

- Header:** YouTube logo, search bar, navigation links (Videos, Music, Movies, Shows, Live, Sports, Education, News), and a central "Upload" button with a tooltip: "Upload button enables you to transfer videos from a computer or mobile device to website".
- Left Sidebar:** A sidebar titled "All Categories" listing various content types: Recommended for You, Autos & Vehicles, Comedy, Entertainment, Film & Animation, Gaming, Howto & Style, and Nonprofits & Activism.
- Most Popular Section:** A heading "Most Popular »" with a star icon. Below it are four video thumbnails:
 - Dog Saves Friends in Canoe (1:14)
 - だるまさんが転んに ψ - Stalking Cat - (1:14)
 - Ultimate Dog Tease (1:21)
 - What Cats Are Really Thinking (0:55)
- Other Video Thumbnails:** A grid of other video thumbnails including "Goodbye Kittens :(" (4:06), "My Mom Teaching Our Dog Griffin to Meow" (8:24), "Jiしゃべるキャット - Talking Cat -" (3:01), and "Puppy Play Time" (2:51).

Source: YouTube, Inc.

● Bookmarking

Pinterest is an example of a bookmarking site.



● Wiki and

Wikipedia is a popular public wiki.

[Create account](#) [Log in](#)

 [WIKIPEDIA](#)
The Free Encyclopedia

Article [Talk](#) Read [Edit](#) View history Search

List of areas in the United States National Park System

From Wikipedia, the free encyclopedia

The [National Park System](#) of the United States is the collection of physical properties owned or administered by the [National Park Service](#). This includes all areas designated [national parks](#) and most [national monuments](#), as well as several other types of protected areas of the United States.

As of 2013, there are 401 units of the National Park System. However, this number is somewhat misleading. For example, [Denali National Park and Preserve](#) is counted as two units, whereas [Fort Moultrie](#) is not counted as a unit because it is considered a feature of the [Fort Sumter National Monument](#).

In addition to areas of the National Park System, the National Park Service also provides technical and financial assistance to several affiliated areas authorized by Congress. Affiliated areas are marked on the lists below.

The [National Register of Historic Places](#) is administered by the Park Service (with nearly 79,000 entries) and automatically includes all National Park System areas designated due to their historic significance. This includes all National Historical Parks/Historic Sites, National Battlefields/Military Parks, National Memorials, and some National Monuments.

Units are found in all 50 states, in [Washington, D.C.](#), and in the U.S. territories of [Guam](#), the [Northern Mariana Islands](#), [American Samoa](#), the [U.S. Virgin Islands](#), and [Puerto Rico](#).

Nearly all units managed by the National Park Service participate in the [National Park Passport Stamps](#) program.

Contents [help](#)

1 National parks
1.1 Existing national parks
1.2 Disbanded national parks

2 National monuments
2.1 Decommissioned national monuments

3 National preserves

4 National Historical parks

5 National Historic sites


National Park Service [edit](#) [log](#)


National parks of the U.S.

● Government Agencies

Government agencies, such as the IRS webpage shown here, have websites providing assistance and information to citizens.

The screenshot shows the official website of the Internal Revenue Service (IRS). At the top, there is a navigation bar with links for 'Subscriptions', 'Language', 'Information For...', 'Search' (with 'Advanced' options), and 'Help & Resources'. Below the navigation bar, there are four main service sections each featuring a portrait of a person and a call-to-action button:

- File your Form 2290 ➤** (A man wearing a cap)
- I need to pay my taxes ➤** (A young man)
- I need to file a return ➤** (A man in a light blue shirt)
- IRS.gov en Español ➤** (A woman)

Below these sections are four colored boxes containing links to various services:

- Forms and Pubs**: Includes links for 941, 4506-T, 1040, SS-4, 2848, and a 'More ...' link.
- Hot Topics**: Includes links for Schedule Your RTRP Test, Free File, Pay Your Tax Bill, E-file Your Form 2290 This Year, Affordable Care Act Tax Provisions, and a 'More ...' link.
- Tools**: Includes links for Order a Return or Account Transcript, Use the Interactive Tax Assistant, Apply for an EIN Online, Request an Electronic Filing PIN, First Time Homebuyer Credit Look-up, and a 'More ...' link.
- Filing & Payment**: Features logos for 'where's my refund?', freefile, e-file, and EFTPS.

IRS: Internal Revenue Service

● Content Aggregation

A content aggregation web app that compiles news from a variety of online sources.



THEWEBLIST.net

what people are clicking on today™  

Popular Today

1,000 years before Stonehenge, they built this Trump left hanging by First Lady	Neighbour Calls Police To Shut Down 4th Of July Slip'n Slide, But Things Don't Go As Planned	Trump Just Defined What Being 'modern day presidential' president looks like
Not sure she's ever heard a joke before	Employee Saves Child From Kidnapper, Instead Of Promotion Gets This Letter Saying He's Fired	11 hours? That's cute
2000+ years old Mason Carée In Nîmes, France — the only completely preserved temple of the ancient world.	4 children, man found dead in Georgia home; mom detained - CBS News	What have the Romans ever done for us?
	my linkedin profile	Maine Governor Says Reporters "Are just 'so Stupid'" Hours Before Getting Caught In A Lie
	Michael Jordan shatters the backboard with a dunk	A Trump Supporter Was Arrested For Writing Super Lame Graffiti To Try To Frame The Left

Google News

[Fox host floats idea of Kim Jong-Un assassination as solution to US/North Korean tensions - TheBlaze.com](#)

[Trump Misleads on Russian Meddling: Why 17 Intelligence Agencies Don't Need to Agree - New York Times](#)

[Mexico violence: 28 dead in prison fight in Acapulco - BBC News](#)

[Russia steps up spying efforts after election - CNN International](#)

[Democrats accuse Republicans of voter suppression - AP News](#)

BuzzFeed News

[Hackers Have Been Targeting US Nuclear And Power Plants](#)

[A Fox Business Host Accused Of Sexual Harassment Has Been Suspended](#)

[California Will Host A Global Climate Summit, Despite Trump's Withdrawal From The Paris Agreement](#)

[The Fate Of America's Former "Toughest Sheriff" Is Now In The Hands Of A Judge](#)

Digg.com

[An Inside Look At How Koch Industries Does Business](#)

[Body-Positive Advertising Isn't Enough](#)

[The Massive Volcano That Scientists Can't Find](#)

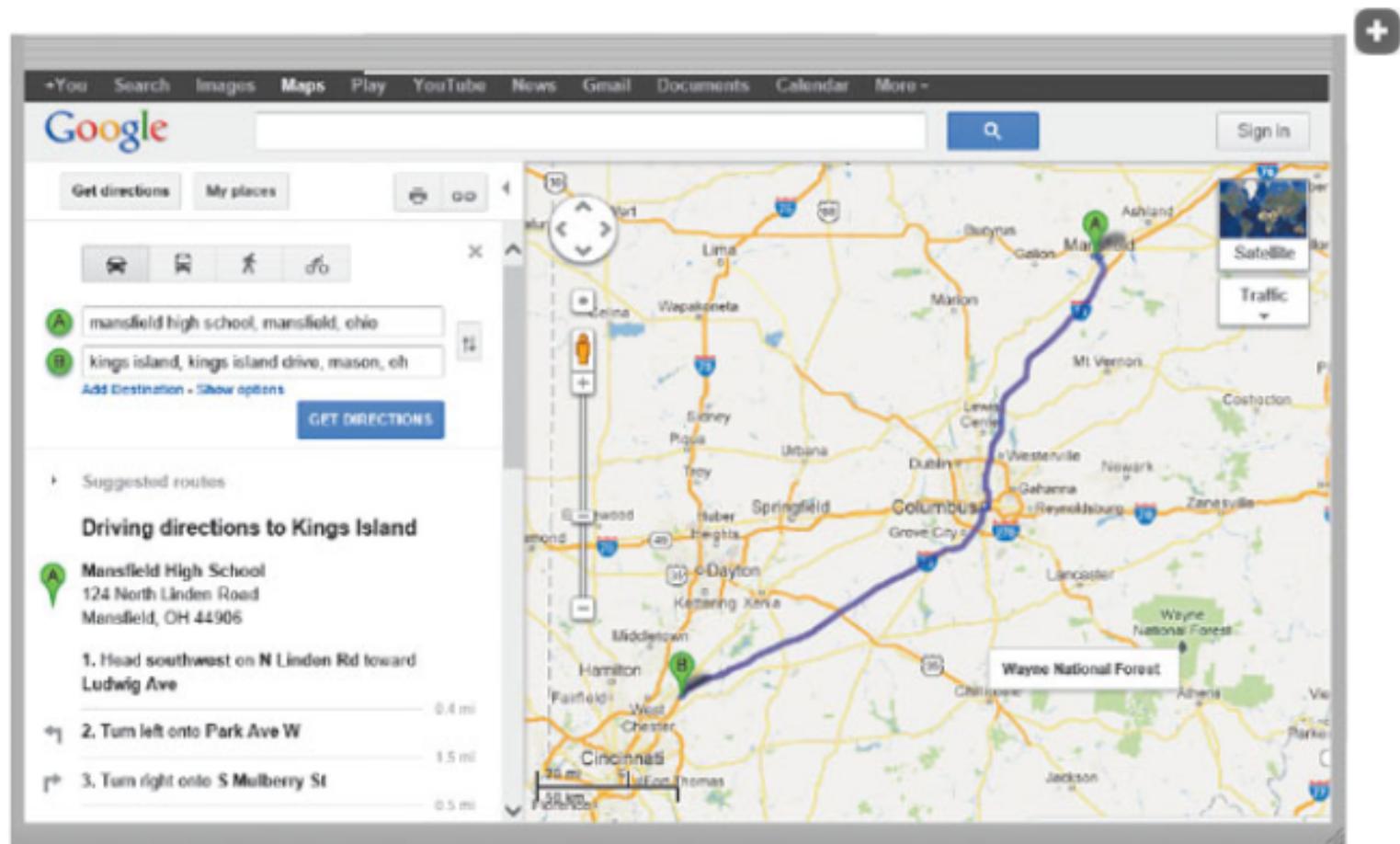
[With A Ticks Boom, It's Not Just Lyme Disease You Have To Fear](#)

[Russia Steps Up Spying Efforts After Election](#)

[The Perfect Breakfast-Sandwich Egg, And Other Recipes To](#)

● Mapping

Using mapping web apps, such as Google Maps shown here, you can obtain driving directions from one destination to another.



Source: Google Inc.

● Retail and auctions

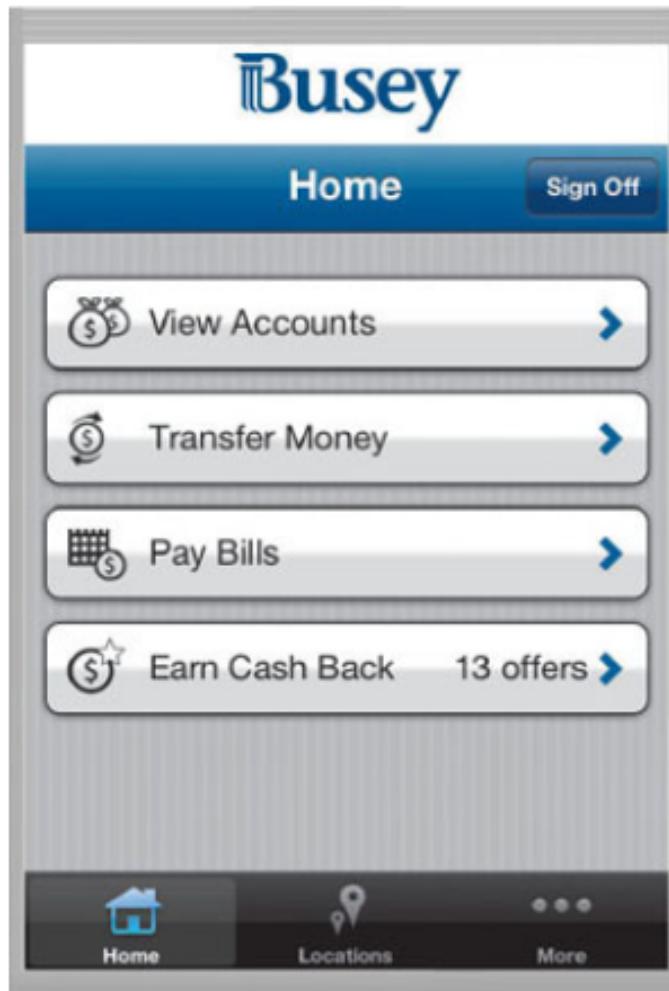
Shown here is Amazon's storefront for Professional and Technical Books.

The screenshot shows the Amazon website's Professional & Technical Books section. At the top, there's a navigation bar with links for Your Amazon.com, Today's Deals, Gift Cards, Help, Sign in, Your Account, Join Prime, and a shopping cart icon. The shopping cart icon has a black arrow pointing to it from the right, with the word "shopping cart" written next to it. Below the navigation, there's a search bar and a "Go" button. A banner for "The Adobe Bookstore" is visible. The main content area features a heading "Professional & Technical Books" and a "Featured Topics at The Seattle Interactive Conference". It displays four book covers: "The Innovation Secrets of Steve Jobs" by Steve Jobs, "Marketing in the Round" by Geoff Livingston and Gini Dietrich, "Google+ for Business: How Google's..." by Chris Brogan, and "Grounded Innovation: Strategies for..." by Lars Erik Hamreid. Below this, there's a section titled "New & Notable in Professional & Technical" featuring books like "DATA SCIENCE FOR BUSINESS" and "HARVARD BUSINESS REVIEW". On the left, there's a sidebar with sections for "New Releases" (Last 30 days, Last 90 days, Coming Soon), "Department" (Books, Professional & Technical, Accounting & Finance, American National Standards Institute, Publications, Architecture, Automotive, Business Management, Education, Engineering, Law, Medical, Professional Science, Transportation), and "Format" (Hardcover, Paperback). On the right, there are promotional boxes for "OMNIVORACIOUS" (Read Amazon's Books Blog), "Fall Reading" (with a link to a blog post), "All-in-One CompTIA A+", and "Accounting & Finance Books Best Sellers".

Source: Amazon.com, Inc.

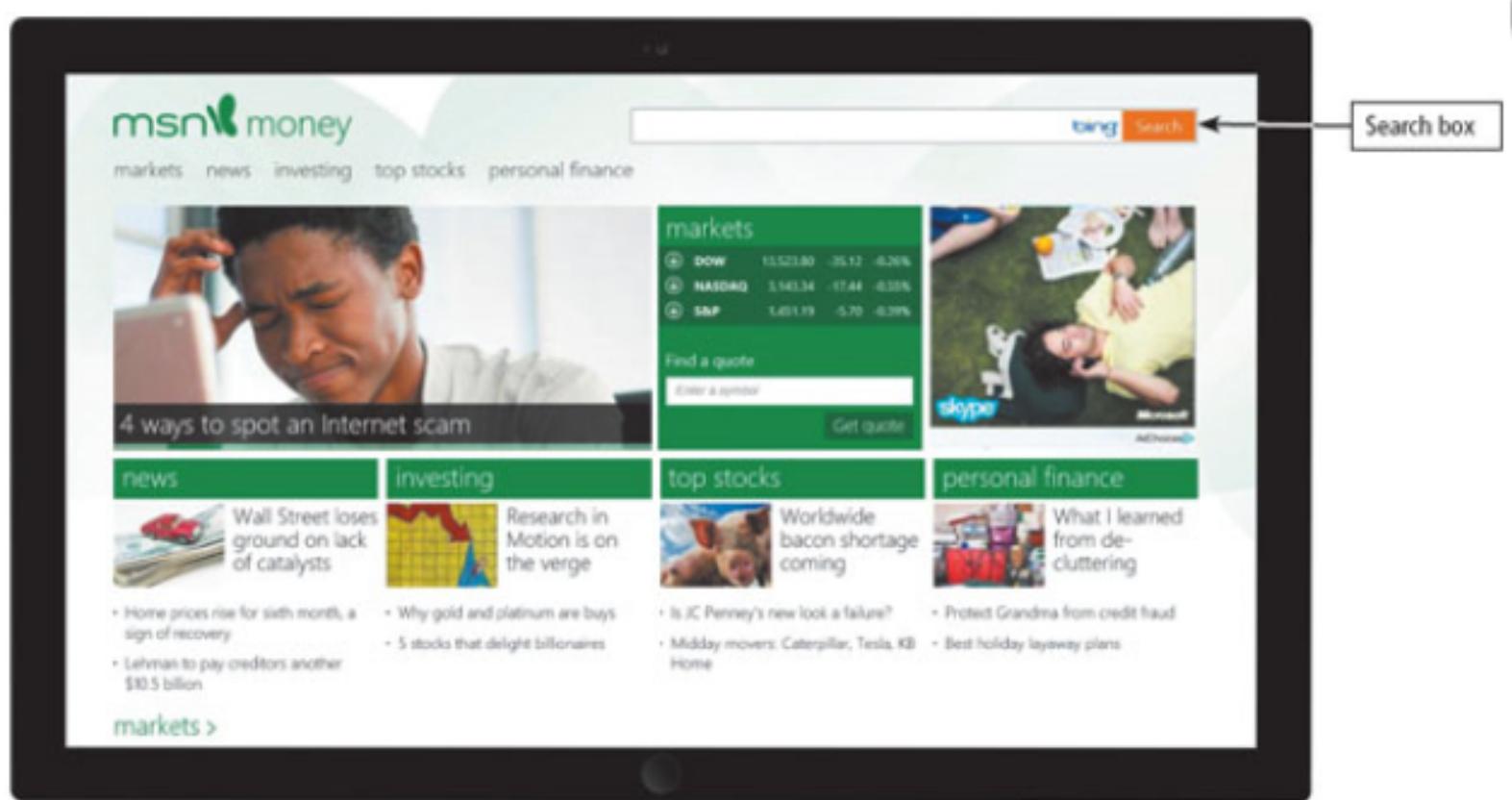
● Banking and Finance

Many banks, such as Busey shown here, provide mobile versions of their online banking website so that users can manage financial accounts from their smartphones.



● Portals

Portals, such as MSN, offer a variety of Internet services from a single location.

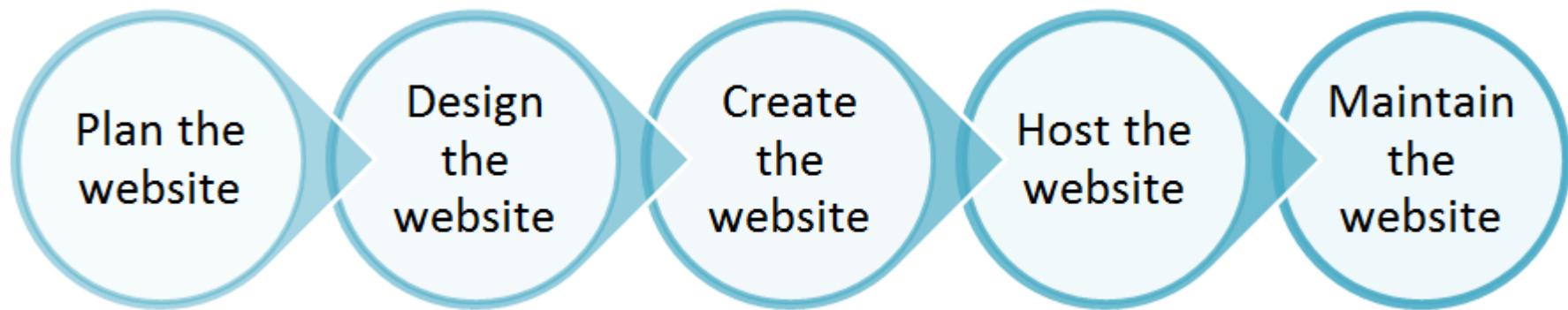


Courtesy of Microsoft Corporation

MSN: MicroSoft Network

Types of Websites (4 of 4)

- **Web publishing** is the creation and maintenance of websites



Digital Media on the Web (1 of 6)

- Multimedia refers to any application that combines text with media
 - Graphics
 - Animation
 - Audio
 - Video
 - Virtual Reality

Digital Media on the Web (2 of 6)

- **Graphic:** a visual representation of nontext information
- Graphic formats include BMP, GIF, JPEG, PNG, and TIFF

Digital Media on the Web (2 of 6)

Abbreviation	Name	Uses
BMP	Bitmap	Desktop backgrounds Scanned images
GIF	Graphics Interchange Format	Images with few colors Simple diagrams Shapes
JPEG	Joint Photographic Experts Group	Digital camera photos Game screenshots Movie still shots
PNG	Portable Network Graphics	Comic-style drawings Line art Web graphics
TIFF	Tagged Image File Format	Photos used in printing industry

Digital Media on the Web (2 of 6)



- **Figure 2-22** Many webpages use colorful graphics to convey messages. For example, the variety of colors, images, shapes, and thumbnails on the San Diego Zoo webpage visually separate and draw attention to areas of the webpage, making the webpage more dynamic and enticing.

- **Infographic**: a visual representation of data and information, designed to communicate quickly, simplify complex concepts, or present patterns

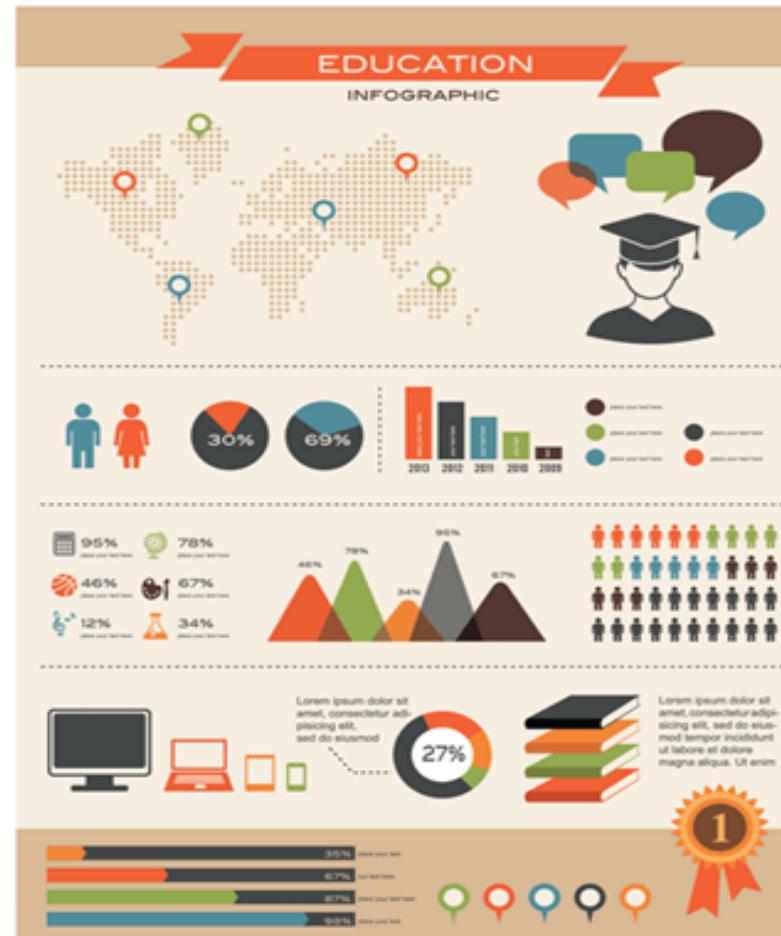
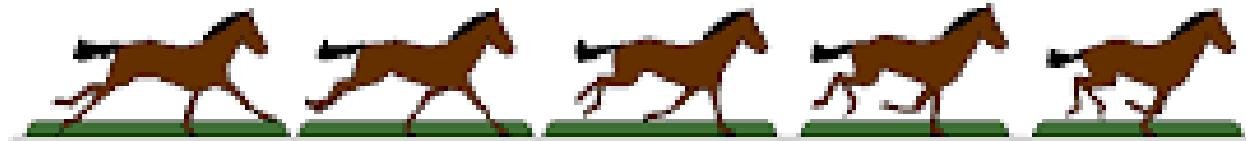
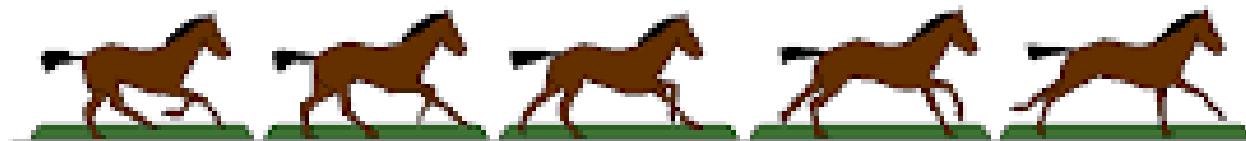


Figure 2-23 An infographic presents complex concepts at a glance.

Digital Media on the Web (3 of 6)

- **Animation:** the appearance of motion created by displaying a series of still images in sequence



Digital Media on the Web (4 of 6)

- **Audio:** includes music, speech, or any other sound
 - Compressed to reduce file size
- You listen to audio on your computer using a media player

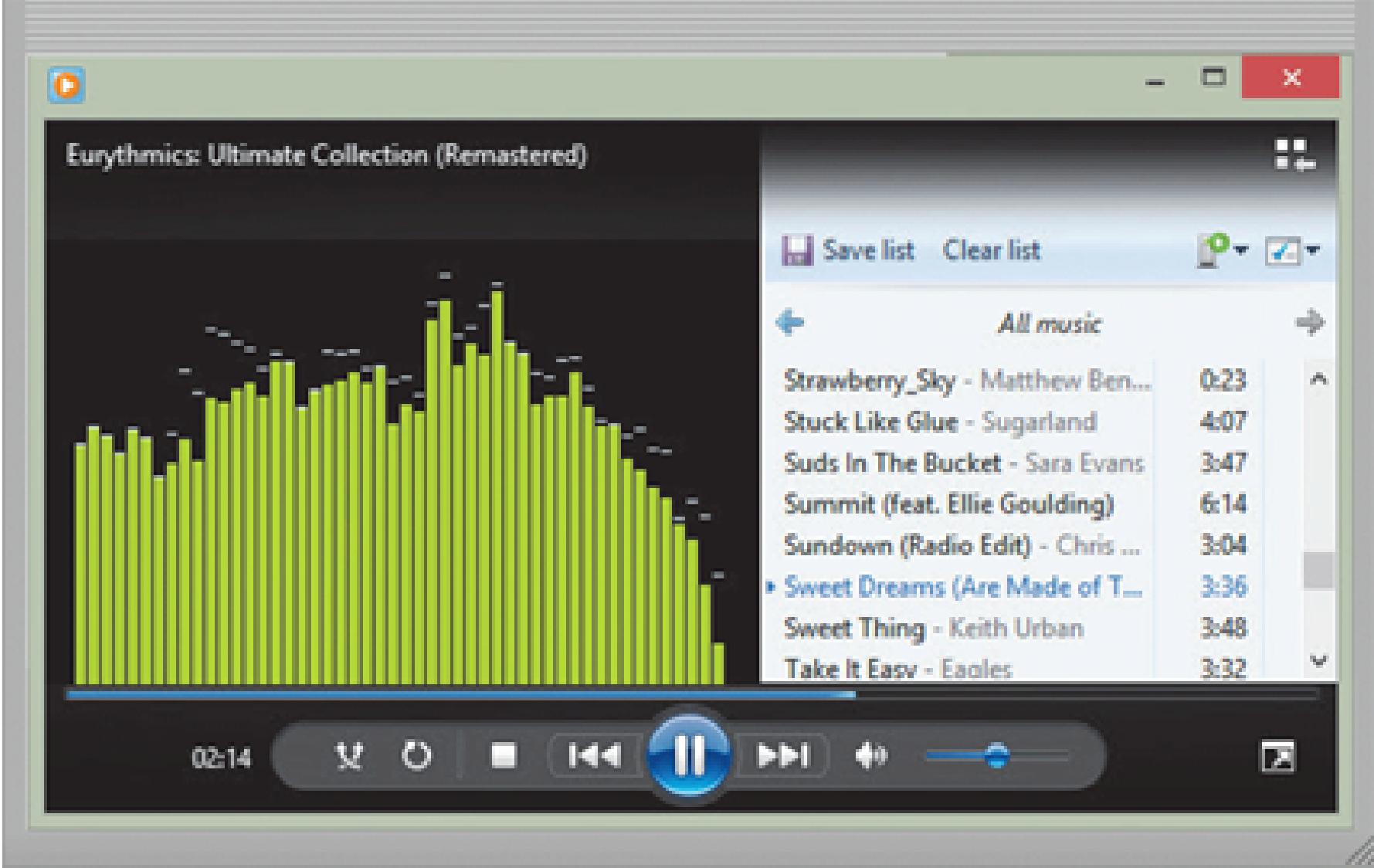


Figure 2-24 Windows Media Player is a popular media player, through which you can listen to music and watch video.

Digital Media on the Web (5 of 6)

- **Video** consists of images displayed in motion
- **Virtual Reality** (VR) is the use of computers to simulate a real or imagined environment that appears as a three-dimensional (3-D) space.

Gemini 7 Space Capsule VR – Smithsonian

360 High Definition VR movie of the Gemini 7 space capsule at the Smithsonian Air and Space Museum in Washington DC

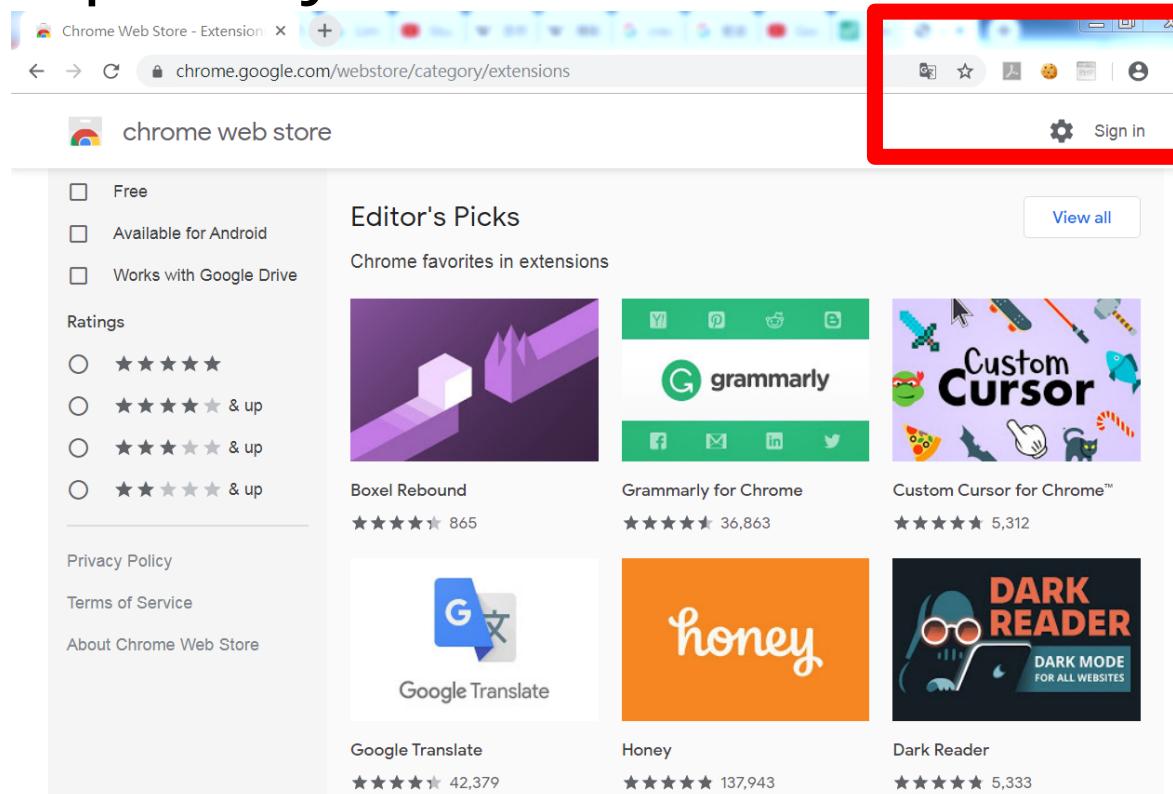


Click and drag inside the 360° VR, click here  for full screen

Figure 2-25 Users can explore a VR world using a touch screen or their input device. For example, users can explore the inside of the Gemini 7 space capsule, located at the Smithsonian Air and Space Museum in Washington, D.C., from their computer or mobile device. D.C.: District of Columbia

Digital Media on the Web (6 of 6)

- A plug-in, or add-on, is a program that extends the capability of a browser



Digital Media on the Web (6 of 6)

- A plug-in, or add-on, is a program that extends the capability of a browser



Other Internet Services (1 of 11)

- Other Internet Service
 - Email
 - Internet Messaging
 - Chat Room
 - Online Discussion
 - VoIP(Voice over Internet Protocol)
 - FTP(File Transfer Protocol)

Other Internet Services (1 of 11)

- **Email** is the transmission of messages and files via a computer network
- An **email program** allows you to create, send, receive, forward, store, print, and delete email messages

How an Email Message May Travel from a Sender to a Receiver

Step 1

Using an email program, you create and send a message on a computer or mobile device.

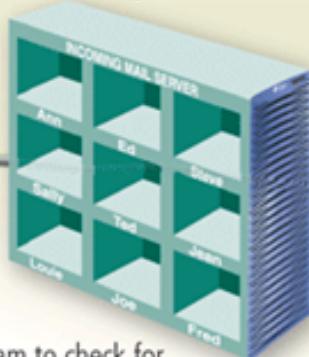


Step 2

Your email program contacts software on the outgoing mail server.



incoming mail server



Step 3

Software on the outgoing mail server determines the best route for the data and sends the message, which travels along Internet routers to the recipient's incoming mail server.



Internet router

Step 4

When the recipient uses an email program to check for email messages, the message transfers from the incoming mail server to the recipient's computer or mobile device.

Internet router

Figure 2-26 This figure shows how an email message may travel from a sender to a receiver.

Other Internet Services (4 of 11)

- **Internet messaging** services, which often occur in real-time, are communications services that notify you when one or more of your established contacts are online and then allows you to exchange messages or files or join a private chat room with them

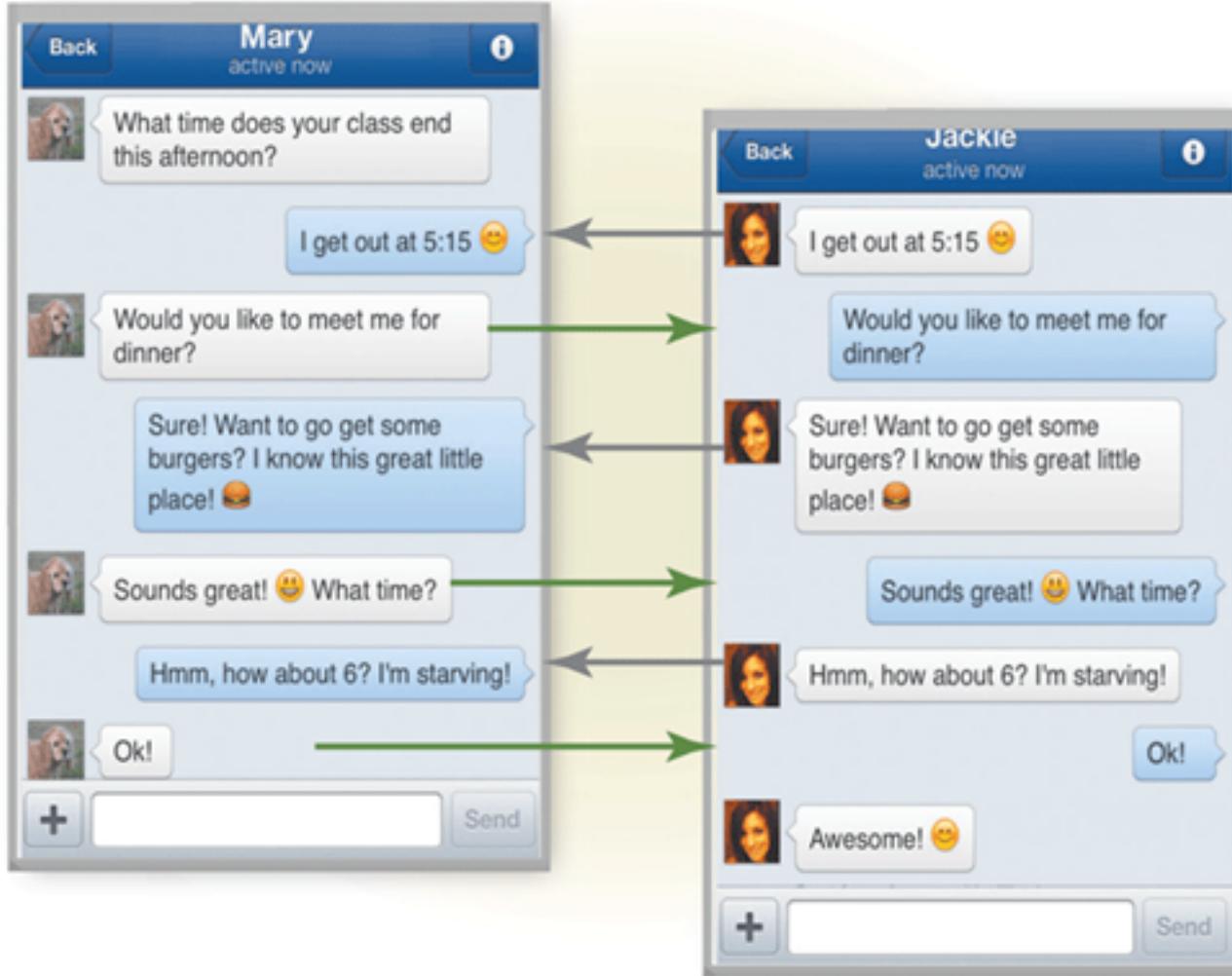


Figure 2-28 With Internet messaging services, you and the person(s) with whom you are conversing are online at the same time. The conversation appears on all parties' screens at the same time. Shown here is Facebook messenger.

Other Internet Services (6 of 11)

- A **chat** is a real-time typed conversation that takes place on a computer or mobile device with many other online users
- A **chat room** is a website or application that permits users to chat with others who are online at the same time



Figure 2-29 As you type, others in the same chat room see what you have typed.

Other Internet Services (8 of 11)

- An **online discussion** is an online area in which users have written discussions about a particular subject

The screenshot shows a Google Groups interface. At the top, there's a navigation bar with links for You, Search, Images, Maps, Play, YouTube, News, Gmail, Drive, Calendar, More, and a Groups button. Below the navigation is a search bar with the placeholder "Search for topics". The main content area is titled "rec.food.cooking > Dinner suggestions?". It shows 13 posts by 11 authors. The first post is from CReneFriborg, followed by responses from Julie Bove, Christine, Frank222, and others. The posts are timestamped with dates like Nov 13, Nov 14, and Nov 15.

Author	Message Content	Date
CReneFriborg	I'm inviting my friends over dinner, and I admit that I'm not a good cook myself. I just want to have some thoughts on what simple foods to cook. Something that they would love. Thanks in advance –	Nov 13
Julie Bove	"CReneFriborg" <CReneFriborg...@foodbanter.com> wrote in message news:CReneFriborg.ae8bee8.129774@foodbanter.com...	Nov 13
Christine	Roast chicken. Very simple..and can be really wonderful. One of my favorite recipes (and one of the easiest) is from Marcella Hazan. http://www.recfoodcooking.org/sigs/Christine%20Dabney/Roast%	Nov 13
Frank222	As from my own experience I suggest not to make any oily and fried things as I don't think they taste good dinner but may be good at lunch. Baked things are good for dinner, vegetables, soup, rice,	Nov 13
CReneFriborg	Thanks for your suggestion Frank222. I'm just thinking that I don't want to serve any vegetables since I do not eat them. But I can try steam roast chicken and some soup and salad. –	Nov 14
jmcquown	What the heck is "steam roast chicken"? And am I misunderstanding you invited these friends over, but you don't want to cook vegetables because "you" don't eat them? Maybe you should just	Nov 15
Gary	I've got to agree here. If you invite friends over to a meal you should be more concerned with their wishes/needs for that one meal. You need to know what they like to eat and more importantly what	Nov 15
jmcquown	I think we'd need to know what they like to eat before offering suggestions. I'd never invite someone over without having "some" idea of what they like. Since I don't know you "or" your friends, I can't	Nov 14
Janet Bostwick	It sounds like you want to have people over to enjoy them, not wow them with your cooking ability. Spaghetti is easy and quick. You cook the spaghetti pasta itself, but you have choices for the	Nov 14
Chemo	On Nov 13, 3:44 pm, CReneFriborg	Nov 14
merryb	I was SO waiting for you to reply!! :) Dr. Pepper to wash it down?	Nov 15
Chemo	on yeah...forgot the Pepper. thanks!	Nov 15

Other Internet Services (10 of 11)

VoIP (Voice over Internet Protocol) enables users to speak to other users via their Internet connection



Source: Microsoft

Other Internet Services (11 of 11)

- **FTP** (File Transfer Protocol) is an Internet standard that permits file uploading and downloading to and from other computers on the Internet
- Many operating systems include FTP capabilities
- An FTP server is a computer that allows users to upload and/or download files using FTP

主機(H): 140.112.31.83

使用者名稱(U): 2024cs

密碼(W): ●●●●●●

連接埠(P): 12000

10:00 a.m. You have a freelance job blogging for a local florist. You are required to post twice weekly to the florist's blog about agreed-upon topics. You use a wiki to confirm the symbolic meaning of different types of roses so that you can include that in your next blog post. You sign in to the blog's content management system and submit your post to the blog.

What responsibility do bloggers have to post accurate, verified information? Should users rely on wikis to verify content?



1:00 p.m. Back at home, you flip through today's mail. You received a bill for your monthly mortgage payment. Using your laptop, you navigate to your bank's website and schedule a recurring payment for the mortgage to ensure you never will be late on a payment.

What precautions should you take when accessing financial information and authorizing payments on the web?



Credit TK

8:30 p.m. While helping your daughter with her math homework, you discover a website that includes the answers to questions asked in her textbook. You have a discussion with your daughter about ethical issues surrounding posting and using that type of content.



Credit TK

Netiquette

- **Netiquette** is the code of acceptable Internet behavior users should follow while on the Internet.

Netiquette Guidelines for Online Communications

Golden Rule: Treat others as you would like them to treat you.

Be polite. Avoid offensive language.

Avoid sending or posting flames, which are abusive or insulting messages. Do not participate in flame wars, which are exchanges of flames.

Be careful when using sarcasm and humor, as it might be misinterpreted.

Do not use all capital letters, which is the equivalent of SHOUTING!

Use **emoticons** and **emojis** to express emotion. Popular emoticons include:

:) Smile :| Indifference :o Surprised :(Frown :| Undecided ;)

Popular emojis include:



Use abbreviations and acronyms for phrases:

BTW by the way

IMHO In my humble opinion

FWIW for what it's worth

FYI for your information

TTFN ta ta for now

TYVM thank you very much

Clearly identify a spoiler, which is a message that reveals an outcome to a game or ending to a movie or program.

Be forgiving of other's mistakes.

Read the FAQ (frequently asked questions), if one exists.

Figure 2-31 Some of the rules of netiquette, with respect to online communications.

Source: Microsoft

FUNNY VIDEO

- <https://www.youtube.com/watch?v=D61gg5RsFdA&t=360s>

Summary

- Evolution of the Internet
- The web
- Various types of websites and media
- Other services available on the Internet
- Netiquette

Q&A

- 1. Steps of publishing a website?
- 2. How many bits make up IPv4 and IPv6 addresses?
- 3. What is web address also called?
- 4. What converts domain name to IP address?
- 5. What is the difference between WWW and the Internet

Q&A

- Answer:
- 1.Plan Design Create Host Maintain
- 2. 32 128
- 3. URL
- 4. DNS server
- 5. The internet is a global network of computers all connected together. The world wide web is a collection of webpages found on this global network of computers

Project due Sep.

- Find and list the server IP addresses of your top ten most frequently used websites.
- For example:
 - example.com - 93.184.215.14 and 2606:2800:21f:cb07:6820:80da:af6b:8b2c
 - github.com - 20.27.177.113
 - pixiv.net - 210.140.92.181
 - google.com - 142.251.42.238 and 2404:6800:4012:2::200e
 - one.one.one.one - 1.1.1.1 and 1.0.0.1 and 2606:4700:4700::1111 and 2606:4700:4700::1001