The history of the internet

LECTURE SUMMARY

PRE-PROGRAMMING

Covered in this lecture:

Why internet was created and how it evolved

- The first version of the internet was made by DARPA (Defense Advanced Research Projects Agency)
- Created in the 1960s, ARPANET was a project that aimed to connect two computers to each other, one in UCLA and the other one in Stanford
- Through this connection, the world's first computer message ("LO") was sent by mistake by a clueless student who was trying to type "LOGIN"
- Later on, they created the TCP/IP (Transmission Control Protocol/Internet Protocol), a system that computers use to transfer information to and from servers and other computers
- Until the 1980s, the internet was only used for transferring research between research institutes

- LAN = Local Area Network (local computers connected to each other)
- The internet consists of many LANs connected to each other
- WWW = World Wide Web (not the same thing as the internet)
- WWW is a standardized system that was created so that any kind of computer can access and transfer the same information
- One of the ways it does that is through the HTTP protocol, which acts as a language for coding information for any computer
- When you type http://www.website.com, "http" specifies the protocol, and "www" specifies the location of what you're looking for

See you next lecture!

The anatomy of the internet

LECTURE SUMMARY

PRE-PROGRAMMING

Covered in this lecture:

How the internet works

- There are 3 concepts you need to know: client, node, server
- The client is the device that requests and receives information
- A node is any machine that that information crosses through to get to the client
- The server is the device that's sending the information, fulfilling the client's request
- These terms are relative and they can be interchangeable depending on which device sends or receives the information
- The most important nodes you need to understand are: ISP (Internet Service Provider), modem, router
- Any information will have to pass through these nodes to get to your computer

- The ISP is any mega hub that distributes and connects computers across the country

  Instead of connecting every computer in the area with each other, you connect all of them to this hub

- The modem is a device that is permanently connected to your ISP and is used to send and receive information through your ISP hub

- The router is a hub that allows all devices and systems in one area or room to connect to the same connection through the modem

See you next lecture!

Domain, IP, DNS

LECTURE SUMMARY

PRE-PROGRAMMING

Covered in this lecture:

Explaining the three concepts

- IP = Internet Protocol
- The IP is a 9 digit string of numbers appended together with periods
- Computers use IP addresses to find the location of your computer or find the server you're requesting
- Every device has an IP
- DNS = Domain Name System
- The DNS holds the information of what IP address is associated with what domain name
- ICANN = The International Corporation of Associated Names & Numbers
- ICANN is the entity that decides if the domain name you want is available

See you next lecture!

How do browsers work?

LECTURE SUMMARY

PRE-PROGRAMMING

Covered in this lecture:

What browsers are and their functions

- A browser is a software that allows you to access websites
- It has two basic functions:

  #1 It establishes a persistent connection with the server where you can access files to view a website

  #2 It translates web programming into something that your operating system can understand
- There are several hundred browsers out there
- The most commonly used are:
  - Google Chrome
  - Mozilla Firefox
  - Internet Explorer
  - Safari
  - Opera

- Every browser has a different way of interpreting web code

  The same site might look different depending on which browser you're using to view it

- Programmers have to ensure that the website they're building will look good and load correctly on all of these browsers

See you next lecture!

How does mobile internet work?

LECTURE SUMMARY

PRE-PROGRAMMING

Covered in this lecture:

How you get internet on your phone

- Smartphones are just small computers that ring
- The mobile phone is a client that receives information
- There are two ways of getting data on your phone: Wi-Fi and cell service
- Wi-Fi only works within a certain range
- Cell service works over longer distances and is provided by the cell towers
- The phone companies that own these cell towers act like the ISP, the cell tower acts like the router, and the modem in this case is called a Gateway Server
- The Gateway server converts data into a language your phone can understand, called WAP (Wireless Application Protocol)

See you next lecture!

The anatomy of a website

LECTURE SUMMARY

PRE-PROGRAMMING

Covered in this lecture:

What a website is made of

- A website is just a big set of text files in a folder stored on the server
- The folder usually contains these 3 files:
  - index.html (main instructions about what the website should show you)
  - a .css file (instructions on the style of the website)
  - a backend script (instructions of what the site can do) - .php, .py, or .rb
- Other potential files might include a folder called "images", where all the images that should be displayed on the website are stored
- For each page of the website there will be a separate folder with the same structure

See you next lecture!

The anatomy of a mobile site

LECTURE SUMMARY

PRE-PROGRAMMING

Covered in this lecture:

What a mobile site and a mobile app are made of

- Nowadays, almost all websites have in their original index file instructions on how to display them on mobile phones
- When accessed through the browser, mobile sites operate very much like the browser on your computer
- Mobile sites are different from mobile apps
- While you can access a mobile site by opening your browser, in order to use a mobile app you will have to download it to your phone
- The structure of the folder that holds the mobile app files is similar to the mobile site folder, only it's now on your phone instead of online

- The group of files you download is called a package

- This package doesn't have a backend file, which is stored on the server of the company that provides the app, in order for it to run faster

See you next lecture!

Let's talk about Netscape

LECTURE SUMMARY

PRE-PROGRAMMING

Covered in this lecture:

What Netscape was and how it change the world

- Netscape was the first commercially available browser
- It did 3 things that changed the internet forever:
  - #1 They invented a new language called Livescript that allowed websites to have richer functionality (they were very basic at first)

    Livescript later became Javascript
  - #2 They invented SSL (Secure Sockets Layer) which encrypted the traffic being passed through the TCP/IP protocol

    People could buy things online without being afraid someone will steal their information
  - #3 It launched what we call "browser wars"

- Companies started fighting about who makes the best browser

- As a result, Microsoft launched Internet Explorer

See you next lecture!