Introduction to the Internet

Introduction to Web Development

Objectives

- To learn about the internet, and how it functions
- To learn about the services of the internet
- How the internet functions

Lesson Outcomes

A clear core understanding of the internet, and where it comes from

1. What is the internet?

The internet is a network of computers. They consist mainly of applications, running on a computer that offer services to the rest of the network.

1. **ARPANET- Advanced Research Projects Agency Network**

   ARPANET, in full **Advanced Research Projects Agency Network**, experimental computer network that was the forerunner of the Internet. The Advanced Research Projects Agency (ARPA), an arm of the U.S. Defense Department, funded the development of the Advanced Research Projects Agency Network (ARPANET) in the late 1960s. Its initial purpose was to link computers at Pentagon-funded research institutions over telephone lines.

2. **INTERNET**

   The Internet is a vast network that connects billions of computers and other electronic devices all around the world. With the Internet, you can get nearly any kind of information (resources), contact with people all over the world, and do a lot more.

Sir Tim Berners Lee

3. **Cloud computing**

   Simply put, cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet (“the cloud”) to offer faster innovation, flexible resources, and economies of scale. You typically pay only for cloud services you use, helping you lower your operating costs, run your infrastructure more efficiently, and scale as your business needs change.

4. **Blockchain technologies**

   Blockchain is a distributed, unchangeable ledger that makes recording transactions and managing assets in a corporate network much easier. A tangible asset (a house, car, cash, or land) can be intangible (intellectual property, patents, copyrights, branding). On a blockchain network, virtually anything of value may be recorded and traded, lowering risk and cutting costs for all parties involved.

💡 Ask the student as the different types of things that I can do on the internet

2. What is web development?

Web development is the process in which those services are created to be consumed by the user, example, Facebook has a website, mobile application and tools to allow us to use what Facebook has to offer.

Ask the students as to what web applications that are available, and talk about CMS applications

3. What is front end development?

A front-end developer is someone who works on software, like desktop or mobile websites, that users interact with. Specifically, a front-end developer spends time on the side of technology that the user touches and sees.

4. What are the languages for front end development

- HTML - Hypertext Markup Language
- CSS - Cascading Stylesheets
- JavaScript
- JSON- JavaScript Object Notation

Different versions of the internet

- Web 1.0

Web 1.0 is the term used for the earliest version of the Internet as it emerged from its origins with Defense Advanced Research Projects Agency (DARPA) and became, for the first time, a global network representing the future of digital communications. It describes the first “iteration” of what became a growing, evolving medium that eventually expanded into a platform with profound multi-functional uses.

The early Internet was mostly composed of web pages joined by hyperlinks, without the additional visuals, controls and forms that we see when we log on today. Experts refer to it as the “read-only” web – a web that was not interactive in any significant sense. The web user was, for the most part, passive, and much of the user input took place

offline.Generally, Individual webpages were made of static pages that were hosted on web servers run by an internet service provider (ISP) or on free web hosting services.

- Web 2.0

Web 2.0 describes the current state of the internet, which has more user-generated content and usability for end-users compared to its earlier incarnation, Web 1.0. In general, Web 2.0 refers to the 21st-century Internet applications that have transformed the digital era in the aftermath of the dotcom bubble.

- Web 3.0

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Every time you buy something on Amazon, the website’s algorithm will look at the other ite
ms that people who have purchased your product went on buy and then recommends that to yo
u. So, think about what is going on here. The website is learning from other users what yo
ur preferred choices can be and then use it to recommend to you what you may like. In esse
nce, the website itself is learning and becoming more intelligent.

That, in a nutshell, is the very philosophy behind web 3.0. Web 1.0 was primarily driven b
y content that came from the business or the institution for its customers. Web 2.0 took t
hings a little bit further by allowing users to upload and share their content on the webs
ite itself. Web 3.0 allows online applications and websites to receive information that’s
 on the Web and give new information/data to the users.
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Challenge:

Research on one of those concepts, and deliver a short summary, and an example on one of the following concepts. The topics will be discussed in class

Aa Concept	Pointers
HTTP	What is it and how does it work brownie points for adding HTTPS and SFTP?
VPN/ Intranet	What does makes it different from the internet that we are used to ?
API	What is it? and what makes it so special, and the bread and butter of the internet?
Swagger	Why do we need it? and what is it that makes it easier for us future developers and existing developers alike?

Aa Concept	Pointers
Email	What protocols does the whole ecosystem use? What problem did it initially solve?
Databases	What is it, and why do we need it, brownie points for differenciating between a SQL database and a non-sql database?
DNS	What is it? and what problem does it solve? What is the difference between the domains?
Blockchain	What is it? and why should we be worried about it?
ISP	Why do we need it, and what's the main purpose of it? Do they govern the internet?
Streaming	What is it? What makes streaming so popular? Give 5 examples of any mainstream streaming service?
Certificates	Why do we need it? and what purpose does it solve?
Hosting	What is the main purpose of hosting an application? Give me 5 popular hosting services, both locally and internationally?
Resources	Research on 3 more resources that the internet has to offer
Virtual Machine	What is it? and how does it work??

Hyperlinks

VPN: https://us.norton.com/internetsecurity-privacy-what-is-a-vpn.html

HTTP: https://developer.mozilla.org/en-US/docs/Web/HTTP/Overview

API: https://www.ibm.com/cloud/learn/api

Swagger: https://swagger.io

Email: https://www.educba.com/what-is-email/

Database: https://www.oracle.com/database/what-is-database/

DNS: https://www.cloudflare.com/en-gb/learning/dns/what-is-dns/

Blockchain: https://www.ibm.com/topics/what-is-blockchain

ISP: https://www.investopedia.com/terms/i/isp.asp

Streaming: https://www.cloudflare.com/en-gb/learning/video/what-is-streaming/

Certificates: https://www.computerhope.com/jargon/c/certific.htm

Hosting: https://www.website.com/beginnerguide/webhosting/6/1/what-is-web-hosting?.ws&source=SC