Internet Basic:

The internet is a world-wide system of computer networks and computers.

Each user makes use of an internet service provider (ISP).

The ISP will set up a user account which will contain a username and a password

Internet Protocol (IP) Address:

Each device on the internet is given **a unique address** known as the Internet Protocol (IP) address. This is a 32 -bit number which is usually written in the form:

94.207.171.169

Some businesses have changed in a major way because of new technology

- Take '**Uber**' or '**Kareem**' for example. T**hese are some of the largest taxi companies in the world**, yet the company itself does not own a single car.

- '**AirBnB**' is one of the largest hotel companies in the world. However, it does not own any real estate.

- **IBM Watson** offers you legal advice for basic public issues. It has an accuracy of up to 90%. Usual human advice only has an accuracy of around 70.

The travel industry

- In the pastwe book a holiday was through a travel agent.
- Today This has all changed now because of so many different **websites.** They can **help you easily book a trip** within a matter of minutes. You can also book other things – hotels, car rentals, .
- There has been a **decrease in travel agencies**
- You can make sure **your flight is on time and find out about any delays right away.**
- You can even **check-in online and get your ticket directly on your phone**

The music industry

- The first major change was **cassettes being replaced by CDs**
- However, over the past 10 years, we have seen **CDs start to die out because of mp3 players and digital music downloads.**
- you can even **upload your entire music collection onto the internet** (the cloud).
- **Record stores have started closing their physical locations**. Many of them have gone out of business altogether.
- **One of the biggest challenges the music industry faces are**

  the pirated copies (النسخ المقرصنة)of albums. **Torrent sites** are among the most popular for this type of activity.

The newspaper industry

- now many people can get all their news on the internet for **free**.
- get **instant up-to-date news** online at any time and in any country.
- Many of the larger newspaper companies have gone online.
- They are able to stay in business by providing the news for free. **they make money on their websites through advertisements**

- The death of the newspaper industry has **negative side effects (الإثار السلبية)**:
  - many people in the industry are left without a job.
  - Many of them have tried to find new work in the printing industry. However, this is very difficult because the old-fashioned way of printing is no longer in use. It has been replaced by faster and easier **digital printing methods**.

What will the future look like?

By the time your students graduate, the world will have changed. Consider the idea of a **self-driving car :**

- **no need large carparks** , the car could park itself out of town
- chance of **a crash is dramatically reduced**
- insurance companies will no longer make any profit

What is HTML(Hypertext Markup Language)?

- **HTML is a basic programming language for making web pages**.
- It uses a set of key words that a web browser understands and displays the page as instructed.
- It is the 'hidden' code that helps us communicate with others on the World Wide Web (WWW).
- HTML was invented(اخترعت) by Sir **Tim Berners-Lee**, a British computer scientist
- He was trying **to find a way for people all over the world to write and share documents with each other**.

What is a markup language?

- a computer language that '**annotates**' **content, allowing it to have meaning to both people and computer systems**.
- In HTML, **content is annotated using tags** (**inside angled brackets**)

```
<title> Ministry of Education Website </title>
```

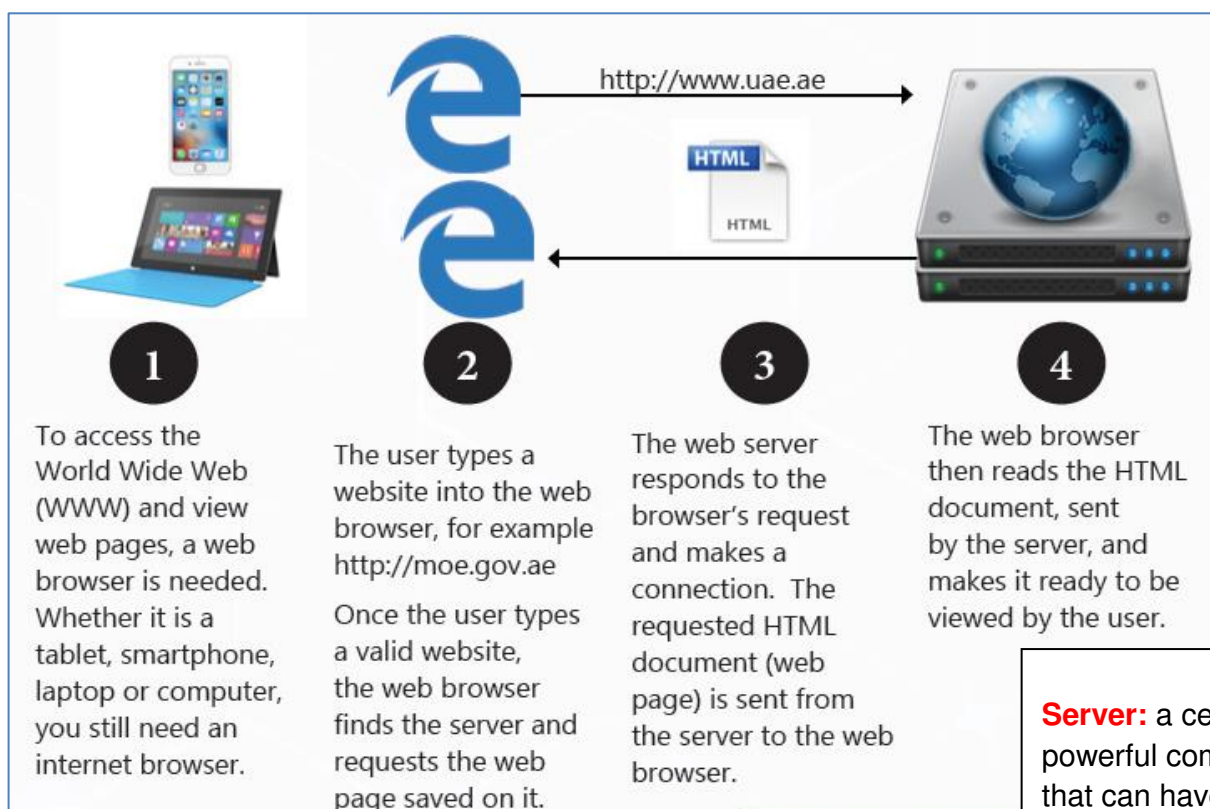**Annotated:** writing notes around something

- When the web browser reads the HTML code **it does not display the tags**.
- The code uses the tags to tell the browser how to display things.
- **HTML documents are called web pages**. The different pages are linked together using hyperlinks.

Hyperlink: a link to another website, location or file, usually used by clicking on a highlighted word or image on the screen.

What is a web browser?

- **HTML documents (web pages) are understood and displayed by web browsers.**
- The web browser reads the HTML code and then displays the web page to the user. We call this process rendering.

Rendering: an automated process a computer does to create or display something.

http://www.uae.ae

1 To access the World Wide Web (WWW) and view web pages, a web browser is needed. Whether it is a tablet, smartphone, laptop or computer, you still need an internet browser.

2 The user types a website into the web browser, for example http://moe.gov.ae

Once the user types a valid website, the web browser finds the server and requests the web page saved on it.

3 The web server responds to the browser's request and makes a connection. The requested HTML document (web page) is sent from the server to the web browser.

4 The web browser then reads the HTML document, sent by the server, and makes it ready to be viewed by the user.

Server: a central powerful computer that can have files or other media on it for others to access

Domain Name Service (DNS):

1. Request Information (Type URL)

After typing URL the computer will check in its **DNS cache** which stores information about recent visited sites. If it gets no information, it will perform **DNS query** to find out.

2. Ask the DNS servers   (Contact / Query ISP server)

The **DNS server of ISP** (Internet Service Provider – Etisalat or DU) will be contacted to find out the requested site in its own caches.

3. Ask the root name Server **(Direct request to other servers if ISP server has no answer)**

The thirteen root nameservers act as a kind of telephone switchboard for DNS.

If the **ISP DNS servers** don't have the requested site, the **root nameservers** will be contacted which will direct the request to **TLD nameservers**.

4. Ask TLD nameservers (Top-Level Domain) (direct request to the best server)

TLD stores the address information to **top level domains such as: .com ,.net ,.org**…

TLD will check in their own servers if they have the answer. If no it will be directed to other best servers.

5. Ask Authorities DNS servers (Review the next part of our request)

These authoritative nameservers are responsible for knowing all the information about a specific domain, including the IP address.

6.   Retrieve Record (Server gets the IP)

Server gets the **IP address** from **authoritative name servers** and **stores** record in its local memory.

This entire process, from start to finish, takes **only milliseconds to complete**
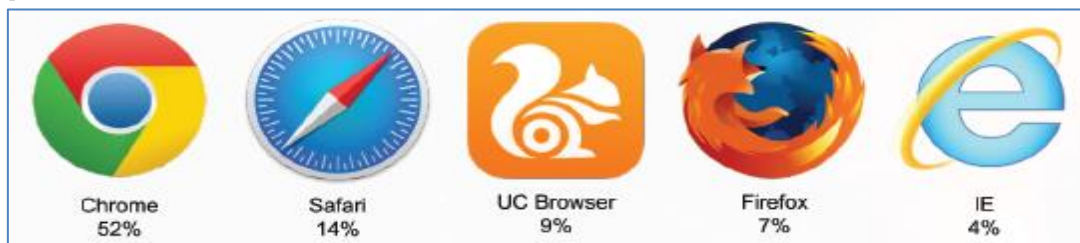
Process	Order
User types the website into the browser.	2
The browser connects to the server.	3
DNS Server finds the IP address of the website typed	4
The browser reads the HTML code to display the page.	6
The server responds and sends the web page.	5
The user opens an internet browser.	1

Internet Browsers:

There are many internet browsers available to users:

Chrome, Firefox, Safari, IE/Edge, and Opera

the top five, in order:

Chrome 52%	Safari 14%	UC Browser 9%	Firefox 7%	IE 4%

- the UC browser: It originated in China and is owned by Alibaba Group.
- **China has a huge population** and often people in China favour open source products. This could be one reason why the browser may appear in the most popular browser list.

W3C

- In the early days of the web, there was little control over HTML standards.
- Many web-browsing companies understood the standards differently (caring little about Sir Tim Berners-Lee's original standards).
- They would often also use their own exclusive tags in the HTML language.

- **In October 1994**, the World Wide Web Consortium (W3C) was created (**Led by Sir Tim Berners-Lee**) to fix these issues.

W3C is a member-based organisation, which includes giants such as:

- Microsoft
- Apple
- IBM
- Adobe.
- the purpose of the organization is **to standardize web languages**, including HTML
- This is done by **creating and maintaining a set of rules for all browsers to follow.**

- **Website Accessibility Initiative (WAI)** is another part of the W3C organization.
- WAI **outlines** international guidelines on **how to design accessible web pages**.
- These guidelines are made **to help web designers develop well-structured and accessible websites, enabling all users (regardless of software/hardware used) to access the World Wide Web**.
- **These guidelines also take into consideration users who may be visually and/or hearing impaired.(disabled users).**

What is CSS?

- **CSS stands for Cascading Style Sheet.**
- Early HTML had **no considerations to the look of web pages**. The language was made **to structure a document only**, to ensure that the document had titles, paragraphs, lists, etc.

- **Companies wanted to make their websites look good and stand out against a crowd. They wanted to set colors, fonts sizes, etc.**
- **To do this, web browsers began to include formatting tags into the HTML language.**

What is JavaScript?

- **JavaScript is often shorted to 'JS'.**

- HTML pages can be referred to as **'static' pages**(ثابتة). This means they are **not interactive**.

- **JavaScript** is a popular programming language that can be used with HTML **to make web pages more interactive.**

- It is the most widespread programming language used in the world.

- **There may be several reasons for its popularity:**
  - The language is open source **(freely available)**
  - **can be executed on most devices**, including computers, laptops, tablets and smartphones.

- **Some examples of what JavaScript can be used for include:**
  - **detecting the version/vendor of a user's web browser**
  - **creating interactive elements that respond to events** (for example, mouse clicks
  - **validating an input form** (for example, to check that only numbers are typed into a telephone input box)

Unit Summary

- **HTML** stands for Hypertext Markup Language. A markup language uses tags to give instructions on how content should be set out. HTML5 is the most recent version of HTML

- **A web browser** requests the HTML from a server, understands it and renders it on the screen for the user.

- **W3C is an organisation** that looks after the standards for HTML, CSS and JavaScript.

- **JavaScript** is a popular programming language that can be used to make HTML pages interactive and animated.

- **CSS** stands for Cascading Style Sheets and is used for format HTML documents.

End of unit quiz

What is CSS? Why was it introduced?

CSS stands for Cascading style Sheet. and is used for format HTML documents.

What is the purpose of JavaScript?
To Make web pages more dynamic and interactive

What are the previous versions of HTML? Use a search engine to help you.

- **HTML 1.0 (1989 - 1994)**
- **HTML 2.0 (1995)**
- **HTML 3.20 (1997)**
- **HTML 4.01 (1999)**
- **HTML 5 (2014)**

Name some partners of the W3C organization.:

- Microsoft
- Apple
- IBM
- Adobe

Keywords:

Internet of things	The connection via the Internet of computing devices inside everyday objects, enabling them to send and receive data.
URL / Domain Name	The address of a webite for example www.moe.gov.ae
IP Address	A unique set of numbers that identifies each computer on the internet for example 94.207.143.228.
DNS	Like an address book of websites. Allows users to type in a website such as www.moe.gov.ae and the computer will find the computers IP address to get the website (151.253.49.178).
HTML	Stands for Hyper Text Mark-up Language. Standard for making webpages.
Annotated	Writing notes around something