DOMAIN NAME SYSTEM (OPERATE C 4.3)

A **Domain Name System (DNS)** helps users find their way through the Internet. Every computer has a unique address on the Internet which is called **Internet Protocol (IP)** and every computer with an IP can have unlimited domain names.

As it is very difficult to remember IP addresses, the DNS makes it easier by allowing a string of letters, i.e. **domain name**, to be used instead of the **IP address.** The action of translation the name into an IP address is called **resolving the domain name.** This means reaching a specific website IP address by entering its domain name.

As we have just seen, the most basic task of a DNS is to translate host names into IP addresses. A DNS makes it possible to assign names to organisations.

A **domain name** is made up of two or more parts separated by dots. The rightmost label conveys the top-level domain, while each label to the left specifies a subdivision or sub-domain. A domain name can contain 255 characters maximum and can be purchased from a registrar.

A **hostname** is a domain name which has one or more associated IP addresses. If you want to see the corresponding IP address of a domain name, you have to use the 'ping' command. On the contrary, if you want to find the hostname, or domain name, of an IP address, you have to send a message to the IP address requesting the computer located at that IP address to return its name.

The Domain Name System (DNS) consists of a hierarchical set of **DNS servers**. Each domain or sub-domain has one or more authoritative DNS servers. At the top of the hierarchy, there are the **root name servers** which are the servers to query when looking up, i.e. resolving a **top-level domain (TLD)** name.

A **hostname**, or **site name**, is the unique name by which a network-attached device is known on a network. The hostname is used to identify a particular host in various forms of electronic communication. It is the left part of a full Internet address.

Top-Level Domain Servers

1 **After studying the page on the left, cover it and try this test. You have to choose the right answer for each question.**

1. A domain name system...
   a. is a synonym of IP address.
   b. is just one for every computer.
   c. can be associated to many IPs.
   d. is just one of the many domain names that a computer with an IP can have.

2. A DNS is...
   a. an unlimited string of letters.
   b. a sequence of 255 numbers.
   c. a string of 255 characters maximum.
   d. the same as an IP address.

3. Resolving a domain name means...
   a. translating an IP address into a domain name.
   b. translating a domain name into an IP address.
   c. translating IP addresses into host names.
   d. translating IP addresses into site names.

4. A domain name does not...
   a. help users find their way in the Internet.
   b. assign names to organisations.
   c. have dots.
   d. have a hierarchy.

5. A domain name...
   a. can be purchased from a registrar.
   b. has a top-level domain on the left.
   c. has a sub-domain on the right.
   d. has no top-level domain.

6. DNS...
   a. is a hierarchical level of servers.
   b. is a hierarchical level of DNS servers.
   c. has root name servers at the bottom of the hierarchy.
   d. has only one DNS root name server.

7. TLD means...
   a. Transmission level domain
   b. Top level domain
   c. Top location domain
   d. Tree level domain

8. A host name...
   a. is also called site name.
   b. is a domain name associated to a single IP address.
   c. is the right part of an Internet address.
   d. is a root name server.

ACTIVITIES