ST. LAWRENCE HIGH SCHOOL
A JESUIT CHRISTIAN MINORITY INSTITUTION

STUDY MATERIAL – 10
TOPIC – NETWORKING

SUBJECT: COMPUTER APPLICATION

CLASS: XII
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Domain Name System (DNS)

❑ It is difficult to remember the IP address of a computer.

❑ To overcome this problem, alphanumeric names called domain names are used in place of IP address to communicate with computers.

❑ A special computer called domain name server is used to translate and alphanumeric domain name like, www.abc.com to its corresponding IP address before it is used.

❑ Domain name system is a hierarchical structure.

❖ **Parts of a domain name:**

❑ **Root domain:** In the hierarchical structure root domain is represented by a dot (.)

❑ **Top level domain:** top level domain is situated below the root Domain. This is the right most part of a domain name.

There are two types of top level domain extensions.

✓ **Generic:** This type usually indicates the purpose of an organisation

e.g. **com** for commercial organisation,

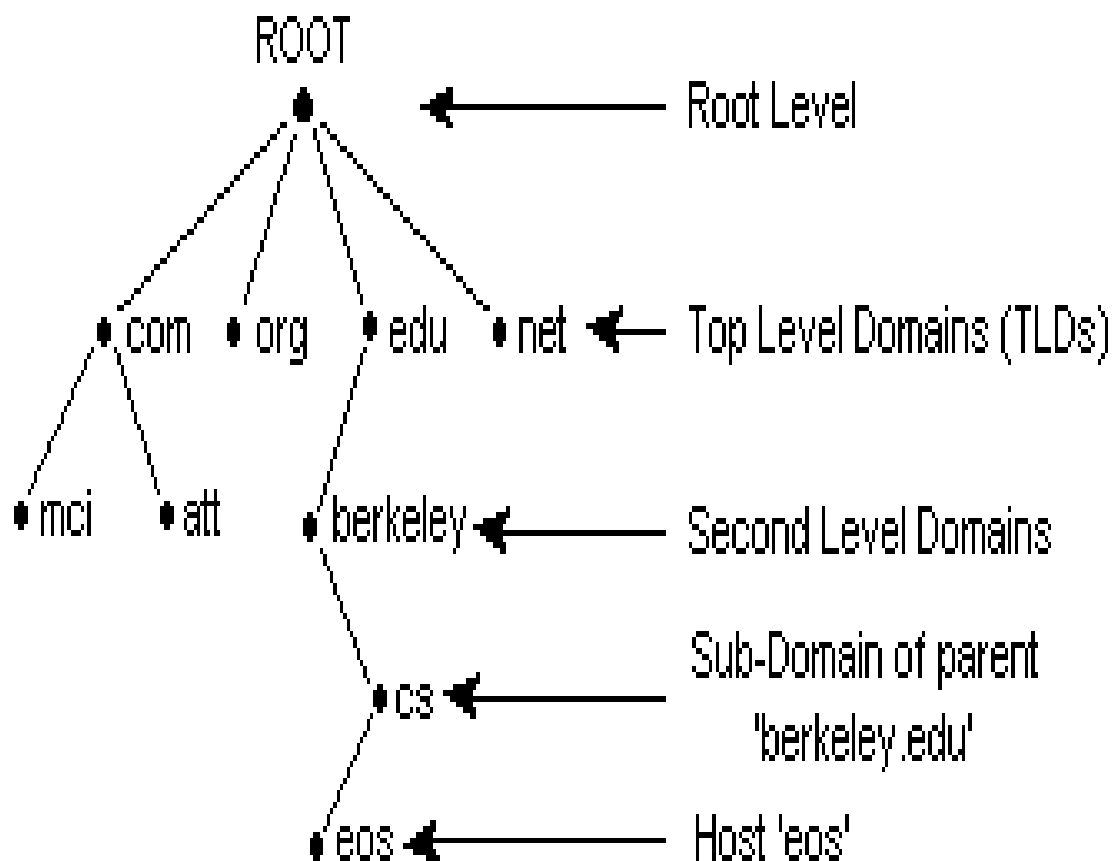**org** for other non profit organisations, edu for educational organisations.

✓ **Country:** These are used to specify the country where the server is located. e.g. in for India,

uk for United Kingdom, **ru** for Russia.

❑**Second level domain:** This is the middle section of a domain name and indicates a unique name for an organisation. google.com and facebook.com are both commercial organisations but differ from each other by their second level domain names google and facebook.

❑ **Third level domain:** This fully optional section is used to identify closely related divisions of an organisation. They may be added at the very beginning of a domain name. Example: finance.yahoo.com

DNS Hierarchy

ROOT

Root Level

com · org · edu · net — Top Level Domains (TLDs)

mci · att · berkeley — Second Level Domains

cs — Sub-Domain of parent 'berkeley.edu'

eos — Host 'eos'

❖ Working of DNS:

❑ Computers can work only with IP addresses.

❑ To access a computer in a network using domain names, first domain name is to be translated to the corresponding IP address.

❑ To do that, an application program contact the DNS server and send the request to translate the domain name.

❑ The DNS server contains a list of all computer names along with their IP addresses.

❑ The server looks up in its list and returns the correct IP address to the application.

❑ The application program finally connects to the desired computer using IP address received from the DNS server.

URL(Uniform Resource Locator)

❑ A uniform resource locator (URL) is the address of a resource on the Internet. A URL indicates the location of a resource as well as the protocol used to access it.

❑ A URL contains the following information:

✓ The protocol used to access the resource

✓ The location of the server (whether by IP address or domain name)

- ✓ The port number on the server (optional)

- ✓ The location of the resource in the directory structure of the server

- ✓ A fragment identifier (optional)

❑ When a user enters the URL of a Web site onto the browser bar, the browser extracts the domain name from the URL and connects to the DNS server of the ISP. The DNS server then translates the domain name into the IP address and connects to the desired website. The particular scheme is then used to retrieve the file from the given path. The general form of an URL is:

Scheme://domain name of server/full path of file

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