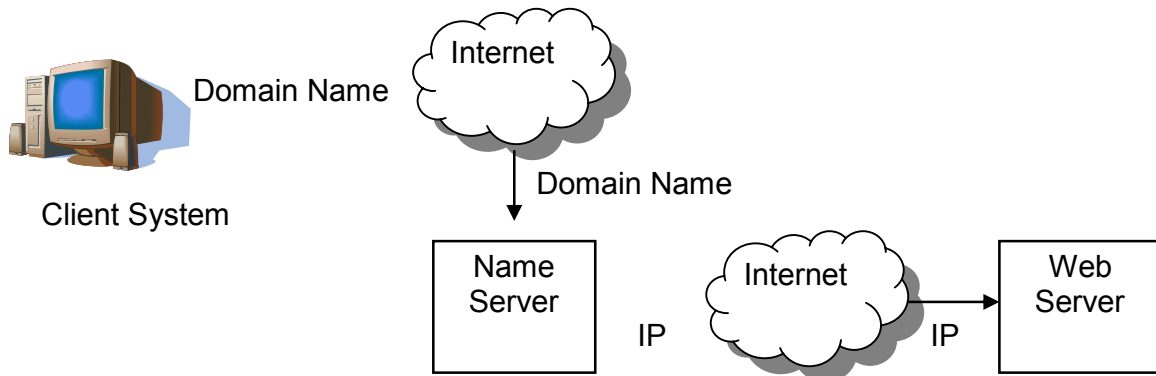


# F Q O C K ' P C O G ' E Q P X G T U K Q P



**Fig. Domain Name Conversion**

IP addresses are the address used internally by the Internet, the fully qualified domain name of the destination for a message, which is given browser, must be converted to an IP address before the message can be transmitted on the internet to the destination. These conversions are done by system software called Name Servers.

Name Servers server a collection of machines on the Internet and are operated by organizations that are responsible for the part of the Internet to which those machines are connected.

All documents requested from the browsers are routed to the nearest name server. If the name server can convert the fully qualified domain name to an IP address. If it cannot , the name server sends the fully qualified domain name to another name server for conversion.

The figure 1 shows how fully qualified domain names requested by a browser are translated into IPs before they are routed to the appropriate web server.

One way to determine the IP address of the website by using telnet.

If we want to know the IP address of [www. Google.co.in](http://www.google.co.in), go to Dos prompt and type telnet [www.google.co.in](http://www.google.co.in)

PROTOCOLS

By the mid – 198s, a collection of different protocols that run on top of TCP/IP had been developed to support a variety of Internet users. Among those the most common were telnet, ftp, usenet, mailto

Uses:

- telnet – which was developed to allow a user on one computer on the Internet to log on to and use another computer on the Internet.[Remote Login]
- ftp[file transfer protocol] - which was developed to transfer file among computers on the Internet.
- usenet – Which was developed to serve as an electronic bulletin board.
- mailto – which was developed to allow messages to be sent from the user of one computer on the Internet to other users on other computer on the Internet.

Client and Server

- Clients and Servers are programs that communicate with each other over the Internet
- A Server runs continuously, waiting to be contacted by a Client
  - Each Server provides certain services
  - Services include providing web pages
- A Client will send a message to a Server requesting the service provided by that server
  - The client will usually provide some information, parameters, with the request

## 1.2 The World-Wide Web

- A possible solution to the proliferation of different protocols being used on the Internet

### 1.2.1 Origins

- Tim Berners-Lee at CERN proposed the Web in 1989
  - Purpose: to allow scientists to have access to many databases of scientific work through their own computers
- Document form: hypertext
- Pages? Documents? Resources?
  - We'll call them documents
- Hypermedia – more than just text – images, sound, etc.

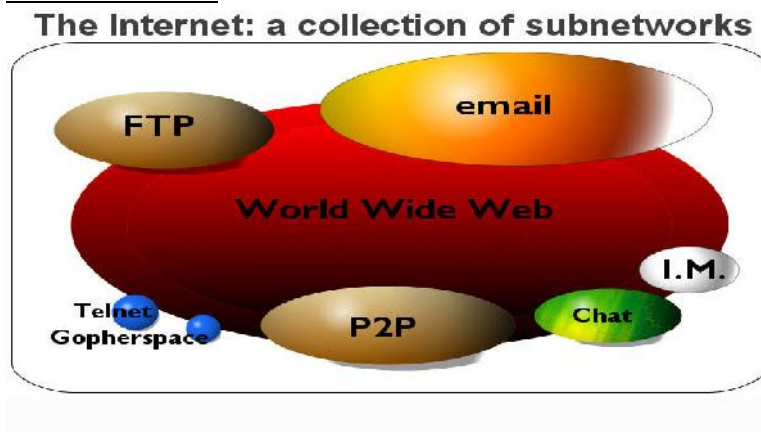
### 1.2.2 Web or Internet?

- The Web uses one of the protocols, http, that runs on the Internet--there are several others (telnet, mailto, etc.)
- The Internet is a massive network of networks, a networking infrastructure. It connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both

connected to the Internet. Information that travels over the Internet does so via a variety of languages known as protocols.

- The World Wide Web, or simply Web, is a way of accessing information over the medium of the Internet. The Web uses the HTTP protocol. The Web also utilizes browsers, such as Internet Explorer or Firefox, to access Web documents called Web pages that are linked to each other via hyperlinks. Web documents also contain graphics, sounds, text and video.
- The Internet is the large container, and the Web is a part within the container.
- But to be technically precise, the Net is the restaurant, and the Web is the most popular dish on the menu.
- Browsers are used to connect to the www part of the internet.

Here is a conceptual diagram of the Internet and how it contains many forms of online communications



The Internet and the Web work together, but they are not the same thing. The Internet provides the underlying structure, and the Web utilizes that structure to offer content, documents, multimedia, etc.

The Internet is at its most basic definition an electronic communications network. It is the structure on which the World Wide Web is based.

### 1.3 Web Browsers

- Browsers are clients - always initiate, servers react (although sometimes servers require responses)
- Mosaic - NCSA (Univ. of Illinois), in early 1993
  - First to use a GUI, led to explosion of Web use
  - Initially for X-Windows, under UNIX, but was ported to other platforms by late 1993
- Most requests are for existing documents, using HyperText Transfer Protocol (HTTP)
  - But some requests are for program execution, with the output being returned as a document