Assignment # 1

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# **Name Nida Mubarak**

# **Institute KICSUET**

Table of Content:

01 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - What is a Protocol?

02 - - - - - - - - - - - - - - - - - - - - - - - - - - - - -What is a URL?

03 - - - - - - - - - - - - - - - - - - - - - - - - - - - - -Difference between http and https

04 - - - - - - - - - - - - - - - - - - - - - - - - - - - - -What is a Domain?

05 - - - - - - - - - - - - - - - - - - - - - - - - - - - - -Web Hosting

06 - - - - - - - - - - - - - - - - - - - - - - - - - - - - -What is an IP address

07 - - - - - - - - - - - - - - - - - - - - - - - - - - - - -Static and dynamic IP addresses

08 - - - - - - - - - - - - - - - - - - - - - - - - - - - - -Mac address

09 - - - - - - - - - - - - - - - - - - - - - - - - - - - - -IP configuration

**What is Protocol?**

A protocol is a standard set of rules that allow electronic devices to communicate with each other. We can think of protocol as a spoken language. When two people share same language they can communicate with each other, just like that devices can communicate if they support the same protocol.

**What is a URL?**

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 a 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)

All URLs are presented in the following order:  
Scheme name

* Colon and two slashes
* Location of the server
* The port (optional) and the location of the resource on the server
* Fragment identifier (optional)

So, the format will look like this:

http://www.google.com/default.htm  
https://www.google.com/default.htm

Both these URLs indicate that there is a file named default.htm on a server with the address of "google.com". One uses regular HTTP, while the other uses a secure version of this scheme.

**Difference between HTTP and HTTPS**

**HTTP HTTPS**

In HTTP, URL begins with “http:/ ”   URL starts with “ [https://](NULL) ”

Uses port number 80 for communication uses port number 443

Unsecure Secure

Works at Application Layer Works at Transport Layer

Non-encrypted Encrypted

No certificate required SSL certificate required

**What is a Domain?**

A domain name is your website name. A domain name is the address where Internet users can access your website. A domain name is used for finding and identifying computers on the Internet. Computers use IP addresses, which are a series of number. However, it is difficult for humans to remember strings of numbers. Because of this, domain names were developed and used to identify entities on the Internet rather than using IP addresses.

**Web Hosting:**

A web hosting is a computer where people store their websites. Think of it as a house where you store all your stuffs; but instead of storing your clothes and furniture, you store computer files (HTML, documents, images, videos, etc) in a web host.

More often than not, the term “web hosting” refers to the company that rent out their computer/servers to store your website and provide Internet connectivity so that other users can access to the files on your website.

For most cases, these hosting companies will handle server maintenance work, such as backup, root configuration, maintenance, disaster recoveries, and so on.

Web hosting companies: [InMotion Hosting](https://www.webhostingsecretrevealed.net/go/inmotion-business" \t "_blank), [SiteGround](https://www.webhostingsecretrevealed.net/go/siteground" \t "_blank), [A2 Hosting](https://www.webhostingsecretrevealed.net/go/a2hosting).

**Companies giving out free (or almost free) domains**

Web hosting: [InMotion Hosting](https://www.webhostingsecretrevealed.net/go/inmotion-business) (free domain for 1 year), [GreenGeeks](https://www.webhostingsecretrevealed.net/go/greengeeks" \t "_blank) (free domain for 1 year), [Hostgator](https://www.webhostingsecretrevealed.net/go/hostgator" \t "_blank) (domain cost at $0.01 for 1 year).

**What is an IP address?**

An IP address, short for Internet Protocol address, is an identifying number for network [hardware](https://www.lifewire.com/computer-hardware-2625895) connected to a network. Having an [IP address](https://www.lifewire.com/what-is-the-ip-address-of-facebook-818152) allows a device to communicate with other devices over an IP-based network like the internet.

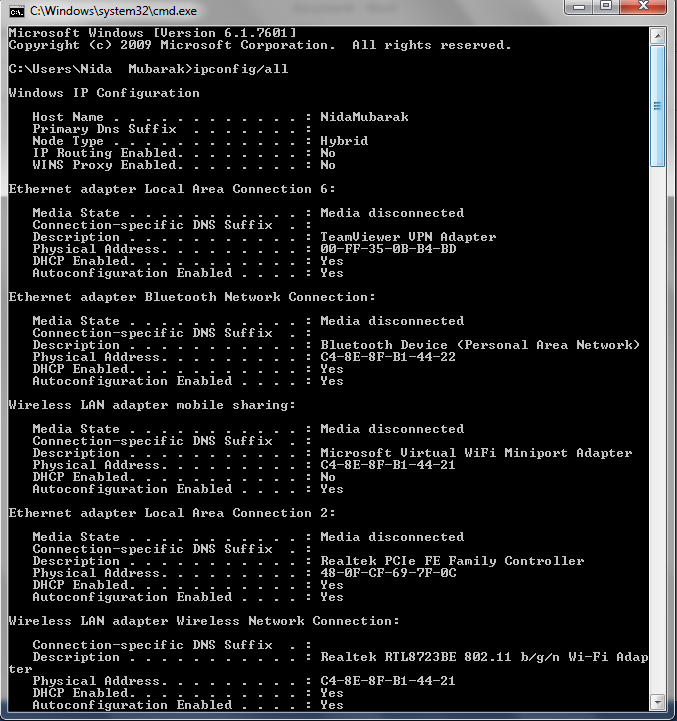
**Static and Dynamic IP addresses:**

An IP address that is assigned by a [DHCP](https://www.lifewire.com/what-is-dhcp-2625848) server is a dynamic IP address. If a device doesn't have DHCP enabled or doesn't support DHCP, then the IP address must be assigned manually, in which case it's called a static IP address.

**Mac address:**

A MAC address is a hardware identification number that uniquely identifies each device on a network. The MAC address is manufactured into every network card, such as an [Ethernet](https://techterms.com/definition/ethernet) card or [Wi-Fi](https://techterms.com/definition/wi-fi) card, and therefore cannot be changed.

**IP config:**

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