Ethical Hacking

Module -1

- **Difference between hardware and software.**

Hardware

Hardware is the physical part of the system

It is manufactured.

Hardware cannot perform any task without software.

Electronic and other materials are used to create hardware.

Hardware is tangible as hardware is a physical electronic device, that can be touched.

Hardware typically wears out over time.

Only machine-level language is known to be understood by hardware.

If the hardware is damaged, it is replaced with a new one.

Dust, overheating, humidity, and other factors are commonly responsible for hardware failures.

It cannot be transferred from one place to another electrically through the network.

Hardware is not affected by computer viruses.

Ex: Keyboard, Mouse, Monitor, Printer, CPU, Hard Disk, RAM, ROM, etc.

Software

Software is the set of the instruction which tells the computer what to do.

It is developed.

The software cannot be executed without any hardware

Created by utilizing a computer language to write instructions.

Software is intangible as we can see and also use the software but can’t touch them.

The program accepts human-readable input, interprets it in machine-level language, and sends it to hardware for additional processing.

If the software is damaged, its backup copy can be reinstalled.

Overloading, systematic error, major-minor version error, and other factors are commonly responsible for software failures.

It can be transferred via a network means.

Software is affected by computer viruses.

Ex: MS word, Power Point, Excel, 3Ds Max etc.

- **Define IP address range and private address range.**

IP addresses are expressed as a set of four numbers — an example address might be 192.158.1.38. Each number in the set can range from 0 to 255. So, the full IP addressing range goes from 0.0.0.0 to 255.255.255.255.

private address range: -

The Internet Assigned Numbers Authority (IANA) has assigned several address ranges to be used by private networks.

Address ranges to be use by private networks are:

- Class A: 10.0.0.0 to 10.255.255.255
- Class B: 172.16.0.0 to 172.31.255.255
- Class C: 192.168.0.0 to 192.168.255.255

An IP address within these ranges is therefore considered non-routable, as it is not unique. Any private network that needs to use IP addresses internally can use any address within these ranges without any coordination with IANA or an Internet registry. Addresses within this private address space are only unique within a given private network.

All addresses outside these ranges are considered public.

- **Explain Network protocol and Port number.**

Network protocol: -

A network protocol is an established set of rules that determine how data is transmitted between different devices in the same network. Essentially, it allows connected devices to communicate with each other, regardless of any differences in their internal processes, structure or design.

Port number: -

A port number is a way to identify a specific process to which an internet or other network message is to be forwarded when it arrives at a server. All network-connected devices come equipped with standardized ports that have an assigned number.

- **Explain Types of Network Device.**

  - ✓ Here is the common network device list:
  - ✓ -Hub
  - ✓ -Switch
  - ✓ -Router
  - ✓ -Bridge
  - ✓ -Gateway
  - ✓ -Modem
  - ✓ -Repeater
  - ✓ -Access Point