

# Network Programming Assignment

## Q1. How firewall helps to secure P.C.?

**Ans** A firewall is a system designed to prevent unauthorised access to or from a private computer network. Firewalls are frequently used to prevent unauthorised Internet users from accessing private networks connected to the Internet.

Firewalls carefully analyze incoming traffic based on pre-established rules and filter traffic coming from unsecured or suspicious sources to prevent attacks. Firewalls guard traffic at a computer's entry point, called ports, which is where information is exchanged with external devices.

For example, "Source address 172.18.1.1 is allowed to reach destination 172.18.2.1 over port 22."

## Type of Firewall:

There are two types of firewalls: software and hardware.

1. **Hardware firewalls** are built into network devices such as routers and can protect every single machine on a network and require little configuration to work effectively. They use packet filtering techniques to examine the header of a packet, determining its source and destination and then, comparing the data to a set of predefined rules, they decide whether to drop the packet or forward it to the next step or to its destination.

2. **Software firewalls** are the most popular network protection method for home users. They usually come as stand-alone applications or as part of a complete anti virus protection software. Besides providing protection for inbound and outbound traffic, a software firewall can also protect against Trojan or Worm applications and allows various options of control over its functions and features.

**Q2. If you are a system admin, what precautions/steps you will take to secure it?**

**Ans** I will take following steps to secure my pc from various viruses and malwares:

**1. Use a Firewall:** A firewall is a piece of software or hardware that sits between your computer and the internet and only allows certain types of data to cross. For example, a firewall may allow checking email and browsing the web, but disallow things like Windows file sharing.

A firewall is the first step to provide security to the computer. It creates a barrier between the computer and any unauthorized program trying to come in through the Internet. If you are using a system at home, turn on the firewall permanently. It makes you aware if there are any unauthorized efforts to use your system.

**2. Install Antivirus Software:** Antivirus is a type of computer program that's designed to seek out and remove computer viruses that have infected your computer. They can also block your system from getting infected with new viruses.

There are antivirus programs available for every operating system, including Windows, Mac OS, Android, iPhone, and even Linux.

**3. Always install Operating System updates:** In order for your computer to operate smoothly and safely it is imperative that all users install updates, especially security updates, as they are released. By not installing these updates you leave your computer at risk from remote users hacking into them or viruses exploiting these bugs to gain access to your computer.

**4. Do not use the same password at every site:** It has now become common to hear about a company who was hacked and the hacker was able to access the company members email addresses and passwords. If you use the same password at every site, and one of those sites was hacked, the hacker now has your account information everywhere that you have an account. They can now login to your email, see what other accounts you have, banks that you use, etc and gather even more private information about you.

5. **Backup the Data:** Backing up your data is not necessarily a way of keeping your computer safe, but it is a way of keeping your data safe. As you use your computer there may come a time that you cannot find a document or your hard drive fails.

Both Windows and MacOS have free built in backup software so Be sure to use them to protect your data. In Windows, we can use Windows Backup program and Macs have the Time Machine program.

6. **Check on the Security Settings of the Browser:** Browsers have various security and privacy settings that you should review and set to the level you desire. Recent browsers give you ability to tell web sites to not track your movements, increasing your privacy and security.

So these are some preventive measure that we can take to secure our PC.