Cyber security is the practice of defending computer systems by filtering outgoing and incoming traffic with the help of firewalls. A firewall is a cyber security tool that blocks malicious and unknown software from infecting our systems with viruses. In short, the purpose of a firewall is to secure the system from communicating with unwanted networks while making the remaining functions run smoothly. Firewalls provide different types and levels of protection based on the sort of security our system needs.

**How does Firewall help in Cyber Security?**

For Cyber Security, a firewall analyses the network traffic and only accepts the connections configured to accept by blocking or allowing some specific data packets of communication you send over digital networks based on pre-defined security rules. A firewall works like a traffic warden at the entry point of our system. Only the trusted IP addresses can come in. An IP address comes in either 32-bit (IPv4) number or a 128-bit (IPv6) number, and the combination identifies the source computer just like our postal address. In Cyber security, firewalls can help by monitoring and regulating network traffic in several ways:

* **Packet filtering:** In this method, data packets enter the network after going through a group of filters. During this process, malicious data packets stay behind while the healthy data packets reach the destination.
* **Stateful inspection:** It is a new method of firewall filtering where filters examine different parts of data packets such as source and destination ports, IP addresses, and applications and compare them to the database of trusted information. Incoming packets must fulfill every condition to be allowed in.
* **Proxy service:** These firewalls are highly secured, but they are slower than other firewalls. In this technique, a system clone is created behind the firewall to prevent the direct connection between the system and incoming packets.

Our operating systems come with a pre-installed firewall like Windows Defender because our home network is not secured at all. To use the system firewall, we must make sure that all the necessary features are on and the security settings are in sync with the system updates. So that every time there is a new update, our system automatically scans everything. Other than this, we must make sure that our internet devices have the latest Operating System, security software, and web browsers for Cyber Security. Another thing we can do is to protect our wireless router by changing the default name and password from the manufacturer and setting up a guest network for guests.