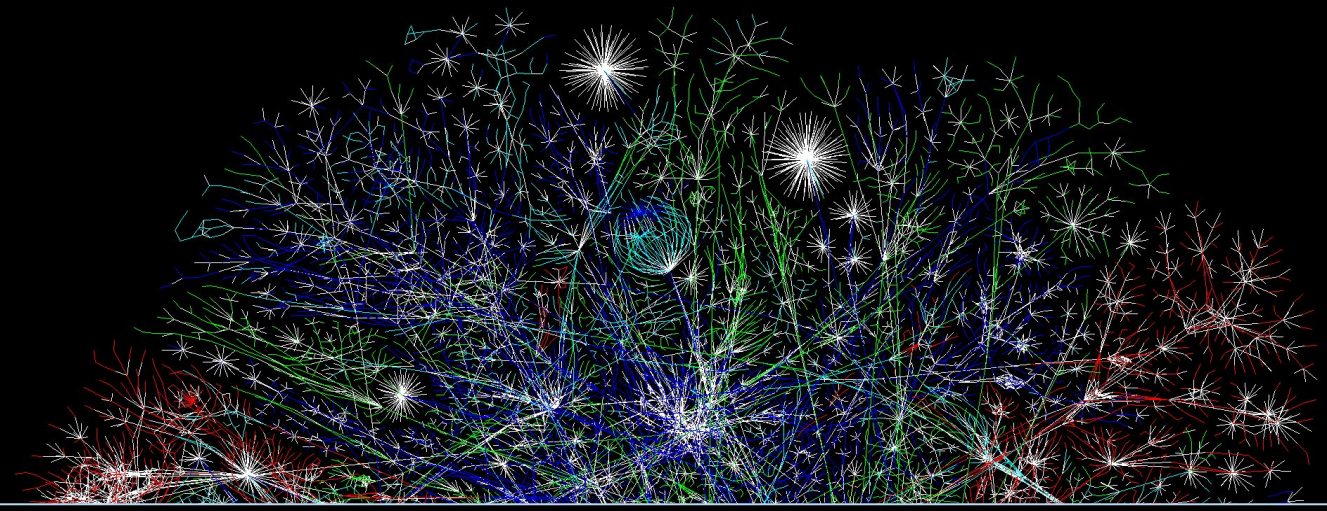
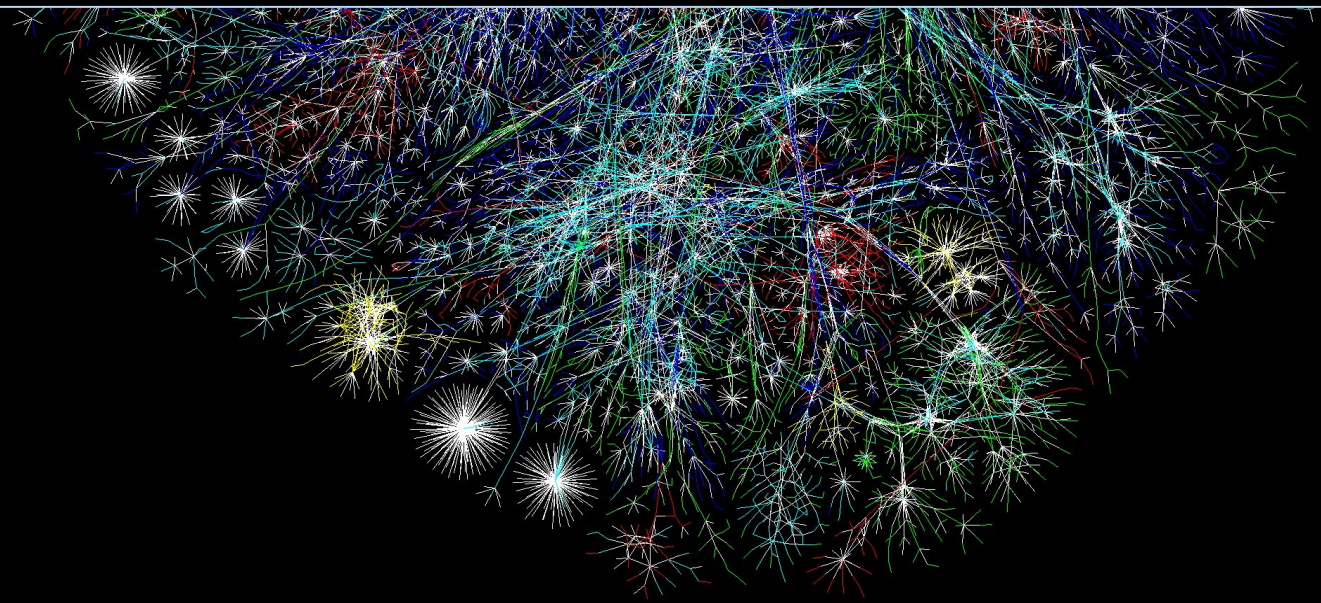
Internet



What is Internet?



The term Internet stands for Interconnected Networks

There are millions of computers connected around the world via telephone lines or wireless medium of communication

www.InformationQ.com

The Internet

- Internet is a network of interconnected computers that is now global
- Internet (1969) - called ARPANET (Advanced Research Projects Agency) backbone of the Internet
- **ARPANET** was the first computer network that became the foundation of the modern internet

The Internet

- The popular term for the Internet is the

  “Information Highway”

- Rather than moving through geographical space, it moves your ideas and information through cyberspace – the space of electronic movement of ideas and information


WWW
World Wide Web

WORLD WIDE WEB

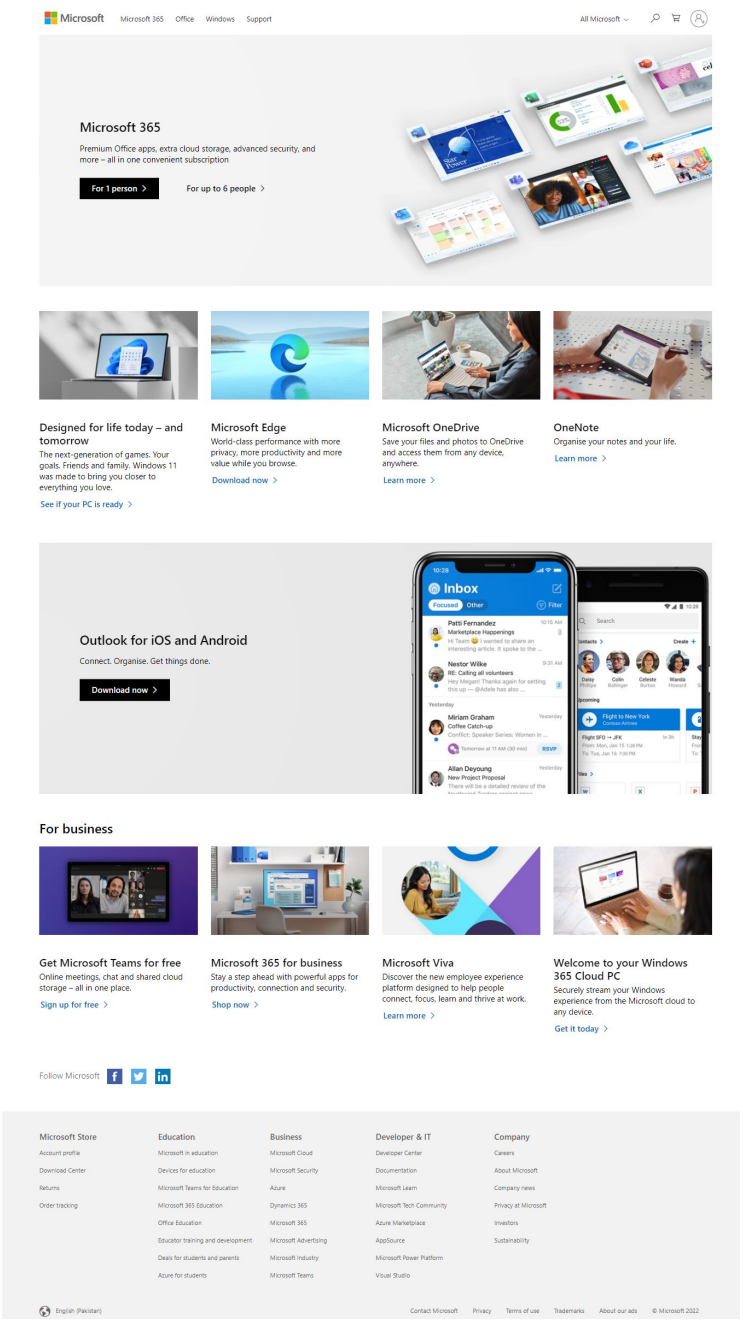
- The **Web (World Wide Web)** consists of information organized into Web pages containing text and graphic images

- It contains hypertext links, or highlighted keywords and images that lead to related information

WORLD WIDE WEB

A collection of linked Web pages that has a common theme or focus is called a **Web site**

The main page that all of the pages on a particular Web site are organized around and link back to is called the site's **Home page**

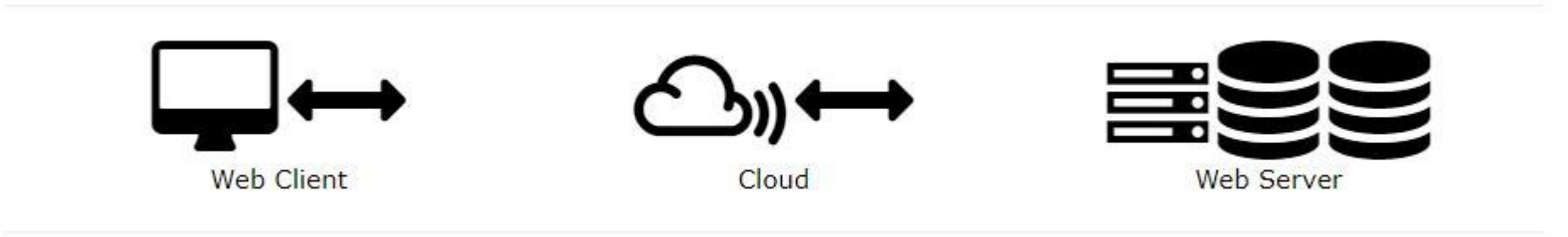


WORLD WIDE WEB

The World Wide Web is about communication between web clients and web servers

Clients are often browsers (Chrome, Edge, Safari), but they can be any type of program or device such as mobile apps

Servers are computers that store, process, and deliver web pages or resources to clients when requested



- Web server handles requests via protocols like **HTTP (Hypertext Transfer Protocol)**
- WWW is about communication between web **clients** and **servers**
- This communication is done by sending **HTTP Requests** and receiving **HTTP Responses**

- **HTTPS (Hypertext Transfer Protocol Secure)**
- Making communication between the browser and server secure and protected from unauthorized access
- **HTTP:** http://www.example.com – The connection is not encrypted. Data is transferred in plain text
- **HTTPS:** https://www.example.com – The connection is encrypted, providing a secure communication channel

Communication Process
HTTP Request / Response

- A client (a browser) sends an HTTP request to the web server by typing a URL into the address bar or clicking a link
- A web server receives the request
- The server runs an application to process the request
- The server returns an HTTP response (output) to the browser
- The client (the browser) receives the response

How to access the Web?

Many schools and businesses have direct access to the Internet using special high-speed communication lines and equipment

Students and employees can access through the organization’s local area networks (LAN) or through their own personal computers

Another way to access the Internet is through Internet Service Provider (ISP)

Internet Service Provider (ISP)

Internet service provider (ISP), company that provides Internet connections and services to individuals and organizations

Examples:

Nayatel (Pvt) Ltd , Wi-tribe, PTCL, WATEEN Telecom etc.

Web Browsers

Web browsers are used to connect you to remote computers, open and transfer files, display text and images

Once you have your Internet connection, then you need special software called a browser to access the Web

Examples of Web browser: Google Chrome and Internet Explorer.

Hypertext Markup Language (HTML)

- The public files on the web servers are ordinary text files, much like the files used by word-processing software
- To allow Web browser software to read them, the text must be formatted according to a generally accepted standard
- The standard used on the web is Hypertext markup language (HTML)

Hypertext Markup Language (HTML)

- Standard language used to create web pages. It structures the content on the page by defining elements such as headings, paragraphs, links, images, and many more

- When a web browser requests a web page from a server, the server sends back the HTML file, and the browser reads the HTML code to display the content properly

Addresses on the Web: IP Addressing

- Each computer on the internet does have a unique identification number, called an IP (Internet Protocol) address
- Most widely used system for identifying devices on the internet
- The IP addressing system currently in use on the Internet uses a four-part number
- For example, 172.16.100.104
- Each part of the address is a number ranging from 0 to 255, and each part is separated from the previous part by period (.)

Addresses on the Web: IP Addressing

- Your computer might have an IP address of 192.168.1.5
- When you visit a website, like www.example.com, your browser sends a request to the website's server, which also has an IP address (e.g., 93.184.216.34)
- Data is then exchanged between your device and the website's server using these IP addresses to route the information properly

Domain Name Addressing

- Most web browsers do not use the IP address to locate Web sites and individual pages
- They use domain name addressing
- A **domain name** is a unique name associated with a specific IP address by a program that runs on an Internet host computer
- This program, which maps the IP addresses and domain names for all computers attached to it, is called **DNS (Domain Name System) software**
- The host computer that runs this software is called a **domain name server**

Uniform Resource Locator

http://isb.nu.edu.pk/Download/Form/AffidavitHealthDeclaration.pdf

http://
identifies
type
of transfer

isb.nu.edu.pk

Domain Name -
name of remote computer

Download/Form/AffidavitHealthDeclaration.pdf
File Location on Remote Computer

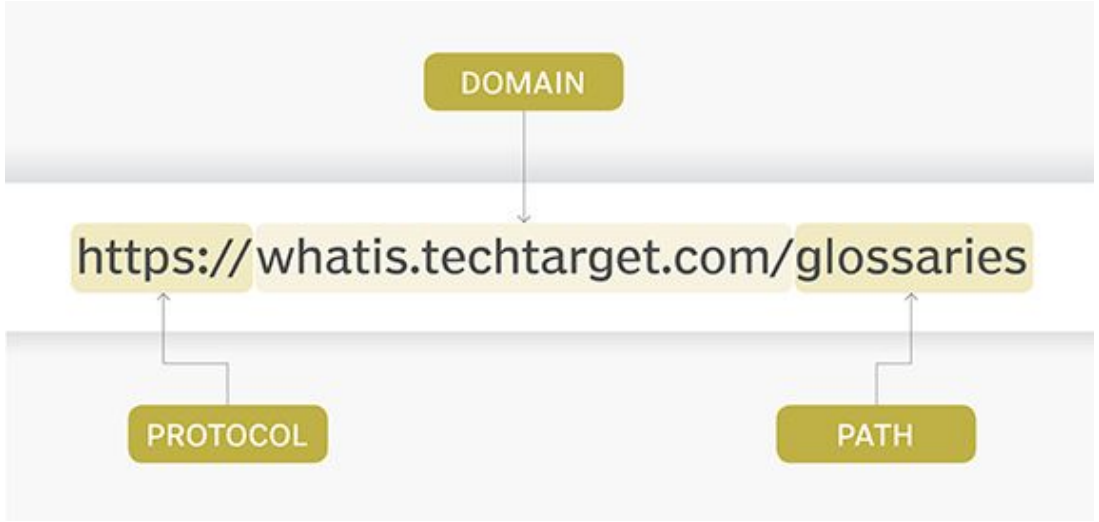
Uniform Resource Locator (URL)

- The IP address and the domain name each identify a particular computer on the Internet
- However, they do not indicate where a Web page's HTML document resides on that computer
- To identify a Web pages exact location, Web browsers rely on Uniform Resource Locator (URL)

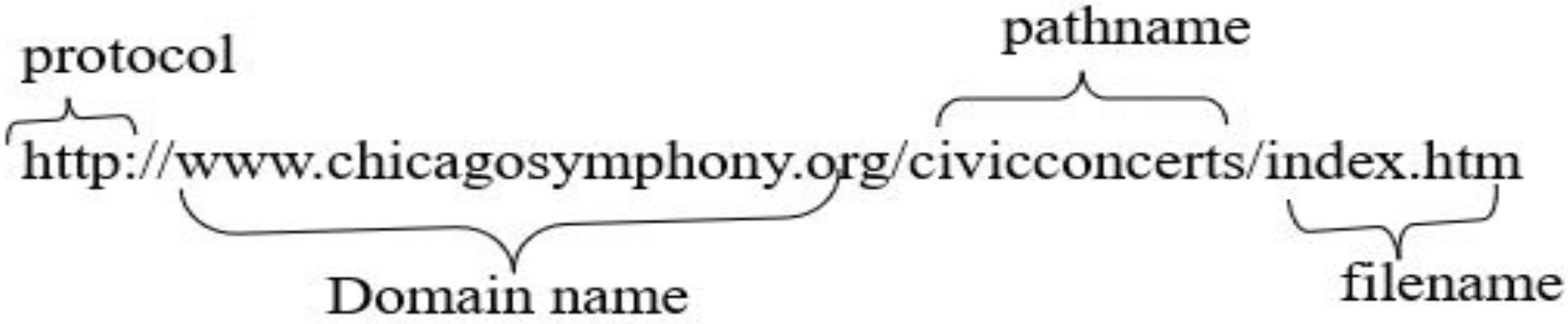
Uniform Resource Locators

URL is a four-part addressing scheme that tells the Web browser:

- What **transfer protocol** to use for transporting the file
- The **domain name** of the computer on which the file resides
- The **pathname** of the folder or directory on the computer on which the file resides
- The **name of the file**



URL-Example



http => Hypertext Transfer Protocol

How to find information on the Web?

A number of search tools have been developed and available to you on certain Web sites that provide search services to help you find information

Examples:

- Yahoo www.yahoo.com
- Google www.google.com
- Excite www.excite.com
- Lycos www.lycos.com
- AltaVista www.alta-vista.com
- MSN Web Search (Bing) www.search.msn.com

How to find information on the Web?

You can find information by two basic means

Search by Topic and Search by keywords

Some search services offer both methods

Yahoo offers both

- ❑ Search by Topic

You can navigate through topic lists

- ❑ Search by keywords

You can navigate by entering a keyword or phase into a search text box.

GOOGLE SEARCH

- Google Search, or simply Google, is a web search engine developed by Google LLC
- It is the most used search engine on the World Wide Web across all platforms, with 92.62% market share as of June 2019
- handling more than 8.5 billion searches per day
- Available in 149 languages

How to search on Google

Few Tips on How to efficiently use the google search engine

1. Start with the basics

- No matter what you're looking for, start with a simple search like **where's the closest airport?**

- You can always add a few descriptive words if necessary

- If you're looking for a place or product in a specific location, add the location. For example, **bakery in Seattle**

2. Search using your voice

Tired of typing?

To search with your voice, say "Ok Google" or select the Microphone . Learn more about how to search with your voice.

3. Choose words carefully

- When you're deciding what words to put in the search box, try to choose words that are likely to appear on the site you're looking for

- For example, instead of saying **my head hurts**, say **headache**, because that’s the word a **medical site** would use

4. Don’t worry about the little things

- **Spelling**

Google's spell checker automatically uses the most common spelling of a given word, whether or not you spell it correctly.

- **Capitalization**

A search for **New York Times** is the same as a search for **new york times**.

5. Find quick answers

For many searches, Google will do the work for you and show an answer to your question in the search results

- **Weather:** Add a city name, like weather Seattle, to find weather for a that place.
- **Dictionary**: Put define in front of any word to see its definition
- **Calculations**: Enter a math equation like 3*9123, or solve complex graphing equations
- **Unit conversions**: Enter any conversion, like 3 dollars in euros
- **Quick facts**: Search for the name of a celebrity, location, movie, or song to find related information

Common search techniques

- ## Search social media

Put @ in front of a word to search social media. For example: @twitter.

- ## Search for a price

Put $ in front of a number. For example: camera $400.

- ## Search hashtags

Put # in front of a word. For example: #throwbackthursday

Common search techniques

- Search for an exact match

Put a word or phrase inside quotes. For example, "tallest building".

- Search within a range of numbers

Put .. between two numbers. For example, camera $50..$100.

- Combine searches

Put "OR" between each search query. For example, icecream or juice.

Common search techniques

- Exclude words from your search

Put - in front of a word you want to leave out. For example, jaguar speed -car

- Search for a specific site

Put "site:" in front of a site or domain. For example, site:youtube.com

- Search for related sites

Put "related:" in front of a web address you already know. For example, related:time.com


Computer Virus

INTRODUCTION

Virus stands for **Vital Information Resource under Siege.**

What is a virus?

In technical term, a computer virus is a computer program which replicates itself and designed in such a way to damage your computer, can steal your information (like Credit Card, Bank Details, your Facebook or gmail passwords) or can provide backdoor unauthorized access to the hackers.

A computer virus is an executable program. Depend on the nature of a virus, it may cause damage of your hard disk contents, and/or interfere normal operation of your computer.

How do viruses come to the computer?

1

Torrent files

2

Downloading programs from unsecure websites.

3

Executable files having an extension of ".com, .exe".

4

Crack files and serial key generators.

5

Email, USB

WAYS IN WHICH VIRUSES COULD INFECT YOUR DEVICE

SPAM EMAILS

INSTANT MESSAGING

FILE-SHARING SERVICES

FAKE ANTIVIRUS DOWNLOADS

UNPATCHED SOFTWARE

INFECTED HARDWARE

SYMPTOMS OF YOUR DEVICE BEING INFECTED BY A COMPUTER VIRUS

SLOW PERFORMANCE	FREEZE-UPS AND CRASHING	MISSING FILES	NEW FILES APPEAR	PROBLEMS WITH HARDWARE	COMPUTER OPERATING BY ITSELF

Types of Viruses

VIRUSES

RESIDENT VIRUS

- A resident virus is a kind of computer virus that hides and stores itself within the computer memory, which then allows it to infect any file that is run by the computer, depending on the virus' programming.
- examples: Randex , CMJ ,Meve, and Mrlunky

DIRECT ACTION VIRUS

- The virus goes into action when a specific condition is met.
- infects the files in the folder where the virus is located as well as the directories specified in the Autoexec.bat file path.
- example : Vienna virus

OVERWRITE VIRUS

- An overwriting virus is a malicious program which, after infection, will effectively destroy the original program code, typically by overwriting data in the system's memory.
- examples: Way, Trj.Reboot

VIRUSES

TROJAN HORSE

- A Trojan horse program is a file that appears harmless unless it is executed.
- A destructive program that pretends to be a useful application, but harms your computer or steals your information after it's installed.
- The name Trojan Horse has been derived from the Greek mythology.

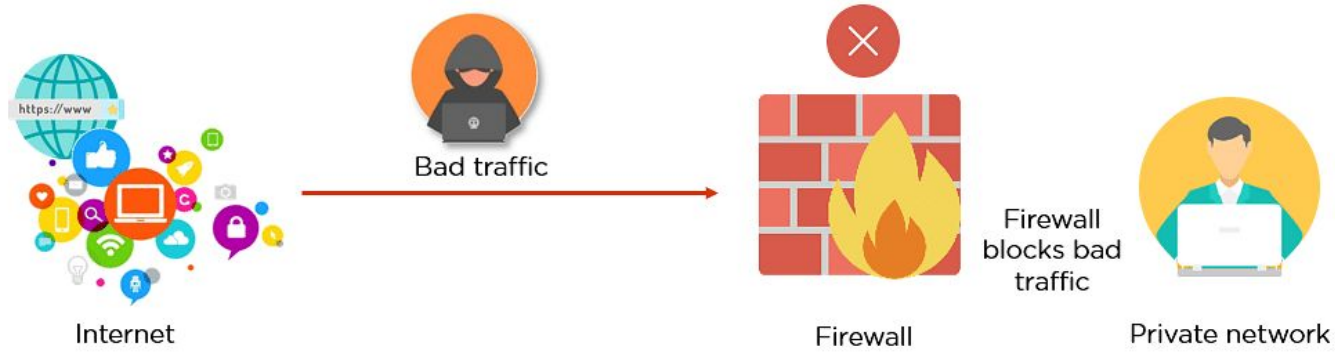
WORMS

- A computer worm is a self-replicating computer program that penetrates an operating system with the intent of spreading malicious code.
- Worms utilize networks to send copies of the original code to other computers, causing harm by consuming bandwidth or possibly deleting files or sending documents via email.

Clearly, a **virus attack** is not something that you wish you had.

How can you protect your PC against viruses?

- Use antivirus protection and a firewall
- Get antispyware software
- Always keep your antivirus protection and antispyware software up-to-date
- Update your operating system regularly
- Increase your browser security settings



- Avoid questionable Websites
- Only download software from sites you trust
- Carefully evaluate free software and file-sharing applications before downloading them
- Don't open messages from unknown senders
- Immediately delete messages you suspect to be spam