

**CSCA0101
COMPUTING BASICS**

**Chapter 9
The Internet**

CSCA0101 Computing Basics

The Internet

1. The Internet
2. Types of Network
3. What Makes Internet Works?
4. Internet Equipment
5. Internet Applications

The Internet

- A global network connecting millions of computers
- More than 100 countries are linked into exchanges of data, news and opinions.
- The Internet links are computer networks all over the world so that users can share resources and communicate with each other.



Types of Computer Network

Local Area Network (LAN)

- A LAN connects network devices over a relatively short distance.
- A networked office building, school, or home usually contains a single LAN, though sometimes one building will contain a few small LANs (perhaps one per room), and occasionally a LAN will span a group of nearby buildings.

Types of Computer Network

Metropolitan Area Network (MAN)

- A metropolitan area network(MAN) is a large computer network that usually spans a city or a large campus.
- A MAN often acts as a high speed network to allow sharing of regional resources.
- A MAN typically covers an area of between 5km and 50km diameter.
- A MAN might be owned and operated by a single organization, but it usually will be used by many individuals and organizations.

Types of Computer Network

Wide Area Network(WAN)

- WAN covers a large geographic area such as country, continent or even whole of the world.
- A WAN is a geographically-dispersed collection of LANs.
- Most WANs (like the Internet) are not owned by any one organization but rather exist under collective or distributed ownership and management.

Internet Access

- To gain access to the internet, the user has to register to any Internet Service Provider (ISP).
- Types of Internet connection:
 - Dail-up
 - Integrated services digital network
 - Asymmetric Digital Subscriber Line
 - Wireless Internet Connections
 - Internet over Satellite

Internet Access

Dial-up

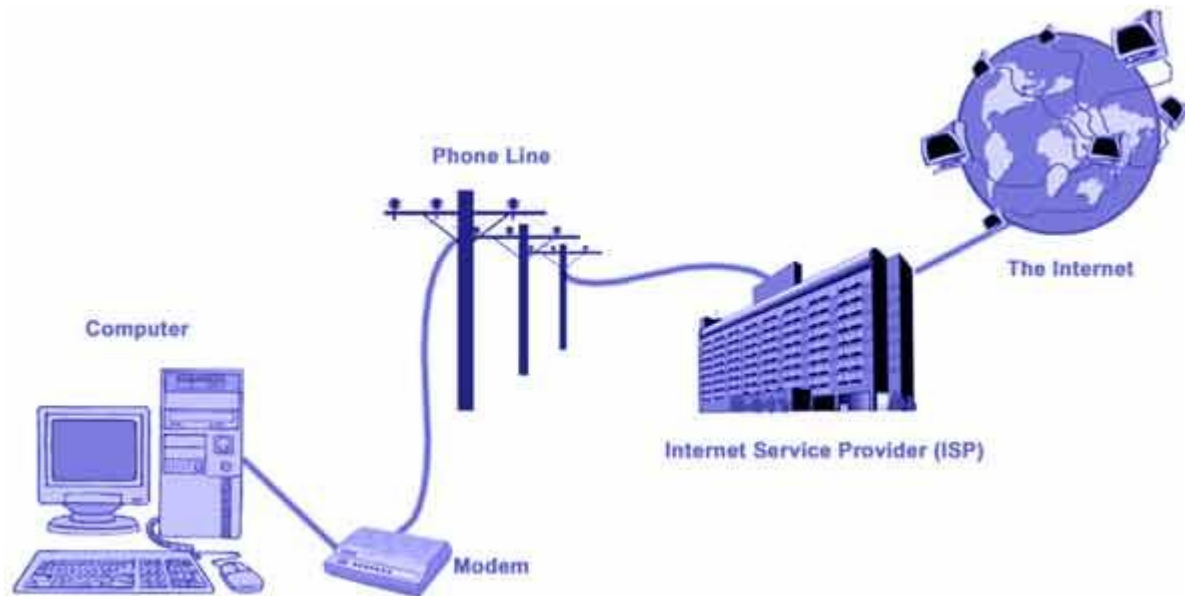
- Slower than other type of connection
- Connects through existing phone lines using dial-up modem
- Cheapest
- Must “dial-up” to connect to Internet and disconnect when done.
- Cannot use Internet and phone line at the same time.

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Internet Access

Dial-up



Internet Access

Digital Subscriber Line (DSL)

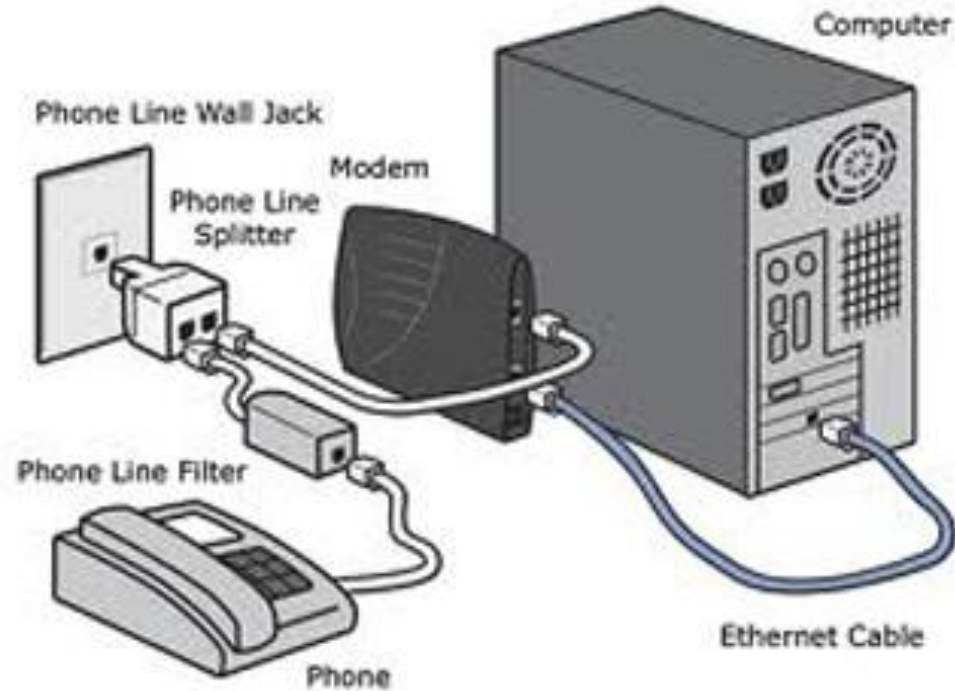
- Broadband – faster than dial-up connection
- Connects through phone lines, but does not require phone service
- Always on
- Internet and phone can be used in the same time
- Unavailable in many location

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Internet Access

Digital Subscriber Line (DSL)



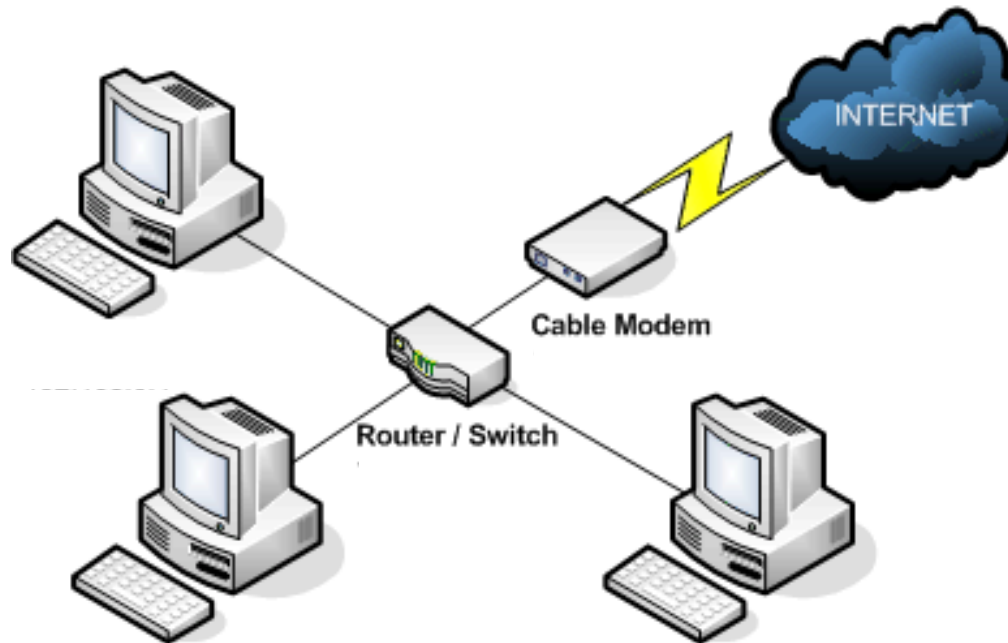
Internet Access

Cable

- Broadband – faster than dial-up and DSL
- Use cable connection
- Always on
- Only available where cable is available

Internet Access

Cable



Internet Access

Satellite

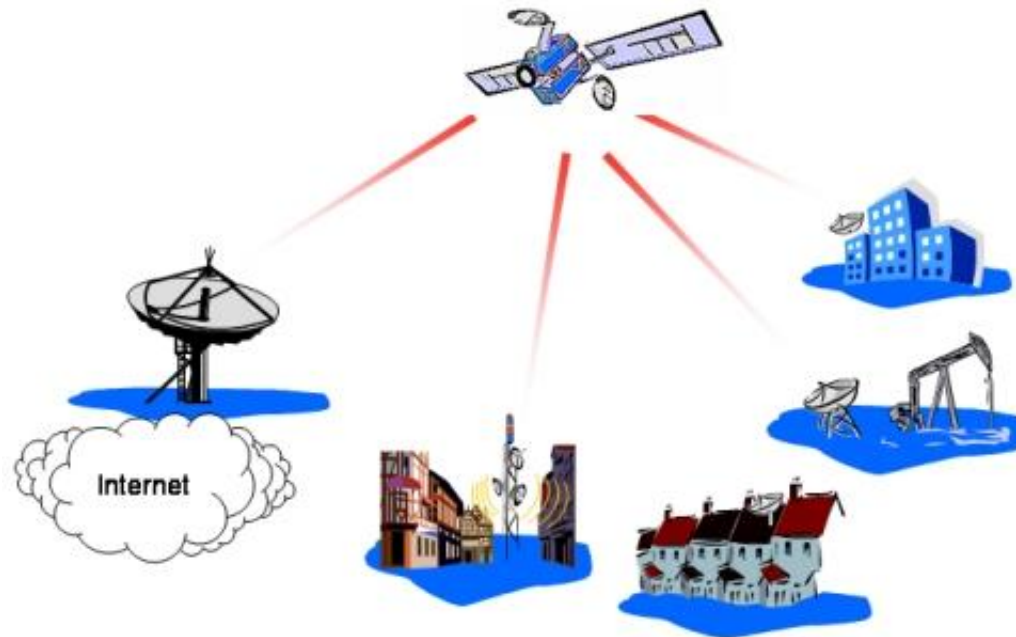
- Broadband – faster than dial-up, but data is delayed
- Connects via satellites
- Can be affected by rain and snow
- Does not require phone lines and cables
- Can be use anywhere around the world

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Internet Access

Satellite



Internet Access

3G and 4G

- Available for mobile phones, computers and tablets
- Connects wirelessly through 3G/4G provider
- Can access Internet anywhere
- Slower than DSL and Cable connection

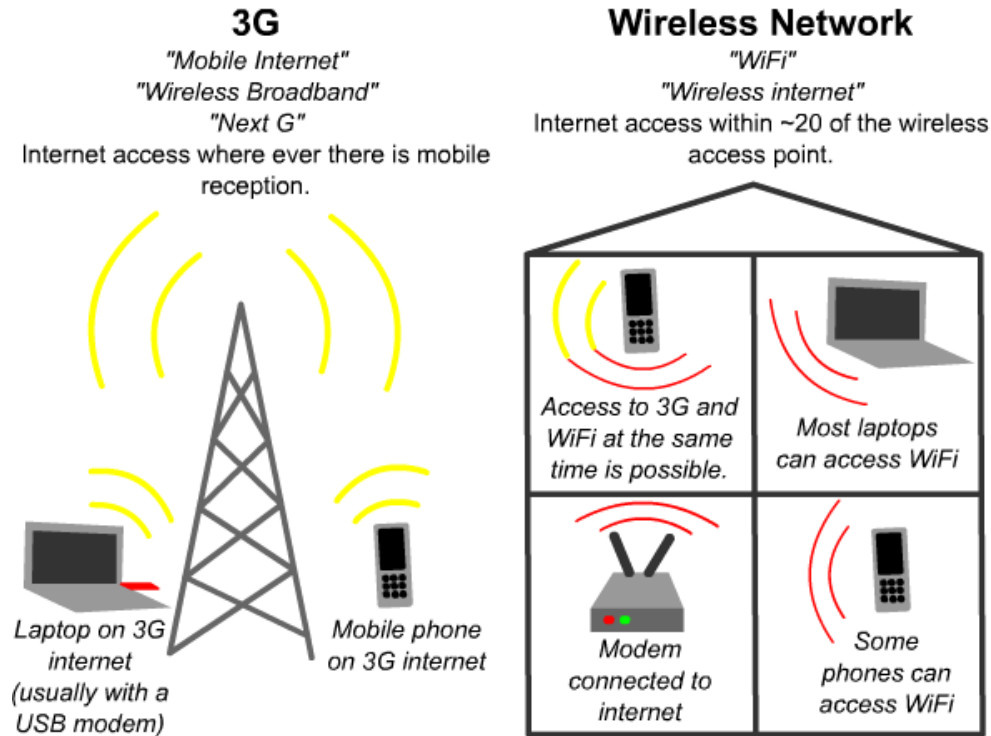
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Internet Access

3G and 4G

The Difference Between 3G and WiFi



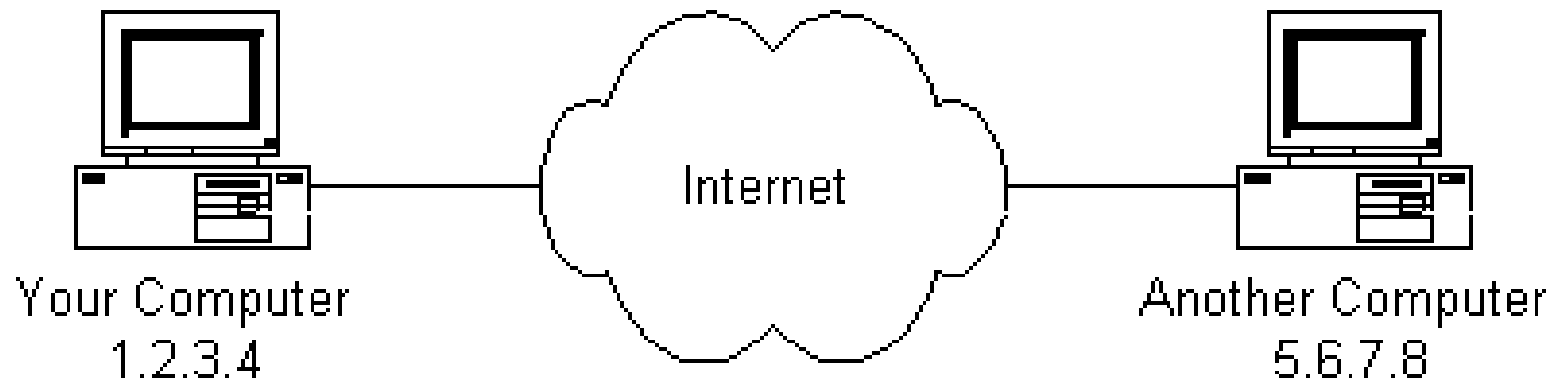
Choosing Internet Service Provider

Below are some things to consider as you research ISPs:

- Speed
- Price
- Ease of Installation
- Service Record
- Technical Support
- Contract Terms

How Internet Works?

- Because the Internet is a global network of computers each computer connected to the Internet **must** have a unique address.
- This address is known as an IP address.



Internet Requirement

- Computer with modem/router/network card.
- Internet account with ISP.
- Application software:
 - Web browser (Firefox, Chrome)
 - Email client (MS Outlook)
 - Plugins software (Adobe Reader, Flash Player)
- Optional: Speaker, Printer, Webcam

Internet Usages

- Communication
- Send and receive emails
- Download files
- Post your opinion to a newsgroup
- Chatting
- Surf the world wide web
- Business
- Shopping
- Entertainment

Internet Applications

- An Internet application is an interactive, compiled application that can be accessed through a corporate or through the Internet.
- Internet applications can perform complex business processes on either the client or the server.
- The application uses the Internet protocol to receive requests from a client, typically a Web browser, process associated code, and return data to the browser.

Internet Applications

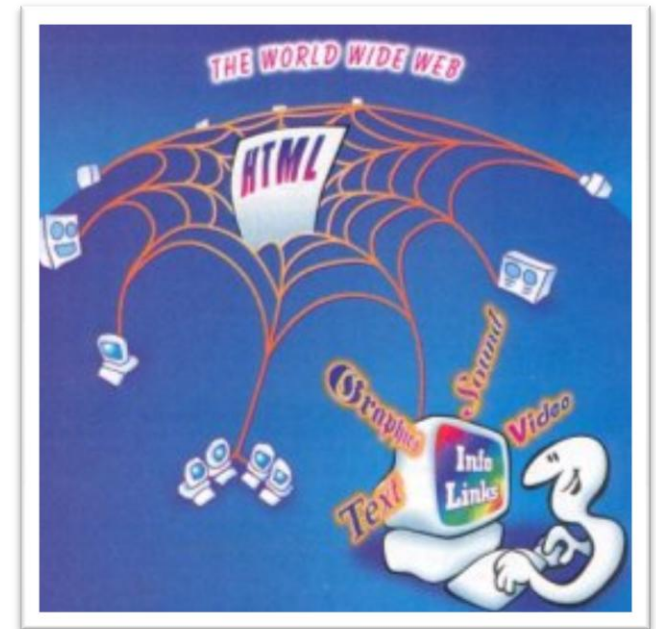
- The World-Wide Web (WWW)
- Electronic Mail (E-Mail)
- File Transfer Protocol (FTP)
- Search Engine
- Chatting
- Video Conferencing
- E-Commerce

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World Wide Web (WWW)

- The **World Wide Web** is a system of interlinked hypertext documents accessed via the Internet
- With a web browser, one can view web pages that may contain text, images, videos, and other multimedia and navigate between them via hyperlinks



World Wide Web (WWW)

- It use a protocol called HTTP – Hypertext Transfer Protocol
- HTTP defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands.

World Wide Web (WWW)

- A **Uniform Resource Locator**, or URL is the address of a document you'll find on the WWW.
- The elements in a URL:
 Protocol://server's address/filename
- Example:
 <http://www.google.com/index.html>

World Wide Web (WWW)

Types of website:

- Static
 - A static website is one that has web pages stored on the server in the format that is sent to a client web browser. It is primarily coded in Hypertext Markup Language (HTML)
- Dynamic
 - A dynamic website is one that changes or customizes itself frequently and automatically, based on certain criteria.

Electronic Mail (Email)

- The transmission of messages over communications networks.
- It is a fast and efficient way to communicate with friends or colleagues.
- You can communicate with one person at a time or thousands; you can receive and send files and other information.

Electronic Mail (Email)

- Basic email functions:
 - send and receive mail messages
 - save your messages in a file
 - print mail messages
 - reply to mail messages
 - attach a file to a mail message

Electronic Mail (Email)

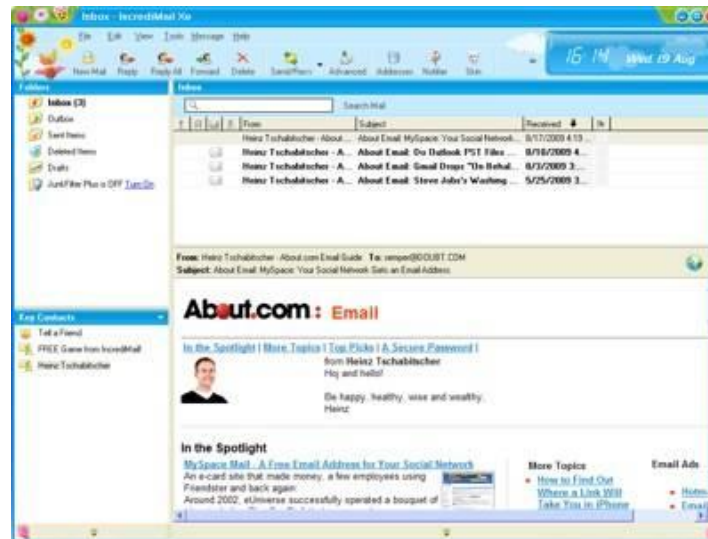
- Email address
 - someone@mail server
- The email address has three parts:
 - a user name
 - an "at" sign (@)
 - the address of the user's mail server
- Example
 - Harris@ftms.edu.my

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Email Client

- An email client is a computer program used to manage a user's email.
- Popular email clients include Microsoft Outlook, Pegasus Mail, Mozilla's Thunderbird, and Apple Inc.'s Mail.

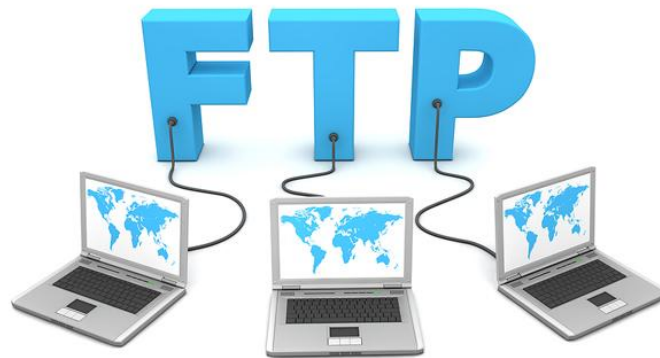


Web-based mail

- Is an e-mail service intended to be primarily accessed via a web browser.
- Very popular webmail providers:
 - Gmail
 - Yahoo! Mail
 - Hotmail
- Web mail is popular as it allows you to send or receive e-mail from anywhere.

File Transfer Protocol (FTP)

- The protocol for exchanging files over the Internet.
- Used for moving files between two hosts on a TCP/IP network.
- FTP is most commonly used to download a file from a server using the Internet or to upload a file to a server.



File Transfer Protocol (FTP)

- To do FTP, a user invokes one of two commands:
 - **get** - the command for transferring a file from another server to your own computer.
 - **put** - the command for moving a file from your computer to another one.

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Search Engine

- A search engine is designed to search for information on the internet.
- Search engine presents the search results in the form of a search results list.
- The search results can be web pages, images, videos, and other type of files.
- Example:
 - Google
 - Bing



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Chatting

- Chatting is the other method for Internet conversation.
- It enables people connected anywhere on the Internet to join in live discussions.
- Chat sessions allow many users to join in the same free-form conversation, usually centered around a discussion topic.



Chatting

Examples:

- MSN Messenger
- Yahoo Messenger
- IRC
- Pidgin

Video Conferencing

- A videoconference or video conference is a set of interactive telecommunication technologies which allow two or more locations to interact via two-way video and audio transmissions simultaneously.



Video Conferencing

The other components required for a videoconferencing system include:

- Video input and output
- Audio input and output
- Data transfer
- Computer

E-Commerce

- Electronic commerce or E-Commerce consists of the buying and selling of products or services over electronic systems such as the Internet and other computer networks.
- It includes the entire online process of developing, marketing, selling, delivering, servicing and paying for products and services.



E-Commerce

Some common applications related to electronic commerce are the following:

- Domestic and international payment systems
- Group buying
- Automated online assistants
- Online shopping and order tracking
- Online banking
- Shopping cart software
- Electronic tickets