

# Internet - 204100

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## Overview

- Computer Network
- Internet
- TCP/IP
- Domain Names
- Internet Services

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## Computer Network

- Telecommunication network that allows computers to exchange data.
- The physical connection established using either cable media or wireless media.
- The best-known computer network is the Internet.

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## Computer Network

### Pros

- Facilitates interpersonal communications
- Allows sharing of files, data, and other types of information
- Allows sharing of network and computing resources

### Cons

- May be insecure
- May interfere with other technologies
- May be difficult to set up

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## Computer Network

- Computer network types by spatial scope
  - LAN (Local Area Network) – limited area such as a home, school, computer laboratory, or office building
  - MAN (Metropolitan Area Network) – geographically separated but in same metropolitan city (5-40km)
  - WAN (Wide Area Network) – across metropolitan, regional, or national boundaries -- WWAN

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## Internet

- The Internet is a global system of interconnected computer networks.
- Uses the standard Internet protocol suite (TCP/IP) to serve several billion users worldwide
- Communications **protocol** is a system of digital **rules** for message exchange within or between computers.

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## TCP/IP

- Main protocol for the Internet
- Consists of
  - TCP (Transmission Control Protocol)
    - Breaks data down into packets
    - Combined received packets back into usable data
    - Error Checking/ Request for Resending
  - IP (Internet Protocol)
    - Use IP address to relay datagram across networks
    - Decide/Change datagram path (Routing)

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## Internet Protocol

- The **Internet Protocol** (IP) is the principal communications protocol in the Internet protocol suite for relaying datagrams across network boundaries.







## Public vs Private IP

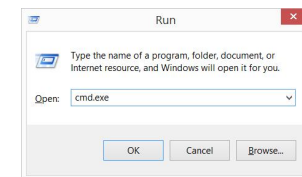
- Public IP
  - Can be referenced across networks
  - Managed/Assigned by governing organizations
    - Network Information Center (NIC)
    - Internet Assigned Numbers Authority (IANA)
- Private IP
  - Within LAN
  - Managed by system administrators

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## Checking IP Address


### Windows

- Open terminal
  - Press  + 
  - You will get run command windows
  - Type in cmd.exe



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## Checking IP Address [2]

- You will terminal 
- Enter ipconfig
 

```
>ipconfig
```
- You will get the following:

```
Ethernet adapter Ethernet:

Connection-specific DNS Suffix . : 
Link-local IPv6 Address . . . . . : fe80::d858:5a39:d8f0:f781%3
IPv4 Address. . . . . : 172.16.0.143
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 172.16.0.254
```

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## Domain Name

- Provides recognizable and memorizable names to numerically addressed Internet resources (IP address)
- Translated by **Domain Name Server** (DNS) to IP address (Name Resolution)



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## Top Level of Domain Name

- Rightmost Section

- Can be:

- Entity Type
  - .com, .gov, .mil, etc.
- Country Code
  - .th, .jp, .uk, .cn, .mm

TLD	Intended Use (Original)
.com	Commercial
.net	Network Infrastructure
.org	Organization
.gov	Government (US)
.edu	Educational Organization
.mil	Military (US)
.int	International Organization (Treaty)
.biz	Business
.info	Informational Site

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## Lower Levels of Domain Name

- Second-level Domain

- Subdomain of TLD

- .go.th, .ac.uk

- Not Subdomain of TLD

- www.google.com

- Other Subdomains

- www.cs.science.cmu.ac.th

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## Services on the Internet

- E-mail
- WWW
- FTP, sFTP
- Telnet, ssh
- Web search engine
- Conversation
- Social Media
- Web Application

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## E-mail

- A method of exchanging digital messages from an author to one or more recipients.
- An email address identifies an email box to which email messages are delivered

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## E-mail Client

- is a computer program used to access and manage a user's email.
- Popular **email clients application** include Microsoft Outlook, Mozilla's Thunderbird, Apple Inc.'s Mail.
- Popular **web-based email clients** include: Gmail, Yahoo! Mail, mail.com, Lycos mail, and Outlook.com.

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## E-mail for CMU students

- The university mail server can be accessed at <https://studentmail.cmu.ac.th/>

Username : **firstname\_l**

Password : **xxxxxxx**

E-mail addresses for new students from the academic year of 2013 on is **firstname\_l@cmu.ac.th**

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**To** The message's primary recipient(s)  
**Cc** The receiver of a copy of a message addressed primarily to other recipient(s)  
**Bcc** addresses added to delivery list but remaining invisible to other recipients.  
**Subject** A brief summary of the topic of the message

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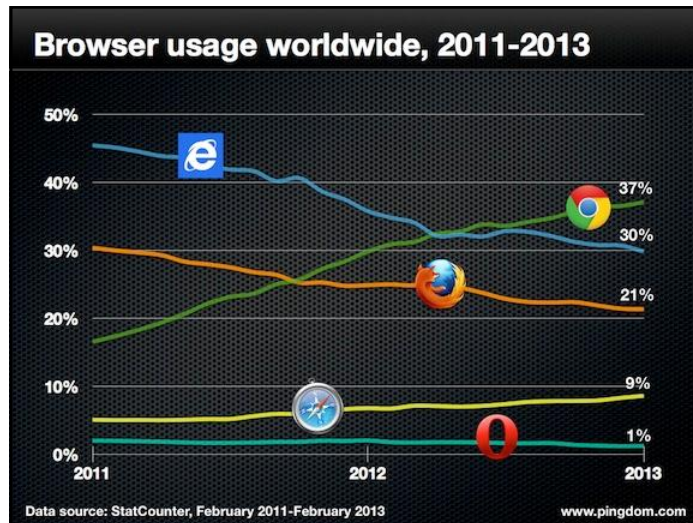
## WWW

- A system of interlinked documents accessed via the Internet with a **web browser**.
- Data are held at **web server**
- Web pages may contain text, images, videos, and other multimedia.
- Navigation via **hyperlinks**.
- Pages are accessed using **Web Address**



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## URL

- A uniform resource locator, abbreviated URL, also known as web address
- In most web browsers, the URL of a web page is displayed on top inside an address bar
- The format is **protocol://domain/path/file**  
e.g.  
<http://www.cs.science.cmu.ac.th/matinee/picture/mypic.jpg>

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## Some Terminology

- Web Page
  - Document file used to display information
  - Contains text, images, sound, etc.
- Website
  - Series of web pages hosted on a single domain
- Home Page
  - Default page of a website

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## More Terminology

- Web Hosting
  - Host website on server, making it available on the WWW
- Internet Service Provider (ISP)
  - Provide access to the Internet
  - 3BB, AIS, TrueNet, ToT

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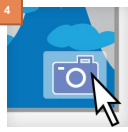


## Telnet - SSH

- Provide a bidirectional interactive text-oriented communication facility using a virtual terminal connection.

## Search by Image [2]

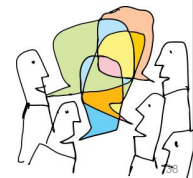
### • How to perform Search by Image

<p><b>1</b></p>  <p><b>Drag and Drop</b></p> <ul style="list-style-type: none"> <li>• Drag and drop an image from the web or computer into the search box</li> </ul>	<p><b>2</b></p>  <p><b>Upload an Image</b></p> <ul style="list-style-type: none"> <li>• Click the camera icon</li> <li>• Select "Upload an image".</li> <li>• Choose image to upload.</li> </ul>	<p><b>3</b></p>  <p><b>Copy and Paste URL for an Image</b></p> <ul style="list-style-type: none"> <li>• Right-click the image and copy the URL</li> </ul> <p>On images.google.com</p> <ul style="list-style-type: none"> <li>• Click the camera icon</li> <li>• Select "Paste the URL"</li> </ul>	<p><b>4</b></p>  <p><b>Right-click an Image on the Web</b></p> <ul style="list-style-type: none"> <li>• Need web browser extension</li> <li>• Just right-click on an image to search</li> </ul>
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## Conversation

- Conversation
  - USENET newsgroup
  - Online Chat
    - IRC
    - Instant messaging: LINE, google talk, skype, etc
  - Web board



## Social Media

- Means of interactions among people in virtual communities and networks
- Create
- Share
- Exchange information and ideas



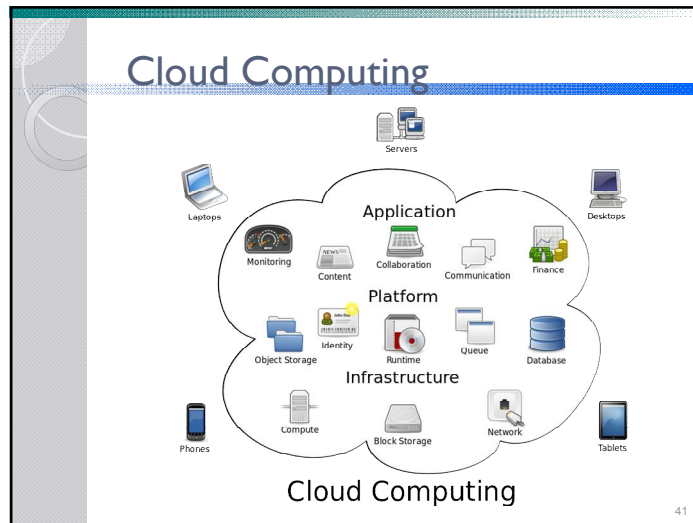
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## Notable Social Media

- **Blog:** Blogger, Tumblr, Wordpress
- **Video Sharing:** YouTube, Vimeo, SocialCam
- **Social Networking:** Facebook, Google+, Hi5
- **Micro Blog:** Twitter
- **Picture Album:** Flickr, Shutterfly, Photobucket
- **Bookmark:** Digg, Stumble Upon



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## Notable Cloud Applications

- Cloud storage: Dropbox, Google Drive, Microsoft Skydrive, Apple iCloud

A cloud shape containing icons for Google Drive (blue and red cube), Apple iCloud (cloud with 'i'), and Microsoft Skydrive (blue cube).

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## Notable Cloud Applications

- Office Application: Google Documents, Microsoft Office Web App
- Online Collaboration

A screenshot of the Google Docs interface showing a document titled "Wikipedia on Microsoft Word". The interface includes a menu bar (File, Edit, Insert, Format, Tools, Table), a toolbar with various editing tools, and a text area containing Wikipedia-style text about Microsoft Word. The document is saved on March 26, 2008, 10:40 AM by Philipp.

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## Google Docs

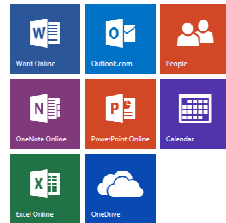
- <http://docs.google.com>
  - Office Suite from Google
  - Free to Use

The Google Docs logo is displayed above icons for Google Docs (green grid), Google Sheets (orange square), Google Slides (blue square), Google Drive (yellow triangle), and Google+ (green checkmark).

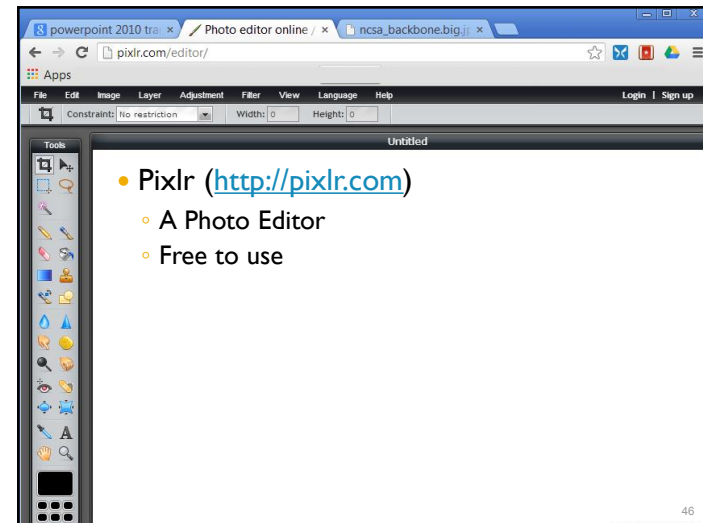
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## Microsoft Office Online

- <http://office.com>
  - Office Suite from Microsoft
  - Similar to Offline version of Microsoft Office
  - Free to Use



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- Pixlr (<http://pixlr.com>)
  - A Photo Editor
  - Free to use

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