Pertemuan 2

Internet dan Jaringan

Penerapan Komputer

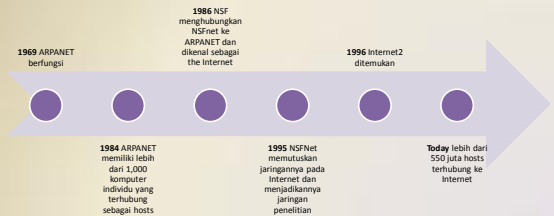**KOM201**
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Internet

- **Internet** merupakan kumpulan jaringan di seluruh dunia yang menghubungkan jutaan bisnis, pemerintahan, institusi pendidikan, dan individu
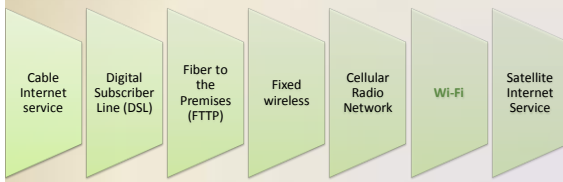

Penggunaan Internet

Komunikasi **Riset & akses informasi** **Belanja** **Bank & investasi** **Perdagangan online**

Hiburan **Unduh musik** **Berbagi video** **Aplikasi web**

Evolusi Internet

1969 ARPANET berfungsi

1986 NSF menghubungkan NSFnet ke ARPANET dan dikenal sebagai the Internet

1996 Internet2 ditemukan

1984 ARPANET memiliki lebih dari 1,000 komputer individu yang terhubung sebagai hosts

1995 NSFNet memutuskan jaringannya pada Internet dan menjadikannya jaringan penelitian

Today lebih dari 550 juta hosts terhubung ke Internet

Koneksi Internet

- Bisnis kecil dan pengguna rumahan terkoneksi ke Internet melalui *high-speed broadband Internet service*

Cable Internet service	Digital Subscriber Line (DSL)	Fiber to the Premises (FTTP)	Fixed wireless	Cellular Radio Network	Wi-Fi	Satellite Internet Service

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Access Provider

- *Access provider* adalah bisnis yang menyajikan akses ke Internet untuk individu maupun organisasi baik secara gratis maupun berbayar

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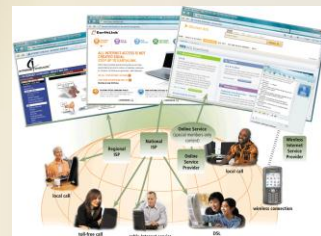
Access Provider

Internet service provider (ISP)	Online service provider (OSP)	Wireless Internet service provider (WISP)
ISP Regional menyediakan akses Internet untuk area geografis tertentu	Memiliki banyak anggota - hanya fitur	Menyediakan akses internet nirkabel untuk komputer & peralatan bergerak
ISP Nasional menyediakan akses Internet untuk kota-kota di tingkat nasional	Contoh OSP terkenal: AOL (America Online) and MSN (Microsoft Network)	Membutuhkan modem nirkabel

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How a Home User's Data and Information Might Travel the Internet Using a Cable Modem Connection

Step 1 You initiate an action to request data or information from the Internet. For example, you request to display a Web page on your computer screen.

Step 2 A cable modem transfers the computer's digital signals to the cable television line in your house.

Step 3 Your request (digital signals) travels through cable television lines to a central cable system, which is shared by up to 500 homes in a neighborhood.

Step 4 The central cable system sends your request over high-speed fiber-optic lines to the cable operator, who often also is the ISP.

Step 5 The ISP routes your request through the Internet backbone to the destination server (in this example, the server that contains the requested Web site).

Step 6 The server retrieves the requested Web page and sends it back through the Internet backbone to your computer.

Alamat Internet

- **IP** *address* adalah angka yang secara unik mengidentifikasi tiap komputer/alat yang terhubung ke Internet
- *Domain name* adalah versi teks dari IP *address*
  - Top-level domain (TLD)
- **DNS server** menerjemahkan nama domain ke bentuk IP address yang sesuai

IP address ⟶ 72.14.207.99

Domain name ⟶ www.google.com

top-level domain ⟶

Examples of Generic Top-Level Domains	
Generic TLD	**Intended Purpose**
aero	Aviation community members
biz	Businesses of all sizes
cat	Catalan cultural community
com	Commercial organizations, businesses, and companies
coop	Business cooperatives such as credit unions and rural electric co-ops
edu	Educational institutions
gov	Government agencies
info	Business organizations or individuals providing general information
jobs	Employment or human resource businesses
mil	Military organizations
mobi	Delivery and management of mobile Internet services
museum	Accredited museums
name	Individuals or families
net	Network providers or commercial companies
org	Nonprofit organizations
pro	Certified professionals such as doctors, lawyers, and accountants
tel	Internet communications
travel	Travel industry

The World Wide Web

- **World Wide Web**, atau **Web**, berisi kumpulan dokumen elektronis (**Web pages**) dari seluruh dunia
- **Website (situs Web)** adalah kumpulan halaman Web dan hal-hal lain yang saling berhubungan
- **Web server** adalah komputer yang memberikan Web pages yang diminta kepada komputer anda
- **Web 2.0** mengacu pada situs Web yang menyediakan suatu cara bagi pengguna untuk berinteraksi

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Web browser

- *Web browser*, atau *browser*, (penjelajah/peramban/perawak Internet), memungkinkan pengguna untuk mengakses halaman Web & aplikasinya

| Internet Explorer | Firefox | Opera | Safari | Google Chrome |

Plug-in

- *plug-in* adalah program yang memperluas kemampuan Web browser

Popular Plug-Ins			
Plug-In Application		**Description**	**Web Address**
Acrobat Reader		View, navigate, and print Portable Document Format (PDF) files — documents formatted to look just as they look in print	adobe.com
Flash Player		View dazzling graphics and animation, hear outstanding sound and music, display Web pages across an entire screen	adobe.com
Java		Enable Web browser to run programs written in Java, which add interactivity to Web pages	java.com
QuickTime		View animation, music, audio, video, and VR panoramas and objects directly on a Web page	apple.com
RealPlayer		Listen to live and on-demand near-CD-quality audio and newscast-quality video, stream audio and video content for faster viewing, play MP3 files, create music CDs	real.com
Shockwave Player		Experience dynamic interactive multimedia, 3-D graphics, and streaming audio	adobe.com
Silverlight		Experience high-definition video, high-resolution interactive multimedia, and streaming audio and video	microsoft.com
Windows Media Player		Listen to live and on-demand audio, play or edit WMA and MP3 files, burn CDs, and watch DVD movies	microsoft.com

Internet

- *home page* adalah halaman pertama yang ditampilkan sebuah website
- Halaman Web memberikan **tautan (***links***)** ke website yang lain
- **Mengunduh (***downloading***)** proses menerima informasi

- Beberapa halaman web didesain khusus untuk *microbrowser*

URL (Uniform Resources Locator)

- Sebuah halaman Web memiliki alamat unik yang disebut **URL** atau **Web** *address*
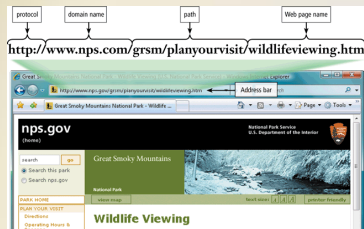
protocol — domain name — path — Web page name

http://www.nps.com/grsm/planyourvisit/wildlifeviewing.htm

Search vs Browse

- 2 tipe alat pencarian adalah *search engines* dan *subject directories*

Search engine	*Subject directory*
Mencari informasi yang berhubungan dengan topik tertentu	Mengklasifikasi Web pages dalam kumpulan kategori yang terorganisasi

Widely Used Search Tools			
Search Tool	**Web Address**	**Search Engine**	**Subject Directory**
A9	a9.com	X	
AlltheWeb	alltheweb.com	X	
AltaVista	altavista.com	X	
AOL Search	search.aol.com	X	
Ask	ask.com	X	
Cuil (pronounced cool)	cuil.com	X	
Dogpile	dogpile.com	X	
Excite	excite.com	X	X
Gigablast	gigablast.com	X	X
Google	google.com	X	X
Live Search	live.com	X	
Lycos	lycos.com	X	
MSN	msn.com	X	X
Open Directory Project	dmoz.org	X	X
WebCrawler	webcrawler.com	X	
Yahoo!	yahoo.com	X	X

Perbaikan kueri

- Operator pencarian dapat membantu memperbaiki pencarian anda

13 tipe Situs Web

Portal	News	Informational	Business/Marketing
Blog	**Wiki**	**Online Social Network**	Educational

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13 tipe Situs Web

Entertainment	Advocacy	**Web Application**
Content Aggregator	Personal	

E-Commerce

Business-to-consumer (B2C)

E-commerce

Business-to-business (B2B)

Consumer-to-consumer (C2C)
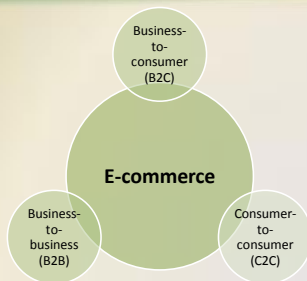
Informasi Web

- Informasi yang ditampilkan pada Web harus dievaluasi akurasinya
- Tidak ada yang mengawasi konten halaman Web

Guidelines for Evaluating the Value of a Web Site

Evaluation Criteria	Reliable Web Sites
Affiliation	A reputable institution should support the Web site without bias in the information.
Audience	The Web site should be written at an appropriate level.
Authority	The Web site should list the author and the appropriate credentials.
Content	The Web site should be well organized and the links should work.
Currency	The information on the Web page should be current.
Design	The pages at the Web site should download quickly and be visually pleasing and easy to navigate.
Objectivity	The Web site should contain little advertising and be free of preconceptions.

Web publishing

- *Web publishing* adalah pengembangan dan perawatan *web pages*

Perencanaan *Website*	Analisis & Desain *Website*	Pembuatan *Website*	Penyebaran *Website*	Perawatan *Website*

Netiquette

- *Netiquette* kode etik yang diterima dalam berinternet

NETIQUETTE — Golden Rule: Treat others as you would like them to treat you.

1. In e-mail, chat rooms, and newsgroups:
   - Keep messages brief. Use proper grammar, spelling, and punctuation.
   - Be careful when using sarcasm and humor, as it might be misinterpreted.
   - Be polite. Avoid offensive language.
   - Read the message before you send it.
   - Use meaningful subject lines.
   - Avoid sending or posting *flames*, which are abusive or insulting messages. Do not participate in *flame wars*, which are exchanges of flames.
   - Avoid sending spam, which is the Internet's version of junk mail. *Spam* is an unsolicited e-mail message or newsgroup posting sent to many recipients at once.
   - Do not use all capital letters, which is the equivalent of SHOUTING!
   - Use **emoticons** to express emotion. Popular emoticons include

   :) Smile :| Indifference :o Surprised
   :(Frown :\ Undecided

- Use abbreviations and acronyms for phrases:
  btw   by the way
  imho   in my humble opinion
  fyi   for your information
  ttfn   ta ta for now
  fwiw   for what it's worth
  tyvm   thank you very much
- Clearly identify a *spoiler*, which is a message that reveals a solution to a game or ending to a movie or program.

2. Read the *FAQ* (frequently asked questions), if one exists. Many newsgroups and Web pages have an FAQ.
3. Do not assume material is accurate or up-to-date. Be forgiving of other's mistakes.
4. Never read someone's private e-mail.
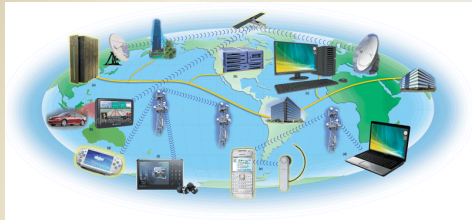
Komunikasi Komputer

Komunikasi Komputer

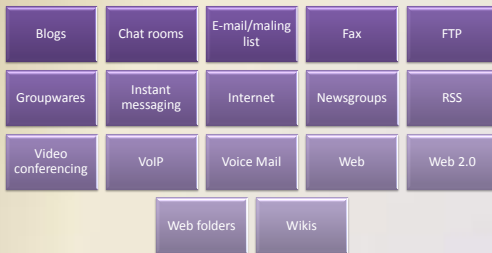- Menggambarkan proses dimana dua atau lebih komputer/alat mentransfer data, instruksi, atau informasi

Sending device → *Communications channel* → *Receiving device*

Penggunaan Komunikasi Komputer

Blogs	Chat rooms	E-mail/maling list	Fax	FTP
Groupwares	Instant messaging	Internet	Newsgroups	RSS
Video conferencing	VoIP	Voice Mail	Web	Web 2.0
	Web folders	Wikis		

Penggunaan Komunikasi Komputer

- *Text messaging*
- *Picture messaging*
- *Video messaging*
- *Wireless IM*

Penggunaan Komunikasi Komputer

- **Wireless Internet Access Points**
- **Cybercafé**

Global positioning system (GPS)

Sistem navigasi yang terdiri dari satu atau lebih *earth-based receiver* yang menerima dan menganalisis sinyal-sinyal yang dikirimkan oleh satelit untuk menentukan lokasi geografis dari receiver
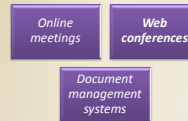
Google Maps
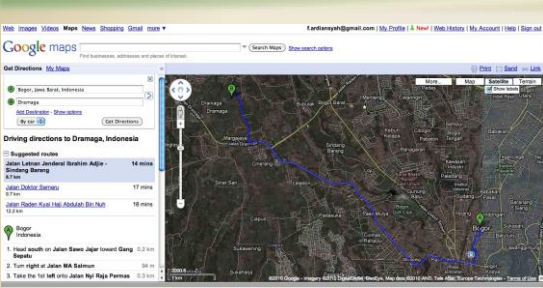
31

Perangkat Lunak Kolaborasi

- Merupakan alat yang memungkinkan pengguna untuk berbagi dokumen saat rapat *online* dan berkomunikasi dengan pengguna lain yang berhubungan
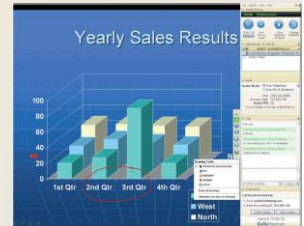
Jaringan

- **Jaringan** adalah kumpulan komputer dan peralatan yang terhubung melalui alat komunikasi dan media transmisi

Memfasilitasi komunikasi	Berbagi *hardware*	Berbagi data dan informasi

Berbagi *software*	Mentransfer data

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Chapter 9

33

Local Area Network

- **local area network** (**LAN**) adalah jaringan yang menghubungkan komputer dan peralatan pada area geografis yang terbatas
- **wireless LAN** (**WLAN**)

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Chapter 9

34

Metropolitan Area Network

- MAN menghubungkan LANs pada area metropolitan
- **wide area network** (**WAN**) adalah jaringan yang melingkupi area geografis yang luas

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Chapter 9

35

Network Architecture
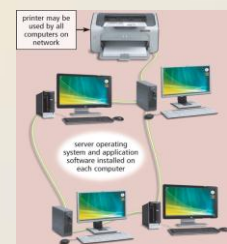
Client/server network

Peer-to-peer network

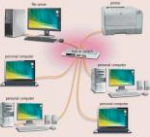Discovering Computers 2010: Living in a Digital World
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36

Topologi Jaringan

Star network

Bus network

Ring network

Intranet & Extranet

Intranet adalah jaringan internal yang menggunakan teknologi Internet

Extranet memungkinkan kostumer/supplier untuk mengakses bagian dari *intranet*

Network Communications Standards

Ethernet	Token ring	TCP/IP	Wi-Fi
Bluetooth	UWB	IrDA	RFID
	WiMAX	WAP	

Communications Software

Membantu pengguna membuka hubungan dengan komputer/jaringan lain

Mengatur transmisi data, instruksi, dan informasi

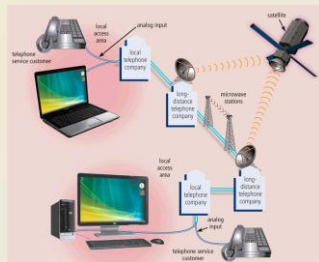Menyediakan antarmuka bagi pengguna untuk berkomunikasi

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Komunikasi melalu jalur Telepon

• Public Switched Telephone Network (PSTN)

Speeds of Various Internet Connections

Type of Line	Approximate Monthly Cost	Transfer Rates
Dial-up	Local or long-distance rates	Up to 56 Kbps
ISDN	$10 to $40	Up to 1.54 Mbps
DSL	$13 to $70	128 Kbps to 8.45 Mbps
Cable TV (CATV)	$20 to $50	128 Kbps to 52 Mbps
FTTP	$35 to $180	5 Mbps to 100 Mbps
Fixed wireless	$35 to $80	256 Kbps to 10 Mbps
Fractional T1	$200 to $700	128 Kbps to 768 Kbps
T1	$400 to $1,600	1.544 Mbps
T3	$5,000 to $15,000	44.736 Mbps
ATM	$3,000 or more	155 Mbps to 622 Mbps, can reach 10 Gbps

Communications Devices

- Segala tipe *hardware* yang mampu mentransmisi data, instruksi, dan informasi antara *sending device* dan *receiving device*
- Contoh: Modem Dial-up, Wireless modem, Network card, Wireless Acces Point, Router, Hub

43

Saluran (*Channel*) komunikasi

– Media transmisi dimana data berjalan dalam sistem komunikasi

Media transmisi adalah material yang mampu membawa satu atau lebih sinyal

Bandwidth adalah jumlah data yang dapat berjalan pada channel

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Transfer Rates for Various Types of LANs Using Physical Transmission Media

Type of Cable and LAN	Maximum Transfer Rate
Twisted-Pair Cable	
• 10Base-T (Ethernet)	10 Mbps
• 100Base-T (Fast Ethernet)	100 Mbps
• 1000Base-T (Gigabit Ethernet)	1 Gbps
• Token ring	4 Mbps to 16 Mbps
Coaxial Cable	
• 10Base2 (ThinWire Ethernet)	10 Mbps
• 10Base5 (ThickWire Ethernet)	10 Mbps
Fiber-Optic Cable	
• 10Base-F (Ethernet)	10 Mbps
• 100Base-FX (Fast Ethernet)	100 Mbps
• FDDI (Fiber Distributed Data Interface) token ring	100 Mbps
• Gigabit Ethernet	1 Gbps
• 10-Gigabit Ethernet	10 Gbps
• 40-Gigabit Ethernet	40 Gbps
• 100-Gigabit Ethernet	100 Gbps

Page 492
Figure 9-35

45

Physical Transmission Media

Twisted-pair cable

Fiber-optic cable

Coaxial cable
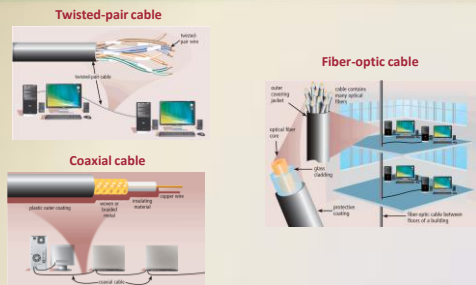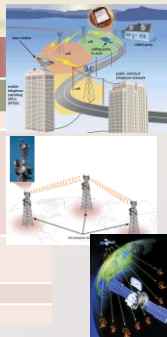
Page 493
Figures 9-36 – 9-38

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Chapter 9

46

Wireless Transmission Media

Transfer Rates for Various Types of Wireless Transmission Media

Medium		Maximum Transfer Transmission Rate
Infrared		115 Kbps to 4 Mbps
Broadcast radio	• Bluetooth	1 Mbps to 2 Mbps
	• HomeRF	1.6 Mbps to 10 Mbps
	• 802.11b	11 Mbps
	• 802.11a	54 Mbps
	• 802.11g	54 Mbps
	• 802.11n	108 Mbps
	• UWB	110 Mbps to 480 Mbps
Cellular radio	• 2G	9.6 Kbps to 19.2 Kbps
	• 3G	144 Kbps to 2.4 Mbps
	• 4G	Up to 15 Mbps
Microwave radio		150 Mbps
Communications satellite		1 Gbps

Page 494
Figure 9-39

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Chapter 9

47

Pertemuan 2

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