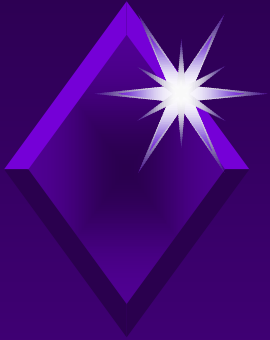


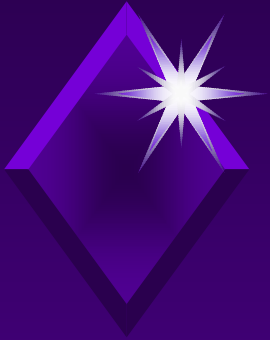
Chapter 12

Connectivity



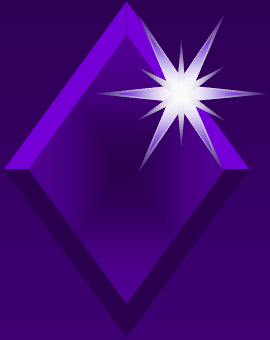
Overview

Basic concepts of networking will be introduced.



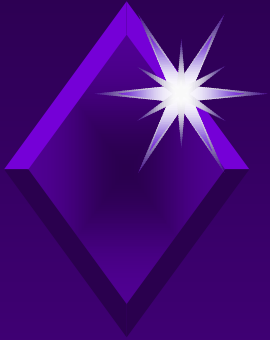
Overview

LAN, WAN, client server,
and resources will be
discussed and
and how they relate to
networks will be explained.



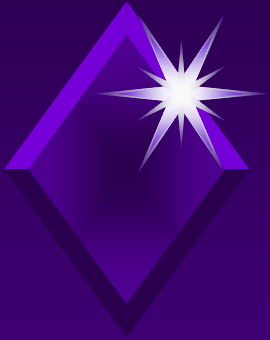
Overview

Server-based networks and peer-to-peer networks will be compared and contrasted.



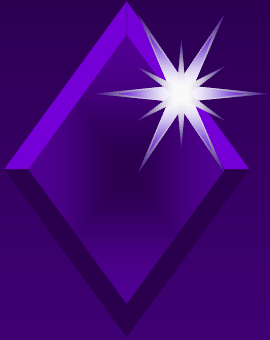
Overview

How to share resources on a network will be explained.



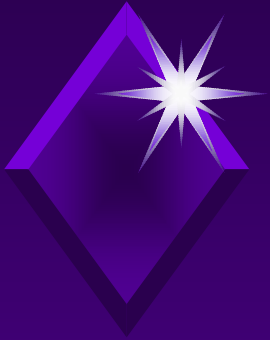
Overview

Basic protocols of the Internet will be introduced.



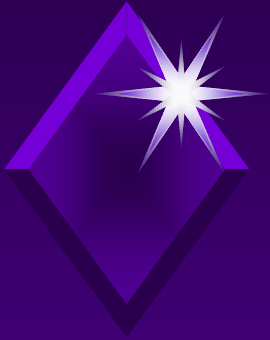
Overview

Will learn how to connect
to and navigate the Internet.



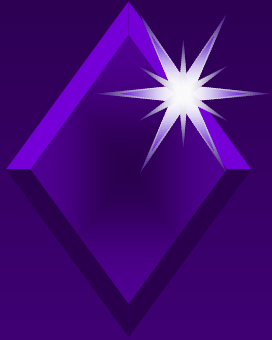
Overview

The Internet and the World
Wide Web will be
compared and contrasted.



Overview

Ways to customize Internet Explorer will be examined.

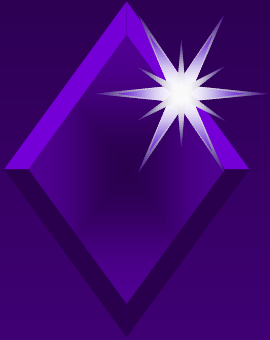


Networks

(LANs and WANs)

LAN (local area network):

- ➔ Network of computers located in one room or building

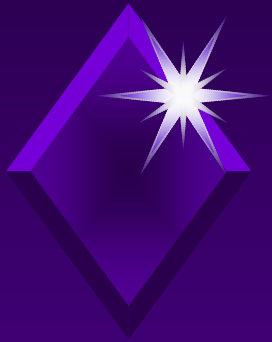


Networks

(LANs and WANs)

Networks have:

- ➔ Servers - provide shared resources to network users
- ➔ Clients - access shared network resources

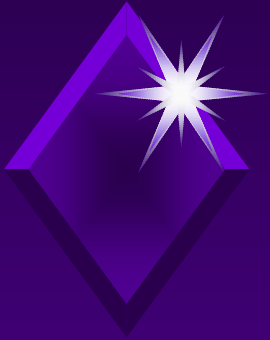


Networks

(LANs and WANs)

Two types of networks:

- ➔ Server-based (> 10 users)
- ➔ Peer-to-peer (< 10 users)

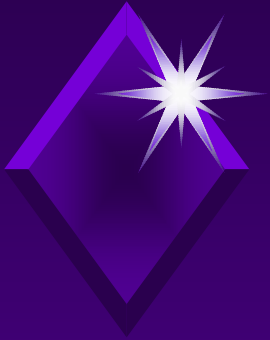


Networks

(LANs and WANs)

WAN (wide area network):

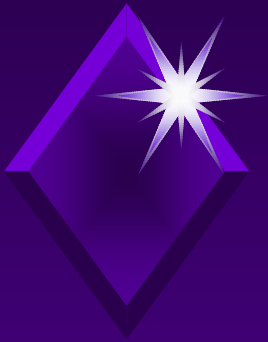
- ➔ Network of computers connected over long distances



Networks

(LANs and WANs)

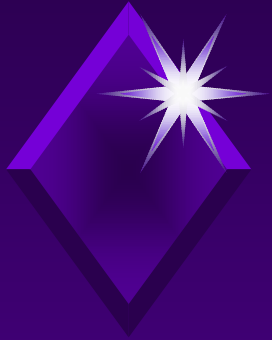
All networks need a Network Interface Card (NIC) installed in each computer.



Networks

(LANs and WANs)

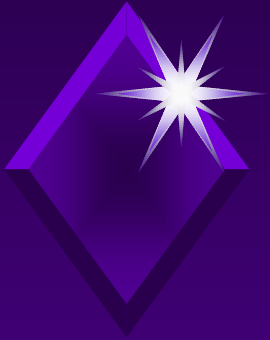
- ➔ **Cabled network** - card must support type of cable used to connect computers
- ➔ **Wireless network** - each computer has wireless network card
 - ➔ Allows computers to communicate by radio waves, infrared , power wires in walls, or by phone.



Networks

(LANs and WANs)

Need to decide appropriate network design (topology).

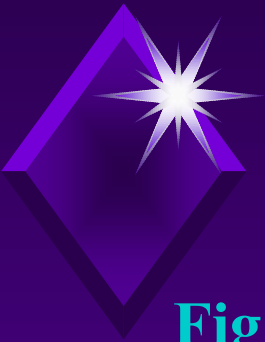


Networks

(LANs and WANs)

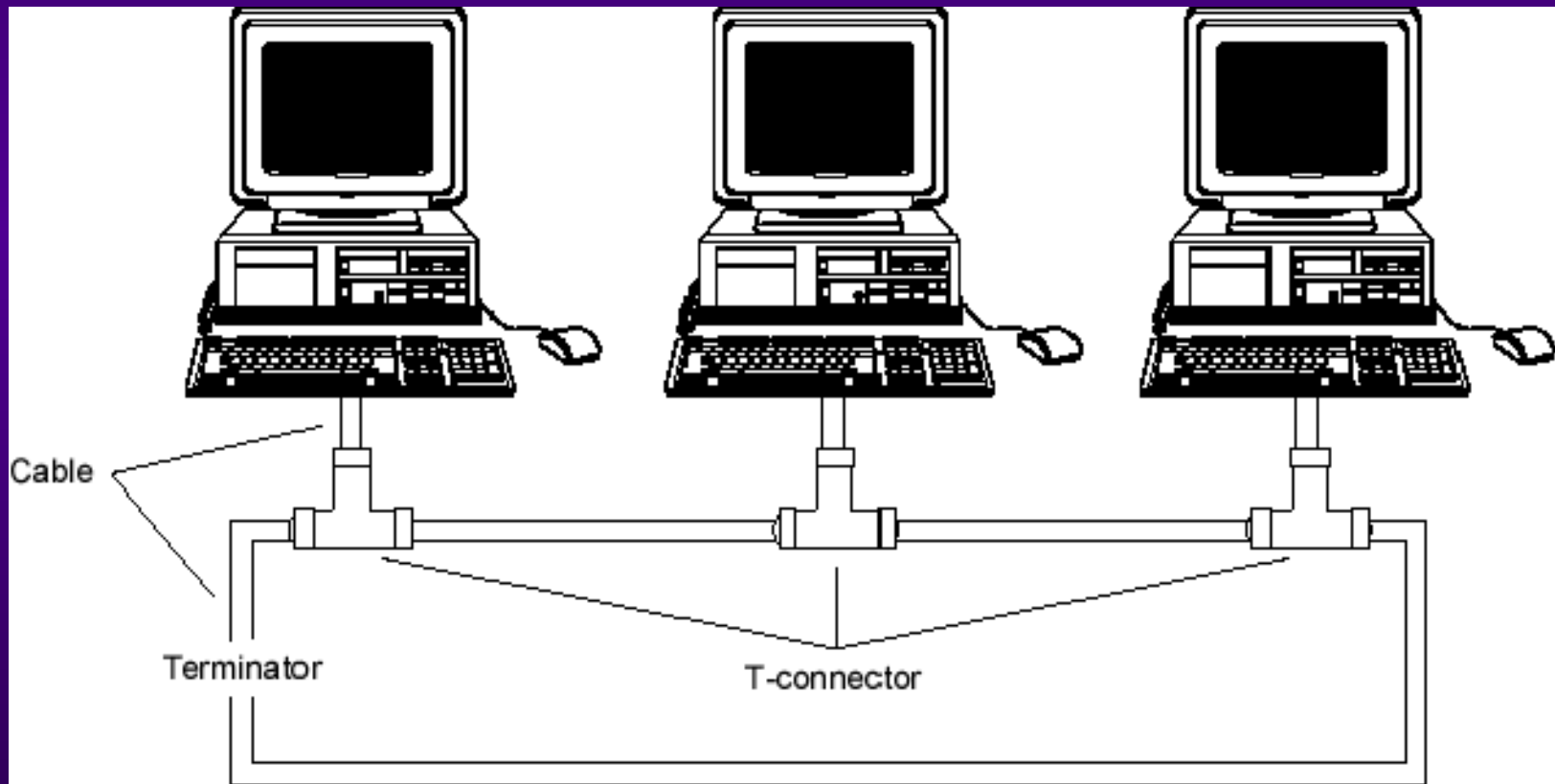
Popular topologies for peer-to-peer network:

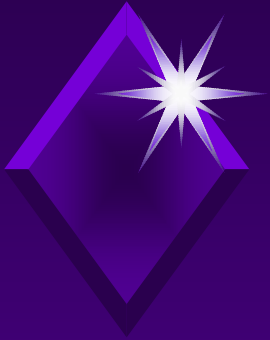
- ➔ Bus topology
- ➔ Star topology



Networks (LANs and WANs)

Fig 12.1 Peer-to-Peer Network with Bus Topology p.585





Networks

(LANs and WANs)

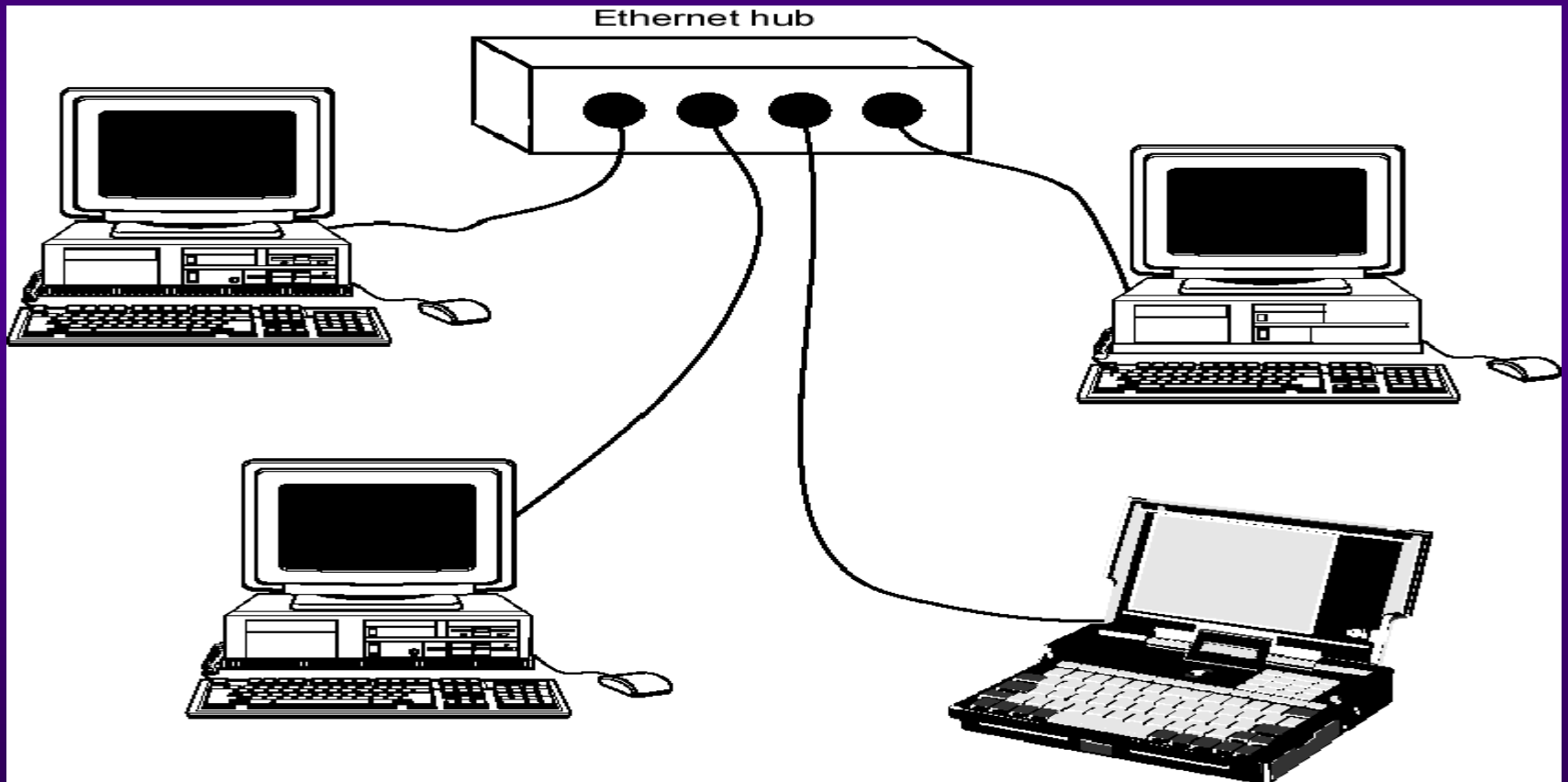
Bus topology:

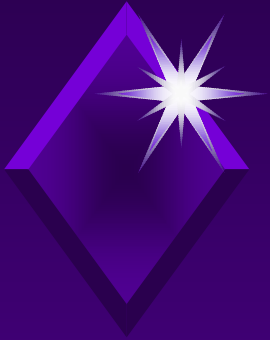
- ➔ Advantages -
 - ➔ Easy to install
 - ➔ Easy to expand
 - ➔ Inexpensive
- ➔ Disadvantage - One segment of cable fails then entire network fails
- ➔ Becoming less common



Networks (LANs and WANs)

Fig 12.2 Peer-to-Peer Network with Star Topology p. 586



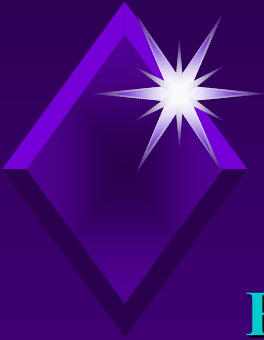


Networks

(LANs and WANs)

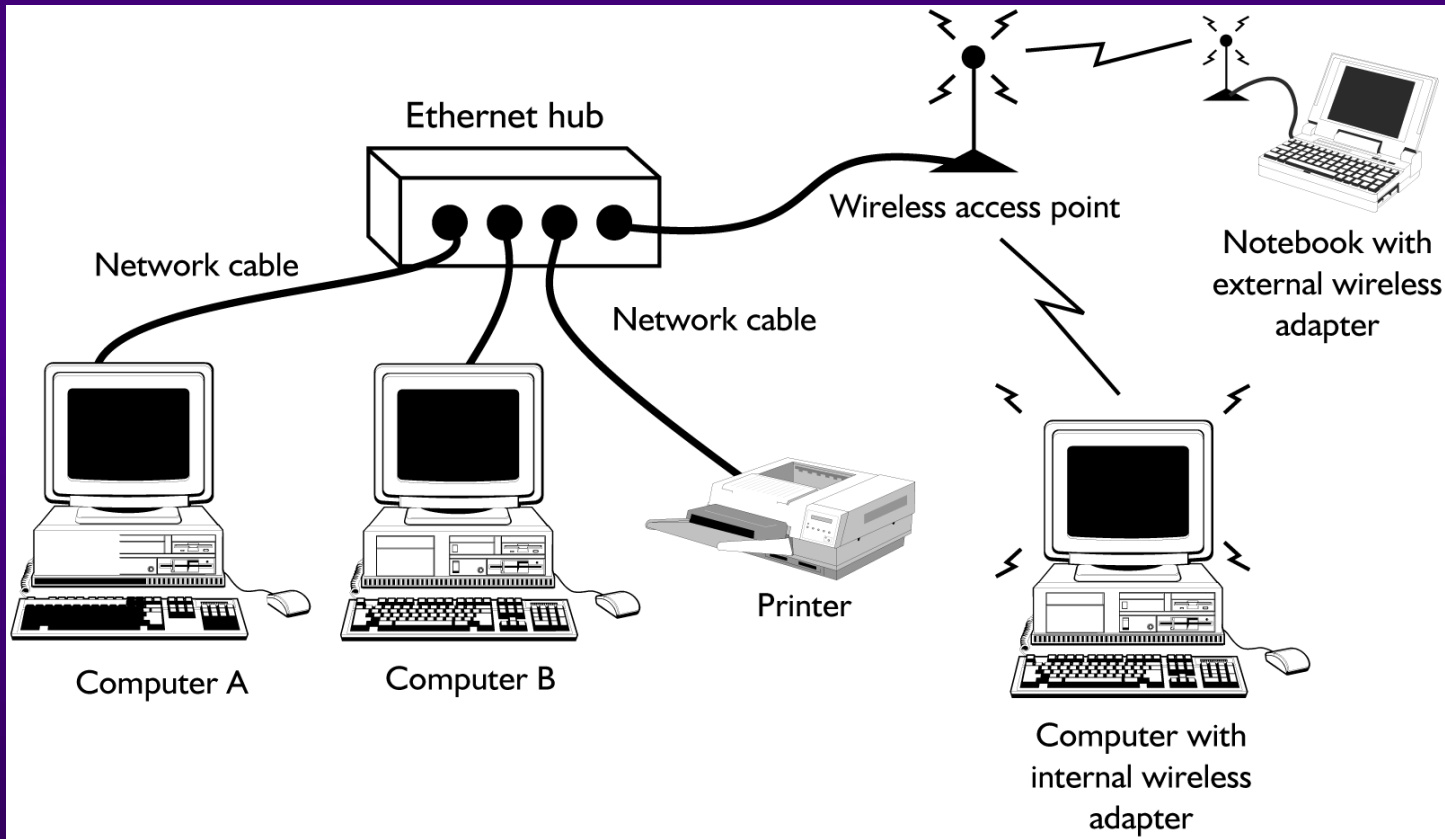
Star topology:

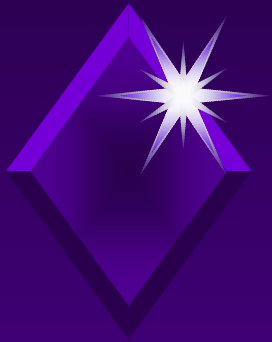
- ➔ Advantage - single point of failure
- ➔ Disadvantages -
 - ➔ More expensive than bus topology
 - ➔ Wiring can become unwieldy
- ➔ With wireless network - do not need to run wires



Networks (LANs and WANs)

Figure 12.3 A Wireless and Wired Network p. 587



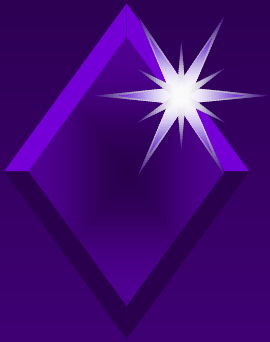


Networks

(LANs and WANs)

Either topology:

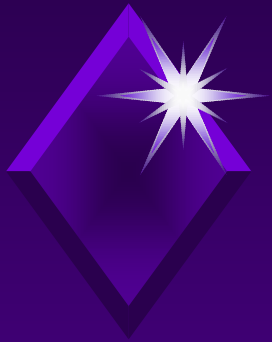
- ➔ Can use network printer (any resource) by connecting it to cable or hub
- ➔ Only computer using printer turned on



Networks

(LANs and WANs)

- ➔ Most users prefer a hub:
 - ➔ Box with many connections
- ➔ Instead of hub can use:
 - ➔ Switch
 - ➔ Router



Networks

(LANs and WANs)

To work, a network needs:

- ➔ Hardware
- ➔ Software
- ➔ Network Administrator



Looking at Your Network

- ➔ When Windows XP Professional is installed, it will detect network card and installs default components.
- ➔ Can add network later using New Connection Wizard or Network Setup Wizard

Looking at Your Network

When setting up peer-to-peer network:

- ➔ Need to name computer
- ➔ Provide administrator password
 - ↳ Most important password in Windows XP Professional
- ➔ Each user needs log on name and password



Looking at Your Network

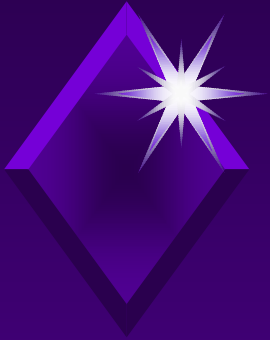
My Network Places
is map to network.



Activity - Looking at Your Network

KEY CONCEPTS:

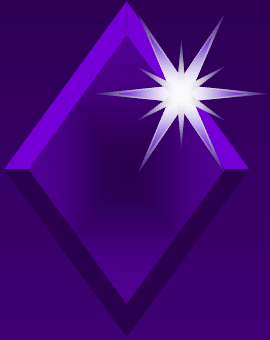
- ➔ Local Area Connection Properties sheet
 - ↳ General, Authentication and Advanced tabs
- ➔ What various icons represent
- ➔ Terms:
 - ↳ Client, Service, Protocol
 - ↳ Firewall, Gateway, ICF, ICS, Browser
- ➔ Computer and workgroup names
- ➔ Universal naming convention



Sharing Printers on a Network

Two parts to sharing resources:

- ➔ Server
- ➔ Client



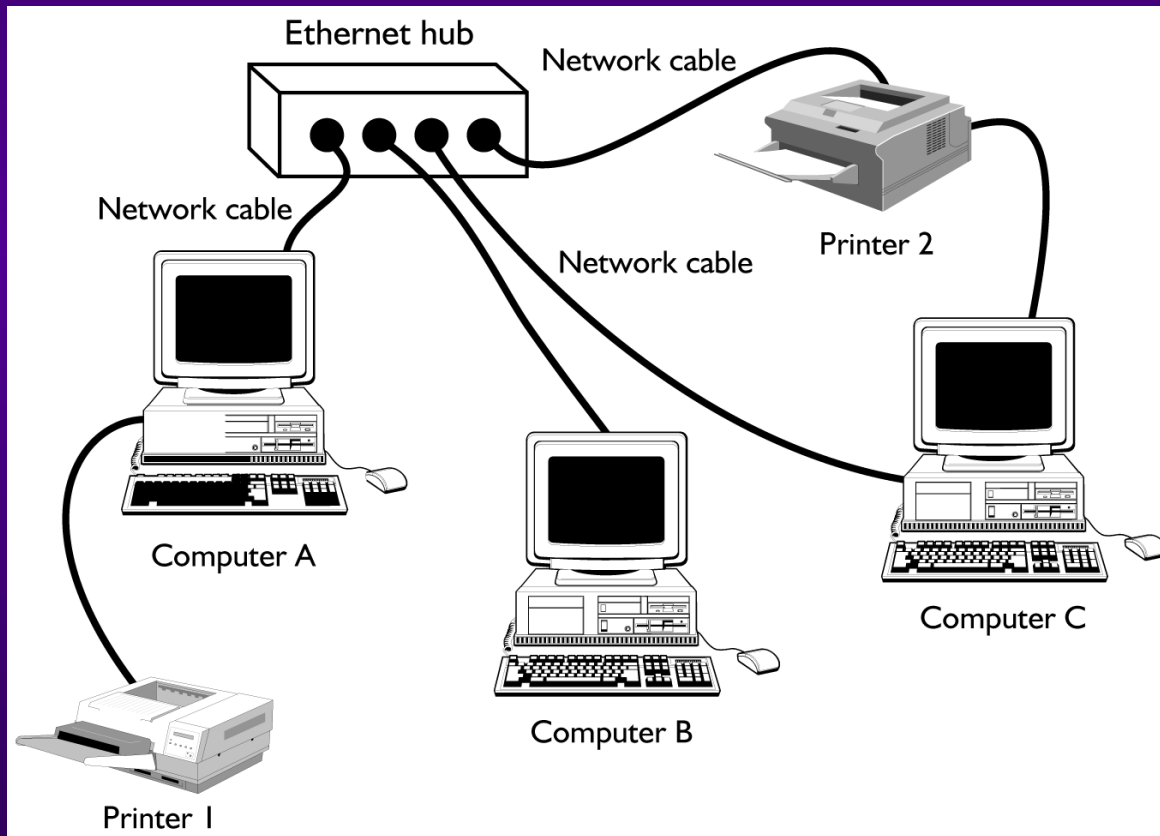
Sharing Printers on a Network

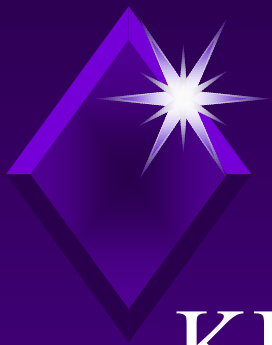
- ➔ On large network one computer is the print server.
- ➔ On small network the print server is any computer that is connected to a printer.



Sharing Printers on a Network

Fig 12.4 Printer Sharing on a Network p. 593





Activity - Sharing Printers on a Network

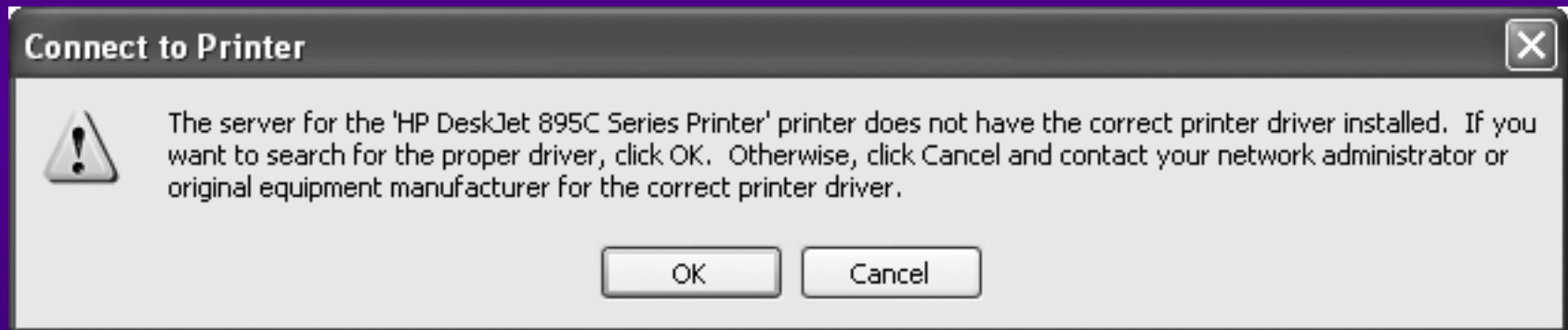
KEY CONCEPTS:

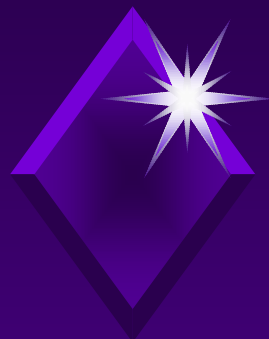
- ➔ Naming the shared printer
- ➔ Icons
 - ↳ Identifying network and shared printer icons
 - ↳ Three printer icons (“Capture”, “Hung Off” and “Local”)
- ➔ Terms: Printer client, port
- ➔ Format



Activity - Sharing Printers on a Network

Figure 12.5 The Connect to Printer Dialog Box p. 598

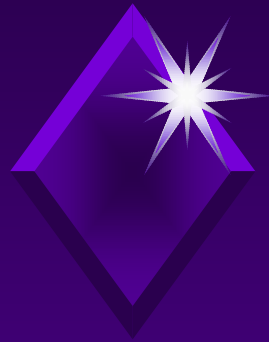




Sharing a Hard Drive on a Network

File server:

- ➔ Computer with drive that is shared
- ➔ Large network - often one computer designated as file server
- ➔ Small network - usually no dedicated file server



Sharing a Hard Drive on a Network

Can share entire drive
or selected folders.



Permissions and Rights

In lab environment local computer part of domain:

- ➔ Administered by network administrator
- ➔ Includes access control



Permissions and Rights

Using NTFS:

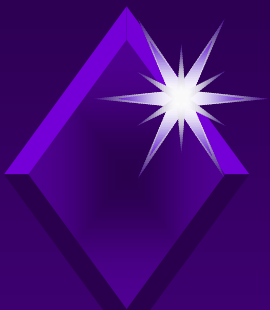
- ➔ Can set permissions on files/folders
- ➔ Users can be assigned to groups
- ➔ When object created owner assigned to it
- ➔ Objects inherit permissions



Permissions and Rights

Using FAT32:

- ➔ Can provide some security on folders when shared on network
- ➔ Cannot assign permissions on a file-by-file basis as you can with NTFS



Activity - Sharing Drives on a Network

KEY CONCEPTS:

- ➔ Ramifications of setting “Simple file sharing
- ➔ *driveletter\$*
- ➔ Administrative share
- ➔ Authenticated Users
- ➔ Naming shared drive
- ➔ Identifying computer you are on



Sharing Only a Folder on a Hard Drive on a Network and Setting Permissions

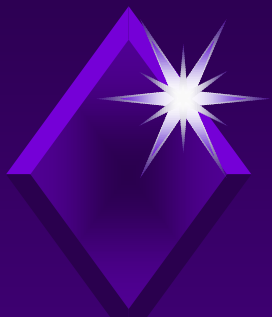
To share a folder on a hard drive:

- ➔ Access folder (server computer)
- ➔ Access shared drive via Windows 98 Network Neighborhood or My Network Places on client computer



Sharing Only a Folder on a Hard Drive on a Network and Setting Permissions

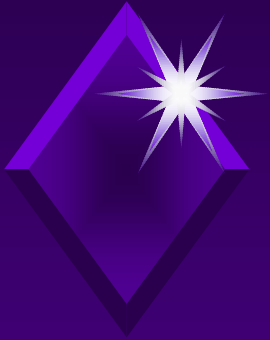
- ➔ If using NTFS as file system can set file permissions on individual files
- ➔ If using FAT32 as file system cannot set permissions on individual files and folders.



Activity - Sharing a Folder on a Network

KEY CONCEPTS:

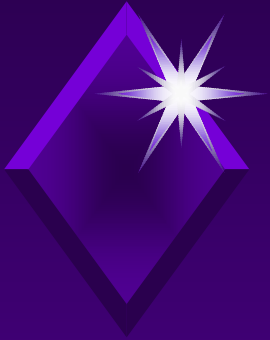
- ➔ Limit sharing to folder
- ➔ Administrative share always recreated when system is booted
- ➔ Simple file sharing - limits options
- ➔ Deny permissions take precedence over allow entries
 - ➔ Setting above will deny users of more than one group to write this file to a disk



Mapping Drives

Mapped drive:

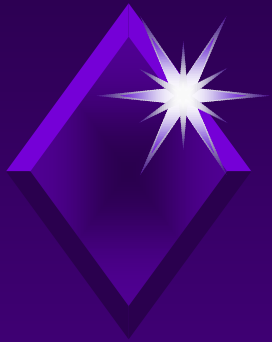
- ➔ Shared network drive or folder that has been assigned a local drive letter



Mapping Drives

Mapped drive/folder:

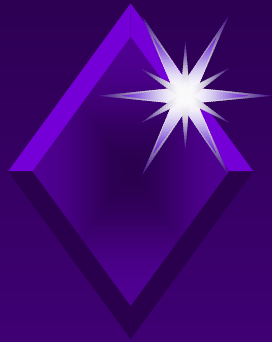
- ➔ Appears as a drive on client computer
- ➔ Can be accessed (My Computer) using assigned/mapped letter.



Activity - Mapping Drives on a Network

KEY CONCEPTS:

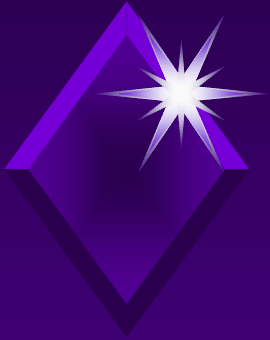
- ➔ Identifying network drive
- ➔ Icon information



Activity - Mapping Drives on a Network

Figure 12.6 A Mapped Drive Icon p. 613

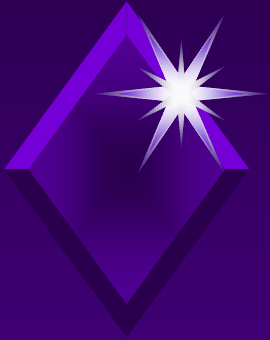




The Internet

Internet:

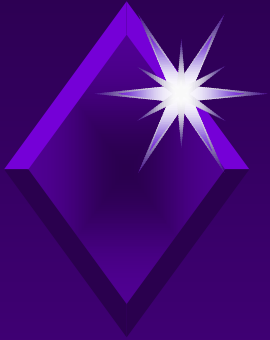
- ➔ Worldwide network of computers
- ➔ Part of information superhighway
- ➔ Referred to as cyberspace
- ➔ Used to gather information, do research, purchase goods.



The Internet

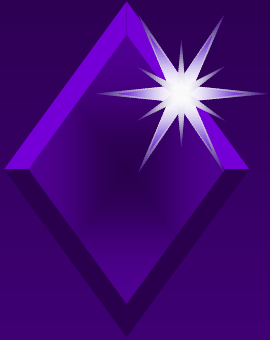
Web:

- ➔ Collection of standards and protocols used to access information on the Internet



The Internet

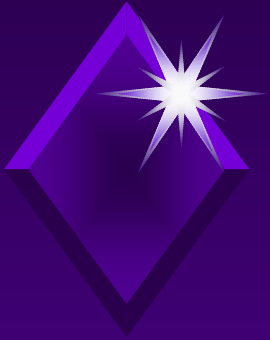
The Web and the Internet
are not synonymous.



The Internet

Web uses three standards:

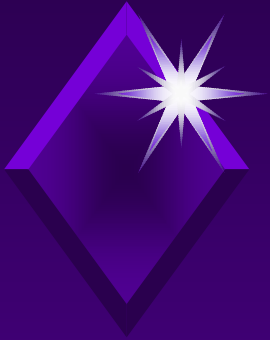
- ➔ URLs - location of documents
- ➔ HTML - programming language used to creates Web documents
- ➔ Protocols - used for information transfer



The Internet

To retrieve a document's URL need:

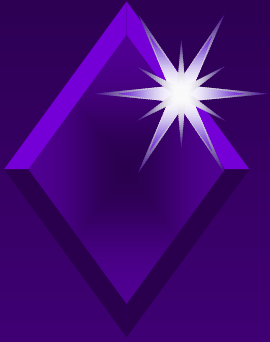
- ➔ Protocol to be used
- ➔ Address with which to connect
- ➔ Path to information



The Internet

Web site:

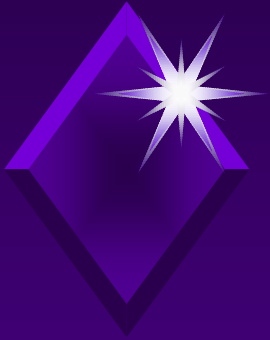
- Resides on server
- Has an address (URL)
- Location of a person or organization's web



The Internet

Web page:

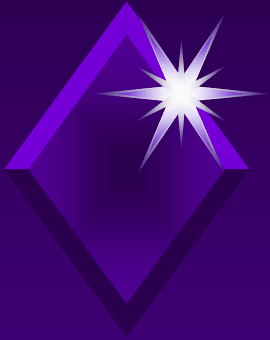
- ➔ Contains text and graphics
- ➔ Usually has hypertext links



The Internet

The “dot” portion of an address indicates a Web site’s type:

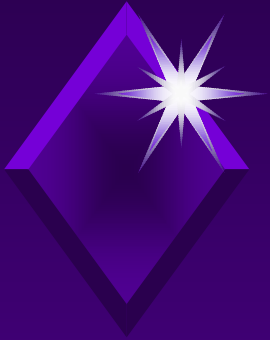
- ➔ .com
- ➔ .gov
- ➔ .edu
- ➔ .mil
- ➔ .org



The Internet

Search engine:

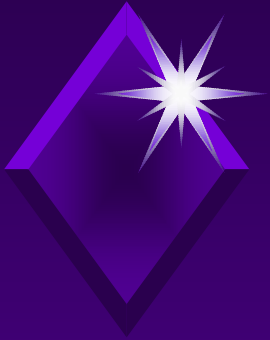
- ➔ Category of sites developed to find needed information.



The Internet

To access information on the Internet need:

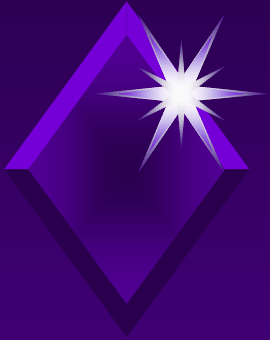
- ➔ Modem
- ➔ Communication software
- ➔ Online provider



The Internet

Ways to access information on the Internet:

- ➔ Modem
- ➔ ISP (Internet Service Providers)
- ➔ Direct cable connections
- ➔ DSL (Digital Subscriber Line)



The Internet

More ways to access information on the Internet:

- ➔ ISDN (Integrated Series Digital Network)
- ➔ T1 or T3 leased line
- ➔ Satellite
- ➔ Wireless connection



An Overview of TCP/IP

Data is transferred over
the Internet through
TCP/IP protocols.



An Overview of TCP/IP

Data travels through levels of networks until it gets to its destination.



An Overview of TCP/IP

TCP and IP:

- ➔ Have different jobs
- ➔ Are two different protocols



An Overview of TCP/IP

You can connect to the
Internet in different ways.



An Overview of TCP/IP

Each computer connected to the Internet needs:

- ➔ TCP/IP protocols installed
- ➔ Unique IP address

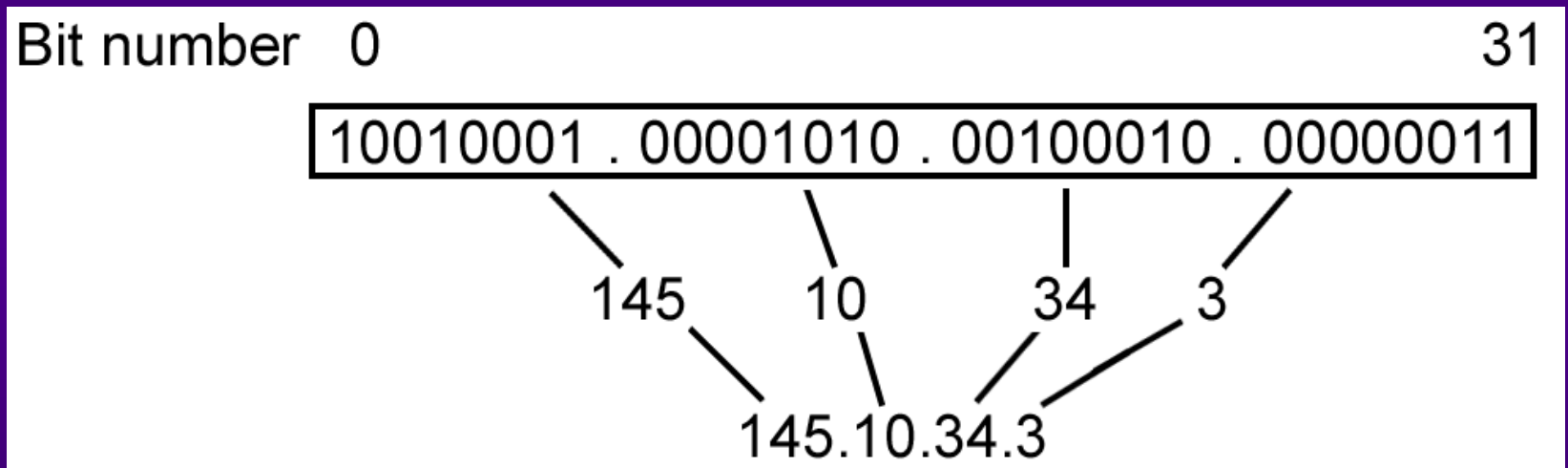


An Overview of TCP/IP

An IP address made up of four numbers separated by periods.

An Overview of TCP/IP

Fig 12.7 A Dotted Quad Address p. 620





An Overview of TCP/IP

Originally, IP address divided into:

➔ Class A, Class B, or Class C

Two additional classes:

➔ Class D or Class E



An Overview of TCP/IP

To not run out of IP addresses:

- ➔ Do not assign permanent (static) address
- ➔ Assign temporary (dynamic) IP address for work session



An Overview of TCP/IP

- ➔ Each site attached to Internet belongs to a domain.
- ➔ Domain Name System (DNS)
 - provides name resolution.



An Overview of TCP/IP

To use browser to access a site on Internet, key in its URL.



An Overview of TCP/IP

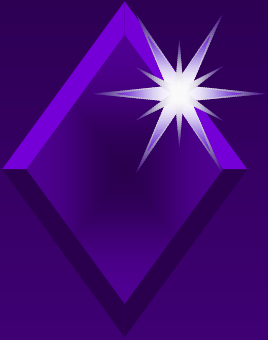
Fig 12.8 The Parts of a URL p. 622

Name of the protocol to use
when accessing the server

Internet name of the
computer (server)

`http://www.microsoft.com/support`

Name of the item to
request from the server



Activity - Using Internet Explorer

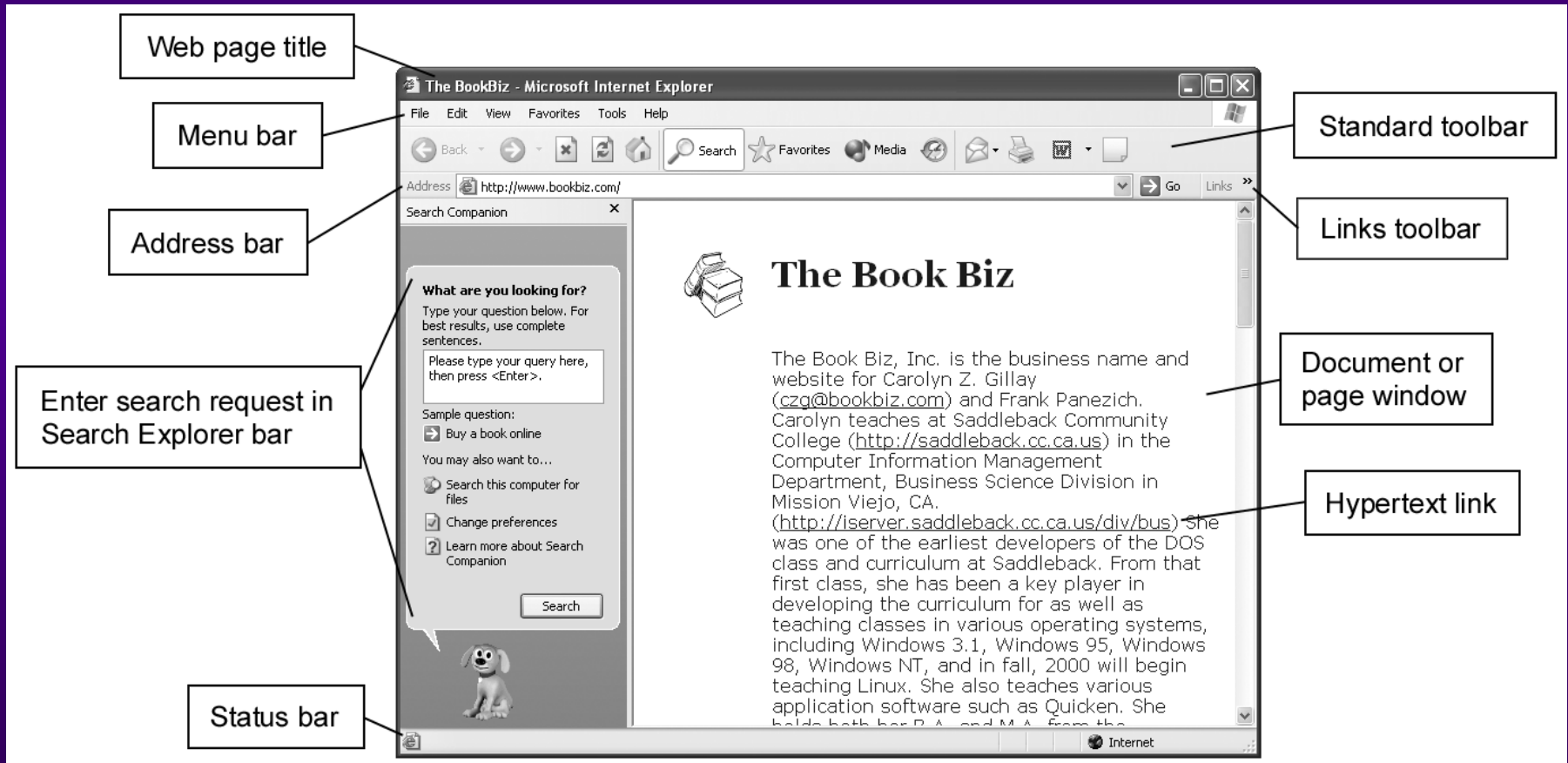
KEY CONCEPTS:

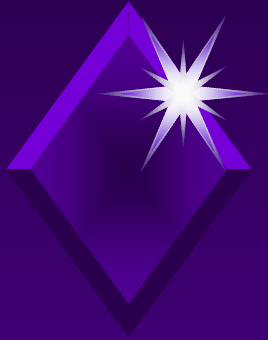
- ➔ Home page
- ➔ Split window choices (Search, Favorites, Media, History)
- ➔ Terms: URL Update, Product enhancements, Bug fixes (patches), and Service Packs



Activity - Using Internet Explorer

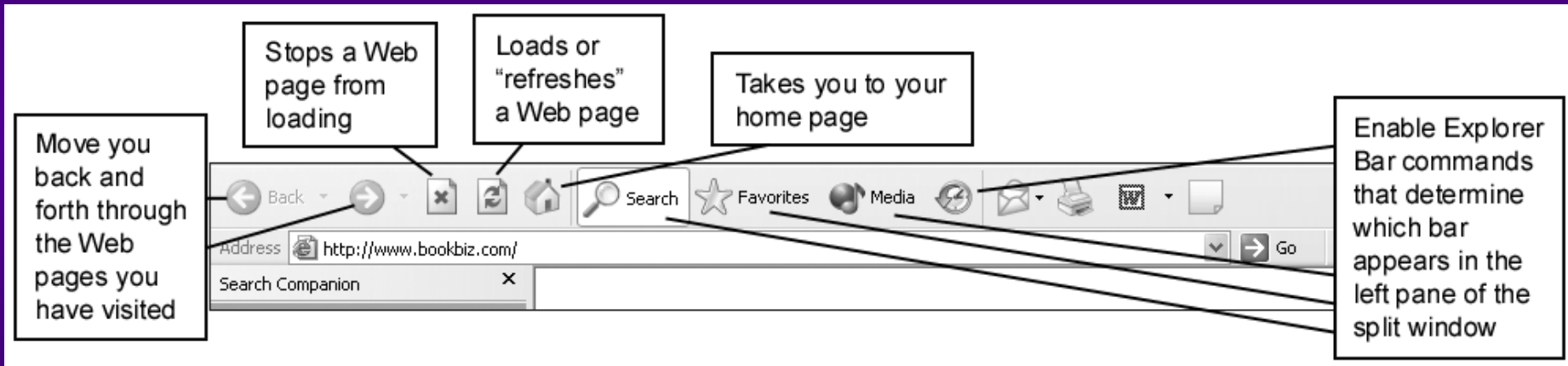
Figure 12.9 Parts of the Internet Explorer Window p.623





Activity - Using Internet Explorer

Figure 12.10 The Standard Toolbar p. 623

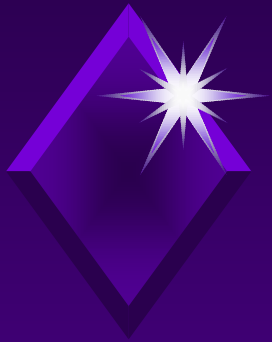




Navigating the World Wide Web

Ways to move about the Web:

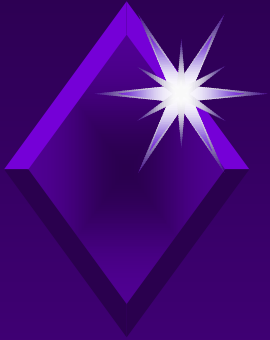
- ➔ Click link to go to specific page
- ➔ Key in URL directly
- ➔ Forward/Back buttons
- ➔ History button
- ➔ Favorites button
- ➔ Search engine to find new Websites



Activity - Navigating the World Wide Web

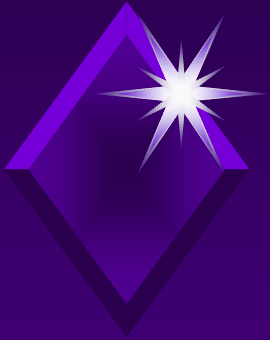
KEY CONCEPTS:

- ➔ Open as Web Folder
- ➔ Yahoo! - index to sites as well as a portal
- ➔ Hypertext links
- ➔ Google - popular search engine



Customizing Internet Explorer

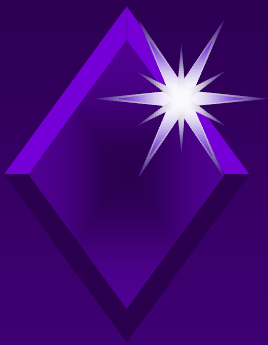
Can configure settings
for Internet Explorer in
one location.



Customizing Internet Explorer

Can customize:

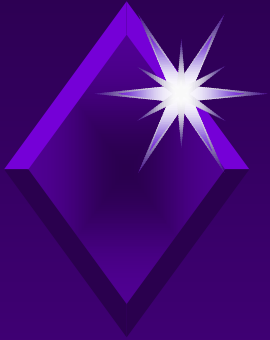
- ➔ Cosmetic options
- ➔ Level of security
- ➔ Preferred Email program



Activity - A Tour of Internet Explorer

KEY CONCEPTS:

- ➔ Property Sheet tabs dealing with customization:
 - ➔ General
 - ➔ Security
 - ➔ Privacy
 - ➔ Content
 - ➔ Connections
 - ➔ Programs
 - ➔ Advanced



Activity - A Tour of Internet Explorer

KEY CONCEPTS:

- ➔ Intranet
- ➔ Cookies
- ➔ Zones
- ➔ Certificates