Aplikasi Web
Pertemuan-5
Web Hosting

Introduction to Web Hosting

How does the Web work? How can I make my own Web Site?

What is a Web Host? What is an Internet Service Provider?

What is the World Wide Web?

- The Web is a network of computers **all over the world**.
- All the computers in the Web can **communicate with each other**.
- All the computers use a **communication standard called HTTP**.

How does the WWW work?

- Web information is stored in documents called **web pages**.
- Web pages are files stored on computers called **web servers**.
- Computers reading the web pages are called **web clients**.
- Web clients view the pages with a program called a **web browser**.
- Popular browsers are **Internet Explorer and Netscape Navigator**.

How does a Browser Fetch a Web Page?

- A browser fetches a page from a web server **by a request**.
- A request is a standard HTTP request containing **a page address**.
- An address may looks like this: **http://www.someone.com/page.htm.**

How does a Browser Display a Web Page?

- All web pages contain **instructions for display**
- The browser displays the page by **reading these instructions**.
- The most common display instructions are called **HTML tags**.

- HTML tags look like this ** This is a Paragraph .**

If you want to learn more about HTML, please visit our HTML tutorial.

What is a Web Server?

- The collection of all your web pages is called **your web site**.
- To let others view your work, you must **publish your web site**.
- To publish your work, you must **copy your site to a web server**.
- Your own PC can act as a web server if it is **connected to a network**.
- Most common is to use an **Internet Service Provider (ISP)**.

What is an Internet Service Provider?

- ISP is a shortcut for **Internet Service Provider**.
- An ISP provides **Internet services**.
- A common Internet service is **web hosting**.
- Web hosting means **storing your web site on a public server**.
- Web hosting normally includes **email services**.
- Web hosting often includes **domain name registration**.

Web Hosting Providers

If you want your web site to be visible to the world, you have to store it on a web server.

Most small businesses and companies store their web site on a server provided by an Internet Service Provider (ISP).

Hosting Your Own Web

Hosting your web site on your own server is always an option. Here are some problems to consider:

Hardware Expenses

To run a "real" web site, you will have to buy some powerful server hardware. Don't expect that a low cost PC will do the job. You will also need a permanent (24 hours a day) high speed connection to your office, and such connections are expensive.

Software Expenses

Don't forget to count the extra cost for software licenses. Remember that server licenses often are much higher than client licenses. Also note that some server software licenses might have limits on number of concurrent users.

Labor Expenses

Don't expect low labor expenses. Remember that you have to install your own hardware and software. You also have to deal with bugs and viruses, and keep your server constantly running in an environment where "everything could happen".

Using an Internet Service Provider

Renting a server from an Internet Service Provider (ISP) is a common option. Here are some advantages:

Connection Speed

Most providers have very fast connections to the Internet, like full T3 fiber-optic 45Mps connections equivalent to about 2000 traditional (28K) modems or 1000 high speed (56K) modems.

Powerful Hardware

Service providers often have many powerful web servers that can be shared by several companies. You can also expect them to have an effective load balancing, and necessary backup servers.

Security and Stability

Internet Service Providers are specialists on web hosting. Expect their servers to have more than 99% up time, the latest software patches, and the best virus protection.

Things to Consider

24-hour support

Make sure your Internet service provider offers 24-hours support. Don't put yourself in a situation where you cannot fix critical problems without having to wait until the next working day. Toll-free phone could be vital if you don't want to pay for long distance calls.

Daily Backup

Make sure your service provider runs a secure daily backup routine, otherwise you may lose some valuable data.

Traffic Volume

Study the provider's traffic volume restrictions. Make sure that you don't have to pay a fortune for unexpected high traffic if your web site becomes popular.

Bandwidth or Content Restrictions

Study the provider's bandwidth and content restrictions. If you plan to publish pictures or broadcast video or sound, make sure that you can.

Email Capabilities

Make sure your provider fully supports the email capabilities you need. (You can read more email capabilities in a later chapter)

Front Page Extensions

Make sure your provider fully supports FrontPage server extensions if you plan to use FrontPage to develop your site.

Database Access

Make sure your provider fully supports the database access you need if you plan to use databases from your site. (You can read more about database access in a later chapter)

Hosting and Domain Names

A Domain Name is a unique name for your web site.

Choosing a hosting solution should include domain name registration.

Your domain name should be easy to remember and easy to type.

What is a Domain Name?

A domain name is a unique name for a web site, like **microsoft.com** and **w3schools.com**.

Domain names must be registered. When domain names are registered they are added to a large domain name register, and information about your site - including your internet IP address - is stored on a DNS server.

DNS stands for Domain Name System. A DNS server is responsible for informing all other computers on the Internet about your domain name and your site address.

Registering a Domain

Domains can be registered from domain name registration companies such as http://www.dotdnr.com.

These companies provide interfaces to search for available domain names and they offer a variety of domain name extensions that can be registered at the same time.

Domain Name Registration provides registration services for .com .net .org .biz .info .us . nu .ws .cc and .tv domains.

Newer domain extensions such as .biz .info and .us have more choices available as many of the popular domains have yet to be taken. While .com and .net domains are well established and recognized, most popular domains with these extensions are already registered.

Choosing Your Domain

Choosing a domain is a major step for any individual or organization.

While domains are being registered at a record, new domain extensions and creative thinking still offer thousands of excellent choices. When selecting a name it is important to consider the purpose of a domain name, which is to provide people an easy way to reach your web site. The best domains have the following characteristics:

Short - People don't like to type! The shorter your domain, the easier it is to reach and the less are the chance the user will make a typographical error while typing it.

Meaningful - A short domain is nothing without meaning, 34i4nh69.com is only 8 characters long but would not be easy to enter or remember. Select a domain that relates to your site in a way that people will understand.

Clear - Clarity is important when selecting a domain name. You should avoid selecting a name that is difficult to spell or pronounce. Also, pay close attention to how your domain sounds and how effectively it can be communicated over the phone.

Exposure: Just like premium real-estate on the ground that gets the most exposure, names that are short and easy to remember are an asset. In addition to humans viewing your domain, you should consider search engines. Search engines index your site and rank it for relevance against terms people search for online. In order to maximize your sites exposure, consider including a relevant search term in your domain. Of course, this should only be considered if it still maintains a short, clear and meaningful domain.

Sub Domains

Most people are unaware but they already use sub domains on a daily basis. The famous "www" of the World Wide Web is the most common example of a sub domain. Sub domains can be created on a DNS server and they don't need to be registered with a domain registrar, of course, the original domain would need to be registered before a sub domain could be created. Common examples of sub domains used on the internet are http://store.apple.com and http://support.microsoft.com.

Sub domains can be requested from your web hosting provider or created by yourself if you manage your own DNS server.

False Domain Names - Directory Listings

Some providers will offer you a unique name under their own name like:
www.theircompany.com/yourcompany/

This is not a real domain name, it is a directory - and you should try to avoid it.

These URLs are not desirable, especially for companies. Try to avoid them if you can afford to register a domain. Typically these are more commonly used for personal sites and free sites provided by your ISP, you may have seen **www.theircompany.com/~username** as a common address, this is just another way to share a single domain and provide users their own address.

Open competition in domain name registration has brought about a dramatic decrease in pricing so domain sharing is far less common since people can register their own domains

for only $15 per year.

Expired Domains

Another source for domain registrations is expired domains. When you register a domain, think of it as a rental, assuming there are no legal or trademark issues with the domain name, you are free to use it as long as you continue to pay the yearly fee (you can now also register in advance as many as 10 years). Some people register domains as speculators, hoping that they can later sell them, while others may have planned to use a domain and never had the time. The result is that domains that were previously registered regularly become available for registration again. You can see, and search through a list of recently expired domains for free at http://www.dotdnr.com. If you wish to register an expired domain you pay the same fee as you would for a new registration.

Use Your Domain Name

After you have chosen - and registered - your own domain name, make sure you use it on all your web pages and on all your correspondence, like email and traditional mail.

It is important to let other people be aware of your name, and to inform your partners and customers about your web site.

Hosting Capacities

Make sure you get the disk space and the traffic volume you need.

How Much Disk Space?

A small or medium web site will need between 10 and 100MB of disk space.

If you look at the size of HTML pages, you will see that the average size is very small. Maybe even smaller than 1K. But if you look at the size of the images (button, gif, banner, jpg) used inside the pages, you will often find images many times larger than the page itself.

Expect each HTML page to take up between 5 and 50K of disk space on your web server, depending on the use of images or other space consuming elements.

If you plan to use lots of images or graphic elements (not to mention sound files or movies), you might be needing much more disk space.

Make sure that you know your needs before you start looking for your web host.

Monthly Traffic

A small or medium web site will consume between 1 and 5GB of data transfer per month.

You can calculate this by multiplying your average page size with the number of expected page views per month. If your average page size is 30K and you expect 50,000 page views per month, you will need 0.03MB x 50,000 = 1.5GB.

Larger, commercial sites often consume more than 100GB of monthly traffic.

Before you sign a contract with a host provider, make sure to check this:

- What are the restrictions on monthly transfer
- Will your site be closed if you exceed the volume
- Will you be billed a fortune if you exceed the volume
- Will my future need be covered
- Is upgrading a simple task

Connection Speed

Visitors to your web site will often connect via a modem, but your host provider should have a much faster connection.

In the early days of the Internet a T1 connection was considered a fast connection. Today connection speeds are much faster.

One byte is 8 bits, and that is the number of bits used to transport a character (a letter or a digit). Low speed communication modems can transport from about 14 000 to 56 000 bits per second (14 to 56 kilobits per second). That is somewhere between 2000 and 7000 characters per second, or about 1 to 5 pages of written text.

One kilobit (Kb) is 1024 bits. One megabit (Mb) is 1024 kilobits. One gigabit (Gb) is 1024 megabits.

These are connection speeds used on the Internet today:

Name	***Connection***	***Speed per second***
Modem	Analog	14.4-56Kb
D0	Digital (ISDN)	64Kb
T1	Digital	1.55Mb
T3	Digital	43Mb
OC-1	Optical Carrier	52Mb

OC-2	Optical Carrier	156Mb
OC-12	Optical Carrier	622Mb
OC-24	Optical Carrier	1.244Gb
OC-48	Optical Carrier	2.488Gb

Before you sign up a contract with any hosting provider, surf some other web sites on their servers, and try to get a good feeling about their network speed. Also compare the other sites against yours, to see if it looks like you have the same needs. Contacting some of the other customers is also a valuable option.

Hosting Email Services

Hosting services should include proper Email Accounts and Email Services.

Email Accounts

Hosting solutions should include email accounts for each person in your company. Email addresses should appear like this:

peter@mycompany.com

paul@mycompany.com

mary@mycompany.com

Most common is to use first name or first initial and last name.

POP Email

POP stands for Post Office Protocol. POP is a standard client/server protocol for sending and receiving email.

The emails are received and held on your internet server until you pick it up with a client email program, like Outlook, Outlook Express, Netscape Messenger, etc. POP email programs are built into Netscape and Internet Explorer browsers (i.e. Microsoft Outlook Express).

IMAP Email

IMAP stands for Internet Message Access Protocol. IMAP is another standard protocol

for sending and receiving email.

The emails are received and held on your internet server until you pick it up with a client email program, like Outlook, Outlook Express, Netscape Messenger, etc.

IMAP represents an improvement over POP because email stored on an IMAP server can be manipulated from several computers (a computer at home, a workstation at the office, etc.) without having to transfer messages back and forth between computers. POP was designed to support email access on a single computer.

Web-based Email

Web-based email services enable you to access email via a web browser. You log into your email account via the Web to send and retrieve email. Being able to access your email from any browser anywhere in the world is a very attractive option.

Examples of web-based email services are Yahoo! Mail and Hotmail.

Email Forwarding

Email forwarding allows you to have multiple email personalities.

With email forwarding, you can setup aliases for other email accounts like

postmaster@mycompany.com should be forwarded to **peter@mycompany.com**

sales@mycompany.com should be forwarded to **mary@mycompany.com**

Mailing Lists

Some service providers offer mailing list capabilities. This is a valuable plus if you plan sending out email to a large number of users.

Web Hosting Server Technologies

This section describes some of the most common hosting technologies.

Windows Hosting

Windows hosting means hosting of web services that runs on the Windows operating system.

You should choose Windows hosting if you plan to use ASP (Active Server Pages) as server scripting, or if you plan to use a database like Microsoft Access or Microsoft SQL Server. Windows hosting is also the best choice if you plan to develop your web site using Microsoft Front Page.

Unix Hosting

Unix hosting means hosting of web services that runs on the Unix operating system.

Unix was the first (original) web server operating system, and it is known for being reliable and stable. Often less expensive than Windows.

Linux Hosting

Linux hosting means hosting of web services that runs on the Linux operating system.

CGI

Web pages can be executed as CGI scripts. CGI scripts are executables that will execute on the server to produce dynamic and interactive web pages.

Most Internet service providers will offer some kind of CGI capabilities. And many will offer preinstalled, ready to run, guest-books, page-counters, and chat-forums solutions written in CGI scripts.

The use of CGI is most common on Unix or Linux servers.

ASP - Active Server Pages

Active Server Pages is a server-side scripting technology developed by Microsoft.

With ASP you can create dynamic web pages by putting script code inside your HTML pages. The code is executed by the web server before the page is returned to the browser. Both Visual Basic and JavaScript can be used.

ASP is a standard component in Windows 95,98, 2000, and XP. It can be activated on all

computers running Windows.

Many web hosting providers are offering ASP, as it is becoming a more and more popular technology.

If you want to learn more about ASP, please visit our ASP tutorial.

Chili!Soft ASP

Microsoft's ASP technology runs only on Windows platforms.

However, Chili!Soft ASP is a software product that allows ASP to run on UNIX and some other platforms.

JSP

JSP is a server-side technology much like ASP developed by Sun.

With JSP you can create dynamic web pages by putting Java code inside your HTML pages. The code is executed by the web server before the page is returned to the browser.

Since JSP uses Java, the technology is not restricted to any server-specific platform.

FrontPage

FrontPage is a very common web site design tool developed by Microsoft.

FrontPage allows users to develop a web site without any deep knowledge of web development. Most Windows hosting solutions support FrontPage server extensions for users that use FrontPage to develop their web site.

If you plan to use FrontPage, you should look for a Windows hosting solution (meaning not Unix / Linux).

PHP

Just like ASP, PHP is a server-side scripting language which allows you to create dynamic web pages by putting script code inside your HTML pages. The code is executed by the web server before the page is returned to the browser.

Cold Fusion

Cold Fusion is another server-side scripting language used to develop dynamic web pages.

Cold Fusion is developed by Macromedia.

Secure Server

A secure server can transmit data encrypted.

If you plan to do online credit card transactions, or other types of web communication that needs to be protected against unauthorized access, your web host must provide a secure server.

Web Hosting Database Technologies

SQL Server or Oracle for high traffic database-driven web sites.

Access or MySQL for low traffics database-access.

Web Databases

If your web site needs to update large quantities of information via the web, you will need a database to store your information.

There are many different database systems available for web hosting. The most common are MS Access, MySQL, SQL Server, and Oracle.

Using the SQL Language

SQL is the language for accessing databases.

If you want your web site to be able to store and retrieve data from a database, your web server should have access to a database-system that uses the SQL language.

If you want to learn more about SQL, please visit our SQL tutorial.

SQL Server

Microsoft's SQL Server is one of the most popular database software for database-driven web sites with high traffic.

SQL Server is a very powerful, robust and full featured SQL database system.

Oracle

Oracle is also a very popular database software for database-driven web sites with high traffic.

Oracle is a very powerful, robust and full featured SQL database system.

Access

When a web site requires a simple database solution, Microsoft Access is a very popular option.

Access is not well suited for very high-traffic, and not as powerful as Oracle or SQL Server.

MySQL

MySQL is also a popular database software for web sites.

MySQL is an inexpensive alternative to the expensive Microsoft and Oracle solutions.

Web Hosting Types

Hosting can be FREE, SHARED or DEDICATED.

Free Hosting

Some service providers offer free web hosting.

Free web hosting is best suited for small sites with low traffic, like family sites or sites about hobbies. It is not recommended for high traffic or for real business. Technical

support is often limited, and technical options are few.

Very often you cannot use your own domain name at a free site. You have to use a name provided by your host like http://www.freesite/users/~yoursite.htm. This is hard to type, hard to remember, and not very professional.

Good:	**Bad:**
Low cost. It's free.	No domain names.
Good for family, hobby or personal sites.	Few, limited, or no software options.
Free email is often an option.	Limited security options.
	Limited or no database support.
	Limited technical support.

Shared (Virtual) Hosting

Shared hosting is very common, and very cost effective.

With shared hosting, your web site is hosted on a powerful server along with maybe 100 other web sites. On a shared host it is common that each web site have their own domain name.

Shared solutions often offer multiple software solutions like email, database, and many different editing options. Technical support tends to be good.

Good:	**Bad:**
Low cost. Cost is shared with others.	Reduced security due to many sites on one server.
Good for small business and average traffic.	Restrictions on traffic volume.
Multiple software options.	Restricted database support.
Own domain name.	Restricted software support.
Good support	

Dedicated Hosting

With dedicated hosting your web site is hosted on a dedicated server.

Dedicated hosting is the most expensive form of hosting. The solution is best suited for

large web sites with high traffic, and web sites that use special software.

You should expect dedicated hosting to be very powerful and secure, with almost unlimited software solutions.

Good:	**Bad:**
Good for large business.	Expensive.
Good for high traffic.	Requires higher skills.
Multiple domain names.	
Powerful email solutions.	
Powerful database support.	
Strong (unlimited) software support.	

Collocated Hosting

Collocation means "co-location". It is a solution that lets you place (locate) your own web server on the premises (locations) of a service provider.

This is pretty much the same as running your own server in your own office, only that it is located at a place better designed for it.

Most likely a provider will have dedicated resources like high-security against fire and vandalism, regulated backup power, dedicated Internet connections and more.

Good:	**Bad:**
High bandwidth.	Expensive.
High up-time.	Requires higher skills.
High security.	Harder to configure and debug.
Unlimited software options.	

Your Checklist

Before you choose your web host, make sure that:

- ❒ The hosting type suits your current needs
- ❒ The hosting type is cost effective
- ❒ Upgrading to a better server is a possible solution
- ❒ If needed, upgrading to a dedicated server is possible

Before you sign up a contract with any hosting provider, surf some other web sites on their servers, and try to get a good feeling about their network speed. Also compare the other sites against yours, to see if it looks like you have the same needs. Contacting some of the other customers is also a valuable option.

Web Hosting E-Commerce

If you are selling a product or a service, e-commerce might be a smart way to do business.

Internet Commerce

E-Commerce is about selling products or services over the Internet.

If you are selling a product or a service, e-commerce might be a smart way to do business. Over the Internet you can reach a large number of customers.

E-Commerce Systems

It is not a very good idea to build your own e-commerce system. Some (larger) companies might do it, but we will not recommend it if you run a smaller business. Building an e-commerce system is a complicated process, with the potential for a lot of errors.

You might buy a ready-to-use system and run it on your own server. Many systems are available on the market today, and most of them will cover your basic needs for order management and processing. But again, if you are not familiar with hosting your own web site, starting with an e-commerce site is not the right thing.

The best solution, in our opinion, is to find a hosting provider that offers an e-commerce solution.

Hosting Providers

E-commerce covers a very huge range of products. With different hosting providers you will find anything from very simple to very complex solutions.

Most providers will offer a simple and inexpensive solution that allow you to run your own "virtual store".

Your Checklist

- How does it handle customers?
- How does it handle product catalogs?
- How does it handle orders?
- How does it handle inventory?
- How does it handle back orders?
- How does it handle shipment?
- How does it handle accounts?
- How does it handle billing?
- How does it handle payment?
- How does it handle foreign currency?
- How does it handle credit cards?
- How does it handle taxes?
- How does it handle security?
- How does it handle integrity (encryption)?

Also check if the most time-consuming tasks are automated. Look for automated billing, invoice handling, accounting, and report generation.

Before you sign up a contract with any hosting provider, surf some other e-commerce sites on their servers. Find out how it works. Actually try some shopping and see if you get a good feeling. Also compare the other sites against yours, to see if it looks like you have the same needs. Contacting some of the other customers is also a valuable option.

Tax Issues

Taxes is a complex issue for most on-line stores. Especially VAT (Value Added Tax).

If you are selling on-line, you will most likely be in the export business.

Trading with different countries is easy, but tax issues might be tricky. Exporting goods may not be the subject of VAT in your country, but often your customers will have to pay their local VAT when they pick up the goods.

In addition, there will be the issue of income tax for your shop, depending on how you report your income from sales.

Before starting an on-line store, be sure to consult your tax adviser.