

# **Web Hosting, ISPs, DNS and Security Protocols**

# ARE DOMAIN NAME AND WEB HOSTING THE SAME?

Cannot tell the difference between a domain name and web hosting.

**Domain Name – The Address**

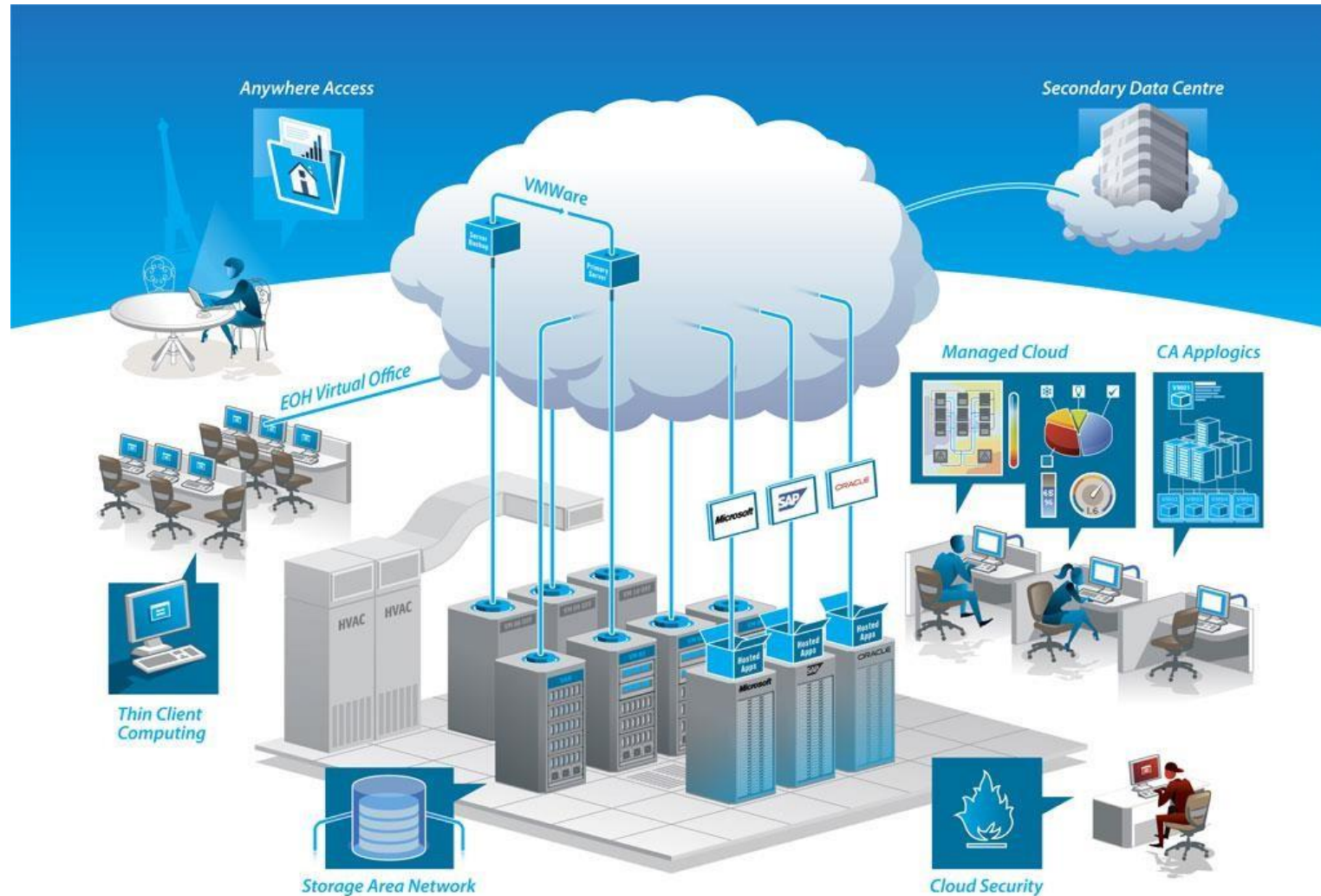
**Hosting – The Land**

**Website – The House**

You get a domain name, then you get hosting, then you build a website/create email addresses



# Web Hosting and ISPs



# Web Hosting

- Web hosting refers to the **activity or service of providing storage space to individuals or organizations, for their websites that are accessible via World Wide Web.**
- Any website to be available for viewing on the World Wide Web, it has to be on a computer that is connected to the Internet.
- The **computer your site is on** is known as its **host**.
- A web host, or hosting service provider, is a **business that provides the technologies and services needed for the website or webpage to be viewed in the Internet.**

# Web Hosting

- Websites are hosted, or stored, on special computers with special software service called servers.
- You have to pay to an organization to put your documents on their webserver, which called as web hosting.
- Hosting service providers are hosting your site on their servers.
- When Internet users want to view your website, all they need to do is type your website address or domain into their browser.
- The **DNS ensures you get associated with the correct computer.**
- Their computer will then connect to your server and your webpages will be delivered to them through the browser.

# Web Hosting

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graph TD; A[Web Hosting] --- B[Windows Hosting]; A --- C[Linux Hosting]; A --- D[Unix Hosting];
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**Windows Hosting**

**Linux Hosting**

**Unix Hosting**

# Windows Hosting

- In web site hosting, there are two main types of operating system platforms on which you may host your web site, namely: **UNIX** and **Windows** (UNIX hosting and Windows hosting).
- **Hosting of web services that runs on the Windows operating system and**
- **Design their own sites using Microsoft technology** means **Windows-specific technologies** such as **ASP, .NET, Microsoft Access and Microsoft SQL server (MSSQL)**.
- You should **choose Windows hosting** if you plan to use **ASP (Active Server Pages) or ASP.net** as **server scripting**, or
- If you **plan to use a database** like **Microsoft Access or Microsoft SQL Server**.
- Some of the Windows-specific technologies such as ASP, .NET, Microsoft Access and Microsoft SQL server (MSSQL) are listed below.
- **ASP .net - Active Server Pages**

# Windows Hosting

- **Active Server Pages (ASP)** 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.**
- ASP is a standard component in current Windows OS's. 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.
- Currently **ASP.net** is more popular among Microsoft community.
- **MySQL** is also popular database software for web sites.
- **MySQL** is an inexpensive alternative to the expensive Microsoft and Oracle solutions.



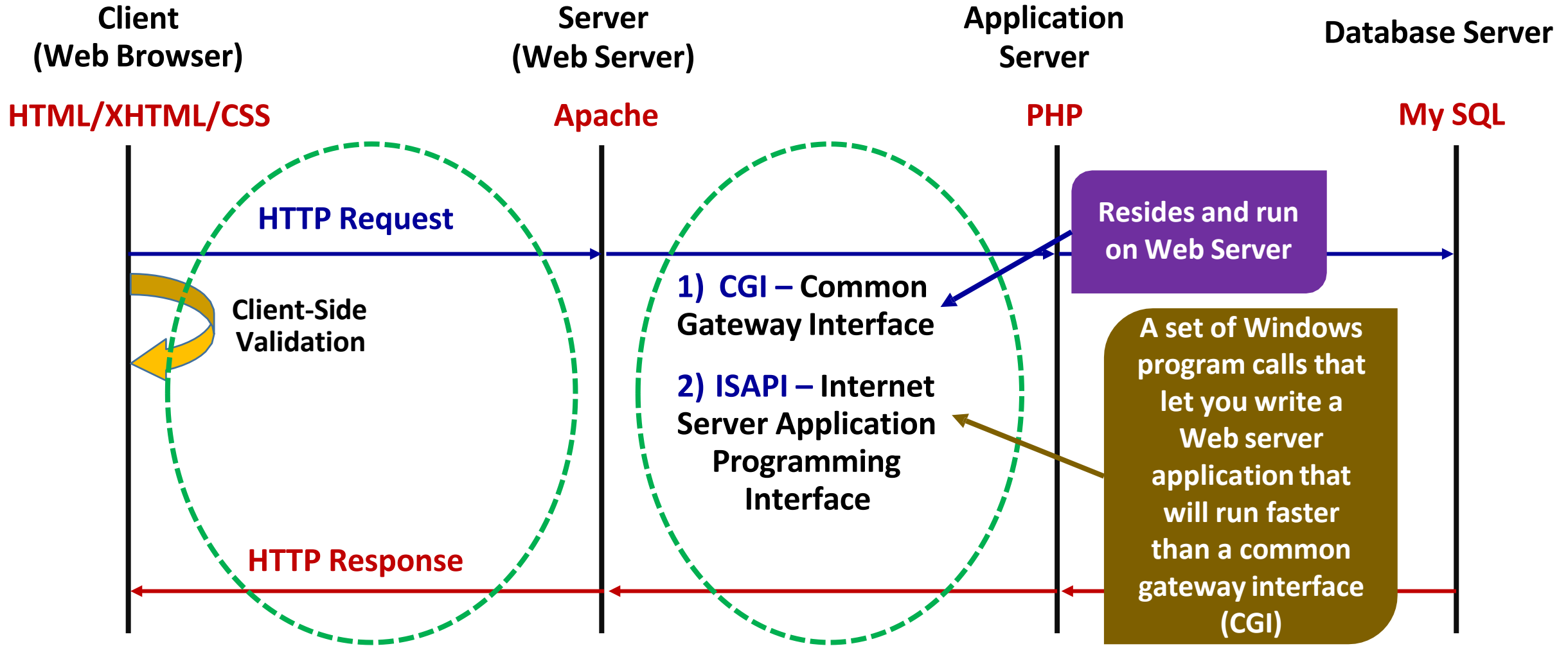
# Unix Hosting and Linux Hosting

- **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**.
- It is **less expensive** than Windows.
- **Linux hosting** means hosting of web services that runs on the Linux operating system.
- Linux servers are known for their **value, stability and wide feature set**.
- **You do not have to be running Linux to use a hosting provider with Linux Servers.**
- It is simply the **software used by the server to share out a website**.

# Web servers, Server Packages and Utilities

- A **web server** that **responds to client side requests** that comes from a web browser, by giving resources like XHTML Pages.
- There are two web servers the **open source Apache HTTP Server** and **Microsoft's Internet Information Services (IIS)** which you can install on your own computer for testing your web pages and web applications.
- **Web server** is a computer **where the web content is stored**.
- Basically **web server** is **used to host the web sites** but there exists other web servers also such as **gaming, storage, FTP, email etc**.

# The Architecture of the Internet



HTTP Request – Response Model  
Client-Server Model for Web Application Development

# Web servers, Server Packages and Utilities

- Web server responds to the client request (browser) in one of the following two ways:
  - Sending the file to the client associated with the requested URL
  - Generating response by invoking a script and communicating with database
- When client sends request for a web page, the web server search for the requested page if requested page is found then it will send it to client with an HTTP response.
- If the requested **web page is not found**, web servers will the send an **HTTP response: Error 404 Not found**.
- If client has requested for some other resources then the web server will contact to the application server and data store to construct the HTTP response.

# Internet Service Providers - ISPs

- An organization that **provides Internet/Web based services to customers.**
- The most popular service is Internet Access and the other services are:
  - POP(Post Office Protocol)/Web Mail
  - Web Hosting
  - Mail Servers etc.

# Apache web server on Linux

- Generally, **Apache web server bundle is delivered with most Linux variant installation packages.**
- Here, in the following video you can learn how to install it from scratch.
- Here it uses Ubuntu as the operating system and apache2 web server package where it is more similar in other Linux/Unix variants and web servers as well.
- Further the next video shows how to configure it from Operating System bundle.
- Apache2 installation Demo: <https://www.youtube.com/watch?v=-q8Jj4aAWYw>
- Apache web server configuration Demo: <https://www.youtube.com/watch?v=UrPNg4tWjUI>

# IIS (Internet Information Server)

- **IIS** is the Windows Web service that can be **installed on Microsoft windows computers**,
- once you installed IIS server to your own computers you **can publish your web pages and web applications on your local computers**.
- **IIS** is not installed on current Windows OS's by default.
- The following video IIS Installation Demo:  
<https://www.youtube.com/watch?v=I32AnqJzD58>

# Publishing web site in IIS

- Create a home page for your Web site.
- Name your home page file Default.htm or Default.asp.
- Copy your home page into the default Web publishing directory for IIS (wwwroot).
- The default Web publishing directory is also called the home directory, and the location provided by Setup is **\Inetpub\wwwroot**.
- **If your network has a name resolution system (typically DNS)**, then visitors can simply type your computer name in the address bar of their browsers to reach your site.
- **If your network does not have a name resolution system**, visitors must type the numerical IP address of your computer.



# Publish content on your FTP site

- Copy or move your files into the default FTP publishing directory. The default directory provided by Setup is **\Inetpub\Ftproot**.
- If your network has a name resolution system (typically DNS), then visitors can type ftp:// followed by your computer name in the address bar of their browsers to reach your site.
- If your network does not have a name resolution system, visitors must type ftp:// and the numerical IP address of your computer.

# Self Learning Activity

- Write the differences and similarities of Windows hosting and Linux hosting.

# Types of Web Hosting

- **Dedicated Hosting** – Your site is put on a web server that does not have any other site. It is called exclusive and the cost is high.
- **In-house Hosting** – Same as dedicated server, but the server kept in your premises.
- **Co-located Server** - You buy the server, load the website and then give it to the ISP to connect to their network

# Types of Web Hosting

- **Free Hosting** - Limited hosting features in return for shown banners and ads on your site
- **Virtual Hosting** – Paid service. Your site is hosted on a shared server. Therefore, it is the cheapest option and the most popular option
- **Server Farm/Cluster** – Certain websites are very large and has high traffic. These are **hosted on multiline services** that share the load.  
Ex: Facebook.com, Google.com

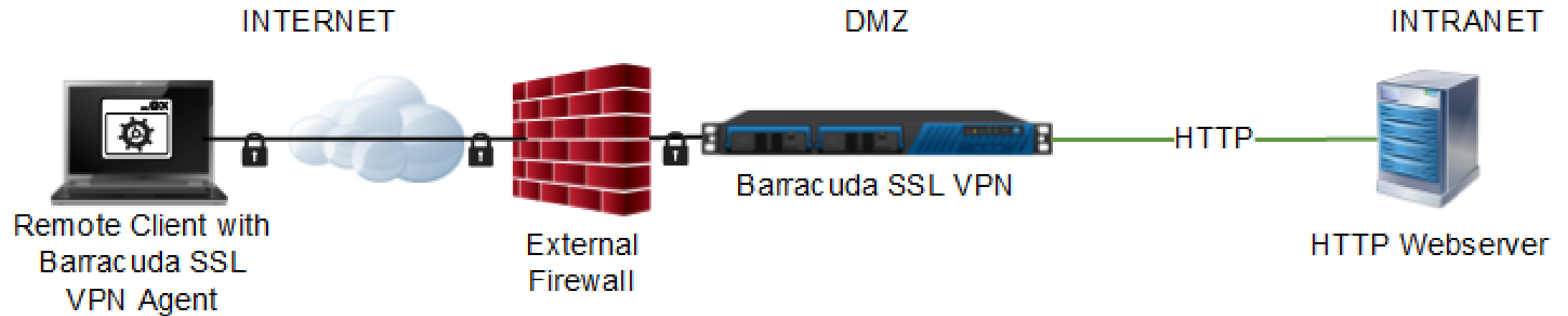
# What is a Domain Name?

- A domain name is a **unique name for a web site**, like **microsoft.com** and **w3schools.com**.
- A domain name is a unique name that people type in the browser to open a particular website.
- For example, **domain name for w3schools** is **w3schools.com**.
- It's the name by which your site will be known on the web and the way individuals can discover it.
- It is the primary thing that your clients will type in their program to get to your site or on the other hand find it through web search tools, for example, Google or Bing.

# What is a Domain Name?

- Your domain name should be important because it is the name that people have to remember and type in to get to your website.
- 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 which 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**.

# Security Protocols



# Secure Socket Layer - SSL

- This works with the **HTTP to provide 128 bit encryption.**
- It allows to have a HTTPS (Hyper Text Transfer Protocol Secure) connection to the web.
- HTTPS/SSL connection is indicated on your browser in two ways
  - 1) The URL will indicate as HTTPS://
  - 2) The status bar of your browser will show a KEY or PADLOCK icon.
- This means that data sent between the browser and the server are encrypted.



# Five (5) Pillars of Security

- **Authentication** – Is user really who she/he claims to be? Username and Password are the easiest way to check this
- **Authorization** – Do you have the RIGHT/PERMISSION to do a specific task
- **Integrity** – Information has not changed (Initially or otherwise)
- **Non-repudiation** – Cannot deny having done something or sent something
- **Availability** - The system should be available at all the time. System should not have “downtime”

Ex: Website have a 99.99% “**UPTIME GUARANTEE**” depending on the hosting provider

# Website Legal Issues: COPYRIGHT, PRIVACY AND TERMS OF USE

## COPYRIGHT

- This is a legal protection that is given for Intellectual property (something that is created as a result of using your intellect)
- Items that can be copyrighted: Books, Movies, Songs, Script of a drama/play, software, website and etc.
- Copyright means that content can not be copied without the written permission of the copyright holder.
- A copyright is normally valid a period of 70 years after the death of the copyright holder

# **Website Legal Issues: COPYRIGHT, PRIVACY AND TERMS OF USE**

## **PRIVACY POLICY**

- There is a statement put on the site by the owner stating what will be done with any information that you provide that site
- Ex: Any information that you provide to this website will not be used for any other purpose other than for the following.....

# Website Legal Issues: COPYRIGHT, PRIVACY AND TERMS OF USE

## TERMS OF USE

- These are the condition to which user will be bound. They will mention what the site can be used by user and may also specifically mention. What is CANNOT be used for
- Self-policy – The user will understand the terms and avoid bad behaviour
- Community Policy – Members of the community will report unwanted content