Redesign the website of National Science & Technology Commission

By

Geethika Amarangani Kumarasihi

(00/AS/089)

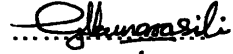The thesis is submitted in the partial fulfillment of the requirements for the degree of

Bachelor of Science

in

Physical Sciences

Department of Physical Sciences
Faculty of Applied Sciences,
Sabaragamuwa University of Sri Lanka,
Buttala.

March 2004.

Declaration

I carried out the work described in this thesis at the National Science & Technology Commission and the Faculty of Applied Sciences under the Supervision of Dr. M.C.N.Jayasuriya and Dr. R.G.N.Meegama. A report on this has not been submitted for any other award of Degree or Diploma.

G.A.Kumarasihi

Date: 08/05/2004

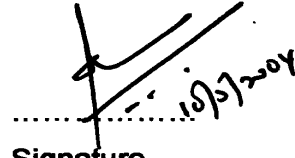Certified By

External Supervisor.

Dr. M.C.N.Jayasuriya.

Executive Director

National Science & Technology Commission

No 2, Galpotta Road

Nawala

Rajagiriya.

Signature

Date: ....
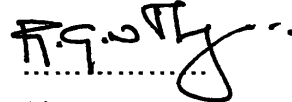
Internal Supervisor

Dr. R.G.N. Meegama.

Center of Computer Studies

Sabaragamuwa University of Sri Lanka.

P.O.Box 2,

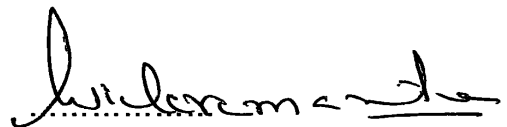Belihuloya.

Signature

Date: 08/05/2004

Head of the Department

Dr. Mrs. N. Wickramaratna

Faculty of Applied Sciences

Sabaragamuwa University of Sri Lanka

Buttala.

Signature

Date: 12/05/2004

Affectionately dedicated to my loving parents.

Acknowledgement

First I would like to give my special sincere thank to Dr.M.C.N.Jayasuriya, Executive Director of National Science and Technology Commission. He is quick in response, his valuable guidance, encouragement and supervision then gives to me to complete this project successfully.

My deepest gratitude is extended to my internal supervisor, Dr.M.G.N.Meegama coordinator, Computer center, Sabaragamuwa University of Sri Lanka, Belihuloya who provided useful insights and suggestions that helped me in preparing the final version of the my project and his help proved to be invaluable.

I would like to express my heartfelt thanks to Dr. Mrs. N. Wicramaratna, head, Department of Physical Sciences, Faculty of Applied Sciences, Sabragamuwa University of Sri Lanka, Buttala, who found this place very special opportunity for me.

I would also like to thank Dr.D.B.Mahinda Wicramaratna, Dean, Faculty of Applied Sciences, Sabaragamuwa University of Sri Lanka and other staff members at National Science and Technology Commission whose help provide to be invaluable.

Abstract

As Information technology is the fastest and most widely used communication media a complete website for an Institution like National Science and Technology necessary to keep the national & international community made aware and updated on the Institution.

The National Science and Technology Commission had a Website. But it had been found that the site lacks both in content and good design. The drawbacks prevalent in this website had only few links. When users clicked on one link, they could proceed only up to a single page. Further those links were not categorized and no searching facility was available.

The objectives of this project were

To overcome the drawbacks of existing website

To improve the website by publishing important information about NASTEC and

To provide search facility.

The website was developed using following methods. Discussing with the relevant persons the analysis was carried out. Also drawbacks were observed in the existing website.

All the information was categorized in to several pages. About the Commission, Product Relations, Public Relations and links to other pages like that. All the web pages were created using Hypertext Markup Language (HTML), Java Scripts. Cascading Style Sheet (CSS) used to provide more attractive design. Common Gateway Interface (CGI) Script was used to provide searching facility. Java Applet was used to create Scroll bars.

The outcome of the project was a new website for the NASTEC with several important categorical links with a good search engine. Further the important information related to NASTEC was added so that they could be accessed very easily.

List of Content

List of Figures

List of Tables

CHAPTER 1

INTRODUCTION

1.1. National Science and Technology Commission

1.1.1. Background

The National Science and Technology Commission (NASTEC) came into existence as a functional Institution only in the beginning of 1999 having been formally inaugurated on December 6th 1998. The Act itself that gave the commission legal status had been passed unanimously by parliament in 1994, but it was put into operation since in 1998. Her Excellency the president appointed six members to the commission and a chairman, in August of 1998.

The functions of NASTEC as defined by the act are to "Advise the Government on policies and plans for the Department of Science and Technology" and include policies and plans relating to a number of subject areas identified in the Act as follows:

- The application of Science and Technology to stimulate economic growth;
- The impact of Science and Technology on the efficiency and competitiveness of industry, agriculture, services and economy;
- The impact of Science and Technology on health, nutrition and poverty alleviation with a view to improving the quality of life of the people;
- The development of human and other resources needed for Science and Technology in consultation with the authorities responsible for education, training and research;
- The development and management of natural resources of Sri Lanka;
- The identification and prioritization of Science and Technology areas those are likely to be of national importance.
- The creation of a climate conductive for the build-up, retention, and attraction of Science and Technology.
- The establishment of management strategies conductive to the productive application of Science and Technology.
- The allocation of funds for Science and Technology, including the priority of funding research and development in Science and Technology Institutions.

1

1.1.2. Services:

The use of Science and Technology as an integral part of the effort to achieve rapid economic development and improved quality of life alleviate poverty; involve scientists and technologists in the formulation of policy and in decision-making;

- Foster scientific and technological activity in all its aspects with a view to developing self reliance in scientific and technological capability, and to ensure the allocation of a reasonable proportion of the Gross National Product (GNP) for Science and Technology activities;

- Support the development of indigenous technology wherever feasible whilst promoting the import, adaptation and assimilation of technology for rapid growth in industry, agriculture and services;

- Ensure that institutions of higher education and technical education and research institutions produce scientists, technologists and technicians of high caliber and competence and to secure the provision of incentives to them with a view to ensuring their retention in Sri Lanka;

- Provide adequate opportunities for all persons to acquire a basic education in science and its practical applications;

- Cultivate among the people, appreciation of the value of science, scientific method and technology and of the integral role that science plays in modern society;

- Disseminate the benefits of Science and Technology activity to all sectors of the people;

- Encourage and strengthen cooperation in Science and Technology between scientists in Sri Lanka, and between scientists in Sri Lanka and scientists outside Sri Lanka, and to provide access to global scientific and technological knowledge and activity;

- Develop the capability to continuously plan, evaluate and review strategies, legislation and the institutional frame work for Science and Technology in Sri Lanka;

- Identify priority areas of Science and Technology likely to be of benefit to Sri Lanka and to promote research and development in such areas.

2

NASTEC will take particular cognizance of the inputs from bodies such as the National Science Foundation (NSF), the Council for Agricultural Research Policy (CARP) and the National Health Research Council (NARK) and Professional bodies such as Sri Lanka Association for the Advancement of Science (SALAS), Institute of Chemistry, Institute of Physics, Institute of Engineers and Institute of Biology.

One of the major issues where NASTEC would be most effective would be in the prioritization of areas of national importance of Science and Technology, and in advising the Government as regards the rational allocation of funds for research and development in national Science and Technology institutions of the country.

NASTEC is also expected to review annually the performance of Science and Technology Institutions and convene a biennial Sri Lanka Conference on Science and Technology

1.1.3. Science and Technology – Policies and Plans

In the context of the development of policies and plans for Science and Technology in Sri Lanka, NASTEC and S & T Act of 1994 is the most recent effort on the part of the political system to organize S & T in the country, in order to make a contribution to national development, YES, the effort is limited and does not deliver the initiatives needed for a complete revamp of the S & T system and give it the desired momentum. Nevertheless, still it is in the right direction of setting forth an initiative towards greater utilization of S & T in national development.

The commission, as described by the Act, consists of six chosen commissioners with a chairman making seven members. It has been granted a number of powers by the Act, but these powers are limited. The commission has been operating financially as another department within the government Ministry of S & T until recently, without even the legal status of a corporate body.

1.2. Project

Redesign the web site of National Science and Technology Commission.

1.2.1. Project Description

The National Science and Technology Commission (NASTEC) had a web site. But it had been found that the Website lacked both in content and good design. The drawbacks prevalent in the present design were:

(1) Only a few links - When we click on one link, we could proceed only up to a single page due to that link. Therefore, additional links would have been included in the web site to make it more informative.

(2) The links were not categorized in the Website and

(3) There was no facility to search the web site for a given information

1.2.2. Objectives

To overcome the drawbacks of existing Website.

To improve the quality and the content of the National Science and Technology Commission's Website with following features:

(1) Good search engine is easy to browse and proceed directly to the required information.

(2) Proper flow of Web pages

(3) Links are properly categorized.

CHAPTER 2

Theoretical Background

2.1 About web

The World Wide Web (www) was created in 1989 at the European laboratory for particle physics in Geneva, Switzerland, as a way to easily access cross-referenced documents that exist on the Internet. Documents are located and opened using hypertext links, which contain a reference to a specific document. Hypertext Markup Language (HTML) is a simple language used to design the web- pages that appear on the World Wide Web. A Web browser is a program that displays html document on your computer screen.

Every web page or document has a unique address known as Uniform Resource Locator (URL). Each URL consists of four parts.

Http: // www.nastec.lk/nastec-files /index.html

Protocol

Domain Name   Directory   File Name
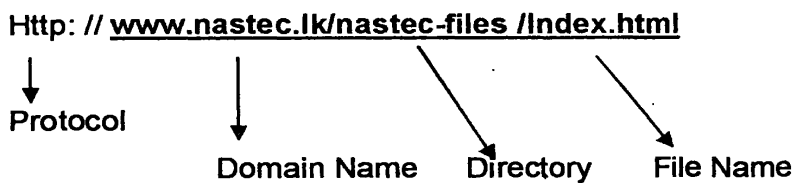
The main purpose of the web was locating and displaying information. Once the web grew beyond a small academic and scientific community people began to recognize that greater interactivity would make the web more useful.

Consider the following possible example:

- Small Business

  The web is an ideal way for small business to communicate with both existing customers and potential customers.

- Large Business

  Large business should be on the web too, especially technical and customer services oriented business. The web is a wonderfully unique way to provide customer services, technical support and informational services at a relatively low cost to the business.

- Community groups

  The web page can even be a great way to inform members of changes to the club or the schedule, or to praise members for accomplishments.

- Hobbies

Even if your major hobby, you can create a web page and place it on the World Wide Web.

As we develop a site, we must be concerned with providing a rich content that is easily understood. We can adequately provide what our audience expects from the contents. In fact, most of the criteria with which the web deals are technical issues such as connecting to the network, finding resources, and using those resources.

However, we must have some inclination as to the whole purpose of the World Wide Web Communication. The criterion for a good web site is its communicative value and how efficiently and effectively that communication occurs.

The webs are designed well using graphics, animations and multimedia elements. We should use graphical elements to help communicate more effectively; this is their goal and purpose. Web documents become much better communication tools when they are formatted and include graphics.

The companies are struggling just to get their presence established on the web. Many throw information on the web and let it sit for several months before updating or modifying it. One of the most important things to a successful web presence is change. Because customers of a company site or an audience would like to know the current state of a company, updating the information on the pages consistently is essential. They like to see activity on the web. Planning to invest in the web, only to let information stagnate at the site is not recommended. One of the best ways to accomplish this is to consistently and frequently update web site with something new.

What is the World Wide Web?

The World Wide Web is a part of the Internet. It relies on a common set of protocols that allow a server computer configured a certain way to distribute documents across the Internet in a standard way. This web standard allows programs on many different computer platforms such as windows 95/98/NT. Maces, Linux, UNIX and so on to properly format and display the information served. These programs are called browsers.

The web is fairly unique among Internet services (which also include email, FTP, Gopher and more) in that its protocols allow the web server to send information of many different types (text, sound, graphics) as well as offer access to those other Internet Services.

Servers and Hosts

The Internet community uses the words. *Host* and *server.*

A host computer is generally a computer that allows its local users to gain access to Internet Services. It might also allow other user to gain access to information in its organization.

The depending on the size of the organization Internet site, the host often doesn't serve that information itself. Instead, it relies on server computers that have more specific functions, such as serving Hypertext Markup Language (HTML) documents, shareware programs or Usenet news. The servers will be accessed through the host, through, so it's really only important to know the host address on the Internet just like in the real world.

The Hypertext Concept: Web Links

In a hypertext document, certain words within the text are marked as links to other areas of the current document or to other areas of the current document or to other documents.

The links can be text or graphics

User moves to a related area by moving mouse pointer to the link and clicking once. This generally causes the current web document to be erased from the browser's window, and a new document in which case clicking the link will cause the browser to move to a new part of the currently displayed document.

The web page

The World Wide Web is composed of millions of web pages, each of which is served to a browser one page at a time. A web page is generally a single HTML document, which might include text, graphics, sound files and hypertext links. Each HTML document you create is a single web page, regardless of the length of the document or the amount of information included.

The web Site

A web site is a collection of web pages under the control of a particular person or group. Generally, a web site offers a certain amount of organization of its internal information. You might start with an index or default page for a web site and then use hypertext link to access more detailed information. Another page within the web site might offer links to other interesting sites on the web, Information about the Organization or just about anything else.

Web site organization is an important consideration for any HTML designer, including those designing and building corporate web sites. The typical corporate web site needs to offer a number of different types of information, each of which might merit its own web page or pages.

A corporate web site

The typical corporate web site starts with an Index page that quickly introduces users to information the site has to offer. Perhaps Index is a misnomer. Because this page usually acts as a sort of table of contents for the web site.

```
                    ┌─────────────────────────┐
                    │      Index Page         │
                    └─────────────────────────┘

┌──────────┐  ┌──────────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐
│About the │  │ Tech Support │  │ Product  │  │ Public   │  │ Links to │
│Company   │  │              │  │ Relations│  │ Relations│  │ Other web│
└──────────┘  └──────────────┘  └──────────┘  └──────────┘  │ Sites    │
                    │                                        └──────────┘
              ┌──────────────┐
              │  FTP site    │
              └──────────────┘
```
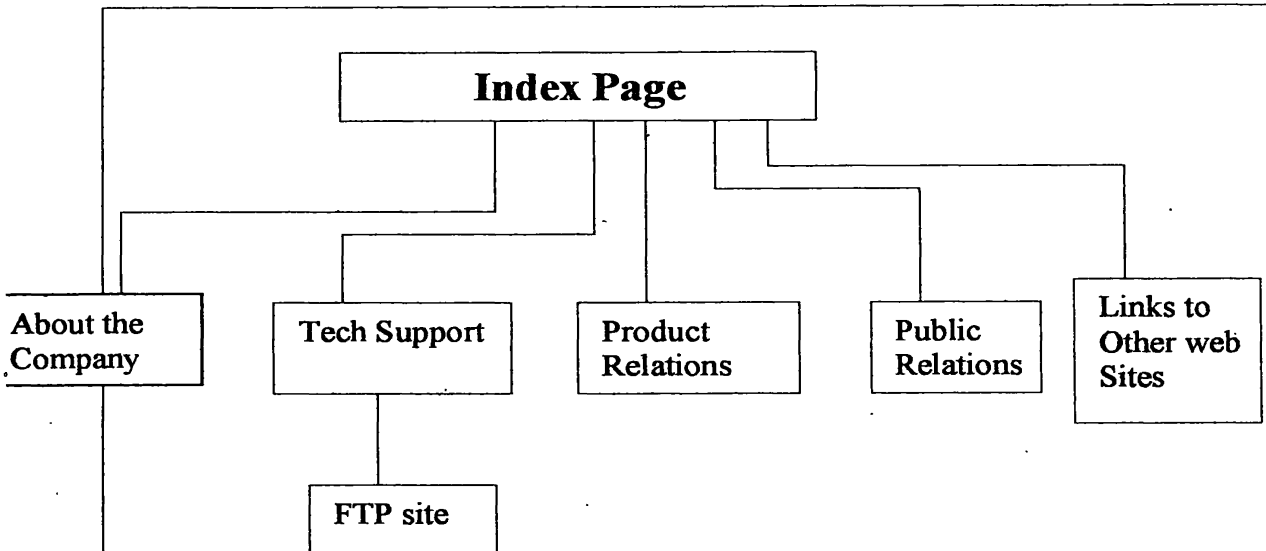
Figure 2.1.   An Organizational chart for a basic corporate web site

(Navarro, A., Stauffer, T. (2000) HTML by Example, Prentice- Hall of India Private Limited, New Delhi, 475 p.p.)

Internet Services and Addresses

The web is unique in its ability to access other Internet service. Being the youngest of the Internet services, the web can access all of its older siblings, including Internet email, Usenet newsgroups, Gopher servers, and FTP server.

Before you can access these services, though you need to know what they do and how they're addressing Schemes work.

Internet Email

Internet email is designed for the transmission of ASCII text messages from one Internet user to another, specified user. Like mail delivered by the U.S.Post office, Internet email

allows you to address your messages to a particular person. After it's sent, it eventually arrives in that person's email box (generally an Internet-connected computer where he or she has an account), and your recipient can read, forward or reply to the message.

Internet email addresses follow certain conventions:

Username@sub-domain.domain.first-level domain

Username is the name of the account with the computer; sub-domain is an optional Internet designation, domain is the assigned to the host organization's Internet presence, and fist-level domain is a two or three letter code that identifies the type of organization the controls the host computer

E.g.:

nastec@itmin.com, where NASTEC is the username. Itmin is the domain, and com is the first-level domain. . com is the three-letter level domain name.

Look Table 2.1

First-level Domain	Organization Type
.com	Commercial
.edu	Educational
.org	Organization/association
.net	Computer network
.gov	Government
.lk	Sri Lanka
.mil	Military installation
.au	Australian domain
.uk	United Kingdom domain
.jp	Japanese domain

Table 2.1   Common first-level Domain News

(Navarro, A., Stauffer, T. (2000) HTML by Example, Prentice- Hall of India Private Limited, New Delhi, 475 p.p.)

Web Servers

Most of us won't have an occasion to truly run our own web servers. However there still details about them that you should be familiar with because you'll still be interacting with them if you choose to create a web site that's housed at your ISP.

A server refers to a machine that performs a specific task. It is a machine that stores and sends out the individual files that make up a web site. The actual process of receiving and responding to requests for file is handling by web server software. Such as Microsoft personal web server (PWS), and Apache.

Web Browser

There are several web browsers. We will talk about Microsoft Internet Explorer.

This web browser created by Microsoft. Originally based on the Mosaic technology, and in fact still licensed (in part) for distribution by SpyGlass. Internet Explorer is a most popular title. Current installations of win 95/98 and Win NT comes with a version of Internet Explorer already installed, Depending on which version of windows you have. I t might not be the most recent version of Internet Explorer.

Internet Explorer, supports most of the HTML recommendation and could use for Cascading Style Sheets.

Uniform Resource Locators (URL)

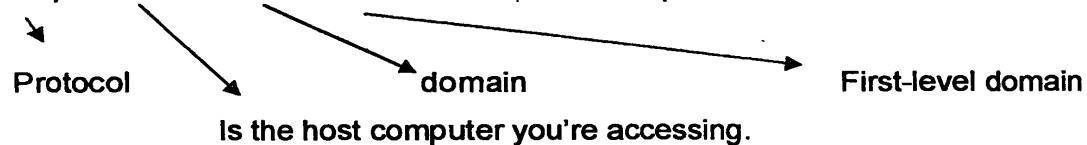URL is this special address. URL follows a format like this:

Http: // host.domain.first-level domain/path/file name.txt

Or

Http: host.domain.first-level domain.

Eg:

Http: //www.microsoft.com/windows/default. Asp.

Protocol   domain   First-level domain

Is the host computer you're accessing.

The URL Advantages

- It allows you to explicit indicate the type of Internet service involved.
- The URL system of addressing makes every single document, program and file on the Internet a separately addressable entity.

    All web browsers should easily handle this address with a URL; you can be much more specific about the document you want to see, because every document on the Internet has an individual address.

10

Protocol	What is Accesses
http : //	HTML documents
https : //	Some 'Secure' HTML documents
file : //	HTML document on your hard drive
ftp : //	FTP sites and files
mailto :	Email messages
telnet :	Direct connection from your computer to the server using a 'shell' account
news : //	Usenet newsgroups on a particular news server.

Table 2.2   Possible Protocols for a URL

(Navarro, A., Stauffer, T. (2000) HTML by Example, Prentice- Hall of India Private Limited, New Delhi, 475 p.p.)

By entering one of these protocols, followed by an Internet server address and a path statement, you can access nearly any document, directory, file, or program available on the Internet or on your own hard drive.

How web browsers Access HTML documents

When you enter a URL in the URL field on your browser, the browser goes through the following three steps:

- It determines what protocol to use.
- It looks up and contacts the server at the address specified.
- It requests the specific document (including its path statement) from the server computer

Using all this information, your browser was able to access the variety of Internet services discussed in Table 2.3

What can be sent on the web

HTTP protocol is that it is fairly unlimited (by Internet Standards) in the sort of files that it can send and receive. HTTP can send both of the major types of files-ASCII and binary using same protocol. This means that both plain text files (such as Usenet message and HTML document) and binaries (such as downloadable programs or graphics files) can be sent via the web without any major effort on the part of the user.

11

When a binary document such as a graphics files is sent over the web, it's important that it have the appropriate extension. That's how web browsers know whether a document should be viewed in the browser window (like a JPG or GIF-format graphic) or it should be saved to the hard drive (like a ZIP file).

The HTML designer, this means two things. First, you should recognize that your HTML pages could offer just about any other type of file for transport across the web. If you want to send graphics, games, WordPerfect documents, or just about anything else, just put a hypertext link to that file on your Web page.

Second, you need to remember that the most important part of a filename, at least for HTML purposes, is its extension. If you fail to put the correct extension on a filename, your user's browser won't know what to do with it. If you're trying to display a graphic on your web page, for instance, but you put a .txt extension on it, it isn't likely to display

There's one other thing you should realize about the web and web browsers before you begin developing web pages. Very simply, everything you view in a Web browser has to be downloaded from the Web site first.

Whenever you enter a URL or click a hypertext link, the HTML document (or binary file) that you're accessing is sent; in it's entirely, from the web server computer to your computer's hard drive. That's why, for instance, web pages with a lot of graphics files take longer to display than web pages with just text.

For the Web user, this is both good and bad. It's good because once a page is downloaded, it can be placed in the cache so that the next time you access the page, it will take much less time to display.

The bad side of downloading, through, is that every graphic and all of the text you include in an HTML page has to be transmitted over the Internet to you user's computer. If your user is accessing the Web over a modem, downloading and displaying your page can take a long time-especially if your Web page includes a lot of graphics. This means that HTML designers have to be constantly aware of the size of their HTML documents and their Web page graphics in order to avoid causing their users unnecessary irritation and wasted time.

Why create web pages?

There are number of reasons you might want to do this; Consider the following possible example:

☐ **Small Businesses**

The Web is an ideal way for small businesses to communicate with both existing customers and potential customers.

☐ **Large Businesses**

Large businesses should be on the web too, especially technically and customer-service-oriented businesses. The web is a wonderfully unique want to provide customer service, technical support, and informational services at a relatively low cost to the business.

☐ **Community groups**

The web page is a great way to offer information about the group, present a meeting schedule, post announcements, and recruit new members. The web page can even be a great way to inform members of changes to the club or the schedule, or to praise members for accomplishments.

☐ **Hobbies**

As a hobby you can create a web page and put it on the World Wide Web. Eventually, people with the same interests, as you will be visiting your page, sending you email, and helping you find more information about your hobby. You might even find others who've put up similar Web pages, and you'll be able to add links to their information on your page.

☐ **Personal or family pages**

It can include your resume; samples of your work; sample of your kid's work; pictures of the house; car or kittens you're selling; and even clips from home movies. It 's a good way to make up-to-the-minute photos available to your family. It's also a great place to post writing samples and old articles about yourself or your family from the local paper

Web Applications

Web application is a web site designed to do more than simply present pages and hypermedia links to its users; it actually acts front end for data processing.

Searching on the Web

The web applications use HTML pages to offer an interface to a database of web sites around the world. You begin by accessing the page and entering keywords, which the web application passes to a processing program. The program uses your keywords to check the database of web pages and then it generates an HTML page with the results.

The URL for that results page is returned to the web server, which treats it as a standard link. The browser loads the newly created page, complete with hypertext links to the possible database matches.

Let's take a look at the popular Yahoo! Web application. Start out by entering http: // www. Yahoo.com/ in your browser and pressing enter.

Once the page is loaded, it should look something like Figure 2.2
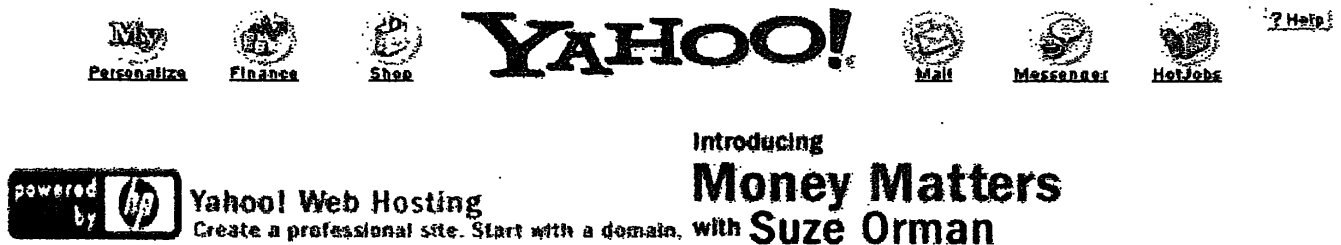

Figure 2.2. Yahoo! Web application

In the field on the web page that allows you to enter text, enter a few keywords that might suggest a hobby that interests you. Click the search button on the web page and the Yahoo! Engine will begin searching for related web pages. Click any links to view the related pages and see whether they offer the information you are seeking.

Advantages & Disadvantages of the web

Advantages

There are many good reasons to commit to creating presence on the World Wide Web.

- Multimedia Presentations:

A web site allows you to do things that are simply not possible in any other medium. Because it combines the visual impact of television.

- Interactivity

There are a number of different areas where the fact that your users can interactively determine what to view or hear can really make the difference for a business.

- Flexibility

14

Disadvantages

- Security

Transmitting data via Internet technology, including the web, can potentially be an unsecured process. For data to be transmitted over the web, it must pass through a number of different servers and hosts, and any of the information you offer could potentially be read or held by any of these system operators.

- Cost

Depending on the size of your organization and the expertise of its people, a web site can quickly become expensive.

Finding a Web Server

Before you can display your HTML pages on the web, you'll need access to a web server. If you work with an Information System (IS) department in a larger corporation. Before it does, need to know how and where to send your HTML files when you want to update the site.

A web server is simply a computer with an Internet connection that runs software designed to send out HTML pages and other file formats (Such as multimedia files.)

The server computer should have a relatively high-speed connection to the Internet and should be powerful enough to deal with a number of simultaneous connections from the Internet.

Web server software generally requires a fairly robust operating system (like UNIX, Win NT, and Linux) although software is available for other platforms, which Internet connection and various operating systems.

Organizing a web site

When organizing a web site is how the server computer you're using will differ from the computer you use to create web pages. This is because you'll need to know the exact path to the HTML pages and multimedia files you use in creating your web page. A URL requires both a server name and a path statement to the file. This includes files that you have placed on your own web server-so while you're creating your web pages. You'll need to know where your files will eventually be.

Although there are a number of different was to arrange a web site, there are some rules of thumb to keep in mind. For the most part, any organization you create for your web site files should be designed to make updating your pages easy in the future.

Naming your files

File extensions are an important part of all the filenames you use for your web site. Because other web browsers may rely on the file extension to know what sort of document or file it is, you'll need to include the appropriate extension with all your web site files.

The web site will almost always begin with a file called Index.html. Most web server software programs will automatically load this page if the URL of your site is accessed without a specific path and file reference.

E.g.
Entering http: // www.hwg.org/ in you browser actually results in the URL http: // www.hwg.org/index.html. Being loaded into your browser. The web site's first page should be designed with this in mind. The other consideration for naming your file is the organization you plan to use for your site. If you're using a single-directory organization, your file names should be as unique as possible, and graphics and other files should probably have names that relate to associated web pages.

For instance
    about-company.html
    about-header. jpg
    about- ceo-photo.jpg

When possible, these names will help you determine which files are associated with which HTML pages when you go to update those files.
For graphics and other files that show up on multiple pages, you might want to come up with a memorable prefix, like gene or site, so that you can easily replace these universal files when necessary.

Organizing a site
To create a reasonably sized site for any organization web site, it possible to use the hybrid style of organization (see-APPENDIX-II).

The web site has different sections. Each of section will have its own directory structure. Graphics will be in their own sub directory.

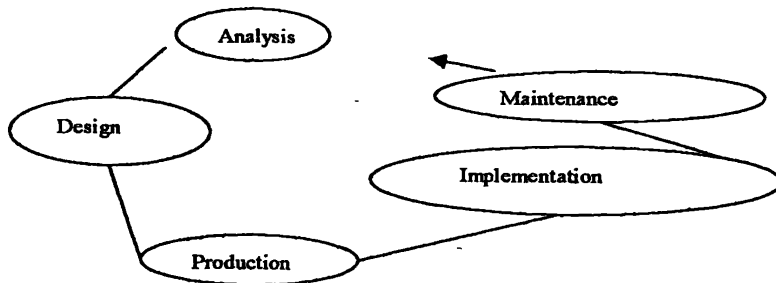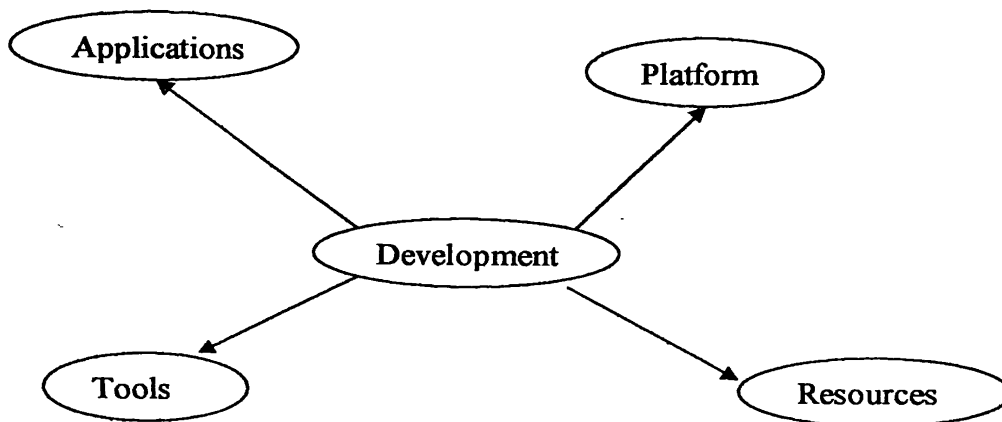## The Development Process

Figure 2.3. Development process

(Navarro, A., Stauffer, T. (2000) HTML by Example, Prentice- Hall of India Private Limited, New Delhi, 475 p.p.)

The entire web development process can be laid out procedurally. If we consider a step-by-step approach to developing web sites successfully as shown figure 2.3

This approach is not necessarily the end all to developing sites. But it should help you in planning and looking at all the variable involved in web site production. Most sites fail simply due to poor planning and design.

Development System

Figure 2.4. Development Systems

17

The primary aspects of concern for the development system are the applications, platform tools and other resources that can be utilized. Looking at these items in a group session make everyone aware of the collaborative resources. Figure 2.4 graphically shows the major points of development system analysis.

Applications

As you begin planning your website, you really need nothing more than a simple text editor and a point application for graphics. However, that many tools have been developed to make web page creation and maintenance more efficient.

The following are some of the most useful tools for web development.

- A web creation tool such as Hypertext Markup Language (HTML), Macromedia Dream weaver, Microsoft front page.
- A raster editor such as Adobe Photoshop
- A vector drawing program such as Macromedia Freehand or Adobe illustrator.

Platform

You also should verify the platform on which you or your web group will be developing the web site. Before you upload it to the web server, developing a site on a local hard drive or storage or storage device is common. Some developers prefer UNIX, others windows, and still others prefer the Macintosh. Any platform will do, but you must be aware of the differences across the various platforms as you begin working.

Tools

In addition to specific development applications, you also might need some other specific tools to add special capabilities.

Other Resources

Beyond the hardware and software resources you will be using, you must also establish what skills each of the group members has. Often a web development group consists of individuals who have a wide variety of skills. In the development system, you can discuss the skills that each person has and how each one contributes to the development of the web site.

Delivery System

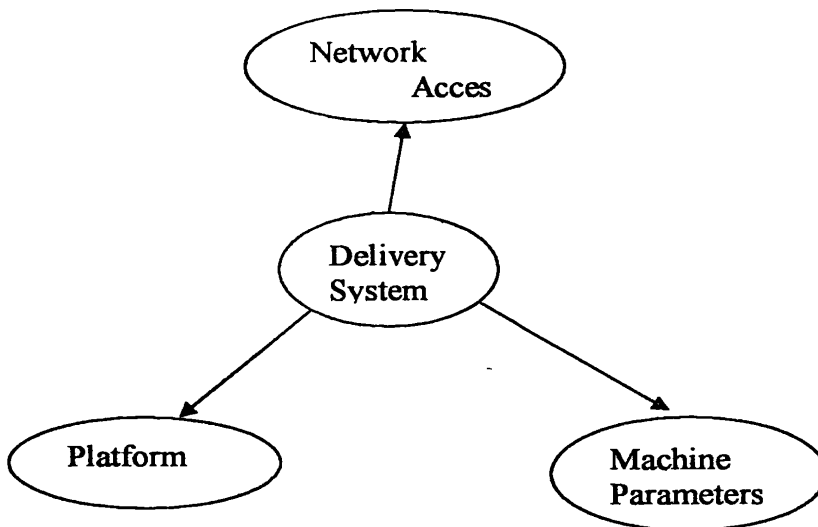

Figure 2.4   Delivery System

(Navarro, A., Stauffer, T. (2000) HTML by Example, Prentice- Hall of India Private Limited, New Delhi, 475 p.p.)

The main concerns in the delivery system are what types of network access the users have, what platforms they are using, and what types of typical machine configuration they will be using (see figure 2.4)

Network Access

The most important aspect of the users' delivery systems is their connection to the Internet. You need to consider from where they will be logging on to the Internet. Is your audience predominantly composed of users logging in from home using dial-up connection? If so, you should carefully choose how much and how many multimedia element you deliver due to the amount of time these elements take to download via modem.
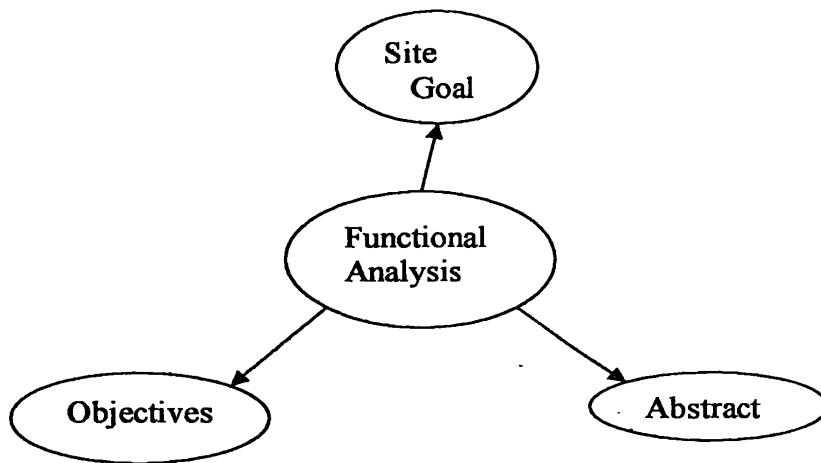
Functional Analysis

Figure 2.6 Functional Analyses

(Navarro, A., Stauffer, T. (2000) HTML by Example, Prentice- Hall of India Private Limited, New Delhi, 475 p.p.)

After looking at the content, audience, development, and delivery systems, you must summarize the information you have.

Up to this point, you have been defining the parameters under which communication should occur. Now you must take that goal and create objectives and the abstract should give more definition to your overall goal. To do a functional analysis like shown in figure 6, you need to document your goal, create objectives, and create an abstract that describes your site.

Site Goal

In the functional analysis you refine and develop the information you have found during analysis in to concise statements that describe your site. As you are creating objectives and the abstract, make sure that these items culminate, complete, and support your overall goal of informing, persuading, educating, or entertaining.

Objectives

Objectives are generally short statements that give definitions to way the overall goal will be accomplished. The objectives deal with each of the various aspects that are to be included in the web site.

20

Abstract

You should describe your rationale for what has been included in the site. This description generally explains why certain features are included and why certain features are not included. The abstract should be written with sufficient length that an individual outside the company could read the document or get a description of the site as well as the rationale for its existence.

Graphic Design

The graphical layout of the pages and the graphics themselves largely contribute to the audience's opinion of your site in addition to the site's communicative value.

Designing appealing graphical pages is not rocket science; indeed, the biggest difficulty is in developing an "artist eye". What looks good to some would be rather unappealing to others. The "artist eye" is somewhat subjective; however there is a general range that most people will agree looks good. To develop an artist's eye simply requires training yourself so that you can tell what looks good and what looks bad.

Graphics that appear on web pages are generally used for three main purposes;

- To enhance, complement, and supplement content that cannot be adequately described or explained with text.

- To present navigational items such as buttons, button bars and icons to enable the user to navigate within your site.

- To aid in creating a visual flow by laying out information through the use of directional, helper and 'filler' graphics.

Technical Design

The main concerns in technical design are the site layout, server structure (see figure 2.7) and the actual directories and files.
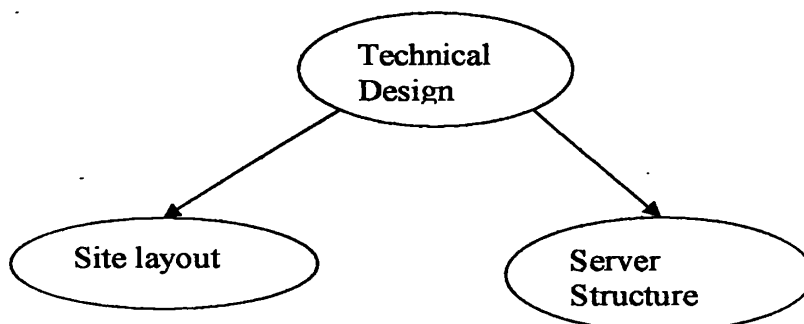
(Navarro, A., Stauffer, T. (2000) HTML by Example, Prentice- Hall of India Private Limited, New Delhi, 475 p.p.)

Site Layout

A site map shows all the various pages at your site and is most often a sketch. The site map layout all the links from one page to the next as well as the various media elements that will be a part of the pages. The site map becomes an invaluable tool as you start creating the pages and the pages and uploading them to your HTTP server.

Server Structure: Directories and files

In addition to being an aid for page development, the site map shows you the relative and absolute file structure for your server.

When developing a site map is how you will set up the file structure on your server. You should create a structure that is logical and easy to manage. All the pages for a particular area. For example: should probably reside in the same folder or directory on the server. Subsequent divisions of each area can have their own directories.

2.2. About Hypertext Markup Language (HTML)

2.2.1. History of HTML

HTML was first proposed in 1989. It took shape as a subset of SGML (Standard Generalized Markup Language), which is a higher-level markup language that has long been a favorite of the Department of Defense and many other organizations with a truly astounding volume of documents to manage. Like HTML, it describes formatting and hypertext links, and it defines different components of a document. HTML is definitely the simpler of the two, and although they are related, few browsers support both.

Because HTML was conceived for transmission over the Internet (in the form of web pages), it is much simpler than SGML, which is more of an application- oriented document format. While it's true that many programs can load, edit, create, and save files in the SGML format (just many programs can create and save files in the Microsoft word format); SGML is not exactly ideal for transmission across the Internet to many different types of computers, users and browser applications.

HTML is more suited to this task. Designed with these considerations in mind, HTML lets you, the designer create pages that can be read on any type of computer, using any web browser software that can be connected to the web. Even users who are unable to view your graphics, for instance, can experience the bulk of what you are communicating if you design your HTML pages properly.

2.2.2. What is HTML

People publish web pages that are purely personal: their thoughts, favorites, pictures, resumes, attributes to their favorite authors and singers and even online journals for those who are more exhibitionistic. The key to this freedom of expression is the language in which web pages are created: the Hypertext Markup Language, or HTML.

2.2.3. HTML is not a programming Language

HTML is not a programming language, but a markup language, HTML is much more easily grasped than most programming languages. If you are familiar with the World Wide Web, you have used a web browser such as Internet Explorer and if you have any experience with a word processor or text editor such as Notepad, simple text, or Emacs, you are familiar with the basic tools required for learning HTML. As web page development matures, we are starting to see more concessions to the professional designers, as well as an expansion in to realms that do require a certain level of computer programming expertise. Creating scripts or applets (small programs) in the java language, for instance, is an area where web page development meets computer programming. It's also relatively distinct arena from HTML, and you can easily be an expert in HTML without ever programming much of anything.

2.2.4. Marking Up text

The most basic element of any HTML page (and, therefore, any page on the web) is ASCII text. Web browsers are smart enough that you could simply write a single paragraph of regular text-generated in a text editor and saved as a text file and have it be displayed in the browser.

HTML formatted documents aren't that far removed from documents created by a word processing program, which are also basically text. Marking up text, then, simply means that you add certain commands or tags to your document in order to tell a web browser, how you want the document displayed.

2.2.5. HTML tags and attributes

The HTML language uses primary code words to define different elements within a document. These primary code words are called tags. In addition, each tag can have its own settings or parameters, which are called attributes. Tags and attributes are not case sensitive. It does not matter whether you enter tags in uppercase or lowercase, but you should be consistent. Use either all caps, or all lowercase to make it easier to read.

You can identify tags in html code by looking for the carrots (< >) that surround them. HTML tags almost always appear in pairs such as <H1> .... </H1>

For example in following, you see simple web page.
<HTML>
<HEAD>
        <TITLE>what is HTML </TITLE>
</HEAD>
<BODY>
  <H1 ALIGN=LEFT> World Wide Web </H1>
</BODY>
</HTML>

Above example, however, notice the words ALIGN=LEFT inserted in to the tag. It has been inserted to show you how to use the attribute inside the <H1> tag.

The attribute is inserted right in to the tag. The tag will use the defaults for its attributes if you don't include attributes in the tag.

Tags are the main or primary HTML code words; attributes are settings or optional parameters for those tags. There are many tags, or code words, in the HTML language. Much like any other programming language, such as BASIC or Pascal. There are many code words so that you can do many different things.

Some of the tags and syntax are displaying in the Appendix- I

24

2.3. About Java Script

2.3.1. JavaScript's Role on the web

The original purpose of the World Wide Web was locating and displaying information. Once the Web grew beyond a small academic and scientific community, people began to recognize that greater interactivity would make the web more useful. As commercial applications of the web grew, the demand for more interactive and visually appealing Web sites also grew. Documents created using basic HTML, however, are static; the main purpose of HTML is to tell a browser bow the document should appear. You can think.of an HTML document, as being approximately equivalent to a document created in a word-processing or desktop publishing program- the only thing you can do with it is view or print it. In response to the demand for greater interactivity, Netscape developed the JavaScript programming language for use in Navigator Web browsers.

JavaScript brings HTML to life and makes Web pages dynamic. Instead of HTML documents being static, JavaScript can turn them into application, such as games or order forms. You can use JavaScript to change the contents of a Web page after a browser, to interact with a user through forms and controls, to create visual effects such as animation, and to control, to create visual effects such as animation, and to control the Web browser window itself has rendered it. None of these things was possible before the creation of JavaScript.

Most of the web site must be exciting, interactive, and visually stimulating. Some Web sites use "flashing signs "that advertise specials, animation, interactivity, intuitive navigation controls, and other forms of entertainment on the Web. All of these types of applications and effects can be created with JavaScript.

2.3.2. The JavaScript Programming Language

JavaScript is a scripting language. The term **scripting language** refers to programming languages that are executed by an interpreter from within a Web browser. An **interpreter** translates programming code into an executable format each time the program is run-one line at a time. Programs written in scripting engine loads an HTML page. A **scripting engine** is an interpreter that is part of the Web

25

browser. A Web browser that contains a scripting engine to translate scripts is called a **scripting host.** Navigator and Internet Explorer are both examples of scripting hosts for JavaScript programs. JavaScript is available in two formats: client-side JavaScript .The standardized **client-side JavaScript** is the format available to HTML pages displayed in Web browsers (the client). Server-side JavaScript is used with Web servers to access file systems, communicate with other applications, access databases, and perform other tasks.

The following description you show overview of JavaScript that we made web sites.

- When using images isn't fast or good enough, add pop-up hint windows

If you have images on your web page, you might want to consider adding text representations of them to help out users with slow connections, users using text only browsers, and users who have turned off loading of images.

The good news is that you don't have to create a separate page – all you have to do is add the "ALT" parameter to your "IMG" tags. For example, if your original IMG tags looks like:

<IMG SRC="welcome.gif">

Simply add the ALT tag as follows with a short but descriptive text that can describe what your image represent:

<IMG SRC="welcome.gif" ALT="Welcome!">

Now, when your visitors choose to see your page without graphics, they'll still be able to see what your images represent.

You can get an extra side benefit by using the ALT parameter. Most new browsers will display the ALT text in a pop-up hint window when the mouse is paused over the image. Example you can see APPENDIX-III

You can easily use this side effect to display on-the-spot help or other long descriptions to your visitors

- Creating links without underlines

Although underlines help us to identify links on web pages, there are some instances where you may want to remove underlines from certain links. It's easy to achieve this effect using "Cascading Style Sheets" (CSS).

Removing underlines from selected links

If you want to remove underlines from certain links, but not all links on a page, simply add **STYLE="text-decoration: none"** to the tag starting the link. Example:

Before (regular link):

About us

After (after stylizing the link to remove underlines):

<a href=http://www.nastec.lk/About us/
STYLE= "text-decoration: none">
About us

Removing underlines from all links on a page

To remove underlines from all links on your page, you can use the following style sheet tags:

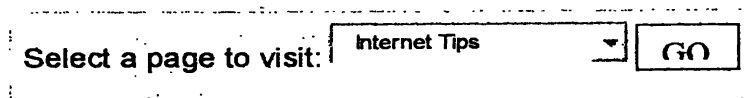```
<style>
<!--
a {text-decoration: none}
-->
</style>
```

How above style sheet tags should be placed inside a page:

```
<html>
<head>
<style>
<!--
a {text-decoration: none}
-->
</style>
<!-- other tags -->
</head>
```

27

```
<body>
<!-- other tags -->
</body>
</html>
```

- How to create active drop down lists without using CGI

Would you like to have a space saving drop down list on your page containing a list of your favorite pages that you can visit with a simple button click as in the example below?

Select a page to visit: | Internet Tips ▼ | GO |

Don't worry if you don't have CGI access; the above drop down list was implemented using JavaScript. Let's look at the source code.

```
<Form name="form1" method="POST">
Select a page to visit:
<Select name="dd1" size=1>
<option value=http://www.nastec.lk/about us/>
Vision
<option>
</select>
<input type="button"
onClick=
"location =
document.form1.dd1.options
[document.form1.dd1.selectedIndex].value;"
value="GO">
</form>
```

The **onClick** code is the magic codes that instruct JavaScript enabled browsers to redirect to a different location depending on the selected drop-down list item.

- How to describe your links using pop-up hints windows

You can make pop-up a hint window, while the mouse is paused over an image, by adding the *ALT* parameter to your *IMG* tags. When it comes to text links, you're

probably used to displaying hints on the status bar. This method may not be the most effective however, not only because the status bar has only a limited amount of space, but also because visitors may not readily notice it or may even have it turned off.

Did you know that you could add pop-up hint windows to your links, without using JavaScript, so that you can better describe them on the spot without using the status bar?

If you like the pop-up hint window you see, here's how to get your links to do the same:

BEFORE: A sample regular link:

<A HREF=http://www.nastec.lk/about us/>
Click here
</A>

AFTER: Same link after adding the *TITLE* tag to create a pop-up hint window:
<A HREF=http://www.nastec/lk/about us/>
 TITLE="Click here to see more details
Click here
</A>

THE RESULT:
This can be look APPENDIX-III
Want to create a multi-line hints window? Simply separate lines with "
" characters:

<A HREF=http://www.nastec.lk/about us/"
 TITLE="Click here to see more cool tips!

This is the second line...



fourth line, after skipping one line">
</A>
See result in APPENDIX-III.

So go ahead, add the *TITLE* parameter to your links to display on-the-spot link descriptions to your visitors. Although not all browsers support this parameter, it won't hurt other browsers since they will simply ignore it for the moment.

2.4. Common Gateway Interface (CGI) Script

Common Gateway Interface (CGI) Scripts are still a favorite method for many developers. Because this type of server-side script offers a lot of power and flexibility. CGI Script is the Standard that describes how web servers connect to external programs, which in turn generate new web pages. To change a page using CGI scripts, the user clicks a hyperlink or submits a form to connect the browser with the server, which contains a script that evaluate what happened and generates a new page in response.

You can do a lot of interesting things with a CGI Script, such as interact with databases or create web pages with user-specific content.

2.5 Cascading Style Sheets (CSS)

Cascading Style Sheets (CSS) is the term used to describe a mechanism that applies a style across one or more web pages. CSS can use to control every aspect of the graphic presentation of a web page, including but certainly not limited to fonts (face, size and color), background color and background image information for web pages and any tables within them, the positioning of elements within the page, page margin and text decoration such as italicizing and underlining. CSS allow a designer to update the style of all hose pages by editing only one file: The style Sheet.

The Syntax of style sheet rules is as follows:

Selector {declaration}

And each declaration follows the syntax like this:

Property: value

Eg: H2 {color: red}

There are four ways to include style information within an HTML document are:

- Linking to an external style sheet
- Importing a style sheet
- Embedding a style sheet

30

- Including style information inline

  Look for example above that in the Appendix-II

2.6. Using frames and accessible Web sites

On the Web, *frames* are a method to display multiple HTML documents at once. The most popular implementation was introduced by Netscape Navigator 2.0.A number of Web sites currently uses frames. The Web Design believes that Web sites should be accessible by *all* visitors, regardless of browser, platform or configuration. This section is intended to use frames.

2.6.1. Frames syntax: overview

As there is no formal standard for frames, it is rather hard to say exactly what is correct syntax. We only have syntax as a guideline. Also, each site discussing frames appears to use different terms. This site is no exception :-), although I hope that the terminology used here is clear enough.

2.6.1.1. Introduction

The term *frames* is used as shorthand for "a technique to display multiple documents at once". This technique is only useful when the browser is running on a graphical display. Other platforms, such as a speech browser, or a console-mode browser, either do not know the concept of "multiple displays" or have only limited screen space. Thus, other terms and descriptions will focus on graphical browsers.

2.6.1.2 Terminology

A browser displays a document in a *window*. A *frame* is a (rectangular) region in the window. It can have a name, so it can be *addressed* or *targeted* by links in documents. If a screen is divided into regions, each one is a frame, and the particular combination of frames is called the *frameset*. To use frames, one document must define the frameset, so that other documents can be displayed in each frame. This document is called the *frameset document*, or just *frameset* for short.

31

When a document displayed in a frame is itself a frameset document, the frames are said to *nest*.

2.6.2. Frame-related HTML elements

There are three new HTML elements, which are used to set up a frameset document.

- The FRAMESET element defines a row or a column in a frameset.
- The FRAMESET element specifies a document that is to be displayed in a frame.
- The NOFRAMESET element is used to indicate content that should be displayed when the browser used is unable to display frames.

2.6.2.1. Targeting frames

When a frame has a name, it is possible to *target* it with a link. This is done using the TARGET attribute. Normally, a link in a document will, when followed, update the frame that the document is in. But when the link uses the TARGET attribute to specify another frame, that frame will be updated instead.

2.6.3. Frames: Assorted attributes

Over time, the FRAMESET and FRAME tags have seen a great many additions, in the form of new attributes. These are mainly hacks introduced to further allow authors to influence the presentation of the frames, and to limit the options that the reader has. For this reason, I strongly discourage their use.

2.6.3.1. Borderless frames

Introduced in Netscape 3 and also present in MS Internet Explorer, although both use different syntax. Using the following syntax: <FRAMESET ROWS="..." BORDER=0 FRAMEBORDER=0 FRAMESPACING=0> the user will not see a "border" between the frames defined in this frameset. While this may look neat, the problem is that the user now can't resize the frame if it is too small for his display.

2.6.3.2. Removing/disabling the scrollbar

By using SCROLLING=NO on a FRAME tag, the scrollbar can be disabled. This means that if the frame turns out smaller than the author expected, the user couldn't scroll through it to read the rest of the contents.

2.6.4. Margin attributes

The MARGINHEIGHT and MARGINWIDTH attributes for FRAME can be used to specify the left and top margins for a frame. This hack was introduced because by default, Netscape leaves a small margin between the borders of the browser window and the actual content of the document. One popular use of this attribute is specifying a frameset with only one frame so the document can be "flushed" against the top of the browser window.

2.6.5. The NORESIZE attribute

This attribute disables the ability to resize a frame.

CHAPTER 3

Methodology

3.1. How analysis was carried out:

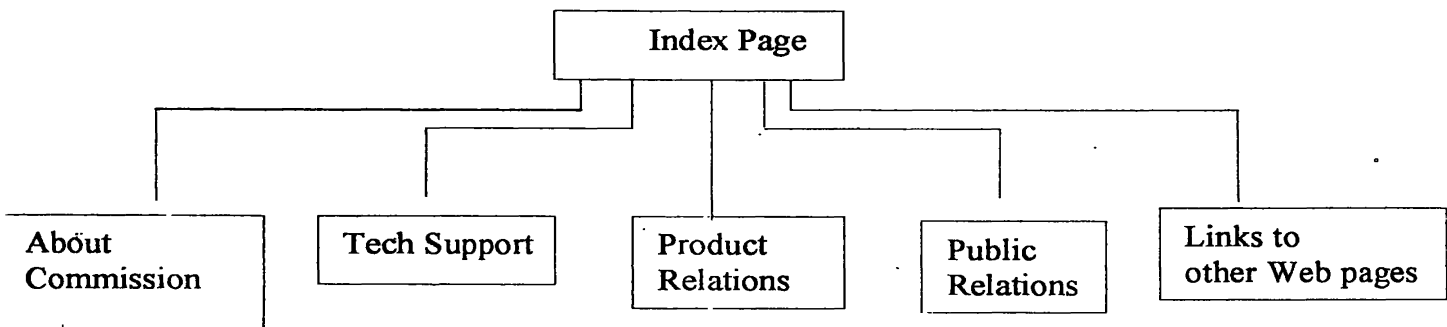Before designing the website the requirements had to be identified.

Hence the analysis was carried out according to the following methods. .

- Discussed with relevant person to get an idea, what were the functions in the Website.

- The information was observed in the present NASTEC Website.

3.2. Designing Approach

The designing was carried out considering the requirements identified in the analysis process

First I was sketched a diagram what was the features of the website

```
                    ┌─────────────────┐
                    │   Index Page    │
                    └─────────────────┘

┌──────────────┐  ┌──────────────┐  ┌──────────────┐  ┌──────────────┐  ┌──────────────────┐
│ About        │  │ Tech Support │  │ Product      │  │ Public       │  │ Links to         │
│ Commission   │  │              │  │ Relations    │  │ Relations    │  │ other Web pages  │
└──────────────┘  └──────────────┘  └──────────────┘  └──────────────┘  └──────────────────┘
```

According to the above diagram the Index page was created using the Hypertext Markup Language (HTML), and used Java Script, Java Applet, CGI Script, CSS. There were three frames included in the Index page. Top frame, Left frame, and Mainframe.

Top frame was created using Microsoft Photoshop. The top frame was displayed in Appendix-III.

Left frame was designed using Hypertext Markup Language (HTML) and Java Script. They were included into relevant pages in the website. The related codes, shown in Appendix-I.

Mainframe was created using Hypertext Markup Language. The updating News and interactive search were included in the mainframe. Java Applet was used to create and

34

updating News. The coding was shown in Appendix- I. The interactive search was created using Common Gateway Interface (CGI) Script.

There were two-search objection

        1. Internet Search

        2. NASTEC Search

There were coding, which were sown in the Appendix-I

All the relevant Web pages were created above procedure.

3.3. Coding

All the codings were included in the Appendix- I

CHAPTER 4

Result and Discussion

All the drawbacks were overcome of the existing Website. The New Website has good covering page and colorful and good designing home page. The New Website has good Search facility which can go to other site map choosing a link as well as.

The out come of the new Website was developed for the NASTEC with several important links and all links were categorized. And also provide with a good search engine that is easy to browse and proceed directly to the required information.

The New Website provides facility to get information about study groups, workshops, Publications, which was held or on going activities. The updating News that can be seen in the scrolling bar from the Index page. The relevant pages of Website included in the APPENDIX - III

CHAPTER 5

Conclusion

The new Website is expected by all of the National Science and Technology Commission members and present Staff members.

As a Further enhancement, the database can be integrated in to the New Website.

CHAPTER 6

Reference

Gosselin, D. (2000) Java Script, Course Technology, a division of Thomson Learning, Singapore, 710 p.p.

Mohler, J.L (1998) How to Become A Webmaster in 14 days, G. C. Jain for Techmedia, New Delhi, 383 p.p.

Navarro, A., Stauffer, T. (2000) HTML by Example, Prentice- Hall of India Private Limited, New Delhi, 475 p.p.

Owen, D., Tom, K. and Amit, B. (1996) Java Applets, An imprint of Macmillan Computer publishing, USA, 220 p.p.

Peter, B., Arman, Dr., Rick, D. and John, J.K. (1998) Dynamic HTML, Techmedia, New Delhi, 715 p.p.

APPENDIX- I

This appendix is designed to give you an overview of the tags and attributed presented in the project we had done. In an effort to make this appendix useful, tags have been arranged in the following manner:

- Document structure tags
- Block tags
- Text tags : Physical
- Text tags: logical
- Text tags: form elements
- Text tags: other
- Text tags: Frames
- Named HTML colors with hexadecimal equivalents
- Standard HTML icons

When appropriate, each of the HTML tags includes

- The tag name
- The tag description
- The tag attributes
- Tag usage
- Tag examples which we used in this project

Document Structure Tags

Document structure tags are the HTML tags that define and delimit the major portions or sections of the HTML document. They are the tags necessary for proper interpretation of the HTML file by a viewing program.

The <HTML> Tag

The <HTML>...... </HTML> tags mark the beginning and the end of the HTML file.

The <HEAD> Tag

The <HEAD> .... </HEAD> tags are used to define specific document parameters and characteristics.

The <BODY> Tag

The <BODY>.... </BODY> section defines the actual instructions for laying out graphics, text, multimedia, and other elements in the browser's work area.

> <BODY> Attributes
>
> □ BGCOLOR="#*FFFFF*" — Defines a background color for your web document
> □ TEXT="#*FFFFF*"- Defines the color of your document's normal text.
> □ LI NK="#*FFFFF*"- Defines the color to be used for links you haven't visited.
> □ VLINK="#*FFFFF*"- Defines the color to be used for links you have visited.
> □ ALINK="#*FFFFF*" — Defines the highlight color used when you click a link.
> □ BACKGROUND=" *bg2.gif*"- Defines an image to be tiled across your document's background.

Example

<BODY BGCOLOR="*FFFFF*" TEXT=" *FFFFF*" LINK="#*FFFFF*"
ALINK="#*FFFFF*" BACKGROUND = "*bg2.gif*">

The <META> Tag

The <META> tag is used to supply information that cannot be supplied anywhere else in the document, such as a generator name or other pertinent information

> **Usage**
>
> □ <META NAME="*Name*" CONTENT="*Name Value or String*">
> □ <META HTTP.EQUIV="*Action*" CONTENT="*Date*">
>
> **Examples**
>
> □ <META NAME="*Author*" CONTENT="*G.A.Kumarasihi*">

The <LINK> Tag

The <LINK> tag is used to define independent relationships of the current page with other documents in the Web structure.

> **Attributes**
>
> □ HREF-Specifices a URL or address for the resource.
> □ REL — Defines the forward relationship of the document.
> □ REV — Defines the reverse or backward relationship of the document.
> □ TITLE — A little for the linked resource.

Block Tags

Block Tags are HTML tags that enable you to specify the formatting and arrangement of lines or bodies of text or graphics. They are characterized by a preceding and following

blank line or space. These must be used within the <BODY> .... </BODY> sections of the HTML document.

<H1>Through <H6> (HX)

The <HX> tag defines the heading for the HTML document, where X can equal a value of 1 to 6. Heading defined by <H1> are rendered in a larger font and are deemed the most important head. As the value of X decreases, the font size and importance also decrease.

Attributes

- ALIGN- Controls the alignment of the heading. Valid entries are LEFT, CENTER, and RIGHT.
- SCR-Specifies an image to appear in front of the heading.

The <P> Tag

The <P> tag defines a block of text to be displayed as a paragraph in the web document. A blank space is inserted before and after a block paragraph.

The <DIV> Tag

The division tag, or <DIV> tag, enables you to define blocks or sections of a document that should all be treated similarly, such as all text of a specific paragraph or section justified left or right.

The <CENTER> Tag

The <CENTER> tag enables you to quickly create a division of text that is center justified. It performs the same functions as <DIV ALIGN=CENTER> ... </DIV>

The <UL> Tag

The <UL> tag is used to create unordered lists in the HTML language. An unordered list creates a vertically bulleted list on a Web page.
Example:

<UL ALIGN=LEFT TYPE=CIRCLE> ... </UL> - This creates an unordered list, left justified, with circles for all list element. Note that the <LI> tag would be used inside this tag to define the list elements.

The <OL> Tag

An ordered list, which uses the <OL> ... </OL> tags, enables you to create that are numerically or alphabetically labeled. By default, ordered lists are numbered.

Attributes:

TYPE- Establishes the numerical or letter sequence to be used with the ordered list. Valid entries are 1, A, a, I, AND I (numerical, uppercase letters, lowercase letters, uppercase Roman numbers, or lowercase Roman numerals).

START- Specifies the number with which you want the list to begin.

Examples:

<OL type=a START=2> .... </OL>- This creates an ordered list that lowercase letters the list stating with 3. Note that the <LI> tag would be used inside this tag to define the list elements

The <LI> Tag

The <LI> tag is used within the <UL>... </UL> tags to define the items that are to be shown in the list. These are called list items.

Attributes

TYPE – Defines the type of bullet used with the specific list item. Valid types are DISC, CIRCLE, SQUARE, 1, A, a, I, and I but are overridden by a TYPE specified with either the <UL> ... </UL> or <OL>.. </OL> tags. .

VALUE-Changes the current sequencing of the list item in an ordered list.

Usage

Note that the <LI> tag is used inside either the <UL> .. </UL> Tags or the <OL> .. </OL> tags. .

Examples

<UL>

    <LI TYPE=DISC> List Item 1 </LI>

    <LI TYPE=DISC> List Item 2 </LI>

    <LI TYPE=SQUARE> List Item 3 </LI>

</UL>

```
<OL>
        <LI TYPE=CIRCLE VALUE=5> List Item 4 </LI>
        <LI TYPE=SQUARE> List Item 16</LI>
</OL>
```

The <DL> Tag

The <DL> tag is used to present a definition list, which presents a list of terms with definitions.

The <PRE> Tag

The <PRE > tag enables text to be displayed in the browser work area as it is shown in the ASCII HTML code file itself. The text is displayed using a monospaced (fixed height and width) font.

The <BLOCKQUOTE> Tag

The < BLOCKQUOTE> tag enables you to format running quotations in your documents. A <BLOCKQUOTE> automatically will indent the margins of the quote to contrast with other body text.

The <HR> Tag

A horizontal rule or <HR> tag automatically creates a horizontal line or divider between block elements.

Attributes

  □ SIZE = y, where y specifies the thickness in pixels. The default is SIZE=2.

  □ WIDTH=x, where x specifies the horizontal width in pixels (WIDTH=20) or as a percentage of the screen (WIDTH=50%). The default is WIDTH=100%.

  □ ALIGN=LEFT, CENTER, RIGHT – Determines the alignment of the horizontal rule. The default is ALIGN=CENTER.

Examples

```
<HR WIDTH=50% ALIGN=LEFT>
<HR SIZE=2>
```

**The
 Tag**

The <BR> tag enables you to insert a line break, or "carriage return-line feed, " into block elements so that you can force a line break within tags.

The <TABLE> Tag

The <TABLE> tag is used to house all of the data for a particular table in the HTML code.

Attributes

- □ ALIGN - Enables text to flow around the table much like text flowing around an image. Valid entries for the ALIGN attributes include LEFT, CENTER, and RIGHT.
- □ BORDER - Sets the thickness for the borders of the table boundaries. The default for this attribute is 0, so not putting any value makes the border invisible.
- □ CELLSPACING - Defines the thickness of the cell frames within the table.
- □ CELLPADDING- Defines how close a cell frame can come to the edges of the object inside the frame.
- □ WIDTH – Specifies the desired width of the table in either pixels or percentages.
- □ HEIGHT - Specifies the desired height of the table in either pixels or percentages.

Examples:

<TABLE BORDER=1 CELLPADDING=0 CELLSPCING=0 WIDTH=660>

The <TR> Tag

The <Tag> tag is used within the <TABLE> ... </TABLE> tags to define the rows for the table.

The <TD> Tag

The <TD> tag is used within the <TR> .... </TR> tags to define the cell within the table now.

Attributes

- □ ALIGN – Specifies the alignment of the text or elements within the cell.
- □ VALIGN – Specifies the vertical alignment of the text or element within the cell. The default is ALIGN=MIDDLE.
- □ COLSPAN – Specifies the number of columns that the cell spans.
- □ ROWSPAN – Specifies the number of rows that the cell spans.

Example:

```
<TD VALIGN=top>
<TD ALIGN=middle HEIGHT=18 WIDTH=613>
```

The <FORM> Tag

The <FORM> .... </FORM> tags are the containers for the items that compose the form. A form can contain anything expect another from and must contain at least one <INPUT>, <SELECT> tag.

Attributes:

☐ ACTION – Specifies the URL to which the data is sent. All forms have an ACTION statement; without it, the data will have no destination. Most often the ACTION statement will reference a script location, but it also can be sent to an e- mail address.

☐ METHOD – Specifies how the data is sent to the defined location. Valid entries include GET and POST. The default is GET.

Example:

```
<FORM METHOD="get" ACTION="http://www.google.com/search"></form>
<FORM METHOD="get" ACTION="http://www.google.com/search">
<Input type="text" name="q" size="18" maxlength="255"   value="">
<Input type="submit" name="sa" value="Search">
<Input   type="hidden" name="domains" value="www.nastec.lk"> <br>
<Input type="radio" name="sitesearch" value="" checked="checked">
<Font size="-1" face="Arial, sans-serif">WWW
<Input type="radio" name="sitesearch" value="www.nastec.lk">NASTEC</font>
</form>
```

This is the Search facility of these Web sites by using www.google.com search engine.

Text Tags: Form Elements

The <INPUT> Tag

The <INPUT> tag is used to define a single field of a form that generally constitutes a single NAME=VALUE pair in the data output of the form.

44

Attributes

- [ ] NAME - Defines the label that is associated with the data that is entered in the field. Every <INPUT> tag must have s NAME attribute so that data entered in the field can be identified.

- [ ] VALUE – Defines the default value that should appear in the field. Radio buttons must have a default value. All other <INPUT> types do not require a default value.

- [ ] TYPE – Defines the type of input entity the item is. Valid entries include TYPE="TEXT", "SUBMIT", "RESET", "PASSWORD", "CHECKBOX", RADIO" and "HIDDEN".

Note that depending upon the TYPE specified, other attributes can include the following;

- [ ] TYPE="text" or "password"

- [ ] TYPE="submit" or "reset"

- [ ] VALUE, Which defines the text to appear on the button

- [ ] SIZE, Which defines the horizontal size of the text box in number of characters.

- [ ] TYPE="checkbox"

- [ ] CHECKED, which specifies whether the box is checked by default.

- [ ] TYPE= "radio"

- [ ] CHECKED, Which specifies whether the box is checked by default.

Example:

```
<Input type="text" name="q" size="18" maxlength="255"  value="">

<Input type="submit" name="sa" value="Search">

<Input type="hidden" name="domains" value="www.nastec.lk"> <br>

<Input type="radio" name="sitesearch" value="" checked="checked">
```

The <SELECT> Tag

The <SELECT> tag establishes the presence of a drop-down menu in the interactive form

Attributes:

- [ ] NAME – The label for the name portion of the NAME= VALUE pair for the field.

- [ ] SIZE – Defines the number of options that are displayed in the drop-down item. The default is SIZE=1. However, setting the SIZE to a larger number causes more options to be displayed in the field.

Example:

`<Select name="dd1" size=1>`

The <OPTION> Tag

The <OPTION> tag creates the author-defined options that appear in the menu.

Attributes:

- ☐ SELECTED – Controls whether the item is, by default, selected or not. In a list that uses MULTIPLE, you can use the SELECTED attribute on more than one option.

- ☐ VALUE – Defines a special value that is used in the NAME=VALUE pair instead of the option's value.

Usage

`<Option SELECTED VALUE = "different value">Option Name`

Example:

`<Option value="http://most.gov.lk">`

Ministry of Science & Technology

`</Option>`

`<Option value=""http://www.accimt.ac.lk/">`

Arthur C Clerk Institute for Modern Technologies

`</Option>`

`<Option value="http://www.nsf.ac.lk">`

National Science foundation

`</Option>`

Text Tags: Other

In addition to styling text, you also can insert graphics, create hypertext links, and do other things using text-level tags.

The <IMG> Tag

The <IMG> tag is used to reference a graphics image file to be included in the display of a Web page.

Attributes:

- ☐ SRC – Defines the image filename and path to be included in the Web page. This is a required attribute for the <IMG> tag.

- ☐ ALT – Specifies alternative text that shout be displayed in nongraphical Web browsers

46

- ☐ ALIGN- Controls the alignment of the image in relationship to the text surrounding the image. Valid options are ALIGN=TOP, MIDDLE, BOTTOM, LEFT, OR RIGHT.
- ☐ WIDTH – Specifies the intended width of the image in pixels. When this attribute is combined with the attribute, the browser shows a blank box for the image is loading.
- ☐ BORDER – Specifies the size of the border for the image.
- ☐ HSPACE – Specifies, in pixels, a specific amount of white, or negative, space to be left and right of the image

Example:

<Img src= "wel2.gif>

The <A> Tag

The <A> tag, also known as an anchor, enables objects on a page to be used as a hyperlink. The <A> tag can be used with graphics, text, and multimedia elements.

Attributes

- ☐ NAME – Used for targeting specific portions of a Web documents. Valid entries for the NAME attribute are strings.
- ☐ HREF – Used to specify a URL address that links the item with the site. Clicking the item sends the browser to the URL address specified here.

Text Tags: Frames

To integrate frames, you can use the following text- level tags.

The <FRAMESET> Tag

The <FRAMESET> ... </FRAMESET> tags are the containers for the definition of a framed page. The < FRAMESET> ... </FRAMESET> tags replace the <BODY> ... </BODY> TAGS IN THE html document.

Attributes

- ☐ ROWS – Defines the number and size of row frames that should be created in the browser work area. Valid entries include absolute (pixels), relative (wild card characters), and percentages of the screen.
- ☐ COLS – Defines the number and size of column frames that should be created in the browser work area.

Example: This tags and attributes are used create web pages.

```
<html>
<head><title>nastec</title>
</head>
<FRAMESET border=0 cols=150,* frameBorder=No frameSpacing=0 rows=*>


<FRAME name=leftFrame noResize scrolling=yes src="left.html">


<FRAMESET border=0 cols=* frameBorder=No frameSpacing=0 rows=120,*>
<FRAME name=topFrame noResize scolling=no src="top1.html">
<FRAME name=mainFrame src="first.html">
</FRAMESET>
</FRAMESET>


</html>
```

The <FRAME> Tag

The < FRAME> tag defines one frame or window in a frames document

Attributes

- ☐ SRC – Defines the Web page that will appear in the frame.
- ☐ NAME – Defines a name for the individual frame. This attribute is used to enable one frame to control another through a TARGET specification.
- ☐ SCROLLING – Defines whether the frame should have scrollbars or not.
- ☐ NORESIZE – Disables the ability of the user to size frame.

Example: Above coding shows about <FRAME> tag.

The < APPLET> Tag

The <APPLET> Tag is used to integrate Java applications into Web pages.

Attributes

- ☐ CODE–- Specifies the file that contains the compiled APPLET subclass in the form of "file.class"
- ☐ WIDTH – Specifies the width of the Java application
- ☐ HEIGHT – Specifies the height of the Java application

48

Example: This coding is used to create first page for updating News.

```
<Applet CODE="ScrollItUp.class" ARCHIVE="ScrollItUp.jar"
WIDTH="250" HEIGHT="150">
                    <param NAME="bgcolor" VALUE="003366">
                    <param NAME="outlinecolor" VALUE="ccffff">
                    <param NAME="scrollbgcolor" VALUE="ccffff">
                    <param NAME="fontcolor" VALUE="ffff00">
                    <param NAME="hovercolor" VALUE="00ff00">
                    <param NAME="linkcolor" VALUE="ff0000">
                    <param NAME="fontface" VALUE="arial">
                    <param NAME="fontstyle" VALUE="plain">
                    <param NAME="fontbold" VALUE="off">
                    <param NAME="fontsize" VALUE="14">
                    <param NAME="textfile" VALUE="test.txt">
                    <param NAME="brakes" VALUE="55">
                    <param NAME="margin" VALUE="2">
                    </applet>
```

APPENDIX-II

- Linking to an external style sheet: -

  ```
  <HTML>
  <HEAD>
  <LINK REL=Style Sheet-type="text/css"
      HREF=A HTTP: //www.davidwiley.com/Style1">
  </HEAD>
  ```

- Importing Style Sheet:

  A style sheet can be imported for use in a web page using the following

  Syntax:

  ```
  <HTML>
  <HEAD>
  <STYLE TYPE="text/css">
  @import URL (HTTP: //www.devidwiley.com/style2);
  </STYLE>
  ```

49

</HEAD>

- Embedding a Style Sheet

Style can be embedded directly within the document by using the <STYL>tag

<HTML>

<HEAD>

<STYLE TYPE="text/css">

<!—

H1 {color: red};

H2 {color: blue};

// — >

</STYLE>

</HEAD>

- Inlining Style Information

Style information can be included inline or within the tag of the HTML element itself.

<BODY>

  This text appears in the default font face.

<P STYLE ="font-family: Helvetica">this text appears in the Helvetica font face

</P>

</BODY>

Hybrid

The best way to organize a large site might be a hybrid of the last two methods just discussed.

Creating separate sub directories for non-recurring items (such as individual web pages in each category) While creating other sub directories for items used multiple times (such as graphics) lets you get to all the files in an efficient way.

APPENDIX – III

The following entries show the overview of the web pages, graphics and additional JavaScript, Java Applets, which we were used.

The header image of the Index.html

National Science & Technology Commission — Sri Lanka
NASTEC
Ministry for Economic Reform, Science & Technology

This is left frame that we used.

- Introduction
- Organization
- Objects & Functions
- Operational Strategy
- Study Groups
- Publications
- International Colloborations
- Photo gallery
- Newsletter
- Route Map
- Archives

Fc 798 visitors since May 05, 2003

In the left frame, include pop-up hint window, Menu list and Mouse over changes.

Codings were displayed in CAPTER 2 under 2.3.2

The Index page of New Website. There were included News bar, search engine, and also provides go to other Website of Ministry. When the user mouseover the image of NASTEC, ALT box will appears.

Welcome to NASTEC

1998. It has been designed as the Apex Policy Formulating and Advisory body to the Government of Sri Lanka on Science and Technology matters.

NASTEC fulfills a need that has

Contact Us

nastec@itmin.com

+94-011- 2889050
+94-011- 2861204
Fax : +94-011-2878735

No.2, Galpotta Road, Nawala, Rajagiriya, Sri Lanka.

Search

⊙ WWW ○ NASTEC

Select a page to visit other sites: Ministry of Science & Technology ⌄ GO

There were several relevant pages include in the New Website. You can see those Web pages as follows.

The front page.

The Introduction page. It included Vision and Mission of NASTEC and brief introduction about NASTEC.

The Organization page. It included Organization Structure, Members of Present Commission and Present Staff members.

The Members of Present Commission. It included name of the person with their qualifications.

- Introduction
- Organization
- Objects & Functions
- Operational Strategy
- Study Groups
- Publications
- International Collaborations
- Photo gallery
- Newsletter
- Route Map
- Archives

visitors

Welcome to NASTEC

Objects and Functions

➤ Specifically mandated to advise the government on policies and plans for the development of Science & Technology (S&T) and its application for economic growth and the improvement of the efficiency and the competitiveness of industry, agriculture and services.

➤ Address the application of Science and Technology in relation to health, nutrition, poverty alleviation and the general improvement of the quality of life of the people.

➤ Formulation of Policies and plans for the proper development and management of the natural resources of Sri Lanka.

The objects and Functions web page.

Welcome to NASTEC

Operational Strategy

➤ Through STUDY GROUPS:

Since NASTEC staff does not comprise of experts in each and every field in Science and Technology, there is a considerable dependence on Consultant scientists. Therefore, Study Groups consisting of Experts/Consultants with prescribed qualifications are appointed to work out matters related to Science and Technology issues. The S & T Act empowers the Commission to appoint Study Groups or Committees as may be necessary for the proper discharge of functions of the Commission. Even such Study Groups have been in operation since the inception of the NASTEC. Study Groups fall into two categories viz. Subjects or issues initiating from discussion and deliberations of

The operational Strategy web page.

National Science & Technology Commission ~Sri Lanka~
Ministry for Economic Reform, Science & Technology

NASTEC

- Introduction
- Organization
- Objects & Functions
- Operational Strategy
- Study Groups
- Publications
- International Collaborations
- Photo gallery
- Newsletter
- Route Map
- Archives

798 visitors

Welcome to NASTEC

Study Groups

▶ Completed Study Groups

1. Amendments to the Science and Technology Development Act No. 11 of 1994 (Study Group I) (1999)
2. Prioritization of the Recommendations made by the Presidential Task Force on Integrated Research and Development Programmes in Science & Technology (Study Group II) (1999)
3. Committee for Reviewing the NSF Report on "Optimal Use of Eppawala Rock Phosphate in Sri Lankan Agriculture". (Study Group V) (2000)
4. Formulation of Guide Lines/Rules for Sri Lanka Conference on Science and Technology (BICOST) (Study Group VI) (2001)
5. Formulation of Guidelines to Enhance the Electronic Industry in Sri Lanka. (Study Group VII) (2001)

The Study Group Web page. It included completed study groups and on going study groups, that can be downloaded in this web page.

National Science & Technology Commission ~Sri Lanka~
Ministry for Economic Reform, Science & Technology

NASTEC

- Introduction
- Organization
- Objects & Functions
- Operational Strategy
- Study Groups
- Publications
- International Collaborations
- Photo gallery
- Newsletter
- Route Map
- Archives

798 visitors

Welcome to NASTEC

NASTEC Publications

Reports and Publications

1. NSTC/99/SG-1/01. Amendments to the S & T Development Act No. 11 of 1994.
2. NSTC/99/SG-1/01. Report on the Implementation of the Recommendations made by the Presidential Task Force on Integrated R & D Programme in Science and Technology
3. NSTC/00/SG-5/01. A Report for the Optimal Use of Eppawala Rock Phosphate in Sri Lankan Agriculture.
4. NSTC/00/BICOST-I/01. Documentation of BICOST - I (Part I). Science and Technology in National Development - Concept Papers and Conference Programme.

The NASTEC Publications web page. It included old publications and on going publications, that can be seen in this web page.

- Introduction
- Organization
- Objects & Functions
- Operational Strategy
- Study Groups
- Publications
- International Colloborations
- Photo gallery
- Newsletter
- Route Map
- Archives

798 visitors

Welcome to NASTEC

International Collaboration

▶ NAM-Science and Technology

In collaboration with NAM S&T Centre in India NASTEC is in the process of organizing a Workshop on the Technology of Application of Pesticides. Preparations are already underway to hold the Workshop from 23-26 June, at the Plant Genetic Resources Centre of the Department of Agriculture, Peradeniya. A number of S&T Institutions including the Department of Agriculture, Faculty of Agriculture and the Post Graduate Institute of Agriculture, University of Peradeniya, Council for Agriculture Research Policy, Central Environmental Authority, ITI and Ministry of Health will be collaborating with NASTEC in this national endeavor.

The International Collaboration

NASTEC PHOTO GALLERY

The Photo Gailery web page. It included workshops, seminar's photos.

National Science & Technology Commission

Sri Lanka

Ministry for Economic Reform, Science & Technology

NASTEC

- Introduction
- Organization
- Objects & Functions
- Operational Strategy
- Study Groups
- Publications
- International Colloborations
- Photo gallery
- Newsletter
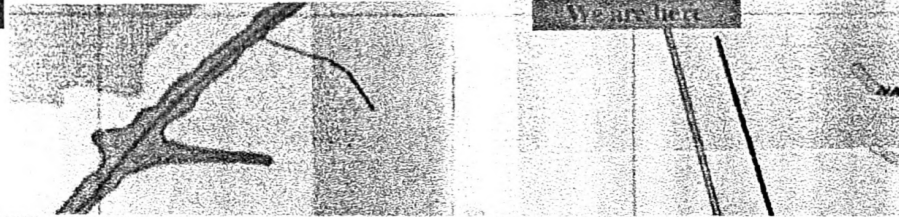- Route Map
- Archives

798 visitors

Location:

The NASTEC Secretariat is located at No.2, Galpotta Road, off the main Colombo - Nugegoda Road in Nawala, Rajagiriya. It is about 10 km from Colombo Fort and easily accessible by public transport via bus route No. 176 from Borella. The Secretariat is in close proximity to Rajagiriya and Nugegoda townships and Research and Development Institutes such as ITI,MRI,PGIM, and the Open University.

We are here

The location of NASTEC

National Science & Technology Commission

Sri Lanka

Ministry for Economic Reform, Science & Technology

NASTEC

- Introduction
- Organization
- Objects & Functions
- Operational Strategy
- Study Groups
- Publications
- International Colloborations
- Photo gallery
- Newsletter
- Route Map
- Archives

798

Welcome to NAS

System of Consultations

Young Scientists Forum - YSF

Achievements since January 2002

The new steering committee comprising of 10 members has been elected by the forum at the Annual General Meeting held in December 2002. The 10 members of the Steering Committee are: Dr. (Mrs.) Bimali Jayawardena (Chairperson), Dr. (Mrs.)K.K.A.S. Yapa, Dr. Chandima Gomes (Joint Secretary), Ms. Ushani Mendis (Joint Secretary), Dr. Sanjeewa Jayawardena, Dr. K N P Bandara, Dr. (Mrs.) Vajira Bulugahapitiya, Mrs.

The System of Consultations with Young Scientists Forum- YSF, Download YSF Members form and link to other Web pages.

National Digitization Project

National Science Foundation

Institute   : Sabaragamuwa University of Sri Lanka

1. Place of Scanning : Sabaragamuwa University of Sri Lanka, Belihuloya

2. Date Scanned   : 2017-09-25

3. Name of Digitizing Company : Sanje (Private) Ltd, No 435/16, Kottawa Rd,

                              Hokandara North, Arangala, Hokandara

4. <u>Scanning Officer</u>

      Name   : B.A.C. Gaduruwan

      Signature   :

<u>Certification of Scanning</u>

I hereby certify that the scanning of this document was carried out under my supervision, according to the norms and standards of digital scanning accurately, also keeping with the originality of the original document to be accepted in a court of law.

<u>Certifying Officer</u>

      Designation : Librarian

      Name   : T. N. Neighsoorei

      Signature   :

Mrs. T.N. NEIGHSOOREI
(MSSc.PhD.ASLA,BA)
Librarian
Sabaragamuwa University of Sri Lanka
P.O.Box 02 Belihuloya,Sri Lanka
Tele. 094 45 2280045
Fax. 094 45 2280045

Date : 2017-09-25

"This document/publication was digitized under National Digitization Project of the National Science Foundation, Sri Lanka"