

# **HTML Programming**

## **1-1 Introduction**

So you have decided to design your web pages yourself! Good decision. So let's start quickly. Web pages are ordinary files with .htm or .html file extensions. They contain a code named "hyper text mark-up language" or html. This codes when viewed in a browser like Internet Explorer or Netscape will be seen as beautiful web pages however code under web page may be complicated. To design an html web page you have two options: a. You can use a web page editor like Microsoft FrontPage to create web pages. It works exactly like Microsoft word (a complicated editor program used for creating and editing book, letter etc pages.) You just type text, insert graphics and finally save your document as an html web page. By the way word 2000 itself can save your existing documents as html pages. So you see designing a web page can be very easy. But soon you will see that this is not a good option for creating a professional web page. b. Second option is to learn html codes and write html pages in a simple text editor. As we said your codes will be seen as WebPages when viewed in a web browser.

## **1-2 Reasons for choosing second option**

- If you want to design professional web pages using these tools will not be enough. You must be familiar with html codes.
- Results of these editors are big and sometimes chaotic code. Maintaining this code is very difficult.
- If you want to design dynamic web pages in future you will need to know html codes.
- If you will need forms in your pages to send information to server and return result pages back to browser you will need to know html codes.
- There are other reasons that dictate us to learn html coding and not satisfy with these tools.

## **1-3 Tools you will need**

You will need a simple text editor to write html codes. For example you can use notepad in windows or any text editor in other operating systems. You will also need a browser like Internet explorer or Netscape Navigator. In this course we will assume that you are working in windows 9X/NT/2000.

## **1-4 Start Here**

Now open notepad and type the following code.

### **Example 1-1:**

```
<HTML>
Hello world!
</HTML>
```

Now save the text as "page11.html" To browse html file open windows explorer and double click on the file. You must see your first web page opened in your web browser. <HTML> and </HTML> are called tags. First one is a start tag and second is an end tag. Tags are something like commands in programming languages. <HTML> tag tells the browser that this is start of the HTML and </HTML> marks its end. <HTML> </HTML> mark start and end of an html page.



## 1-5 HTML code headers

Every html page must have a header. Header contains important information about the page. Different tags are used for different sections of a header. Header of an html page is specified by

<HEAD> and </HEAD> tags.

<HTML>

<HEAD>

...

</HEAD>

</HTML>

We will enter header information between <HEAD> </HEAD> tags.

## 1-6 Title

One of the most important parts of a header is title. Title is the small text that will appear in title

Bar of viewer's browser. So html document will be as below.

<HTML>

<HEAD>

<TITLE>Title of the page</TITLE>

</HEAD>

</HTML>

## 1-7 Web page body

Now our web page needs a body in which we will enter web page content. As you may guess we will use these tags: <BODY> </BODY>

Body will come right after header end tag. So our web page will be something like this

Example 1-2:

<HTML>

<HEAD>

<TITLE>My Company web page</TITLE>

</HEAD>

<BODY>

Welcome to our homepage. More text here.

</BODY>

</HTML>

Now type html code in notepad and save it as "page2.html". Then view html file in your browser by double clicking on it in windows explorer.

## 1-8 Extended <BODY> tag

Most of html tags we will learn have optional parameters and extensions. Here we will learn to extensions for <BODY> tag.

## 1-9 Background color for body of web page

If you want you can change background color of your web page by extending <BODY> tag as below.



#### Example 1-3:

```
<HTML>
<HEAD>
<TITLE>Page with Back Color</TITLE>
</HEAD>
<BODY BGCOLOR="#00FF00">
Page with Back Color
</BODY>
</HTML>
```

This will change your background color to green. Format of color number is RRGGBB. You know that each color is a combination of three main colors: Red, Green and Blue. In color format RR is value of red component of the main color in hexadecimal format. GG is value of green component and BB is the value of blue component. Two digit hexadecimal number can be anything between 00 to FF i.e. 0 to 255 in decimal format. So if we write 00FF00 we mean (red=0, green=255, blue=0) so the result is a pure green color. You can produce 16 million colors in this way but pay attention that not all of the browsers will be capable to show all these colors. So test your web page in 256 colors mode.

### 1-10 Background Image

We can use a background picture for web page instead of background color. You must have a ready image file in .gif or .jpg formats. Now you must extend <BODY> tag as below. "image1.gif" is file name of the image we want to use as background image. <BODY BACKGROUND="image1.gif">

#### Example 1-4:

```
<HTML>
<HEAD>
<TITLE>Page with background image</TITLE>
</HEAD>
<BODY BACKGROUND="image1.gif">
<B>Page with background image. </B>
</BODY>
</HTML>
```

Image file must be in the same folder as your html file. Otherwise browser will not be able to find it.

### 2-1 Text Formatting

Until now we have learned to insert simple text into our web pages. In this lesson we will learn text formatting techniques. This part of html writing skills is the most important part of our whole web design course. So you must learn it word by word.

#### 2-2 Changing text style

We can make a text bold, italic or underlined. If you want to make a text bold, you must enclose it in <B>...</B> tags. <BODY> this is very <B> important </B> </BODY> in above text the word "important" is typed bold. You can make text italic by inclosing it in <em>...</em> tags. And finally you can make some text underlined by inclosing it in <U>...</U> tags.



### Example 2-1:

```
<HTML>
<HEAD>
<TITLE>Example 1, Lesson 2</TITLE>
</HEAD>
<BODY>
<B>This text is bold</B><br>
<I>While this one is Italic</I><br>
<U>and this text is underlined</U><br>
<B><I>Look at this, this is both bold and italic</I></B>
</BODY>
</HTML>
```

In above example you can see that how we can make a text both bold and italic or any other combination. You may notice the tag `<BR>` in the end of each line. Let's see what this tag is. If you insert enter keys (new line characters) at the end of each line and wish that it will make new lines in your output page you will soon be disappointed. All lines will be in a single line in output web page. No matter how html code is written in separate lines. To break lines in output web page you must insert `<BR>` tags in breaking points. Also pay attention that `<BR>` tag is one of few single tags in html language. It has not an ending tag.

### 2-3 Nested Tags

In previous section we saw a line of code with nested tags.

```
<B><I>this is both bold and italic</I></B>
```

When you use nested tags you must be sure that they do not overlap each other. They must be nested exactly. For example some part of text may change to bold although it is not desired.

### 2-4 Text with fixed width font

As you may know, regular fonts use different horizontal space. For example letter 'w' uses more space than the letter 'i'. Sometimes we need a font with exactly the same width for all letters. For example if you want to make a table of numbers and you want the columns to be exactly under each other in different rows, we will need this kind of text. To specify this kind of text you must use `<TT>...</TT>` tags. TT means Typewriter Text.

### 2-5 Changing size and face of fonts

We can change face and size of fonts using `<FONT>...</FONT>` tags. Also using this tag alone will not change the text. You need to use parameters for this tag. These parameters specify what kind of change you need in text font.

### 2-6 Size of font

To change size of font in a part of text, enclose it with a `<FONT>` tag as below: `<FONT SIZE=n>..., </font>` n is size of font. Size of font must be a number between 1 and 7. If you insert some text without determining its size default size will be 3.

### Example 2-2

```
<HTML>
<HEAD>
<TITLE>Example 2, Lesson 2</TITLE>
</HEAD>
<BODY>
<FONT SIZE=1>1This text is bold</FONT><br>
```



```
<FONT SIZE=2>2This text is bold</FONT><br>
<FONT SIZE=3>3This text is bold</FONT><br>
<FONT SIZE=4>4This text is bold</FONT><br>
<FONT SIZE=5>5This text is bold</FONT><br>
<FONT SIZE=6>6This text is bold</FONT><br>
<FONT SIZE=7>7This text is bold</FONT><br>
</BODY>
</HTML>
```

## 2-7 Face of fonts

We can use a font for a part of text by specifying its name.

```
<FONT FACE="Font Name Here">...</FONT>
```

You must insert font name in double quotes in above tag.

### Example 2-3:

```
<HTML>
<HEAD>
<TITLE>Example 3, Lesson 2</TITLE>
</HEAD>
<BODY>
<FONT FACE="ARIAL">this text is in ARIAL font</FONT><br>
<FONT FACE="IMPACT">this text is in IMPACT font</FONT><br>
</BODY>
</HTML>
```

In above example we have used Arial and Impact fonts while you can use any font you want. Warning: Fonts will be displayed on your viewer if specified font is installed on your computer. So be careful while using new fonts. It's better to use native windows fonts in your pages. Windows is used by about %95 of web surfers. Alternatively you can use several font faces for each part of your text. In this way your browser will try alternative fonts if it cannot find primary font. `<FONT Face="Arial, HELVATICA">...</FONT>`

## 2-8 Changing font colors

In previous lesson you learned how to change web page background color. Here we will learn how to change text color. Look at this example:

### Example 2-4:

```
<HTML>
<HEAD>
<TITLE>Example 4, Lesson 2</TITLE>
</HEAD>
<BODY>
<FONT COLOR="#FF0000">this text is in red color. </FONT><br>
<FONT COLOR="#00FF00">this text is in green color. </FONT><br>
<FONT COLOR="#0000FF">this text is in blue color. </FONT><br>
</BODY>
</HTML>
```

In above text different colors are used. You can change text color by changing color number. If you don't remember how to specify color numbers return to previous lesson and review section on "web page background color".



## 2-9 Combining Fonts attributes

We can obviously combine <FONT> tag parameters as we wish. In this way we will be able to have text with different colors, font faces and font sizes. You can even use text styles with <FONT> tag by nesting style and font tags.

```
<B><I><FONT SIZE="5" FACE="IMPACT" COLOR="#00FF00">
```

How is this?

```
</FONT></I></B>
```

## 2-10 changing default font colors in a web page

Each browser has its own default settings for text color, link color, visited link color and active link color.

Text color default is black. Links are usually blue. To change default settings for these values you must use <BODY> tag with more parameters.

```
<BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#0000FF"
VLINK="#00FF00" ALINK="#FF0000">Some Text </BODY>
```

BGCOLOR: Web page background

TEXT: Text Color

LINK: Link Color

VLINK: Visited link

ALINK: Active link

## 2-11 Ends

This lesson included some of the most important techniques in html writing. Now you must be able to use any kind of text in your web pages. As remembering so much tags and parameters are difficult, you must use them repeatedly so that you can remember them. I always tell this sentence in my programming classes

**"No one becomes a programmer**

**Without programming"**

## 3-1 Line Breaks, Paragraphs

As we saw in previous lesson if we break lines in html code by simply inserting enter keys (new line characters), lines will not break in output result in browser. They will be printed in a single line in browser. We must use <BR> tag to do this as you used it in previous lesson. You can also divide text using paragraphs. A paragraph starts on a new line with one blank line after previous line.

Paragraph tag is <p> </p>

```
<p>First paragraph</p>
```

```
<p>Second paragraph</p>
```

You will nest other tags inside paragraph tag for fonts, styles and other tags that will be used inside a paragraph. There is another option in forming text that is using <PRE> tag. Text between <PRE> </PRE> tags will be displayed exactly as it is typed in html source.

Therefore you will not need <BR> tags to break lines. It is enough to enter text in separate lines with enter key (new line character) at their end.



### 3-2 Space between texts

Browser does not show more than one space between two words even if you have entered a hundred spaces between them in html source. If you want to enter more than one blank character between two words you will need to use a small code for this purpose. It is "&nbsp;" without the quotes.

```
<BODY>
```

Here we insert 5 &nbsp;&nbsp;&nbsp;&nbsp;&nbsp; extra spaces.

```
</BODY>
```

### 3-3 Paragraph alignments in your web page

You can determine how a paragraph will be aligned in a web page. You can align text in left, right or center of a web page. To specify alignment for a paragraph you must use an extra parameter for your paragraph tag. You can use one of these combinations:

```
<P ALIGN="left"> </P>
```

```
<P ALIGN="center"> </P>
```

```
<P ALIGN="right"> </P>
```

#### Example 3-1:

```
<HTML>
```

```
<HEAD>
```

```
<TITLE>Example 3-1</TITLE>
```

```
</HEAD>
```

```
<BODY>
```

```
<P ALIGN="left">you can align text in left. </P>
```

```
<P ALIGN="center">you can align text in center. </P>
```

```
<P ALIGN="right">you can align text in right. </P>
```

```
</BODY>
```

```
</HTML>
```

### 3-4 Indented Text

If you need a text that is indented from both sides of web page you can use

<BLOCKQUOTE> tag. Text that is enclosed in this tag will have a margin from left and right of your web page.

#### Example 3-2:

```
<HTML>
```

```
<HEAD>
```

```
<TITLE>Example 3-2</TITLE>
```

```
</HEAD>
```

```
<BODY>
```

We see block quotes here :< BR><BR>

```
<BLOCKQUOTE>
```

In cases that you want to emphasis on a paragraph in your text you can use this tag. It will indent your text from both sides.

```
</BLOCKQUOTE>
```

```
</BODY>
```

```
</HTML>
```



### 3-5 Images in your web page

In previous lesson you learned how to use an image as a background for web pages. It was

```
<BODY BACKGROUND="image.gif">
```

```
</BODY>
```

Here we want to learn how to add an image in a web page. Tag that will be used for this purpose is <IMG> tag.

Actually we will need parameters for this tag that specify image file location, file name and other optional parameters. Look at this example:

#### Example 3-3:

```
<HTML>
```

```
<HEAD>
```

```
<TITLE>Example 3-3</TITLE>
```

```
</HEAD>
```

```
<BODY BACKGROUND="image1.gif">
```

```
<B>this is an image :< /B><BR>
```

```
<IMG SRC="abanner.gif">
```

```
</BODY>
```

```
</HTML>
```

In this example I have used both a background image and an image between texts. Also you may have noticed that this tag is also a single tag that does not need an ending tag. If you want to show your image in a different size than its real size, you can specify its size as below.

#### Example 3-4:

```
<HTML>
```

```
<HEAD>
```

```
<TITLE>Example 3-4</TITLE>
```

```
</HEAD>
```

```
<BODY BACKGROUND="image1.gif">
```

```
This is an image :< BR>
```

```
<IMG SRC="abanner.gif" WIDTH=234 HEIGHT=30>
```

```
</BODY>
```

```
</HTML>
```

### 3-6 Alignment and border size for images

You can align image in your web page by inclosing it in a paragraph that is aligned as aligned to left, right or center. See example below

#### Example 3-5:

```
<HTML>
```

```
<HEAD>
```

```
<TITLE>Example 3-5</TITLE>
```

```
</HEAD>
```

```
<BODY BACKGROUND="image1.gif">
```

```
This is an image :< BR>
```

```
<P ALIGN="center">
```

```
<IMG SRC="abanner.gif">
```

```
</P>
```

```
</BODY>
```





</HTML>

You can add a border to an image by adding a border parameter to <IMG> tag. See the results of this html code. You can see examples of this lesson in our site. Go to email course section in our site to see ready examples.

#### Example 3-6:

```
<HTML>
<HEAD>
<TITLE>Example 3-6</TITLE>
</HEAD>
<P ALIGN="center">
<IMG SRC="abanner.gif" border=3>
</P>
</HTML>
```

Some of options we use may not be supported on other browsers. As most of web surfers use "MS

Internet Explorer"

We will work around this browser.

### 3-7 Alternative text for images

Some web surfers may use browsers that do not support graphics. An example is lynx browser that is used in UNIX text environments. If you want to consider these users, you can enter a text as an alternative to each image in your web page. In this way image will be replaced by its alternative text. It is very easy. Just add an ALT parameter to <IMG> tag. <IMG SRC="abanner.gif" ALT="Learning Online"> you see it does not cost too much.

### 3-8 Path of image file

In above examples, image file must be located in the same directory that html file is located. If our image file resides in other directory, we must add a relational path or a complete URL to this image. See examples below: <IMG SRC="images/abanner.gif"> Image is located in "images" directory below the directory that html file resides. <IMG SRC="../abanner.gif"> Image is located in parent directory of the directory of html file.

### 3-9 Ends

In this lesson you learned more text formatting techniques. You also learned how to include images in your web pages. In next lesson we will learn about links, image links and more. Until then I suggest you to start designing a web page using the knowledge you have from these three lessons.

## 4-1 Links

Any object such as text, a graphic image etc. that leads us to a new page on the web is called a link. Links can point to a page on our site or to a web page on another site. In this lesson we will learn how to make links.

### 4-2 Text links

Creating a text link is an easy task. We will use <A> </A> tag to do this. As before we will need extra parameters from this tag. Look at example below



#### Example 4-1:

```
<HTML>
<HEAD>
<TITLE>Example 4-1</TITLE>
</HEAD>
<BODY>
<A HREF="http://www.yahoo.com">Click here to visit Yahoo</A>
</BODY>
</HTML>
```

Above code will create a link that clicking on it will send the user to Yahoo website. We have used HREF parameter to specify destination web page. Text between <A> and </A> is link text which user will click on it to go to destination page.

### 4-3 Image links

In previous section we used a text as a link point. It is possible to use an image instead of text. To do this, you must replace link text between <A> and </A> with an <IMG> tag that displays an image file.

```
<HTML>
<HEAD>
<TITLE>Example 4-1</TITLE>
</HEAD>
<BODY>
Click on below picture to visit my homepage.<BR><BR>
<A HREF="http://www.angelfire.com/nt/sarmadys">
<IMG SRC="me.gif">
</A>
</BODY>
</HTML>
```

In above example clicking on picture will bring surfer to the address of <A HREF=".."> Tag. If you see the result in a browser you will notice a blue border around the picture. This blue border is added to image because it is a default for image links. If you don't want this border, use border=0 parameter.

#### Example 4-2:

```
<HTML>
<HEAD>
<TITLE>Example 4-2</TITLE>
</HEAD>
<BODY>
Click on below picture to visit my homepage.<BR><BR>
<A HREF="http://www.angelfire.com/nt/sarmadys">
<IMG SRC="me.gif">
</A>
<BR><BR>without link border : <BR><BR>
<A HREF="http://www.angelfire.com/nt/sarmadys">
<IMG SRC="me.gif" border=0>
</A>
</BODY>
</HTML>
```



#### 4-4 Email links

If you have surfed web for a while you have seen links that when you click on them your email program starts a "compose new message" window that its receiver address is entered from web page . This email address is the address you want email to be sent to. Look at example below to see how you can make a link to an email address.

```
<BODY>
Click on below link to send an email to me <BR>
<A HREF="mailto:webmaster@learnem.comt">
Email Me
</A>
</BODY>
```

It uses a "mailto:" string before desired email address to convert it into a link address.

If you want, you can use a subject for the email. This example will show you how to do this :

#### Example 4-3:

```
<HTML>
<HEAD>
<TITLE>Example 4-2</TITLE>
</HEAD>
<BODY>
Click on below link to send us your comments .<BR>
<A HREF="mailto:webmaster@learnem.com?
Subject: comments about your site">Email Me</A>
</BODY>
</HTML>
```

Just know that some browsers and email programs do not support subject in email links.

#### 4-5 Lists

There are times that you want to insert items related to a subject in list form in your web page.

HTML provides you with tags to do this. <UL></UL> tags are first choice of these tags.

#### Example 4-4:

```
<HTML>
<HEAD>
<TITLE>Example 4-3</TITLE>
</HEAD>
<BODY>
This is a list of subjects covered in this lesson :
<UL>
<LI>Text Links
<LI>Image Links
<LI>Email Links
<LI>List of Items
</UL>
</BODY>
</HTML>
```

Result page will display list items in separate lines started with a small bullet. You see that we have entered list items started with a <LI> tag between <UL></UL> tags. <UL> tag is a part of List tags.



If you want the items to start with numbers instead of bullets, you must use `<OL></OL>` tags Instead of `<UL></UL>` tags.

```
<OL>
<LI>Text Links
<LI>Image Links
<LI>Email Links
<LI>List of Items
</OL>
```

Be sure to write down codes in a file and view it with a browser.

#### 4-6 Horizontal Separator Rule

Another useful html tag that you will use, is `<HR>` tag. If you need to separate text in your web page by horizontal lines , you may use this tag.

```
<BODY>
```

First section

```
<HR>
```

Second section

```
</BODY>
```

Result is two lines of text separated by a horizontal rule. You can specify parameters for horizontal rule. If you want to change width of rule you can use width parameter.

```
<HR WIDTH="50%"> width in percent
```

```
<HR WIDTH="100"> width in pixels
```

You can also determine line size parameter to change line diameter.

```
<HR size=5>
```

It is obvious that you can mix parameters with each other. Horizontal rule created by this tag is a line that has a shade. You can change the rule to a solid line instead of a shaded line, you can add a `NOSHADE` parameter.

```
<HR SIZE=1 NOSHADE>
```

You can also determine Color for your line:

```
<HR color="#000000">
```

Above line will not have a shade and it is a solid line.

#### 4-9 Ends

In this lesson you learned how to use text links, image links, email links, lists and horizontal rule. Until now we have covered general HTML tags. In next lesson we will cover more. We will then start more advanced subjects such as tables, frames and forms in next lessons. Now you must be able to design simple home pages. So why not start ?

#### 5-1 Tables

Table is a matrix like object that holds other objects such as text, images, buttons and etc.

Even if you don't see them they are present in all professional web pages. Hidden tables hold graphic images and text in their places in these pages.



## 5-2 Drawing a table

To draw a table we will use <TABLE> tag. We will need two other related tags to make table rows and columns. These are <TR> and <TD> tags.

<TR> tag is used to create a row in table. Data that will fit in a row will be enclosed in <TR> </TR> tags.

Following example produces a table with two rows. We will need <TD> tag to create columns in each row.

```
<TABLE>
<TR>
<TD>First Row</TD>
</TR>
<TR>
<TD>Second Row</TD>
</TR>
</TABLE>
```

If you browse this code in a browser you may surprise. You will not see any table but two lines of code. In fact table is there but you cannot see it.

<TABLE> Tag will not make table borders. You must use a parameter to add borders to the table. You can specify a border width for a table by adding a border parameter to <TABLE> tag.

```
<TABLE BORDER=1>
<TR>
<TD>First Row</TD>
</TR>
<TR>
<TD>Second Row</TD>
</TR>
</TABLE>
```

As you may guess default border size is 0. When we do not specify sizes for a table it will be in a size that it needs to be able to fit text or any other object that it will hold.

## 5-3 Specifying table sizes

You can specify width for a table both in percents of page width and in pixels.

### Example 5-1:

```
<HTML>
<HEAD>
<TITLE>Example 5-1</TITLE>
</HEAD>
<BODY>
<TABLE WIDTH=50% BORDER=1>
<TR>
<TD>Cell Row1 Col1</TD>
<TD>Cell Row1 Col2</TD>
</TR>
<TR>
<TD>Cell Row2 Col1</TD>
<TD>Cell Row2 Col2</TD>
</TR>
</TABLE>
```



```
</BODY>
```

```
</HTML>
```

If you want you can determine table width in pixels.

```
<TABLE WIDTH=250 BORDER=1>
```

```
<TR>
```

```
<TD>Cell Row1 Col1</TD>
```

```
<TD>Cell Row1 Col2</TD>
```

```
</TR>
```

```
<TR>
```

```
<TD>Cell Row2 Col1</TD>
```

```
<TD>Cell Row2 Col2</TD>
```

```
</TR>
```

```
</TABLE>
```

You can specify table height too. In this way you can determine height and width of table. Width and height of table will be divided between cells in rows and columns so if table width is 100 and there are 2 columns then width of each cell will be 50. Just pay attention to this important point that if you put a lot of text in a cell of a table it will be expanded to fit the text in it.

#### 5-4 Text alignment in table cells

By default text entered in a cell will appear at the left side of the cell. You can add either of these options to <TD> tags to specify horizontal alignment of text.

```
<TD ALIGN=CENTER> or
```

```
<TD ALIGN=RIGHT> or
```

```
<TD ALIGN=LEFT>
```

As we saw, left alignment is default for cells. You can also determine vertical alignment of text in a cell by adding VALIGN option to <TD> tag.

There are three values for VALIGN option : TOP, BOTTOM and MIDDLE. MIDDLE is default value if you do not use this parameter.

#### Example 5-2:

```
<HTML>
```

```
<HEAD>
```

```
<TITLE>Example 5-2</TITLE>
```

```
</HEAD>
```

```
<BODY>
```

```
<TABLE WIDTH=50% HEIGHT=100 BORDER=3>
```

```
<TR>
```

```
<TD ALIGN=LEFT VALIGN=TOP>TOP LEFT</TD>
```

```
<TD ALIGN=RIGHT VALIGN=TOP>TOP RIGHT</TD>
```

```
</TR>
```

```
<TR>
```

```
<TD ALIGN=LEFT VALIGN=BOTTOM>BOTTOM LEFT</TD>
```

```
<TD ALIGN=RIGHT VALIGN=BOTTOM>BOTTOM RIGHT</TD>
```

```
</TR>
```

```
</TABLE>
```

```
</BODY>
```

```
</HTML>
```



### 5-5 Images in table cells

You will soon need to insert images in table cells. As we told later tables will be used to hold images in their places. You can insert an image in a table cell by inserting <IMG> tag between <TD></TD> tags of a certain cell.

#### Example 5-3

```
<HTML>
<HEAD>
<TITLE>Example 5-3</TITLE>
</HEAD>
<BODY>
<TABLE BORDER=4>
<TR>
<TD><IMG SRC="image53.gif"></TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

### 5-6 Ends

In this lesson you learned creating tables. Tables are one of important objects in web pages. In next lesson you will learn more about tables. And finally a question: Have you started designing web pages? Now is a great time to start. You learn and you use what you learn immediately. This will guarantee that you learn everything you studied in this course. So start now

### 6-1 Introduction

We started our study on tables in previous lesson and We will continue our study in this lesson. As I told you in previous lesson, tables are very important in professional web design. You will need them for holding pictures, buttons, text etc. In this lesson we will cover more options about table cells, cell padding, cell spacing and finally we will learn how to link different parts of an image to different locations on the web.

### 6-2 Cell Width (Column Width)

In previous lesson we learned how we can determine width and height of a table.

```
<HTML>
<HEAD>
<TITLE>Table: Column widths not specified</TITLE>
</HEAD>
<BODY>
<TABLE WIDTH=400 HEIGHT=100 BORDER=3>
<TR>
<TD>TOP LEFT</TD>
<TD>TOP RIGHT</TD>
</TR>
<TR>
<TD>BOTTOM LEFT</TD>
<TD>BOTTOM RIGHT</TD>
</TR>
</TABLE>
```



```
</BODY>
</HTML>
```

In above table we have not determined sizes for two cells in first row. In this way you will not be able to say how these cells will display in different browsers and different screen modes. You can determine width of each column in your table by specifying width of cells in first row. Just be careful about correctness of sizes you specify. For example if your table width is 200 pixels sum of cell widths must be exactly 200.

#### Example 6-1a:

```
<HTML>
<HEAD>
<TITLE>Example 6-1a</TITLE>
</HEAD>
<BODY>
<TABLE WIDTH=400 HEIGHT=100 BORDER=3>
<TR>
<TD WIDTH=140>TOP LEFT</TD>
<TD WIDTH=260>TOP RIGHT</TD>
</TR>
<TR>
<TD>BOTTOM LEFT</TD>
<TD>BOTTOM RIGHT</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

You can also determine cell widths in percent. Sum of cell width percentages must be 100%.

#### Example 6-1b:

```
<HTML>
<HEAD>
<TITLE>Example 6-1b</TITLE>
</HEAD>
<BODY>
<TABLE WIDTH=400 HEIGHT=100 BORDER=3>
<TR>
<TD WIDTH=35%>TOP LEFT</TD>
<TD WIDTH=65%>TOP RIGHT</TD>
</TR>
<TR>
<TD>BOTTOM LEFT</TD>
<TD>BOTTOM RIGHT</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

When you determine sizes of first row cells you will not need to determine widths for second row cells. If you want a cell to be empty, you cannot omit definition for that cell. Insert cell definition, and enter a &nbsp; between <TD></TD> tags. As we told in later lessons this means a space character. You must enter at least a space in this form if you need an empty cell. Otherwise area of that cell will not appear like an empty cell.





### Example 6-2:

```
<HTML>
<HEAD>
<TITLE>Example 6-2</TITLE>
</HEAD>
<BODY>
<TABLE WIDTH=400 HEIGHT=100 BORDER=3>
<TR>
<TD WIDTH=140>TOP LEFT</TD>
<TD WIDTH=260>&nbsp;</TD>
</TR>
<TR>
<TD>&nbsp;</TD>
<TD>BOTTOM RIGHT</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

In above example we have two empty cells but as we have specified both table and cell sizes, table will not lose its shape. If we remove sizes, we cannot guarantee how it will be displayed on different browsers and screen modes. For the above reason we suggest you to determine table sizes in every table you use. Using fixed sizes is not a good idea. Use percent sizes instead of fixed sizes.

### 6-3 Cell padding

You can specify two other important size parameters for a table. Cell padding is the space between cell borders and table contents such as text, image etc.

### Example 6-3:

```
<HTML>
<HEAD>
<TITLE>Example 6-3</TITLE>
</HEAD>
<BODY>
Cell padding effect : <BR><BR>
<TABLE BORDER=3 CELLPADDING=20>
<TR>
<TD>TOP LEFT</TD>
<TD>TOP RIGHT</TD>
</TR>
<TR>
<TD>BOTTOM LEFT</TD>
<TD>BOTTOM RIGHT</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

Default value for this option is 1. It means that contents of a cell will have a distance of one pixel with borders. If you don't want any space between object inside the cells and its borders you can determine the value of 0 for this option.



## 6-4 Cell spacing

Cell spacing parameter determines the space between inner and outer parts of a table. In fact a table is constructed from two borders . A border area and a cell area. There is a space between cell area and outer border. We call this "cell spacing". If you increase this value you will have a thick border. Default value for this property is 2. If you specify 0 for it, you will have a very thin border.

### Example 6-4:

```
<HTML>
<HEAD>
<TITLE>Example 6-4</TITLE>
</HEAD>
<BODY>
Cell spacing effect : <BR><BR>
<TABLE BORDER=3 CELLSPACING=10>
<TR>
<TD>TOP LEFT</TD>
<TD>TOP RIGHT</TD>
</TR>
<TR>
<TD>BOTTOM LEFT</TD>
<TD>BOTTOM RIGHT</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

You can also mix cell spacing and cell padding options to make specific tables that you need.

## 6-5 Tables and images

Sometimes you need an image that when users click on different parts of it they go to different pages. In previous lessons you learned how to use an image as a link to another address or page. In this special case you will need to cut your picture into as many parts as you need and insert them in a table that holds image parts beside each other. Then you will link each image part to a different page. You will also need to set both cell spacing and cell padding to the value of 0 to prevent the table to be seen between image parts.

In this way users will see a single image but when they click on different parts of image they will go to different addresses. You can see [an example](#) of this technique in example page for this lesson on our site among other examples.

## 6-6 Working with graphic editing programs

As a web designer you need a graphics manipulation program. There are many professional programs in the market. Photoshop is a very professional and powerful program but it is an expensive program. You can use Paint Shop Pro instead. This is another professional but easy program. You can even download limited versions of this program from many download sites. These programs will enable you to cut pictures into parts, add many effects on your graphics, decrease graphics size etc. Now in this lesson you will need such a program. You must work with the program to increase your expertise with it. In this way it will be possible for you to make interesting images for your web pages. In exercises of this lesson you must use such program to cut an image into four parts. It is a starting point. One side of web design art is graphics design. So start Now !



### 7-1 Table background color

We can use background colors for tables in new browsers. You can specify background color options inside <TABLE> tag.

#### Example 7-1:

```
<HTML>
<HEAD>
<TITLE>Example 7-1</TITLE>
</HEAD>
<BODY>
<TABLE width="300" BGCOLOR="#66CCFF">
<TR>
<TD width="50%">A</TD>
<TD width="50%">B</TD>
</TR>
<TR>
<TD width="50%">C</TD>
<TD width="50%">D</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

In above example entire table will change to new color even table borders. You can also determine background color for each row of your table. If you want to do this, you must use BGCOLOR option inside <TR> tag of the desired row. This second method will only change colors of cells in specified row.

#### Example 7-2:

```
<HTML>
<HEAD>
<TITLE>Example 7-2</TITLE>
</HEAD>
<BODY>
<TABLE width="300" BORDER=1>
<TR BGCOLOR="#66CCFF">
<TD width="50%">A</TD>
<TD width="50%">B</TD>
</TR>
<TR BGCOLOR="#CCFFFF">
<TD width="50%">C</TD>
<TD width="50%">D</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

You can even change color of individual cells by using BGCOLOR option in <TD> </TD> cell tags. You can mix all above options to create your desired table. In next example we will change color of first row to "#336699". Then we will change color of two cells in second row to "#66CCFF" and "#CCFFFF" respectively.



### Example 7-3:

```
<HTML>
<HEAD>
<TITLE>Example 7-3</TITLE>
</HEAD>
<BODY>
<TABLE width="300" BORDER=1>
<TR BGCOLOR="#336699">
<TD width="50%">A</TD>
<TD width="50%">B</TD>
</TR>
<TR>
<TD width="50%" BGCOLOR="#66CCFF">C</TD>
<TD width="50%" BGCOLOR="#CCFFFF">D</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

## 7-2 Column Span

Sometimes you need to join two cells in a row to each other. For example in a 2\*3 table we may want to join two cells with each other. In this way we will have two cells in first row and three cells in second row. Enter this html code in a file and browse it in your browser to see what column spans is.

### Example 7-4:

```
<HTML>
<HEAD>
<TITLE>Example 7-4</TITLE>
</HEAD>
<BODY>
<TABLE BORDER=1>
<TR>
<TD COLSPAN=2>A</TD>
<TD>B</TD>
</TR>
<TR>
<TD>A</TD>
<TD>B</TD>
<TD>C</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

Just be careful that when you have for example 2 cells in first row and first one uses column span parameter COLSPAN=2 it means that it is equal to two cells. Therefore you must have three cells in next row (three <TR> tags) or you may use COLSPAN to create cells that when you add them, it will be equal to previous row or 3 in this example.



### 7-3 Row Span

This time we want to join two cells in a column (from different rows). This is the same as previous section with the difference that we will join cells from different rows rather than cells in different columns. This time we must use ROWSPAN instead of COLSPAN.

#### Example 7-5:

```
<HTML>
<HEAD>
<TITLE>Example 7-5</TITLE>
</HEAD>
<BODY>
<TABLE BORDER="1" WIDTH="200">
<TR>
<TD ROWSPAN="2">A</TD>
<TD>B</TD>
<TD>C</TD>
</TR>
<TR>
<TD>D</TD>
<TD>E</TD>
</TR>
</TABLE>
</BODY>
</HTML>
```

Again you must be careful that when you have for example a cell in first column that you have joined two cells to create it using the option ROWSPAN=2 then your table must have two rows and you must take this in mind in next parts of your table. In above example we only entered two cells in second row (started from second <TR> ) as first cell of first row has occupied first cell of this row too and we have only two cells left of 3 cells. Enter this example and browse it to see the results. You may want to mix these tags to create your custom tables however this is a complicated task and you must work hard to gain needed experience with these tables.

### 7-4 Nested Tables

Yes we can nest tables in each other. If you are going to design complicated web pages you will always do this. For example you need a table with border size of 3 in a specific part of a web page. To fix position of that table in your desired place you will need a table with border size of 0. In this case first table can be seen as its border size is 2 but second one will not be seen as you used it just for positioning of first table. Anyway, writing a nested table code is easy.

#### Example 7-6:

```
<HTML>
<HEAD>
<TITLE>Example 7-6</TITLE>
</HEAD>
<BODY>
<TABLE border="0" width="750">
<TR>
<TD width="25%">&nbsp;&nbsp;&nbsp;</TD>
```



```

<TD width="25%">&nbsp;</TD>
<TD width="25%">
<TABLE border="2" width="100%">
<TR>
<TD width="50%">1-</TD>
<TD width="50%">HTML</TD>
</TR>
<TR>
<TD width="50%">2-</TD>
<TD width="50%">C Prog.</TD>
</TR>
<TR>
<TD width="50%">3-</TD>
<TD width="50%">JScript</TD>
</TR>
</TABLE>
</TD>
<TD width="25%">&nbsp;</TD>
</TR>
</TABLE>
</BODY>
</HTML>

```

In this example we have a 1\*4 table. We want to hold our main table inside this table in its third column so that our main table will be shown in right side of the center of the screen. Main table has a border size of 1 while first table is hidden.

### 7-5 You know tables now

Now you have learned table basics. You see what you learned about tables was not too complicated however writing a complicated tables is not very easy. You must work for a little to be able to use them effectively. Tables are one of the most powerful features of html design so you must be able to use their power correctly. In next lesson we will start studying on Frames. Until then, you can use your free time to work on tables.

