

Lesson Three: Variables

There are three types of variables in Perl. Scalars, Arrays and Hashes. The first type that we will use is a Scalar variable. A variable is a way to store a value. Scalar variables are single variables and carry only one number or string of characters and must start with a dollar sign (\$). Scalar variables are storage areas that you can use to store any scalar value. They are also case sensitive, thus \$abc is a different variable than \$aBc.

Scalar Variables

Let's call our first Scalar variable A.

```
$A = 5;
```

Let's call our second Scalar variable B.

```
$B = 10;
```

And our third C;

```
$C = $A + $B;
```

Make sure that the variable is always at the beginning not after. Don't use it like:

```
$A + $B = $C;
```

Step 1. Start your editor and fill it in to look just like illustration 35. I may not remind you every time but remember that your path to Perl may be different than mine.

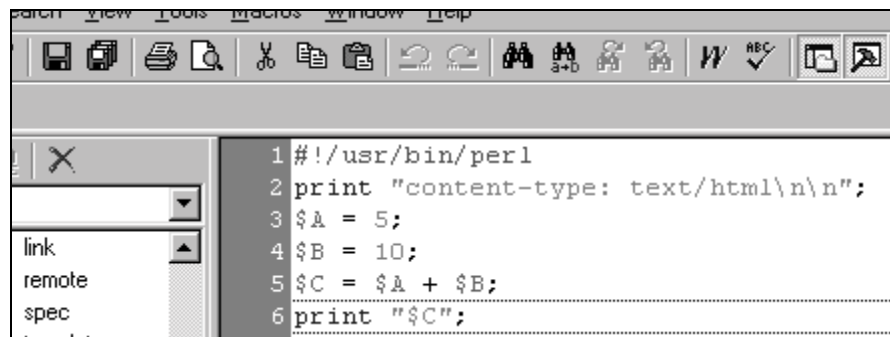


Illustration 35

Step 2. Save this file and name it *samp2.cgi*. If you don't remember how to save a file review lesson 2.

Step 3. Connect to the Internet and start CuteFTP, connect to your web site and line up the right side so it lines up with your cgi-bin directory like illustration 36.

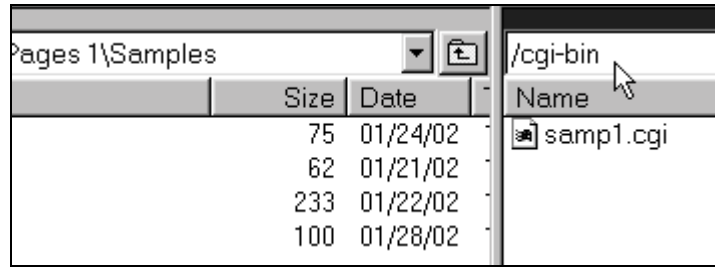


Illustration 36

Step 4. Line up the left side with your file named *samp2.cgi* like illustration 37.

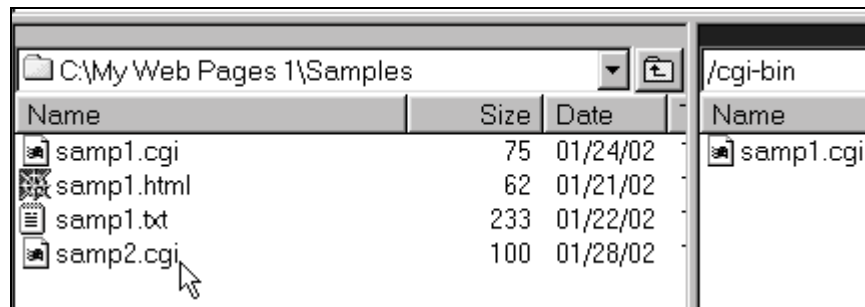


Illustration 37

Step 5. Click once on the menu that says *Edit* at the top left of CuteFTP as in illustration 38. This is the last time I will show you how to FTP files to your server. If you can't remember later on you can always come back and review it.

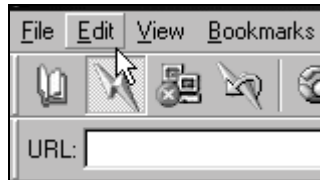


Illustration 38

Step 6. A menu will open as shown in illustration 39. Click once where it says settings.

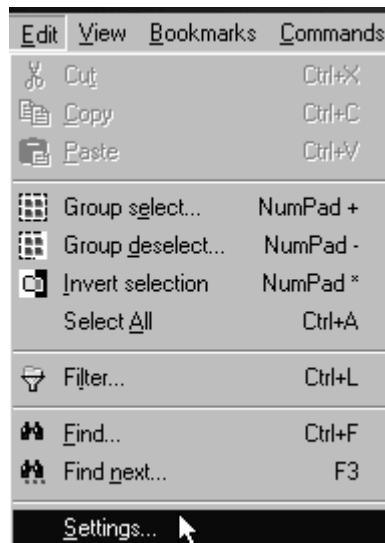


Illustration 39

Step 7. Remember that all CGI files must be loaded to the server as ASCII text. A control panel will be opened that looks like illustration 40. Click once on the radio button that says *ASCII* if it is not highlighted already and click the OK button.

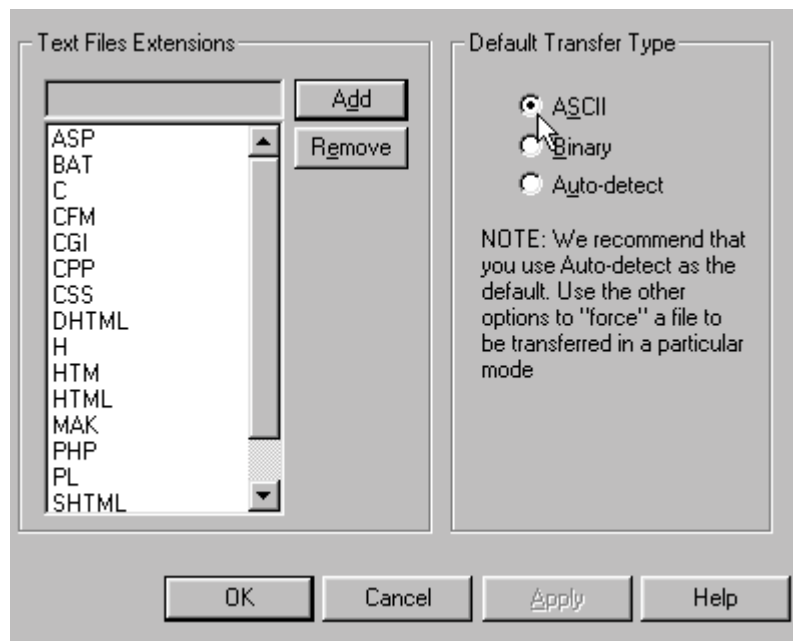


Illustration 40

Step 8. Click once and hold down your left mouse button on your file *samp2.cgi* and drag and drop it to your cgi-bin directory on the right side of CuteFTP like in illustration 41.

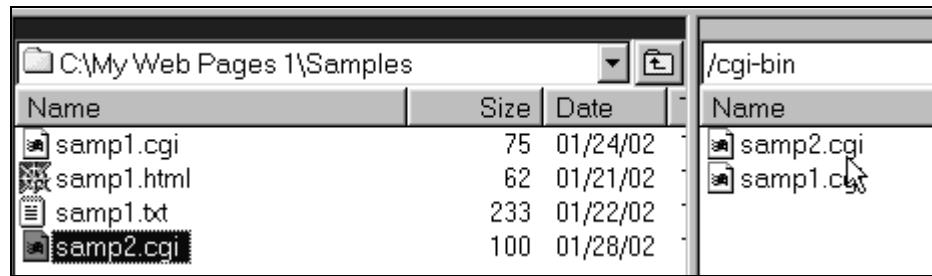


Illustration 41

Step 9. Now right click on your file sam2.cgi. A menu will open like illustration 42.

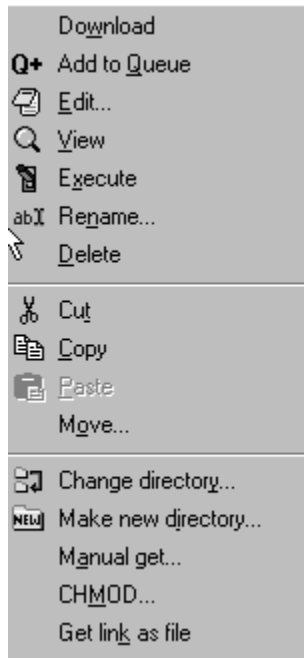


Illustration 42

Step 10. Move your mouse down to the area that says CHMOD and click once on it. A window will open as shown in illustration 43. Make sure the text window says 755 and click the OK button.

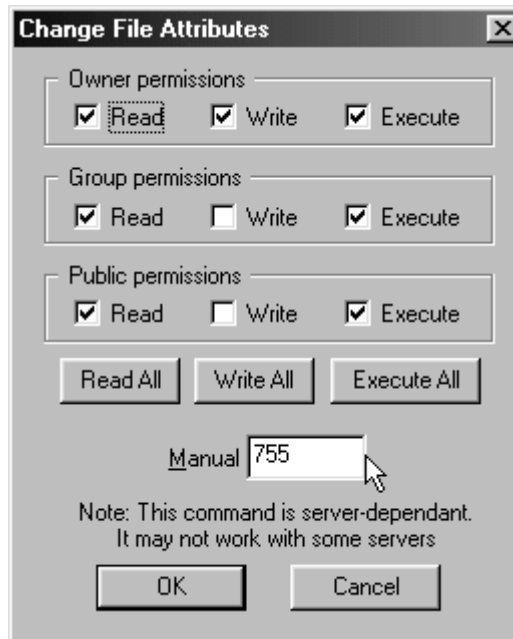


Illustration 43

Step 11. Now start your browser and fill in the location bar at the top so it goes to your file *samp2.cgi* in your cgi-bin directory and press the *Enter* key. Yours will look different than mine. Your screen should have the solution to your math problem, $C = A + B$. Your screen should say 15.



Illustration 44

To give a Scalar variable a string value, (sentence, text, text with numbers) you need to use single quotation marks or double quotation marks. When you use single quotations the string is used as it is written.

```
$ONE='blue';
print "The sky is $ONE .";
```

Your program would print to the screen, *The sky is blue.*

Using double quotation marks is a way of allowing the use of more than one variable. You can add other variables together to make one variable.

```
$ONE='blue';  
$TWO="The sky is $ONE.";  
print "$TWO";
```

This will print on your screen, The sky is blue.

Step 12. Open Crimson editor and fill it in just like illustration 45. I may not remind you every time but remember that your path to Perl may be different than mine.

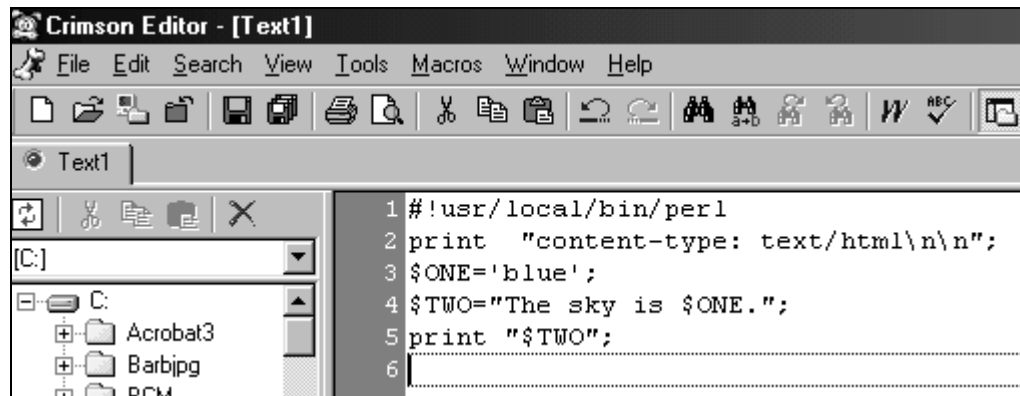


Illustration 45

Step 13. Save the file as samp3.cgi.

Step 14. Start CuteFTP and log in to your web site. If you don't remember how to do this go back to step 3.

Step 15. Make sure your file transfer protocol is set to ASCII and drag and drop the file, *samp3.cgi* to your cgi-bin directory.

Step 16. CHMOD the file to 755.

Step 17. Start your favorite browser and line up the URL path to your file and it should say, *The sky is blue.* just like illustration 46.



Illustration 46

Array Variables

Our second variable is the Array. Arrays are ordered groups of variables that start with the at “@” sign. Arrays are really Scalars but are together in a group. Let’s make a simple Array.

```
@colors = ("red","green","blue");
```

Notice they are all in a group. Now, let’s make the same thing as Scalars.

```
$colors[0] = "red";  
$colors[1] = "green";  
$colors[2] = "blue";
```

Both can do the same, but notice the numbers. Computers start counting at 0. So, 1 2 3 to your computer is the same as 0 1 2.

Step 18. We need to make a simple program. Start your editor and fill it in like illustration 47. I may not remind you every time but remember that your path to Perl may be different than mine.

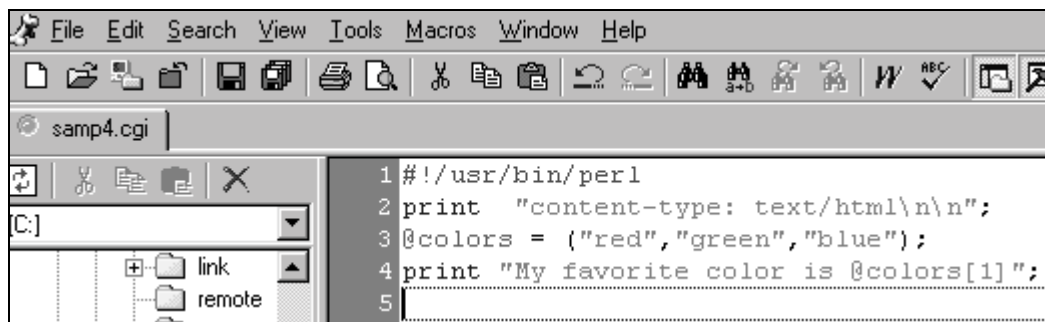


Illustration 47

Step 19. Save the program under file name *samp4.cgi*.

Step 20. Connect to the Internet.

Step 21. Start CuteFTP and connect to your web site.

Step 22. Make sure that your file transfer mode is ASCII and copy your file to your cgi-bin directory.

Step 23. CHMOD your file to 755.

Step 24. Start your browser and fill in the location bar so it lines up with your file and press the enter key. Your browser screen should say, “My favorite color is green” just like illustration 48.



Illustration 48

It uses the word green because it is number 1. Remember computers start counting at 0.

You don't have to have all of the Array list items on one line for it to work.

```
@colors = ("red","green","blue",
           "yellow","purple");
```

One way to make Array list items print on different lines is to make them individually by using the carriage return sign "\n".

```
print "@colors[0] \n";
print "@colors[1] \n";
print "@colors[2] \n";
print "@colors[3] \n";
print "@colors[4] \n";
```

But sometimes carriage returns don't work in Perl so I use the HTML break and return sign, "
". Some people will say I don't know what I'm talking about on this one but I know it is true.

```
print "@colors[0] <br>";
print "@colors[1] <br>";
print "@colors[2] <br>";
print "@colors[3] <br>";
print "@colors[4] <br>";
```

Step 25. We can make this work. Fill in your editor so it looks like illustration 49 and save the file as *samp5.cgi*.

```
1#!/usr/bin/perl
2print "content-type: text/html\n\n";
3@colors = ("red","green","blue",
4           "yellow","purple");
5print "$colors[0]<br>";
6print "$colors[1]<br>";
7print "$colors[2]<br>";
8print "$colors[3]<br>";
9print "$colors[4]<br>";
10
```

Illustration 49

Step 26. Start CuteFTP and connect to your web site.

Step 27. Make sure that your file transfer mode is ASCII and copy your file to your cgi-bin directory.

Step 28. CHMOD your file to 755.

Step 29. Start your browser and fill in the location bar so it lines up with your file and press the enter key. Your browser should look like illustration 50.



Illustration 50

If your program doesn't work with the `
` change it to `\n` and see if it works.

Hash Variables

The last Variable is the Hash. Hashes are keys or values. A Hash is a key that stores data or a value. A Hash is like a database that can be looked up so the information can be printed.

Hashes always start with the percent sign "%". You can assign pairs of Hashes together to create an information base to be accessed. Let's say you want to be able to locate the stock number of a stores products.

```
%stocknumber = ( shoe => 3945, hat => 9332, milk => 5571, dip => 2365,  
                eggs => 4812, cheese => "NotInStockAnyMore");
```

Notice that the numbers don't need quotation marks and the words do just like Scalars. The bar `=>` tells it to associate with the information to the right.

```
print "$stocknumber {shoe}\n";
```

Would print the stock number 3945.

Step 30. Let's build a program. Fill in your editor so it looks like illustration 51. You can use `\n` for a new line feed instead of `
` if it works on your server.

```

1#!/usr/bin/perl
2print "content-type: text/html\n\n";
3%stocknumber = ( shoe => 3945, hat => 9332,
4                  milk => 5571, dip => 2365,
5                  eggs => 4812,
6                  cheese => "NotInStockAnyMore");
7
8print "$stocknumber{shoe}<br>";
9print "$stocknumber{hat}<br>";
10print "$stocknumber{milk}<br>";
11print "$stocknumber{dip}<br>";
12print "$stocknumber{eggs}<br>";
13print "$stocknumber{cheese}<br>";
14

```

Illustration 51

Step 31. Start CuteFTP and connect to your web site.

Step 32. Make sure that your file transfer mode is ASCII and copy your file to your cgi-bin directory.

Step 33. CHMOD your file to 755.

Step 34. Start your browser and fill in the location bar so it lines up with your file and press the enter key. Your browser should look like illustration 52.



Illustration 52