

IT350 Web and Internet Programming

Fall 2007

SlideSet #13: Perl Functions and More

(see online references)

use strict AND my

- With “use strict”, variables must be declared with “my”
- More work at first, but saves pain later!
 - Avoids errors from same vars being used in diff. files

```
use strict;
use CGI qw( :standard );
print( header() );

my($w)      =      (87);
my($x)      =      89;
my($y, $z) =      (91, 93);

my(@array) =      (1, 2, 3);

my($d1, $d2, $d3) = @array;
my($f1, @f2, $f3) = @array;

print p("w is $w");
print p("x is $x");
print p("y is $y");
print p("z is $z");

print p("d1: $d1 d2: $d2 d3: $d3");

print p("f1: $f1 f2: @f2 f3: $f3");

my($details) = "John|rabbit7";
my($name,$password) = split ( /\|/, $details);

print p("name: '$name' password: '$password'");

print(end_html());
```

Perl Function Calls (“subroutines”)

```
use CGI qw( :standard );
print( header() );

# Prints "hello", takes no arguments
sub hello {
    print "\n<br/> Hello.";
}

# Takes two arguments, return their product
sub multiply {
    my($valA, $valB) = @_;
    return $valA * $valB;
}

my($x) = 2;
&hello;
print "\n<br/> $x * 7 = " . &multiply($x, 7);
&hello();
&hello(72145);

print(end_html());
```

Function Calls and Arrays

```
# Takes an array as argument, returns minimum value
sub findMin {
    my(@array) = @_;
    my $min = $array[0];
    my $ii;
    my $len = @array;
    for ($ii=0; $ii < $len; $ii++) {
        if ($array[$ii] < $min) {
            $min = $array[$ii];
        }
    }
    return $min;
}

# Defines new global array, @array1
# AND returns a new array with 4 elements.
sub makeArray() {
    @array1 = (89, 23, 90);
    my @array2 = (34, 5.4, 123, 2.01);
    return @array2;
}

@test1 = makeArray();
@test2 = (89, 23, 40, -17);
print "\nMin1 is: " . &findMin(@test1);
print "\nMin2 is: " . &findMin(@test2);
print "\nMin3 is: " . &findMin(@array1);
print "\nMin4 is: " . &findMin(@array2);
```

Exercise #1

- Write a Perl function `checkNum()` that takes three arguments, `num`, `min`, and `max`, and returns 1 if `num` is in the range $[min,max]$ (inclusive), or 0 otherwise.

Exercise #2

- Write a function dup() that takes two arguments, ch and count, and prints the value of ‘ch’ out count times.
- Then write code to produce the following output:

12 12 12 12 12

Exercise #3

- Write a function, `makeArray`, that takes one argument, `count`, and returns an array of size `count` with the numbers from `[1..count]`. So `makeArray(4)` should return `(1, 2, 3, 4)`

Exercise #4

- Write a Perl function, `reverse()`, that takes one argument, an array, and returns that array in reverse order. So `(1, 2, 3)` becomes `(3, 2, 1)`.

String → number conversions (and back)

- Perl will convert to number where needed , or to a string where needed

```
$str1 = "27";
$str2 = "dog";
$str3 = "cat";

$result1 = $str1 + 10;
$result2 = $str1 - 10;
$result3 = $str2 + 10;

print p("result1: $result1 result2: $result2");
print p("result3: $result3");

$val1 = 13;
$val2 = 27;

print p("Combine these: " . $val1 . $val2);

if ($str2 == $str3) {
    print h2("Dogs and cats unite!");
}
```

Gotchas, References, and Multiple Files

```
my (@array) = @_;
    not the same as
my (@array) = $_;

my ($valA, $valB) = @_;
    not the same as
my $valA, $valB = @_;
```

References:

```
@array = (1, 2, 3);
$ref_array = \@array;
$array2 = @$ref_array;

print "\nfrom ref: " . $$ref_array[1];
print "\nfrom array2: " . $array2[1];
```

Multiple Perl Files:

```
require "question_struct.pl";
```

Be sure not to use same names (e.g., function names) in different files!

elsif

```
if ($x > 0) {  
    print "Hello";  
}  
  
elsif ($x == -5) {  
    print "Goodbye";  
}  
  
else {  
    print "Bye";  
}
```

Still to come

- Cookies