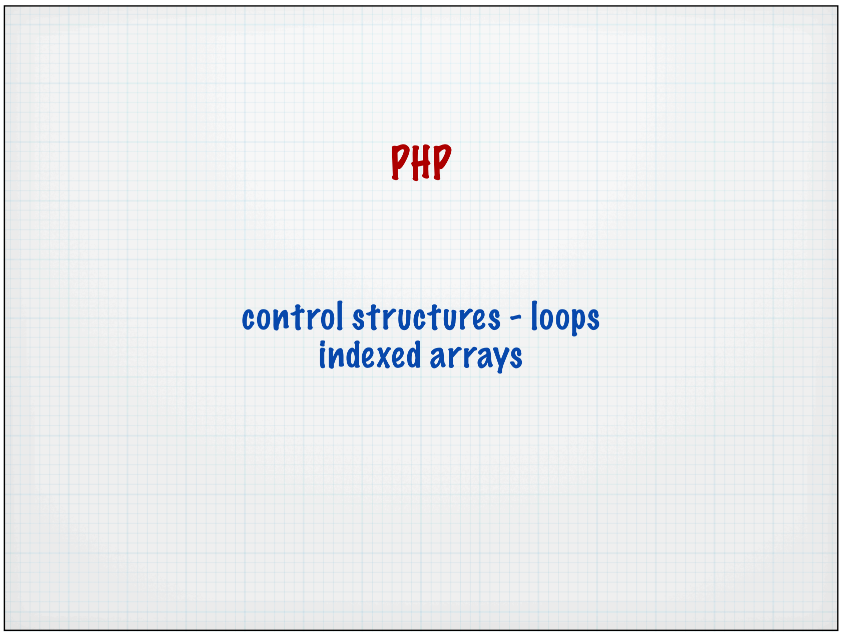
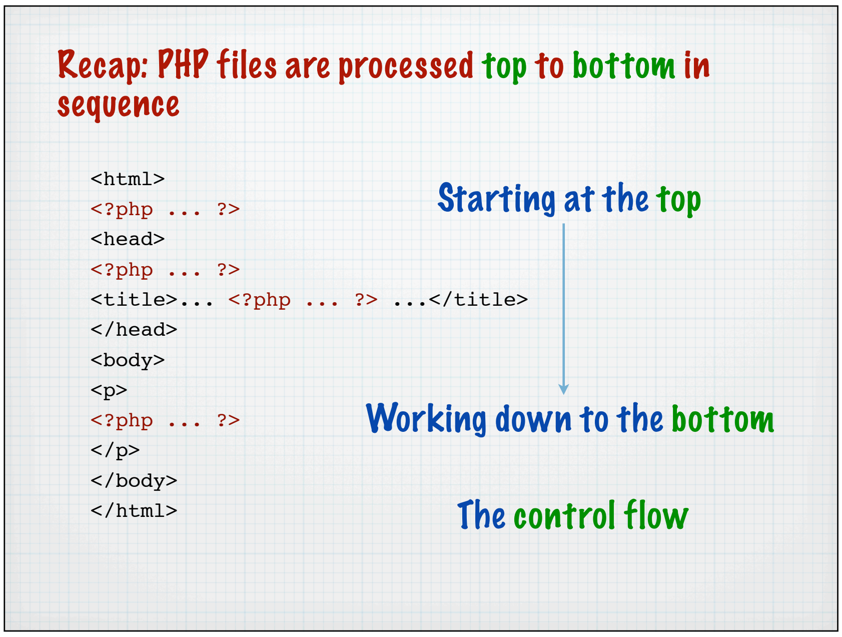


PHP

control structures - loops
indexed arrays



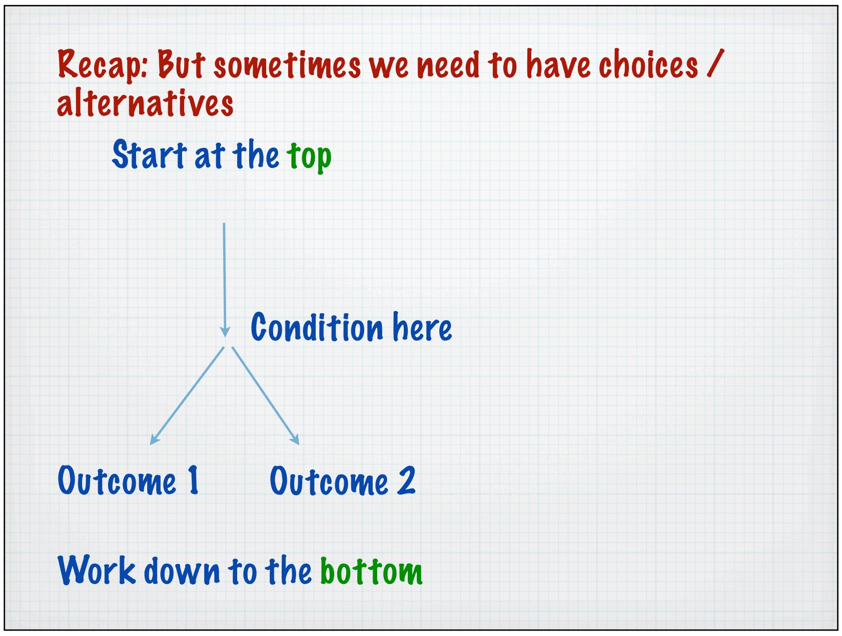
Recap: PHP files are processed top to bottom in sequence

```
<html>
<?php ... ?>
<head>
<?php ... ?>
<title>... <?php ... ?> ...</title>
</head>
<body>
<p>
<?php ... ?>
</p>
</body>
</html>
```

Starting at the top

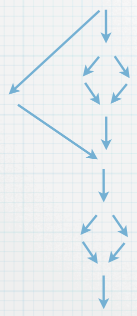
Working down to the bottom

The control flow



Recap: But sometimes we need to have choices / alternatives

Can be complex flows



Done with an if or a switch statement

```
if (expression)
  statement
```

Perform the statement if the expression is true

```
if (expression)
  statement1
else
  statement2
```

Perform statement1 if the expression is true otherwise statement2

```
if (expression){
   statement;
   statement;
   }
else {
   statement;
   statement;
   };
```

Perform blocks of statements if the expression is true otherwise ...

```
switch($name) {
      case 'value 1 of name':
        // do something
        break;
      case 'value 2 of name':
        // do something
        break;
      case 'value 3 of name':
        // do something
        break;
      case 'value 4 of name':
        // do something
        break;
    }
```

When the if statement has many sub-if parts, a switch statement may be better

Best to choose this when $name has a limited set of values known in advance

And and Or

Sometimes the expression needs to test for multiple conditions at once

PHP has built in support for logical AND and OR

And Or

And and Or

Example

```
if (($name="Dan") and ($favprog="XFactor")) {
// Done only if BOTH are true
}
```

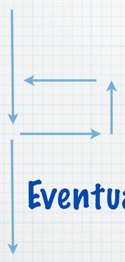
And and Or

Example

```
if (($name="Dan") or ($favprog="XFactor")) {
// Done if either (or both) are true
}
```

Sometimes we need to do things many times

Start



Round the Loop

Eventually come out of the loop ...

Loops / Iteration / doing things over and over and over and over ....

Three standard loop types

- for
- while ...
- do ... while

Loops / Iteration / doing things over and over and over and over ....

Three standard loop types - for loops today

- for
- while ...
- do ... while

Choose a for-loop if the number of times the loop will run is known 'in advance'

The loop will run 4 times
The loop will run 1000 times
The loop will run 'n' times

Loops / Iteration / doing things over and over and over and over ....

Three standard loop types - for loops today

for
while ...
do ... while

...or you are processing an array (more on this in a minute)

for loop

The structure of a for statement is:

```
for (start; condition; change amount)
   statement
```

or with many statements -

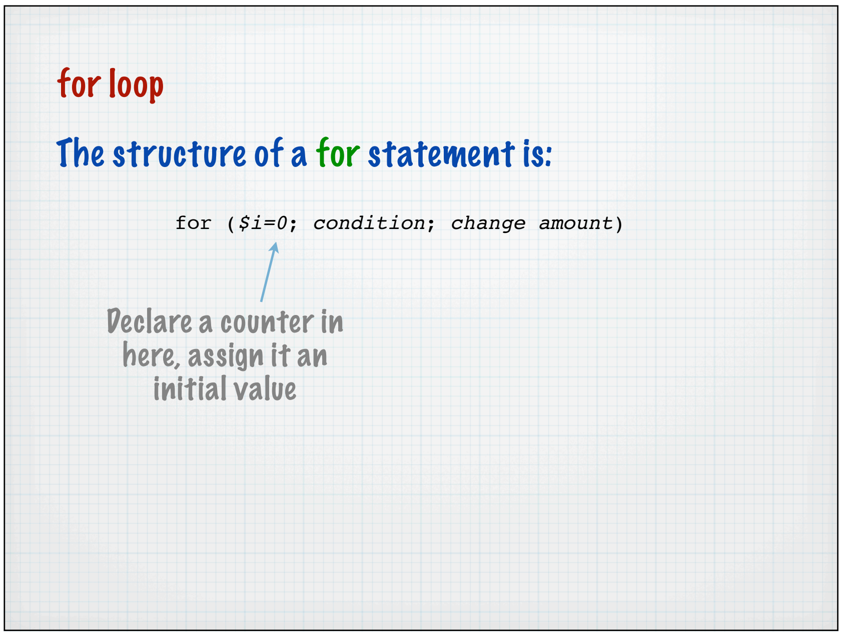
```
for (start; condition; change amount){
   statement;
   statement;
   statement;
   statement;
};
```

for loop

The structure of a for statement is:

```
for (start; condition; change amount)
```

Declare a counter in here, assign it an initial value

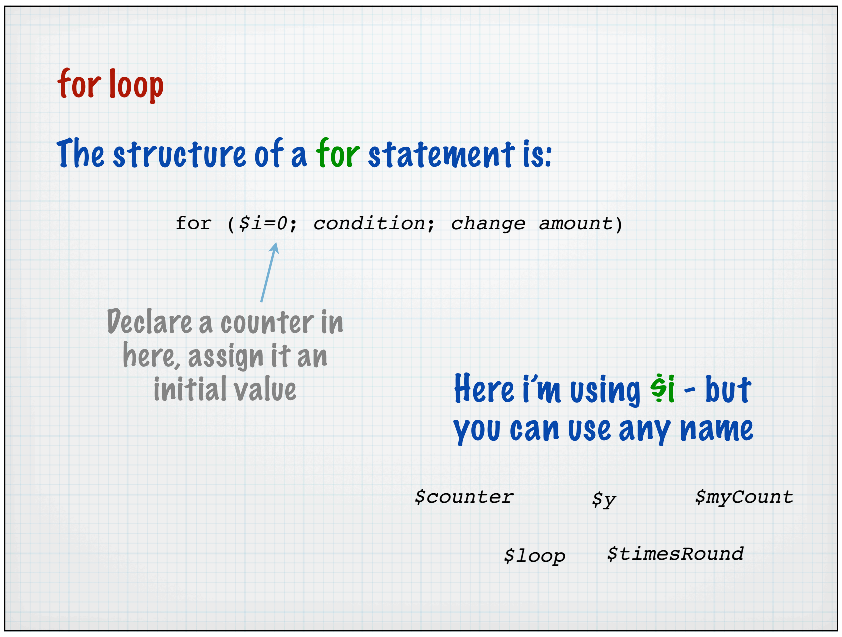


for loop

The structure of a for statement is:

```
for ($i=0; condition; change amount)
```

Declare a counter in here, assign it an initial value



for loop

The structure of a for statement is:

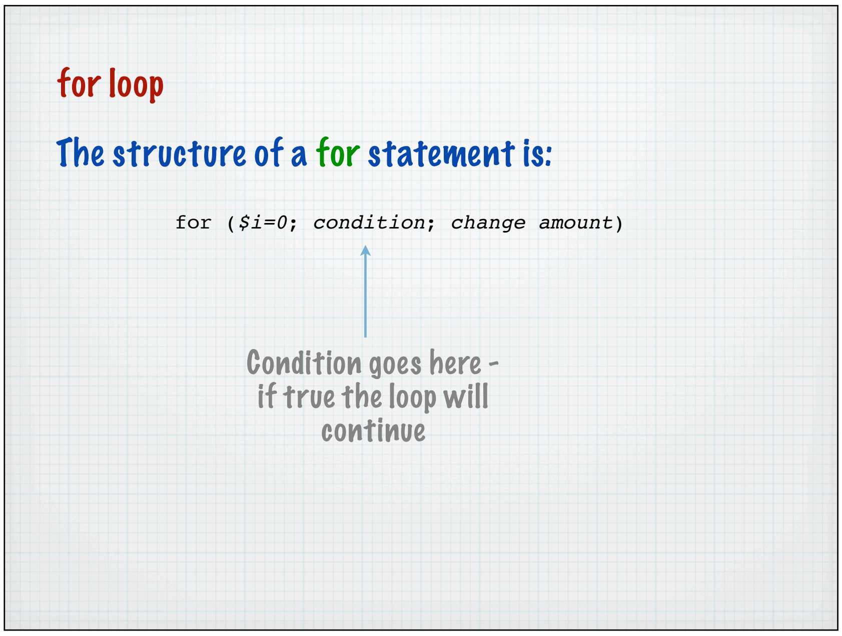
```
for ($i=0; condition; change amount)
```

Declare a counter in here, assign it an initial value

Here i'm using $i - but you can use any name

$counter $y $myCount

$loop $timesRound

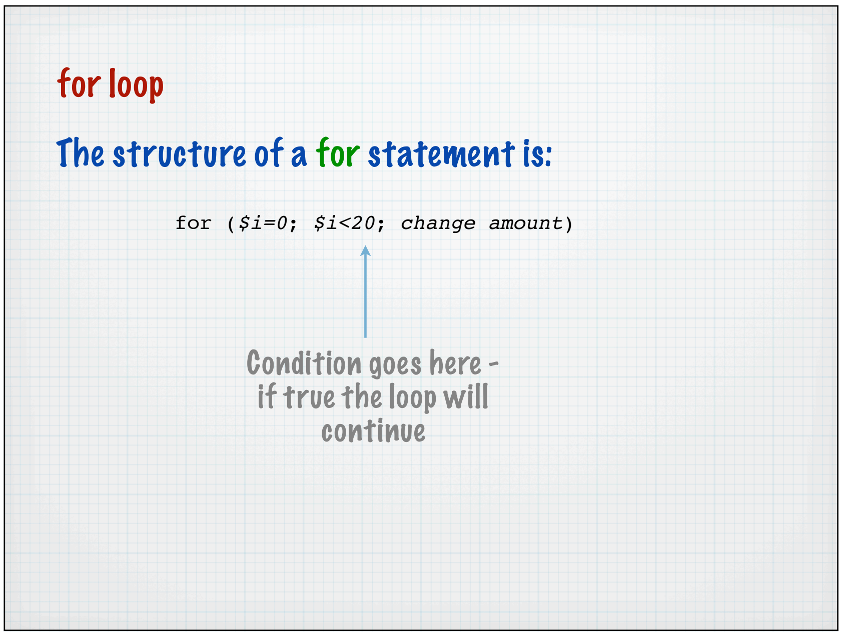


for loop

The structure of a for statement is:

```
for ($i=0; condition; change amount)
```

Condition goes here - if true the loop will continue

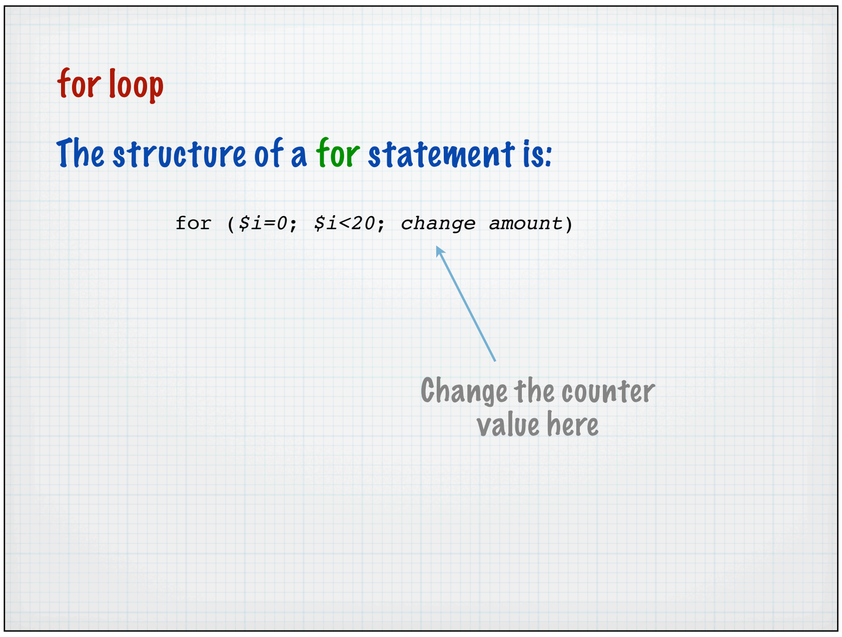


for loop

The structure of a for statement is:

```
for ($i=0; $i<20; change amount)
```

Condition goes here - if true the loop will continue

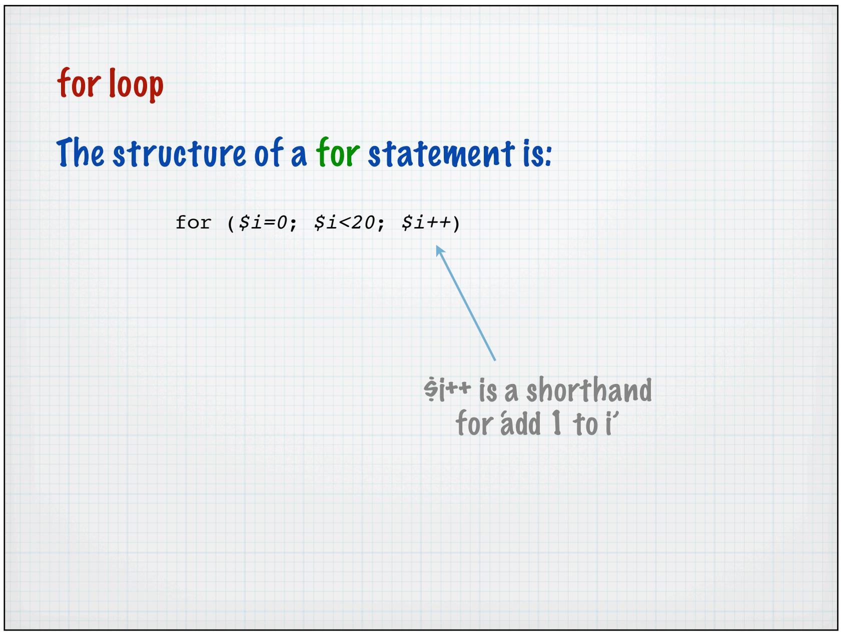


for loop

The structure of a for statement is:

```
for ($i=0; $i<20; change amount)
```

Change the counter value here

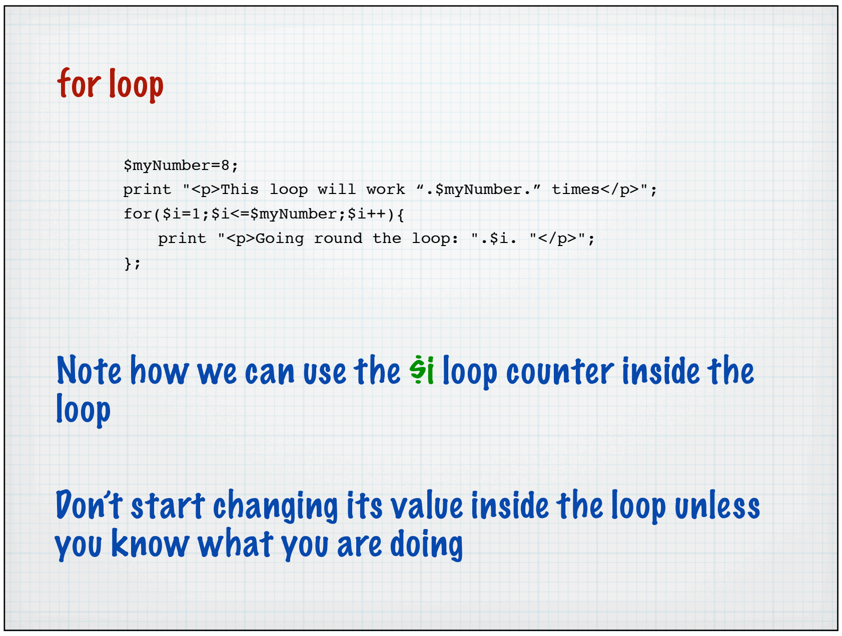


for loop

The structure of a for statement is:

```
for ($i=0; $i<20; $i++)
```

$i++ is a shorthand for 'add 1 to i'

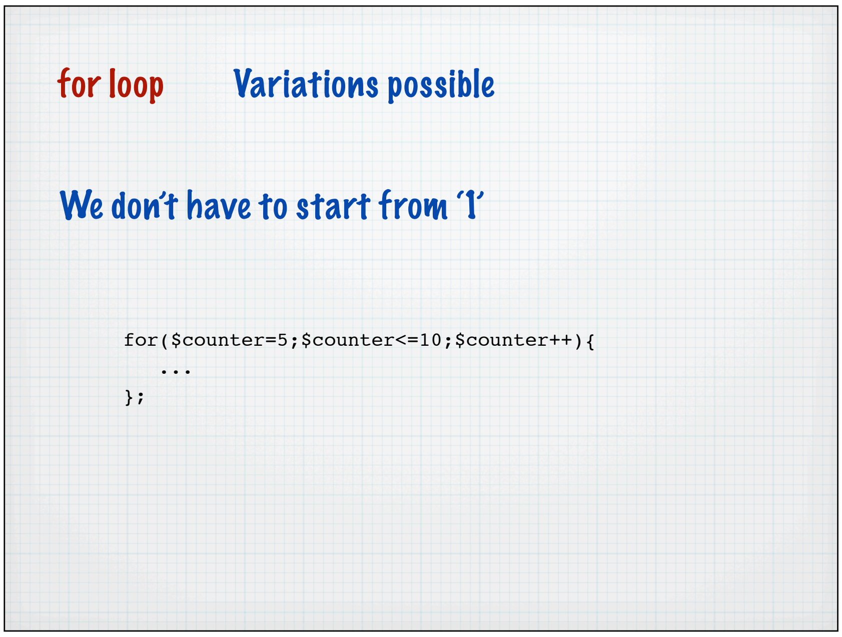


for loop

```
$myNumber=8;
print "<p>This loop will work “.$myNumber.” times</p>";
for($i=1;$i<=$myNumber;$i++){
    print "<p>Going round the loop: ".$i. "</p>";
};
```

Note how we can use the $i loop counter inside the loop

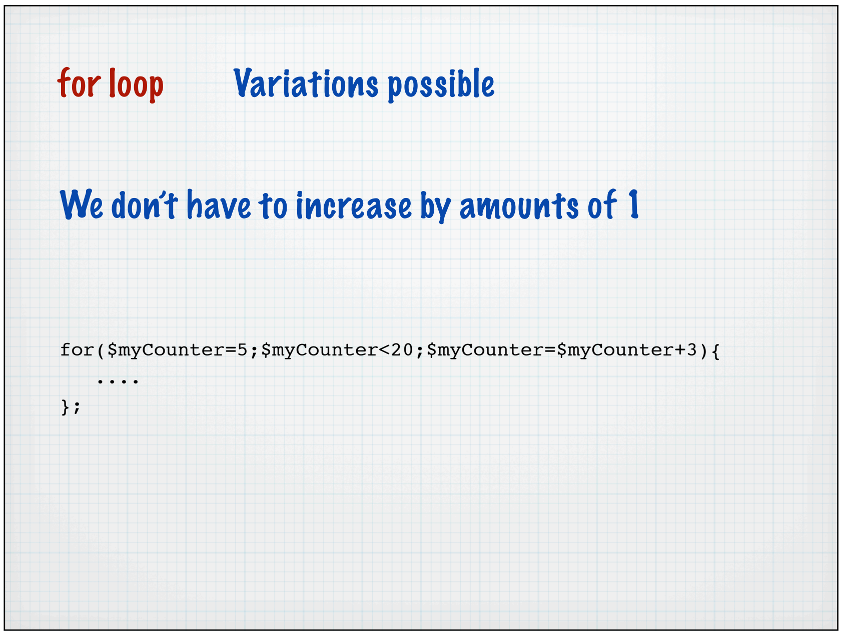
Don’t start changing its value inside the loop unless you know what you are doing



for loop Variations possible

We don’t have to start from ‘1’

```
for($counter=5;$counter<=10;$counter++){
    ...
};
```



for loop Variations possible

We don’t have to increase by amounts of 1

```
for($myCounter=5;$myCounter<20;$myCounter=$myCounter+3){
    ....
};
```

for loop   Variations possible

We can count down

```
for($j=20;$j>0;$j--){
   ....
};
```

$j-- is a shorthand for 'subtract 1 from j'

Arrays

- indexed arrays
- associative arrays

Much of this material is explained in PHP programming 2nd Ed. Chap 5

Arrays

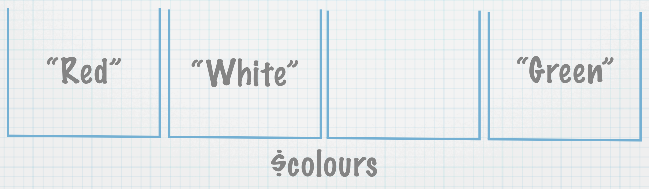
- indexed arrays - today
- associative arrays

Much of this material is explained in PHP programming 2nd Ed. Chap 5

Arrays

Sometimes we have a set of values that should have a single name

Can use a structure called an array to store these



A series of boxes with the same name

Arrays

So how do we get at the individual values inside the array?

Use a number - the index

Index is indicated in square brackets

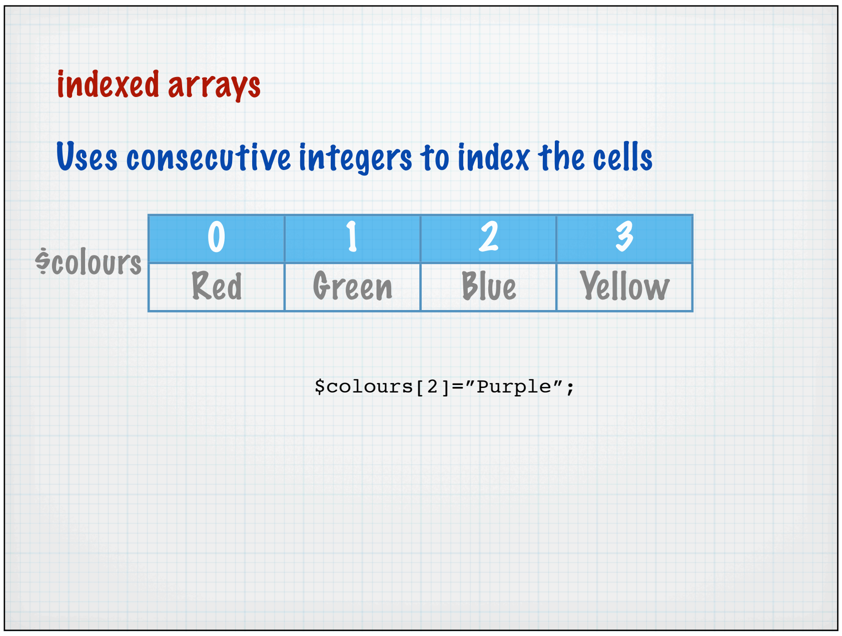
indexed arrays

Uses consecutive integers to index the cells

	0	1	2	3
$colours	Red	Green	Blue	Yellow

```
print $colours[1];
```

Green

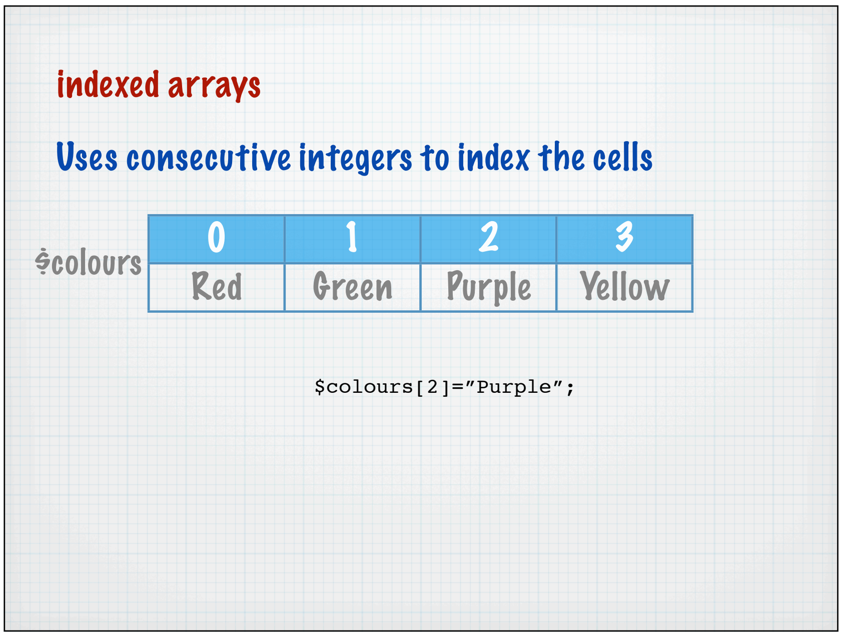


indexed arrays

Uses consecutive integers to index the cells

	0	1	2	3
$colours	Red	Green	Blue	Yellow

```
$colours[2]="Purple";
```

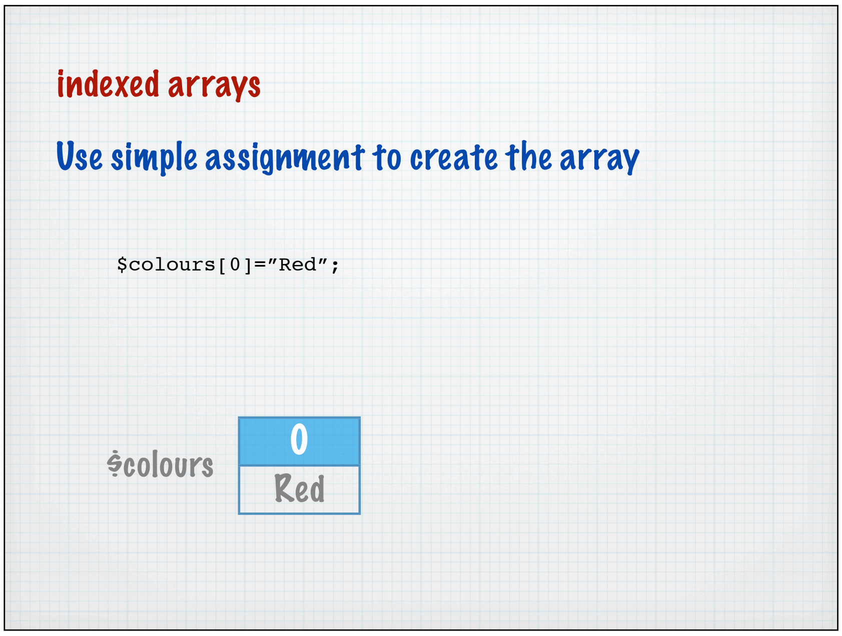


indexed arrays

Uses consecutive integers to index the cells

	0	1	2	3
$colours	Red	Green	Purple	Yellow

```
$colours[2]="Purple";
```



indexed arrays

Use simple assignment to create the array

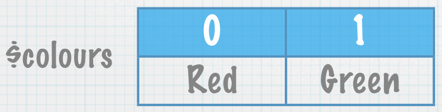
```
$colours[0]="Red";
```

	0
$colours	Red

indexed arrays

Use simple assignment to create the array

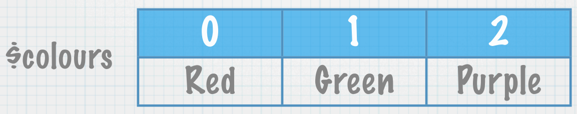
```
$colours[0]="Red";
$colours[1]="Green";
```



indexed arrays

Use simple assignment to create the array

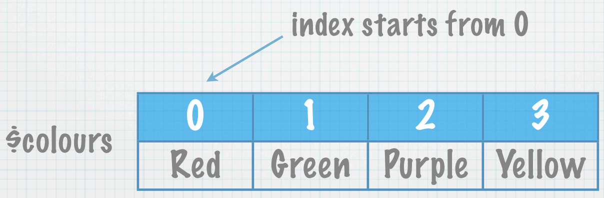
```
$colours[0]="Red";
$colours[1]="Green";
$colours[2]="Purple";
```



indexed arrays

If all the values are known in advance, use the reserved word array

```
$colours = array ("Red","Green","Purple","Yellow");
```



indexed arrays

To add an element to the end, use []

```
$colours = array ("Red","Green","Purple","Yellow");
$colours[] = "Black";
```

	0	1	2	3
$colours	Red	Green	Purple	Yellow

indexed arrays

To add an element to the end, use []

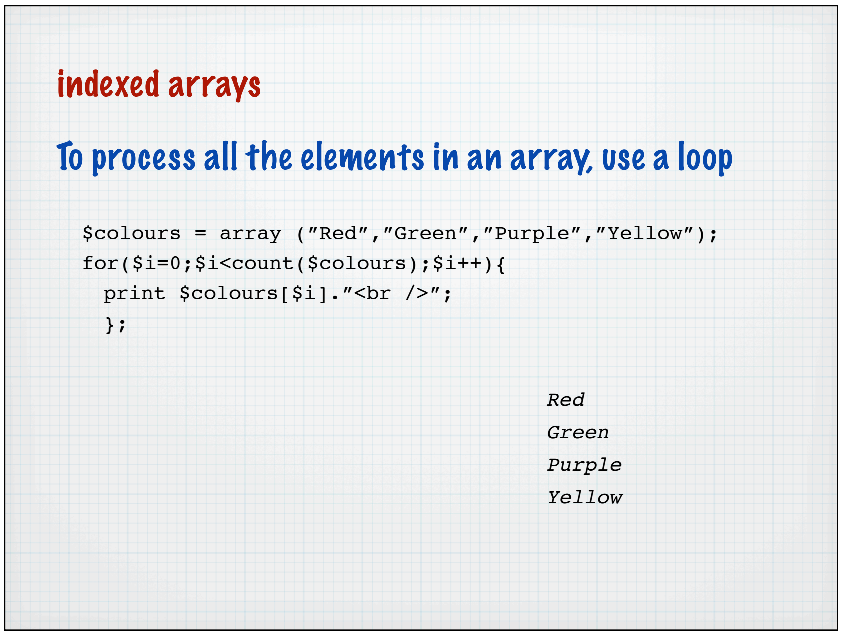
```
$colours = array ("Red","Green","Purple","Yellow");
$colours[] = "Black";
```

	0	1	2	3	4
$colours	Red	Green	Purple	Yellow	Black

useful functions

See appropriate references for more useful array functions

function	explanation
count()	no of array cells



indexed arrays

To process all the elements in an array, use a loop

```
$colours = array (”Red”,”Green”,”Purple”,”Yellow”);
for($i=0;$i<count($colours);$i++){
  print $colours[$i].”<br />”;
  };
```

```
Red
Green
Purple
Yellow
```