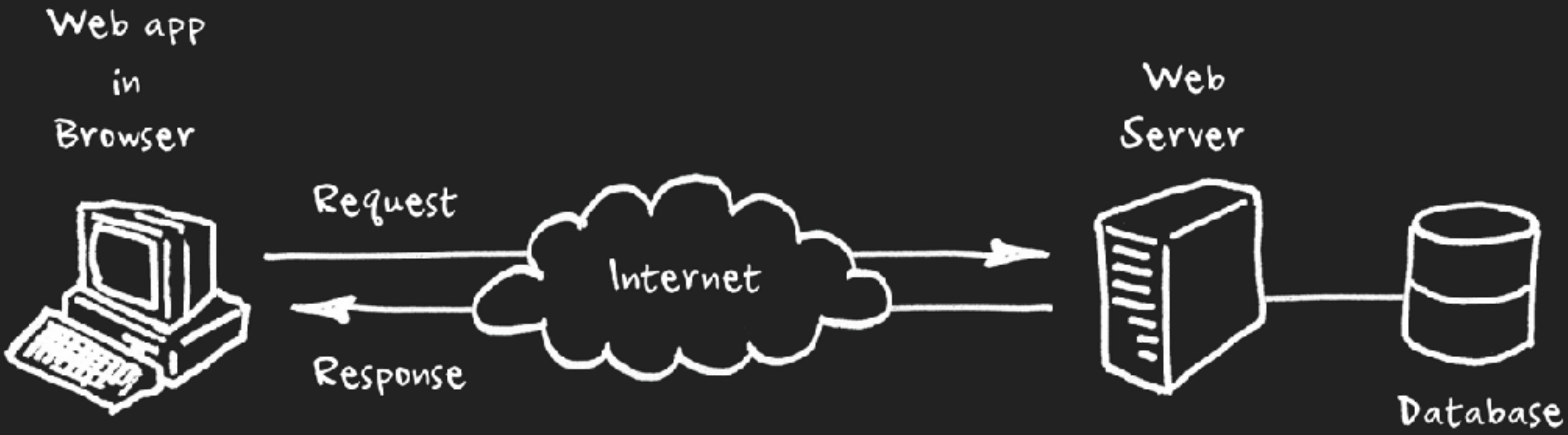
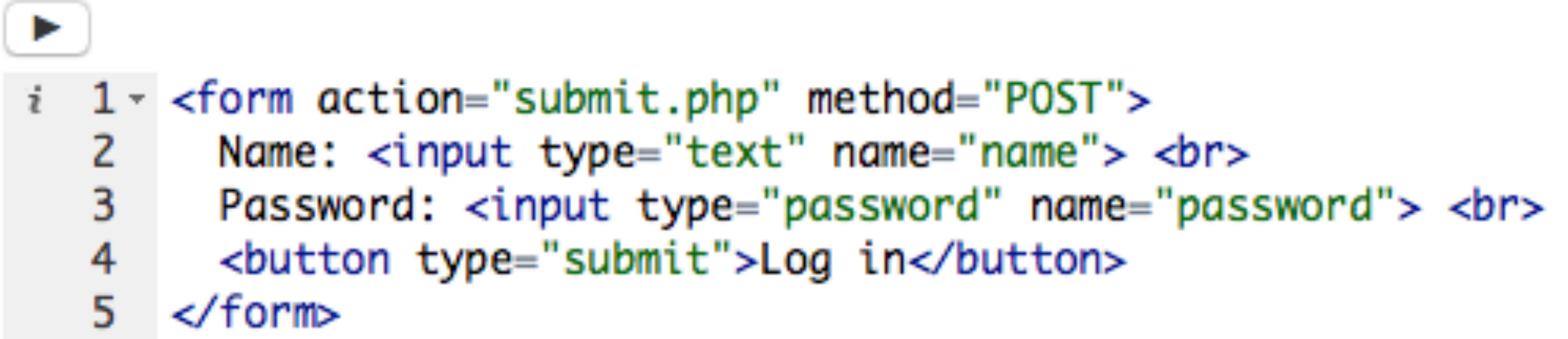
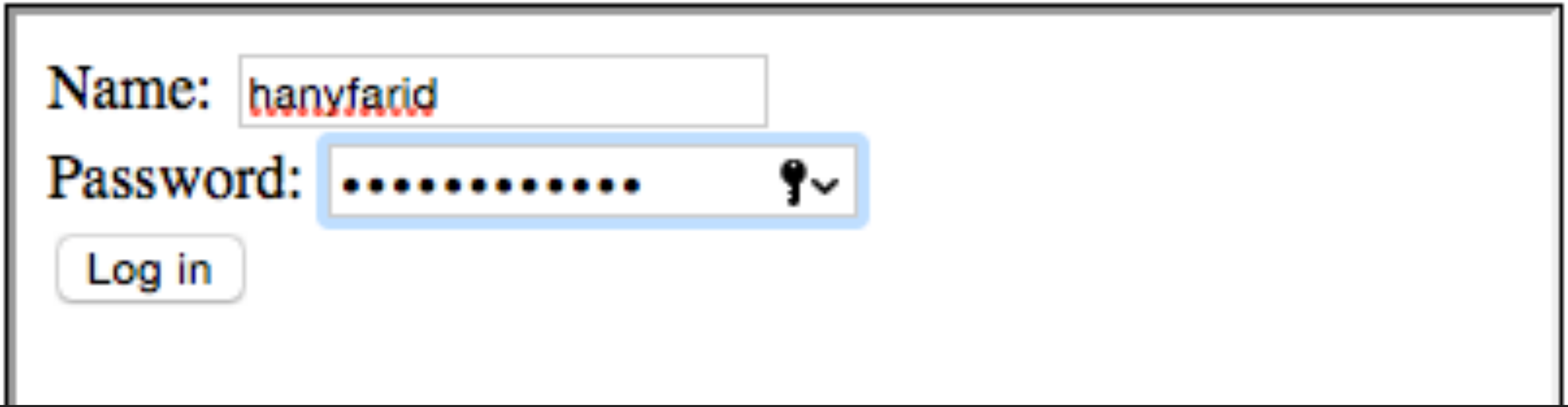
Client/Server



Submitting forms (client-side)



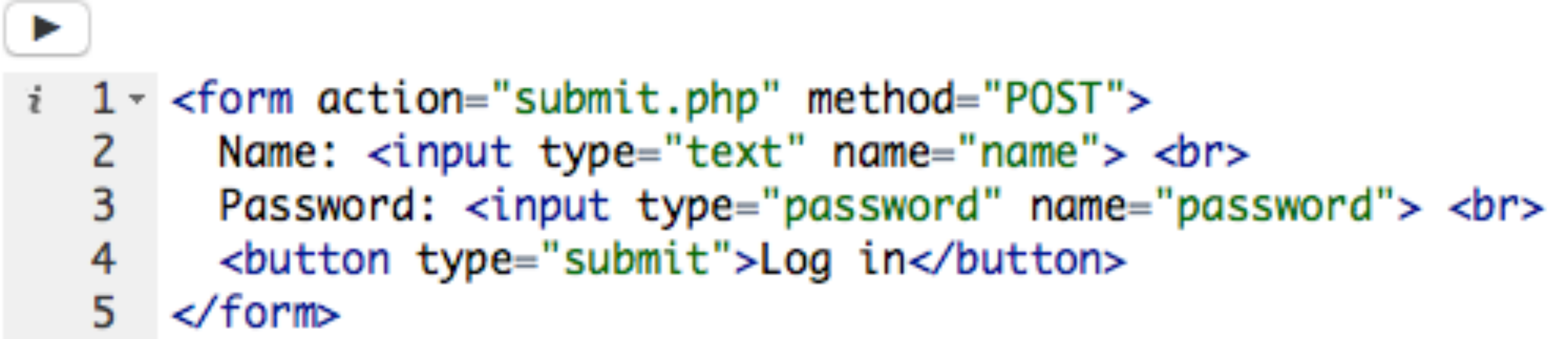
```html
<form action="submit.php" method="POST">
  Name: <input type="text" name="name"> <br>
  Password: <input type="password" name="password"> <br>
  <button type="submit">Log in</button>
</form>
```



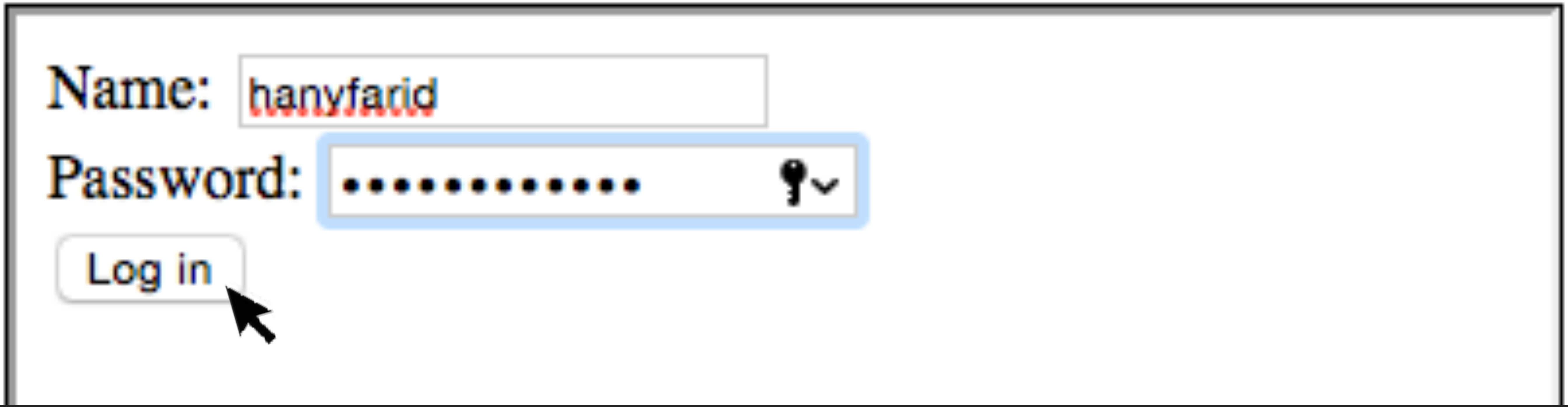
Name: hanyfarid

Password: ••••••••••••••

Submitting forms (client-side)



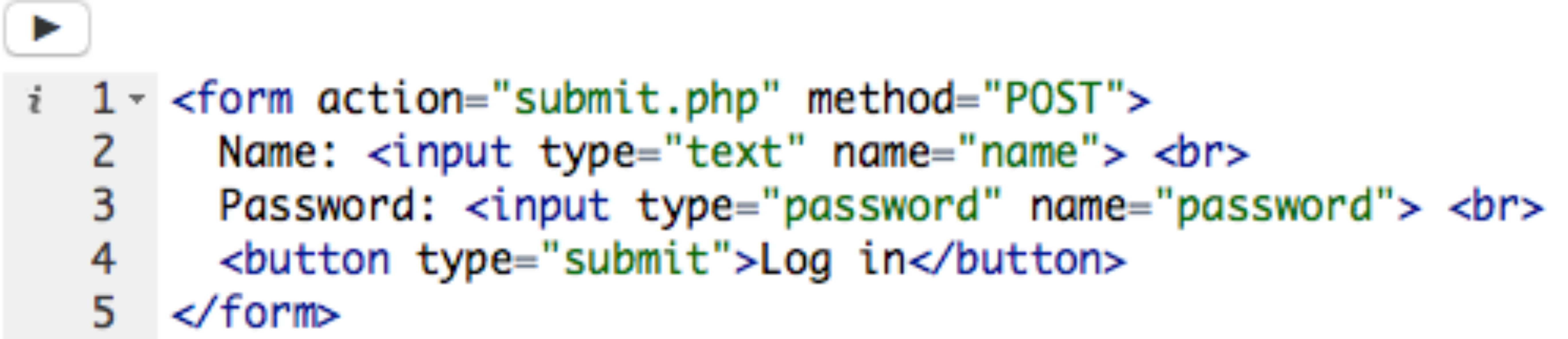
```html
<form action="submit.php" method="POST">
  Name: <input type="text" name="name"> <br>
  Password: <input type="password" name="password"> <br>
  <button type="submit">Log in</button>
</form>
```



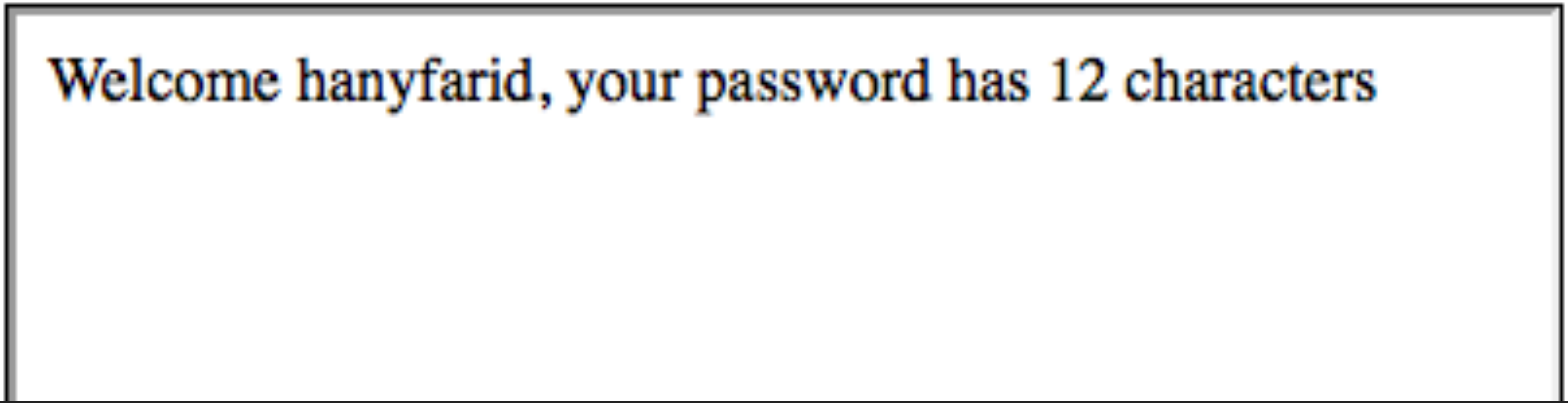
Name: hanyfarid

Password: ••••••••••••••

Submitting forms (client-side)



```
<form action="submit.php" method="POST">
  Name: <input type="text" name="name"> <br>
  Password: <input type="password" name="password"> <br>
  <button type="submit">Log in</button>
</form>
```



Welcome hanyfarid, your password has 12 characters

submit.php

```php
<?php
     $len  = strlen($_POST["password"]);
     $name = $_POST["name"];

     print "Welcome " . $name;
     print ", your password has " . $len . " characters";
?>
```

submit.php

```php
<?php
    $len  = strlen($_POST["password"]);
    $name = $_POST["name"];

    print "Welcome " . $name;
    print ", your password has " . $len . " characters";
?>
```

this is php code

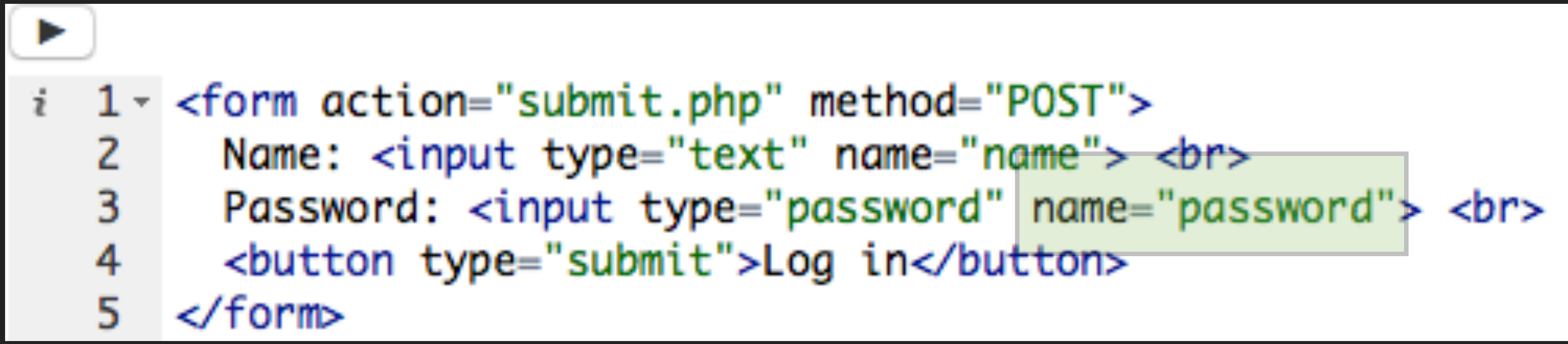
submit.php

```php
<?php
     $len  = strlen($_POST["password"]);
     $name = $_POST["name"];

     print "Welcome " . $name;
     print ", your password has " . $len . " characters";
?>
```

variables in php are prefixed with $

submit.php



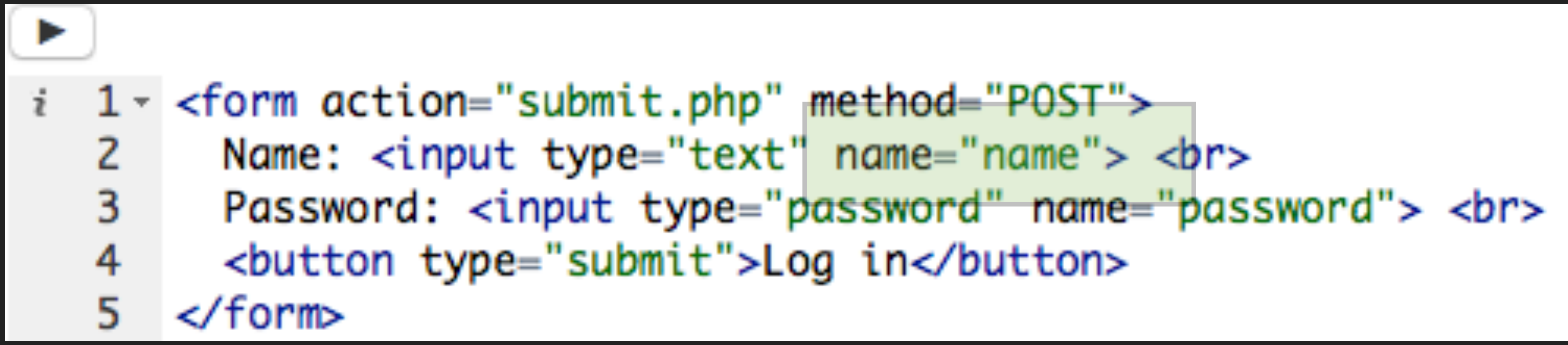
```
<form action="submit.php" method="POST">
  Name: <input type="text" name="name"> <br>
  Password: <input type="password" name="password"> <br>
  <button type="submit">Log in</button>
</form>
```

```
<?php
     $len  = strlen($_POST["password"]);
     $name = $_POST["name"];

     print "Welcome " . $name;
     print ", your password has " . $len . " characters";
?>
```

POST is a variable containing client form data

submit.php



```html
<form action="submit.php" method="POST">
  Name: <input type="text" name="name"> <br>
  Password: <input type="password" name="password"> <br>
  <button type="submit">Log in</button>
</form>
```

```php
<?php
     $len  = strlen($_POST["password"]);
     $name = $_POST["name"];

     print "Welcome " . $name;
     print ", your password has " . $len . " characters";
?>
```

POST is a variable containing client form data

submit.php

```php
<?php
     $len  = strlen($_POST["password"]);
     $name = $_POST["name"];

     print "Welcome " . $name;
     print ", your password has " . $len . " characters";
?>
```

send data back to client by printing

submit.php

```php
<?php
     $len  = strlen($_POST["password"]);
     $name = $_POST["name"];

     print "Welcome " . $name;
     print ", your password has " . $len . " characters";
?>
```

send data back to client by printing

submit.php

```
<?php
     $len  = strlen($_POST["password"]);
     $name = $_POST["name"];

     print "Welcome " . $name;
     print ", your password has " . $len . " characters";
?>
```

commands end with semi-colon

extract client information

```php
<?php
     $agent    = $_SERVER["HTTP_USER_AGENT"];
     $ip       = $_SERVER["HTTP_CLIENT_IP"];
     $referrer = $_SERVER["HTTP_REFERER"];
     $time     = $_SERVER["REQUEST_TIME"];
?>
```

extract client information

```
<?php
    $agent     = $_SERVER["HTTP_USER_AGENT"];
    $ip        = $_SERVER["HTTP_CLIENT_IP"];
    $referrer  = $_SERVER["HTTP_REFERER"];
    $time      = $_SERVER["REQUEST_TIME"];
?>
```

extract client information

```
<?php
     $agent    = $_SERVER["HTTP_USER_AGENT"];
     $ip       = $_SERVER["HTTP_CLIENT_IP"];
     $referrer = $_SERVER["HTTP_REFERER"];
     $time     = $_SERVER["REQUEST_TIME"];
?>
```

browser

extract client information

```
<?php
     $agent    = $_SERVER["HTTP_USER_AGENT"];
     $ip       = $_SERVER["HTTP_CLIENT_IP"];
     $referrer = $_SERVER["HTTP_REFERER"];
     $time     = $_SERVER["REQUEST_TIME"];
?>
```

IP address

extract client information

```
<?php
     $agent    = $_SERVER["HTTP_USER_AGENT"];
     $ip       = $_SERVER["HTTP_CLIENT_IP"];
     $referrer = $_SERVER["HTTP_REFERER"];
     $time     = $_SERVER["REQUEST_TIME"];
?>
```

which page referred you to the current page (can be manipulated or may be blank)

extract client information

```php
<?php
    $agent    = $_SERVER["HTTP_USER_AGENT"];
    $ip       = $_SERVER["HTTP_CLIENT_IP"];
    $referrer = $_SERVER["HTTP_REFERER"];
    $time     = $_SERVER["REQUEST_TIME"];
?>
```

date/time

cookies

```
<?php
    setcookie( "<name>", "<value>", <expiration date> );
?>
```

set cookie

```
<?php
    setcookie( "DSA", $name, time()+(30*24*60*60) );
?>
```

set cookie

```
<?php
    setcookie( "DSA", $name, time()+(30*24*60*60) );
?>
```

number of seconds since January 1 1970 00:00:00 GMT

set cookie

```php
<?php
    setcookie( "DSA", $name, time()+(30*24*60*60) );
?>
```

30 days * 24 hrs/day * 60 min/hr * 60 sec/min

read cookie

```php
<?php
    $cookie = $_COOKIE["DSA"];
?>
```

read cookie

```php
<?php
    $cookie = $_COOKIE["DSA"];
?>
```

delete cookie

```
<?php
    setcookie( "DSA", $username, time()-1 );
?>
```

example

http://www.cs.dartmouth.edu/~dsa/exercise/cookie.php

*preferences -> show advanced settings ->
content settings -> all cookies and site data*

php in html

```
<?php
    setcookie( "DSA", $username, time()-1 );
?>

<html>
     <head>
     </head>
     <body>
          <p> some html code </p>
     </body>
</html>
```

but…

sessions are an alternative to cookies

data is stored on the server, not the client

PHP

PHP, separate from HTML/Javascript, is a full-blown programming language

Variables

Javascript

```
var x = 42;
var y = 8;
var z = x + y;
print( "x + y = " + z );
```

Variables

Javascript

```
var x = 42;
var y = 8;
var z = x + y;
print( "x + y = " + z );
```

PHP

```
<?php
    $x = 42;
    $y = 8;
    $z = $x + $y;
    print( "$x + $y = $z\n" );
?>
```

Variables

Javascript

```
var x = 42;
var y = 8;
var z = x + y;
print( "x + y = " + z );
```

PHP

```
<?php
    $x = 42;
    $y = 8;
    $z = $x + $y;
    print( "$x + $y = $z\n" );
?>
```

Variables

Javascript

```
var x = 42;
var y = 8;
var z = x + y;
print( "x + y = " + z );
```

PHP

```
<?php
     $x = 42;
     $y = 8;
     $z = $x + $y;
     print( "$x + $y = $z\n" );
?>
```

Variables

Javascript

```
var x = 42;
var y = 8;
var z = x + y;
print( "x + y = " + z );
```

PHP

```
<?php
     $x = 42;
     $y = 8;
     $z = $x + $y;
     print( "$x + $y = $z\n" );
?>
```

Boolean

```php
<?php
     $x = True;
     $y = False;
?>
```

Constants

```
<?php
     $x = 42;
     $x = $x + 1;
     print( "$x" );
?>
```

Constants

```php
<?php
     define("Y",1);
     $x = 42;
     $x = $x + Y;
     print( "$x" );
?>
```

Constants

```
<?php
     define("Y",1);
     print( "Y" );
?>
```

output: Y

Constants

```
<?php
    define("Y",1);
    print( constant("Y") );
?>
```

output: 1

Constants

```php
<?php
     define("Y",1);
     define("Y",2);
     print( constant("Y") );
?>
```

Constants

```
<?php
	define("Y",1);
	define("Y",2);
	print( constant("Y") );
?>
```

output: 1

Constants

```
<?php
     define("Y",1);
     define("Y",2);
     print( constant("Y") );
?>
```

constants cannot (and should not) be redefined

this makes global variables (a bit) safer

Operators

```
<?php
     $x = 42;
     $y = 8;
     $z = $x + $y; // addition
     $z = $x * $y; // multiplication
     $z = $x - $y; // subtraction
     $z = $x / $y; // division
     $z = $x % $y; // modular division
     $x++;// increment by one
     $x--; // decrement by one
?>
```

Operators

```php
<?php
    $x = 42;
    $y = 8;
    $z = $x == $y; // equality
    $z = $x != $y; // not equality
    $z = $x > $y; // greater than
    $z = $x >= $y; // greater than or equal to
    $z = $x % $y; // modular division
?>
```

Conditionals

```php
<?php
     $x = 42;
     if( $x % 2 == 0 ) {
          print( "$x is even\n" );
     } else {
          print( "$x is odd\n" );
     }
?>
```

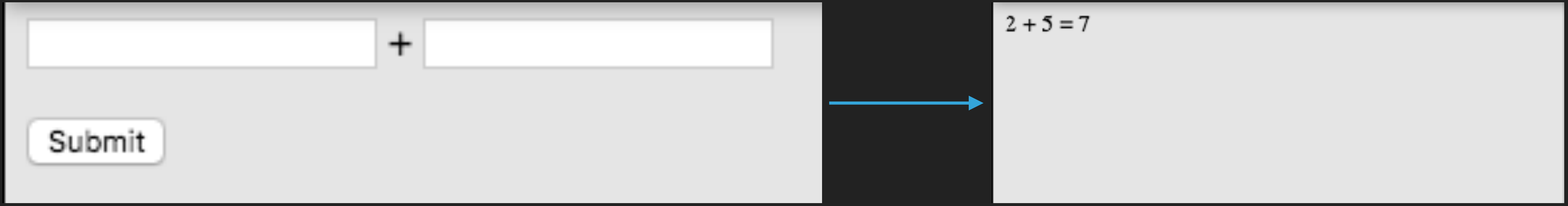
PHP’s == vs. Javascript’s ===

Exercise

write the client (html) and server-side (php) code that creates the following webpage with two text inputs and one submit button. After submitting, your server-side code should return the sum of the two numbers.

NOTE: $x = (int)$x; converts string to integer

www.c9.io

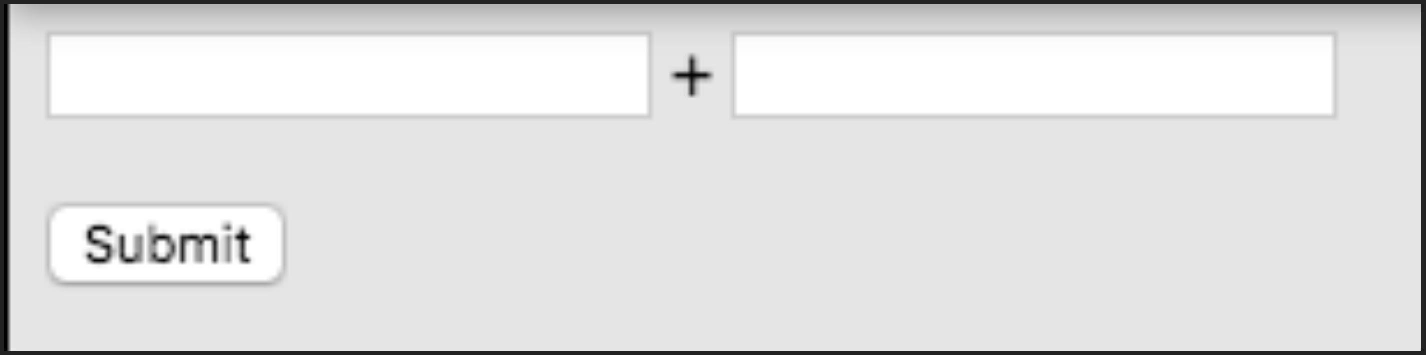


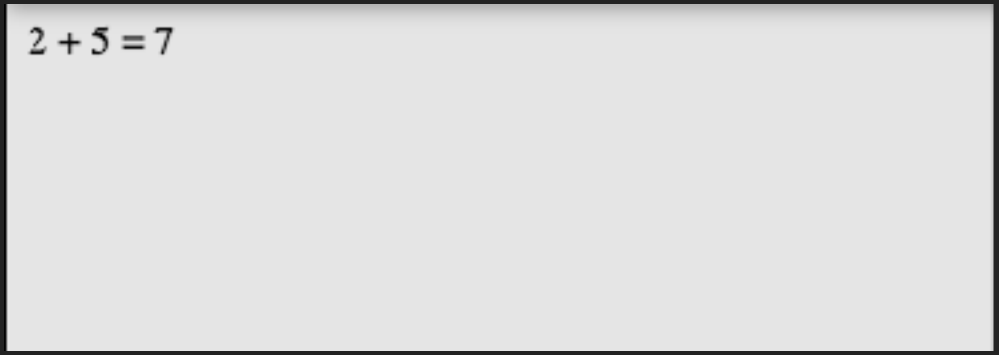
```
2 + 5 = 7
```

```
<html>
    <head>
        <title> addition </title>
    </head>
    <body>
        <form action="addition.php" method="POST">
             <input type="text" name="x"> +
             <input type="text" name=“y">

             <br><br>

             <input type="submit">
        </form>
    </body>
</html>
```



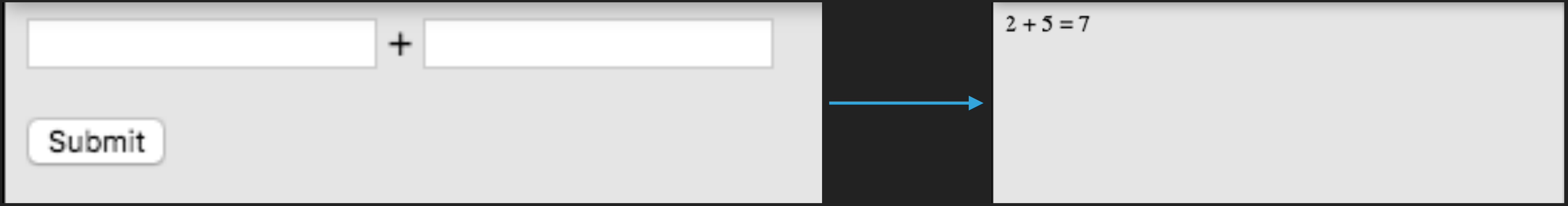


```
2 + 5 = 7
```

```
<html>
    <head>
        <title> addition </title>
    </head>
    <body>
        <form action="addition.php" method="POST">
             <input type="text" name="x"> +
             <input type="text" name="y">

             <br><br>

             <input type="submit">
        </form>
    </body>
</html>
```

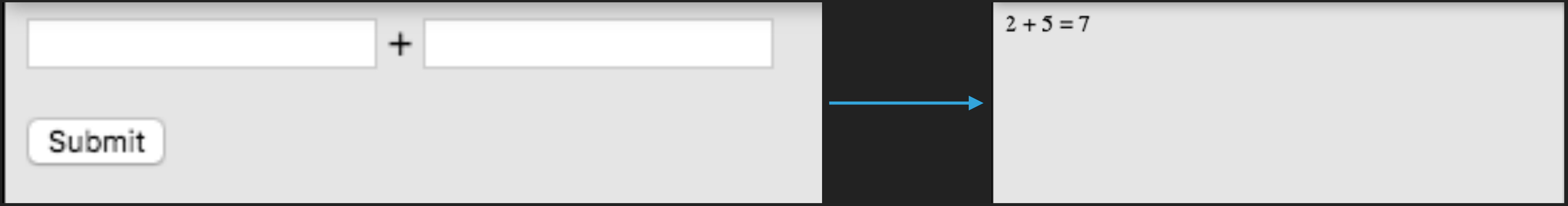


```
2 + 5 = 7
```

```
<html>
    <head>
        <title> addition </title>
    </head>
    <body>
        <form action="addition.php" method="POST">
            <input type="text" name="x"> +
            <input type="text" name="y">

            <br><br>

            <input type="submit">
        </form>
    </body>
</html>
```

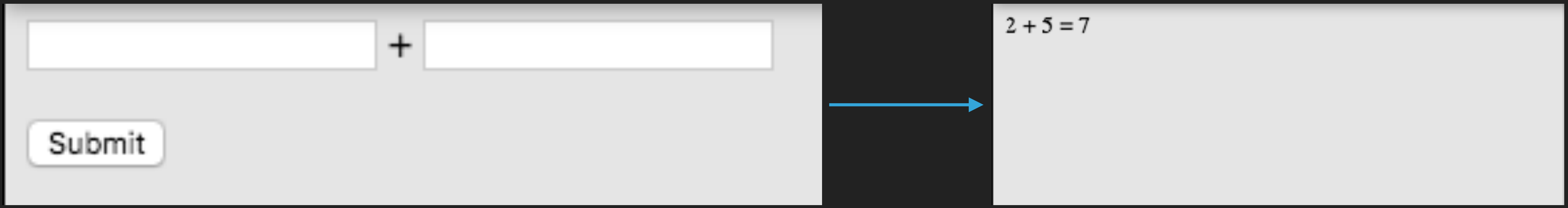


```
2 + 5 = 7
```

```
<html>
    <head>
        <title> addition </title>
    </head>
    <body>
        <form action="addition.php" method="POST">
             <input type="text" name="x"> +
             <input type="text" name="y">

             <br><br>

             <input type="submit">
        </form>
    </body>
</html>
```

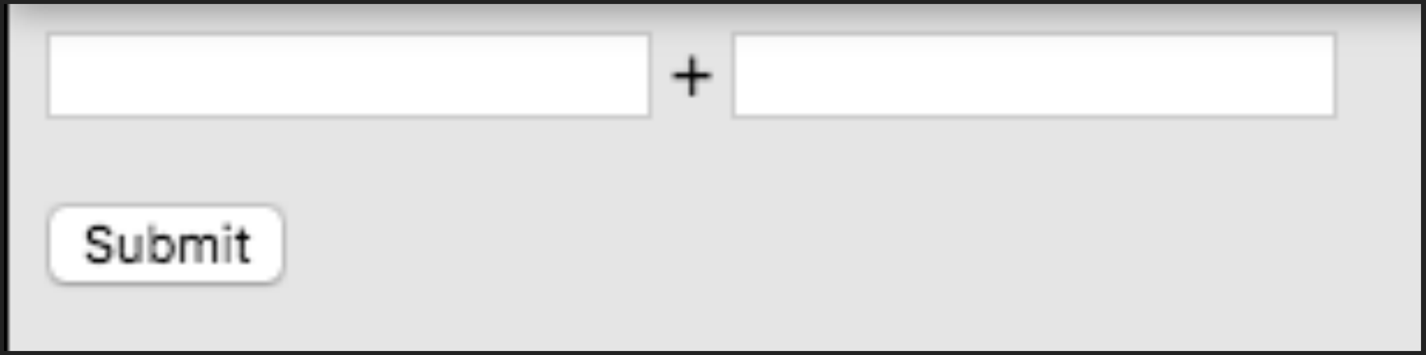


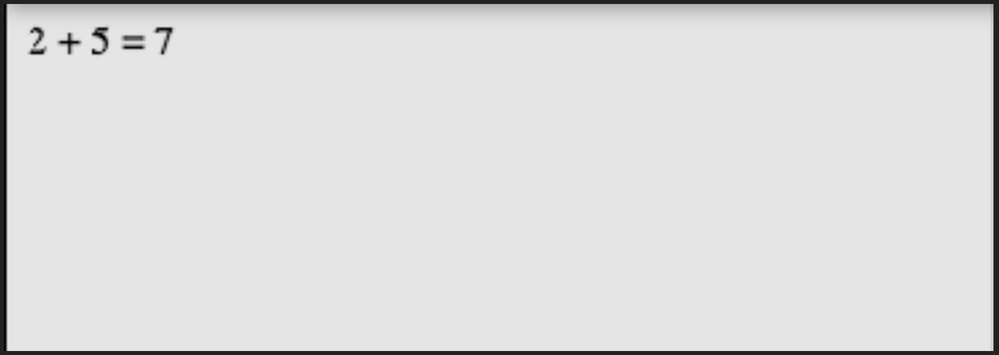
```
2 + 5 = 7
```

```
<html>
    <head>
        <title> addition </title>
    </head>
    <body>
        <form action="addition.php" method="POST">
             <input type="text" name="x"> +
             <input type="text" name="y">

             <br><br>

             <input type="submit">
        </form>
    </body>
</html>
```





```
2 + 5 = 7
```

```
<html>
    <head>
        <title> addition </title>
    </head>
    <body>
        <form action="addition.php" method="POST">
             <input type="text" name="x"> +
             <input type="text" name="y">

             <br><br>

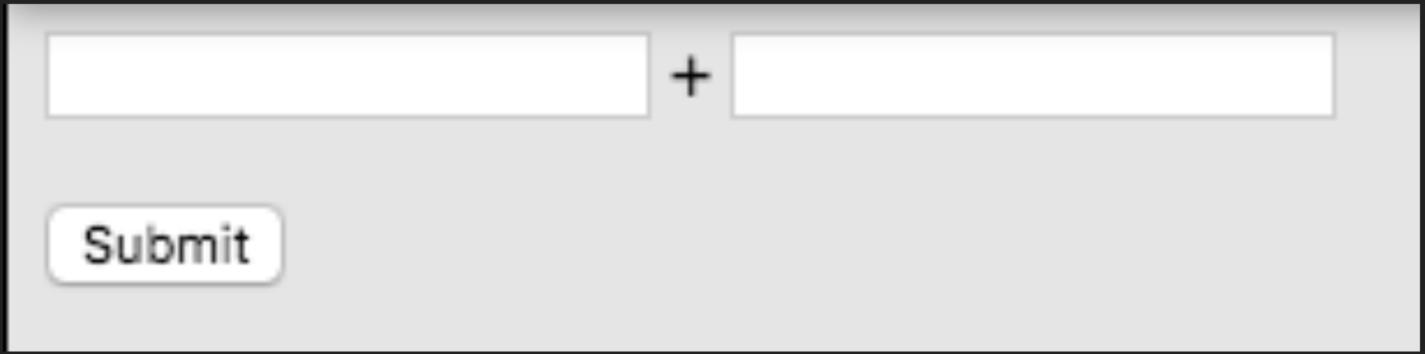
             <input type="submit">
        </form>
    </body>
</html>
```

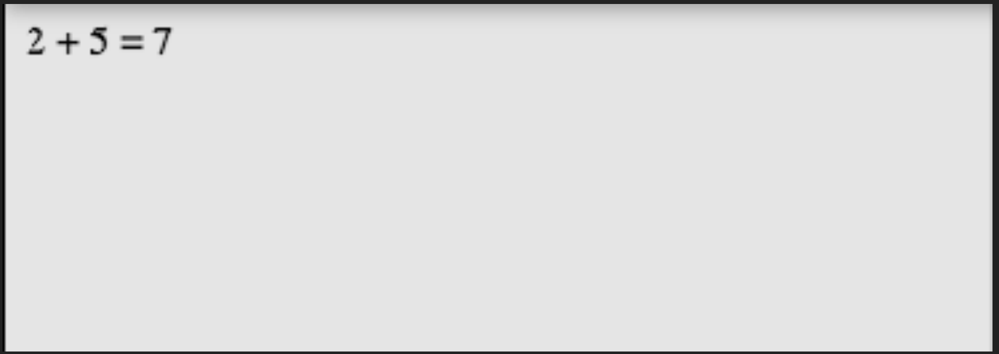
```
<?php

   $x = $_POST["x"];
   $y = $_POST["y"];
   $z = (int)$x + (int)$y;

   print("$x + $y = $z");

?>
```





```
2 + 5 = 7
```

```
<html>
    <head>
        <title> addition </title>
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    <body>
        <form action="addition.php" method="POST">
             <input type="text" name="x"> +
             <input type="text" name="y">

             <br><br>

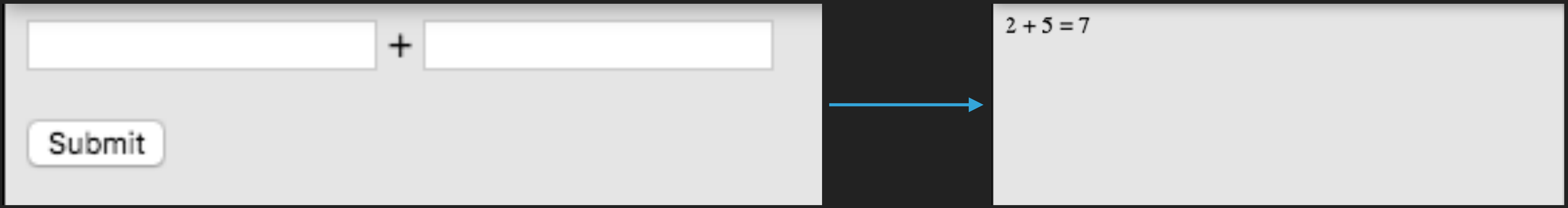
             <input type="submit">
        </form>
    </body>
</html>
```

```
<?php

   $x = $_POST["x"];
   $y = $_POST["y"];
   $z = (int)$x + (int)$y;

   print("$x + $y = $z");

?>
```



```
2 + 5 = 7
```

```
<html>
    <head>
        <title> addition </title>
    </head>
    <body>
        <form action="addition.php" method="POST">
             <input type="text" name="x"> +
             <input type="text" name="y">

             <br><br>

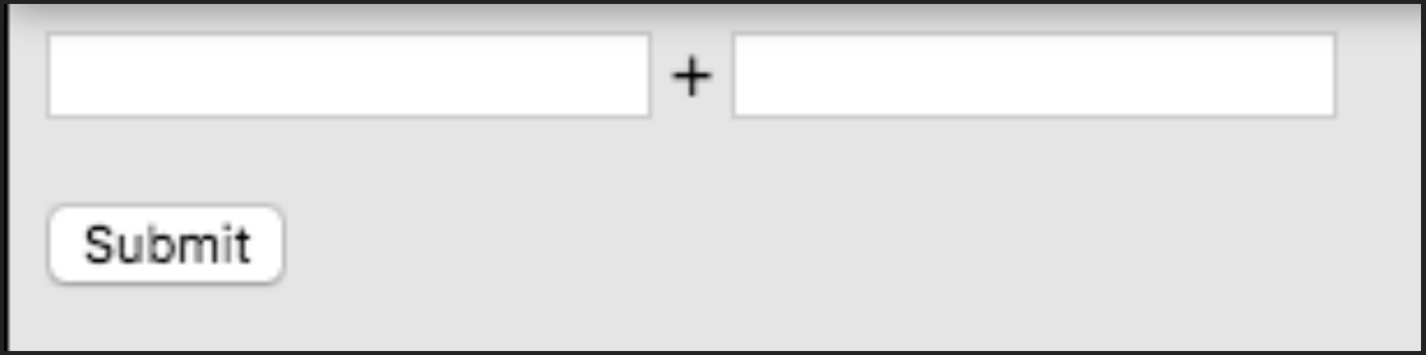
             <input type="submit">
        </form>
    </body>
</html>
```

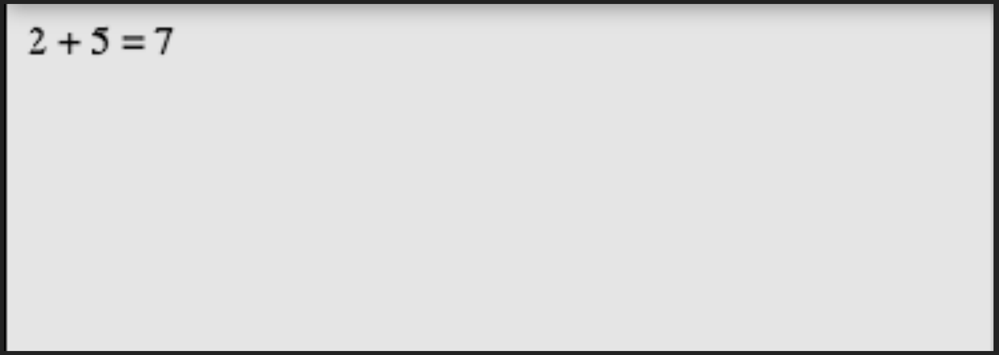
```
<?php

   $x = $_POST["x"];
   $y = $_POST["y"];
   $z = (int)$x + (int)$y;

   print("$x + $y = $z");

?>
```





```
2 + 5 = 7
```

```
<html>
    <head>
        <title> addition </title>
    </head>
    <body>
        <form action="addition.php" method="POST">
             <input type="text" name="x"> +
             <input type="text" name="y">

             <br><br>

             <input type="submit">
        </form>
    </body>
</html>
```

```
<?php

   $x = $_POST["x"];
   $y = $_POST["y"];
   $z = (int)$x + (int)$y;

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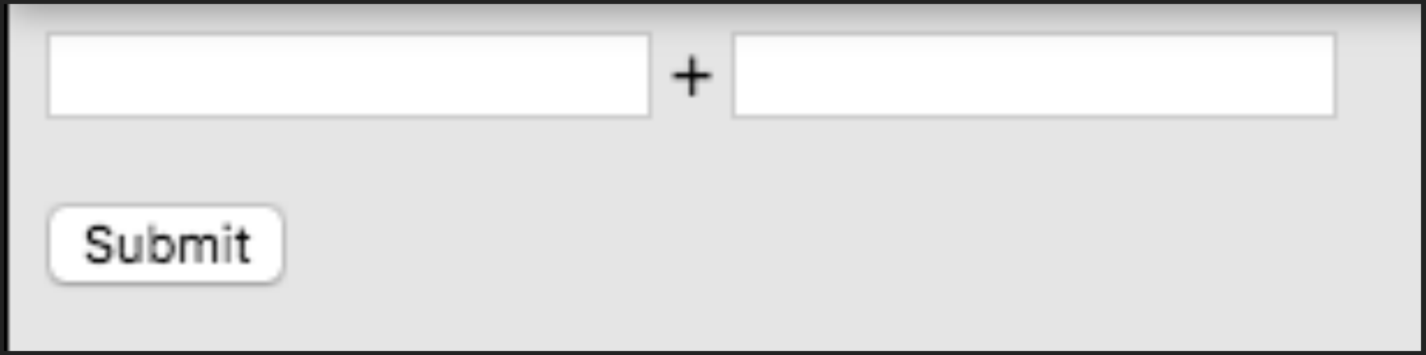
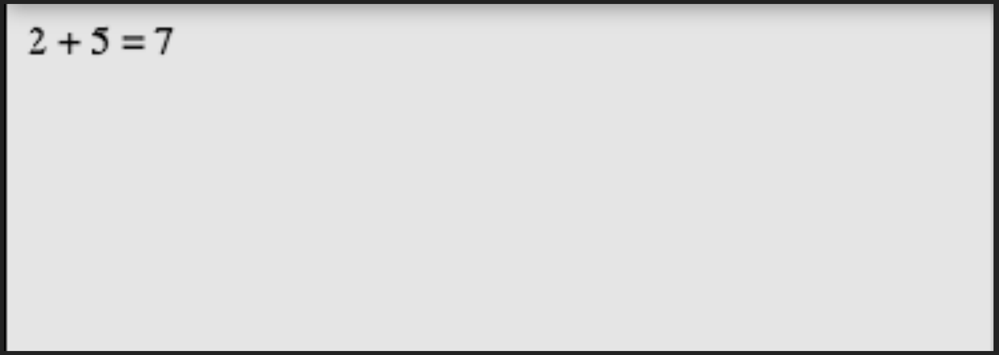
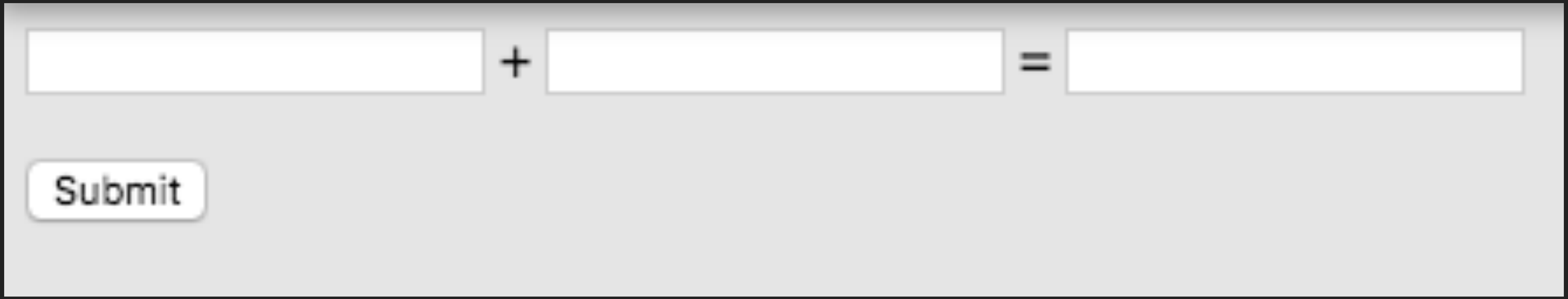
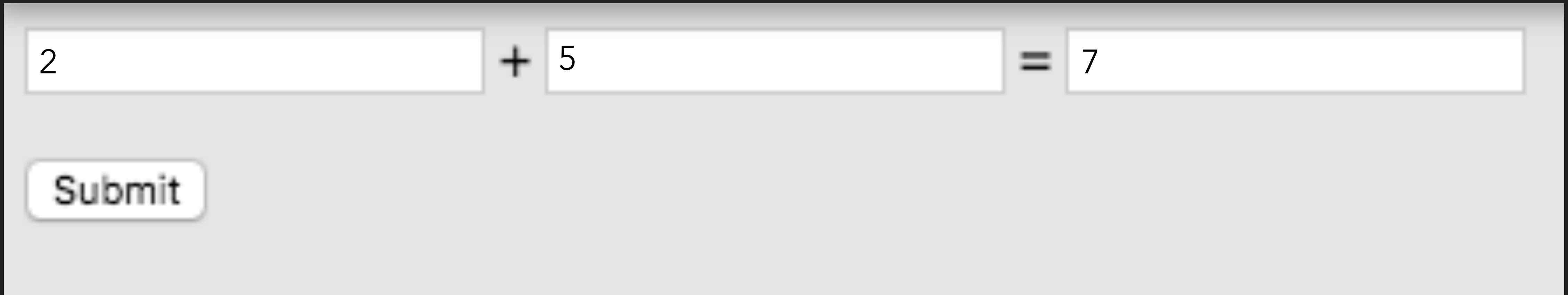




```
2 + 5 = 7
```


+
=
Submit



2 + 5 = 7

update, not replace, current HTML

```
<html>
   <body>
      <form id='additionForm'>
         <input type="text" name="x"> +  <input type="text" name="y"> =
         <input type="text" name="answer" id="answer">
         <br><br>
        <input type="submit">
      </form>

      <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.7.1/jquery.min.js"></script>
      <script>
      $(document).ready(function(){
      $('#additionForm').submit(function(){
         $.ajax({
             type: 'POST',
             url: 'additionAjax.php',
             data: $(this).serialize()
         })
         .done(function(data){
            $('#answer').val(data); // show the response
         })
         .fail(function() {
            alert( "Posting failed." ); // just in case posting your form failed
         });
         return false; // to prevent refreshing the whole page page
       });
     });
    </script>
   </body>
</html>
```

```
<html>
   <body>
      <form id='additionForm'>
         <input type="text" name="x"> +  <input type="text" name="y"> =
         <input type="text" name="answer" id="answer">
         <br><br>
        <input type="submit">
      </form>

      <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.7.1/jquery.min.js"></script>
      <script>
      $(document).ready(function(){
      $('#additionForm').submit(function(){
         $.ajax({
             type: 'POST',
             url: 'additionAjax.php',
             data: $(this).serialize()
         })
         .done(function(data){
            $('#answer').val(data); // show the response
         })
         .fail(function() {
            alert( "Posting failed." ); // just in case posting your form failed
         });
         return false; // to prevent refreshing the whole page page
       });
     });
    </script>
   </body>
</html>
```

no action or method!

```
<html>
   <body>
      <form id='additionForm'>
         <input type="text" name="x"> +  <input type="text" name="y"> =
         <input type="text" name="answer" id="answer">
         <br><br>
        <input type="submit">
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      <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.7.1/jquery.min.js"></script>
      <script>
      $(document).ready(function(){
      $('#additionForm').submit(function(){
         $.ajax({
             type: 'POST',
             url: 'additionAjax.php',
             data: $(this).serialize()
         })
         .done(function(data){
            $('#answer').val(data); // show the response
         })
         .fail(function() {
            alert( "Posting failed." ); // just in case posting your form failed
         });
         return false; // to prevent refreshing the whole page page
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```

Loops

```
for( initialization; condition; increment ) {
     code to be executed;
}
```

same as Javascript

Loops

```
for( $i = 0; $i <= 10; $i++ ) {
     print( "$i" );
}
```

output?

Loops

```
for( $i = 0; $i <= 10; $i++ ) {
     print( "$i" );
}
```

```
012345678910
```

Loops

```
for( $i = 0; $i <= 10; $i++ ) {
     print( "$i\n" );
}
```

```
0
1
2
3
```

Exercise

write some php code that multiplies two numbers the old-fashioned way… the product of 5 and 8 is:

8 + 8 + 8 + 8 + 8 = 40

your code should define two variables to be multiplied and after computing the product print out the product

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NOTE: run php multiply.php

```
<?php
   $x = 5;
   $y = 8;
   $prod = 0;
   for( $i = 1; $i <= $x; $i++ ) {
       $prod = $prod + $y;
   }
   print( "$prod" );
?>
```

```
<?php
   $x = 5;
   $y = 8;
   $prod = 0;
   for( $i = 1; $i <= $x; $i++ ) {
       $prod = $prod + $y;
   }
   print( "$prod" );
?>
```

always think about edge cases