

Coding Basic Web Pages

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Overview and Structure

- HTML
- CSS
 - Bootstrap (and other frameworks)
- Interactivity
 - Javascript and frameworks
 - PHP
 - Node.js

Web Pages

- Components
 - HTML - structure
 - CSS – style / design
 - Javascript - interactivity
 - Other
 - PHP, ASP etc

HTML

- Based on “tags” (start and end), and “content”
 - `<atag>Some content</atag>`
- The tag is closed with `</>`
- Many different tags for numerous functions

HTML File

- They are text files and typically have the extension “.html” or “.htm” extension
- Top of the file (content goes ...)

```
<!DOCTYPE html>
```

```
<html>
```

```
...
```

```
</html>
```

HTML File

- Meta information & title in the **<head>**

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<meta charset="utf-8">
```

```
<title>Title here </title>
```

```
</head>
```

```
</html>
```

HTML File

- The **<body>** contains the webpage content

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8">
<title>Title here </title>
</head>
<bbody>
Content here...
</body>
</html>
```

HTML Content Examples...

`<h1> Heading One</h1>`

`<h2> Heading Two</h2>`

`<h3> Heading Three</h3>`

Heading One

Heading Two

Heading Three

HTML Content Examples...

```
<p>Some text here</p>
```

```
<p>Some more text here</p>
```

Some text here

Some more text here

HTML Content Examples...

```
<ul>  
<li>One</li>  
<li>Two</li>  
</ul>
```

- One
- Two

HTML Content Examples...

```
<ol>  
<li>One</li>  
<li>Two</li>  
</ol>
```

1. One
2. Two

HTML Content Examples...

```
<p>We can also make some text  
<em>italic</em> or other text  
<strong>bold</strong>.  
</p>
```

We can also make some text *italic* or other text **bold**.

HTML Content Examples...

```

```



HTML Content Examples...

```
<a href="http://www.liv.ac.uk">This is a  
hyperlink</a>
```

```
<a href="http://www.liv.ac.uk">  
</a>
```

This is a [hyperlink](#).



HTML Content Examples...

```
<p>We can also navigate to <a href  
="#S1">sections</a> within the page.</p>
```

```
<h1 id="S1">Another Heading</h1>
```

We can also navigate to [sections](#) within the page.

Another Heading

CSS

- CSS
 - *Selector* – HTML tag
 - *Property* - attribute of HTML tag
 - *Value* – what is assigned

selector { property: value; }

table{ border : 1px solid #000000; }



Multiple values

CSS

- Types of selectors

- Universal

```
* {  
  color: #FFFFFF;  
}
```

- Descendant

```
ol em { color: #FFFFFF;  
}
```

- Class

```
.green { color: #00ff00;  
}  
h2.green { color: #00ff00;  
}
```

<h2 class = “green”> Title </h2>

CSS

- Adding CSS to a document


e.g. screen,
print etc –
different media
for different
uses

```
<!DOCTYPE html>
<html>
  <head>
    <style type = "text/css" media = "all">
      body {
        background-color: #243a6a;
      }
      h1 {
        color: #85cbff;
        margin-left: 50px;
      }
    </style>
  </head>

  <body>
    <h1>This is a heading</h1>
    <p>This is a paragraph.</p>
  </body>
</html>
```

```
<link type = "text/css" href = "..." media = "..." />
```

More...


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Intro to HTML/CSS: Making webpages

Learn how to use HTML and CSS to make webpages. HTML is the markup language that you surround content with, to tell browsers about headings, lists, tables, etc. CSS is the stylesheet language that you style the page with, to tell browsers to change the color, font, layout, and more.

[+ New Webpage](#)

[Documentation](#)

[My Projects](#)

[? Help Requests](#)

[Community Questions](#)

ALL CONTENT IN "INTRO TO HTML/CSS: MAKING WEBPAGES"

Intro to HTML

Learn what HTML is and how to make a webpage with marked up text and images.

- Welcome to the web!
- HTML basics
- Challenge: Write a Poem
- HTML: Text emphasis
- Challenge: You can learn text tags
- HTML: Lists
- Challenge: Your learning list
- HTML: Images
- Challenge: A picture-perfect trip

Intro to CSS

Learn how to write simple CSS rules, to select based on element, class, or ID, and change the colors of your page.

- CSS Basics
- Challenge: Colorful creature
- CSS: Selecting by id

More...

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Make a Website

Build a recent version of Airbnb's home page and learn the fundamentals of web development in the process.

START

300k+
enrolled students

3 hours
estimated course time

Beginner
required technical level

UNIT 1

0%

Structure your page
Use HTML to add text, images, and links.

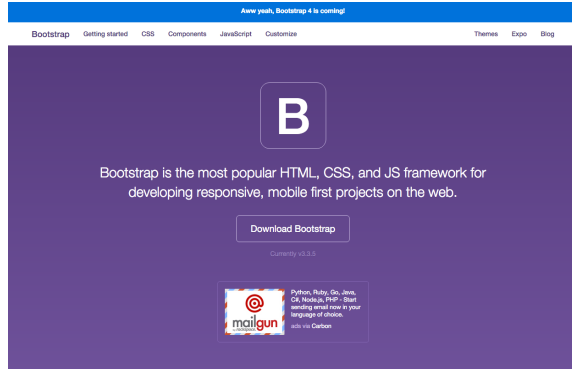


Test your knowledge with
HTML & CSS quizzes.

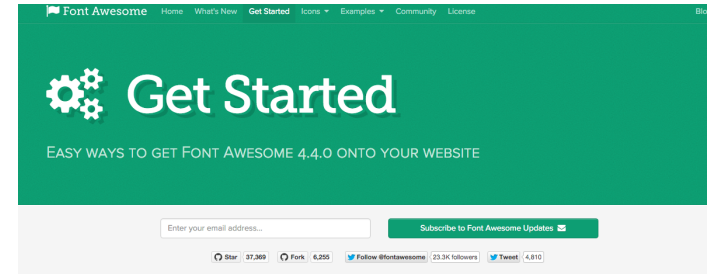


Go deeper with our
recommended resources.

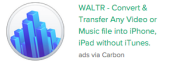
CSS Frameworks



<http://getbootstrap.com/>



Setting up Font Awesome can be as simple as adding two lines of code to your website, or you can be a pro and customize the LESS yourself! Font Awesome even plays nicely with [Bootstrap 3](#)!



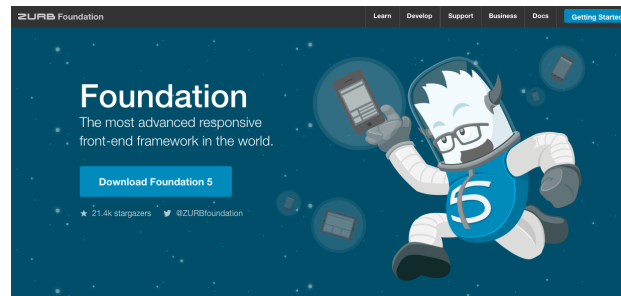
EASIEST: [BootstrapCDN](#) by [MaxCDN](#)

Thanks to the generous folks at [MaxCDN](#), you can use Bootstrap CDN to add Font Awesome into your website with a single line of code. You don't even have to download or install anything!

1. Paste the following code into the **<head>** section of your site's HTML

```
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/font-awesome/4.4.0/css/font-awesome.min.css">
```

<http://fontawesome.io/>



Responsive design gets a whole lot faster

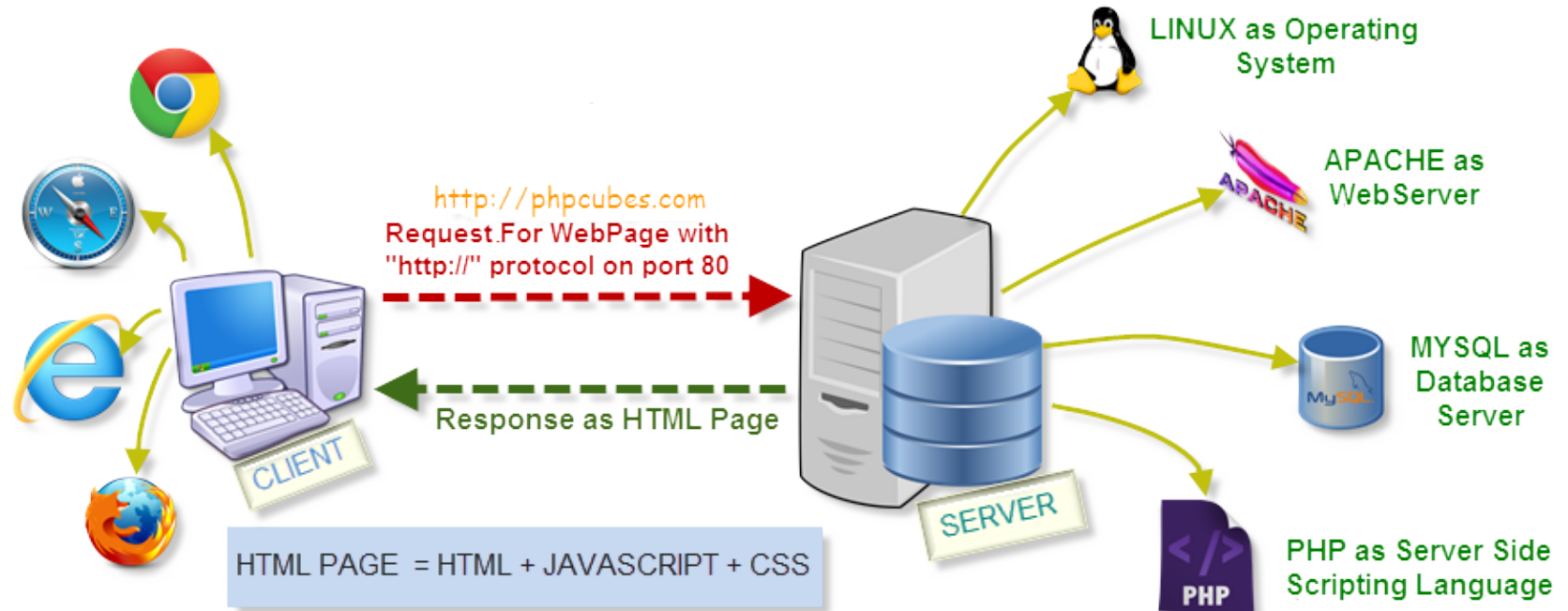
A **Framework** for any device, medium, and accessibility. Foundation is a family of responsive front-end frameworks that make it easy to design beautiful responsive websites, apps and emails that look amazing on any device. Foundation is semantic, readable, flexible, and completely customizable. We're constantly adding new features.

<http://foundation.zurb.com/>

Interactivity: a few tech jargons

- **HTML and CSS:** display (**static**) web contents **Javascript:** Human-Website **interaction**
- **PHP:** **Dynamic** web contents (with a database)
- **Node.js:** Similar to PHP, but written in Javascript language.

A simple web architecture



Interactivity: JavaScript

- JavaScript is **NOT** Java
- A programming language for HTML/CSS
- Power of JavaScript:
 - Many libraries/framework
 - Simple enough to learn (and play with)
 - Widely-supported
- Things you can do with JavaScript:
 - Dynamic/complex visualisation
 - Events handling (mouse click, key press, etc)
 - And many more...

JavaScript: an example

```
1  <html>
2  <!-- Begin JavaScript bits-->
3  <script type="text/javascript">
4      function sayHello(text) {
5          document.getElementById("output").innerHTML = 'Hello ' + text;
6      }
7  </script>
8  <!-- End JavaScript bits-->
9  <body>
10     <h1>JavaScript can handle events</h1>
11     <input id="nametext" placeholder="What is your name?">
12     <button type="button" onclick="sayHello(nametext.value)">Submit</button>
13     <p id="output"></p>
14 </body>
15 </html>
```

JavaScript can handle events

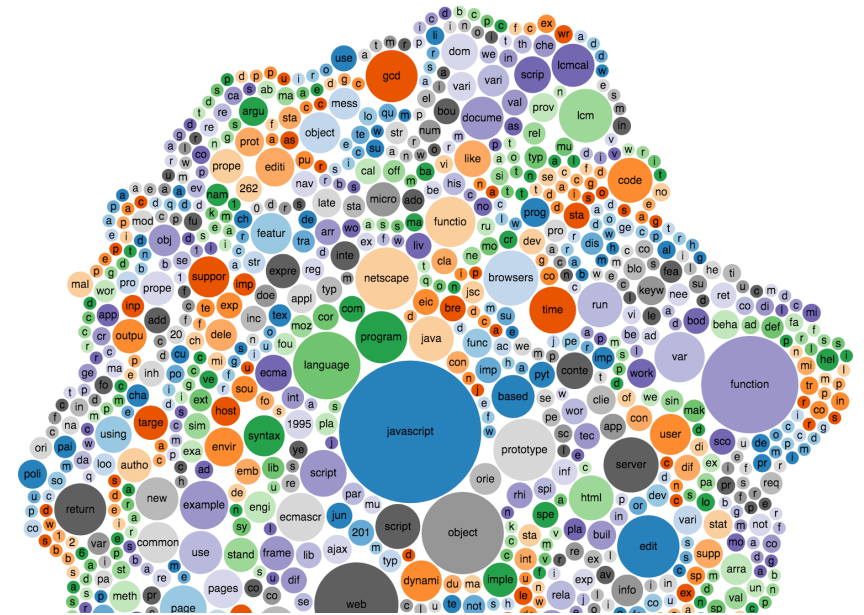
Hello Alex

jQuery and D3.js: Complex visualisation/interactivity

Displays collapsible content panels for presenting information in a limited amount of space.

► Section 4

← → ↻  www.infocaptor.com/bubble-my-page?url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FJavaScript&si:
[https://en.wikipedia.org/wiki/JavaScript], No of Characters:100000 , Number of words:1044



D3.js/C3.js: JavaScript frameworks for complex visualisation/charts

JavaScript frameworks:

AngularJS: JavaScript without programming

The Basics

index.html

Hint: Click **me**.

[Edit Me](#)

```
1. <!doctype html>
2. <html ng-app>
3.   <head>
4.     <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.4.7/
angular.min.js"></script>
5.   </head>
6.   <body>
7.     <div>
8.       <label>Name:</label>
9.       <input type="text" ng-model="yourName" placeholder="Enter a name her
e">
10.     <hr>
11.     <h1>Hello {{yourName}}!</h1>
12.   </div>
13. </body>
14. </html>
```

Name:

Alex

Hello Alex!

Watch as we build this app



JavaScript frameworks:

Node.js – JavaScript for Server Side

```
var mysql      = require('mysql');
var connection = mysql.createConnection({
  host      : 'localhost',
  user      : '< MySQL username >',
  password  : '< MySQL password >',
  database  : '<your database name>'
});

connection.connect();

connection.query('SELECT * from < table name >', function(err, rows, fields)
  if (!err)
    console.log('The solution is: ', rows);
  else
    console.log('Error while performing Query.');
```

```
});

connection.end();
```

Where to learn JavaScript

codecademy

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JavaScript

Learn the fundamentals of JavaScript, the programming language of the Web.

CONTINUE

5m+
Enrolled Students

10 Hours
Estimated Course Time

Beginner
Required Technical Level

UNIT 1: INTRODUCTION TO JAVASCRIPT

RESOURCES

- JavaScript Basics
Codecademy Pro Only
- Grammar and Types
Codecademy Pro Only
- Unit 1 Quiz
Codecademy Pro Only

</>

Lesson: Getting Started with Programming
Time to become a coding champ.

</>

Lesson: Code Your Own Adventure!
Let's create your very own "code your own adventure" game.

<https://www.codecademy.com/learn/javascript>

<http://www.w3schools.com/js/>

w3schools.com

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JavaScript Examples

<< Previous

Next >>

What can JavaScript do?

[JavaScript can change HTML content](#)
[JavaScript can change HTML attributes](#)
[JavaScript can change CSS style](#)
[JavaScript can validate input](#)

JavaScript Output

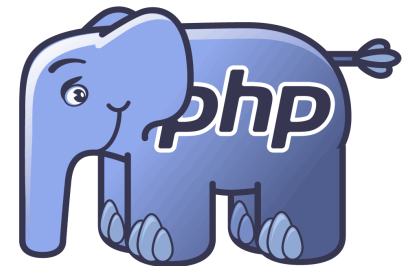
[Writing into an window alert box](#)
Writing into the HTML output

JS Tutorial

JS HOME
JS Introduction
JS Where To
JS Output
JS Syntax
JS Statements
JS Comments
JS Variables
JS Operators
JS Arithmetic
JS Assignment
JS Data Types
JS Functions
JS Objects
JS Scope
JS Events
JS Strings
JS String Methods
JS Numbers

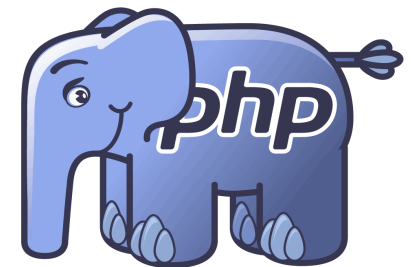
PHP: the Server-side programming language

- JavaScript + CSS + HTML: static web pages
- Contents are normally:
 - Not ready to be displayed as webpages
 - Stored in a database (MySQL, MongoDB, etc.)
- PHP tasks:
 - Pull data from/push data to the database
 - Process data if needed
 - Retrieve/send data from/to clients (web-browsers)



A taste of PHP: searching user's data

```
1 <?php
2 // create a connection to database
3 $db=mysql_connect ("servername", "username", "password") or die ('I cannot connect to the
   database because: ' . mysql_error());
4 // choose database
5 $mydb=mysql_select_db("exampleDatabase");
6 // prepare the query
7 $sql="SELECT FirstName, LastName, Job FROM Users WHERE FirstName LIKE '%" . $keyword . "%'";
8 //run the query against the mysql query function
9 $result=mysql_query($sql);
10
11 // If there is any result, show them
12 while($row=mysql_fetch_array($result)){
13     // each row is one result
14     echo "<ul>\n";
15     echo "<li>" . $row['FirstName'] . " " . $row['LastName'] . " is a " . $row['Job'] . "</li>\n";
16     echo "</ul>";
17 }
18 ?>
```



Example: search facility

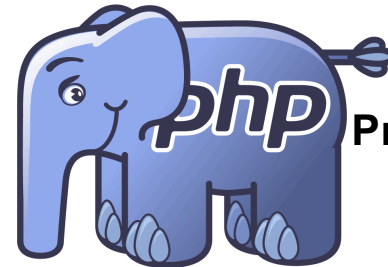
HTML + CSS + JavaScript



Send keyword: 'Alex'

Send Alex's HTML
webpage to browser

PHP/Node.JS



Process Alex's data

Ask for Alex's data in
the database

Receive Alex's data
from the database

MySQL/POSTGIS



Search for
Alex's data

Many thanks...

