



An Introduction to HTML, CSS & JavaScript

And other cool stuff if we have time ;)



The Plan

- Start with HTML
- Learn a bit of CSS
- Learn basic JavaScript
- Learn some best practices
- Hacking stuff or a large(r) project

Why learn?

- It's not for everyone
- If it is for you, it can be rewarding
- There is always something new to try
- Job opportunities doing something you love
- Cool offices



What you'll need

- A CodePen.io account
- A place to export projects when we are done
- An interest in learning how to code





What you won't need

- Online Games
- YouTube
- Facebook
- Twitter
- Anything that isn't what we're working on

Things could change

- These slides will be constantly updated
- Stop me if you have questions
- Your input is welcome
- Creative ways to break stuff are encouraged



Your PC ran into a problem that it couldn't handle, and now it needs to restart.

You can search for the error online: HAL_INITIALIZATION_FAILED



HTML

The Structure

Tags everywhere!

HTML consists of tags, usually an opening and a closing tag with content inside.

These are used to define the content on your web page.

```
<p>My Paragraph</p>
```

```
<h1>My heading</h1>
```

```
<h2>My smaller heading</h2>
```

Would create something like:

My Paragraph

My heading

My smaller heading



Self closing tags

Not all tags need content.

```
<p>Hello<br />world</p>
```

Would create:

```
Hello  
world
```

Different tags do different things

There are tags for:

- Paragraphs
- Dividers
- Lines
- Input fields
- Sliders
- Tables
- Images
- Embedding other pages
- **And a lot more**

Nesting tags

Tags are usually nested inside other tags.

```
<div>  
  <p>Paragraph 1</p>  
  <p>Paragraph 2</p>  
  <p>Paragraph 3</p>  
  
  <ul>  
    <li>List item 1</li>  
    <li>List item 2</li>  
  </ul>  
</div>
```

Basic web page format

- Define the DOCTYPE
- It is all inside a html tag
- Stuff describing the page goes in “head”
- Content goes in “body”

```
<!DOCTYPE html>
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <p>
      This is a
      paragraph.
    </p>
  </body>
</html>
```

Attributes

It is possible to add extra data to tags. This data can:

- Change the tags appearance or behavior
- Help JavaScript find them
- Specify which CSS styles are applied
- Go [here](#) for more info

```

```

```
<button class="button-primary">  
    Click Me  
</button>
```

```
<input id="name" value="jim"  
type="text">
```

Try it out!

- Create a page with a form
- Have a header tag
- Have two fields with inputs filled in with default values
- Have a select box

Example Form

First Name	<input type="text" value="Foo"/>
Last Name	<input type="text" value="Bar"/>
Age	<input type="text" value="1"/>



Project #1

A Basic Blog

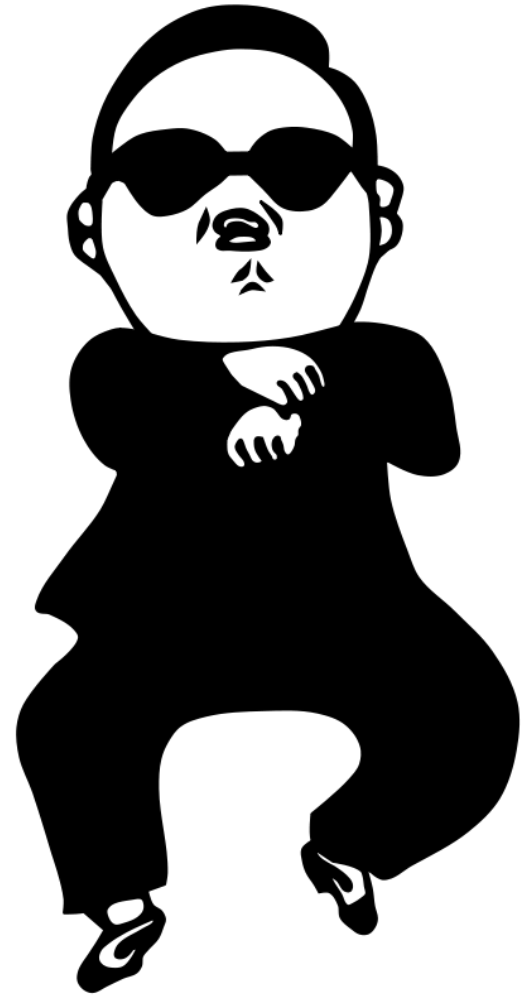


The Specs

- 2 Pages
 - About you
 - Photo Gallery
- Pages link to each other
- Pages need a header and a title
- Info on the pages doesn't have to be real
- lipsum.com can be used for filler text
- Use more than paragraph tags to format text



CSS!



Web Development With Style

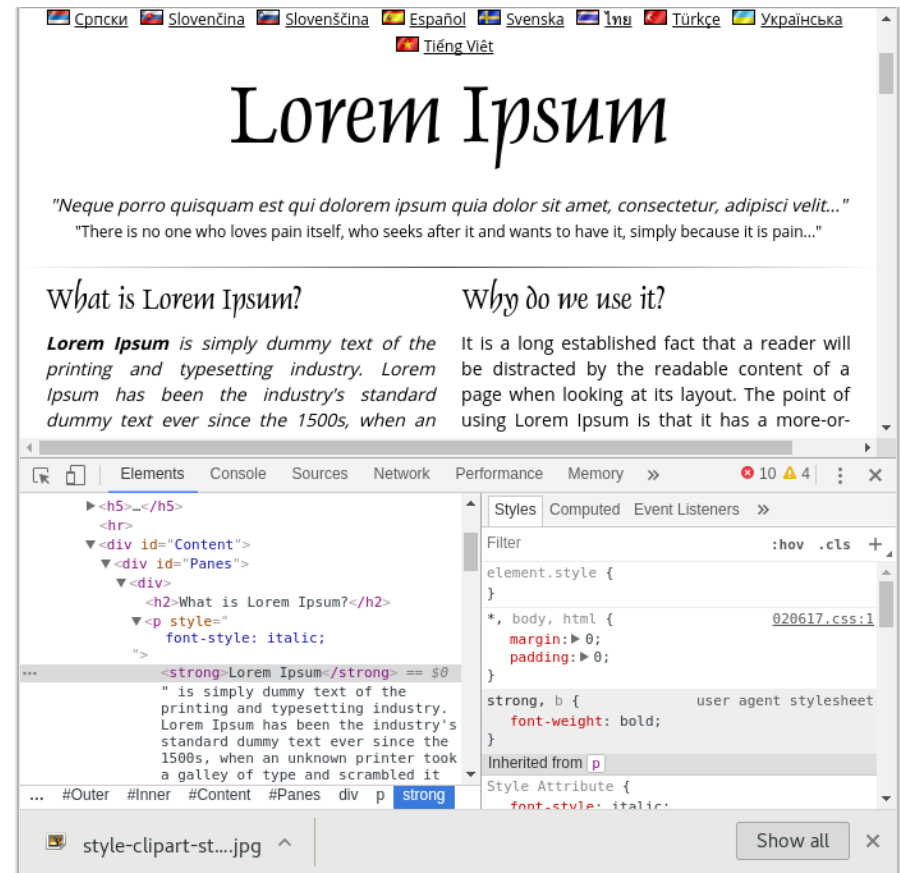
Basic structure

- Selector(s)
- Body
- Attributes

```
p {  
    font-weight: bold;  
    color: #00FF00;  
}  
  
* {  
    background-color: black;  
}  
  
.main-title, .sub-title {  
    font-style: italic;  
}  
  
input[type="text"] {  
    padding: 5px;  
}
```

Inspecting Pages

- Right click and select “Inspect Element”
- See the HTML, CSS & JavaScript a page
- Other Resources:
 - W3schools
 - Google
 - developer.mozilla.org





JavaScript

Making it dynamic!

Some HTML

```
<!DOCTYPE html>
<html>
  <head>
    <title>My Page</title>
  </head>
  <body>
    <button id="my_button">Click Me!!</button>
    <script>
      //... this will be on the next slide
    </script>
  </body>
</html>
```

 Apps  How Lo

Click Me!

Making it Dynamic

```
...  
<button id="my_button">Click Me!!</button>  
<script>  
  var myButton = document.getElementById("my_button");  
  
  myButton.onclick = function() {  
    myButton.innerText = "Thank you!";  
  }  
</script>  
...
```



Thank you!

Making it Dynamic

```
...  
<button id="my_button">Click Me!!</button>  
<script>  
  var myButton = document.getElementById("my_button");  
  
  myButton.onclick = function() {  
    myButton.innerText = "Thank you!";  
    myButton.style.backgroundColor = "red";  
  }  
</script>  
...
```



So what is JavaScript?

- JavaScript is the programming language of the web.
- It provides a way to make your web pages dynamic and respond to user input.
- It can be ran pretty much anywhere these days. I use it to run my tank.





Going to w3schools

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

JavaScript Project

- Review what we just covered in w3schools
- Log into CodePen.io
- Clear out your project and create
 - index.html – do a basic setup
 - main.css – include using a `<link>` tag
 - app.js – include using `<script>` tags at the bottom of the body
- Setup the demo from the “JS Output” section
- If you know JavaScript use JQuery instead.



Syntax Through Assignment

Plan for today:

- Go to <https://www.w3schools.com/js>
- Click on “JS Statments” on the side bar
- Work through “JS Assignment”
- Discuss statements vs expressions
- Try what we’ve learned



Statement or Expression?

`1 + 1;`



Statement or Expression?

```
var x = 1 + 1;
```



Statement or Expression?

```
x += 1;
```



Statement or Expression?

`add(5, 5) - 3;`

Statement or Expression?

```
function doTheThing(x, y) {  
  var z = x + y;  
  z += 1;  
  z *= 2;  
  return z;  
}
```

```
console.log(doTheThing(10, 2));
```


Statement or Expression?

```
var z = 0;
```

```
function doTheThing2(x, y) {  
  z = z + x + y;  
  z += 1;  
  z *= 2;  
  return z;  
}
```

```
console.log(doTheThing2(10, 2));
```

Trying things out

- `prompt("Some prompt")` to get your value
- Use some of the things we've covered to do things to the text that comes in from the prompt
- Use the things from the output section to display what you've done

(Note: this will require using "onclick" and a function to run)

Data Types

- Primitive
 - String - “Hello world”, ‘hello world’, “”, etc
 - Number - 1, 1.2, -2 -3.888, etc
 - Boolean - true, false
 - Undefined - undefined
- Complex
 - Function
 - Object
- All of these can be stored in variables (e.g. `var x = 1;`
`var y = “hello”;`)



Function Vocabulary

- Call/Run/Execute/Invoke
- Passing
- Parameters
- Define



Try it out

- Write an example of each kind of data type with the name of the type beside it in a comment
- Write a function that takes no parameters
- Write a function that takes one or more parameters
- Write a function that in the body:
 - Calls two functions storing the result of each in a variable
 - Calls a third function passing in those variables and returns the result
- Have me review your functions (or ask for help if you get stuck)



Getting the slides

<http://repo.lupnix.org/slides/CodingClub.pdf>