

HTML JavaScript

- JavaScript makes HTML pages more dynamic and interactive.

My First JavaScript

Click me to display Date and Time

Thu Oct 22 2020 14:21:37 GMT+0800 (台北標準時間)

The HTML `<script>` Tag

- The HTML `<script>` tag is used to define a client-side script (JavaScript).
- The `<script>` element either contains script statements, or it points to an external script file through the `src` attribute.
- Common uses for JavaScript are image manipulation, form validation, and dynamic changes of content.
- To select an HTML element, JavaScript most often uses the `document.getElementById()` method.
- This JavaScript example writes "Hello JavaScript!" into an HTML element with `id="demo"`:

```
<script>  
document.getElementById("demo").innerHTML = "Hello JavaScript!";  
</script>
```

A Taste of JavaScript

- Here are some examples of what JavaScript can do:

JavaScript can change styles:

JavaScript can change attributes:

```
doc
doc document.getElementById("image").src = "picture.gif";
doc document.getElementById("image").style.src = "picture.gif";
```

The HTML `<noscript>` Tag

- The HTML `<noscript>` tag defines an alternate content to be displayed to users that have disabled scripts in their browser or have a browser that doesn't support scripts:

```
<script>
document.getElementById("demo").innerHTML = "Hello JavaScript!";
</script>
<noscript>Sorry, your browser does not support JavaScript!</noscript>
```

HTML File Path

- A file path describes the location of a file in a web site's folder structure.

File Path Examples

Path	Description
<code></code>	The "picture.jpg" file is located in the same folder as the current page
<code></code>	The "picture.jpg" file is located in the images folder in the current folder
<code></code>	The "picture.jpg" file is located in the images folder at the root of the current web
<code></code>	The "picture.jpg" file is located in the folder one level up from the current folder

HTML File Paths

- A file path describes the location of a file in a web site's folder structure.
- File paths are used when linking to external files, like:
 - Web pages
 - Images
 - Style sheets
 - JavaScripts

Absolute File Paths

- An absolute file path is the full URL to a file:

```

```

Relative File Paths

- A relative file path points to a file relative to the current page.
- In the following example, the file path points to a file in the images folder located **at the root of the current web**:

```

```

- In the following example, the file path points to a file in the images folder located **in the current folder**:

```

```

- In the following example, the file path points to a file in the images folder located **in the folder one level up from the current folder**:

```

```

Best Practice

- It is best practice to use relative file paths (if possible).
- When using relative file paths, your web pages will not be bound to your current base URL. All links will work on your own computer (localhost) as well as on your current public domain and your future public domains.

HTML Head

- The HTML `<head>` element is a container for the following elements: `<title>`, `<style>`, `<meta>`, `<link>`, `<script>`, and `<base>`.

The HTML <head> Element

- The <head> element is a container for **metadata** (data about data) and is placed between the <html> tag and the <body> tag.
- HTML metadata is data about the HTML document. Metadata is not displayed.
- Metadata typically define **the document title, character set, styles, scripts, and other meta information.**

The HTML <title> Element

- The <title> element defines the title of the document. The title must be text-only, and it is shown in the browser's title bar or in the page's tab.
- The <title> tag is required in HTML documents!
- The contents of a page title is very important for search engine optimization (SEO)! The page title is used by search engine algorithms to decide the order when listing pages in search results.
- The <title> element:
 - defines a title in the browser toolbar
 - provides a title for the page when it is added to favorites
 - displays a title for the page in search engine-results
- So, try to make the title as accurate and meaningful as possible!

The HTML `<style>` Element

- The `<style>` element is used to define style information for a single HTML page

The HTML <link> Element

- The <link> element defines the relationship between the current document and an external resource.
- The <link> tag is most often used to link to **external style sheets**:

```
<link rel="stylesheet" href="mystyle.css">
```

The HTML `<meta>` Element

- The `<meta>` element is typically used to specify the character set, page description, keywords, author of the document, and viewport settings.
- The metadata will not be displayed on the page, but are used by browsers (how to display content or reload page), by search engines (keywords), and other web services.

Define the character set used:

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

Define keywords for search engines:

```
<meta name="keywords" content="HTML, CSS, JavaScript">
```

Define a description of your web page:

```
<meta name="description" content="Free Web tutorials">
```

Define the author of a page:

```
<meta name="author" content="John Doe">
```

Refresh document every 30 seconds:

```
<meta http-equiv="refresh" content="30">
```

Setting the viewport to make your website look good on all devices:

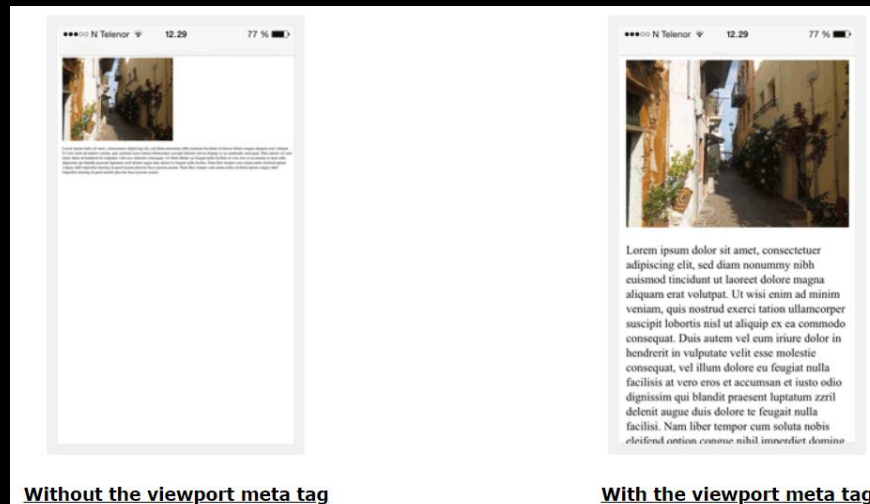
```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

Setting The Viewport

- The viewport is the user's visible area of a web page. It varies with the device - it will be smaller on a mobile phone than on a computer screen.
- You should include the following `<meta>` element in all your web pages:

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

- This gives the browser instructions on how to control the page's dimensions and scaling.
- The **width=device-width** part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).
- The **initial-scale=1.0** part sets the initial zoom level when the page is first loaded by the browser.



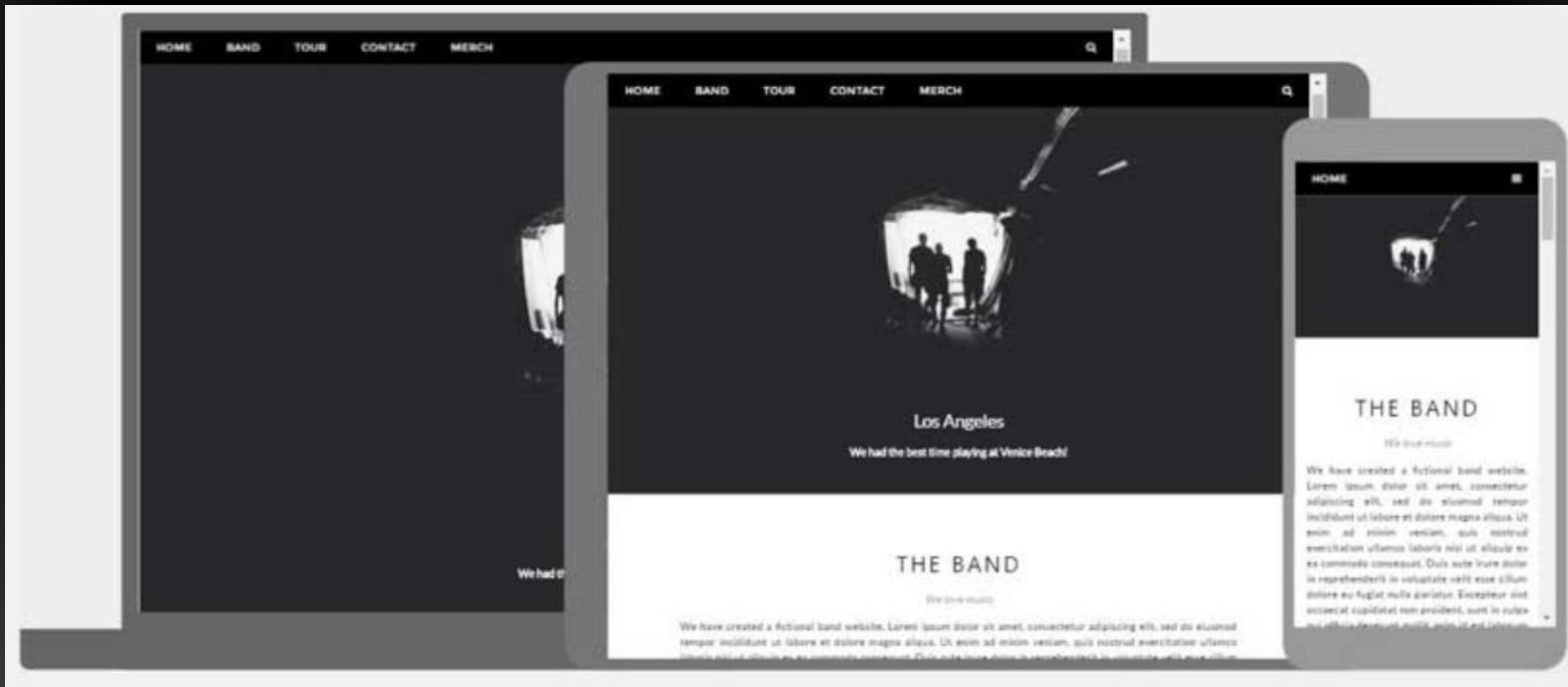
The HTML `<script>` Element

- The `<script>` element is used to define client-side JavaScripts.
- The following JavaScript writes "Hello JavaScript!" into an HTML element with `id="demo"`:

```
<script>  
function myFunction() {  
    document.getElementById("demo").innerHTML = "Hello JavaScript!";  
}  
</script>
```


HTML Responsive

- Responsive web design is about creating web pages that look good on all devices!
- A responsive web design will automatically adjust for different screen sizes and viewports.



What is Responsive Web Design?

- Responsive Web Design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge, a website, to make it look good on all devices (desktops, tablets, and phones):
- [Try it Yourself »](#)

Setting The Viewport

- To create a responsive website, add the following `<meta>` tag to all your web pages:

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

- This will set the viewport of your page, which will give the browser instructions on how to control the page's dimensions and scaling.

Responsive Images

- Responsive images are images that scale nicely to fit any browser size.

```

```

Using the width Property

- If the CSS **width** property is set to 100%, the image will be responsive and scale up and down:

Using the max-width Property

- If the **max-width** property is set to 100%, the image will scale down if it has to, **but never scale up to be larger than its original size**:

```

```

- [Try it Yourself »](#)

Show Different Images Depending on Browser Width

- The HTML <picture> element allows you to define different images for different browser window sizes.
- Resize the browser window to see how the image below change depending on the width:

- [Try it Yourself »](#)

```
<picture>
  <source srcset="img_smallflower.jpg" media="(max-width: 600px)">
  <source srcset="img_flowers.jpg" media="(max-width: 1500px)">
  <source srcset="flowers.jpg">
  
</picture>
```


Responsive Text Size

- The text size can be set with a "vw" unit, which means the "viewport width".
- That way the text size will follow the size of the browser window:

```
<h1 style="font-size:10vw">Hello World</h1>
```

- [Try it Yourself »](#)

Media Queries

- In addition to resize text and images, it is also common to use media queries in responsive web pages.
- With media queries you can define completely different styles for different browser sizes.
- Example: resize the browser window to see that the three div elements below will display horizontally on large screens and stacked vertically on small screens:

Left Menu

Main Content

Right Content

- Try it Yourself »

```
<style>
.left, .right {
  float: left;
  width: 20%; /* The width is 20%, by default */
}

.main {
  float: left;
  width: 60%; /* The width is 60%, by default */
}

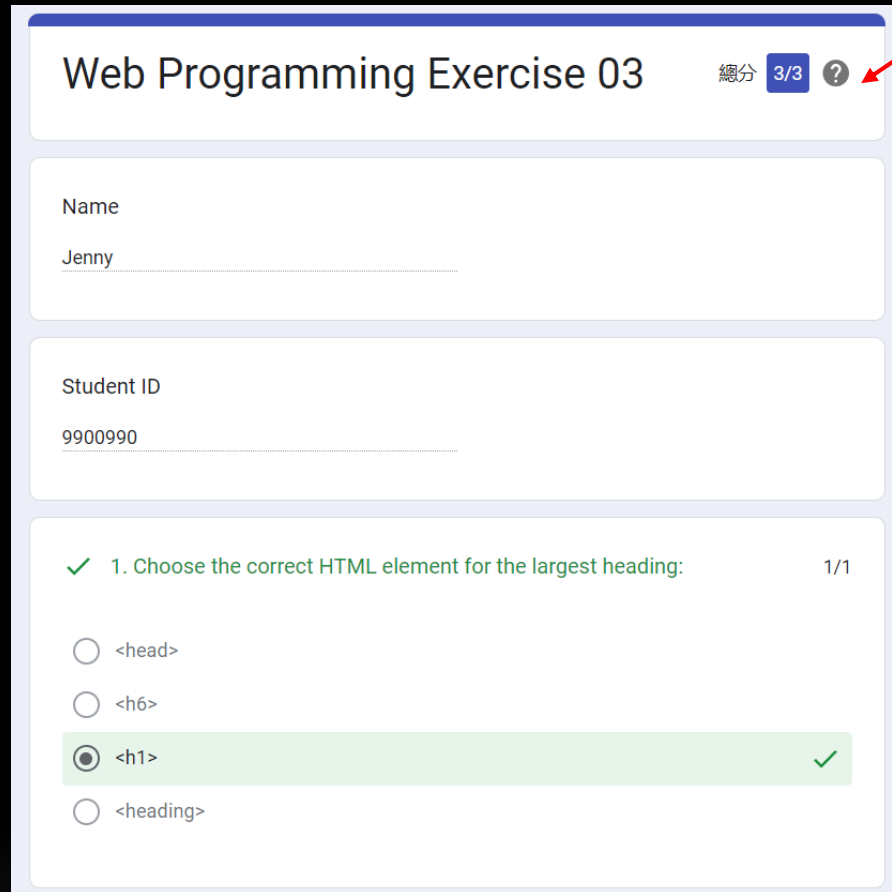
/* Use a media query to add a breakpoint at 800px: */
@media screen and (max-width: 800px) {
  .left, .main, .right {
    width: 100%; /* The width is 100%, when the viewport is 800px or smaller */
  }
}
</style>
```

Responsive Web Design - Frameworks

- All popular CSS Frameworks offer responsive design.
- They are free, and easy to use.
 - W3.CSS
 - Bootstrap

Exercise 07

- <https://reurl.cc/8Xzrnj>



Web Programming Exercise 03 總分 3/3 ?

Name
Jenny

Student ID
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✓ 1. Choose the correct HTML element for the largest heading: 1/1

☐ <head>

☐ <h6>

☒ <h1> ✓

☐ <heading>

Just show that you are all correct!

*** Upload this image to YZU portal ***