



前端網絡開發人員證書

1. Introduction to HTML I

Presented by Krystal Educational Platform



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Learning Outcomes



- Knowing the basic elements of HTML5: Effective document structure, meaning & use of semantic tags, common semantic tags
- Understanding the advanced application of HTML5: Web effects, advanced syntax, special application like form, table & multimedia
- Setting development environment, and use HTML5 to design web



1.1 What is HTML?

1.1 What is HTML?



- HyperText Markup Language
- Programming language
- Most websites are written in HTML
- Usage:
 - Create pages
 - Make them functional



1.2 Installation of tool



1.2 Installation of tool



- Atom
 - Code editor for: HTML, CSS, JS, etc.

<https://atom.io/>

1.2.1 Open a HTML file



1. Click File -> New File
2. At the bottom right corner, click Plain Text
3. In the pop up search bar, type and select “HTML”
4. Click File -> Save As “Hello world”



1.3 HTML document structure

1.3 HTML document structure



- DOCTYPE declaration
 - To clarify the document type
 - Tags
 - Container for elements
 - Elements
 - Includes the opening & closing tags and everything in between
- Press TAB to indent, to make the HTML more readable

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <!-- stored information of the web
5  , won't be displayed -->
6  <title>Web Title</title>
7  </head>
8  <body>
9  <!-- Comment
10   won't be displayed -->
11 <h1>This is a heading.</h1>
12 <p>This is a paragraph.</p>
13 </body>
14 </html>
```

1.3.1 Elements



- Block
 - Starts on a new line
 - Takes up the full width available
 - Has top and bottom margin

Example tags

<address>	<article>	<aside>	<blockquote>	<canvas>	<dd>
<div>	<dl>	<dt>	<fieldset>	<figcaption>	<figure>
<footer>	<form>	<h1>-<h6>	<header>	<hr>	
<main>	<nav>	<noscript>		<p>	<pre>
<section>	<table>	<tfoot>		<video>	

1.3.1 Elements



- **Inline**
 - Does NOT have top and bottom margin

Example tags

<a>	<abbr>	<acronym>		<bdo>	<big>
 	<button>	<cite>	<code>	<dfn>	
<i>		<input>	<kbd>	<label>	<map>
<object>	<output>	<q>	<samp>	<script>	<select>
<small>			<sub>	<sup>	<textarea>
<time>	<tt>	<var>			

1.3.1 Elements: Example



- Code

```
<div>This is a div</div>
<span>This is a span</span>
<span>This is another span</span>
```

- Web

This is a div
This is a span This is another span



1.4 Non-semantic VS Semantic HTML

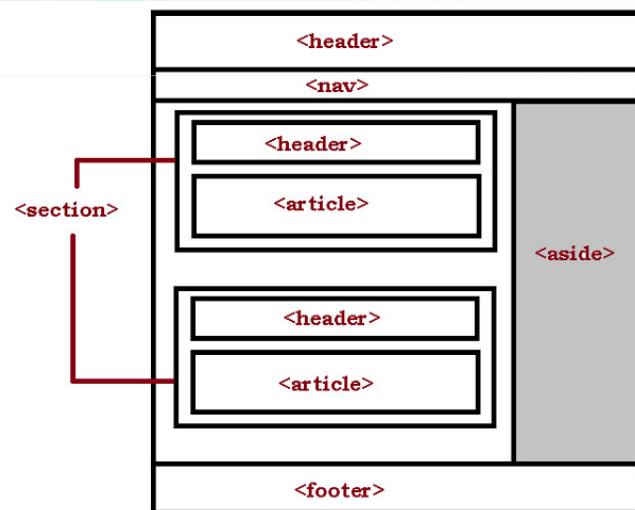
1.4 Non-semantic VS Semantic HTML



- Semantic element
 - Name = meaning

Example

- <article>
- <nav>
- <details>



- Non-semantic element
 - NO meaning

Example

- <div>
-

1.4 Non-semantic VS Semantic HTML



- Semantic HTML

```
<!DOCTYPE html>
<html>
  <head>
    <title>Hello World</title>
  </head>
  <body>
    <h1>Hello World</h1>
    <p>Welcome guys!</p>
  </body>
</html>
```

- Non-semantic HTML

```
<span class="heading"><strong>Hello world</span></strong>
<br><br>
Welcome guys!
```

Attribute: Modifier of an HTML element type



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1.5 Getting start with HTML



1.5.1 What is head?



- Contains information of the web
- Placed between <html> & <body>
- WILL NOT be displayed in the web

```
<!DOCTYPE html>
<html>
  <head>
    <title>Hello world</title>
  </head>
  <body>
    <div>This is a div.</div>
    <span>This is a span.</span>
    <span>This is another span.</span>
  </body>
</html>
```

This is a div This is a span This is another span

1.5.2 Head elements



- **Title**

- Displays in the browser toolbar
- Displays in search-engine results
- Provides a title when it is added to favorites

1.5.2 Head elements



- Style
 - Defines style information (CSS)

```
<style>
  span {
    color: red;
  }
</style>
```

This is a span This is another span

1.5.2 Head elements



- Link

- Defines the relationship between the current document and an external resource
- Often used to link to external style sheets (CSS)

```
< Hello world.html      # style.css  X
C: > Users > bjenn > OneDrive > 桌面 > #
1   span {
2     color: green;
3 }
```

```
<head>
  <title>Web Title</title>
  <link rel="stylesheet" href="style.css">
</head>
```

This is a span This is another span

1.5.2 Head elements



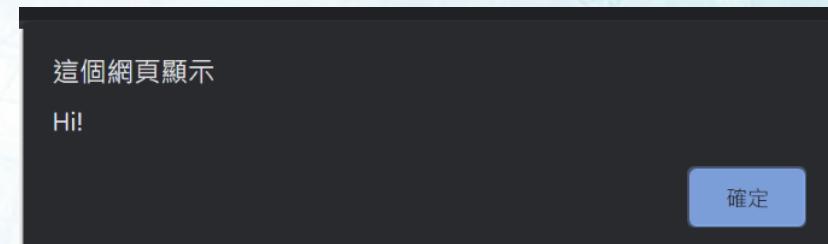
- Script (JS: JavaScript)
 - Contains scripting statements
 - Points to an external script file through the src attribute

```
<head>
  <title>Web Title</title>
  <script>
    alert("Hi!")
  </script>
</head>
```

The screenshot shows a file structure. At the top is a file named "Hello world.html". To its right is a "JS JS.js" file. Below these are folder paths: "Users > bjenn > OneDrive > 桌面". Under "桌面" is a single line of code: "1 alert('Hi!')".

The screenshot shows the content of "Hello world.html". It contains the following HTML code:

```
<head>
  <title>Web Title</title>
  <script src="JS.js"></script>
</head>
```



1.5.2 Head elements



- Noscript
 - Defines what to display when users disabled JS in their browser OR have a browser that doesn't support JS
- See how to disable JS in browsers

<https://www.computerhope.com/issues/ch000891.htm#chrome>

```
<noscript>
|   Your browser does not support JavaScript!
</noscript>
```

Your browser does not support JavaScript!

1.5.2 Head elements



- Base

- Specifies the base URL for **ALL** URLs in a document
- There can only be **ONE** <base> element

```
<head>
  <title>Web Title</title>
  <base href="https://google.com/" target="_blank">
</head>
<body>
  <a href="">Google</a><br>
  <a href="intl/zh-HK_hk/business/">Google Business</a>
</body>
```



1.5.3 Head element: Meta



- Defines metadata
- Metadata is data about data

1.5.4 Meta: Attributes



- charset
 - Specifies the character encoding
 - HTML5 encourages UTF-8
 - Common use: `<meta charset="UTF-8">`

1.5.4 Meta: Attributes



- http-equiv
 - Provides an HTTP header for the information/value of the content attribute
 - Common use: `<meta http-equiv="refresh" content="30">`
 - Refresh the web every 30s

1.5.4 Meta: Attributes



- name
 - Specifies a name for the metadata
 - It can be any name you like
- content
 - Specifies the value associated with the **http-equiv** OR **name** attribute

1.5.4 Meta: Attributes



- name & content

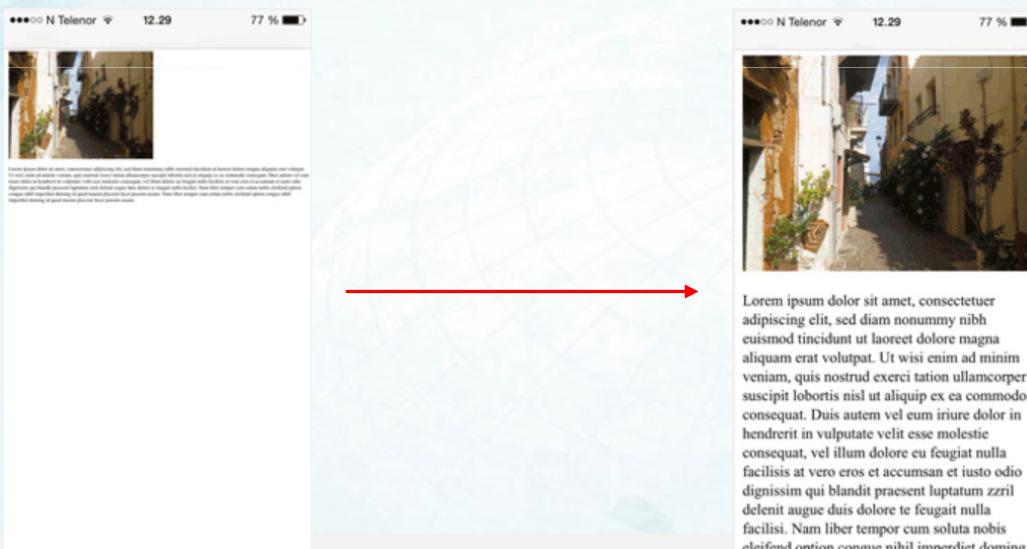
- `<meta name="keywords" content="HTML, CSS, JavaScript">`
 - Defines keywords for search engines
 - Note: Google **DOES NOT** support this function anymore
- `<meta name="author" content="Choco Lau">`
- `<meta name="description" content="My first HTML">`

1.5.4 Meta: Attributes



- name & content

- `<meta name="viewport" content="width=device-width, initial-scale=1.0">`
 - Makes the web look good on other devices



Example: on phone

1.5.4 Meta: Attributes



- name = “robots” `<meta name="robots" content="noindex,nofollow">`
- Provides instructions to search engines
 - noindex: NOT to show the web
 - noimageindex: NOT to index any images
 - follow: Follow all the links on a page and pass equity to the linked pages
 - nofollow: NOT to follow any links
 - none: Same with noindex &nofollow
 - noarchive: NOT to show the cached link
 - nosnippet: NOT to show the snippet (i.e. meta description)
 - unavailable_after: [date/time] : NOT to index the web after a particular datetime



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1.6 HTML debugging (Google Chrome)

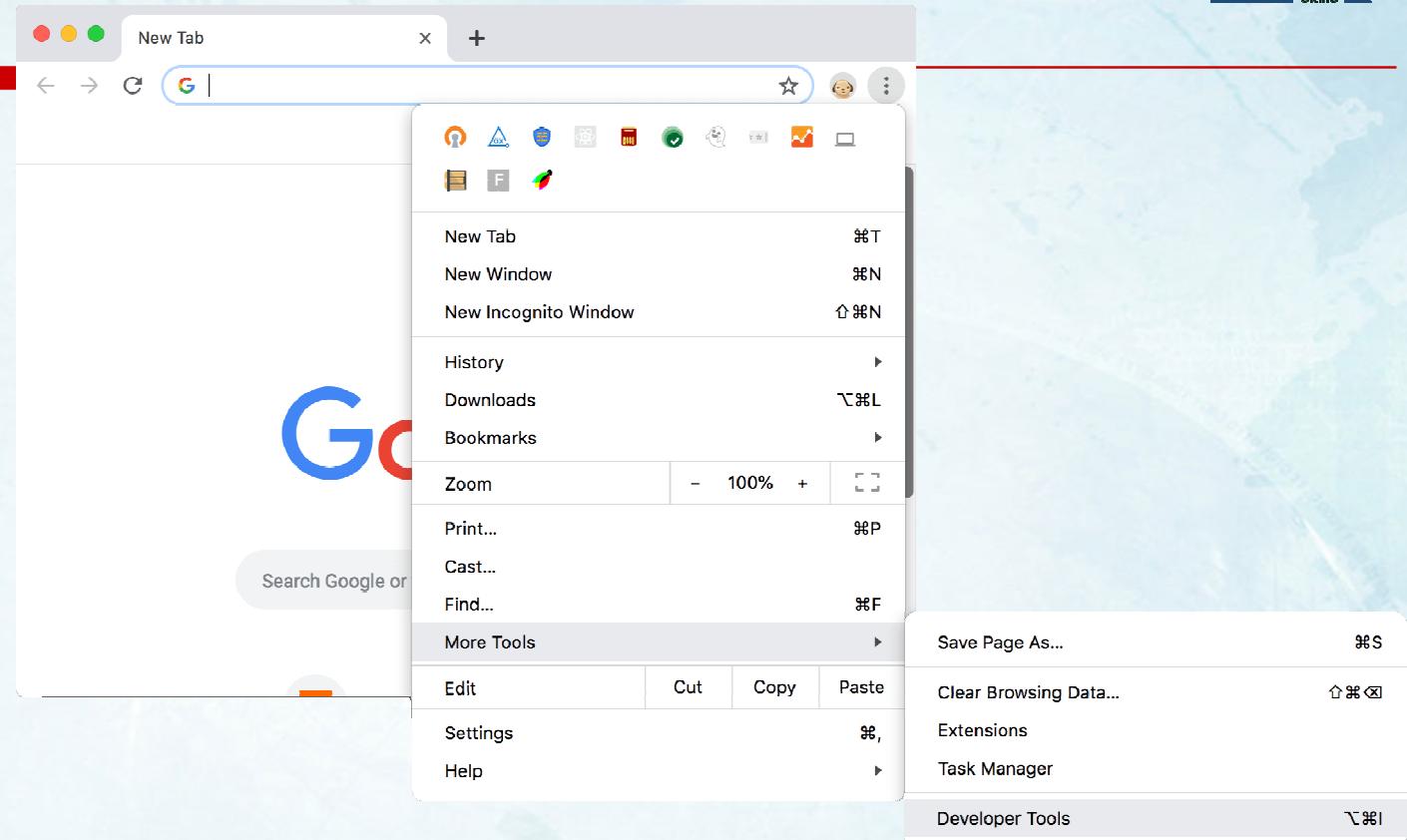


1.6.1 Opening developer tool



Method 1

1. Setting
2. More Tools
3. Developer Tools

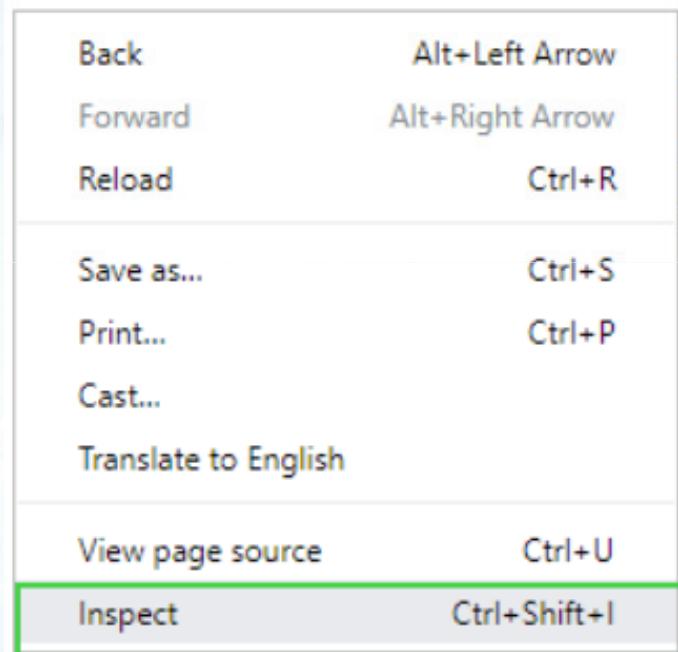


1.6.1 Open developer tool

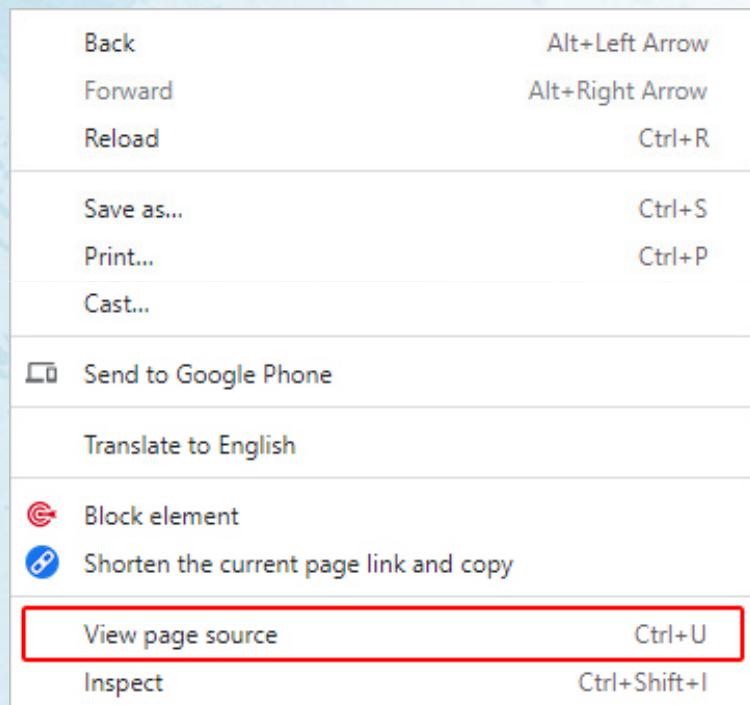


Method 2

1. Right click the webpage
2. Inspect



1.6.2 View page source



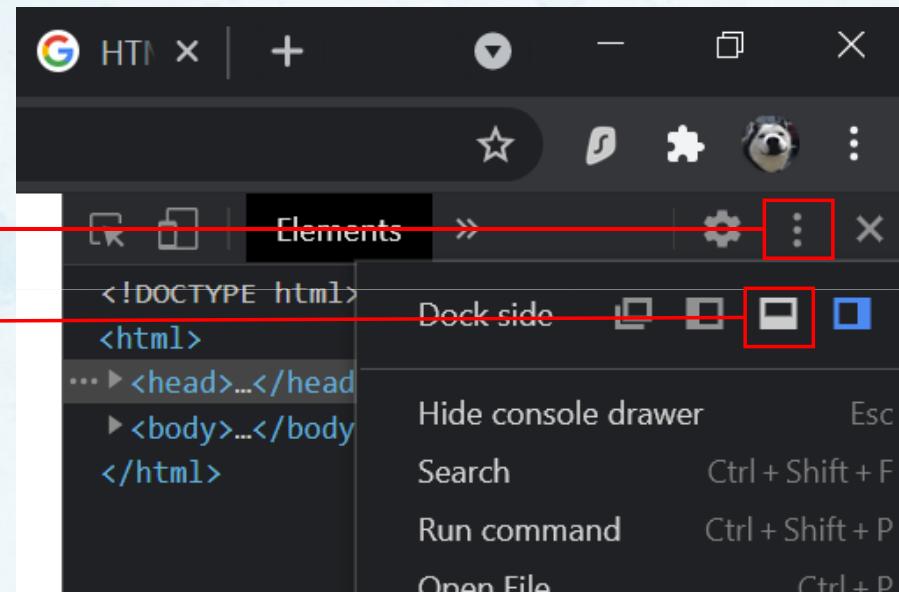
自動換行 □

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <!-- stored information of the web
   , won't be displayed -->
5   <title>Web Title</title>
6 </head>
7 <body>
8   <!-- Comment
       won't be displayed -->
9     <div>This is a div</div>
10    <span>This is a span</span>
11    <span>This is another span</span>
12  </body>
13 </html>
```

1.6.3 Debugging



- Setting
- Dock to bottom



1.6.3 Debugging



Method 1

- Try interacting with the webpage by pointing at different tags

A screenshot of a browser's developer tools showing the "Elements" tab. The DOM tree is visible, with a red box highlighting a `<div>` element containing the text "This is a div". A tooltip above the element says "This is a div". Another tooltip to the right says "This is another span". The element has a bounding box of "div 1264 × 18". The browser's address bar shows "http://www.w3schools.com/html/html_intro.asp".

A screenshot of a browser's developer tools showing the "Elements" tab. The DOM tree is visible, with a red box highlighting a `<div>` element containing the text "This is a div". A tooltip above the element says "This is a div". Another tooltip to the right says "This is another span". The element has a bounding box of "div 1264 × 18". The browser's address bar shows "http://www.w3schools.com/html/html_intro.asp".

1.6.3 Debugging



Method 2

- Click to enable “Select an element in the page to inspect it”
- Try interacting by pointing at elements in the webpage

The screenshot shows a browser's developer tools open. The top navigation bar has tabs: Elements (which is highlighted with a red border), Console, and Source. Below the tabs, the DOM tree is displayed. A mouse cursor is hovering over a `<div>` element, which is highlighted with a red box. The element's content, "This is a div", is shown in a light blue tooltip. The DOM tree shows the following structure:

```
<!DOCTYPE html>
<html>
  <head>...</head>
  <body>
    <!-- Comment
        won't be displayed -->
    .. <div>This is a div</div> == $0
    <span>This is a span</span>
    .. This is another span
```

1.6.3 Debugging: Try on your own



- Change the code to make some mistakes

- E.g. Delete close tags

```
<span>This is another span
```

- E.g. Badly nested tags

```
<div>DIV<p>Paragrph</div></p>
```

- See how the code in Developer Tool changes!

1.6.3 Debugging



- Code with mistakes

```
<span>This is another span
```



- Code in Developer Tool

```
<span>This is another span  
          </span>
```

```
<div>DIV<p>Paragrph</div></p>
```



```
<div>  
    "DIV"  
    <p>Paragrph</p>  
</div>  
<p></p>
```

- **Developer Tool suggests a better code to you, but it may NOT be 100% accurate**



1.7 Exercise: Your first HTML



1.7 Exercise: Your first HTML



- Head:
 - Title
 - Author
 - Description
 - Viewport
 - Refresh every 60s

Hi guys! My name is Choco Lau.
I am 21 years old. I studies in...
My interests are...
My goal in this course is to...
...

- Body
 - Type anything to introduce yourself, and share it with others
 - Use one <p>, use
 within to skip line

1.7 Exercise: Suggested answer



```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Exercise1</title>
5      <meta charset="UTF-8">
6      <meta name="author" content="Choco Lau">
7      <meta name="description" content="My first HTML">
8      <meta http-equiv="refresh" content="60">
9      <meta name="viewport" content="width=device-width, initial-scale=1.0">
10
11 </head>
12 <body>
13     <p>Hi guys! My name is Choco Lau.
14         <br>I am 21 years old. I studies in...
15         <br>My interests are...
16         <br>My goal in this course is to...<br>...</p>
17 </body>
18 </html>
```



1.8 UML



1.8 What is UML?



- **Unified Modeling Language** is a business process modeling techniques; a modern approach to modeling and documenting software.
- It is based on **diagrammatic representations** of software components.
- UML was created as a result of the chaos revolving around software development and documentation. In the 1990s, there were several different ways to represent and document software systems. The need arose for a more unified way to visually represent those systems and as a result, in 1994-1996, the UML was developed by three software engineers working at Rational Software. It was later adopted as the standard in 1997 and has remained the standard.

1.8 What the use of UML?



- UML has been used as a general-purpose modeling language in the field of **software engineering**. However, it has now found its way into the documentation of several **business processes** or **workflows**. For example, activity diagrams, a type of UML diagram, can be used as a replacement for flowcharts. They provide both a more standardized way of modeling workflows as well as a wider range of features to improve readability and efficacy.

1.8 Types of UML Diagrams



Behavioral UML Diagram

- Activity Diagram
- Use Case Diagram
- Interaction Overview Diagram
- Timing Diagram
- State Machine Diagram
- Communication Diagram
- Sequence Diagram

1.8 Types of UML Diagrams



Structural UML Diagram

- Class Diagram
- Object Diagram
- Component Diagram
- Composite Structure Diagram
- Deployment Diagram
- Package Diagram
- Profile Diagram



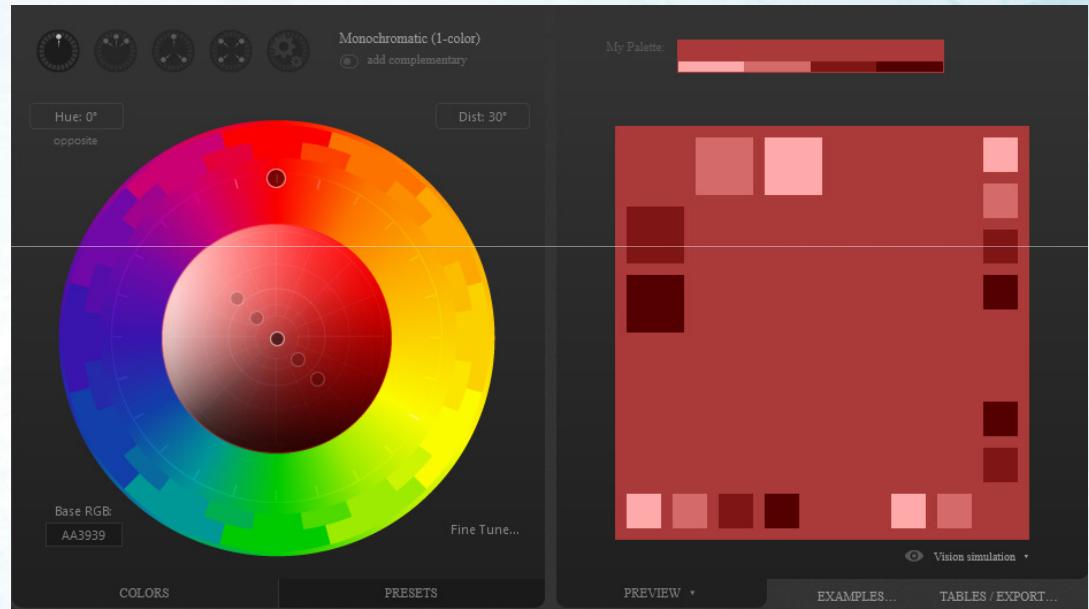
1.9 Wireframe tools



1.9 What is wireframe?



- The design world uses the term "wireframe" to refer to sketch or outline of our idea
- A wireframe is meant to be visually simple, using basic shapes to indicate buttons and images



1.9 Useful wireframe tools



- Visual Studio Marketplace - <https://marketplace.visualstudio.com/>
 - [Bracket pair colorizer](#)
 - [Html snippets](#)
 - [JavaScript \(ES6\) code snippets](#)
 - [IntelliSense for css names in html](#)
 - [Live server](#)
 - [Material icon theme](#)
 - [Prettier - code formatter](#)

1.9 Useful wireframe tools



Interface Design

- Figma – <http://figma.com/>
- MockFlow – <https://www.mockflow.com/>
- Envatoelements – <https://elements.envato.com/>
- Pencil Project – <https://pencil.evolus.vn/>
- Semantic UI – <https://semantic-ui.com/>
- StarUML – <https://staruml.io/>

1.9 Useful wireframe tools



CSS related

- Specificity Calculator – <https://specificity.keegan.st/>
- Google Font – <https://fonts.google.com/>
- Paletton – <https://paletton.com/>
- CSS-trick – <https://css-tricks.com/>

1.9 Other tools/useful sites



Other tools/useful sites

- [Codepen](https://codepen.io/) – <https://codepen.io/>
- [Stack Overflow](https://stackoverflow.com/) – <https://stackoverflow.com/>
- [Github](https://github.com/) – <https://github.com/>
- [Source Tree](https://www.sourcetreeapp.com/) – <https://www.sourcetreeapp.com/>
- [Jet Brains](https://www.jetbrains.com/) – <https://www.jetbrains.com/>
- [RunJS](https://runjs.app/) – <https://runjs.app/>
- [Web technology for developers | MDN](https://developer.mozilla.org/en-US/docs/Web) – <https://developer.mozilla.org/en-US/docs/Web>

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MC Quiz



- 10 minutes

<https://www.online-stopwatch.com/countdown/>



Reference



- Computer Hope (2021). *How do I enable or disable JavaScript in my browser?* [online] available from <<https://www.computerhope.com/issues/ch000891.htm#chrome>> [20 May 2021]
- Google Developers (2018). *Open Chrome DevTools* [online] available from <<https://developer.chrome.com/docs/devtools/open/>> [20 May 2021]
- W3Schools (2021). *HTML Tutorial* [online] available from <<https://www.w3schools.com/html/default.asp>> [20 May 2021]

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Reference



- **The 8 best wireframe tools in 2021 | zapier<
<https://zapier.com/blog/best-wireframe-tools/>>**

