**# ComIQ Website README**

**Introduction**

The ComIQ website is a web page designed for computer science enthusiasts and learners. It provides information about computer science quizzes at different levels and encourages users to explore and test their knowledge. You can also access the website through this link - <https://pmxxavwx6nk0lhalqtwhjg.on.drv.tw/P216_ComIQ_RollNo_145_147.com/>

Or you can also scan this QR code



**Problem Statement**

Computer science is a complex and rapidly evolving field. Enthusiasts and learners often face challenges in finding engaging and informative resources to enhance their knowledge and test their skills. To address this, we have created the ComIQ website to:

- Provide a platform where users can explore and deepen their understanding of computer science.

- Offer quizzes at different difficulty levels to cater to beginners and experienced learners.

- Make learning fun and interactive by gamifying the experience.

**Table of Contents**

1. Project Description
2. Getting Started
3. Usage
4. Contributing
5. Questions included in the Quiz

**Project Description**

The ComIQ website is a single-page web application that consists of the following elements:

- A header with a logo and navigation menu.

- A main content section with an introduction to the computer science quiz.

- Quiz selection buttons for HTML, JavaScript, and CSS.

- A popup window explaining the quiz levels: Beginner, Intermediate, and Advanced.

- Buttons to start quizzes or exit.

The website is designed to be responsive and user-friendly.

**Getting Started**

To get started with this project, you need to download or clone the repository. Follow these steps:

1. Download or clone the repository to your local machine.

2. Open the HTML file (index.html) in a web browser to view the website.

**Usage**

Once you open the index.html file in your web browser, you can explore the ComIQ website. Here's what you can do:

- Click on the navigation menu links to navigate between sections.

- Read the introduction to the computer science quiz.

- Click on one of the quiz buttons (HTML, JavaScript, CSS) to select a quiz.

- The "Quiz Levels" popup provides information about quiz difficulty levels and options to start a quiz or exit.

**Contributing**

We welcome contributions to improve the ComIQ website. If you have any suggestions, bug reports, or feature requests, please open an issue or submit a pull request to the mail i’d given.

**Questions included in the Quiz**

**HTML BEGINNER LEVEL**

1. What does HTML stand for?

a) Hyperlink Text Markup Language

b) Hyper Transfer Markup Language

c) Hyper Text Markup Language

d) High-Level Text Markup Language

Answer: c) Hyper Text Markup Language

2. Which HTML tag is used to create a hyperlink?

a) <link>

b) <href>

c) <a>

d) <hyperlink>

Answer: c) <a>

3. Which HTML tag is used to define the structure of an HTML document?

a) <body>

b) <head>

c) <html>

d) <title>

Answer: c) <html>

4. What is the correct HTML syntax for creating an ordered list?

a) <ol><li>Item 1</li><li>Item 2</li></ol>

b) <ul><li>Item 1</li><li>Item 2</li></ul>

c) <list><item>Item 1</item><item>Item 2</item></list>

d) <li>Item 1</li><li>Item 2</li>

Answer: a) <ol><li>Item 1</li><li>Item 2</li></ol>

5. Which HTML tag is used to insert a line break?

a) <break>

b) <br>

c) <lb>

d) <newline>

Answer: b) <br>

**HTML INTERMEDIATE LEVEL**

1. In JavaScript, what keyword is used to declare a variable with block scope?

a) var

b) let

c) const

d) block

\*\*Correct Answer:\*\* b) let

2. Which of the following is NOT a valid data type in Python?

a) int

b) float

c) char

d) str

\*\*Correct Answer:\*\* c) char

3. What does the acronym "API" stand for in the context of web development?

a) Application Programming Interface

b) Advanced Programming Interface

c) Application Process Integration

d) Advanced Process Interface

\*\*Correct Answer:\*\* a) Application Programming Interface

4. Which of the following CSS properties is used to control the spacing between lines of text within an element?

a) text-spacing

b) line-height

c) letter-spacing

d) text-line

\*\*Correct Answer:\*\* b) line-height

5. In relational databases, which language is used to query and manipulate data?

a) HTML

b) JavaScript

c) SQL

d) PHP

\*\*Correct Answer:\*\* c) SQL

6. What is the purpose of the "box-sizing" CSS property?

a) To change the shape of HTML elements

b) To control the box shadow of an element

c) To control the layout and sizing of an element's box model

d) To change the color of an element's border

\*\*Correct Answer:\*\* c) To control the layout and sizing of an element's box model

7. Which programming language is often used for developing mobile applications for Android?

a) Swift

b) Java

c) Python

d) C++

\*\*Correct Answer:\*\* b) Java

8. What does the acronym "URL" stand for?

a) Universal Resource Locator

b) Uniform Resource Link

c) Uniform Resource Locator

d) Universal Resource Link

\*\*Correct Answer:\*\* a) Universal Resource Locator

9. What is the primary purpose of the "DOCTYPE" declaration in HTML?

a) To specify the character encoding of the document

b) To declare a custom HTML tag

c) To define the document type and version

d) To create a link to an external stylesheet

\*\*Correct Answer:\*\* c) To define the document type and version

10. In object-oriented programming, what is encapsulation?

a) The process of converting data into a binary format

b) The process of hiding the internal details of an object and providing a public interface

c) The process of arranging elements in a specific order

d) The process of optimizing code for performance

\*\*Correct Answer:\*\* b) The process of hiding the internal details of an object and providing a public interface

**HTML ADVANCED LEVEL**

1. What does the "data-" attribute in HTML5 allow you to do?

a) Store arbitrary data associated with an element

b) Define a data structure for the page

c) Create a hyperlink to an external data source

d) Style elements with custom data values

\*\*Correct Answer:\*\* a) Store arbitrary data associated with an element

2. Which HTML5 element is used to define the structure and content of a navigation menu?

a) <nav>

b) <menu>

c) <list>

d) <navbar>

\*\*Correct Answer:\*\* a) <nav>

3. What does the HTML "download" attribute do when used with the <a> element?

a) It specifies the file extension of the linked file

b) It forces the linked file to be downloaded by the user

c) It creates a link to download the entire webpage

d) It opens the linked file in a new browser tab

\*\*Correct Answer:\*\* b) It forces the linked file to be downloaded by the user

4. Which HTML5 API is used for real-time communication between a web browser and a server, often used for chat applications and online gaming?

a) WebSocket API

b) File API

c) WebRTC API

d) Local Storage API

\*\*Correct Answer:\*\* a) WebSocket API

5. What is the purpose of the HTML <figure> and <figcaption> elements?

a) To define a table with a caption

b) To embed audio and video content

c) To create a figure with a caption or legend

d) To define a mathematical formula

\*\*Correct Answer:\*\* c) To create a figure with a caption or legend

6. Which HTML5 attribute is used to specify a regular expression pattern for the input data in a <input> element with type="text"?

a) pattern

b) regex

c) validation

d) match

\*\*Correct Answer:\*\* a) pattern

7. What is the purpose of the HTML <meter> element?

a) To display progress bars

b) To define a unit of measurement

c) To display measurement values within a specified range

d) To create a horizontal line in the document

\*\*Correct Answer:\*\* c) To display measurement values within a specified range

8. Which HTML5 element is used to provide a container for an SVG (Scalable Vector Graphics) image?

a) <vector>

b) <svg>

c) <image>

d) <canvas>

\*\*Correct Answer:\*\* b) <svg>

**Question 9:** What does the "sandbox" attribute in an <iframe> element do?

a) It restricts the iframe's content to be displayed in a popup window.

b) It enables cross-origin communication between iframes.

c) It restricts the iframe's content from initiating new browser windows or popups.

d) It allows the iframe to run JavaScript code from any origin.

Answer: c) It restricts the iframe's content from initiating new browser windows or popups.

**Question 10:** Which HTML5 API provides access to a device's geolocation information?

a) Geolocation API

b) GPS API

c) Location API

d) Maps API

Answer: a) Geolocation API

**Question 11:** Which HTML5 element is used to create a container for responsive web design and control the layout of content based on screen size?

a) <grid>

b) <flexbox>

c) <container>

d) <viewport>

Answer: b) <flexbox>

**Question 12:** In HTML, what is the purpose of the "hidden" attribute?

a) It hides an element's content from screen readers.

b) It hides an element from both screen readers and visual display.

c) It specifies that an element's content should be initially hidden but can be displayed with JavaScript.

d) It marks an element as hidden and prevents it from being indexed by search engines.

Answer: c) It specifies that an element's content should be initially hidden but can be displayed with JavaScript.

**Question 13:** Which HTML5 element is used to define the structure of a form, including input fields and buttons?

a) <form>

b) <fieldset>

c) <input>

d) <controls>

Answer: a) <form>

**Question 14:** What is the purpose of the "async" attribute when including a JavaScript file using the <script> element?

a) It specifies that the script should be executed asynchronously, without blocking the rendering of the page.

b) It specifies that the script should be executed after the page has finished rendering.

c) It prevents the script from running on the page.

d) It specifies that the script should be executed in a separate thread.

Answer: a) It specifies that the script should be executed asynchronously, without blocking the rendering of the page.

**Question 15:** Which HTML5 element is used to define a group of related form elements that can be submitted together?

a) <group>

b) <fieldset>

c) <formgroup>

d) <section>

Answer: b) <fieldset>

**CSS BEGINNER LEVEL**

**Question 1:** What does CSS stand for?

a) Creative Style Sheets

b) Computer Style Sheets

c) Cascading Style Sheets

d) Colorful Style Sheets

Answer: c) Cascading Style Sheets

**Question 2:** Which HTML tag is used to link an external CSS file to an HTML document?

a) <style>

b) <css>

c) <link>

d) <script>

Answer: c) <link>

**Question 3:** Which CSS property is used to change the text color of an element?

a) font-color

b) text-color

c) color

d) font-style

Answer: c) color

**Question 4:** What is the purpose of the CSS property "margin"?

a) To add space between the border and content of an element

b) To change the background color of an element

c) To set the font size of an element

d) To align text within an element

Answer: a) To add space between the border and content of an element

**Question 5:** Which CSS selector targets all <p> elements inside a <div> element with the class "container"?

a) div p

b) .container p

c) #container p

d) div .container p

Answer: b) .container p

**CSS INTERMEDIATE LEVEL**

**Question 1:** Which CSS property is used to control the space between the content and the border of an element?

a) padding

b) margin

c) border-spacing

d) space-between

Answer: a) padding

**Question 2:** What does the CSS property "display: inline-block" do?

a) Makes an element inline and responsive to width and height properties

b) Makes an element behave like a block-level element but remain inline in the flow

c) Makes an element disappear from the page

d) Converts text into a block-level element

Answer: b) Makes an element behave like a block-level element but remain inline in the flow

**Question 3:** What is the purpose of the CSS pseudo-class ":hover"?

a) It selects the first child of an element

b) It selects an element when the mouse pointer is over it

c) It selects an element with a specific class

d) It selects an element that is currently active

Answer: b) It selects an element when the mouse pointer is over it

**Question 4:** Which CSS property is used to control the transparency of an element?

a) opacity

b) transparency

c) visibility

d) display

Answer: a) opacity

**Question 5:** What does the CSS property "position: relative" do?

a) Makes an element absolutely positioned within its parent element

b) Makes an element positioned relative to its normal position in the document flow

c) Makes an element fixed in place on the page

d) Makes an element disappear from the page

Answer: b) Makes an element positioned relative to its normal position in the document flow

**Question 6:** What is the purpose of the CSS property "z-index"?

a) It sets the background color of an element

b) It specifies the order in which elements are stacked on top of each other

c) It defines the font size of an element

d) It controls the width of an element

Answer: b) It specifies the order in which elements are stacked on top of each other

**Question 7:** What does the CSS property "box-sizing: border-box" change about an element's box model?

a) It includes padding and border in the element's total width and height

b) It excludes padding and border from the element's total width and height

c) It removes the element's border

d) It changes the element's font size

Answer: a) It includes padding and border in the element's total width and height

**Question 8:** Which CSS unit represents a percentage of the viewport width?

a) px

b) em

c) vw

d) cm

Answer: c) vw

**Question 9:** What is the purpose of the CSS property "flex-direction" when working with Flexbox?

a) It defines the order in which flex items are displayed

b) It specifies the alignment of flex items along the main axis

c) It controls the direction in which flex items are laid out in the flex container

d) It sets the width of flex items

Answer: c) It controls the direction in which flex items are laid out in the flex container

**Question 10:** Which CSS pseudo-element is used to select the first letter of a text element?

a) :first-letter

b) :initial-letter

c) :first-character

d) :start-letter

Answer: a) :first-letter

**CSS ADVANCED LEVEL**

**Question 1:** Which CSS property is used to create a shadow effect for an element?

a) box-shadow

b) text-shadow

c) shadow-effect

d) element-shadow

Answer: a) box-shadow

**Question 2:** What does the CSS property "transform: rotate(45deg);" do?

a) It rotates an element by 45 degrees clockwise

b) It scales an element by 45%

c) It skews an element by 45 degrees

d) It translates an element by 45 pixels

Answer: a) It rotates an element by 45 degrees clockwise

**Question 3:** What is the purpose of the CSS property "perspective" when working with 3D transformations?

a) It defines the background color of a 3D element

b) It specifies the perspective from which the 3D element is viewed

c) It controls the opacity of a 3D element

d) It sets the width of a 3D element

Answer: b) It specifies the perspective from which the 3D element is viewed

**Question 4:** Which CSS property is used to create a responsive, flexible grid layout?

a) grid-template

b) flexbox

c) grid-layout

d) column-count

Answer: b) flexbox

**Question 5:** What does the CSS property "counter-increment" do?

a) It increments the font size of an element

b) It increases a specified counter by a specified value

c) It changes the border color of an element

d) It removes an element from the document flow

Answer: b) It increases a specified counter by a specified value

**Question 6:** What is the purpose of the CSS property "mix-blend-mode"?

a) It defines the blend mode for mixing colors

b) It adjusts the contrast of an element

c) It specifies the opacity of an element

d) It adds a background image to an element

Answer: a) It defines the blend mode for mixing colors

**Question 7:** What is the default value of the CSS property "position"?

a) static

b) relative

c) absolute

d) fixed

Answer: a) static

**Question 8:** What is the CSS "float" property primarily used for?

a) Creating rounded corners for elements

b) Making text bold

c) Positioning elements to the left or right of their containers

d) Changing the opacity of elements

Answer: c) Positioning elements to the left or right of their containers

**Question 9:** What does the CSS property "will-change" optimize for?

a) Animation performance

b) Font rendering

c) Text alignment

d) Media queries

Answer: a) Animation performance

**Question 10:** In CSS Grid Layout, what does the property "grid-template-areas" define?

a) The size of grid items

b) The arrangement of grid items in named areas

c) The number of columns in the grid

d) The spacing between grid items

Answer: b) The arrangement of grid items in named areas

**Question 11:** What does the CSS property "unicode-bidi" control?

a) The direction of text flow in an element

b) The font size of an element

c) The background color of an element

d) The visibility of an element

Answer: a) The direction of text flow in an element

**Question 12:** Which CSS pseudo-element is used to select the last line of a block-level element?

a) :last-line

b) :end-line

c) :final-line

d) :bottom-line

Answer: a) :last-line

**Question 13:** What is the purpose of the CSS property "content" when used with the ::before and ::after pseudo-elements?

a) It defines the background color of the pseudo-element

b) It specifies the content that should be generated before or after an element

c) It controls the positioning of the pseudo-element

d) It sets the font size of the pseudo-element

Answer: b) It specifies the content that should be generated before or after an element

**Question 14:** Which CSS property is used to create a gradient background for an element?

a) background-color

b) background-image

c) background-gradient

d) gradient-color

Answer: b) background-image

**Question 15:** What is the purpose of the CSS property "clip-path"?

a) It defines the shape of a cursor

b) It clips the visible portion of an element to a specified shape

c) It adds shadows to an element

d) It adjusts the spacing between lines of text

Answer: b) It clips the visible portion of an element to a specified shape

**JAVA SCRIPT BEGINNER LEVEL**

**Question 1:** What is JavaScript primarily used for in web development?

a) Creating structured documents

b) Styling web pages

c) Adding interactivity to websites

d) Managing databases

Answer: c) Adding interactivity to websites

**Question 2:** Which keyword is used to declare a variable in JavaScript?

a) var

b) variable

c) declare

d) v

Answer: a) var

**Question 3:** What is the purpose of the "if" statement in JavaScript?

a) To create loops

b) To define a function

c) To make decisions in code based on a condition

d) To comment out code

Answer: c) To make decisions in code based on a condition

**Question 4:** How do you write a comment in JavaScript?

a) //This is a comment

b) /\*This is a comment\*/

c) 'This is a comment'

d) "This is a comment"

Answer: a) //This is a comment

**Question 5:** What is the JavaScript function used to display a dialog box with a message and an "OK" button?

a) alert()

b) confirm()

c) prompt()

d) log()

Answer: a) alert()

**JAVASCRIPT INTERMEDIATE LEVEL**

**Question 1:** What does the "typeof" operator in JavaScript return for a function?

a) "function"

b) "object"

c) "undefined"

d) "array"

Answer: a) "function"

**Question 2:** What is the difference between "null" and "undefined" in JavaScript?

a) They are the same and can be used interchangeably.

b) "null" represents an intentional absence of any object value, while "undefined" represents an uninitialized variable.

c) "undefined" represents an intentional absence of any object value, while "null" represents an uninitialized variable.

d) "null" is used for numbers, while "undefined" is used for strings.

Answer: b) "null" represents an intentional absence of any object value, while "undefined" represents an uninitialized variable.

**Question 3:** Which loop in JavaScript allows you to iterate over the properties of an object?

a) for loop

b) while loop

c) for...in loop

d) do...while loop

Answer: c) for...in loop

**Question 4:** What is a closure in JavaScript?

a) A way to hide sensitive data in the code

b) A function that can only be called once

c) A function that has access to its outer function's variables even after the outer function has finished executing

d) A function that is defined inside another function

Answer: c) A function that has access to its outer function's variables even after the outer function has finished executing

**Question 5:** What is the purpose of the "JSON.parse()" method in JavaScript?

a) It converts a JavaScript object to a JSON string.

b) It converts a JSON string into a JavaScript object.

c) It parses HTML documents.

d) It generates random JSON data.

Answer: b) It converts a JSON string into a JavaScript object.

**Question 6:** What does the "this" keyword refer to in JavaScript?

a) It refers to the current JavaScript file.

b) It refers to the parent function.

c) It refers to the current object or context.

d) It refers to the global window object.

Answer: c) It refers to the current object or context.

**Question 7:** Which method is used to add a new element to the end of an array in JavaScript?

a) push()

b) append()

c) add()

d) insert()

Answer: a) push()

**Question 8:** What does the "try...catch" statement in JavaScript allow you to do?

a) It allows you to create a loop.

b) It allows you to execute code only if a condition is met.

c) It allows you to handle errors gracefully by catching and handling exceptions.

d) It allows you to define custom functions.

Answer: c) It allows you to handle errors gracefully by catching and handling exceptions.

**Question 9:** Which JavaScript function is used to schedule a function to run at a specified interval?

a) setTimeout()

b) setInterval()

c) setDelay()

d) runAfter()

Answer: b) setInterval()

**Question 10:** What is a callback function in JavaScript?

a) A function that calls other functions repeatedly

b) A function that takes another function as an argument and is executed after the first function completes

c) A function that generates random numbers

d) A function that performs mathematical calculations

Answer: b) A function that takes another function as an argument and is executed after the first function completes.

**JAVASCRIPT ADVANCED LEVEL**

**Question 1:** What is the difference between "null" and "undefined" in JavaScript?

a) They are equivalent and can be used interchangeably.

b) "null" represents an uninitialized variable, while "undefined" represents an intentional absence of any object value.

c) "null" represents an intentional absence of any object value, while "undefined" represents an uninitialized variable.

d) "null" is used for numbers, while "undefined" is used for strings.

Answer: c) "null" represents an intentional absence of any object value, while "undefined" represents an uninitialized variable.

**Question 2:** What is the concept of "hoisting" in JavaScript?

a) It refers to the process of moving a variable to the top of its scope during compilation.

b) It refers to the ability to declare variables without the "var" keyword.

c) It refers to the automatic conversion of data types in JavaScript.

d) It is not a concept in JavaScript.

Answer: a) It refers to the process of moving a variable to the top of its scope during compilation.

**Question 3:** What does the "bind()" method do in JavaScript?

a) It binds a function to an HTML element.

b) It creates a new function that, when called, has its "this" value set to a specific value.

c) It checks if a variable is bound to a specific value.

d) It prevents a function from executing.

Answer: b) It creates a new function that, when called, has its "this" value set to a specific value.

**Question 4:** What is the purpose of the "prototype" property in JavaScript?

a) It defines the default styles for HTML elements.

b) It allows you to add properties and methods to an object's constructor function.

c) It specifies the order in which scripts are executed on a web page.

d) It stores the URL of external resources.

Answer: b) It allows you to add properties and methods to an object's constructor function.

**Question 5:** Which of the following statements about closures in JavaScript is true?

a) Closures cannot access variables from their parent functions.

b) Closures can only be created within arrow functions.

c) Closures have access to variables from their parent functions even after the parent functions have completed execution.

d) Closures are a type of data structure in JavaScript.

Answer: c) Closures have access to variables from their parent functions even after the parent functions have completed execution.

**Question 6:** What is the purpose of the JavaScript "reduce()" method for arrays?

a) It reduces the length of an array.

b) It applies a function against an accumulator and each element in the array to reduce it to a single value.

c) It removes duplicate elements from an array.

d) It reverses the order of elements in an array.

Answer: b) It applies a function against an accumulator and each element in the array to reduce it to a single value.

**Question 7:** What does the "event.preventDefault()" method do in JavaScript?

a) It stops the propagation of an event to parent elements.

b) It cancels the default behavior of an event, such as submitting a form or following a link.

c) It triggers an event handler.

d) It prevents the execution of an event listener.

Answer: b) It cancels the default behavior of an event, such as submitting a form or following a link.

**Question 8:** In JavaScript, what is a "Promise" used for?

a) To create loops

b) To handle asynchronous operations and manage their results or errors

c) To define classes and objects

d) To create regular expressions

Answer: b) To handle asynchronous operations and manage their results or errors.

**Question 9:** What is the purpose of the JavaScript "Map" object?

a) It maps keys to values and can store any data type as keys and values.

b) It is used for navigation and geolocation.

c) It creates a mapping between HTML elements and JavaScript code.

d) It is used for timing and animation.

Answer: a) It maps keys to values and can store any data type as keys and values.

**Question 10:** Which JavaScript method is used to remove an item from an array by its index?

a) splice()

b) pop()

c) shift()

d) remove()

Answer: a) splice()

**Question 11:** What does the "async" keyword do when used in a JavaScript function declaration?

a) It declares a function as asynchronous and allows the use of "await" inside it.

b) It forces a function to execute synchronously.

c) It defines a function as a generator function.

d) It declares a function as a callback function.

Answer: a) It declares a function as asynchronous and allows the use of "await" inside it.

**Question 12:** What is the purpose of the JavaScript "Symbol" data type?

a) It represents a unique and immutable value that can be used as an object property.

b) It is used for performing mathematical calculations.

c) It defines the starting point of a loop.

d) It stores binary data.

Answer: a) It represents a unique and immutable value that can be used as an object property.

**Question 13:** What is the event delegation in JavaScript?

a) It refers to the process of handling events for a specific element.

b) It involves creating a delegation of events to multiple elements.

c) It allows you to assign a single event listener to a common ancestor of multiple elements to manage their events.

d) It is a technique for animation in JavaScript.

Answer: c) It allows you to assign a single event listener to a common ancestor of multiple elements to manage their events.

**Question 14:** What does the JavaScript "eval()" function do?

a) It evaluates an arithmetic expression.

b) It evaluates a regular expression.

c) It evaluates a string as JavaScript code.

d) It evaluates user input for security purposes.

Answer: c) It evaluates a string as JavaScript code.

**Question 15:** Which method is used to sort the elements of an array in JavaScript?

a) sort()

b) order()

c) arrange()

d) organize()

Answer: a) sort()