

Computational Thinking

1. JavaScript is ..

- a scripting language that is common used to create _____ effects within web browsers.
- loosely typed, that is, _____ to declare variable type

2. Data Types

Datatype	Description	Example
	an immutable string of characters	<code>var name = 'Sakura Dining';</code> <code>var description = "Fine dining Japanese cuisine.";</code>
	whole or decimal numbers	<code>var rating = 4.5;</code> <code>var postalCode = 560123;</code>
	represents logical values true or false	<code>var vegetarian = false;</code> <code>var family = true;</code>
	represents a value that has not been defined	<code>var discount;</code>

3. Comments

- _____ comments start with `//`
`var price = 99.90; // Declare price, give it the value of 99.90`
`var dPrice = price * 0.8; // Declare dPrice, give it the value of price * 0.8`
- _____ comments start with `/*` and end with `*/`
`/*`
`The code will assign the value of the original price to price`
`and a 20% discounted price to dPrice`
`*/`
`var price = 99.90;`
`var dPrice = price * 0.8;`

4. Functions

- _____ are known as functions in JavaScript
- **Example:**

```
var price = 100;
function printPrice() {
  console.log(price);
}
function getDiscountedPrice(rate) {
  console.log(price * (1-rate));
}
```

Output on Console:

```
100
80
```

5. Conditional Statements: If-Else If-Else

- **Purpose:** To perform different actions for different decisions.
 - Use **if** to specify a block of code to be executed, if a specified condition is true
 - Must be present
 - Use **else** to specify a block of code to be executed, if the same condition is false
 - Optional. If present, can only appear once and must be the last block.
 - Use **else if** to specify a new condition to test, if the first condition is false
 - Optional. If present, can appear multiple times after if block or else if block.

```
var currDate = new Date();           // Saves current date time into currDate
var greeting;

if (currDate.getHours() < 12) {      // If the current hour is less than 12
    greeting = "Good morning!";
}
else if (currDate.getHours() < 18) { // Else if the current hour is less than 18
    greeting = "Good afternoon!";
}
else if (currDate.getHours() == 18) { // Else If the current hour is 18
    greeting = "Good evening!";
}
else {                               // Else if the above conditions are all false
    greeting = "Good night!";
}

console.log(greeting);
```

6. USING JAVASCRIPT WITH HTML

Method	Example
In a <code><script></code> tag within the <code><head></code> tag	<pre><html> <head> <script> function myFunction { document.getElementById("demo").innerHTML = "Hello!"; } </script> </head> <body> ... </body> </html></pre>
Link to external .js file	<pre><html> <head> <script src="myScript.js"></script> </head> <body> ... </body> </html></pre>

7. DOM Access: By id

- **Access the element:** `document.getElementById('idName')`
- **Access the content in between the start and end tag:**
`document.getElementById('idName').innerHTML`
- **Example:**

```
var myComment = document.getElementById('comments');

myComment.innerHTML = "This is my cat!";           // Replace the
myComment.innerHTML = "This is my <b>cat</b>!";      content // Include HTML
```