

TLE/ICT 9

Third Quarter

Lesson 3



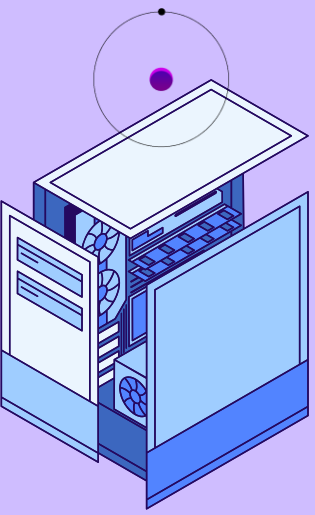
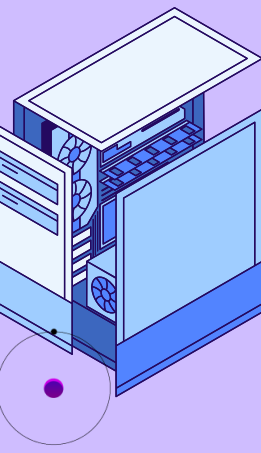
Group Task

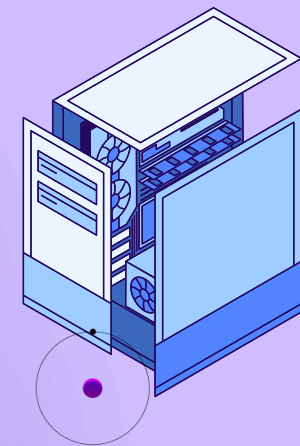
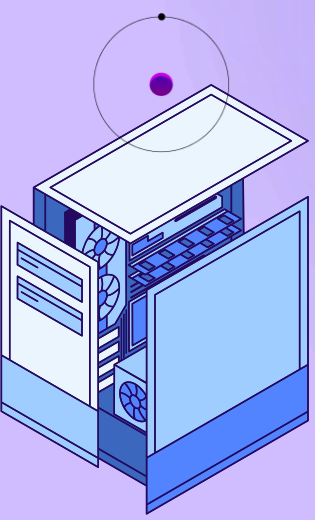
Faith

Fairness

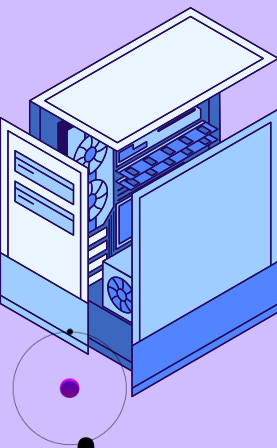
Family

Fidelity

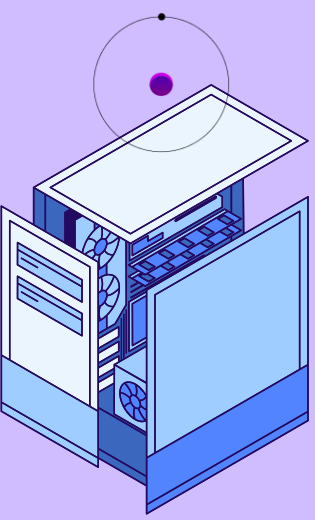




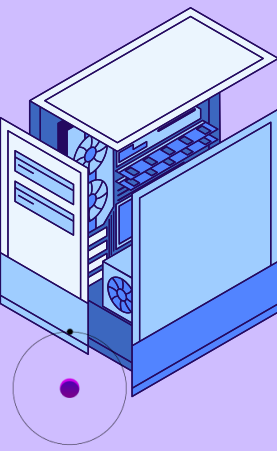
JavaScript Syntax Rules



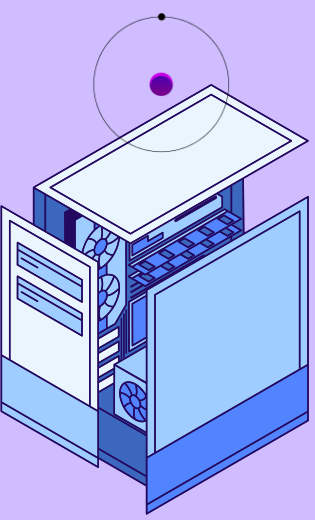
- When JavaScript was introduced, there was a need for an interface to allow the script to access elements on the page.
- During this infancy, each browser had their own specification on how to access page elements. This became a problem for programmers since there was not set standard to follow and there were inconsistencies between webpages depending on the internet browser they are using.



JavaScript Syntax Rules and Variables



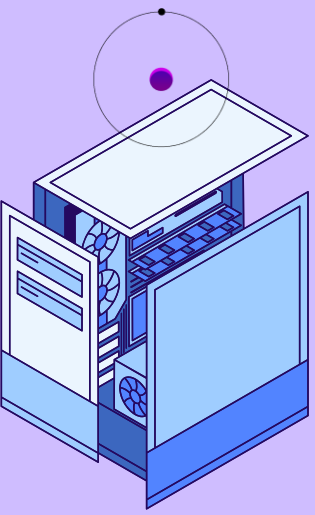
- The W3C (World Wide Web Consortium) was created so that there would be compatibility and agreement in the adoption of new standards.
- Document Object Model (DOM) is an interface that allows you to access and manipulate the contents of a document (in our lessons, a webpage) with programming language.



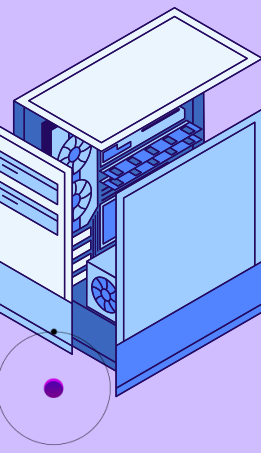
JavaScript Syntax Rules and Variables



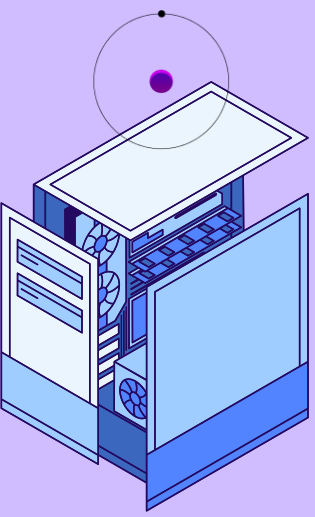
- DOM is a structured object-oriented representation of the individual elements of a page with methods, properties and events of those objects.
- With DOM, programmers can easily create dynamic content for webpages.
- DOM is not exclusive for JavaScript – other programming languages such as Java, C++ and C# also adhere to this standard.

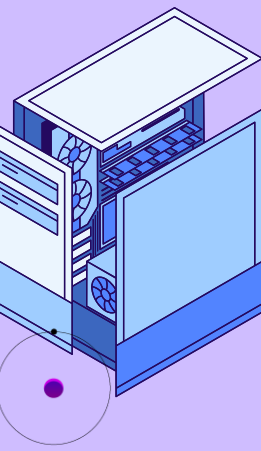


JavaScript Objects, Methods, Properties and Events

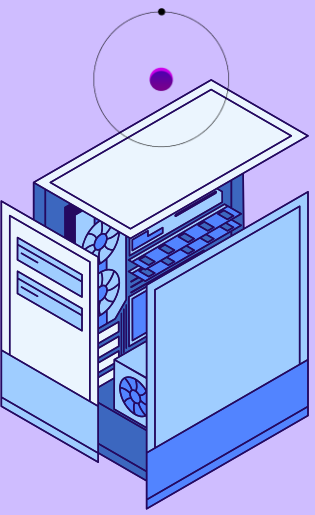


Let's begin our first JavaScript Program with the classic "Hello World" display. By now, you already know how to display "Hello World" using HTML. But did you know that JavaScript can be used to display it too? Let us check the code snippet:



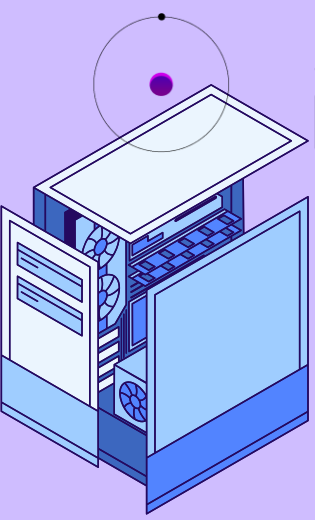
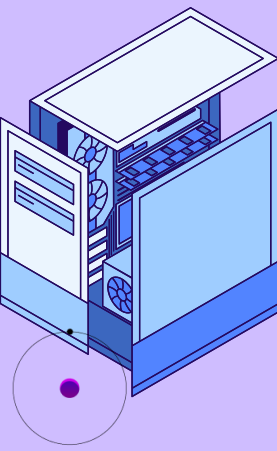


```
1  <html>
2  <head><title>My First JS</title>
3  <script type="text/Javascript">
4  document.write ("Hello World");
5  </script>
6  </head>
7  <body>
8  <br/>
9  This portion holds contents of the body tag.
10 </body>
11 </html>
```



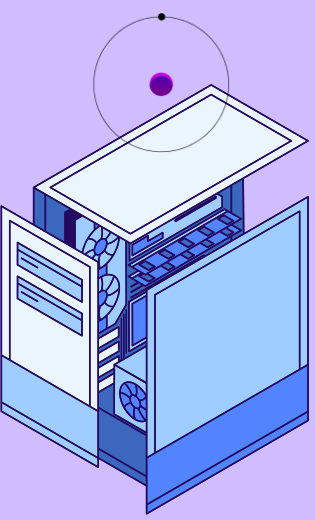
Let us study the structure of the code snippet:

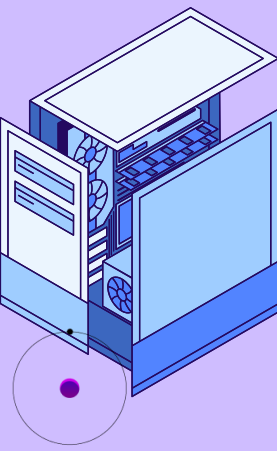
- Here we placed the JavaScript within the `<head>` tags of HTML. This means that JavaScript is executed even before the `<body>` tags.
- From lines 3-5 you will see the `<script>` tags that tell the browser that the lines of code within those tags are scripts. After closing the `<script>` tag, the browser will proceed with parsing normal HTML until it encounters another non-HTML script or instructions.



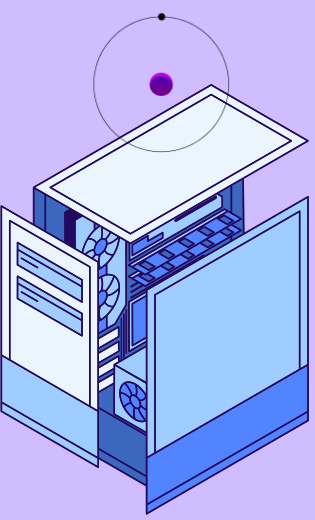


Parsing - a technique used to analyze and interpret the syntax of a text or program to extract relevant information. Essentially, parsing involves breaking down a complex set of data structures or code into smaller, more manageable components that can be analyzed and understood.



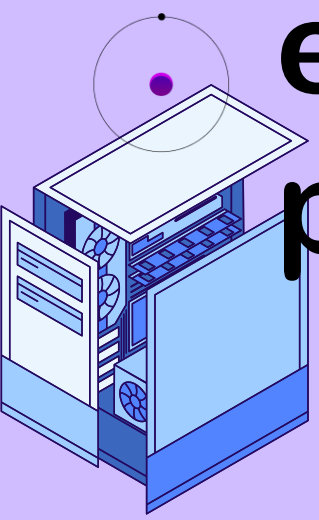
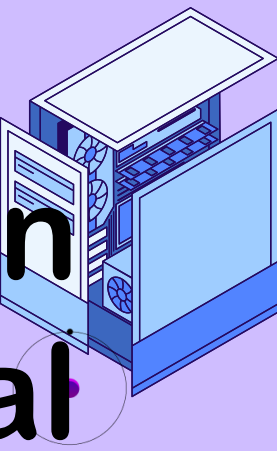


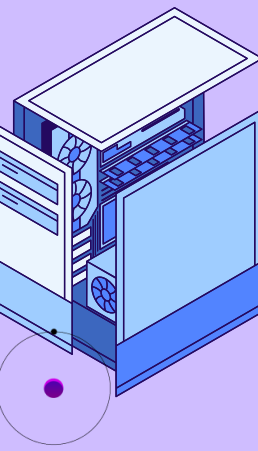
- Line 4 holds the actual JavaScript code. The “document” object refers to the <body> tags of HTML while “write” is a method of the document object. This means that you want JavaScript to write the contents between the parenthesis and quotes to the HTML document.



JavaScript does not always have to be placed within the head tags of an HTML file. Below are additional ways you can place your JavaScript code:

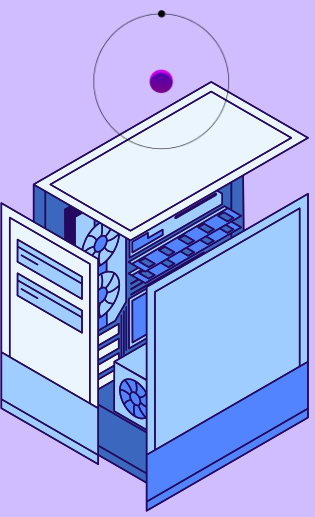
- JavaScript can be placed within HTML elements. These scripts are normally placed together with event triggers. Discussion will be done next time.
- You can also create an external file with a *.js extension to contain JavaScript code that you can reuse throughout various HTML pages. With an external file, you can embed it on any HTML file by placing this code on your HTML.

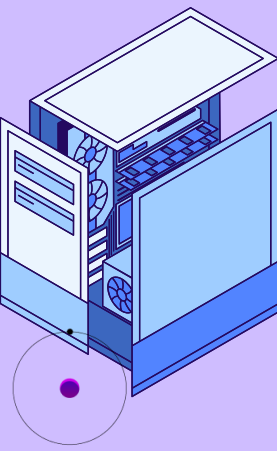




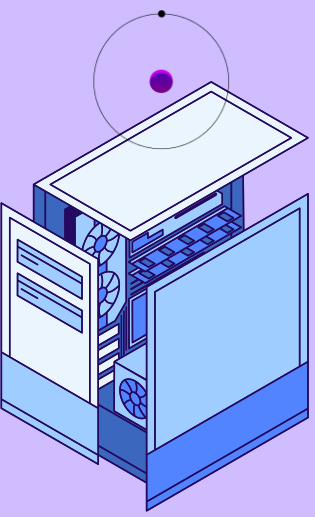
Syntax:

```
<script style="text/javascript" src="script.js"></script>
```



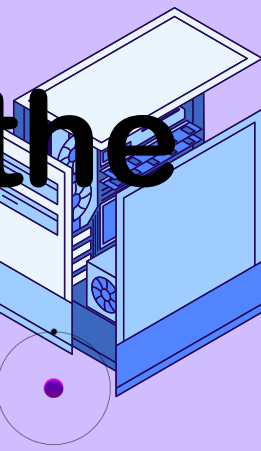


Since JavaScript is an OOP language, not only does it have objects and methods but objects also have properties. The table shown have some of the common methods and properties for the document object.

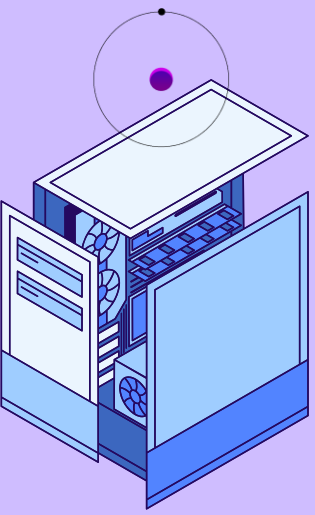


Document Object Properties		Document Object Methods	
bgColor	Background Color	write()	Writes a string of text to the document.
fgColor	Foreground / font color	writeln()	Writes a string of text followed by a new line character to a document.
Image	Set an image	getElementById()	Returns a reference to the element whose ID is specified.
Location	Get or set the URL path	getElementsByName()	Writes a string of text followed by a newline character to a document.

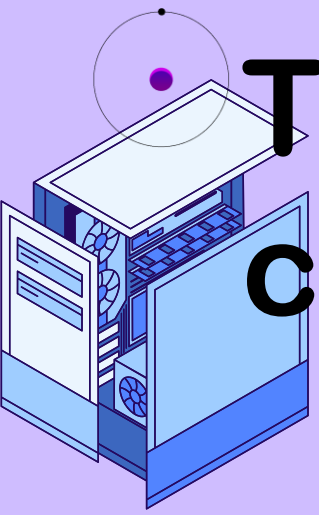
Example on how Document Object Properties with the code below:



```
1  <html>
2  <head><title>DOM</title>
3  </head>
4  <body>
5  <Input Type=Button Value="Red"
   Onclick="document.bgColor='#FF0000'">
6  <Input Type=Button Value="Blue"
   Onclick="document.bgColor='#0000FF'">
7  <Input Type=Button Value="Yellow"
   Onclick="document.bgColor='#FFFF00'">
8  </body>
9  </html>
```

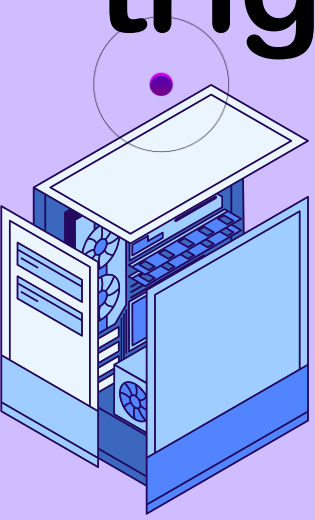
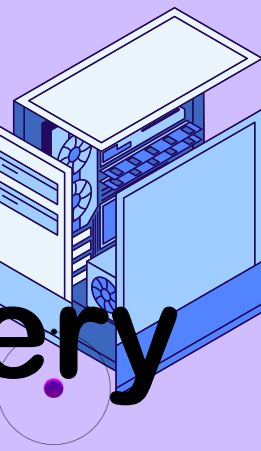


- In the code, we used 3 buttons to change the background color of the page whenever it is clicked. you can see this on lines 5-7. Take note of the Onclick event which is the trigger for our JavaScript. Also notice that we were able to put JavaScript together with HTML between two double quotes.
- One quirk for many programming languages is the use of the quotes. Since our script is nested within two double quotes, we can no longer use double quotes within the script, but instead we use single quotes. That is the reason why the hexadecimal values of the colors are within single quotes and not double quotes.



Events act as triggers to run scripts within HTML. Every element on the website has events that trigger JavaScript.

The ability of JavaScript to integrate object properties and methods with website events enables it to create rich dynamic websites which will be discussed later together with a few object properties, functions and triggers.

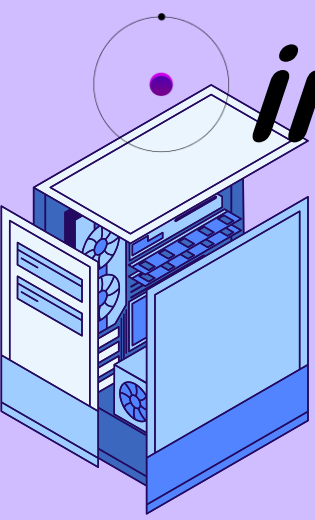


Syntax Guides

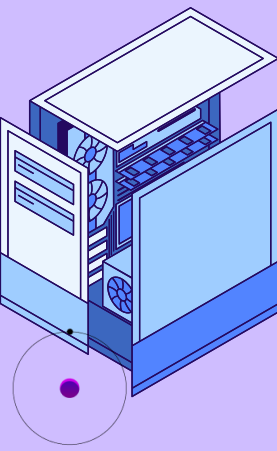


Rules in JavaScript syntax:

- In order for the HTML document to identify JavaScript as the scripting language used, it is necessary to include *language="JavaScript"* in the opening `<SCRIPT>` tag.
- The syntax for manipulating an object by using a method or property as always *Object.Method()* or *Object.Property()*. The parenthesis () are called the *instance*.



Syntax Guides



- JavaScript is case-sensitive.

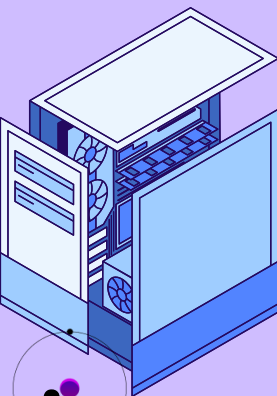
Ex. If you called the function `warning()` in the previous example using `wArning()`, you'll encounter an error since the entry is incorrect. Another example is the `bgColor` property. If you don't type it like this, you'll get an undefined result.

- JavaScript is processed from top to bottom.

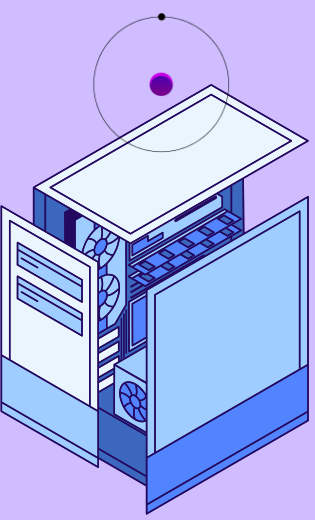
The first one on the page is processed first while the script at the end is processed last. We can pre-load the script by placing it within the `<head>` tags. Elements of this script can be executed before any other script embedded in the HTML.



Syntax Guides



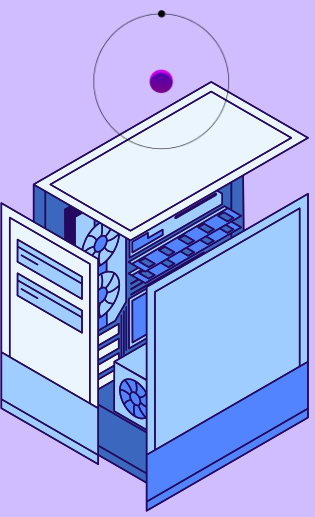
- Quotes are used to tell the browser what is to be displayed exactly as it is written in the script. Hence, don't place variables inside quotes; otherwise, the variable name will be displayed instead of the value assigned.
- Quotes may be single quote (') or double quote ("). Remember to use them consistently, especially when embedded within each other.



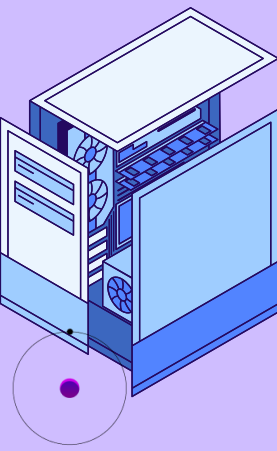
Syntax Guides



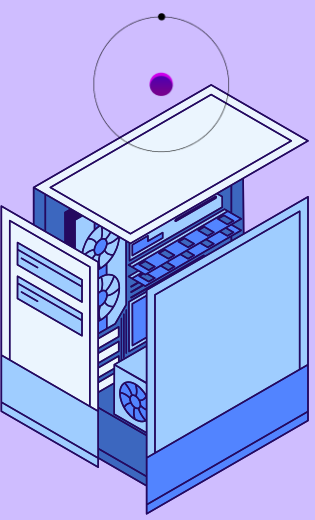
- You can add comments using “//” for a single line of comment or you may enclose your multiple-line comments between “/*” and “*/”.
- Use the symbol + to concatenate a string
Concatenate - a process of combining two or more strings into a single larger string.



Syntax Guides



- Statements may contain a semicolon at the end of them. However, this is not necessary in JavaScript unless there are multiple statements in one line. In this case, you must separate multiple statements in a single line by using a semicolon. But it is always good programming practice to use a semicolon to end a statement.



Summary of the Lesson

