

# **Understanding JavaScript**

EXSM 3928: Module 5

# Learning Outcomes

What is the purpose of this module?

- Describe the **purpose of JavaScript**
- Identify script tags and **embed them** into a webpage
- Recall five built in **JavaScript types** and their purpose
- Interpret JavaScript **comparison** and **logical operators**
- Interpret JavaScript **IF ELSE** conditional statements
- Examine **Javascript code** and predict the output
- Customize options from an existing **JavaScript library**

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## HTML — Structuring the web

# JavaScript basics

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JavaScript is a programming language that adds interactivity to your website. This happens in games, in the behavior of responses when buttons are pressed or with data entry on forms; with dynamic styling; with animation, etc. This article helps you get started with JavaScript and furthers your understanding of what is possible.

## What is JavaScript?

[JavaScript](#) is a powerful programming language that can add interactivity to a website. It was invented by Brendan Eich.

JavaScript is versatile and beginner-friendly. With more experience, you'll be able to create games, animated 2D and 3D graphics, comprehensive database-driven apps, and much more!

JavaScript itself is relatively compact, yet very flexible. Developers have written a variety of

## In this article

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# **Summary**

# JavaScript Types

- String (“hello world”)
- Number (0, -3.14, 1234567)
- Boolean (true or false)
- Array []
- Object {}

# JavaScript Operators

- Addition (“+”)
- Subtraction, Multiplication, Division (“-”, “\*”, “/”)
- Assignment (“=”)
- Strict equality (“==”)
- Not, Does-not-equal (“!”, “!=”)

# JavaScript Conditionals

```
let iceCream = "chocolate";
if (iceCream === "chocolate") {
  alert("Yay, I love chocolate ice cream!");
} else {
  alert("Awww, but chocolate is my favorite...");
}
```



# JavaScript Functions

```
function multiply(num1, num2) {  
  let result = num1 * num2;  
  return result;  
}
```



```
multiply(4, 7);  
multiply(20, 20);  
multiply(0.5, 3);
```



# Module 5 Demonstration

- <https://exsm-3928-module-5-start.glitch.me/>
- Theory
  - JavaScript types
  - JavaScript functions
  - JavaScript operators
  - JavaScript conditionals

# Module 5 Demonstration

- <https://exsm-3928-module-5-start.glitch.me/>
- Practice
  - Add functionality to project from last week
  - Add an animated website background with Vanta.js

# Module Discussion

**Why is JavaScript important? Can you make websites without JavaScript? Why is there so much JavaScript used today?**

**Module 5 Prompt**

# **Module Resources (extra)**

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# JavaScript Introduction

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This page contains some examples of what JavaScript can do.

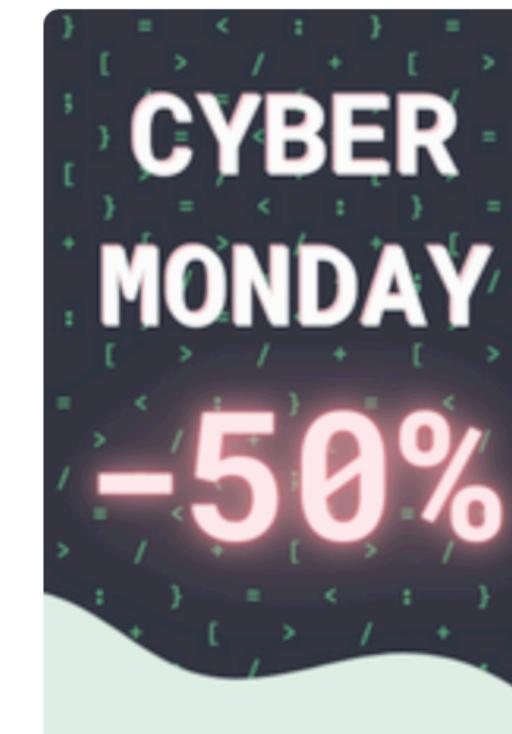
## JavaScript Can Change HTML Content

One of many JavaScript HTML methods is `getElementById()`.

The example below "finds" an HTML element (with id="demo"), and changes the element content (innerHTML) to "Hello JavaScript":

### Example

```
document.getElementById("demo").innerHTML = "Hello JavaScript";
```

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# JavaScript and HTML DOM Reference

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## Complete JavaScript and HTML DOM Reference

Revised January 2022

## JavaScript Reference

Properties and Methods of all JavaScript Objects, with Examples:

<a href="#">Array</a>	<a href="#">String</a>	<a href="#">Number</a>	<a href="#">Math</a>
<a href="#">Date</a>	<a href="#">Global</a>	<a href="#">RegExp</a>	<a href="#">Object</a>



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# Element.classList

The `Element.classList` is a read-only property that returns a live `DOMTokenList` collection of the `class` attributes of the element. This can then be used to manipulate the class list.

Using `classList` is a convenient alternative to accessing an element's list of classes as a space-delimited string via `element.className`.

## Value

A `DOMTokenList` representing the contents of the element's `class` attribute. If the `class` attribute is not set or empty, it returns an empty `DOMTokenList`, i.e. a `DOMTokenList` with the `length` property equal to `0`.

Although the `classList` property itself is read-only, you can modify its associated `DOMTokenList` using the `add()`, `remove()`, `replace()`, and `toggle()` methods.

## Examples

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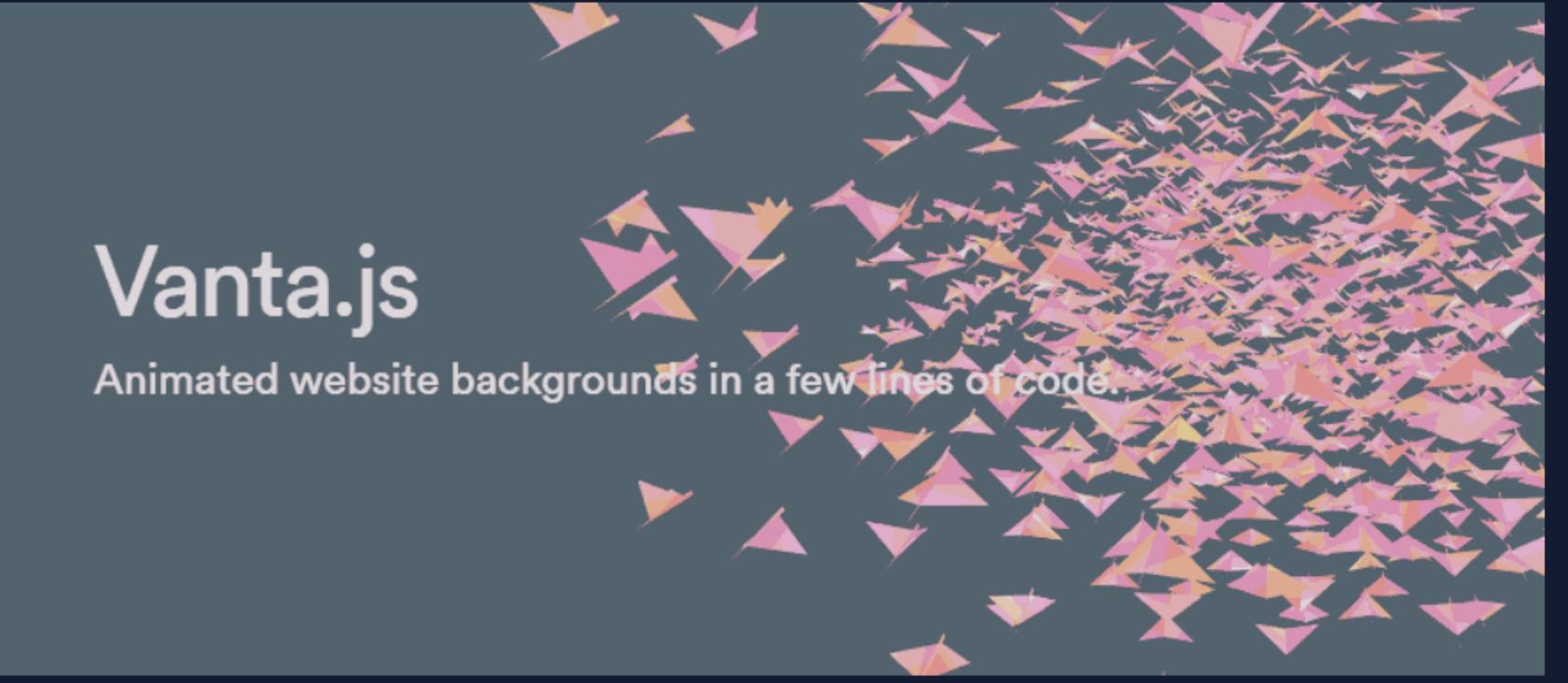
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# **Module 5 Assignment**

- See eClass for details

