

Data Type And Operators

Web Technologies



Lecture by
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```
<!doctype html>
<html>
  <head>
    <title>
      Web Technologies
    </title>
    <style>
      p {
        color: blue;
      }
    </style>
    <script>
      console.log("client-side");
    </script>
  </head>
  <body>
    <p>
      Welcome!
    </p>
  </body>
</html>
```


What we will cover

- Data types
- Operators
- Functions

Data Types

- **Number: 15, -21, 3.14**
 - `let x = 5;`
- **String: “JavaScript”, “hello_world”, “myId\$”**
 - `let y = “javaScript”;`
- **Boolean: true/false**
 - `let z = true;`
- **Null**
- **Undefined**
- **Symbol**
- **Bigint**

Arithmetic Operators

- Addition +
- Subtraction −
- Multiplication *
- Division /
- Modulus %
- Increment ++
- Decrement - -

Compound Assignment Operators

+= **Addition assignment**

```
let subtotal = 74;
```

```
subtotal += 20;              // subtotal = 94;
```

-= **Subtraction assignment**

```
let counter = 10;
```

```
counter -= 1;              // counter = 9
```

***=** **Multiplication assignment**

```
let price = 100;
```

```
price *= 0.8;              // price = 80
```

The Concatenation Operators for Strings

+ Concatenates two values.

+= Concatenates the result of the expression to the end of the variable.

```
const firstName = "Grace ";
```

```
const lastName = "Hopper";
```

```
const name = firstName + lastName;    //result is Grace Hopper
```

```
const name += " Senior";              //result is Grace Hopper Senior
```

Template Literal - String

- **Syntax**

``$ {....}``

```
const firstName = " Grace "  
const lastName = "Hopper";
```

```
const name = `${lastName}, ${firstName}`;
```

The name "Hopper, Grace" will display on the page

Escape Sequence

- `\n`
- `\'` `alert("This isn't the time to talk about this.");`
- `\"`
- `\\` `alert("The file is in the javascript\\strings directory.");`

This page says

This isn't the time to talk about this.

OK

This page says

The file is in the javascript\\strings directory.

OK

Unicode Characters

- \u00A9 ©
- \u00AE ®
- \u263A 😊
- \u2665 ♥

This page says

I ♥ Murach® Publishing! 😊

(© 2020)

OK

```
alert ("I \u2665 Murach\u00AE Publishing! \u263A \n(\u00A9 2020)");
```

Conditional Expression

- Equal to ==
- Not equal to !=
- Greater than >
- Less than <
- Greater than or equal to >=
- Less than or equal to <=

isNaN()

- Syntax

isNaN(expression)

- Examples

isNaN("123") // Returns false

isNaN("abc") // Returns true

The Logical Operators

&& **AND expression**

|| **OR expression**

! **NOT expression**

Functions

```
function addNumbers (num1, num2) {  
    let sum = num1 + num2;  
    return sum;  
}  
  
let result = addNumbers (5, 10);  
document.write ("The result value is " + result);
```

Splitting a Statement

Split a statement after:

- +, -, *, /, =, ==, >, or <
- { opening curly bracket
- [opening square bracket
- (round opening parenthesis
- } closing curly bracket

Do not split a statement after:

- an identifier, a value, or the return keyword
-] closing square bracket
-) round closing parenthesis

Try It Yourself

In this activity, you can practice creating a new function.

1. Create a function using the script provided in slide 14.
2. You can either create the function inside the `<script>` element of your HTML file or create an external JavaScript file and link it to your HTML page.