Frontend Programming

Javascript

- DAY 2-

MARTHA SUTOPO

Introduction to JavaScript

JavaScript

- JavaScript is a **lightweight**, **interpreted** programming language

- **Network-centric applications**

- Complementary to and integrated with **HTML**

- Complementary to and integrated with **Java**

- **Open and cross-platform**

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Advantages of JavaScript

- Less server interaction
- Immediate feedback to the visitors
- Increased interactivity
- Richer interfaces

Limitations of JavaScript

- Does not allow the **reading** or **writing** of files

- Cannot be used for **networking applications**

- Doesn't have any **multi-threading** or **multiprocessor** capabilities

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Basic Syntax

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JavaScript – Basic Syntax

- Can be implemented using JavaScript statements that are placed within the **<script>... </script>** HTML tags

```
<script ...>
    JavaScript code
</script>
```

JavaScript – Basic Syntax

- Two important attributes:
  - **Language**
  - **Type**

```
<script language = "javascript" type = "text/javascript">
   JavaScript code
</script>
```

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JavaScript – Basic Syntax

```html
<!DOCTYPE html>
<html>
  <head>
  </head>

  <body>
    <script language = "javascript" type = "text/javascript">
      document.write("Hello World!")
    </script>
  </body>
</html>
```

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JavaScript - Comments

- Javascript is a **case-sensitive language**

- There are some kind of comments:
  - //
  - /* */
  - <!—
  - //-->

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JavaScript - Comments

```html
<!DOCTYPE html>
<html>
  <head>
  </head>

  <body>
    <script language = "javascript" type = "text/javascript">
      <!--
          // This is a comment. It is similar to comments in C++


          /*
          * This is a multi-line comment in JavaScript
          * It is very similar to comments in C Programming
          */
      //-->
    </script>
  </body>
</html>
```

Operators

JavaScript – Arithmetic Operators

Operator	Description
+	Addition
-	Subtraction
*	Multiplication
**	Exponentiation (ES2016)
/	Division
%	Modulus (Division Remainder)
++	Increment
--	Decrement

JavaScript – Assignment Operators

Operator	Example	Same As
=	x = y	x = y
+=	x += y	x = x + y
-=	x -= y	x = x - y
*=	x *= y	x = x * y
/=	x /= y	x = x / y
%=	x %= y	x = x % y
**=	x **= y	x = x ** y

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JavaScript – Comparison Operators

Operator	Description
==	equal to
===	equal value and equal type
!=	not equal
!==	not equal value or not equal type
>	greater than
<	less than
>=	greater than or equal to
<=	less than or equal to
?	ternary operator

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JavaScript – Logical Operators

Operator	Description
&&	logical and
||	logical or
!	logical not

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JavaScript – Type Operators

Operator	Description
typeof	Returns the type of a variable
instanceof	Returns true if an object is an instance of an object type

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JavaScript – Bitwise Operators

Operator	Description	Example	Same as	Result	Decimal
&	AND	5 & 1	0101 & 0001	0001	1
|	OR	5 | 1	0101 | 0001	0101	5
~	NOT	~ 5	~0101	1010	10
^	XOR	5 ^ 1	0101 ^ 0001	0100	4
<<	Zero fill left shift	5 << 1	0101 << 1	1010	10
>>	Signed right shift	5 >> 1	0101 >> 1	0010	2
>>>	Zero fill right shift	5 >>> 1	0101 >>> 1	0010	2

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Data Type

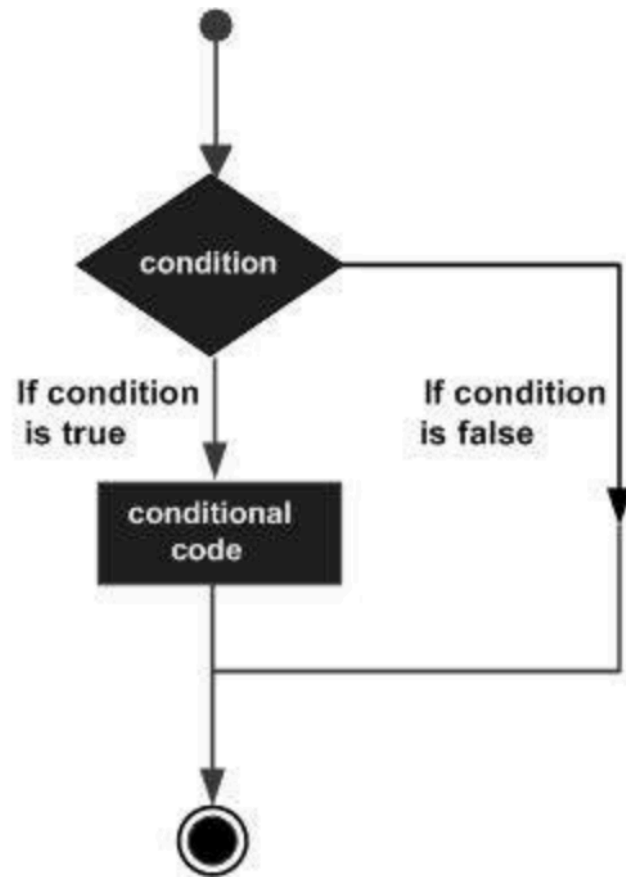# JavaScript – Data Type

- JavaScript variables can hold many **data types**: numbers, strings, objects and more

```
var length = 16;                              // Number
var lastName = "Johnson";                     // String
var x = {firstName:"John", lastName:"Doe"};   // Object
var y = true;                                 // Boolean
```

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If Else Statement

JavaScript – If Else Statement


```
if (expression) {
    Statement(s) to be executed if expression is true
}
```

```
if (expression) {
    Statement(s) to be executed if expression is true
} else {
    Statement(s) to be executed if expression is false
}
```

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JavaScript – If Else Statement

```html
<!DOCTYPE html>
<html>
  <body>
    <script type = "text/javascript">
        var age = 20;

        if( age > 18 ) {
           document.write("<b>Qualifies for driving</b>");
        }
    </script>
    <p>Set the variable to different value and then try...</p>
  </body>
</html>
```
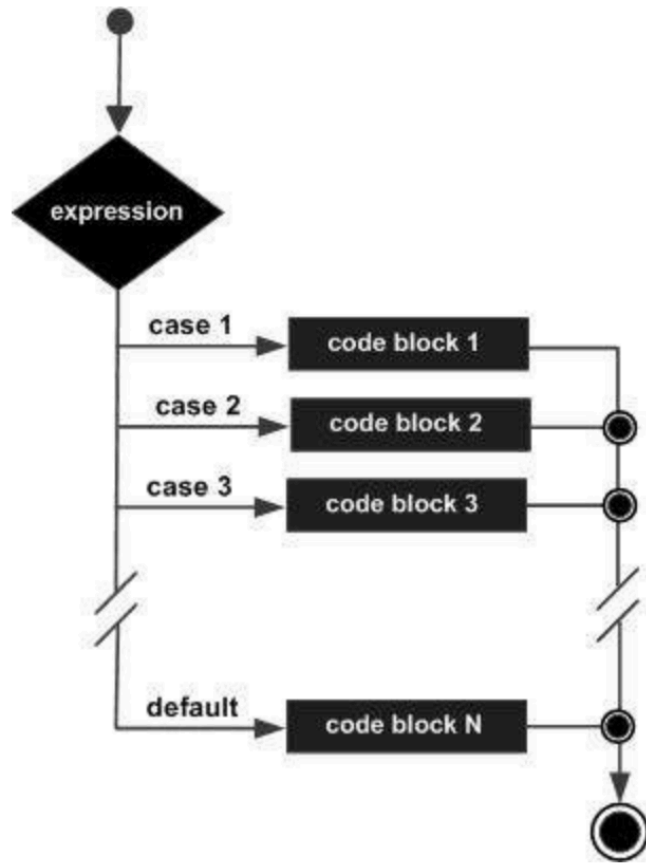
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Let's try !

- If time is less than 10:00, create a "Good morning" greeting, if not, but time is less than 20:00, create a "Good day" greeting, otherwise a "Good evening":

Switch Case

JavaScript - Switch Case


```
switch (expression) {
    case condition 1: statement(s)
    break;

    case condition 2: statement(s)
    break;
    ...

    case condition n: statement(s)
    break;

    default: statement(s)
}
```

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JavaScript – Switch Case

```html
<!DOCTYPE html>
<html>
  <body>
    <script type = "text/javascript">
      <!--
        var grade = 'A';
        document.write("Entering switch block<br />");
        switch (grade) {
          case 'A': document.write("Good job<br />");
          break;

          case 'B': document.write("Pretty good<br />");
          break;

          case 'C': document.write("Passed<br />");
          break;

          case 'D': document.write("Not so good<br />");
          break;

          case 'F': document.write("Failed<br />");
          break;

          default:  document.write("Unknown grade<br />")
        }
        document.write("Exiting switch block");
      //-->
    </script>
    <p>Set the variable to different value and then try...</p>
  </body>
</html>
```

Let's try !

- The getDay() method returns the weekday as a number between 0 and 6.

- (Sunday=0, Monday=1, Tuesday=2 ..)

Summary

- Basic Syntax
- Operators
- Data Type
- If Else Statement
- Switch Case

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