Introduction to JavaScript

Department of Information system, KICT, IIUM
Dr. Najhan M.Ibrahim

- JavaScript is the world's most popular programming language.

- JavaScript is the programming language of the Web and mobile.

- JavaScript is easy to learn (Similar to C++).

```
<h2>My First JavaScript</h2>

<button type="button"
onclick="document.getElementById('demo').inne
rHTML = Date()">
Click me to display Date and Time.
</button>

<p id="demo"></p>
```

- JavaScript is one of the **3 languages** all web developers **must** learn:

- 1. **HTML** to define the content of web pages
- 2. **CSS** to specify the layout of web pages
- 3. **JavaScript** to program the behaviour of web pages

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

```
<h2>What Can JavaScript Do?</h2>

<p id="demo">JavaScript can change HTML content.</p>

<button type="button”
 onclick='document.getElementById("demo").innerHTML =
"Hello
 JavaScript!"'>Click Me!</button>
```

Example: change paragraph

JavaScript Can Change HTML Attribute Values

- In this example JavaScript changes the value of the src (source) attribute of an <img> tag:

- Example:

```
<h2>What Can JavaScript Do?</h2>
<p>JavaScript can change HTML attribute values.</p>
<p>In this case JavaScript changes the value of the src (source) attribute of an image.</p>

<button onclick="document.getElementById('myImage').src='pic_bulbon.gif'">Turn on the light</button>

<img id="myImage" src="pic_bulboff.gif" style="width:100px">

<button onclick="document.getElementById('myImage').src='pic_bulboff.gif'">Turn off the light</button>
```

The <script> Tag

- In HTML, JavaScript code is inserted between <script> and </script> tags.

- Example:

```
<script>
document.getElementById("demo").innerHTML =
 "My First JavaScript";
</script>
```

Example. Light.html

- A JavaScript function is a block of JavaScript code, that can be executed when you "called" for.

- For example, a function can be called when an **event** occurs, like when the user clicks a button.

JavaScript in <head>

```
<!DOCTYPE html>
<html>

<head>
<script>
function myFunction() {
  document.getElementById("demo").innerHTML = "Paragraph changed.";
}
</script>
</head>

<body><h2>Demo JavaScript in Head</h2>

<p id="demo">A Paragraph</p>
<button type="button" onclick="myFunction()">Try it</button>
</body>
</html>
```

- You can place any number of scripts in an HTML document.

- Scripts can be placed in the <body>, or in the <head> section of an HTML page, or in both.

JavaScript in <body>

```
<!DOCTYPE html>
<html>
<body>

<h2>Demo JavaScript in Body</h2>

<p id="demo">A Paragraph</p>

<button type="button" onclick="myFunction()">Try it</button>

<script>
function myFunction() {
  document.getElementById("demo").innerHTML = "Paragraph changed.";
}
</script>

</body>
</html>
```

- External file: myScript.js

```
function myFunction() {
  document.getElementById("demo").innerHT
ML = "Paragraph changed.";
}
```

HTML file;

```
<!DOCTYPE html>
<html>
<body>

<h2>Demo External JavaScript</h2>

<p id="demo">A Paragraph.</p>

<button type="button" onclick="myFunction()">Try it</button>
<script src="myScript.js"></script>

</body>
</html>
```

```
<!DOCTYPE html>
<html>
<body>

<h1>My First Web Page</h1>
<p>My first paragraph.</p>

<script>
document.write (5 + 6);
</script>

</body>
</html>
```

- JavaScript syntax is the set of rules, how JavaScript programs are constructed:

- // How to create variables:

```
var x; (var keyword)
let y;  (let keyword)
```

```
// How to use variables:
x = 5;
y = 6;
let z = x + y;
```

When to Use JavaScript var?

- Always declare JavaScript variables with var, let, or const.
- The var keyword is used in all JavaScript code from 1995 to 2015.
- The let and const keywords were added to JavaScript in 2015.
- If you want your code to run in older browser, you must use var.

1. **Numbers** are written with or without decimals:

- 10.50
- 1001

2. **Strings** are text, written within double or single quotes:

- "John Doe”
- 'John Doe'

- In this example, x is defined as a variable. Then, x is assigned (given) the value 6:

- let x;

- X = 6;

- Has true/false value.
- var iAmAlive = true;
- var amILate = false;
- var test = 6 > 3;

- A single object that stores multiple values.
- The first element is at index zero.

- var names = [‘Chris’, ‘John’,’Adam’];
- var numbers = [1,2,3,4];

- names[0]; //access array
- numbers[3]; //access array

- JavaScript uses **arithmetic operators** (+ - * /) to **compute** values:

```
(5 + 6) * 10
```

- JavaScript uses an **assignment operator** (=) to **assign** values to variables:

```
let x, y;

x = 5;
y = 6;
```

- An expression is a combination of values, variables, and operators, which computes to a value.
- For example, 5 * 10 evaluates to 50:
- Expressions can also contain variable values: x * 10
- The values can be of various types, such as numbers and strings.
- For example, "John" + " " + "Doe", evaluates to "John Doe":

- Not all JavaScript statements are "executed".

- Code after double slashes // or between /* and */ is treated as a **comment**.

- Single line use?
- Multiple line use?

- All JavaScript identifiers are **case sensitive**.

- The variables lastName and lastname, are two different variables:


Thank You
Asante
Merci
Arigato
Matondo
Spasibo
Salamat
Multumesc
Merci
Thank You