Web Engineering & Development (SWE 363)

4.1 JavaScript Fundamentals

Hasan Al-kaf

In today's lecture:

- JS Variables

- JS Functions

- JS Objects

- JS Arrays

- JS DOM

- JS Events

Reference:

- Zybook: 4.1 to 4.7

Announcements 📣

- Project Assignment #1 is due This Thursday at 11:59 PM

Examples:

📘 JavaScript Basics – Simple Examples

```html
<!-- 1. Variables -->

let name = "Ali";         // string
let age = 20;             // number
let isStudent = true;     // boolean
console.log(name, age, isStudent);
```

```html
<!-- 2. Functions -------------------------------------->

function greet(name) {
  return "Hello, " + name + "!";
}
console.log(greet("Ali"));
```

```html
<!-- 3. Objects ------------------------------------->
let student = {
  name: "Ali",
  age: 20,
  isStudent: true
};
console.log(student.name); // outputs "Ali"
```

```html
<!-- 4. Arrays ------------------------------------->
let fruits = ["Apple", "Banana", "Mango"];
console.log(fruits[0]);      // "Apple"
console.log(fruits.length); // 3
```

```html
<!-- 5. DOM ----------------------------------->
<!DOCTYPE html>
<html>
<body>
<p id="demo">Hello</p>
<script>
document.getElementById("demo").innerHTML = "Hello, JavaScript!";
</script>
</body>
</html>
```

```html
<!-- 6. Events ---------------------------------->
<!DOCTYPE html>
<html>
<body>
<button onclick="showMessage()">Click Me</button>
<p id="output"></p>
<script>
function showMessage() {
  document.getElementById("output").innerHTML = "Button was clicked!";}
</script>
```

functions in JavaScript:

```javascript
function Greeting(){
    console.log("Helllo");
    alert("Alert me")
}
Greeting();
```

```javascript
const greet=function(){
    alert("Alert me")
}
greet();
```

```javascript
 const greet=()=>{
    alert("Alert me");
}
greet();
```

```javascript
document.getElementById("btn").onclick = function() {
    alert("Alert me");
};
```

```javascript
class Car {
  start() {
    alert("Alert me");
  }
}
const myCar = new Car();
myCar.start(); // Trigger method
```

```javascript
function sayHi() {
      alert("Alert me");  }
```

```javascript
(function(){
      alert("Alert me");
})();
```

```javascript
function Person(name) {
  this.name = name;
  this.sayHello = function() {
      alert("Alert me");
  };
}

const p1 = new Person("Hasan");
p1.sayHello(); // Triggered on object
```

```javascript
 document.getElementById("btn").addEventListener("click",()=>{
      alert("Alert me");

});
```

Let and Var keywords

Using var

```
var x = 17;

function numbers() {
    console.log(x);          → 17
    if (x > 0) {
        var y = x / 2;
        console.log(y);      → 8.5
    }
    if (x < 100) {
        var z = x * 2;
        console.log(z);      → 34
    }

    console.log(y);          → 8.5
    console.log(z);          → 34
}

numbers();
console.log(x);              → 17

console.log(y);              → ReferenceError
console.log(z);
```

Using let

```
let x = 17;

function numbers() {
    console.log(x);          → 17
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        let y = x / 2;
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numbers();
console.log(x);              → 17

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console.log(z);
```

45m

Demo

Starter code at: web-engineering-kfupm-classroom-4-1-js-fundamentals/

Next Class

- Js Part 2