
Pre-Lab Exercises – Experiment 4

Introduction to JavaScript & Basic Interactivity

Part A: JavaScript Basics

Exercise 1: Introduction to JavaScript

What is JavaScript?

JavaScript is a high-level, interpreted programming language used to make web pages interactive. It allows developers to create dynamic content such as pop-ups, form validation, animations, and real-time updates.

Why is JavaScript called a client-side scripting language?

JavaScript is called a client-side scripting language because it runs directly in the user's web browser (client) rather than on the server. This makes web pages faster and more responsive.

One real-life example of JavaScript usage in websites:

Displaying an alert message when a user submits a form without filling all required fields.

Exercise 2: JavaScript Output Methods

Method	Purpose	Example Use Case
alert()	Displays a pop-up message to the user	Showing a welcome message
console.log()	Displays output in the browser console	Debugging code
document.write()	Writes content directly on the web page	Displaying simple text

Example Code:

```
<script>

  alert("Welcome to JavaScript!");

  console.log("This is a console message");

  document.write("Hello World");

</script>
```

Part B: Hands-On JavaScript Practice

Exercise 3: Writing Your First JavaScript Code

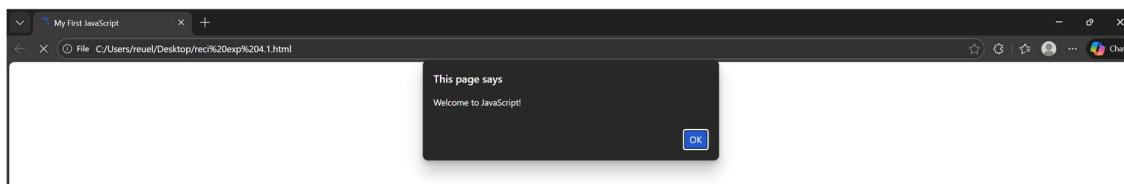
Code:

```
<!DOCTYPE html>
<html>
<head>
<title>My First JavaScript</title>
</head>
<body>

<script>
alert("Welcome to JavaScript!");
</script>

</body>
</html>
```

Output:

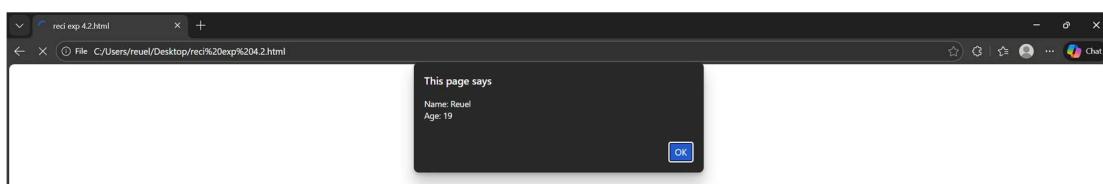


Exercise 4: Using Variables in JavaScript

Code:

```
<script>
let name = "Reuel";
let age = 19;
alert("Name: " + name + "\nAge: " + age);
</script>
```

Output:



Exercise 5: JavaScript with Button Click

Code:

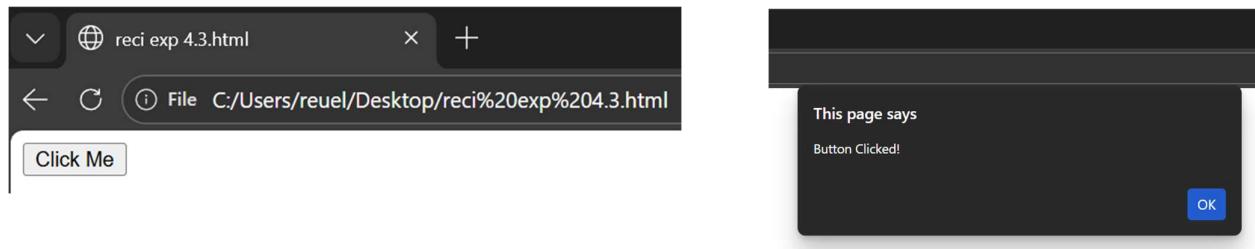
```
<!DOCTYPE html>
<html>
<body>

<button onclick="showMessage()">Click Me</button>

<script>
function showMessage() {
  alert("Button Clicked!");
}
</script>

</body>
</html>
```

Output:



Part C: Introduction to Events

Exercise 6: Understanding Events

What is an event in JavaScript?

An event is an action performed by the user or browser, such as clicking a button, loading a page, or pressing a key.

Three common JavaScript events:

- onclick
- onload
- onmouseover

Which event occurs when a button is clicked?

onclick

Exercise 7: Event Handling Using onclick

Code:

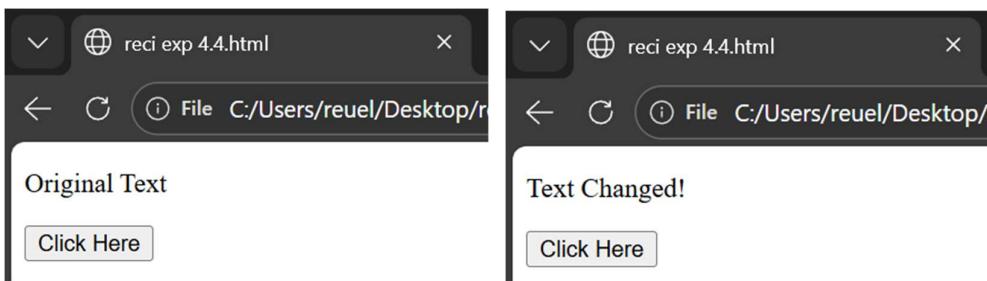
```
<!DOCTYPE html>
<html>
<body>

<p id="para">Original Text</p>
<button onclick="changeText()">Click Here</button>

<script>
function changeText() {
  document.getElementById("para").innerText = "Text Changed!";
}
</script>

</body>
</html>
```

Output:



Part D: Basic DOM Manipulation

Exercise 8: Accessing HTML Elements

Code:

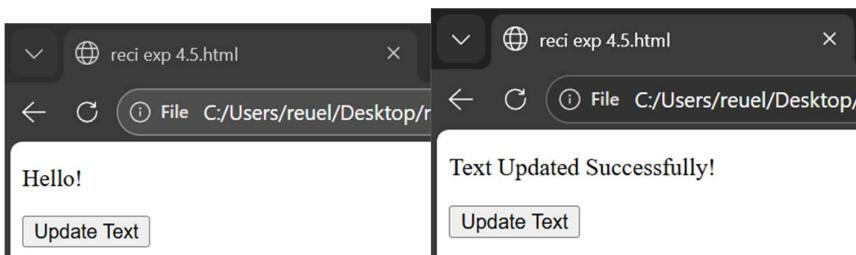
```
<!DOCTYPE html>
<html>
<body>

<p id="message">Hello!</p>
<button onclick="updateText()">Update Text</button>

<script>
function updateText() {
  document.getElementById("message").innerText = "Text Updated
Successfully!";
}
</script>

</body>
</html>
```

Output:



Exercise 9: Simple Logic Using JavaScript

Code:

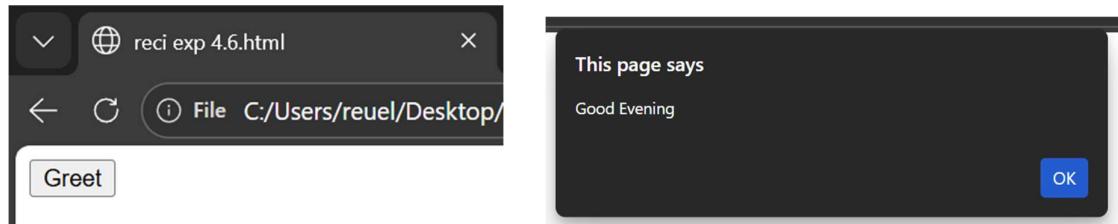
```
<!DOCTYPE html>
<html>
<body>

<button onclick="greet()">Greet</button>

<script>
function greet() {
  let hour = new Date().getHours();
  if (hour < 12) {
    alert("Good Morning");
  } else {
    alert("Good Evening");
  }
}
</script>

</body>
</html>
```

Output:



Part E: Practice Questions (Short Answer)

1. Difference between HTML and JavaScript?

HTML is used to structure web pages, while JavaScript is used to add interactivity and dynamic behavior.

2. What is an event?

An event is an action triggered by the user or browser, such as clicking or loading a page.

3. What is DOM?

DOM (Document Object Model) represents the structure of an HTML document as objects that JavaScript can access and modify.

4. Why is JavaScript important for interactivity?

JavaScript allows websites to respond to user actions, making pages dynamic and interactive.

5. What happens if JavaScript is disabled in the browser?

Interactive features like buttons, alerts, and form validation will not work.
