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LAB 5 SUMMARY
INTERACTIVITY WITH JAVASCRIPT

Part 1: Introduction to JavaScript and ES6

JavaScript

JavaScript is a programming language commonly used in web development. It allows you to add interactivity and dynamic content to your websites. JavaScript is the scripting language of HTML and can be used to control nearly any aspect of a web page.

ECMAScript 6 (ES6)

ES6, also known as ECMAScript 2015, is a significant update to JavaScript. It introduces new features that make JavaScript code more readable, more concise, and more powerful. Some of the key features of ES6 include:

- Arrow functions
- Template literals
- const and let keywords
- Default function parameters
- Classes

Part 2: Setting Up Your Environment

Text Editor and Browser

To get started with JavaScript, you will need a text editor and a web browser. A text editor is used to write your JavaScript code, and a web browser is used to run your code. Some popular text editors for JavaScript development include Visual Studio Code, Sublime Text, and Notepad++. Some popular web browsers for JavaScript development include Chrome, Firefox, and Safari.

Creating an HTML File

An HTML file is the basic building block of a web page. It defines the structure and content of your web page. To create an HTML file, simply open a text editor and save the file with the .html extension.

Linking JavaScript

To link JavaScript to your HTML file, you can use the <script> tag. The <script> tag has a src attribute, which specifies the URL of the JavaScript file that you want to link. For example, the following code will link a JavaScript file called script.js to an HTML file called index.html:

HTML

```
<script src="script.js"></script>
```

Part 3: Basic JavaScript Concepts

Writing Your First JavaScript

To write your first JavaScript code, you can use the console.log() function to display a message in the browser console. For example, the following code will display the message "Hello, World!" in the browser console:

JavaScript

```
console.log("Hello, World!");
```

Variables and Data Types

Variables are used to store data in JavaScript. JavaScript has several different data types, including numbers, strings, and booleans. To declare a variable, you can use the var keyword. For example, the following code declares a variable called message and assigns it the value "Hello, World!":

JavaScript

```
var message = "Hello, World!";
```

Part 4: ES6 Features

Constants with const

The **const** keyword is used to declare constants in ES6. Constants are variables that cannot be changed after they are declared. For example, the following code declares a constant called PI and assigns it the value 3.14159:

JavaScript

```
const PI = 3.14159;
```

Template Literals

Template literals are used to create dynamic strings in ES6. Template literals are enclosed in backticks (`). For example, the following code creates a string that contains the current date and time:

JavaScript

```
const currentDate = new Date();
const formattedDate = `Current date and time: ${currentDate}`;
```

Arrow Functions

Arrow functions are a concise way to write functions in ES6. Arrow functions are enclosed in curly braces ({}) and have an arrow (->) instead of the function keyword. For example, the following code defines an arrow function that squares a number:

JavaScript

```
const square = (number) => number * number;
```

Let vs. Var

The let keyword is used to declare variables in ES6. Let variables have block scope, which means that they are only accessible within the block in which they are declared. The var keyword is used to declare variables in older versions of JavaScript. Var variables have function scope, which means that they are accessible throughout the function in which they are declared.

Part 5: Basic Interactivity

Alert and Confirm Boxes

Alert boxes are used to display messages to the user. Confirm boxes are used to display messages to the user and ask for a confirmation. To create an alert box, you can use the alert() function. To create a confirm box, you can use the confirm() function.

JavaScript

```
alert("This is an alert box.");

const confirmation = confirm("Are you sure?");
if (confirmation) {
  console.log("User confirmed.");
} else {
  console.log("User canceled.");
```