

Training Day 15 Report

Date: 19 June 2024

Location: Science & Technology Entrepreneurs' Park

Project Title: *Introduction to JavaScript – Variables, Data Types, and Output*

On Day 15, I began my journey into JavaScript, which is one of the core technologies of web development along with HTML and CSS. While HTML is for structure and CSS for styling, JavaScript is used to make web pages dynamic and interactive. It felt a little scary at first since I had never coded in a scripting language before, but the session was very beginner-friendly and step-by-step.

Project Objectives

- Understand the purpose of JavaScript in web development.
 - Learn how to include JavaScript in a webpage.
 - Explore JavaScript variables using `var`, `let`, and `const`.
 - Understand different data types used in JavaScript.
 - Learn how to display output to users using various methods.
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Introduction to JavaScript

JavaScript (JS) is a client-side scripting language, which means it runs inside the browser. It can change HTML content, validate user input, control multimedia, create animations, and much more. We can include JS in our HTML documents using the `<script>` tag either in the `<head>` or at the bottom of the `<body>` section.

Variables in JavaScript

Variables are like boxes that store information so we can use or change it later. In JavaScript, there are three main ways to declare variables: `var`, `let`, and `const`.

- `var` is the older way, but it's not recommended in modern JS.
- `let` is used when we want to change the value later.
- `const` is used when the value shouldn't change after assigning it.

For example, to store a name, we might write something like:

Let the name be "Alice" – `let name = "Alice";`

What I found interesting is that variable names in JS are case-sensitive, so `age` and `Age` would be treated as different variables.

Data Types in JavaScript

There are different types of values we can store in variables. Today we studied the main data types:

- **Strings:** These are pieces of text, written inside quotes. Example: `"Hello world"`
- **Numbers:** Both whole numbers and decimals. Example: `25`, `3.14`
- **Booleans:** These are either `true` or `false`. They're useful for decision-making.
- **Undefined:** A variable that has been declared but not given a value yet.

- **Null**: A variable with an empty or unknown value (we set it on purpose).

We also briefly discussed objects and arrays, but we will learn more about them later.

Output in JavaScript

There are different ways to show output in JS. The most common methods we practiced today were:

1. **console.log()** - This shows output in the browser's developer console. It's useful for testing and debugging.
2. **alert()** - This pops up a small message box in the browser window.
3. **document.write()** - This writes directly to the webpage, but it's not used much in modern development.

For example, if I wanted to greet someone, I could store their name in a variable and then show a message using `alert()` like:

"Hello, Alice!" (not actual code, just the idea).

Operators

We also learned about **arithmetic operators** like `+`, `-`, `*`, `/`, and `%`. These are used for doing math.

- `+` is also used for **string concatenation**, which means joining two texts together.

For example: `"Hello" + "World"` becomes `"HelloWorld"`.

This part was fun because it let me play around with numbers and texts in different ways.

Comments

In programming, comments are notes that are not run by the computer. They're just for humans to read. In JS, we write single-line comments using `//` and multi-line comments using `/* */`.

This is useful to explain what our code is doing or to temporarily disable lines when testing.

Summary

Overall, Day 15 gave me a strong foundation for understanding how JavaScript works. It was exciting to learn how we can store and manipulate different types of information. Although it's just the beginning, I now understand how to declare variables, work with different data types, and display outputs to users. Everything was taught clearly with real-life examples, and I was able to try them out in my own browser. I'm looking forward to learning how to make decisions in JavaScript using conditions tomorrow.

BY: Ekamjot Kaur

URN: 2302867

CRN: 2315264

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