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IF120203-Web Programming

03: JavaScript

PRU/SPMI/FR-BM-18/0222

Goals

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- To learn about JavaScript and its role in web development
- To understand how JavaScript is used to add interactivity and dynamic behavior to web pages
- To learn about JavaScript functions, variables, and control flow structures
- To apply JavaScript code to enhance the functionality of the currency converter web page from the previous session

Introduction to JavaScript

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- JavaScript is a high-level, interpreted scripting language primarily used for web development.
- It is often described as the ”language of the web” as it allows developers to create interactive and dynamic web pages.
- JavaScript enables client-side scripting, meaning it runs directly in the web browser and can interact with the HTML and CSS of a web page.
- With JavaScript, you can respond to user actions, manipulate the DOM (Document Object Model), and perform asynchronous operations, such as fetching data from servers.

Basic JavaScript Syntax

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```
// JavaScript comment
function functionName(parameter) {
    // function body
    return result;
}

// Example
function addNumbers(a, b) {
    return a + b;
}
```

JavaScript Variables

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- Variables are declared using the `var`, `let`, or `const` keyword.
- `var` was the traditional way to declare variables, but `let` and `const` are recommended in modern JavaScript.
- `let` allows reassigning the value of a variable, while `const` creates a read-only (constant) variable.
- Variables can store various data types, such as numbers, strings, arrays, objects, and more.

JavaScript Control Flow

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- `if` statement: Executes a block of code if a specified condition is true.
- `else` statement: Executes a block of code if the `if` condition is false.
- `else if` statement: Checks additional conditions after the initial `if` condition.
- `switch` statement: Evaluates an expression and executes different code blocks based on its value.
- `for` loop: Repeats a block of code for a specified number of times.
- `while` loop: Repeats a block of code as long as a specified condition is true.

Javascript converter.js

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- Create file converter.js
- Add <script src="assets/js/converter.js"></script> to converter.html
- Register an account in https://app.freecurrencyapi.com/
- Copy the url adding it to url variable in tutorial
- Function for Reverse Button (Next Pages)
- Function for Convert Button (Next Pages)

Javascript Reverse Button

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```
const reverseButton = document.getElementById("reverse");
reverseButton.addEventListener("click", function () {
  const fromSelect = document.getElementById("from");
  const toSelect = document.getElementById("to");
  const temp = fromSelect.value;
  fromSelect.value = toSelect.value;
  toSelect.value = temp;
});
```

Convert Button - Part 1

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```
const convertButton = document.getElementById("convert");
convertButton.addEventListener("click", async function () {
  const fromSelect = document.getElementById("from");
  const toSelect = document.getElementById("to");
  const url = "https://api.freecurrencyapi.com/v1/latest?
     apikey=
     fca_live_iq1WvbaON67X9adHTaJiqEszDhP6jtDz7IouUbWv&
     currencies=" + toSelect.value + "&base_currency=" +
     fromSelect.value;
  const options = {
    method: "GET",
  };
```

Convert Button - Part 2

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```
try {
    const response = await fetch(url, options);
    const result = await response.text();
    const amount = document.getElementById("amount").value;
    const rate = result.split(":")[2].split("}")[0];
    const converted = (amount * rate).toLocaleString(
        undefined, {
      minimumFractionDigits: 2,
      maximumFractionDigits: 2,
    });
```

Convert Button - Part 3

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```
let fromCurrencySymbol;
 if (fromSelect.value === "IDR") {
   fromCurrencySymbol = "Rp. ";
 } else if (fromSelect.value === "USD") {
   fromCurrencySymbol = "$ ";
 } else if (fromSelect.value === "EUR") {
   fromCurrencySymbol = €" ";
 } else if (fromSelect.value === "GBP") {
   fromCurrencySymbol = "£ ";
 }
```

Convert Button - Part 4

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```
let toCurrencySymbol;
 if (toSelect.value === "IDR") {
   toCurrencySymbol = "Rp. ";
 } else if (toSelect.value === "USD") {
   toCurrencySymbol = "$ ";
 } else if (toSelect.value === "EUR") {
   toCurrencySymbol = €" ";
 } else if (toSelect.value === "GBP") {
   toCurrencySymbol = "£ ";
 }
```

Convert Button - Part 5

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```
const fromResult = document.getElementById("from-result
    ");
const fromCurrency = document.getElementById("from-
    currency");
const toResult = document.getElementById("to-result");
fromResult.textContent = fromCurrencySymbol + amount;
fromCurrency.textContent = fromSelect.value;
toResult.textContent = toCurrencySymbol + converted;
document.getElementById("to-currency").textContent
= toSelect.value;
```

Convert Button - Part 6

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```
    const exchangeRateLabel = document.getElementById("
      exchange-rate");
    const formattedRate = parseFloat(rate).toFixed(2);
    const exchangeRateText = '1 ${fromSelect.value} = ${
      formattedRate} ${toSelect.value}';
    exchangeRateLabel.textContent = exchangeRateText;
  } catch (error) {
    console.error(error);
  }
});
```

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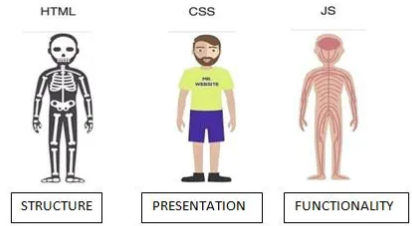
JavaScript adds interactivity to web pages, allowing users to interact with and modify the content dynamically. By using functions, variables, and control flow structures, you can create responsive web applications that adapt to user actions.



JS adds life to a web page!

Thank You