Lab Practice: JavaScript Basics

Note: The answers are written in Blue Color Text

Instructions

Part I: Problem Set

For each problem below, output the result of your solutions to the console using the function console.log. Use your criteria to determine when to use variables to represent the values in each problem, the type of declaration statements (*let* or *const*), and the use of template literals.

1. Write a multi-line comment with your name in one line and your student ID in another line.

   /* Ayushi Porwal

   Student ID: 403299270 */

Expressions using arithmetic operators

2. Write an expression that calculates the area of a triangle with base and height defined as variables with values of your choice.

   const base = 4;

   const height = 7;

   const area = (base * height) /2

   console.log('The area of the triangle is : ' + area);

Expressions using string operators

4. Write a single expression that displays the following message:

   The sum of 5 and 3 is: 8

   Specify 8 results from the arithmetic expression 5 + 3.

   const num1 = 5;

   const num2 = 3;

```
console.log('The sum of num1 and num2  is: ' + (num1 + num2));

console.log('The sum of num1  and num2  is: ' , num1 + num 2);

console.log(`The sum of num1 and num2 is : ${num1 + num2}`);
```

5. Write a single expression that displays the following message:

   My age is 33 years old.

   Specify your age as a variable.

   ```
   let age = 33;

   console.log(`My age is ${age} years old.`);
   ```

6. Write a single expression that displays the following message:

   In JavaScript, we use the backslash (\) to escape special characters.

   ```
   console.log('In JavaScript, we use the backslash (\\) to escape special characters.');
   ```

7. Write a single expression that displays the following message:

   Einstein once said: "Life is like riding a bicycle. To keep your balance, you must keep moving."

   ```
   console.log('Einstein once said: "Life is like riding a bicycle. To keep your balance, you must keep moving."');
   ```

Expressions using comparison operators

8. Write an expression that takes two numbers defined as variables with values of your choice and evaluates whether the first number is greater or equal to the second.

   ```
   const num1 = 14;

   const num2 = 11;

   console.log(num1 >= num2);

   OR

   if (num1 === num2){

   console.log('The two numbers are equal');
   ```

```
}else if(num1 > num2){

console.log(`First number ${num1} is greater than second number ${num2}`);

}else

console.log(`Second number ${num2} is greater than first number ${num1}`);
```

Expressions using logical operators

9. Write an expression that evaluates whether two numeric values defined with values of your choice satisfy the following condition: the first number is greater than the second, and the second number is greater than 0.

```
const num1=100;

const num2=04;

(num1 > num2 && num2 >0 ) ? console.log('Condition satisfied') : console.log('Condition not satisfied');
```

10. Write an expression that evaluates whether two numeric values defined with values of your choice satisfy the following condition: both numbers are equal or the second number is less than 10.

```
var num1=100;

var num2=40;

(num1 == num2 || num2 <10 ) ? console.log('Condition satisfied') : console.log('Condition not satisfied');
```

Part II: Implementing a Basic Calculator

Implement a basic calculator by completing the functions in the JavaScript section. Use the HTML and CSS code provided below. When submitting your solution, include the JavaScript code in the same single text file used in Part I.

JavaScript:

```
// Add the values from input fields

function add() {

  /* The expression below obtains the value from the input

      element in the form with id attribute equals to operand1. */


  let operand1 = document.querySelector("#operand1").value;

  console.log(operand1);


  /* Note that the value is a string.

       Thus, we need to convert the string value to a number to

       perform arithmetic operations.

    */

  console.log(typeof operand1);


  // The parseInt function converts a string containing a number into a
number

  operand1 = parseInt(operand1);

  console.log(typeof operand1);


  /* COMPLETE THIS FUNCTION */

  let operand2 = document.querySelector("#operand2").value;

  operand2 = parseInt(operand2);
```

```
  console.log(typeof operand2);


  let result = 0;

  result = operand1 + operand2;

  /* The expression below updates the value of the input element in the
form

      with id attribute equals to result. */

  document.querySelector("#result").value = result;

}


// Substract the values from input fields

function substract() {

  /* COMPLETE THIS FUNCTION */

    let operand1 = document.querySelector("#operand1")?.value;

    operand1 = parseInt(operand1);

    let operand2 = document.querySelector("#operand2")?.value;

    operand2 = parseInt(operand2);

    let result = 0;

    result = operand1 - operand2;

    console.log(result);

    document.querySelector('#result').value = result;

}


// Multiply the values from input fields

function multiply() {

  /* COMPLETE THIS FUNCTION */

  let operand1 = document.querySelector("#operand1")?.value;
```

```
  operand1 = parseInt(operand1);
  let operand2 = document.querySelector("#operand2")?.value;
  operand2 = parseInt(operand2);
  let result = 0;
  result = operand1 * operand2;
  console.log(result);
  document.querySelector('#result').value = result;
}

// Divide the values from input fields
function divide() {
  /* COMPLETE THIS FUNCTION */
  let operand1 = document.querySelector("#operand1")?.value;
  operand1 = parseInt(operand1);
  let operand2 = document.querySelector("#operand2")?.value;
  operand2 = parseInt(operand2);
  let result = 0;
  result = operand1 / operand2;
  console.log(result);
  document.querySelector('#result').value = result;
}

// Clear input fields
function clearInput() {
  document.querySelector("#operand1").value = "";
  document.querySelector("#operand2").value = "";
  document.querySelector("#result").value = "";
```

```
}
```