

JavaScript Problem Set 2 (PS2)

Beginner Level – Continued

Topics covered: Functions, Arrays, Loops, Strings, Objects, DOM Basics, Array Methods.

Problem 1 Function Return Value

Write a function called `square` that takes a number and returns its square.

Solution

```
function square(num) {  
  return num * num;  
}  
  
console.log(square(5)); // Output: 25
```

Problem 2 Sum of an Array

Write a function `sumArray` that takes an array of numbers and returns the total sum.

Solution

```
function sumArray(arr) {  
  let sum = 0;  
  for (let num of arr) {  
    sum += num;  
  }  
}
```

```
    return sum;
}

console.log(sumArray([1, 2, 3, 4])); // Output: 10
```

Problem 3 Reverse a String

Write a function `reverseString` that reverses any string.

Solution

```
function reverseString(str) {
    return str.split('').reverse().join('');
}

console.log(reverseString("hello")); // Output: "olleh"
```

Problem 4 Count Vowels

Write a function `countVowels` that counts the number of vowels in a string.

Solution

```
function countVowels(str) {
    let count = 0;
    let vowels = 'aeiouAEIOU';
    for (let char of str) {
        if (vowels.includes(char)) {
            count++;
        }
    }
    return count;
}

console.log(countVowels("javascript")); // Output: 3
```

Problem 5 Object Iteration

Print all key-value pairs from an object.

Solution

```
let student = {
  name: "Alice",
  age: 22,
  major: "Computer Science"
};

function printObject(obj) {
  for (let key in obj) {
    console.log(`${key}: ${obj[key]}`);
  }
}

printObject(student);
```

Problem 6 FizzBuzz

From 1 to 20, print Fizz for multiples of 3, Buzz for multiples of 5, and FizzBuzz for both.

Solution

```
for (let i = 1; i <= 20; i++) {
  if (i % 3 === 0 && i % 5 === 0) {
    console.log("FizzBuzz");
  } else if (i % 3 === 0) {
    console.log("Fizz");
  } else if (i % 5 === 0) {
    console.log("Buzz");
  } else {
    console.log(i);
  }
}
```

```
}
```

Problem 7 Add to Array

Add items to an array using a function.

Solution

```
let favoriteFoods = [];  
  
function addFood(food) {  
  favoriteFoods.push(food);  
}  
  
addFood("Pizza");  
addFood("Burgers");  
addFood("Sushi");  
  
console.log(favoriteFoods);
```

Problem 8 Map Function

Double each number in an array using `.map()`.

Solution

```
function doubleNumbers(arr) {  
  return arr.map(num => num * 2);  
}  
  
console.log(doubleNumbers([1, 2, 3])); // Output: [2, 4,  
  6]
```

Problem 9 Basic DOM Manipulation

Click a button to change text in the browser.

HTML

```
<button id="myButton">Click Me!</button>
<p id="message">Hello!</p>
```

JavaScript

```
document.getElementById("myButton").addEventListener("
  click", function() {
    document.getElementById("message").textContent = "You
      clicked the button!";
  });
```

Problem 10 Palindrome Checker

Check if a string is a palindrome (same forward and backward).

Solution

```
function isPalindrome(str) {
  let reversed = str.split('').reverse().join('');
  return str === reversed;
}

console.log(isPalindrome("racecar")); // true
console.log(isPalindrome("hello"));  // false
```