10 JavaScript Coding Exercises with Explanation and Code

1. Reverse a String:

Description: Write a function to reverse a string.

Code:

```
function reverseString(str) {

  // Using split, reverse, and join methods

  return str.split("").reverse().join("");
```

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```
}
```

```
// Example usage

const str = "Hello world!";

const reversedStr = reverseString(str);

console.log(reversedStr); // !dlrow olleH
```

2. Factorial of a Number:

Description: Write a function to calculate the factorial of a number.

Code:

```
function factorial(n) {

  // Base case

  if (n === 0) return 1;

  // Recursive case

  return n * factorial(n - 1);

}
```

```javascript
// Example usage

const num = 5;

const factorialResult = factorial(num);

console.log(factorialResult); // 120
```

3. Check for Palindrome:

Description: Write a function to check if a string is a palindrome (reads the same backwards and forwards).

Code:

```javascript
function isPalindrome(str) {

  // Convert string to lowercase and remove whitespace

  str = str.toLowerCase().replace(/\s/g, "");

  // Compare string with its reversed version

  return str === str.split("").reverse().join("");

}


// Example usage

const word = "racecar";
```

```
const palindromeCheck = isPalindrome(word);

console.log(palindromeCheck); // true
```

4. Find the Longest Word:

Description: Write a function to find the longest word in a sentence.

Code:

```
function longestWord(sentence) {

  // Split sentence into words

  const words = sentence.split(" ");

  // Sort words by length (descending)

  words.sort((a, b) => b.length - a.length);

  // Return the first word (longest)

  return words[0];

}


// Example usage

const sentence = "The quick brown fox jumps over the lazy dog.";
```

```
const longestWordResult = longestWord(sentence);

console.log(longestWordResult); // jumps
```

5. Title Case a Sentence:

Description: Write a function to convert a sentence to title case.

Code:

```
function titleCase(sentence) {

  // Split sentence into words

  const words = sentence.split(" ");

  // For each word, capitalize the first letter and lowercase the rest

  words.forEach((word, index) => {

    words[index] = word.charAt(0).toUpperCase() +
word.slice(1).toLowerCase();

  });

  // Join words with spaces

  return words.join(" ");

}
```

```
// Example usage

const sentence = "hello world!";

const titleCasedSentence = titleCase(sentence);

console.log(titleCasedSentence); // Hello World!
```

6. Return Largest Numbers in Arrays:

Description: Write a function to return the largest numbers in an array.

Code:

```
function largestNumbers(arr) {

  // Use Math.max and spread operator

  return Math.max(...arr);

  // Alternative using loops and conditional statements

  // let largest = arr[0];

  // for (let i = 1; i < arr.length; i++) {

  //   if (arr[i] > largest) largest = arr[i];

  // }

  // return largest;
```

```
}
```

```
// Example usage

const numbers = [1, 5, 3, 8, 2];

const largestNumber = largestNumbers(numbers);

console.log(largestNumber); // 8
```

7. Check if a String Contains Another String:

Description: Write a function to check if a string contains another string.

Code:

```
function containsString(str1, str2) {

  // Use includes method

  return str1.includes(str2);

  // Alternative using indexOf method

  // return str1.indexOf(str2) !== -1;

}
```

```
// Example usage

const string1 = "Hello JavaScript";

const string2 = "JavaScript";

const containsCheck = containsString(string1, string2);

console.log(containsCheck); // true
```

8. Count the Number of Occurrences of a Character:

Description: Write a function to count the number of times a character appears in a string.

Code:

```
function countChar(str, char) {

  // Use split and filter methods

  return str.split("").filter((c) => c === char).length;

  // Alternative using a loop and counter

  // let count = 0;

  // for (let i = 0; i < str.length; i++) {
```

```
//   if (str[i] === char) count++;

// }

// return count;

}


// Example usage

const str = "apple";

const char = "p";

const charCount = countChar(str, char);

console.log(charCount); // 2
```

9. Filter Numbers from an Array:

Description: Write a function to filter out all non-numeric values from an array.

Code:

```
function filterNumbers(arr) {

  // Use filter method and isNaN function

  return arr.filter((num) => !isNaN(num));
```

```
// Alternative using a loop and conditional statements

// const filteredArray = [];

// for (let i = 0; i < arr.length; i++) {

//   if (!isNaN(arr[i])) filteredArray.push(arr[i]);

// }

// return filteredArray;

}


// Example usage

const mixedArray = ["1", 2, "apple", 3, "banana", 5];

const filteredNumbers = filterNumbers(mixedArray);

console.log(filteredNumbers); // [1, 2, 3, 5]
```

10. Calculate the Average of an Array:

Description: Write a function to calculate the average of all elements in an array.

Code:

```
function average(arr) {
```

```javascript
  // Use reduce method and length property

  return arr.reduce((acc, num) => acc + num, 0) / arr.length;

}


// Example usage

const numbers = [1, 2, 3, 4, 5];

const averageValue = average(numbers);

console.log(averageValue); // 3
```

These are just a few examples of simple JavaScript coding exercises. By practicing these and other similar exercises, you can improve your understanding of JavaScript syntax, logic, and problem-solving skills.