



# JavaScript Coding Challenge

events | functions | looping | decision making | array | string



Welcome to the JavaScript Coding Challenge! This set of exercises is designed to test your understanding and application of various JavaScript concepts, including events, looping, condition checking, array functions, and string functions. Each question provides a meaningful description to help you understand the challenge and apply your knowledge effectively.

## EVENTS

### 1. **onchange:**

- **Description:** Create a dropdown menu with a list of colors. Use JavaScript to display an alert showing the selected color whenever the selection changes.
- **Challenge:** Create an HTML form with a dropdown menu. Implement the `onchange` event to show the selected value in an alert box.

### 2. **onload:**

- **Description:** Display a welcome message when the page finishes loading.
- **Challenge:** Write a JavaScript function that triggers an alert saying "Page Loaded!" once the page is fully loaded.

### 3. **onclick:**

- **Description:** Change the text of a button when it is clicked.
- **Challenge:** Create a button in HTML. Implement the `onclick` event to change the button's text to "Clicked!" when it is clicked.

### 4. **onkeypress:**

- **Description:** Count the number of key presses in an input field.
- **Challenge:** Create an input field. Use the `onkeypress` event to count and display the number of key presses while the input field is focused.

### 5. **onkeyup:**

- **Description:** Display the input text in uppercase as the user types.
- **Challenge:** Create an input field. Implement the `onkeyup` event to convert the input text to uppercase and display it in another element in real-time.

## LOOPING AND CONDITION CHECKING

### 6. **Even Numbers Filter:**

- **Description:** Extract only the even numbers from an array of integers.
- **Challenge:** Write a function that takes an array of numbers and returns a new array containing only the even numbers.

### 7. **Number Sign Checker:**

- **Description:** Determine if a number is positive, negative, or zero.
- **Challenge:** Write a function that takes a number as input and returns a string indicating whether the number is "positive", "negative", or "zero".

### 8. **Uppercase Conversion:**

- **Description:** Convert all strings in an array to uppercase.
- **Challenge:** Create a function that takes an array of strings and returns a new array with all strings converted to uppercase.

### 9. **Range Generator:**

- **Description:** Generate an array of numbers within a specified range.
- **Challenge:** Write a function that takes two numbers and returns an array of all numbers between them, inclusive.

**10. Palindrome Checker:**

- **Description:** Check if a string reads the same forwards and backwards.
- **Challenge:** Create a function that checks if a given string is a palindrome.

**ARRAY FUNCTIONS****11. push:**

- **Description:** Add a value to the end of an array.
- **Challenge:** Write a function that takes an array and a value, adds the value to the end of the array using `push`, and returns the new array.

**12. pop:**

- **Description:** Remove the last element of an array.
- **Challenge:** Write a function that takes an array, removes the last element using `pop`, and returns the removed element.

**13. shift:**

- **Description:** Remove the first element of an array.
- **Challenge:** Write a function that takes an array, removes the first element using `shift`, and returns the removed element.

**14. unshift:**

- **Description:** Add a value to the beginning of an array.
- **Challenge:** Write a function that takes an array and a value, adds the value to the beginning of the array using `unshift`, and returns the new array.

**15. reverse:**

- **Description:** Reverse the order of elements in an array.
- **Challenge:** Write a function that takes an array of numbers and returns a new array with the numbers in reverse order.

**16. sort:**

- **Description:** Sort an array of strings alphabetically.
- **Challenge:** Write a function that takes an array of strings and returns a new array with the strings sorted in alphabetical order.

**17. indexOf:**

- **Description:** Find the index of a value in an array.
- **Challenge:** Write a function that takes an array and a value, and returns the index of the value in the array. If the value is not found, return -1.

**18. slice:**

- **Description:** Extract a portion of an array.
- **Challenge:** Write a function that takes an array and two indices, and returns a new array containing the elements between those indices, inclusive.

**19. splice:**

- **Description:** Modify an array by removing and optionally adding elements.
- **Challenge:** Write a function that takes an array, a start index, a delete count, and optional new elements. Use `splice` to remove the specified number of elements from the array starting at the start index, and optionally add the new elements in their place. Return the modified array.

**STRING FUNCTIONS****20. trim:**

- **Description:** Remove whitespace from both ends of a string.
- **Challenge:** Write a function that takes a string and returns the same string with all leading and trailing whitespace removed using `trim`.

**21. split:**

- **Description:** Split a string into an array of substrings.
- **Challenge:** Write a function that takes a string and a character, and returns an array of substrings split by the given character using `split`.

**22. toUpperCase:**

- **Description:** Convert all characters in a string to uppercase.
- **Challenge:** Write a function that takes a string and returns the same string with all characters converted to uppercase using `toUpperCase`.

**23. toLowerCase:**

- **Description:** Convert all characters in a string to lowercase.
- **Challenge:** Write a function that takes a string and returns the same string with all characters converted to lowercase using `toLowerCase`.

**COMBINATION QUESTIONS****24. Sort Strings Alphabetically:**

- **Description:** Convert strings to lowercase and sort them alphabetically.
- **Challenge:** Create a function that takes an array of strings, converts each string to lowercase, sorts them alphabetically, and returns the sorted array.

**25. Reverse Words in a Sentence:**

- **Description:** Reverse the order of words in a sentence.
- **Challenge:** Write a function that takes a string, splits it into an array of words, reverses the order of the words, and joins them back into a string.

**26. Filter and Sort Even Numbers:**

- **Description:** Filter out odd numbers and sort the even numbers.
- **Challenge:** Create a function that takes an array of numbers, filters out the odd numbers, sorts the even numbers in ascending order, and returns the sorted array.

**27. Uppercase Words in a Sentence:**

- **Description:** Convert each word in a sentence to uppercase.
- **Challenge:** Write a function that takes a sentence, splits it into an array of words, converts each word to uppercase, and joins them back into a single string.

**28. Trim and Uppercase a String:**

- **Description:** Remove whitespace and convert to uppercase.
- **Challenge:** Create a function that takes a string, trims any leading and trailing whitespace, converts it to uppercase, and returns the modified string.