Expanded JavaScript Solutions for All 14 Problems

(Each code block is written in fully expanded step-by-step form)

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1. Palindrome Array – return mismatched index

```
        function palindromeArrayResult(arr) {
  let left = 0;
  let right = arr.length - 1;
  while (left < right) {
    if (arr[left] !== arr[right]) {
      return left;
    }
    left++;
    right--;
  }
  return -1;
}
```

----

2. Reverse words in a sentence (two-pointer)

```
        function reverseWords(str) {
  const parts = str.trim().split(/\s+/);
  let left = 0;
  let right = parts.length - 1;
  while (left < right) {
    let temp = parts[left];
    parts[left] = parts[right];
    parts[right] = temp;
    left++;
    right--;
  }
  return parts.join(" ");
}
```

----

3. Is Anagram (expanded frequency map – no sort)

```
        function isAnagram(a, b) {
  a = a.toLowerCase();
  b = b.toLowerCase();
  if (a.length !== b.length) {
    return false;
  }
  const map = {};
  for (let ch of a) {
    if (map[ch] === undefined) {
      map[ch] = 1;
    } else {
      map[ch] = map[ch] + 1;
    }
  }
  for (let ch of b) {
    if (map[ch] === undefined || map[ch] === 0) {
      return false;
    } else {
      map[ch] = map[ch] - 1;
    }
  }
  for (let key in map) {
    if (map[key] !== 0) {
      return false;
    }
  }
  return true;
}
```

4. Count vowels

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

5. Remove duplicates (no Set)

```
        function removeDuplicates(arr) {
  const seen = {};
  const result = [];
  for (let value of arr) {
    if (!seen[value]) {
      result.push(value);
      seen[value] = true;
    }
  }
  return result;
}
```

6. Second highest number

```
        function secondHighest(arr) {
  let max = -Infinity;
  let second = -Infinity;
  for (let num of arr) {
    if (num > max) {
      second = max;
      max = num;
    } else if (num > second && num !== max) {
      second = num;
    }
  }
  return second;
```

```
}
```

----

7. Check string rotation

```
        function isRotation(a, b) {
  if (a.length !== b.length) {
    return false;
  }
  const doubled = a + a;
  return doubled.includes(b);
}
```

----

8. Remove spaces

```
        function removeSpaces(str) {
  let result = "";
  for (let c of str) {
    if (c !== " ") {
      result += c;
    }
  }
  return result;
}
```

----

9. Character frequency

```
        function charFrequency(str, target) {
  let count = 0;
  str = str.toLowerCase();
  target = target.toLowerCase();
  for (let c of str) {
    if (c === target) {
      count++;
    }
  }
  return count;
}
```

----

10. Unique characters

```
        function uniqueCharacters(str) {
  const set = new Set();
  for (let c of str) {
    if (set.has(c)) {
      return false;
    }
    set.add(c);
  }
  return true;
}
```

----

11. Longest word

```
        function longestWord(str) {
```

```
  const words = str.split(/\s+/);
  let longest = "";
  for (let w of words) {
    if (w.length > longest.length) {
      longest = w;
    }
  }
  return longest;
}
```

----

12. Reverse each word

```
        function reverseEachWord(str) {
  const words = str.split(" ");
  const result = [];
  for (let word of words) {
    let reversed = word.split("").reverse().join("");
    result.push(reversed);
  }
  return result.join(" ");
}
```

----

13. Count words

```
        function countWords(str) {
  if (str.trim() === "") {
    return 0;
  }
  const words = str.trim().split(/\s+/);
  return words.length;
}
```

----

14. Pangram check

```
        function isPangram(str) {
  const seen = new Set();
  for (let c of str.toLowerCase()) {
    if (c >= "a" && c <= "z") {
      seen.add(c);
    }
  }
  return seen.size === 26;
}
```