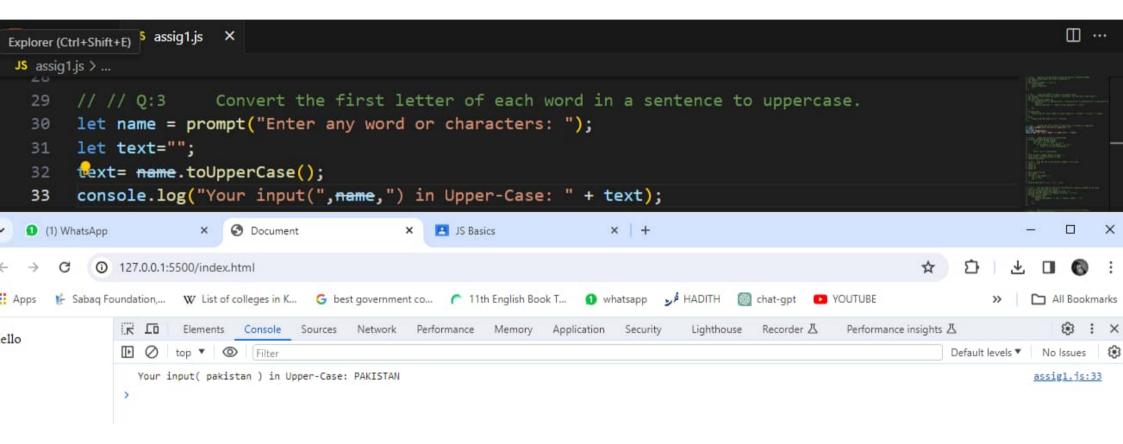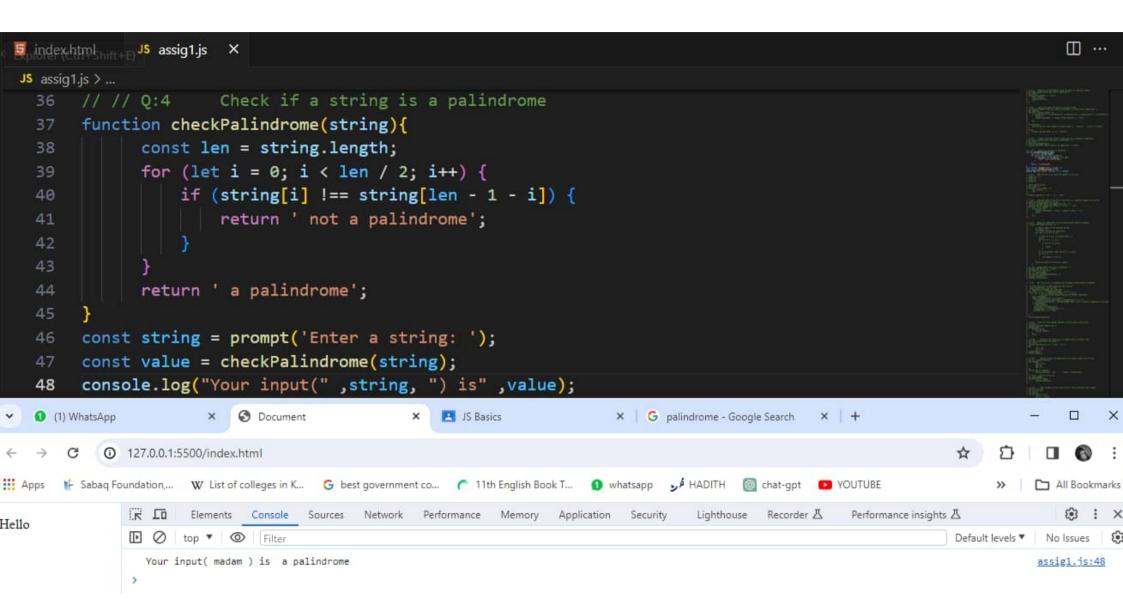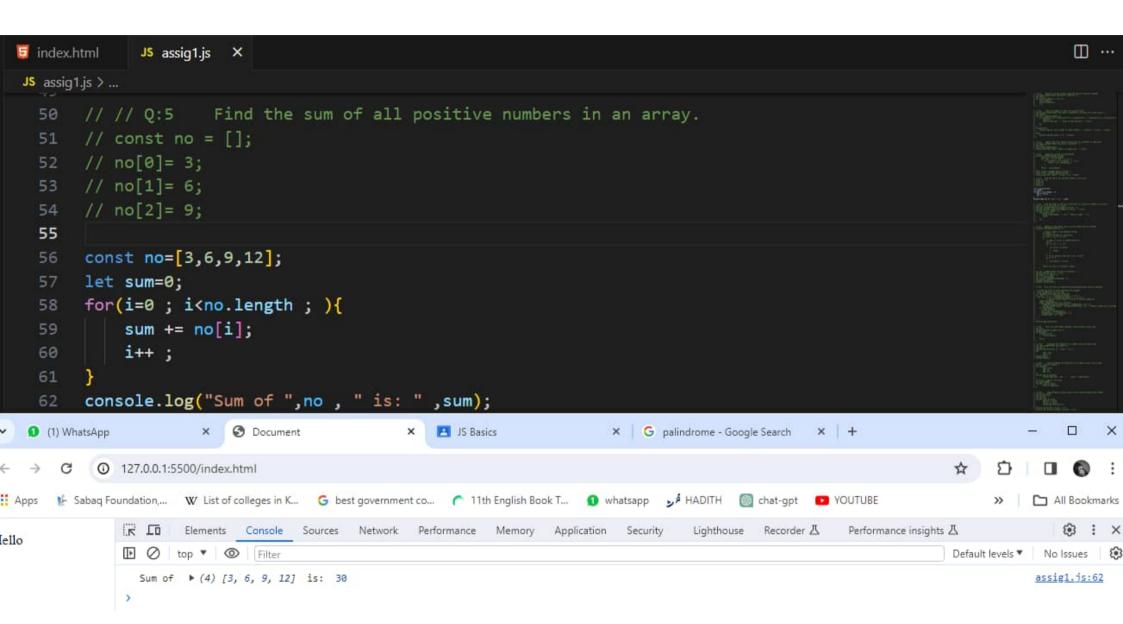```js
// // Q:1   Reverse a string without using the built-in reverse() method.
let name= prompt("Enter any word or character:");
let text="";
for(i=(name.length)-1 ; i>=0 ;){
    text= name[i];
    console.log(text);
    i--;
}
```

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d                                                                      assig1.js:6
a                                                                      assig1.js:6
h                                                                      assig1.js:6
a                                                                      assig1.js:6
>

```javascript
// // Q:2      Count the number of vowels in a given string.
let person= prompt("Enter any words or characters, all must be in lower-case:");
let vowel=0;
for(i=0 ; i<person.length ;){
    if (person[i]=="a" || person[i]=="e" || person[i]=="i" || person[i]=="o" || person[i]=="u"){
        vowel+=1;
        console.log(vowel + "- Vowel at this position:" + (i+1));
    }
    i++;
}
if(vowel!=0){
    console.log("So, Total number of vowels found in " + person + " is/are: " + vowel);
}
else{
    console.log("NO vowels is in " + person);
}
```

Console output:
```
1- Vowel at this position:2                                    assig1.js:17
2- Vowel at this position:3                                    assig1.js:17
3- Vowel at this position:6                                    assig1.js:17
So, Total number of vowels found in zeeshan is/are: 3          assig1.js:22
```

```javascript
28
29  // // Q:3    Convert the first letter of each word in a sentence to uppercase.
30  let name = prompt("Enter any word or characters: ");
31  let text="";
32  text= name.toUpperCase();
33  console.log("Your input(",name,") in Upper-Case: " + text);
```

ello

Your input(pakistan) in Upper-Case: PAKISTAN   assig1.js:33

>

```javascript
// // Q:4        Check if a string is a palindrome
function checkPalindrome(string){
    const len = string.length;
    for (let i = 0; i < len / 2; i++) {
        if (string[i] !== string[len - 1 - i]) {
            return ' not a palindrome';
        }
    }
    return ' a palindrome';
}
const string = prompt('Enter a string: ');
const value = checkPalindrome(string);
console.log("Your input(" ,string, ") is" ,value);
```

Hello

Your input(madam) is a palindrome   assig1.js:48

```javascript
// // Q:5    Find the sum of all positive numbers in an array.
// const no = [];
// no[0]= 3;
// no[1]= 6;
// no[2]= 9;

const no=[3,6,9,12];
let sum=0;
for(i=0 ; i<no.length ; ){
    sum += no[i];
    i++ ;
}
console.log("Sum of ",no , " is: " ,sum);
```

Sum of ▶ (4) [3, 6, 9, 12] is: 30   assig1.js:62

```javascript
// // Q:6     Find the index of the first occurrence of a specific element in an array.
const arr=[1,5,10,4,8,0,2,7,3,6,9];
let inp = prompt("Enter any number b/w 0-10 : ");
console.log("The sequence of Numbers in array:  " + arr);
for(i=0 ; i<arr.length ; ){
    if(inp==arr[i]){
        console.log("Number " + inp + " found at index: " + i);
        break
    }
    i++ ;
}
```

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top   Filter   Default levels   No Issues

The sequence of Numbers in array: 1,5,10,4,8,0,2,7,3,6,9   assig1.js:68

Number 8 found at index: 4   assig1.js:71

```javascript
78  // // Q:7    Remove all duplicates from an array without built-in methods.
79  function removeDuplicate(str, n)
80      {
81          // Used as index in the modified string
82          var index = 0;
83          // Traverse through all characters
84          for (var i = 0; i < n; i++)
85          {
86              // Check if str[i] is present before it
87              var j;
88              for (j = 0; j < i; j++)
89              {
90                  if (str[i] == str[j])
91                  {
92                      break;
93                  }
94              }
95              // If not present, then add it to // result.
96              if (j == i)
97              {
98                  str[index++] = str[i];
```

```js
 99                }
100            }
101            return str.join("").slice(str, index);
102        }
103
104    var str = prompt("Enter any word or character: ");
105    console.log("string is: ", str);
106    var separ = str.split("");
107    var n = separ.length;
108    var result= removeDuplicate(separ, n);
109    console.log(result);
110    document.write(result);
```

127.0.0.1:5500/index.html

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```
    string is:  AFNAN                                assig1.js:105
    AFN                                              assig1.js:109
>
```

```javascript
113    // // Q:8      Sort the array in ascending and descending without built-in methods.
114
115     // Clone the array to avoid modifying the original
116      const clonedArray = [2,6,1,5,0];
117     // Implement the bubble sort algorithm
118    for (let i = 0; i < clonedArray.length - 1; i++) {
119       for (let j = 0; j < clonedArray.length - i - 1; j++) {
120              // Use the custom compare function or default comparison
121          const shouldSwap =
122          typeof compareFunction === "function"
123            ? compareFunction(clonedArray[j], clonedArray[j + 1]) > 0
124            : String(clonedArray[j]) > String(clonedArray[j + 1]); // Default comparison as strings
125          if (shouldSwap) {
126            // Swap elements
127            const temp = clonedArray[j];
128            clonedArray[j] = clonedArray[j + 1];
129            clonedArray[j + 1] = temp;
130          }
131        }
132    }
133    console.log(clonedArray);
```

JS assig1.js > ...

```
113    // // Q:8      Sort the array in ascending and descending without built-in methods.
114
```

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▶ (5) [0, 1, 2, 5, 6]   assig1.js:133

>

```javascript
// // Q:9      Print all even numbers between 1 and 20 using a while loop
let no=1;
console.log("Even numbers are:");
while(no<21){
    if(no%2 === 0){
        console.log(no);
    }
    no+=1;
```

Even numbers are: assig1.js:138
2   assig1.js:141
4   assig1.js:141
6   assig1.js:141
8   assig1.js:141
10   assig1.js:141
12   assig1.js:141
14   assig1.js:141
16   assig1.js:141
18   assig1.js:141
20   assig1.js:141

```javascript
// // Q:10      Calculate the factorial of a number using a do-while loop.
let inp= prompt("Enter any number:");
let fac=1;
console.log("Factorial of " + inp + " is:");
do{
        fac*= inp;
        inp -= 1;
}while(inp>0);
console.log(fac);
```

Hello

Factorial of 6 is: assig1.js:149
720   assig1.js:154

```javascript
// // Q:11        Iterate through the properties of an object using a for-in loop.
// for-in : used for objects
let student= {
    name: "Ali",
    age: 30,
    cgp: 3.7,
};
for(let key in student){
    console.log("key=", key , "    value=", student[key]);
}
```

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top ▼   Filter   Default levels ▼   No Issues

```
key= name        value= Ali                                          assig1.js:165
key= age         value= 30                                           assig1.js:165
key= cgp         value= 3.7                                          assig1.js:165
```

```javascript
// // Q:12        Loop through an array using a for-of loop and double each element.
let arr=[0,2,6,8];
let new_arr= [];
let join=[];
for(let value of arr){
        new_arr += value;
        new_arr += value;
        join=Array.from(new_arr);
}
console.log("Original Array: ",arr);
console.log("Doubling element of Array: ",join);
```

Hello

Original Array: ▶ (4) [0, 2, 6, 8]   assig1.js:183

Doubling element of Array: ▶ (8) ['0', '0', '2', '2', '6', '6', '8', '8']   assig1.js:184

JS assig1.js > ...

```
186
187    // // Q:13      Check if a number is even or odd and return a corresponding message.
188    let inp= prompt("Enter any number:");
189    if(inp%2===0){
190        console.log("The number(" + inp + ") u provide is an Even Number");
191    }
192    else{
193        console.log("The number(" + inp + ") u provide is an Odd Number");
194    }
195
```

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← → C   ⓘ 127.0.0.1:5500/index.html

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Elements   Console   Sources   Network   Performance   Memory   Application   Security   Lighthouse   Recorder   Performance insights

top ▾   Filter   Default levels ▾   No Issues

The number(7) u provide is an Odd Number   assig1.js:193

>

```javascript
197  // // Q:14        Find the maximum of three numbers using nested ternary operators.
198  let inp1 = prompt("Enter first number:");
199  let inp2 = prompt("Enter second number:");
200  let inp3 = prompt("Enter third number:");
201  console.log("1st no u provide is: " ,inp1);
202  console.log("2nd no u provide is: " ,inp2);
203  console.log("3rd no u provide is: " ,inp3);
204  let check =
205      (inp1 > inp2 && inp1 > inp3)
206      ? "Input 1 is Greater"
207      : (inp2 > inp1 && inp2 > inp3)
208      ? "Input 2 is Greater"
209      : (inp3 > inp1 && inp3 > inp2)
210      ? "Input 3 is Greater"
211      : "All inputs are equal";
212  console.log("Maxmimum out of them: ",check);
213
```

```
197    // // Q:14        Find the maximum of three numbers using nested ternary operators.
198    let inp1 = prompt("Enter first number:");
199    let inp2 = prompt("Enter second number:");
200    let inp3 = prompt("Enter third number:");
```

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Elements   Console   Sources   Network   Performance   Memory   Application   Security   Lighthouse   Recorder   Performance insights

top   Filter   Default levels   No Issues

Hello

```
1st no u provide is:  4                                          assig1.js:201
2nd no u provide is:  7                                          assig1.js:202
3rd no u provide is:  3                                          assig1.js:203
Maxmimum out of them:  Input 2 is Greater                        assig1.js:212
```

```js
215    // // Q:15        Determine if a year is a leap year or not.
216    let inp= prompt("Enter any year number:");
217    if(inp%4===0){
218        console.log(inp," is a Leap Year")
219    }
220    else{
221        console.log(inp," is not a Leap Year")
222    }
```

Hello

2024 is a Leap Year   assig1.js:218