WD - JavaScript Essentials & Advanced

Q.1 Using console. Log () print out the following statement: The quote 'There is no exercise better for the heart than reaching down and lifting people up.' by John Holmes teaches us to help one another. Using console. Log () print out the following quote by Mother Teresa:

- The console.log() function prints the provided string to the console.
- Both quotes are included in separate console.log() statements.

Q.2 Check if type of '10' is exactly equal to 10. If not make it exactly equal?

Ans::
```
if('10'===10){
    document.write("it is exactaly equal")
}else{
     document.write("it is not exactaly equal")
 }

if(parseInt('10')===10){
     document.write("it is exactaly equal")
}else{
    document.write("it is not exactaly equal")

}
```

- `Type of '10'` gives `'string'`, and `type of 10` gives `'number'`, so they are not exactly equal.
- `Number ('10')` converts the string `'10'` to the number `10`, which allows for a valid comparison using `===`.

Q.3 Write a JavaScript Program to find the area of a triangle?

Let base = 10

Let height = 5

Let area = calculateArea (base ,height)

Console. Log (area)

Q.4 Write a JavaScript program to calculate days left until next Christmas?

```
function daysUntilChristmas() {
    let today = new Date(),
        year = today.getFullYear(),
        nextChristmas = new Date(year, 11, 25);

    if (today > nextChristmas) nextChristmas.setFullYear(year + 1);

    return Math.ceil((nextChristmas - today) / (1000 * 60 * 60 * 24));
}

console.log(daysUntilChristmas());
```

Q.5 What is Condition Statement?

A **conditional statement** in programming is a feature that allows a program to perform different actions based on certain conditions. It evaluates an expression or condition and then executes code depending on whether the condition is true or false. Conditional statements are fundamental for controlling the flow of execution in programs.

Q.6 Find circumference of Rectangle formula : C = 4 * a ?

The formula you mentioned, C = 4 * a, is incorrect for the circumference (or perimeter) of a **rectangle**.

The correct formula to find the circumference (perimeter) of a rectangle is based on its **length** (`l`) and **width** (`w`). The formula is: C=2× (l+w)

Q.7 WAP to convert years into days and days into years?

Let years = 2

Let days = 800

Function years to days(years){

Return years *365

}

Function days to years(days){

Return years /365

}

Console.log(years to days)

Console.log(days to years)

Q.8 Convert temperature Fahrenheit to Celsius? (Conditional logic Question)

```
let fahrenheit = prompt("Enter Fahrenheit: ");
let celsius = (fahrenheit - 32) * 5 / 9;
console.log(celsius)
```

Q.9 Write a JavaScript exercise to get the extension of a filename.?

```
function paramiter(a){
    const parts= a.split(".");
if(parts.length>1){
    console.log(parts.pop())
}else{
    console.log("plx enter valid file name")
}
}
console.log(paramiter("doc.pf"))
```

Q.10 What is the result of the expression (5 > 3 && 2 < 4)?

- 5>3 is true.
- 2<4 is true.

Q.11 What is the result of the expression (true && 1 && "hello")?

- true is a boolean value and evaluates to `true`.
- **`1`** is a number, which is truthy in JavaScript and evaluates to `true`.
- **`"hello"`** is a non-empty string, which is also truthy and evaluates to `true`.

Q.12 What is the result of the expression true && false || false && true?

- `true && false` evaluates to `false`.
- `false && true` evaluates to `false`.
- This evaluates to `false` since at least one side must be true for an OR operation to yield true. false || false

  The final result false.

Q.13 Check Number Is Positive or Negative in JavaScript?

```
let number = -12

if (number >0) {
    console.log( " positive ")
} else if (number < 0) {
    console.log( "  negative ")
} else {
    console.log(" zero.")
}
```

Output : negative

Q.14 Find the Character Is Vowel or Not ?

```
let char=prompt("enter the char")
    if(char=='a'||char=='e'||char=='i'||char=='o'||char=='u'||char=='A'||char=='E'||char=='I'||char=='O'||char=='U'){
        console.log("it is vowel")
    }else{
        console.log("it is not vowel");
    }
```

Q.15 Write to check whether a number is negative, positive or zero?

```
let num=parseInt(prompt("enter the number"))
if(num>0){
    console.log("number is positive")
}else if(num<0){
    console.log("number is negetive")
}else{
    console.log("number is 0");
}
```

Q.16 Write to find number is even or odd using ternary operator in JS?

```
if (40 != '') {
            (40 % 2 == 0)  ?  document. write('no is even') :   document. write('no is odd');
        }
```

Q.17 Write find maximum number among 3 numbers using ternary operator in JS?

```
        let a = 50
        let b = 100
        let c = 150
        let answer = (a > b) ? (a > c) ? a : c : (b > c) ? b : c
        console.log(answer)
```

Q.18 Write to find minimum number among 3 numbers using ternary operator in JS?

```
        let a = 50
        let b = 100
        let c = 150
        let answer = (a < b) ? (a < c) ? a : c : (b < c) ? b : c
        console.log(answer)
```

Q.19 Write to find the largest of three numbers in JS?

```
function findLargest(a, b, c) {
    if (a >= b && a >= c) {
        return a;
    } else if (b >= a && b >= c) {
        return b;
    } else {
        return c;
    }
}

console.log(findLargest(10, 20, 15)); run:20
```

Q.20 Write to show i. Monday to Sunday using switch case in JS? ii. Vowel or Consonant using switch case in JS?

```
let days=parseInt(prompt("enter the number"))
switch(days){
    case 1:
        console.log("monday");
        break;
    case 2:
        console.log("tuesday");
```

```
        break;
    case 3:
        console.log("wednesday");
        break;
    case 4:
        console.log("thrusday");
        break;
     case 5:
        console.log("friday");
        break;
     case 6:
        console.log("satruday");
        break;
    case 7:
        console.log("sunday");
        break;
    default:
        console.log("error");

}
```

```
let vowel=prompt("enter the number")
switch(vowel){
    case 'a':
        console.log("it is vowel");
        break;
    case 'e':
        console.log("it is vowel");
        break;
    case 'i':
        console.log("it is vowel");
        break;
    case 'o':
        console.log("it is vowel");
        break;
    case 'u':
        console.log("it is vowel");
        break;
    case 'A':
        console.log("it is vowel");
        break;
    case 'E':
        console.log("it is vowel");
        break;
    case 'I':
        console.log("it is vowel");
        break;
     case 'O':
        console.log("it is vowel");
        break;
    case 'U':
        console.log("it is vowel");
        break;
    default:
        console.log("it is not vowel");

}
```

Q.21 What are the looping structures in JavaScript? Any one Example?

```
    let i = 1

        while(i<=10){
            document.write(+i)
            i++
```

```
        }
```

Q.22 Write a print 972 to 897 using for loop in JS?

```
for (let i = 972; i >= 897; i--) {
            console.log(i);
        }
```

Q.23 Write to print factorial of given number?

```
function factorial(n) {
            let result = 1;
            for (let i = 2; i <= n; i++) {
                result *= i;
            }
            return result;
        }

        const number = 5;
        console.log(factorial(number));
```

Q.24 Write to print Fibonacci series up to given numbers?

```
function fibonacci(n) {
    let a = 0, b = 1, result = [a, b];
    while (result.length < n) result.push(a = b, b = a + b);
    return result.slice(0, n);
}

console.log(fibonacci(10));
```

Q.25 Write to print number in reverse order e.g.: number = 64728 ---> reverse =82746 in JS?

```
console.log(fibonacci(10));

function reverseNumber(num) {
    return parseInt(num.toString().split('').reverse().join(''));
}

console.log(reverseNumber(64728)); //run:82746
```

Q.26 Write a program make a summation of given number (E.g., 1523 Ans: - 11) in JS?

```
function sumOfDigits(num) {
    return num.toString().split('').reduce((sum, digit) => sum + Number(digit), 0);
}

console.log(sumOfDigits(1523)); //run:11
```

Q.27 Write a program you have to make a summation of first and last Digit. (E.g., 1234 Ans: - 5) in JS?

```
function sumFirstAndLastDigit(num) {
    const numStr = num.toString();
    const firstDigit = Number(numStr.charAt(0));
    const lastDigit = Number(numStr.charAt(numStr.length - 1));
    return firstDigit + lastDigit;
}

console.log(sumFirstAndLastDigit(1234)); //run:5
```

Q.28 Use console.log() and escape characters to print the following pattern in JS?

1 1 1 1 1, 2 1 2 4 8, 3 1 3 9 27, 4 1 4 16 64, 5 1 5 25 125

```
console.log("1\ 1\ 1\ 1")
console.log("2\ 1\ 2\ 4\ 8")
console.log("3\ 1\ 3\ 9\ 27")
console.log("4\ 1\ 4\ 16\ 27")
  console.log("5\ 1\ 5\ 25\ 125")
```

Q.29 Use pattern in console.log in JS?

1) 1 1 0 1 0 1 1 0 1 0 1 0 1 0 1

```
    console.log("  1");
    console.log("1 0");
    console.log("1 0 1");
    console.log("1 0 1 0");
    console.log("1 0 1 0 1");
```

2) A B C D E F G H I J K L M N O

```
console.log("A");
console.log("B C D");
console.log("E F");
console.log("G H I J");
console.log("K L M N O");
```

3) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

```
    console.log("1");
    console.log("2 3");
    console.log("4 5 6");
    console.log("7 8 9 10");
    console.log("11 12 13 14 15");
```

4) * * * * * * * * * * * * * * *

```
    console.log("*");
    console.log("* *");
    console.log("* * *");
    console.log("* * * *");
    console.log("* * * * *");
```

Q.30 Accept 3 numbers from user using while loop and check each numbers palindrome?

```
let count = 0;

while (count < 3) {
    let number = prompt("Enter a number:");
    if (number === null) break;


    if (!isNaN(number)) {
        const isPalindrome = number === number.split('').reverse().join('');
        console.log(`${number} is ${isPalindrome ? '' : 'not '}a palindrome.`);
        count++;
    } else {
        console.log("Please enter a valid number.");
    }
```

```
}
```

Q.31 Write a JavaScript Program to display the current day and time in the following format. Sample Output: Today is Friday. Current Time is 12 PM: 12 : 22 2 ?

```
function mydate(){
    const days = ["Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"];
    let now= new Date()
    let currentdate=days[now.getDay()]
    let hours = now.getHours();
    let minutes = now.getMinutes();
    let seconds = now.getSeconds();
    let ampm=hours>=12?"pm":"am";
    const formattedTime = `${hours} ${ampm}: ${minutes} : ${seconds}`;
    console.log(`Today is ${currentdate}. Current Time is ${formattedTime}`);

    }
    mydate()
```

Q.32 Write a JavaScript program to get the current date?

```
   <body>

<div class="cointer" style="display: flex; gap:4px">
        <div id="date"></div>
        <div id="month"></div>
        <div id="year"></div>
    </div>
</body>
<script>
var today = new Date();
let day=(today.getDate());
let month=(today.getMonth());
let year=(today.getFullYear());
document.getElementById("date").innerHTML=day+"/"
document.getElementById("month").innerHTML=month+"/"
document.getElementById("year").innerHTML=year
</script>
```

Q.33 Write a JavaScript program to compare two objects?

```
        let a = { name :'komal',age:'25'}
        let b = { name :'kajal',age :'25'}
        console.log(JSON.stringify(a)===JSON.stringify(b))  //run : false
```

Q.34 Write a JavaScript program to convert an array of objects into CSV string?

```
const csvString = convertToCSV(data);
console.log(csvString);

const convertToCSV = (array) => {
    if (!array.length) return '';

    const headers = Object.keys(array[0]);
    const rows = array.map(obj => headers.map(header =>
        `"${(obj[header] || '').toString().replace(/"/g, '""')}"`).join(','));

    return [headers.join(','), ...rows].join('\n');
};


const data = [
    { name: 'joker', age: 28, city: 'delhi' },
    { name: 'raja', age: 34, city: 'mumbai' },
```

```
    { name: 'rani', age: 22, city: 'rajkot' }
];

console.log(convertToCSV(data));
```

Q.35 Write a JavaScript program to capitalize first letter of a string?

```
const capitalizeFirstLetter = (str) => {
    if (!str) return '';
    return str.charAt(0).toUpperCase() + str.slice(1);
};


const inputString = "hello Ahmedabad";
const capitalizedString = capitalizeFirstLetter(inputString);
console.log(capitalizedString);
```

Q. 45 Write a JavaScript program to determine if a variable is array?

```
function array(a){
    return Array.isArray(a)
}
let arr=[1,2,3]
let arr2="myfile"
console.log(array(arr));
console.log(array(arr2));
```

Q.46 Write a JavaScript program to clone an array?

```
let arr=[11,12,1,14,15]
let newarr=[...arr]
 newarr[0]=100;// not change array
console.log(arr);
console.log(newarr);
```

Q.47 What is the drawback of declaring methods directly in JavaScript objects?

```
let obj={
    a:function(){
        console.log("it is obj ");
    }
}
let obj2={
    a:function(){
        console.log("it is obj ");

    }
}
console.log(obj.a===obj2.a);
```

Q.48 Print the length of the string on the browser console using console.log()?

```
const myString = "Hello, javascript!";
console.log(myString.length);
```

Q.49 Change all the string characters to capital letters using toUpperCase() method?

```
let str="komal"
console.log(str.toUpperCase());
```

Q.50 What is the drawback of declaring methods directly in JavaScript objects?

```
let obj={
    a:function(){
        console.log("it is obj ");
    }
}
let obj2={
    a:function(){
        console.log("it is obj ");

    }
}
console.log(obj.a===obj2.a);
```

Q.51 Write a JavaScript program to get the current date. Expected Output : mm-ddyyyy, mm/dd/yyyy or dd-mm-yyyy, dd/mm/yyyy?

```
var today = new Date();

let day=(today.getDate());

let month=(today.getMonth());

let year=(today.getFullYear());
const formate={
        'mm-dd-yyyy': `${month}-${day}-${year}`,
        'mm/dd/yyyy': `${month}/${day}/${year}`,
        'dd-mm-yyyy': `${day}-${month}-${year}`,
        'dd/mm/yyyy': `${day}/${month}/${year}`
}
console.log(formate);
```

Q.52 Use indexOf to determine the position of the first occurrence of a in 30 Days Of JavaScript?

```
const myString = "30 Days Of JavaScript";
const position = myString.indexOf("a");
console.log(position);
```

Q,53 Use lastIndexOf to determine the position of the last occurrence of a in 30 Days Of JavaScript?

```
let str= "30 Days Of JavaScript"
let ans=str.lastIndexOf('a')
console.log(ans);
```

Q.54 Form Validtion in JS?

```
<form id="myForm" onsubmit="return validateForm()">
        <input type="text" id="name" placeholder="Name"><br><br>
        <input type="email" id="email" placeholder="Email"><br><br>
        <input type="text" id="age" placeholder="Age"><br><br>
        <input type="submit" value="Submit">
    </form>

    <script>
    function validateForm() {
        const name = document.getElementById('name').value;
        const email = document.getElementById('email').value;
        const age = document.getElementById('age').value;

        if (!name || !email.match(/^[^\s@]+@[^\s@]+\.[^\s@]+$/) || isNaN(age)) {
            alert("Please fill all fields correctly.");
            return false;
        }
        return true;
    }
```

```
    </script>
```

Q.55 Form in Email, number, Password, Validation?

```
<body>

  <h1>Form with Validation</h1>

  <form id="myForm">

    <label for="email">Email</label>
    <input type="email" id="email" name="email" required>
    <span id="emailError" class="error"></span>


    <label for="number">Number (Between 1 and 100)</label>
    <input type="number" id="number" name="number" min="1" max="100" required>
    <span id="numberError" class="error"></span>


    <label for="password">Password (Min 8 characters)</label>
    <input type="password" id="password" name="password" minlength="8" required>
    <span id="passwordError" class="error"></span>


    <button type="submit">Submit</button>
  </form>

  <script>
    const form = document.getElementById('myForm');
    const emailInput = document.getElementById('email');
    const numberInput = document.getElementById('number');
    const passwordInput = document.getElementById('password');

    const emailError = document.getElementById('emailError');
    const numberError = document.getElementById('numberError');
    const passwordError = document.getElementById('passwordError');

    form.addEventListener('submit', function(event) {

      emailError.textContent = '';
      numberError.textContent = '';
      passwordError.textContent = '';

      let valid = true;


      if (!emailInput.validity.valid) {
        valid = false;
        emailError.textContent = 'Please enter a valid email address.';
      }


      if (!numberInput.validity.valid) {
        valid = false;
        numberError.textContent = 'Please enter a number between 1 and 100.';
      }


      if (!passwordInput.validity.valid) {
        valid = false;
        passwordError.textContent = 'Password must be at least 8 characters long.';
```

```
    }


    if (!valid) {
      event.preventDefault();
    }
  });
</script>
```

Q.56 Dynamic Form Validation in JS?

Dynamic form validation in JavaScript involves validating form inputs based on user interactions in real time. This means that as users type or select options, the validation logic responds immediately, providing feedback and ensuring that the data entered meets specified criteria.

Q.57 how many type of JS Event? How to use it ?

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet"
integrity="sha384-QWTKZyjpPEjISv5WaRU9OFeRpok6YctnYmDr5pNlyT2bRjXh0JMhjY6hW+ALEwIH" crossorigin="anonymous">
</head>
<body>

   <button class="btn btn-success" id="btn"> btn</button>
</body>
<script>
    document.getElementById("btn").addEventListener("click",function(){
        alert("btn was click")
    })
</script>
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js" integrity="sha384-
YvpcrYf0tY3lHB60NNkmXc5s9fDVZLESaAA55NDzOxhy9GkcIdslK1eN7N6jIeHz" crossorigin="anonymous"></script>
</html>
```

Q.60 What is Bom vs Dom in JS?

The BOM (Browser Object Model) consists of the objects navigator, history, screen, location and document which are children of window. In the document node is the DOM (Document Object Model), the document object model, which represents the contents of the page. You can manipulate it using javascript.

Q.61 Array vs object defences in JS?

The key difference between Arrays and Objects is how the data is organized. Arrays are used when we need to collection a list of elements of the same data type or structure. On the other hand, objects are used when grouping multiple sets of data that belong together using labels, where each property or key has its own value of any type.

Q.62 Split the string into an array using split() Method?

```
const str = "hello";
const arr = str.split("");
console.log(arr); // run: ["h", "e", "l", "l", "o"]
```

Q.63 Check if the string contains a word Script using includes() method?

```
let a = [10,20,30,40,50,60,70]
let k= a. includes(100)
console. log("includes function--"+k) // run: false
```

Q.64 Change all the string characters to lowercase letters using toLowerCase() Method.

```
let str = "HELLO, HOW ARE YOU?";
        let lowerCaseStr = str. toLowerCase();

        console.log (lowerCaseStr); // run: "hello, how are you?"
```

Q.65 What is Character at index 15 in '30 Days of JavaScript' string? Use char At () method.

```
   const str = "30 Days of JavaScript";
            const characterAtIndex15 = str.charAt(15);
            console.log("Character at index 15:", characterAtIndex15);
```

Q.66 copy to one string to another string in JS?

```
        let str="Hello"
        newstr =str;
        console.log(newstr);
```