JAVA SCRIPT

**What is JavaScript?**

1. JavaScript is the world’s most popular programming language.

2. It is a programming language for the web development purpose.

3. If you want to become a web developer, Then you can’t ignore

JavaScript because,

JavaScript plays a major role in web applications.

4. JavaScript is a lightweight and cross-platform

object-oriented programming.

5. JavaScript is interpreted language not compiler language,

That means JavaScript code executes line by line.

6.If you learn JavaScript, Then you can easily understand all the

JavaScript frameworks like jQuery, React, Angular, etc.

**Features of JavaScript:**

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There are lots of features in JavaScript:

1. All popular web browsers support JavaScript.

2. JavaScript supports **object-oriented programming** and

also uses **inheritance.**

3. JavaScript is a lightweight interpreted language.

4. JavaScript can be used on servers.

5. JavaScript can be used to manipulate **HTML** **DOM**.

DOM stands for **Document Object Model**

6. JavaScript is a **case-sensitive language**.

7. JavaScript support multiple operating systems including,

Windows, macOS,DOS, etc.

8. There are so many JavaScript frameworks and

Libraries are available.

9. JavaScript is a weakly typed language,

Where certain types are implicit cast.

**Alert dialog box: or alert()**

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1. An alert dialog box is mostly used to give the

**warning messages to the users**.

2. These messages are friendlier messages.

3. An alert dialog gives only one button

i.e 'ok' button to select and proceed.

4. **The alert function can display messages of any**

**data type**.

e.g: string , number, boolean ....etc

5. **There is no need to convert a message to**

**string type**.

ex-1: **alert**('welcome to web developers');

ex-2: **alert**('welcome to Tronix technologies');

ex-3: **alert**('welcome to javascript tutorials');

ex-4: **alert**(500);

ex-5: **alert**(true);

ex-6: **alert**(false);

**Prompt dialog box:**

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1.The prompt dialog is very useful when you want to

**pop-up a text box to get the user input.**

2.This is enables to interact to the user's.

3.The user needs to fill the field and then click the ok button.

**syntax:**

**prompt(arg1,arg2);**

here,

1. The **arg1** indicates , the message to be displayed.

2. The **arg2** indicates, the default value.

These two arguments are **optional**.

3. **The prompt dialog contains 2 buttons**:

one is **'ok'** button .

the other one is **'cancel'** button.

4. **If the user clicks the 'ok' button, then**

**the prompt() function returns the entered**

**value from the text box**.

5. **If the user clicks the 'cancel' button, then**

**the prompt() function returns the zero value**

**from the text box.**

6. This funciton is used to get the input from the user.

7. By default, the **prompt dialog box returns string data type.**

**ex-1:** n= **prompt**("enter any number");

**ex-2:** age=**prompt**('enter age');

**ex-3:** name=**prompt**('enter name of the student');

**ex-4:** n=**prompt**('enter any number',50)

**ex-5**: **Write a program Addition of two numbers:**

*<script>*

*var n1,n2,result;*

*n1= Number(prompt('enter First number'));*

*n2= Number(prompt('enter Second number'));*

*result=n1+n2;*

*document.write('result = '+result);*

*</script>*

**Confirm dialog box (or) confirm():**

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1. It is also called **confirmation dialog box.**

2. **A confirmation dialog box is mostly used to take**

**user's confimation to proceed.**

3. The confirmation box is **similar to alert box,**

but also displays a cancel button in the popup.

4. **It displays a dialog box with two buttons.**

**i.e ok and cancel buttons**.

5**. These buttons returns boolean values.**

**i.e. true or false.**

6. **true for ok and false for cancel.**

7. If the user clicks the ok button, it returns true.

8. if the user clicks the cancel button, it returns false.

**Syntax :**

**confirm("Any message....");**

**ex-1:** **confirm**("Are you sure ")

**ex-2:** **confirm**('Exit or not?')

**ex-3:** **confirm**('save or not?')

**ex-4:** **confirm**('update or not?')

**ex-5:**

<script>

var x;

x = confirm("Are you sure ")

if (x == true)

{

confirm('Exit or not?')

confirm('save or not?')

confirm('update or not?')

}

</script>

**ex-6:**

<h1> demo: confirmation dialog box </h1>

<script>

var result;

result=confirm("do you want to save changes?");

if (result)

{

document.write("data saved successfully");

}

else

{

document.write("save cancelled");

}

</script>

**alert():**

* This function is used to display messages.
* **Syntax:**

**alert(' Any Message ')**

**prompt():**

* This function is used to get user input.
* By default , this function returns string data type.
* syntax:

**variablename = prompt('Any Message ..')**

**Ex:**

name = **prompt**('Enter your name');

age = **prompt**('Enter your age');

phno = **prompt**('Enter your phone number');

**confirm():**

* This function is used to display messages.
* It returns, boolean values. i.e. true, false,
* true is represented by '1'.
* false is reprsented by '0'.

**Ex-1 : Write a javascript program to find addition of two numbers**

**Method-1:**

<script>

a = Number(prompt('Enter first number'));

b = Number(prompt('Enter second number'));

c=a+b;

document.write(c);

</script>

**Method-2:**

<script>

a = Number(prompt('Enter first number'));

b = Number(prompt('Enter second number'));

c=a+b;

console.log(c);

</script>

**Ex-2 : write a prgoram to find the area of a rectangle**

<script>

l= Number(prompt('Enter length value'));

b = Number(prompt('Enter bredth value'));

area = l \* b;

document.write('Area of a rectangle = '+area);

</script>

**Ex-3 : write a prgoram to find the area of a circle**

<script>

r= Number(prompt('Enter radius value'));

area = 3.14 \* r\* r

document.write('Area of a circle = '+area);

</script>

**Ex-4:**

<script>

empid = prompt("enter employee number");

ename = prompt("enter employee name");

sal = prompt("enter employee salary");

document.write("Employee Number = " + empid +"<br>");

document.write("Employee Name = "+ ename +"<br>");

document.write("Employee salary = "+ sal +"<br>");

 </script>

**DATA TYPES IN JAVASCRIPT**

* **Data means only values.**

1. Javascript is a loosely typed programming langauge.

2. javascript is a dynamic typed programming language.

i.e The programmer neednot explicitly specify

the data type to store in a variable.

3. A data type is a classfication of data that

tell the compiler or interpreter how the

programmer wants to use the data.

4. javascript can handled 2 types of data types.

**DATA TYPES**

**PRIMITIVE DATA TYPES NON-PRIMITIVE DATA TYPES**

1. number data type 1. Arrays

2. string data type 2. Object

3. Boolean data type 3. Date

4. undefined data type

5. null data type.

**PRIMITIVE DATA TYPES**

* + It is also called **built-in data types** or **standard data type** or **predefined data type**.
  + These are 5 types:

1. **number data type**
2. **string data type**
3. **Boolean data type**
4. **undefined data type**
5. **null data type.**
6. **number data types:**

* It represents digits with decimal point

**Ex:**

x=5;

y=88

z=99

a=10.5

b=45.90

**2. string data types:**

* It represents **alphabets, digits and special symbols**.
* A single character or group of characters is called string.
* These are enclosed by either single quotes or double quotes.

**Ex:**

s=’javascript is a high level language’

x=”Tronix Technologies”;

y=’Kusu ondition rao’;

z=’html 5’;

a=’css 3’;

b=’Django 4’;

**3. Boolean data type:**

* It ondition either true or false. Only two values.

**Ex:**

x=true;

y=false;

**4. undefined data type:**

* A variable that “**has an unassigned**” value will have an undefined default value.

**Ex:**

var x ;

1. **null data type:**

* In javascript, null means “**nothing**”.
* It is something that doesnot exist.

**Ex:**

a=null;

b=null;

* **Write a program to Demonstrate Primitive Data Types:**

<html>

<head>

<script>

var a,b,c,d,e;

a=10;

b=’Tronix technologies’;

c=true;

e=null;

document.write(typeof(a)+”<br>”);

document.write(typeof(b)+”<br>”);

document.write(typeof(c)+”<br>”);

document.write(typeof(d)+”<br>”);

document.write(typeof(e)+”<br>”);

</script>

</head>

</html>

**NON-PRIMITIVE DATA TYPES**

* It is also called **composite data types** or **user-defined data types**.
* These are 3 types:

1. **Array**

2. **Object**

3. **Date**

1. **Array:**

* A array is a **Variable** . It is used to **store more than one value of same data type.**

**Ex-1:**

var a = [5,8,25,10,20];

**Ex-2:**

<html>

<head>

<script>

var a= [5,8,25,10,20];

for(i=0;i<5;i++)

{

document.write(a[i]+”<br>”);

}

</script>

</head>

</html>

**2. object:**

* In java script, **everything is an object.**
* It is an instance of a class that access the data and members encapsulated in the given class.

**Ex:**

<html>

<head>

<script>

var student = new Object();

student.name=’ram’;

student.age=22;

document.write(‘student name=’+student.name+”<br>”);

document.write(‘student age=’+student.age+”<br>”);

document.write(typeof(student));

</script>

</head>

</html>

**3. Date ():**

* This date represents date data type.

**Ex: To print present date and time.**

<html>

<head>object

<script>

var d = new Date();

document.write(d+’<br>’);

document.write(typeof(d))

</script>

</head>

</html>

* **Write a Demo JavaScript Program for Arithmetic Operators**

<html>

<head>

<script>

a=10;

b=2;

document.write(“The value of A + B = “+(a+b)+”<br>”);

document.write(“The value of A – B = “+(a-b)+”<br>”);

document.write(“The value of A \* B = “+(a\*b)+”<br>”);

document.write(“The value of A / B = “+(a/b)+”<br>”);

document.write(“The value of A % B = “+(a%b)+”<br>”);

</script>

</head>

</html>

* **Write a Demo JavaScript Program for Relational Operators**

<html>

<head>

<script>

a=10;

b=2;

document.write(“The value of A < B = “+(a<b)+”<br>”);

document.write(“The value of A > B = “+(a>b)+”<br>”);

document.write(“The value of A <= B = “+(a<=b)+”<br>”);

document.write(“The value of A >= B = “+(a>=b)+”<br>”);

document.write(“The value of A == B = “+(a==b)+”<br>”);

document.write(“The value of A != B = “+(a!=b)+”<br>”);

</script>

</head>

</html>

**CONDITIONAL CONTROL STATEMENTS**

* In JavaScript the Conditional Control Statements are 2 Types

1. **if statement**
2. **switch statement**

**1.if statement:**

* It is a conditional statement
* Based on the condition the statements are executed.
* Every condition returns only two values. Either true or false.
* In JavaScript the if statement are available in 4 forms:

1. **simple if statement**
2. **if – else statement**
3. **if-else-if statement**
4. **nested if statement**.

**I . simple if statement:**

* If the condition returns True then body of the if statements are Executed.

**Syntax:**

**if (condition)**

**{**

**statement-1**

**statement-2**

**statement-3**

**…...**

**…...**

**statement-n**

**}**

here,

1. **if** is a **Keyword**.

2. condition is a **Relational Expression**. It **Returns** either **true or false**.

3. if the condition returns true, then

st-1,st-2,st-3…..st-n are executed.

**Ex-1:**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>FR</title>  
</head>  
<body bgcolor=”grey”>  
<script>  
 a = Number(prompt(“ENTER ANY NUMBER :”))  
 if (a>0)  
 {  
 document.write(“THE NUMBER IS POSTIVE”);  
 }  
</script>  
</body>  
</html>

**Ex-2:**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>FR</title>  
</head>  
<body bgcolor=”grey”>  
<script>  
 time = Number(prompt(“ENTER PRESENT TIME :”))  
 if ( (time>6) && (time<11) )  
 {  
 document.write(“hai friends”);  
 document.write(“good morning”);  
 }  
  
</script>  
</body>  
</html>

**ii. if-else statement:**

* if the condition returns true, then true block will be executed. Otherwise false block will Executed.

**Syntax:**

**if (condition)**

**{**

**true block**

**}**

**else**

**{**

**false block**

**}**

here,

1. **if,else** are keywords in **JavaScript.**

2. condition is a **Relational Expression.**

3. It **returns** either **true or false**.

4. If the condition **returns** **true**, then **true** blockwillbe **executed**.

5. If the condition **returns** **false**, then **false** blockwillbe **executed**.

**Ex: To Find The Biggest of Two Numbers:**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>FR</title>  
</head>  
<body bgcolor=”grey”>  
<script>  
 time = Number(prompt(“ENTER PRESENT TIME :”))  
 if ( (time>6) && (time<11) )  
 {  
 document.write(“hai friends”);  
 document.write(“good morning”);  
 }  
  
</script>  
</body>  
</html>

**iii. if-else-if statement:**

* it is used to check multiple conditions.

**Syntax:**

**if (condition-1)**

**{**

**st-1**

**}**

**else if (condition-2)**

**{**

**st-2**

**}**

**else**

**{**

**st-3**

**}**

here,

1. **if,else** are keywords

2. if condition-1 returns true then statement-1 will be executed and remaining part-1 not executed.

3. if condition-1 returns false, then st-1 is not executed, and to check condition-2

4. if condition-2 returns true then st-2 will be executed. And remaining part not executed.

5. if the condition-2 returns false, then st-3 will be executed.

**Ex: To Find The Given Number is Positive Number or Negative Number or Zero Number.**

**Using : if-else-if**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>FR</title>  
</head>  
<body bgcolor=”grey”>  
<script>  
 n=Number(prompt(“ENTER ANY NUMBER :”));  
 if(n>0)  
 {  
 document.write(“THE NUMBER IS POSTIVE”);  
 }  
 else if(n==0)  
 {  
 document.write(“THE NUMBER IS ZEREO”);  
 }  
 else  
 {  
 document.write(“THE NUMBER IS NEGATIVE”);  
 }  
</script>  
</body>  
</html>

**iv. nested if statement:**

* A if statement contains another if statement. Is called Nested if statement.

**Syntax:**

**if (condition-1)**

**{**

**if (condition-2)**

**{**

**st-1**

**}**

**else**

**{**

**st-2**

**}**

**}**

**else**

**{**

**st-3**

**}**

here,

1. condition-1 returns true and conition-2 returns true st-1 will be executed.

2. condition-1 returns true and condition-2 returns false then st-2 will be executed.

3. if condition -1 returns false then st-3 will be executed.

**Ex: Write a Program to Check The Given Number is Positive Number or Negative or Zero Number**

**Using Nested if statement**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>FR</title>  
</head>  
<body bgcolor=”grey”>  
<script>  
 n=Number(prompt(“ENTER ANY NUMBER :”));  
 if(n>=0)  
 {  
 if(n>0)  
 {  
 document.write(“THE NUMBER IS POSTIVE”);  
 }  
 else  
 {  
 document.write(“THE NUMBER IS ZERO”);  
 }  
 }  
 else  
 {  
 document.write(“THE NUMBER IS NEGATIVE”);  
 }  
</script>  
</body>  
</html>

**1.Switch Statement :**

* Switch statement is a **Conditional Control Statement** in JavaScript.
* Switch statement is used to perform different actions on different conditions.
* **It is used to compare the same expression to different values.**

**Syntax:**

**switch (expression)**

**{**

**case condition-1:**

**statement-1;**

**break;**

**case condition-2:**

**statement-2**

**break;**

**case condition-3:**

**statement-3**

**break;**

**…....**

**…...**

**case condition-n:**

**statement-n;**

**break;**

**default:**

**default statements;**

**}**

**Here,**

1. **switch**, **case**, **break** are **Keywords**.

2. **ondition-1, Condton-2……Condition-n** are **Relational Expression.**

3. if the **conditions are false**, then Automatically **default** statements are **Executed.**

**Ex: Write a JavaScript Program To Print a Given Single Digit Number in Words.**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>MR</title>  
</head>  
<body>  
<script>  
  
 n=Number(prompt(“ENTER YOUR DIGIT :”));  
 switch(n)  
 {  
 case 0:  
 document.write(“ZERO”);  
 break;  
  
 case 1:  
 document.write(“ONE”);  
 break;  
  
 case 2:  
 document.write(“TWO”);  
 break;  
  
 case 3:  
 document.write(“THREE”);  
 break;  
  
 case 4:  
 document.write(“FOUR”);  
 break;  
  
 case 5:  
 document.write(“FIVE”);  
 break;  
  
 case 6:  
 document.write(“SIX”);  
 break;  
  
 case 7:  
 document.write(“SEVEN”);  
 break;  
  
 case 8:  
 document.write(“EIGHT”);  
 break;  
  
 case 9:  
 document.write(“NINE”);  
 break;  
  
 default:  
 document.write(“INVALID DIGIT”+”<br>”);  
 document.write(“PLEASE CHECK AGAIN\_\_\_\_!!!!”);  
 break;  
 }  
</script>  
</body>  
</html>

**Ex-2:**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>FR</title>  
</head>  
<body bgcolor=”skyblue”>  
<script>  
 fruits=prompt(“ENTER THE FRUIT NAME :”);  
 switch(fruits)  
 {  
 case “Banana”:  
 alert(“BANANA IS GOOD”);  
 break;  
  
 case “APPLE”:  
 alert(“APPLE IS BRILIANT”);  
 break;  
  
 case “Carrot”:  
 alert(“CARROT IS HEALTHY”);  
 break;  
  
 case “Orange”:  
 alert(“ORANGES HAVE VICTIMINS”);  
 break;  
  
 default:  
 alert(“IN-COORECT FRUIT NAME”+”<br>”);  
 alert(“PLEASE CHECK FRUIT NAME”);  
 break;  
 }  
</script>  
</body>  
</html>

**Ex: Write a Program To Enter Day Number And Print it in Words**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>FR</title>  
</head>  
<body bgcolor=”grey”>  
<script>  
 daynum=Number(prompt(“ENTER THE DAY NUMBER :”));  
 switch(daynum)  
 {  
 case 1:  
 document.write(“MONDAY”);  
 break;  
  
 case 2:  
 document.write(“TUESDAY”);  
 break;  
  
 case 3:  
 document.write(“WEDNESDAY”);  
 break;  
  
 case 4:  
 document.write(“THURSDAY”);  
 break;  
  
 case 5:  
 document.write(“FIRDAY”);  
 break;  
  
 case 6:  
 document.write(“SATURDAY”);  
 break;  
  
 case 7:  
 document.write(“SUNDAY”);  
 break;  
  
 default:  
 document.write(“INVALID DAY NUMBER”+”<br>”);  
 document.write(“PLEASE CHECK THE NUMBER”);  
 break;  
 }  
</script>  
</body>  
</html>

**Ex: Write a Program To Enter Month Number And Print it in Words.**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>FR</title>  
</head>  
<body bgcolor=”grey”>  
<script>  
 monnum=Number(prompt(“ENTER THE DAY NUMBER :”));  
 switch(monnum)  
 {  
 case 1:  
 document.write(“JANUARY”);  
 break;  
  
 case 2:  
 document.write(“FEBRUARY”);  
 break;  
  
 case 3:  
 document.write(“MARCH”);  
 break;  
  
 case 4:  
 document.write(“APRIL”);  
 break;  
  
 case 5:  
 document.write(“MAY”);  
 break;  
  
 case 6:  
 document.write(“JUNE”);  
 break;  
  
 case 7:  
 document.write(“JULY”);  
 break;  
  
 case 8:  
 document.write(“AUGUST”);  
 break;  
  
 case 9:  
 document.write(“SEPTEMBER”);  
 break;  
  
 case 10:  
 document.write(“OCTOBER”);  
 break;  
  
 case 11:  
 document.write(“NOVEMBER”);  
 break;  
  
 case 12:  
 document.write(“DECEMBER”);  
 break;  
  
 default:  
 document.write(“INVALID MONTH NUMBER”+”<br>”);  
 document.write(“PLEASE CHECK THE NUMBER”);  
 break;  
 }  
</script>  
</body>  
</html>

**Ex: Write a JavaScript Program To Enter 2 Numbers And Find The Corresponding**

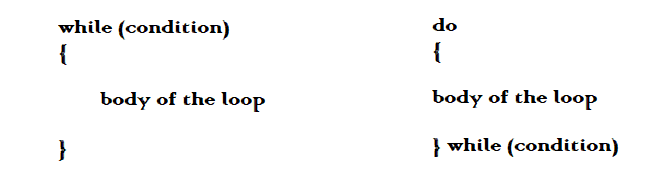
**Arithmetic Operation.**

<!DOCTYPE html>  
<html lang=”en”>  
<head>  
 <meta charset=”UTF-8”>  
 <title>FR</title>  
</head>  
<body bgcolor=”grey”>  
<script>  
 x=Number(prompt(“ENTER THE FIRST NUMBER :”));  
 y=Number(prompt(“ENTER THE SECOND NUMBER :”));  
 op=prompt(“SELECT THE OPERATOR[ + , - , \* , / , % ]:”);  
 switch(op)  
 {  
 case ‘+’:  
 document.write(“THE ADDITION IS “+(x+y));  
 break;  
  
 case ‘-‘:  
 document.write(“THE SUBTRACTION IS “+(x-y));  
 break;  
  
 case ‘\*’:  
 document.write(“THE MULTIPLICATION IS “+(x\*y));  
 break;  
  
 case ‘/’:  
 document.write(“THE DIVISION IS “+(x/y));  
 break;  
  
 case ‘%’:  
 document.write(“THE MODULO DIVISION IS “+(x%y));  
 break;  
  
  
 default:  
 document.write(“INVALID OPERATOR”+”<br>”);  
 document.write(“PLEASE CHECK THE OPERATOR”);  
 break;  
 }  
</script>  
</body>  
</html>

* what are differences between while and do-while loop?

WHILE LOOP DO-WHILE LOOP

**1. SYNTAX: 1. SYNTAX:**



**2**. It is also called **“ENTRY-CONTROLLED LOOP**”. **2**. It is also called **“EXIT-CONTROLLED LOOP**”.

**3.** **In this loop, 3. In this loop,**

**First, we check the condition First, we execute the body of the Loop, then**

**if the condition returns True, then we check the Condition.**

**Execute the body of the Loop**

**4. This Process is Repeated until the condition 4. This Process is Repeated until the condition**

**Returns True. If the Condition returns False Returns True. If the Condition returns False**

**Then the Loop will Stop Then the Loop will Stop**

**for loop:**

* **while and do-while loops are executed based on condition.**
* **But for loop is executed ‘n’ number of times.**

1. simple for loop
2. for-of loop
3. for-in loop

**1. simple for loop:**

--------------------------

**Syntax:**

**for(initialization;conditon;increment/decrement)**

**{**

**body of the for loop**

**}**

**Ex-1: To Print 'good afternoon' Message 10 Times.**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 for(i=1;i<=10;i++)  
 document.write("GOOD MORNING"+"<br>");  
</script>  
</body>  
</html>

**Ex-2:**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 for(i=1;i<=10;i++)  
 {  
 document.write("SIVA ");  
 document.write("KIRAN"+"<br>");  
 }  
</script>  
</body>  
</html>

**Ex-3: Write a Program To Print 1 to 10 Numbers**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 for(i=1;i<=10;i++)  
 {  
 document.write(i+"<br>");  
 }  
</script>  
</body>  
</html>

**Ex-4: Write a JavaScript Program To Print “ODD NUMDERS” Between 1 To 10 Numbers**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 for(i=1;i<=10;i=i+2)  
 {  
 document.write(i+"<br>");  
 }  
</script>  
</body>  
</html>

**Ex-5: Write a JavaScript Program To Print “EVEN NUMDERS” Between 1 To 10 Numbers**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 for(i=2;i<=10;i=i+2)  
 {  
 document.write(i+"<br>");  
 }  
</script>  
</body>  
</html>

**Ex-6: Write a Program To Print Number, and “SQUARE and CUDE” Of The Given Number.**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
document.write("Number"+"&nbsp"+"Square"+"&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp"+"cube"+"<br>");  
for(i=1;i<=10;i++)  
 document.write("&nbsp&nbsp"+i+"&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp"+(i\*i)+"&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp&nbsp"+(i\*i\*i)+"<br>");  
</script>  
</body>  
</html>

**Ex-7: Write a Program To Print Given “MATHEMATICAL TABLE”**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 n = prompt("ENTER TABLE NUMBER :")  
 document.write("MATHEMATICAL TABLE :"+"<br>");  
 for(i=1;i<=10;i++)  
 document.write(n , ' \* ', i ,' = ', n\*i +"<br>");  
</script>  
</body>  
</html>

**Ex-7: Write a Program To Print 1 To 20 “MATHEMATICAL TABLES”**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 document.write("1 TO 20 MATHEMATICAL TABLES"+"<br>");  
 document.write("-------------------------------------------------"+"<br><br>");  
 for (n=1;n<=20;n++)  
 {  
 document.write("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"+"<br>");  
 document.write("TABLE NUMBER : "+ n + "<br>");  
 document.write("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*"+"<br>");  
 for (i=1;i<=10;i++)  
 {  
 document.write(n+" \* "+ i +" = "+ n\*i +"<br>");  
 }  
 document.write("<br><br>");  
 }  
</script>  
</body>  
</html>

**Ex-8: Write a Program To Check The Given Number is PRIME NUMBER O NOT?**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 n=Number(prompt("ENTER ANY NUMBER :"))  
 count=0  
 for (i=1;i<=n;i++)  
 if (n % i == 0)  
 count=count+1  
  
 if (count ==2)  
 {  
 document.write("IT IS PRIME NUMBER");  
 }  
 else  
 {  
 document.write("IT IS NOT PRIME NUMBER");  
 }  
</script>  
</body>  
</html>

**Ex-9: Write a Program To Factors Of a Given Number ?**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 n=Number(prompt("ENTER ANY NUMBER :"))  
 count=0  
 for (i=1;i<=n;i++)  
 if (n % i == 0)  
 {  
 document.write("FACTORS ARE :" + i +"<br>")  
 count=count+1  
 }  
 document.write("NUMBER OF FACTORS ARE :" +count)  
</script>  
</body>  
</html>

**2. for - in statement:**

----------------------------

1. for -in loop is used traverse all the properties of an object.
2. It is designed for looping through arrays.

**Syntax:**

**for ( variablename in object)**

**{**

**st-1**

**st-2**

**st-3**

**....**

**....**

**st-n**

**}**

**Here:**

**for , in** are **Keywords**

**object is a iterable i.e arrays, strings or maps**

**Ex-1:**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 var x=['c','c++','javascript'];  
 for (i in x)  
 {  
 document.write(x[i]+"<br>");  
 }  
</script>  
</body>  
</html>

**3. for - of statement:**

* The JavaScript for - of loops through the values of an iterable objects.

**Syntax :**

**for ( variablename of iterable)**

**{**

**st-1;**

**st-2;**

**st-3;**

**...**

**....**

**st-n;**

**}**

**Here:**

**for , of** are called **Keywords**

**st-1,st-2....st-n are called body of the for loop.**

**Ex-1:**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 var x = ['c','c++','javascript'];  
 for (i of x)  
 {  
 document.write(i+"<br>");  
 }  
</script>  
</body>  
</html>

**Ex-2:**

<!DOCTYPE html>  
<html lang="en">  
<head>  
 <meta charset="UTF-8">  
 <title>FR</title>  
</head>  
<body bgcolor="grey">  
<script>  
 var i;  
 var x=[11,22,33,44];  
 for (i of x)  
 {  
 document.write(i+"<br>");  
 }  
</script>  
</body>  
</html>

**Ex-3: Write a Program to Find Sum of Digits of a Given Number.**

**Ex: 4519 ==> 4+5+1+9 = 19**

**Method-1: Using while loop**

<script>

n = Number(prompt('Enter any number'))

sum=0;

while (n>0)

{

d = n%10;

n = parseInt(n / 10);

sum = sum + d;

}

document.write('Sum of digits = '+ sum);

</script>

**Method-2: Using function**

<script>

function find(x)

{

sum=0;

while (x>0)

{

d = x%10;

x = parseInt(x/10);

sum = sum + d;

}

return sum

}

n = Number(prompt('Enter any number'));

s = find(n);

document.write('Sum of digits = ' + s);

</script>

**Method-3: Using Recursive Function**

<script>

function find(x)

{

if (x==0)

return 0

else

return x%10 + find(parseInt(x/10))

}

n = Number(prompt('Enter any number'));

s = find(n);

document.write('Sum of digits = ' + s);

</script>

**Ex-4: Write a Program to Find The Factorial of a Given Number**

using recursion

5 ! = 5 x 4!

= 5 x 4 x 3!

= 5 x 4 x 3 x 2!

= 5 x 4 x 3 x 2 x 1!

= 5 x 4 x 3 x 2 x 1

= 120

<script>

function factorial(x)

{

if (x==1)

return 1

else

return x \* factorial(x-1)

}

n = Number (prompt('Enter any number'));

f = factorial(n);

document.write('Factorial value = ' + f);

</script>

**Ex-5: Write a Function to Find Addition of Two Numbers**

function addition(x,y,m,n)

{

z = x+y;

return z

}

a=10;

b=20;

c = addition(a,b);

document.write(c);

Here,

**a, b** are called Actual Arguments

**x, y** are called Formal Arguments

**z** is called Local Variable.