

Java Script

What is Script :-

Scripts are the light weighted computer programs that directly interprets on web browser to assign programming ability to a web Application.

* Type of Script:

- 1) Client side script :- Java Script, VB Script
- 2) Server side script :- JSP, ASP, PHP, ...

* The difference b/w client side and server side script.

Client Side Script

Server Side Script

1. The famous client side scripts are Java Script and VB script. ① Famous server side scripts are JSP, ASP, PHP.

2. Client side scripts are mainly used to achieve validation in online registration form like email should have @ and .com, Mobile no. exact 9/10 digit etc.

② The main objective of server side script is to achieve database connectivity in a web application.

3. The client side script does not require any web server.

③ The server side script must need a web server for execution.

Example of Server Side Script

ASP

PHP

JSP

Local host web server

IIS

WAMP or XAMPP

APACHE · TOMCAT

① The client side script does not have the server side code.

④ The server side script can contain client side script.

⑤ The client side scripts are visible from the browser by view source option.

⑥ The server side script cannot be visible in browser so it is much secure as compared to client side script.

* Java Script :

Java script is an object based client side script to assign programming ability to a web application.

* Advantage of Java Script ?

-
- ① WAP in JavaScript to add two numbers.

* History of JavaScript:

Java Script is initially known as Live Script but after Java in 1995 it will be renamed as JavaScript.

- ② WAP in JavaScript to add two numbers.

<HTML>

<BODY>

<SCRIPT>

Var a, b, c;

a = parseInt(prompt("Enter 1st no."));

b = parseInt(prompt("Enter 2nd no."));

c = a + b;

document.write("sum = " + c);

</script>

</Body>
</HTML>

→ ~~Ans~~

var → var is a keyword to declare variable in Java script.

prompt → prompt () is a fun of JavaScript to provide input dialog box

parseInt → parseInt() is a fun to convert data in into integer

document → document is a object and write() is a function to write data.

- Q WAP in JavaScript to find the greater b/w two no.
- Q WAP in JavaScript to find the greatest b/w three no using ?:
 - a) table
 - b) fact
- Q Rewrite a no.

Q Reverse:

```

<html>
<body>
<script>
n = parseInt(prompt("Enter a no"));
s = 0;
while (n > 0)
{
    r = n % 10;
    s = s * 10 + r;
    n = Math.floor(n / 10);
}
document.write("Reverse = " + s);
</script>
</body>
</html>
or
for(i = n; i > 0; i = Math.floor(i / 10))
    s = (s * 10 + (i % 10));

```

Q WAP in Java Script to generate a series of prime b/w a given lower to upper limit.

```

<body>
<script>
l = parseInt(prompt("Enter lowerlimit"));
u = parseInt(prompt("Enter upperlimit"));
for(i = l; i <= u; i++)
{
    for(j = 2; j < l; j++)

```

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```
if(i < j == 0)
    break;
}
if(j == i)
document.write(" " + i + " " + j);
</script>
</body>
```

* Array in JavaScript:

In JavaScript Array is dynamic and generic so it can store any size any type data.

Ex:

```
<script>
var a = new Array ("ramchandra", 9, $, 675.56);
// done Array
document.write(a);
</script>
```

Done array:

compile time initialized array.

The compile time static array is known as done array in JavaScript.

A WAP in JavaScript to create a dynamic generic array.

```
<script>
n = prompt("Enter no. of data
you want to store");
```

```
Var a = new Array(n);
alert ("Enter " + n + " data");
For (i=0; i < n; i++) {
    a[i] = prompt ("Enter data");
    alert ("Going to display Array elements");
}
document.write (a);
</script>
```

Q) Syntax:

Q) NOTE:

In Java Script ~~array~~ Array is a predefined class so it must have some function for performing operation on array like:

- ① Sort()
- ② Push()
- ③ Pop()

;

;

;

→

<Script>

```
Var a = new Array("C-dac", "atu", "rahul",
                  "Sumit");
```

```
document.write ("Array elements: " + "<br>")
```

```
document.write (a);
```

```
document.write ("<br>" + "Array elements are  
sorted order: " + "<br>");
```

```

document.write(a.pop());
document.write("<h1>" + "Array elements  
with pop an element" + "</h1>");

a.pop();
document.write(a);
document.write("<b>" + "Array elements  
with push an element" + "</b>");

a.push("Sumit");
document.write(a);
</script>

```

Q WAP in Java Script in Array.

- (A) Sort
- (B) Search
- (C) reverse
- (D) Find the max and 2nd max
- (E) Sum and avg of array elements
- (F) Sum of evens
- (G) Sum of odds

Q Sort the array in ascending order by Selection sort.

```

<script>
n = parseInt(prompt("Enter no. of data"));
var a = new Array(n);
for (i=0; i<n; i++)
    a[i] = parseInt(prompt("Enter data"));
for (i=0; i<n; i++)
{
    for (j=i+1; j<n; j++)
        if (a[i]>a[j])

```

J

$$t = a[i][j];$$
$$a[i][j] = a[j][i];$$
$$a[i][j] = t;$$

J

J

~~<script>~~ document.write(a);
</script>

B

Q1

t
1 2
1 2 3
1 2 3 4

Q2

A
A B
A B C
A B C D

2.

Q3

*
* *
* * *
* * * *

<script>

/*

1

1 2

1 2 3 4

1 2 3 4

*/

for(i=1; i<=4; i++)

{

for(j=1; j<=i; j++)

{

document.write(j);

}

document.write("
");

}

</script>

2.

<Script>

/*

A

A B

A B C

A B C D

*/

str = "ABCD";

for(i=0; i<=3; i++)

{

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

{

document.write(str.charAt(j));

}

For (i=4; i >= 0; i--)

document.write ("
");
}
</script>

Q Rewrite:

<script>

n = parseInt(prompt ("Enter no. of data"));
var a = new Array (n);
for (i = 0; i < n; i++)
a[i] = prompt ("Enter data");
for (i = n - 1; i >= 0; i--)
document.write (a[i] + " ; ");

</script>

Q Merge two array in 3rd Array

Q Copy one array content to another.

Q Create a Java Script application to assign a timer
on the web browser using SetInterval()

<body onload = "a()">

<script>

var x = 1; // Global variable in JS

function a() // UDF

{

document.getElementById ("K").value = x;
x++;

}

~~setInterval(a, 2000);~~ // it is a system define
// Java script function that consists of two args
// 1st the UDF and the 2nd time interval in ms
// to call that UDF

</script>

<input type="text" id="K">

onload:

Onload event always associated on <body> tag and call a js function when the page is load on web browser.

getElementById():

pre define js function to get HTML element by their Id.

Q. Create A JavaScript Application where timer is set at 0 : At 0 we get a message your session is over and navigate to the new page with a message done.

Q. Create A Java Script Application where pictures are change at a fixed time interval.

<body onload="aC()">

<script>

Var x=1;

function aC()

if (x==7)

x=1;

document.getElementById("K").src = "F" + x +
"jpeg";

x++;

y

Set Interval (x, 2000)

</script>

<img src="" id="K" height="100"
width="100">

* String Handling in JavaScript:

String is a collection of streams.

Some important function of String class
object:-

Function

Purpose

1. length → it is an object in Java ~~or~~ Script

2. charAt(i) → return the char at ith index

3. indexof('a') → return the index of 'a' of
1st appearance

4. lastIndexOf('a') → return the index of 'a'
of last appearance.

5. toUpperCase()

6. toLowerCase()

7. substring(2, 7) → create a substring b/w
2 to 7th index

8. trim() → remove space from both right
and left of string.

* JavaScript has two ~~imp~~ imp functions to open and close a new page.

- (1) open ("R.html");
- (2) close ("R.html");

* Assignment on String Handling 1 in JavaScript:

- (1) Find the length of string
- (2) Reverse a string
- (3) Count the no. of vowels of string
- (4) Copy one string to another
- (5) Merge two string in a 3rd string
- (6) Palindrome.

Assignment 2:

- (1) Enter a sentence and display the largest word.
- (2) Enter a sentence and display only the palindrome words.
- (3) Enter a sentence and display the words starts and ends with vowel.
- (4) Enter a word and display the word without repetition of characters.

```
if (x == 'a' || x == 'e' || x == 'i' || x == 'o' ||  
    x == 'u')  
    c++;  
document.write(c);  
</script>
```

* Return + Padd

```
<script>  
str = prompt("Enter a String");  
out = ""
```

* Reverse:

<Script>

str = prompt ("Enter a string");

c = 0;

for (i = 0; i < str.length; i++)

{

x = str.charAt(i);

if (x == 'a' || x == 'e' || x == 'i' || x == 'o' ||
x == 'u')

c++;

}

document.write(c);

</Script>

* Reverse + Palid:

<Script>

str = prompt ("Enter a string");

str1 = "";

for (i = str.length; i >= 0; i--)

str1 = str1 + str.charAt(i);

document.write(str1);

if (str1 == str)

document.write ("Palid string")

else

document.write ("Not Palid string")

</Script>

* Merge two string into third string:

<script>

```
str1 = prompt ("Enter 1st string");
str2 = prompt ("Enter 2nd string");
str3 = " ";
```

```
for (i=0; i<str1.length; i++)
    str3 = str3 + str1.charAt(i);
str3 = str3 + " ";
```

```
for (i=0; i<str2.length; i++)
    str3 = str3 + str2.charAt(i);
```

2 Enter a string and display the palindrome word.

<script>

```
str = prompt ("Enter a string");
str1 = " ";
```

```
for (i=0; i<str.length; i++)
```

{

```
x = str.charAt(i);
```

```
if (x == ' ')
```

{

```
str2 = " ";
```

```
for (j = str.length - 1; j >= 0; j--)
```

```
str2 = str2 + str1.charAt(j);
```

```
if (str1 == str2)
```

```
document.write (str1 + "<br>");
```

```
str1 = " ";  
if  
{  
    str1 = str1 + x;  
}  
else
```

```
</script>
```

* Hidden type:

In HTML we can write a type hidden that will be assigned any type (textbox, radiobutton, checkbox) at run-time.

- Q Create a java script application where on first click of a button we get a text box, on second click it will be changed on radio button and on 3rd click it will be changed on ~~checkbox~~-checkbox.

Ex:

```
<body>  
<script>  
function a(c)  
{  
    document.getElementById("K").type =  
        "text";  
}
```

```
</script>  
<input type = "hidden" id = "K">  
<b>
```

```
<input type = "submit" value = "click"  
      onclick = "a()">
```

```

<html>
<body>
<script>
x = 1;
function a()
{
    if (x == 1)
        document.getElementById("k").type = "checkbox";
    else if (x == 2)
        document.getElementById("k").type = "radio";
    else
        document.getElementById("k").type = "text";
    x++;
}
</script>
<input type = "Hidden" id="k" >
<input type = "Submit" onclick = "a()" >

```

* User define function (UDF) in javascript:
 Function is not a program. It is a part of program or subprogram that provides :-

- Reusability
- Modularity

Type :-

- System define
- User define

1) System define function:
 These are the predefined library function

Parameter

Return

Character

Variable

2) User Define function (UDF)

These function are created by user as per requirement.

Functions are further divide into following types:

1. No return type AND no args:

example:

```
<Script>
Function a()
{
    document.write("Hello");
}
a(); // Function calling
</Script>
```

2. Returns type But no args.

```
<Script>
Function a()
{
    return 0;
}
document.write(a());
<Script>
```

3. Argument but no return type:

```
<script>
Function a(x,y)
{
    document.write("Sum = " + (x+y));
}
```

```
x = parseInt(prompt("Enter 1st no."));
y = parseInt(prompt("Enter 2nd no."));
```

```
</script>
```

4) Function with both return type and args:

```
<script>
Function a(x,y)
{
    return (x+y);
}
```

```
x = parseInt(prompt("Enter 1st no."));
y = parseInt(prompt("Enter 2nd no."));
document.write("SUM = "+(a(x,y)));
```

```
</script>
```

Q Create a VOF prime(n)

```
<script>
Function prime(n)
{
    for(j=2;j<n;j++)
}
```

```
if (n % i == 0)
```

```
break;
```

```
}
```

```
if (i == n)
```

```
return i;
```

```
else return 0;
```

```
}
```

```
<script>
if (prime == true) {
    document.write ("Prime");
} else {
    document.write ("Not prime");
}
</script>
```

* Recursion function:

A function that call itself is called recursive function.

Q7

Recursion is a way to make function works as a loop.

Q. WAP in Java Script to find a factorial by non recursive and recursive function.

* Non Recursive:

```
<script>
```

```
function fact(n)
```

```
{
```

```
f = 1;
```

Date : _____

```
for (i=1; i<=n; i++)  
    F = F * i;  
return F;
```

```
document.write (Fact (prompt ("Enter no")));  
</script>
```

Recursion:

```
<script>
```

```
F = 1, P = 1 // Global variables  
function Fact (n)
```

```
{
```

```
if (j <= n)
```

```
{
```

```
P = F * j;
```

```
j++;
```

```
Fact (n);
```

```
}
```

```
return P;
```

```
{
```

```
document.write (Fact (prompt ("Enter no")));  
</script>
```

Q) Fibonacci - 0 1 1 2 4 7 12

Q.

1	2	3	4	→ recursively
1	2	3	4	