**1. Develop and demonstrate a XHTML file that includes JavaScript script for the following problem:**

**i. Input: A number n obtained using prompt.**

**ii. Output: The first n Fibonacci numbers.**

<!DOCTYPE html>

<html>

<body>

<script>

function fib()

{

var n = prompt("Enter N: ","");

fib1=0;

fib2=1;

fib=0;

document.write("<h2>" +fib1 +"\n</h2>");

document.write("<h2>" +fib2 +"\n</h2>");

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

{

fib = fib1+fib2;

fib1=fib2;

fib2=fib;

document.write("<h2>" +fib +"\n</h2>");

}

}

fib();

</script>

</body>

</html>

**4. Change background color of a web page depending on time of day using JavaScript.**

<!DOCTYPE html>

<html>

<head>

<title>Fahrenheit to Celcius Temperature Converter</title>

</head>

<body>

<script type="text/javascript">

let now=new Date();

let h=now.getHours();

document.write("The hour is: "+h);

if(h>=0 && h<6)

{

document.write('<body style="background-color:red" > ')

}

else if(h>=6 && h<12)

{

document.write('<body style="background-color:orange" > ')

}

else if(h>=12 && h<18)

{

document.write('<body style="background-color:blue" > ')

}

else if(h>=18 && h<23)

{

document.write('<body style="background-color:magenta" > ')

}

</script>

</body>

</html>

**5.Design an arithmetic calculator using JavaScript and html.**

<html>

<head>

<title>Simple Javascript Calculator - Basic Arithmetic Operations</title>

<script language="javascript" type="text/javascript">

function multiply(){

a=Number(document.calculator.number1.value);

b=Number(document.calculator.number2.value);

c=a\*b;

document.calculator.total.value=c;

}

function addition(){

a=Number(document.calculator.number1.value);

b=Number(document.calculator.number2.value);

c=a+b;

document.calculator.total.value=c;

}

function subtraction(){

a=Number(document.calculator.number1.value);

b=Number(document.calculator.number2.value);

c=a-b;

document.calculator.total.value=c;

}

function division(){

a=Number(document.calculator.number1.value);

b=Number(document.calculator.number2.value);

c=a/b;

document.calculator.total.value=c;

}

function modulus(){

a=Number(document.calculator.number1.value);

b=Number(document.calculator.number2.value);

c=a%b;

document.calculator.total.value=c;

}

</script>

</head>

<body>

<form name="calculator">

<label>Number 1:</label>

<input type="text" name="number1"><br><br>

<label>Number 2:</label>

<input type="text" name="number2"><br><br>

<label>Get Result:</label>

<input type="text" name="total"><br><br>

<div>

<input type="button" value="+" onclick="addition();">

<input type="button" value="-" onclick="subtraction();">

<input type="button" value="\*" onclick="multiply();">

<input type="button" value="/" onclick="division();">

<input type="button" value="%" onclick="modulus();">

</div>

</form>

</body>

</html>

**6. Describe the methods used to display something in webpage in JavaScript.**

JavaScript can "display" data in different ways:

* Writing into an HTML element, using innerHTML.
* Writing into the HTML output using document.write().
* Writing into an alert box, using window.alert().
* Writing into the browser console, using console.log().

**Using innerHTML**

To access an HTML element, JavaScript can use the document.getElementById(id) method.

The id attribute defines the HTML element. The innerHTML property defines the HTML content:

Example

<!DOCTYPE html>

<html>

<body>

<h1>My First Web Page</h1>

<p>My First Paragraph</p>

<p id="demo"></p>

<script>

document.getElementById("demo").innerHTML = 5 + 6;

</script>

</body>

</html>

**Using document.write()**

For testing purposes, it is convenient to use document.write():

<!DOCTYPE html>  
<html>  
<body>  
  
<h1>My First Web Page</h1>  
<p>My first paragraph.</p>  
  
<script>  
document.write(5 + 6);  
</script>  
  
</body>  
</html>

**Using window.alert()**

You can use an alert box to display data:

Example

<!DOCTYPE html>

<html>

<body>

<h1>My First Web Page</h1>

<p>My first paragraph.</p>

<script>

window.alert(5 + 6);

</script>

</body>

</html>

**Using console.log()**

For debugging purposes, you can use the **console.log()** method to display data.

Example

<!DOCTYPE html>

<html>

<body>

<script>

console.log(5 + 6);

</script>

</body>

</html>

**7. Describe the methods used to display something in webpage.**

The write() method writes HTML expressions or JavaScript code to a document.

The write() method is mostly used for testing: If it is used after an HTML document is fully loaded, it will delete all existing HTML.

**Example:**

**<!DOCTYPE html>**

**<html>**

**<body>**

**<script>**

**document.write("Hello World! <br>");**

**document.write("Have a nice day!");**

**</script>**

**</body>**

**</html>**

**8.Create an html page to explain the use of various predefined functions of string and math object in java script.**

1. **Predefined Math Functions**

<!DOCTYPE html>

<html>

<body>

<h2>JavaScript Math Constants</h2>

<p id="demo"></p>

<script>

document.getElementById("demo").innerHTML =

"<p><b>Math.E:</b> " + Math.E + "</p>" +

"<p><b>Math.PI:</b> " + Math.PI + "</p>" +

"<p><b>Math.SQRT2:</b> " + Math.SQRT2 + "</p>" +

"<p><b>Math.SQRT1\_2:</b> " + Math.SQRT1\_2 + "</p>" +

"<p><b>Math.LN2:</b> " + Math.LN2 + "</p>" +

"<p><b>Math.LN10:</b> " + Math.LN10 + "</p>" +

"<p><b>Math.LOG2E:</b> " + Math.LOG2E + "</p>" +

"<p><b>Math.Log10E:</b> " + Math.LOG10E + "</p>";

</script>

</body>

</html>

1. **Predefined string Functions**

<!DOCTYPE html>

<html>

<body>

<h2>JavaScript String Properties</h2>

<p>The length property returns the length of a string:</p>

<p id="demo"></p>

<script>

var txt = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";

document.getElementById("demo").innerHTML = txt.length;

</script>

</body>

</html>

**9. a) How scripting language differs from HTML.**

**b) Define function in Java Script with example.**

**(4+5+6)**

a) HTML is actually a markup language and not a scripting language.

Scripting implies decision making capabilities (the code can actually evaluate and take an action based on what it finds) – PHP, PERL, Ruby, Javascript are examples of scripting languages.

Markup languages create structure for a document … they only describe data. For example: HTML, XHTML, XML

b) Code can be reused: Define the code once, and use it many times. The same code many times with different arguments, to produce different results.

<!DOCTYPE html>

<html>

<body>

<h2>JavaScript Functions</h2>

<script>

functiontoCelsius(f)

{

return (5/9) \* (f-32);

}

alert(functiontoCelsius(99) );

</script>

</body>

</html>

**c)Write the complete JavaScript to prompt the user for the radius of the sphere and call function sphere Volume to calculate and display the volume of the sphere. Use the statement. Volume=(4.0/3.0)\*Math.PI\*Math.pow(radius,3).**

<!DOCTYPE html>

<html>

<head>

<title>Page</title>

<script>

function vol()

{

n=document.volCalc.radius.value;

vol=(4.0/3.0)\*Math.PI\*Math.pow(n,3);

document.getElementById("demo").innerHTML=vol;

}

</script>

</head>

<body>

<form name="volCalc" method="POST">

<label>Radius</label>

<input type="text" name="radius" placeholder="Radius">

<input type="button" name="submit" value="Calculate" onclick="vol();">

<br><br>

<p id="demo"> </p>

</form>

</body>

</html>

**14. a) Explain the various event handlers in java script. Give an example of each.**

**b) Develop a JavaScript program to display a message “HI ! GOOD MORNING TO YOU “when a page is loaded and displays a message “THANKS TO VISIT OUR WEB PAGE” when a page is unloaded.**  (8+7)

Event Handlers:

|  |  |
| --- | --- |
| onclick: | Use this to invoke JavaScript upon clicking (a link, or form boxes) |
| onload: | Use this to invoke JavaScript after the page or an image has finished loading. |
| onmouseover: | Use this to invoke JavaScript if the mouse passes by some link |
| onmouseout: | Use this to invoke JavaScript if the mouse goes pass some link |
| onunload: | Use this to invoke JavaScript right after someone leaves this page. |

<script>

function inform()

{

alert("You have activated me by clicking the grey button!")

}

</script>

<form>

<input type="button" name="test" value="Click me" onclick="inform()">

</form>

<html>

<head>

<title>Body onload example</title>

</head>

<body onload="alert('This page has finished loading!')">

Welcome to my page

</body>

</html>

<a href="blabla.htm" onmouseover="status='DHTML code library!';return true"onmouseout="status=' '">Dynamic Drive</a>

<body onunload="alert('Thank you. Please come back to this site and visit us soon, ok?')">

**b.**

<html>

<head>

<script type="text/JavaScript">

function load()

{

alert("HI ! GOOD MORNING TO YOU");

}

function unload()

{

alert("THANKS TO VISIT OUR WEB PAGE");

}

</script>

</head>

<body **onLoad**="load()" **onUnload**="unload()">

<!-- Webpage content goes here -->

</body>

</html>

**15. a) With an example describe java scripts Control structure.**

**a)** Conditional statements are used to perform different actions based on different conditions.

Very often when you write code, you want to perform different actions for different decisions.

In JavaScript we have the following conditional statements:

Use if to specify a block of code to be executed, if a specified condition is true

Use else to specify a block of code to be executed, if the same condition is false

Use else if to specify a new condition to test, if the first condition is false

Use switch to specify many alternative blocks of code to be executed

Example:

<!DOCTYPE html>

<html>

<body>

<p>Click the button to get a time-based greeting:</p>

<button onclick="myFunction()">Try it</button>

<p id="demo"></p>

<script>

function myFunction() {

var greeting;

var time = new Date().getHours();

if (time < 10) {

greeting = "Good morning";

} else if (time < 20) {

greeting = "Good day";

} else {

greeting = "Good evening";

}

document.getElementById("demo").innerHTML = greeting;

}

</script>

</body>

**b) Design a web page with a text box (username) where the user can enter a name and**

**Another text box (ID) where the user enter an only four digit ID.NO and a button “validate”. Validate the entered username and ID field for the following using java script.**

**· Both the fields should not be empty**

**· Name field should have alphabets**

* **ID field should have numeric.**

<!DOCTYPE html>

<html>

<body>

<form action="/action\_pid.php" onsubmit="return myFunction()">

UserName (characters only):

<input type="text" id="uname" name="uname">

<br><br>

Id (4 digit numeric value):

<input type="text" id="id" name="id"><br><br>

<input type="submit" value="Submit">

</form>

<script>

function myFunction()

{

var id = document.getElementById("id").value;

var uname = document.getElementById("uname").value;

submitOK = "true";

if (uname.length <= 0 || id.length <= 0)

{

alert("The name and id can not be empty");

submitOK = "false";

}

else

{

var letters = /^[A-Za-z]+$/;

if(!uname.match(letters))

{

alert('Please input alphabet characters only in username');

return false;

}

if (isNaN(id))

{

alert("The id contain numeric value only!!");

submitOK = "false";

}

else

{

if (id.length != 4 )

{

alert("The id contain 4 digits only !!");

submitOK = "false";

}

}

}

if (submitOK == "false") {

return false;

}

}

</script>

</body>

</html>

**16. a) What are Style Sheets? List down the ways of including style information in a document. Explain about types of cascading style sheet? Explain with example.**

A Style Sheet is a collection of style rules that that tells a browser how the various styles are to be applied to the HTML tags to present the document. Rules can be applied to all the basic HTML elements, for example the <p> tag, or you can define you own variation and apply them where you wish to.

**There are three types of Style Sheets:**

**Embedded**: the style rules are included within the HTML at the top of the Web page - in the head.

**Inline**: the style rules appear throughout the HTML of the Web page - i.e. in the body.

**Linked**: The style rules are stored in a separate file external to all the Web pages.

* CSS stands for Cascading Style Sheets
* CSS describes how HTML elements are to be displayed on screen, paper, or in other media
* CSS saves a lot of work. It can control the layout of multiple web pages all at once
* External stylesheets are stored in CSS files

**<!DOCTYPE html>**

**<html>**

**<head>**

**<style>**

**body {**

**background-color: lightblue;**

**}**

**h1 {**

**color: white;**

**text-align: center;**

**}**

**p {**

**font-family: verdana;**

**font-size: 20px;**

**}**

**</style>**

**</head>**

**<body>**

**<h1>My First CSS Example</h1>**

**<p>This is a paragraph.</p>**

**</body>**

**</html>**

**b) Design a webpage with a textbox where the user can enter a four digit number and button “validate”. Validate the entered number for the following using java script. No zeroes the first digit Entered number must be in ascending order of digits (Ex:1234,5678…).**

(7+8)

<!DOCTYPE html>

<html>

<body>

<p id="demo"></p>

<script>

function validate()

{

var cars=form1.demo.value;

vari = 0;

varlen = cars.length;

for (; i< len-1; i++) {

if(len!=4)

{

alert("length should be 4");

break;

}

else if(cars[0]==0)

{

alert("0 should not be first digit");

break;

}

else {

if(cars[i]>cars[i+1]){

alert("digits must be in ascending order");

break;}

}

}

if (len-1==i)

document.write(cars);

}

</script>

<form name="form1">

Enter a value:

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

<button type="submit" onclick=validate()>Submit</button></form>

</body>

</html>

**18. Write JavaScript for the following. Provide a text box for the user enter user name. Validate the username for the no. of characters (assume some no. say 6). Provide a SUBMIT button for the validation to happen. On successful validation display a new page with an image and two text boxes for entering the width and height of the image respectively with a RESIZE button below. On clicking the Resize button validate the width and height numbers and on successful validation display the image with the requested width and height. (15)**

<!DOCTYPE html>

<html>

<body>

<form action="/action\_pid.php" onsubmit="return myFunction()">

UserName (characters only):

<input type="text" id="uname" name="uname">

<br><br>

Id (4 digit numeric value):

<input type="text" id="id" name="id"><br><br>

<input type="submit" value="Submit">

</form>

<script>

function myFunction()

{

var id = document.getElementById("id").value;

var uname = document.getElementById("uname").value;

submitOK = "true";

if (uname.length <= 0 || id.length <= 0)

{

alert("The name and id can not be empty");

submitOK = "false";

}

else

{

var letters = /^[A-Za-z]+$/;

if(!uname.match(letters))

{

alert('Please input alphabet characters only in username');

return false;

}

if (isNaN(id))

{

alert("The id contain numeric value only!!");

submitOK = "false";

}

else

{

if (id.length != 4 )

{

alert("The id contain 4 digits only !!");

submitOK = "false";

}

}

}

if (submitOK == "false") {

return false;

}

}

</script>

</body>

</html>

<!DOCTYPE html>

<html>

<body>

Width:

<input type="text" id="width"><br><br>

Height:

<input type="text" id="height"><br><br>

<br><br>

<img src="img\_girl.jpg" id="gl" alt="Girl in a jacket" width="100" height="100"><br>

<button onclick="myFunction()">Resize</button>

<script>

function myFunction()

{

var myImg = document.getElementById("gl");

var x = document.getElementById("width").value;

var y = document.getElementById("height").value;

myImg.width=x;

myImg.height=y;

}

</script>

</body>

</html>

**19. a) Create an html page named as “validate\_registration.html”**

**A) Define a method name as “reset()” to be called when reset button is clicked and manually set all values of fields to default.**

**B) Define a method name as “check()” to be called when check button is clicked.**

**C) here check for blank entry, name, age, email, phone no, radio button, checkbox.**

**D) Once all the valuables are properly filled make the submit button to be visible.**

**E) Define the various fields in form using table.**

**(15)**

<html>

<script>

function reset1()

{

x=confirm("It will clear all the text entered")

if(x==true)

{

document.form1.t1.value=""

document.form1.t2.value=""

document.form1.ta.value=""

document.form1.t3.value=""

document.form1.r1[0].checked=false

document.form1.r1[1].checked=false

document.form1.c1.checked=false

document.form1.c2.checked=false

document.form1.c3.checked=false

document.form1.c4.checked=false

document.form1.c5.checked=false

document.form1.c6.checked=false

document.form1.t1.focus()

}

}

function check()

{

if((document.form1.t1.value=="")||(!(isNaN(document.form1.t1.value))))

{

alert("please enter the correct name")

document.form1.t1.value=""

document.form1.t1.focus()

}

else if((document.form1.t2.value=="")||(isNaN(document.form1.t2.value)))

{

alert("please enter the age correctly")

document.form1.t2.value=""

document.form1.t2.focus()

}

else if(document.form1.t2.value>40)

{

alert("Sorry you age is beyound the limit")

document.form1.t2.value=""

document.form1.t2.focus()

}

else if(document.form1.ta.value=="")

{

alert("please enter the address")

document.form1.ta.focus()

}

else if((document.form1.r1[0].checked==false)&&(document.form1.r1[1].checked==false))

{

alert("please select the radio button")

document.form1.r1[0].focus()

}

else if((document.form1.c1.checked==false)&&(document.form1.c2.checked==false)&&(document.form1.c3.checked==false)&&(document.form1.c4.checked==false)&&(document.form1.c5.checked==false))

{

alert("please select the the languages known")

document.form1.c1.focus()

}

else if(document.form1.t3.value=="")

{

alert("please enter the password")

document.form1.t3.focus()

}

else if((document.form1.t1.value!="")&&(document.form1.t2.value!="")&&(document.form1.t3.value!="")&&(document.form1.ta.value!="")&&((document.form1.r1[0].checked!=false)||(document.form1.r1[0].checked!=false))&&((document.form1.c1.checked!=false)||(document.form1.c2.checked!=false)||(document.form1.c3.checked!=false)||(document.form1.c4.checked!=false)||(document.form1.c5.checked!=false)))

{

x=confirm("you have entered the datascorrectly,want to submit the form")

if(x)

{

document.lay.visibility="show"

}

}

}

</script>

<body bgcolor="lightblue" text="red" style="font-size:15pt;font-family:Garamond" onload=document.form1.t1.focus()><center>

<h2>ENTRY FORM</h2></center>

<form name=form1 method=post >

<table name=tab cellspacing=30pt>

<tr><td align=left><h2>Enter your Name :</h2></td><td align=right><input type=text name=t1 size=18>

<tr><td align=left><h2>Enter your Age :</h2></td><td align=right><input type=text name=t2 maxlength=3 size=18>

<tr><td align=left><h2>Enter your Address :</h2></td><td align=right><textarea name=ta rows=5 cols=15></textarea>

<tr><td align=left><h2>Sex :</h2></td><td align=left><input type=radio name=r1 value="female">Female<br>

<input type=radio name=r1 value=male>Male</td>

<tr><td align=left><h2>Languages Known :</h2></td><td align=left><center>(select more than one)</center>

<input type=checkbox name=c1 value=c>C<br>

<input type=checkbox name=c2 value=c++>C++<br>

<input type=checkbox name=c3 value=vb>VB<br>

<input type=checkbox name=c4 value=java>JAVA<br>

<input type=checkbox name=c5 value=asp>ASP<br>

<input type=checkbox name=c6 value=others>OTHERS<br></td>

<tr><td align=left><h2>Enter your Password :</h2></td><td align=right><input type=password name=t3 size=18>

</table><center>

<input type=button value=" reset "onClick=reset1()>

<input type=button value=" check "onClick=check()>

<h3>Before submitting the datas please click the check Button</h3>

<input type="submit" value=" submit "></center>

</form>

</body>

</html>

**20. a) How will you add an element to the beginning of an array?**

**b) Write an HTML/JavaScript code to take name as input through a confirm box and male or female from radio button and display Mr. or Mrs. And followed by user’s name.**

**(7+8)**

a) The unshift() method adds new items to the beginning of an array, and returns the new length.

Example

Add new items to the beginning of an array:

var fruits = ["Banana", "Orange", "Apple", "Mango"];

fruits.unshift("Lemon","Pineapple");

b)

<html>

<head>

<script LANGUAGE="JavaScript">

functionValidateForm(form){

ErrorText= "";

if ( ( form.gender[0].checked == false ) && ( form.gender[1].checked == false ) )

{

alert ( "Please choose your Gender: Male or Female" );

return false;

}

if ( form.gender[0].checked == true)

alert("Mr."+form.name.value);

if ( form.gender[1].checked == true)

alert("Mrs."+form.name.value);

}

</script>

</head>

<body>

<form name="feedback" action="#" method=post>

Name:<input type="text" name="name" ><br>

Your Gender: <input type="radio" name="gender" value="Male"> Male

<input type="radio" name="gender" value="Female"> Female

<input type="button" name="SubmitButton" value="Submit" onClick="ValidateForm(this.form)">

<input type="reset" value="Reset">

</form>

</body>

</html>