Unit -1

1. With a neat block diagram, describe the components of a web application.
2. Explain the request response model of HTTP with a neat diagram.
3. Compare the GET and POST methods of HTTP request.
4. Write the structure of HTTP request and response messages. Write briefly about the salient components of these messages. What are the different response codes that the server may return?
5. List the different HTTP methods and write their corresponding functionality on the server.

Answer 3-Compare the GET and POST methods of HTTP request.

|  |  |
| --- | --- |
| GET Method | POST Method |
| Request parameters are sent as part of the URL. Hence, less secure compared to POST. | Request parameters sent as part of the message body.  Hence, more secure compared to GET. |
| As data is sent in URL, history, caching and bookmarking the result page is possible. | As data is sent as part of message body, history, caching and bookmarking not allowed. |
| Data length limited to length of URL that is typically 2048 bytes. | No restriction on data length. |
| Data sent should be ASCII as it is sent in URL. | No restriction on type of data sent, it can be binary as well. |

2.Write a HTML page for displaying your **Resume/Profile**.

It should include the following:

1. browser title “Name’s Profile”
2. a heading with your name
3. A profile picture
4. Paragraph containing your address in three separate lines (address line1, address line2, city-state-pincode)
5. A table containing your educational/academic record as follows
6. What is the use of the alt property in an image tag?

“alt” property is used to specify the alternative text message to be shown if the image is not loaded or displayed. The image may not be displayed due to server error, incorrect URL, unsupported format or text based browsers. It is also used by page readers to tell a visually impaired user what the image is about.

1. What if an input tag is created with a type that is not recognized by the browser? Will the browser ignore the tag?

 When an incorrect input type property is specified or a input type is not recognized or supported by the browser, the default input type “text” for text box is displayed by the browser

#### Question Bank on CSS

1. Write the three different ways in which styling can be applied in HTML.
2. Write CSS rules for the following
   1. All <p> elements which are immediate children of any <div> must have the text colour set to blue and background set to yellow
   2. All hyperlinks must blink when the mouse moves over them.
3. Give examples for different types of selectors in CSS.
4. For any of the table created by you, apply the following CSS rules
   1. All table headings with class “important” are displayed in red color
   2. All other cells have a blue text
   3. Hover over any cell of the table changes the background color to yellow
5. Why are styling rules called as “cascading”?

**Answer 4:**

th.important {

        color: red;

}

td {

        color: blue;

}

td:hover {

        background-color: yellow;

}

1. With a neat diagram briefly explain the CSS Box Model
2. What are the different ways in which an XHTML element can be “positioned” using CSS? Explain with an example.
3. What is the significance of the <span> and <div> tags with regard to styling?
4. Add a logo to a HTML page. The logo should always remain in the top right corner even if the page is scrolled. Set the position property accordingly.

<span> is used to style a part of the paragraph.

Example:

*<p>This is an <span style=”color:red”>important</span> message.</p>*

<div> is used to group a set of elements and apply style uniformly to all elements under it.

Example:

*<div style=”text-align:center”>*

*<h3>…</h3>*

*<p>…</p>*

*</div>*

Javascript

1. What are the primitive datatypes available in Javascript? With a proper example explain what is special about the “+” operator in Javascript?
2. With an example, explain the difference between == and === operators.
3. Given numstr = "456"; Convert this string into a number -
4. Using mathematical operators
5. Using an inbuilt Javascript utility function
6. Using an inbuilt Javascript constructor function
7. What is the output for the following snippets?

var num = 123.789;

num2 = parseInt( num );

num3 = parseInt( num, 8);

document.write(num2 + “:::” + num3);

#### Answer to Question 3 in Question Bank

1. Given numstr = "456"; Convert this string into a number -
2. Using mathematical operators

let num = numstr – 0;

// numstr will be converted to number to perform subtraction

1. Using an inbuilt Javascript utility function

let num = parseInt(numstr);

// By default numstr will be converted into a decimal number (base 10)

1. Using an inbuilt Javascript constructor function

let num = new Number(numstr);

//creates a new Number with the value specified in numstr

Arrays,functions and hoisting

1.Explain the concept of variable and function hoisting. What is the output of the following code?

var salary = “1000$”

function giveHike() {

            console.log (“Original salary was” + salary);

            var salary = “2000$”

            console.log (“My new salary is” + salary);

}

1. What will be output of the following code:

function myfunc(x,y){

            return x + y;

}

console.log (myfunc(10));

console.log (myfunc(10,20,30));

How can the third argument (that is 30) be accessed within the function?

1. What is the output of the following code?

var x = 100;

function hoist() {

  // A condition that should not affect the outcome of the code

  if (false) {

    var x = 200;

  }

  console.log(x);

}

hoist ();

1. Write a function **add**that takes variable number of integer arguments and returns the sum of the argument values passed.
2. Write a function **reverse** that takes a variable number of strings as argument and prints the strings in the reverse order in the console.
3. What is the output of the following code? Will it result in an error or show some output?

var a = [1,2,3];

a[10] = 6;

console.log (a.length + a[6]);

#### Answer to Question 6 in Question Bank

6. What is the output of the following code? Will it result in an error or show some output?

var a = [1,2,3];

a[10] = 6;

console.log (a.length + a[6]);

**Output:** 11undefined

**Explanation:**a.length will be set to 11 when a new element is added at index 10. a[6] is undefined hence the output will be 11 + “undefined” resulting in a concatenation

#### Assignment on JavaScript - Builtin Objects

Write a function convert which would convert an array into string or string into an array.

The function checks the number of arguments that are passed. (use ...args for variable arguments)

If only one argument is passed, it converts the string into an array (using the split method) and returns the array.

If more than one argument is passed, it appends each argument to a string and returns the string. (use array.join method).

#### Question Bank on JavaScript - Builtin Objects

1. What is the output for the following snippets?

arr = new Array(19,17,15,13,11,9,7,5,3,1);

document.write( arr.sort());

How do we make the sort method use a different sorting mechanism?

1. Write code snippet to generate a random number between 100 and 200.
2. Please read the function given below and answer the questions below.

function  f1(s) {

            s = s.split(‘’);

            var len = s.length, halfIndex = Math.floor(len/2) – 1, tmp;

            for (var i=0; i<= halfIndex; i++) {

                        tmp = s[len-i-1];

                        s[len-i-1] = s[i];

                        s[i] = tmp;

            }

            return s.join(‘’);

}

* 1. What is the output of console.log(f1(“stressed”));
  2. What is the output of console.log(f1(“desserts”, “exhausted”));

1. What will be the output of the following code:

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

       setTimeout(function() { console.log(i); }, i \* 1000 );

}

Think carefully (it is a trick question) as to when the function will be called and so on.

1. What is NaN? Write a code snippet which will give rise to NaN value. How can we check if a value is NaN or not. What is the output of ***console.log (isNaN(“123.4”))***?
2. Write a Javascript program for "Guess my magic number" game.  
   a) The script first generates a magic number (random number between 1 - 100)  
   b) The script should prompt the user for guessing the magic number.  
   c) Depending on the user's input, the script should provide hints telling him whether his guess was more or less than the magic number. It should allow him another attempt.  
   d) The script should provide a max of 10 attempts to the user after which it notifies him that he failed to guess the number.  
   e) If the user does not enter any valid number on three consecutive attempts, the script ends with a message.

#### Answer to Question 5 in Question Bank

5. What is NaN? Write a code snippet which will give rise to NaN value. How can we check if a value is NaN or not.

What is the output of ***console.log (isNaN(“123.4”))***?

**Answer:**

NaN stands for Not a Number. If we try to create a number using non numeric value, the Number object is flagged as NaN.

let num = Number(“10 days”) would result in num being made a NaN.

console.log(isNaN(“123.4”) would return **false**.

#### Question Bank on JavaScript Objects

1. What is the output for the following snippets?

obj = {param1:”one”, param2: “two”};

for (j in obj) {  console.log ( j ); }

1. When the below code is executed, "undefined" is returned. Why? How do we fix this?

function fruit() {

var size = "small";

this.color = "red";

}

var apple = new fruit();

console.log(apple.size);

1. Consider the code below

function Pandemic(name,symptoms) {

this.name = name;

this.symptoms = symptoms;

}

Pandemic.prototype.year = 2020;

var P1 = new Pandemic("corona","cold,cough,Fever");

//...

//...

var P10 = new Pandemic("H1N1","lungs Problem");

console.log(P10.year);

Here a new property named "year" is added to the prototype of constructor function "Pandemic".

Then 10 objects P1 to P10 of same type are created.

Justify, how adding a property to the prototype is beneficiary in this case than adding it directly to the constructor function?

1. Look at the code below. When I query as

*console.log(person1.name +"'s "+"The pet animal is "+ person1.pet.name + " " + "and it lives in " + person1.pet.shelter);*

I should get the output as

"Tom's pet animal is cat and it lives in cage".

Fill in the blanks accordingly.

function animal(name,shelter)

{

this.name = name;

this.shelter = shelter;

}

var A1 = new animal("cat","cage");

function Person(name,age,pet) {

this.name = name;

this.age = age;

this.pet = pet;

}

var person1 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

console.log("The pet animal is "+ person1.pet.name + " " + "and it lives in " + person1.pet.shelter);

#### Answer to Question 1 in Question Bank

1. What is the output for the following snippets?

obj = {param1:”one”, param2: “two”};

for (j in obj) {  console.log ( j ); }

**Output:**

param1

param2

**Explanation:**

The variable j here refers to the member name or index and not the member value.

#### Question Bank on JavaScript Object Inheritance

1. What are the two ways of achieving inheritance in JavaScript?
2. How can a method be overwritten when creating a new object using Object.create()?
3. Consider these two objects, Student and TA, where Student has members like sname, srn, dept and showinfo method. The TA object has additionally members like subject, facultymember, stipend and showotherinfo method. Write JavaScript code to implement TA as inheriting from Student object. Create instances and check that the code works correctly.
4. If childobj.prototype = new parent() step is not done, what is the effect of that? Why is that step required?

#### Answer to Question 1 in Question Bank

1. If childobj.prototype = new parent() step is not done, what is the effect of that? Why is that step required?

When childobj.prototype is not set to parent object, all methods defined in the parent will not be accessible in the child object.

The side effect is childobj.prototype.constructor will be set to parent and new childobj() will call the constructor of parent.

Hence additionally we have to set childobj.prototype.constructor = childobj;