WEB PROGRAMMING

INTERVIEW QUESTIONS UNIT-1

1. What are the different data types present in javascript?

To know the type of a JavaScript variable, we can use the typeof operator.

➢ Primitive types

- String - It represents a series of characters and is written with quotes. A string can be represented using a single or a double quote.
- Number - It represents a number and can be written with or without decimals.
- BigInt - This data type is used to store numbers which are above the limitation of the Number data type. It can store large integers and is represented by adding "n" to an integer literal.
- Boolean - It represents a logical entity and can have only two values : true or false. Booleans are generally used for conditional testing.
- Undefined - When a variable is declared but not assigned, it has the value of undefined and it's type is also undefined.
- Null - It represents a non-existent or a invalid value.
- Symbol - It is a new data type introduced in the ES6 version of javascript. It is used to store an anonymous and unique value.

➢ Non-primitive types

Primitive data types can store only a single value. To store multiple and complex values, non-primitive data types are used.

- Object - Used to store collection of data.

2. Explain Hoisting in javascript.

Hoisting is a default behaviour of javascript where all the variable and function declarations are moved on top.This means that irrespective of where the variables and functions are declared, they are moved on top of the scope. The scope can be both local and global.

3. Difference between “ == “ and “ === “ operators.

Both are comparison operators. The difference between both the operators is that,“==” is used to compare values whereas, “ === “ is used to compare both value and types.

Example:

```
var x = 2;

var y = "2";

(x == y)  // Returns true since the value of both x and y is the same.

(x === y) // Returns false since the typeof x is "number" and typeof y is "string"
```

4. Is javascript a statically typed or a dynamically typed language?

JavaScript is a dynamically typed language. In a dynamically typed language, the type of a variable is checked during run-time in contrast to statically typed language, where the type of a variable is checked during compile-time.

5. What is NaN property in JavaScript?

NaN property represents “Not-a-Number” value. It indicates a value which is not a legal number.

typeof of a NaN will return a Number .

To check if a value is NaN, we use the isNaN() function,

6. What is an Immediately Invoked Function in JavaScript?

An Immediately Invoked Function (known as IIFE and pronounced as IIFY) is a function that runs as soon as it is defined.

Syntax of IIFE :

```
(function(){
  // Do something;
})();
```

7. Explain “this” keyword.

The “this” keyword refers to the object that the function is a property of.

The value of “this” keyword will always depend on the object that is invoking the function.

8. Explain call(), apply() and, bind() methods.

call()

It’s a predefined method in javascript.

This method invokes a method (function) by specifying the owner object.

call() method allows an object to use the method (function) of another object.

apply() The apply method is similar to the call() method. The only difference is that,

call() method takes arguments separately whereas, apply() method takes arguments as an array.

bind() This method returns a new function, where the value of “this” skeyword will be bound to the owner object, which is provided as a parameter.

9. What is currying in JavaScript?

Currying is an advanced technique to transform a function of arguments n, to n functions of one or less arguments.

10. Explain Scope and Scope Chain in javascript.

Scope in JS, determines the accessibility of variables and functions at various parts in one’s code.

There are three types of scopes in JS:

Global Scope

Local or Function Scope

Block Scope

11. What are object prototypes?

All javascript objects inherit properties from a prototype.

For example,

Date objects inherit properties from the Date prototype

Math objects inherit properties from the Math prototype

Array objects inherit properties from the Array prototype.

12. What are callbacks?

A callback is a function that will be executed after another function gets executed.In javascript, functions are treated as first-class citizens, they can be used as an argument of another function, can be returned by another function and can be used as a property of an object.

13. What is memoization?

Memoization is a form of caching where the return value of a function is cached based on its parameters. If the parameter of that function is not changed, the cached version of the function is returned.

14. What is recursion in a programming language?

Recursion is a technique to iterate over an operation by having a function call itself repeatedly until it arrives at a result.

```
function add(number) {
  if (number <= 0) {
    return 0;
  } else {
    return number + add(number - 1);
  }
}
```

15. What is the use of a constructor function in javascript?

Constructor functions are used to create objects in javascript.

Example:

```
function Person(name,age,gender){
  this.name = name;
```

```
  this.age = age;
  this.gender = gender;
}
```

16. What is DOM?

DOM stands for Document Object Model.DOM is a programming interface for HTML and XML documents.

17. What are arrow functions?

Arrow functions were introduced in the ES6 version of javascript.They provide us with a new and shorter syntax for declaring functions.Arrow functions can only be used as a function expression.

18. What is the rest parameter and spread operator?

Both rest parameter and spread operator were introduced in the ES6 version of javascript.

Rest parameter (…)

It provides an improved way of handling parameters of a function.

Using the rest parameter syntax, we can create functions that can take a variable number of arguments.

Spread operator (…)

Although the syntax of spread operator is exactly the same as the rest parameter, spread operator is used to spread an array, and object literals. We also use spread operators where one or more arguments are expected in a function call.

```
function addFourNumbers(num1,num2,num3,num4){
  return num1 + num2 + num3 + num4;
}
```

Rest parameter is used to take a variable number of arguments and turns into an array while the spread operator takes an array or an object and spreads it

Rest parameter is used in function declaration whereas the spread operator is used in function calls.

19. What is the use of promises in javascript?

Promises are used to handle asynchronous operations in javascript.Before promises, callbacks were used to handle asynchronous operations. But due to limited functionality of callback, using multiple callbacks to handle asynchronous code can lead to unmanageable code.

Promise object has four states -

Pending - Initial state of promise. This state represents that the promise has neither been fulfilled nor been rejected, it is in the pending state.

Fulfilled - This state represents that the promise has been fulfilled, meaning the async operation is completed.

Rejected - This state represents that the promise has been rejected for some reason, meaning the async operation has failed.

Settled - This state represents that the promise has been either rejected or fulfilled.

20. What are generator functions?

Introduced in ES6 version, generator functions are a special class of functions.They can be stopped midway and then continue from where it had stopped.Generator functions are declared with the function* keyword instead of the normal function keyword:

```
function* genFunc(){
  // Perform operation
}
```

21. Explain WeakSet in javascript.

In javascript, Set is a collection of unique and ordered elements.Just like Set, WeakSet is also a collection of unique and ordered elements with some key differences:

Weakset contains only objects and no other type.

An object inside the weakset is referenced weakly. This means, if the object inside the weakset does not have a reference, it will be garbage collected.Unlike Set, WeakSet only has three methods, add() , delete() and has() .

22. Explain WeakMap in javascript.

In javascript, Map is used to store key-value pairs. The key-value pairs can be of both primitive and non-primitive types.WeakMap is similar to Map with key differences:

The keys and values in weakmap should always be an object.

If there are no references to the object, the object will be garbage collected.

23. What is a Temporal Dead Zone?

Temporal Dead Zone is a behaviour that occurs with variables declared using let and const keywords.

It is a behaviour where we try to access a variable before it is initialized.

Guess the outputs of the following codes:

24. Code 1:

```
function func1(){
  setTimeout(()=>{
    console.log(x);
    console.log(y);
  },3000);
  var x = 2;
  let y = 12;
}func1();
```

Answer:

Code 1 - Outputs 2 and 12 . Since, even though let variables are not hoisted, due to async nature of javascript, the complete function code runs before the setTimeout function. Therefore, it has access to both x and y.

25. Code 2:

```
function func2(){
  for(var i = 0; i < 3; i++){
    setTimeout(()=> console.log(i),2000);
}
}
func2();
```

Answer:

Code 2 - Outputs 3 , three times since variable declared with var keyword does not have block scope. Also, inside the for loop, the variable i is incremented first and then checked.

26. Code 3:

```
(function(){
  setTimeout(()=> console.log(1),2000);
  console.log(2);
  setTimeout(()=> console.log(3),0);
  console.log(4);
})();
```

Answer:

Code 3 - Output in the following order:

2

4

3

1 // After two seconds

Even though the second timeout function has a waiting time of zero seconds, the javascript engine always evaluates the setTimeout function using the Web API and therefore, the complete function executes before the setTimeout function can execute.

27. In a function, what does the word “arguments” refer to?
It is a property of the function, and is an array-like list of the arguments that were actually passed into the function.

28. What does the above function return?
Answer: “undefined” (without quotes)
Hint**:** If you do not specify a return value in a function, it returns **undefined** .

29. Which event is fired as the mouse is moving over an element when a drag isoccurring?
Answer : dragover

30. Which event is fired on the element where the drop occurred at the end of the drag operation.
Answer: drop

31. Which of the following property is used to determine which drag operation was desired?
Answer: dropEffect

32. Which API allows scripts in a document from one server to exchange messages with scripts?
Answer: Cross-Document Messaging API

33. Which method is used to add a binding?
Answer: bind()

34. What will be the output of the following JavaScript code?

```
<p id="demo"></p>
<script>
var x = 'It\'s';
document.getElementById("demo").innerHTML = x ;
</script>
```

Answer: It’s

Explanation: If an apostrophe is present in the string then a backslash is added before it. The string skips the execution of the character after a backslash.

35. Web Workers don't stop by themselves but the page that started them can stop them by calling terminate() method.

A) True
B) False

Answer: A) True

36. **JavaScript was designed to run in a single-threaded environment, meaning multiple scripts cannot run at the same time.**

A) Yes
B) No

Answer: **A) Yes**

37. Which is a JavaScript running in the background, without affecting the performance of the page.

A) Web Worker
B) Canvas
C) SVG
D) None of the above

Answer: **A) Web Worker**

38. Since web workers are in external files, they do not have access to which of these JavaScript objects.

A) The window object
B) The document object
C) The parent object
D) All the mentioned above

Answer: **D) All the mentioned above**

39. To reuse the web worker which code is used.

A) w.terminate();
B) w = undefined;
C) w = terminate;
D) w.undefined();

Answer: **B) w = undefined;**

40. When executing scripts in an HTML page, the page becomes responsive until the script is finished.

A) True
B) False

Answer: **B) False**

41. From the following give the suitable advantages that are given by application cache?

A) Offline browsing
B) Speed
C) Reduced server load
D) All the mentioned above

Answer: **D) All the mentioned above**

42. In the application cache which browser will only download updated/changed resources from the server?

A) Offline browsing
B) Speed
C) Reduced server load
D) All the mentioned above

Answer: **C) Reduced server load**

43. Which version browser for chrome that fully supports application cache.

A) 3.0
B) 2.0
C) 4.0
D) None

Answer: **C) 4.0**

44. A manifest file needs to be served with the correct media type, which is "text/cache-manifest" and that must be configured on the web server.

A) True
B) False

Answer: **A) True**

45. Which files are listed under this header that requires a connection to the server, and will never be cached.

A) CACHE MANIFEST
B) NETWORK
C) FALLBACK
D) None of the above

Answer: **B) NETWORK**

46. For updating the cache, it remains cached until one of the following happens.

1) The user clears the browser's cache
2) The manifest file is modified.
3) The application cache is programmatically updated
A) True
B) False

Answer: **A) True**

47. Which is designed for storage that spans multiple windows, and lasts beyond the current session.

A) Session Stotage
B) Local Storage
C) Both A & B
D) None of the above

Answer: **B) Local Storage**

48. To clear a local storage all setting you would need to call.

A) localStorage.remove('key')
B) localStorage.clear()
C) Both A & B
D) None of the above

Answer: **B) localStorage.clear()**

49. The Session Storage Data would be deleted by the browsers immediately after the session gets terminated.

A) True
B) False

Answer: **A) True**

50. Which is designed for scenarios where the user is carrying out a single transaction, but could be carrying out multiple transactions in different windows at the same time.

A) Local Storage
B) Session Storage
C) Both A & B
D) None of the above

Answer: **B) Session Storage**

51. From the following give the suitable advantages that are given by application cache?

A) Offline browsing
B) Speed
C) Reduced server load
D) All the mentioned above

Answer: **D) All the mentioned above**

52. In the application cache which browser will only download updated/changed resources from the server?

A) Offline browsing
B) Speed
C) Reduced server load
D) All the mentioned above

Answer: **C) Reduced server load**

53. Which version browser for chrome that fully supports application cache.

A) 3.0
B) 2.0
C) 4.0
D) None

Answer: **C) 4.0**

54) A manifest file needs to be served with the correct media type, which is "text/cache-manifest" and that must be configured on the web server.

A) True
B) False

Answer: **A) True**

55) Which files are listed under this header that requires a connection to the server, and will never be cached.

A) CACHE MANIFEST
B) NETWORK
C) FALLBACK
D) None of the above

Answer: **B) NETWORK**

56) For updating the cache, it remains cached until one of the following happens.

1) The user clears the browser's cache
2) The manifest file is modified.
3) The application cache is programmatically updated
A) True
B) False

Answer: **A) True**

57) Which section below specifies that "offline.html" will be served in place of all files in the /html/ catalog, in case an internet connection cannot be established.

A) CACHE MANIFEST
B) NETWORK
C) FALLBACK
D) None of the above

Answer: **C) FALLBACK**

58) The recommended file extension for manifest files is: ".cacheapp".

A) True
B) False

Answer: **B) False**

59) Which advantage of application cache gives the cached resources load faster

A) Offline browsing
B) speed
C) Reduced server load
D) None of the above

Answer: **B) speed**

60) Drag and Drop (DnD) is powerful User Interface concept which makes it easy to.

A) Copy
B) Deletion
C) Reorder
D) All the mentioned above

Answer: **D) All the mentioned above**

61) HTML 5 DnD is supported by all the major browsers like Chrome, Firefox 3.5 and Safari 4.

A) True
B) False

Answer: **A) True**

62) Drag and Drop (DnD) is powerful User Interface concept which makes it easy to copy, reorder and deletion of items with the help of.

A) Keyboard
B) Mouse
C) Both A & B
D) None of the above

Answer: **B) Mouse**

63) Which event will fire every time when the mouse is moved while the object is being dragged.

A) Drop
B) Drag
C) Dragend
D) Dragstart

Answer: **B) Drag**

64) Which event is fired as the mouse is moved over an element when a drag is occuring. Much of the time, the operation that occurs during a listener will be the same as the dragenter event.

A) Dragleave
B) Dragover
C) Dragstart
D) Dragenter

Answer: **B) Dragover**

65) Which data transfer attribute returns the specified data. If there is no such data, returns the empty string.

A) data = dataTransfer.getData(format)
B) dataTransfer.setData(format, data)
C) dataTransfer.files
D) dataTransfer.setDragImage(element,x,y)

Answer: **A) data = dataTransfer.getData(format**

66) These are the steps for,

a) The dragenter event, which is used to determine whether or not the drop target is to accept the drop. If the drop is to be accepted, then this event has to be canceled.
b) The dragover event, which is used to determine what feedback is to be shown to the user. If the event is canceled, then the feedback (typically the cursor) is updated based on the dropEffect attribute's value.

A) Dragging the object
B) Dropping the object
C) Both A & B
D) None of the above

Answer: B) Dropping the object

67) The following description is given for which data transfer attribute?

a) Returns the kind of operation that is currently selected.
b) This attribute can be set, to change the selected operation.
c) The possible values are none, copy, link, and move.

A) dataTransfer.effectAllowed [= value]
B) dataTransfer.dropEffect [= value]
C) dataTrnasfer.types
D) dataTransfer.clearData([format])

Answer: **B) dataTransfer.dropEffect [= value]**

68) The drop event fires when the user releases the mouse button while dragging an object.

A) True
B) False

Answer: **B) False**

69) HTML5 came up with a Drag and Drop (DnD) API that brings native DnD support to the browser making it much easier to code up.

A) Yes
B) No

Answer: **A) Yes**

70. Which of the following is a way of embedding Client-side JavaScript code within HTML documents?

a. From javascript:encoding
b. External file specified by the src attribute of a 'script' tag
c. All of the mentioned
d. None of the mentioned

Answer: (b).External file specified by the src attribute of a 'script' tag

71. When does JavaScript code appear inline within an HTML file?

a. Between the 'script' tag
b. Outside the 'script' tag
c. Between or Outside the 'script' tag
d. None of the mentioned

Answer: (a).Between the 'script' tag

72. One of the main advantage of using src attribute is

a. It becomes self-cached
b. It makes the HTML file modular
c. It restricts manipulation in the HTML file
d. It simplifies the HTML files

Answer: Option D

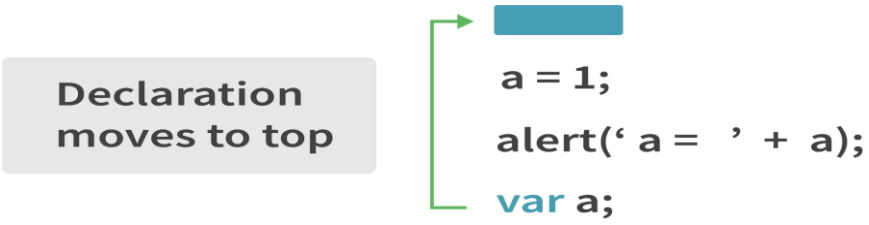
73. Which identifier is used to represent a web browser window or frame?

a. frames
b. window
c. location
d. frame

Answer: Option B

74. Explain Hoisting in javascript.

Hoisting is a default behaviour of javascript where all the variable and function declarations are moved on top.



This means that irrespective of where the variables and functions are declared, they are moved on top of the scope. The scope can be both local and global.

Example 1:

```
hoistedVariable = 3;

console.log(hoistedVariable); // outputs 3 even when the variable is declared after it is initialized

var hoistedVariable;
```

75. Which class in JSP provides the capability to implement a growable array of objects?

a. Array class
b. GrowAbleArray class
c. Container class
d. Vector class

Answer : d. Vector class