Topic 3 JavaScript

Interview Questions and Answers

Q1. What is the significance of using JavaScript?

JavaScript is an object scripting language used in web pages along with HTML. An HTML is a markup language that can create static pages and without JavaScript, it would still be static. JavaScript can add dynamic nature to a website by making it more interactive. It makes website navigation easier so that designers can guide the visitors with additional information or guide them through walkthroughs. Visual effects can also be achieved at a much better level with JavaScript as it can create special effects like rollover for images.

Q2. How can we check if a given value is a number or not in JavaScript?

There are two ways to check whether the given value is a number or not.

1. By using `isNaN()`, it is a global variable that is assigned to the window object in the browser. If it returns false, the value is a number.
2. By using the `typeof` operator, it will return a string with the value 'number' if used on a number value.

Q3. What is the difference between null and undefined?

In JavaScript, undefined represents that the variable has been declared, but it has not been assigned any value yet. It means its value and type are undefined.

Example:

```
var x;

console.log(x); //shows undefined. console.log(typeof x);
//shows undefined.
```

null represents that value has been assigned to a variable. It means its value is null, but its type is an object.

Example:

```
var x = null;

console.log(x); //shows null.
console.log(typeof x); //shows object.
```

From the above examples, it should be clear that undefined and null are two distinct types: undefined is a type itself (undefined) while null is an object.

Q4. Difference between == vs ===?

== operator

It compares two variables but ignores the datatype of variables.

Example:

```
var a = 1 var b = “1” if(a==b) {

console.log(“Matched”)

}
```

```
else {
console.log("Not Matched")
}
```

Output: Matched

=== operator

It compares the value of two variables but also compares the datatype of those variables.

Example

```
var a = 1 var b = "1" if(a===b) {
console.log("Matched")
}
else {
console.log("Not Matched")
}
```

Output: Not Matched

Q5. Difference between `setTimeout` and `setInterval` functions in JavaScript?

`setTimeout(expression, timeout)` is used to run the code/function once after the timeout. `setInterval(expression, timeout)` is used to run the code/function in intervals i.e., it will run after a certain period.

Example:

```
var intervalID = setInterval(alert, 1000); // Will alert
every second. setTimeout(alert, 1000); // Will alert once,
after a second.
```

Q6. Explain this keyword in JavaScript.

This keyword can have different values depending on where it is used as:

1. In a method, this keyword refers to the owner object.
2. Alone, this keyword refers to the global object.
3. In a function, this keyword refers to the global object.
4. In a function, in strict mode, this keyword is undefined.
5. In an event, this keyword refers to the element that received the event.
6. Methods like `call()` and `apply()` can refer to this to any object.

Q7. What is throttling in JavaScript?

Throttling is a technique/practice in which, the function gets called when the user fires an event for the first time, and for the subsequent user fires, the function gets called only once in the given interval of time, no matter how many times the user fires the event.

Throttling is a best practice of code to improve the browser's performance

Throttling works on any user events.

In other words, throttling is a way of programming to limit the number of times a time-consuming function gets called when the user fires an event.

Q8. What is the output of the below statement?

”50”+”2”-502+502-”502”

The output is 0.

In the given statement, the first number(50) and the second number(2) are in double quotes(“), so it performs string concatenation. so, the output of the first two numbers is 502. Here the third number is 502, so it performs subtraction with the result of the previous calculation. Now the result is 0. the fourth number is 502 and the fifth number is in double quotes(“), and the operation is minus(-), so it converts the fifth string into a number and performs subtraction. so, the output is 0.

Q9. What is the significance of using strict in JavaScript?

There are multiple benefits of using strict in JavaScript. Some of them are:

It eliminates some errors that do not display any message by changing them into throw errors.

It fixes mistakes that can make JavaScript engines difficult to perform optimizations.

Sometimes it can run faster than simple identical code.

It prohibits some syntax likely to be defined in future versions of ECMAScript.

It prevents or throws errors when relatively “unsafe” actions are taken (such as gaining access to the global object).

It can disable features that are confusing or poorly thought out. It makes it easier to write “secure” JavaScript.

Q10. What are the ways of integrating JavaScript with HTML?

JavaScript code can be integrated with HTML documents by using the HTML tag `<script>` and will wrap the JavaScript code inside. The `<script>` tag can be placed inside:

`<head>` section of the HTML file

`<body>` section of the HTML file

Q11. What is the difference between let, var, and const?

1. **var**
    - var declarations have global / function scope.
    - variables can be updated and re-declared within their scope.
    - var variables can be declared without being initialized.
2. **let**
    - let declarations have block scope.
    - variables can be updated but not re-declared.
    - let variables can be declared without being initialized.
3. **const:**
    - const declarations have block scope.
    - variables can neither be updated nor re-declared.
    - const variables must be initialized during declaration.

Q12. Difference between the splice and slice functions in JavaScript?

1. **splice Method:** It returns the removed items in an array. It makes changes in the original array. It can take multiple arguments.

2. **slice Method:** It returns the selected element in an array as a new array object It doesn't make any changes in the original array. It can take two arguments.