100+ JavaScript Questions

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ANSWERS

What is the difference between null and undefined in JavaScript?

null represents a deliberate non-value or empty object reference, while undefined represents an uninitialized or missing value.

What is the purpose of the "use strict" directive in JavaScript?

The "use strict" directive is used to enable strict mode, which enforces stricter parsing and error handling rules, disallows the use of certain features, and prevents certain common mistakes.

What is the difference between a function declaration and a function expression in JavaScript?

A function declaration creates a named function that is hoisted to the top of its scope, while a function expression creates an unnamed function that is assigned to a variable or property.

What is the difference between synchronous and asynchronous code execution in JavaScript?

Synchronous code is executed in a sequential order, blocking the program until a task is completed, while asynchronous code

allows multiple tasks to be executed simultaneously and continues running without waiting for a task to complete.

What is the purpose of the "this" keyword in JavaScript?

The "this" keyword refers to the current object context and allows methods to access and manipulate properties and methods of the object that called them.

What is the difference between "var", "let", and "const" in JavaScript?

"var" declares a variable with function scope, "let" declares a variable with block scope, and "const" declares a variable that cannot be reassigned.

What is a closure in JavaScript?

A closure is a function that has access to variables in its outer lexical scope, even after the outer function has returned.
A closure is a function that has access to variables in its outer (enclosing) function's scope. This allows the function to "remember" the values of those variables, even if they are no longer in scope.

What is the difference between a for loop and a for...in loop in JavaScript?

A for loop iterates over a range of values, while a for...in loop iterates over the properties of an object.

What is the difference between call() and apply() in JavaScript?

Both methods allow you to call a function with a given this value and arguments, but while call() accepts an argument list, apply() accepts an array of arguments.

What is the difference between null and undefined in JavaScript?

null is a value that represents the intentional absence of any object value, while undefined is a value assigned to variables that have not been assigned a value.

What is a closure in JavaScript and how does it work?

A closure is a function that has access to its outer function scope, even after the outer function has returned. It works by creating an inner function that retains access to variables in the outer function's scope.

What is hoisting in JavaScript?

Hoisting is a behavior in JavaScript where variable and function declarations are moved to the top of their scope, allowing them to be used before they are declared.

How can you check if a variable is an array in JavaScript?

You can use the Array.isArray() method to check if a variable is an array. It returns true if the variable is an array, and false otherwise.

What is the difference between let and var in JavaScript?

let declares a block-scoped variable that can be reassigned, while var declares a variable with function scope that can be reassigned.

What is the this keyword in JavaScript?

The this keyword refers to the current object in which the code is being executed. The value of this depends on how the function is called.

How do you declare a function in JavaScript?

You can declare a function using the function keyword followed by the function name, a set of parentheses for parameters, and a block of code inside curly braces. For example:

```
function myFunction(param1, param2) {

  // code goes here

}
```

What is an immediately-invoked function expression (IIFE) in JavaScript?

An IIFE is a function that is immediately executed when it is defined. It is typically used to create a private scope and avoid polluting the global namespace. For example:

```
(function() {

  // code goes here

})();
```

What is event bubbling in JavaScript?

Event bubbling is a behavior in JavaScript where events triggered on an element propagate up the DOM tree to all its ancestor elements. This allows for event delegation, where events are handled on ancestor elements instead of individual child elements.

What is JavaScript?

JavaScript is a programming language that is primarily used to create interactive web pages and dynamic user interfaces. It is a

high-level, object-oriented language that can be used on both the front-end and back-end of web development.

JavaScript is a scripting language that allows web developers to create dynamic and interactive websites. It runs on the client-side of a web page, enabling it to communicate with the server-side and make changes to the web page without requiring a page refresh.

JavaScript is a programming language that is widely used to create interactive and dynamic web content. It is a high-level, object-oriented language that can be run on almost any platform.

What are the primitive data types in JavaScript?

The primitive data types in JavaScript are string, number, boolean, null, undefined, and symbol (added in ES6).

What is the difference between let, const, and var in JavaScript?

let and const are block-scoped variables introduced in ES6, while var is function-scoped. let variables can be reassigned, while const variables cannot be reassigned. Additionally, const variables must be assigned a value when they are declared, while let variables can be assigned a value later.

What is the difference between the "==" and "===" operators in JavaScript?

The "==" operator compares two values for equality, converting them to a common type if necessary, while the "===" operator compares two values for strict equality, without type coercion.

== is a loose equality operator that compares values without considering their data types. === is a strict equality operator that compares values while considering their data types. For example, "1" == 1 would return true, while "1" === 1 would return false.

== compares values for equality after converting them to a common type, while === compares values for equality without type conversion.

What is the difference between a synchronous and asynchronous function in JavaScript?

Synchronous functions execute one after the other, blocking the execution of other code until they are finished. Asynchronous functions can execute concurrently with other code, allowing multiple tasks to be performed at the same time.

What is the difference between a for loop and a forEach loop in JavaScript?

A for loop is a traditional looping construct that allows you to iterate over an array or object by specifying a starting point, an ending point, and an increment. A forEach loop is a built-in method on arrays that iterates over each element in the array and performs a function on each element.

What is the difference between let and var in terms of hoisting?

Variables declared with var are hoisted to the top of their scope, meaning that they can be accessed before they are declared. Variables declared with let are not hoisted, and attempting to access them before they are declared will result in a reference error.

What is the difference between call, apply, and bind in JavaScript?

call and apply are methods that allow you to call a function with a specific context (i.e., the value of the this keyword) and arguments. The difference between them is how you pass the

arguments: call accepts arguments as a comma-separated list, while apply accepts arguments as an array. bind is a method that returns a new function with a bound context, allowing you to call the function later with the same context.

What is the difference between a callback function and a promise in JavaScript?

A callback function is a function that is passed as an argument to another function and is called when that function completes. A promise is an object that represents the eventual completion (or failure) of an asynchronous operation, and provides a way to handle the result of that operation. Promises are typically used to avoid "callback hell" and make asynchronous code easier to read and maintain.

What is a variable in JavaScript?

A variable is a named storage location in JavaScript that holds a value. It is used to store data that can be accessed and manipulated throughout a script.

How do you declare a variable in JavaScript?

You can declare a variable in JavaScript using the "var", "let", or "const" keyword followed by the variable name. For example:

```
var myVariable;
let myVariable;
const myVariable;
```

What is the difference between "let" and "var" in JavaScript?

"let" and "var" both declare variables in JavaScript, but "let" is block-scoped, meaning it is only accessible within the block it was declared in, while "var" is function-scoped, meaning it is accessible throughout the entire function it was declared in.

How do you declare a constant variable in JavaScript?

You can declare a constant variable in JavaScript using the "const" keyword followed by the variable name. For example:

```
const myConstant = 10;
```

Once a value is assigned to a constant variable, it cannot be reassigned.

What is a function in JavaScript?

A function is a block of code that performs a specific task in JavaScript. It can be reused multiple times throughout a script and can accept input parameters and return values.

How do you declare a function in JavaScript?

You can declare a function in JavaScript using the "function" keyword followed by the function name, input parameters (optional), and the function code. For example:

```
function myFunction(param1, param2) {
  // function code here
}
```

What is an array in JavaScript?

An array is a collection of data in JavaScript that can hold multiple values, including strings, numbers, and objects. It is declared using square brackets and each value is separated by a comma. For example:

```
let myArray = ["apple", "banana", "orange"];
```

How do you loop through an array in JavaScript?

You can loop through an array in JavaScript using a "for" loop or a "forEach" loop. For example:

```
// for loop
for (let i = 0; i < myArray.length; i++) {
  console.log(myArray[i]);
}


// forEach loop
myArray.forEach(function(item) {
  console.log(item);
});
```

What is an object in JavaScript?

An object is a collection of properties in JavaScript that can hold multiple values, including strings, numbers, arrays, and other objects. It is declared using curly braces and each property is separated by a comma. For example:

```
let myObject = {
  name: "John",
  age: 30,
  hobbies: ["reading", "traveling"]
};
```

What is the difference between null and undefined in JavaScript?

null is an explicitly assigned value that represents no value or an empty object, while undefined is a variable that has been declared but has not been assigned a value.

What is a closure in JavaScript?

A closure is a function that has access to variables in its outer scope, even after the outer function has returned.
Answer: A closure is a function that has access to variables in its outer scope, even after the outer function has returned. This allows for more powerful and flexible coding patterns.

What is the difference between == and === in JavaScript?

== performs type coercion before comparison, while === does not. For example, "5" == 5 would be true because the string "5" is coerced to the number 5, but "5" === 5 would be false.

How do you check if a variable is an array in JavaScript?

You can use the Array.isArray() method to check if a variable is an array. For example, Array.isArray([1, 2, 3]) would return true.

What is hoisting in JavaScript?

Hoisting is a behavior in JavaScript where variable and function declarations are moved to the top of their scope before code execution.

How do you create a new object in JavaScript?

You can create a new object in JavaScript using either object literal notation (const obj = {}) or the Object() constructor (const obj = new Object()).

What is the difference between let, const, and var in JavaScript?

let and const are block-scoped and cannot be redeclared in the same scope, while var is function-scoped and can be redeclared in the same scope. const is also a constant variable that cannot be reassigned.

How do you loop through an object in JavaScript?

You can use a for...in loop to iterate over the keys of an object. For example:

```
const obj = { a: 1, b: 2, c: 3 };
for (const key in obj) {
  console.log(key, obj[key]);
}
```

How do you prevent event bubbling in JavaScript?

You can use the stopPropagation() method of the event object to prevent event bubbling. For example:

```javascript
const button = document.querySelector('button');
button.addEventListener('click', (event) => {
  event.stopPropagation();
  // Do something
});
```

How do you create a new array from an existing array in JavaScript?

You can use methods like map(), filter(), and reduce() to create a new array from an existing array. For example:

```javascript
const numbers = [1, 2, 3];
const doubled = numbers.map(num => num * 2);
console.log(doubled); // [2, 4, 6]
```

What is the difference between == and === operators in JavaScript?

Answer: The == operator compares the values of two operands for equality, while the === operator compares both the values and types of the operands. For example, 5 == "5" would be true, but 5 === "5" would be false.

What is the this keyword in JavaScript?

Answer: this refers to the object that the function is a method of. It is determined at runtime and can change depending on how the function is called.

What is the purpose of the let keyword in JavaScript?

Answer: let is used to declare a block-scoped variable in JavaScript. It is similar to var, but the scope of the variable is limited to the block in which it is declared.

How do you check if a variable is an array in JavaScript?

Answer: You can use the Array.isArray() method to check if a variable is an array. For example, Array.isArray([1, 2, 3]) would be true.

What is the difference between let and const in JavaScript?

Answer: let is used to declare a variable that can be reassigned, while const is used to declare a variable that cannot be reassigned. However, the value of a const variable can still be changed if it is an object or an array.

What is the purpose of the map() method in JavaScript?

Answer: The map() method is used to create a new array by applying a function to each element of an existing array. The original array is not modified.

What is the difference between null and undefined in JavaScript?

Answer: null is a value that represents the intentional absence of any object value, while undefined is a value that represents the absence of any value. undefined is the default value of a variable that has not been assigned a value.

What is a promise in JavaScript?

Answer: A promise is an object that represents a value that may not be available yet but will be in the future. It allows you to write asynchronous code that is more readable and maintainable.

What is the difference between synchronous and asynchronous code in JavaScript?

Answer: Synchronous code executes in a sequential order, meaning that one line of code is executed at a time and the next

line of code cannot begin until the previous line has finished. Asynchronous code does not execute in a sequential order, meaning that multiple lines of code can be executed at the same time. Asynchronous code is often used for tasks that may take a long time to complete, such as retrieving data from a server.

What is JavaScript, and what are its key features?

JavaScript is a high-level, dynamic, and interpreted programming language that is used to create interactive and dynamic web pages. Some of its key features include:

Object-oriented programming support

Dynamic typing

First-class functions

Event-driven programming

Asynchronous programming

Cross-platform compatibility

Easy integration with HTML and CSS

What is the difference between let and var in JavaScript?

The let and var keywords are used to declare variables in JavaScript, but they have some important differences:

var is function-scoped, meaning that it is accessible within the function in which it is declared. let is block-scoped, meaning that it is only accessible within the block in which it is declared (such as an if statement or for loop).

Variables declared with var are hoisted to the top of their function or global scope, meaning that they are accessible even before they are declared. Variables declared with let are not hoisted.

var allows redeclaration of the same variable within the same scope, whereas let does not.

What is a closure in JavaScript, and how does it work?

A closure is a function that has access to variables in its outer (enclosing) function scope, even after the outer function has returned. In other words, a closure allows a function to access and manipulate variables that are not in its own scope.

Closures work by creating a reference to the outer function's variables when the inner function is created. This reference is stored in memory and is available to the inner function even after the outer function has completed.

What is the difference between == and === in JavaScript?

The double equals (==) and triple equals (===) operators are used to compare values in JavaScript. The key difference between them is that == performs type coercion, while === does not.

When using ==, JavaScript will try to convert the operands to the same type before performing the comparison. For example, 1 == '1' would return true, because JavaScript converts the string '1' to a number before comparing.

When using ===, the operands must be of the same type to be considered equal. 1 === '1' would return false, because the types (number and string) are different.

What is the difference between null and undefined in JavaScript?

null and undefined are both values that represent the absence of a value in JavaScript, but they have different meanings: undefined is a value that is assigned to a variable that has not been assigned a value or has been assigned the value undefined explicitly. It is also returned by functions that do not have a return statement.

null is a value that represents the intentional absence of any object value. It is often used to indicate that a variable or object property should have no value.

What is a callback function in JavaScript?

A callback function is a function that is passed as an argument to another function and is executed after that function has completed. Callback functions are often used in asynchronous programming, where a function needs to wait for a result before it can continue executing.

What is the difference between synchronous and asynchronous programming in JavaScript?

Synchronous programming refers to code that is executed sequentially, one line at a time, and each line of code blocks until the previous line has completed. Asynchronous programming, on the other hand, allows code to be executed out of order, so that other operations can occur while waiting for an operation to complete.

Asynchronous programming in JavaScript is often achieved using callbacks, promises, or async/await.

What is the difference between let and var in JavaScript?

Answer: The main difference between let and var is their scope. Variables declared with var are function-scoped, while variables declared with let are block-scoped.

What is NaN in JavaScript?

Answer: NaN stands for "Not a Number". It is a special value that represents the result of an operation that cannot produce a valid number.

What is the difference between == and === in JavaScript?

Answer: The == operator checks for equality, but it performs type coercion, meaning that it tries to convert the values to a common type before comparing them. The === operator, on the other hand, checks for strict equality, meaning that it does not perform type coercion and requires both the value and the type to be the same.

What is hoisting in JavaScript?

Answer: Hoisting is a JavaScript mechanism where variables and function declarations are moved to the top of their respective scopes. This means that you can use them before they are declared.

What is the difference between null and undefined in JavaScript?

Answer: Both null and undefined represent absence of a value, but null is an assigned value that represents no value or an empty object pointer, while undefined represents a variable that has been declared but has not been assigned a value.

What is the difference between synchronous and asynchronous code execution in JavaScript?

Answer: Synchronous code execution means that each line of code is executed one after another, in order. Asynchronous code execution means that some code can be run in the background while other code is still executing, allowing multiple tasks to be performed simultaneously.

What is the difference between call and apply in JavaScript?

Answer: Both call and apply are used to call a function with a given this value, but call takes individual arguments, while apply takes an array of arguments.

What is a callback function in JavaScript?

Answer: A callback function is a function that is passed as an argument to another function, and is executed when that function completes its task.

What is the difference between local storage and session storage in JavaScript?

Answer: Both local storage and session storage are mechanisms for storing data on the client-side, but local storage persists even after the browser is closed, while session storage is cleared when the browser is closed.

What are the different data types in JavaScript?

JavaScript has seven different data types:

1. Number

2. String

3. Boolean

4. Null

5. Undefined

6. Object

7. Symbol

How do you declare a variable in JavaScript?

You can declare a variable in JavaScript using the var, let, or const keyword. For example:

```
var myVariable = "Hello, World!";

let myOtherVariable = 42;

const myConstantVariable = true;
```

What is the difference between var, let, and const in JavaScript?

The main difference between var, let, and const is how they handle scope and reassignment:

- var: Variables declared with var have function scope or global scope, and can be reassigned.
- let: Variables declared with let have block scope and can be reassigned.
- const: Variables declared with const have block scope and cannot be reassigned.

How do you write a conditional statement in JavaScript?

You can write a conditional statement in JavaScript using the if, else if, and else keywords. For example:

```
if (x > 10) {
  console.log("x is greater than 10");
} else if (x < 10) {
  console.log("x is less than 10");
} else {
  console.log("x is equal to 10");
}
```

What is a callback function in JavaScript?

A callback function is a function that is passed as an argument to another function and is executed when the other function is finished.

How do you iterate over an array in JavaScript?

You can iterate over an array in JavaScript using a for loop, a forEach() loop, or a map() loop. For example:

```
let myArray = [1, 2, 3, 4, 5];


// Using a for loop
```

```javascript
for (let i = 0; i < myArray.length; i++) {
  console.log(myArray[i]);
}


// Using a forEach() loop
myArray.forEach(function(item) {
  console.log(item);
});


// Using a map() loop
let mappedArray = myArray.map(function(item) {
  return item * 2;
});
console.log(mappedArray);
```

What is the difference between == and === in JavaScript?

The double equals (==) operator checks for equality of value, but it does not check for equality of type. The triple equals (===) operator checks for both equality of value and equality of type.

What is a closure in JavaScript?

A closure is a function that has access to variables in its outer (enclosing) function's scope chain.

Answer: A closure is a function that has access to variables in its outer lexical environment, even after that environment has been destroyed.

A closure is a function that has access to variables in its outer function scope, even after the outer function has returned. This is possible because the inner function "closes over" the variables in the outer function. Closures are commonly used to create private variables and functions in JavaScript.

A closure is a function that has access to its parent scope, even after the parent function has closed.

What is the difference between null and undefined in JavaScript?

Undefined is a variable that has been declared but has not been assigned a value. Null is a value that represents no value or an empty value.

What is the difference between "==" and "===" in JavaScript?

The "==" operator checks for equality of values, but it does not check for the data type. For example, 5 == "5" will return true. On the other hand, the "===" operator checks for both equality of values and data type. For example, 5 === "5" will return false.

What is the difference between let and var in JavaScript?

The main difference between let and var is that let has block scope, while var has function scope. This means that variables declared with let are only accessible within the block in which they are defined, while variables declared with var are accessible throughout the entire function in which they are defined.

What is the difference between null and undefined in JavaScript?

In JavaScript, null is a value that represents the intentional absence of any object value, while undefined is a value that represents an uninitialized variable or an object property that does not exist. In other words, null is a value that is explicitly set by a programmer, while undefined is a value that is implicitly set by the JavaScript engine.

What is hoisting in JavaScript?

Hoisting is a JavaScript mechanism where variables and function declarations are moved to the top of their respective scopes during compilation, regardless of where they are defined. This means that you can use a variable or function before it has been declared, as long as it is declared somewhere in the same scope.

What is the difference between a for loop and a forEach loop in JavaScript?

A for loop is a traditional loop that iterates over a range of values, while a forEach loop is a newer method that iterates over an array and executes a function for each element. The main difference is that a for loop can be used with any iterable object, while a forEach loop is only used with arrays.

What is the difference between synchronous and asynchronous code in JavaScript?

Synchronous code is code that is executed sequentially, one line at a time, and blocks the execution until a particular operation is completed. Asynchronous code, on the other hand, is code that does not block the execution and allows other code to run while waiting for an operation to complete. This is achieved through the use of callbacks, promises, and async/await.

What is a callback function in JavaScript?

A callback function is a function that is passed as an argument to another function and is executed after a certain operation is completed. Callback functions are commonly used in asynchronous programming to handle the results of an operation once it is completed.

What is event bubbling in JavaScript?

Event bubbling is a phenomenon where an event that occurs on a nested element is propagated up through its parent elements in the DOM tree. This means that if you click on a nested element, the click event will also trigger on all of its parent elements up to the root element.

What is the difference between the DOM and the BOM in JavaScript?

The Document Object Model (DOM) is a programming interface for HTML and XML documents that allows JavaScript to access and manipulate the content and structure of a web page. The Browser Object Model (BOM), on the other hand, provides a programming interface for the browser window and other browser-specific features, such as history and location.

What is the difference between "undefined" and "null" in JavaScript?

Undefined means a variable has been declared but has not yet been assigned a value. Null is an assignment value that represents no value or no object.

How do you declare a variable in JavaScript?

You can declare a variable in JavaScript using the "var", "let", or "const" keywords followed by the variable name. For example:

```
var myVar;
let myLet;
const myConst;
```

How do you check if a variable is an array in JavaScript?

```
You can check if a variable is an array in JavaScript
using the Array.isArray() method. For example:
Array.isArray([1, 2, 3]); // true
Array.isArray("hello"); // false
```

How do you check if an object has a specific property in JavaScript?

You can check if an object has a specific property in JavaScript using the "in" operator or the hasOwnProperty() method. For example:
"propertyName" in myObject; // true or false
myObject.hasOwnProperty("propertyName"); // true or false

How do you convert a string to a number in JavaScript?

You can convert a string to a number in JavaScript using the Number() or parseInt() functions. For example:

```
Number("123"); // 123
parseInt("123"); // 123
```

What is the difference between "==" and "===" in JavaScript?

"==" compares the values of two operands, while "===" compares both the values and the data types of two operands.
What is the "this" keyword in JavaScript?
The "this" keyword refers to the object that the function is a method of, or the global object if the function is not a method of any object.

What is the difference between "let" and "var" in JavaScript?

"var" is function-scoped, while "let" is block-scoped. This means that variables declared with "var" are accessible within the function they are declared in, while variables declared with "let" are only accessible within the block they are declared in.

How do you create a new object in JavaScript?

You can create a new object in JavaScript using either object literal notation or the Object() constructor. For example:
var myObject = {name: "John", age: 30};
var myObject = new Object(); myObject.name = "John";
myObject.age = 30;

What is the difference between null and undefined in JavaScript?

In JavaScript, null represents the intentional absence of any object value while undefined means a variable has been declared but has not been assigned a value.

What is the difference between let and var in JavaScript?

Both let and var are used to declare variables in JavaScript, but let is block-scoped while var is function-scoped. This means that variables declared with var are accessible throughout the function, while variables declared with let are only accessible within the block where they are defined.

What is the use of 'use strict' in JavaScript?

'use strict' is a directive that is used to enforce stricter parsing and error handling in JavaScript code. It helps to identify coding errors and ensures that the code is executed in a secure manner.

What is a callback function in JavaScript?

A callback function is a function that is passed as an argument to another function and is executed after some operation has been completed. It is often used in asynchronous programming to handle the completion of a task.

What is an immediately-invoked function expression (IIFE) in JavaScript?

An IIFE is a function that is executed as soon as it is defined. It is used to create a private scope for a block of code and to prevent the pollution of the global namespace.

Example:

```
(function() {
// Code to be executed
})();
```

What is the difference between == and === in JavaScript?

The double equals (==) is used to compare values while ignoring their data types. The triple equals (===) is used to compare values while taking their data types into account.

What is the difference between synchronous and asynchronous programming?

Synchronous programming is when code is executed one statement at a time in a sequential manner. Asynchronous programming allows code to be executed out of order and is often used for operations that take a long time to complete.

What is a closure in JavaScript?

A closure is a function that has access to variables in its outer function, even after that function has returned. It allows for data encapsulation and helps to create private variables and functions.

Example:

```
function outerFunction() {
var outerVar = 'Hello, ';
function innerFunction(name) {
```

```
console.log(outerVar + name);

}

return innerFunction;

}

var innerFunc = outerFunction();

innerFunc('John'); // Output: Hello, John
```

What is the difference between let and const in JavaScript?

Both let and const are used to declare variables in JavaScript, but while let can be reassigned, const cannot. This means that once a variable is declared with const, its value cannot be changed.

What is the difference between == and === operators in JavaScript?

The double equals (==) operator compares the values of two variables after type coercion, while the triple equals (===) operator compares the values and types of two variables without type coercion. For example:

```
console.log(5 == "5"); // true

console.log(5 === "5"); // false
```

What is the difference between let and var in JavaScript?

The var keyword declares a variable with function scope, while the let keyword declares a variable with block scope. Block scope means that the variable is only accessible within the block it is defined in. For example:

```
function test() {
  var a = 1;
  let b = 2;
  {
    var a = 3;
    let b = 4;
  }
  console.log(a); // 3
  console.log(b); // 2
}
```

What is the difference between null and undefined in JavaScript?

Undefined means a variable has been declared but has not yet been assigned a value, while null is an assignment value representing no value or no object. For example:

```
let a;
console.log(a); // undefined
```

```
let b = null;
console.log(b); // null
```

What is a closure in JavaScript?

A closure is a function that has access to its parent function's variables, even after the parent function has returned. Closures can be used to create private variables and functions. For example:

```
function outer() {
  let a = 1;
  function inner() {
    console.log(a);
  }
  return inner;
}


let innerFunc = outer();
innerFunc(); // 1
```

What is a callback function in JavaScript?

A callback function is a function that is passed as an argument to another function and is executed when the parent function is done executing. Callbacks are often used in asynchronous programming to handle the results of an asynchronous operation. For example:

```
function getData(callback) {

  setTimeout(function() {

    let data = "Some data";

    callback(data);

  }, 1000);

}


getData(function(data) {

  console.log(data);

});
```

What is the difference between let and const in JavaScript?

The const keyword declares a variable that cannot be reassigned, while the let keyword declares a variable that can be reassigned. Both let and const variables have block scope. For example:

```
const a = 1;

a = 2; // TypeError: Assignment to constant variable.


let b = 3;

b = 4;

console.log(b); // 4
```

What is the difference between map() and forEach() in JavaScript?

The map() method creates a new array with the results of calling a function on each element in the original array, while the forEach() method executes a function on each element in the original array. The map() method returns a new array, while the forEach() method does not. For example:

```
let arr = [1, 2, 3];
let mappedArr = arr.map(function(elem) {
  return elem * 2;
});
console.log(mappedArr); // [2, 4, 6]


arr.forEach(function(elem) {
  console.log(elem * 2);
});
```

What is the difference between null and undefined in JavaScript?

null and undefined are both used to represent missing or nonexistent values, but they have different meanings. null is a value that represents the intentional absence of any object value,

while undefined is a value that represents an uninitialized, missing, or non-existent value.

What is the difference between == and === in JavaScript?

== is a loose equality operator that only checks for value equality, while === is a strict equality operator that checks for both value and type equality.

What are the primitive data types in JavaScript?

There are six primitive data types in JavaScript: string, number, boolean, null, undefined, and symbol.

What is a closure in JavaScript?

A closure is a function that has access to its outer function's variables, even after the outer function has returned. This allows for private variables and data encapsulation in JavaScript.

What is the difference between let, const, and var in JavaScript?

let and const are block-scoped variables, while var is function-scoped. let allows for reassignment of the variable, while const does not.

What is the this keyword in JavaScript?

The this keyword refers to the object that the current function or method is a property of. It is determined dynamically at runtime based on how the function is called.

What is event bubbling in JavaScript?

Event bubbling is the process by which an event that is triggered on an inner element will also trigger on all of its parent elements, propagating up the DOM tree.

What is the difference between synchronous and asynchronous code in JavaScript?

Synchronous code executes in a linear, blocking manner, meaning that each statement is executed one after the other in the order that they are written. Asynchronous code, on the other hand,

allows multiple tasks to be executed simultaneously, and does not block the execution of other code while waiting for a task to complete.

What is the difference between map() and forEach() in JavaScript?

map() and forEach() are both array methods in JavaScript. The main difference between them is that map() returns a new array, while forEach() does not.

What is a promise in JavaScript?

A promise is an object that represents the eventual completion (or failure) of an asynchronous operation and its resulting value. It allows for better handling of asynchronous code and helps avoid callback hell.