JavaScript Interview Experience

1. Difference between null and undefined in JavaScript

null is explicitly assigned to a variable representing 'no value', while undefined indicates that a variable has been declared but has not been assigned a value yet.

Example:

```
let a; // undefined
let b = null; // null
```

2. What is Closure in JavaScript?

A closure is a function that retains access to its lexical scope, even when the function is executed outside of that scope.

Example:

```
function outer() {
  let count = 0;
  return function inner() {
    count++;
    console.log(count);
  }
}
const counter = outer();
counter(); // 1
counter(); // 2
```

3. Array Methods in JavaScript

Some common array methods include push, pop, map, filter, and reduce.

Example:

```
let arr = [1, 2, 3];
arr.push(4); // [1, 2, 3, 4]
```

4. Difference between map and forEach

map returns a new array after applying a function, whereas forEach only iterates over the array without returning a new one.

Example:

```
let arr = [1, 2, 3];
let mappedArr = arr.map(x => x * 2); // [2, 4, 6]
arr.forEach(x => console.log(x)); // Prints 1, 2, 3
```

5. What is a Callback Function in JavaScript?

A callback function is a function passed into another function as an argument and is executed after the completion of some operation.

Example:

```
function greet(name, callback) {
  console.log('Hello ' + name);
  callback();
}
function sayGoodbye() {
  console.log('Goodbye');
}
greet('John', sayGoodbye);
```

6. What are Events in JavaScript?

Events are actions or occurrences that happen in the browser and can be detected using event listeners.

Example:

```
document.getElementById('myBtn').addEventListener('click', function() {
  alert('Button clicked!');
});
```

7. What is Synchronization in JavaScript?

JavaScript is single-threaded, meaning tasks are executed one at a time. Synchronization ensures tasks happen in sequence without blocking the main thread.

8. What are Promises in JavaScript?

A promise represents the eventual completion (or failure) of an asynchronous operation and its resulting value.

Example:

```
let promise = new Promise((resolve, reject) => {
  setTimeout(() => resolve('Success!'), 1000);
});
promise.then(result => console.log(result));
```

9. ES6 Features in JavaScript

ES6 introduced new features like let/const, arrow functions, template literals, destructuring, promises, and classes.

Example:

```
let name = 'John';
```

let greet = `Hello, ${name}`;

10. What is Hoisting in JavaScript?

Hoisting refers to JavaScript's behavior of moving variable and function declarations to the top of their scope before execution.

Example:

console.log(x); // undefined

var x = 5;