Functional Programming - Quiz

Below is a scored review of your assessment. All questions are shown.

Correct Answer | Partially Correct | Incorrect Answer

1 How can you achieve immutability in your own code?

Your Answer	By using constant variables
Correct Answer	By using read-only properties

Justification

Read-only properties are properties of an object whose values cannot be changed after they are set. By using read-only properties, you can ensure that the values of certain properties remain the same throughout the program, preventing accidental changes or unintended side effects.

2 What are the drawbacks of immutability in JavaScript?

Your Answer	Reduced flexibility
Correct Answer	All of the above

Justification

While immutability can offer benefits such as improved code reliability and predictability, it can also have drawbacks such as higher memory usage, reduced flexibility, and more complex coding. The trade-offs of immutability should be carefully considered before deciding to use it in a particular programming project.

3 What does functional programming help in reducing?

Your Answer	Code complexity
Correct Answer	Code complexity

Justification

Functional programming is a programming paradigm that emphasizes the use of pure functions, which do not have side effects and always produce the same output given the same input. One of the main advantages of using pure functions is that they are composable, meaning that they can be combined together to form more complex functions. This can help to reduce code redundancy by enabling the reuse of common patterns and abstractions.

4 What are first-class objects in JavaScript?

Your Answer	Both A and B
Correct Answer	Both A and B

Justification

In JavaScript, first-class objects are functions and objects that can be treated like any other value. This means they can be stored in variables, passed as arguments to other functions, and returned as values from functions. This flexibility allows for powerful programming techniques and supports functional programming paradigms.

5 What will be the output of the following code?

```
function sayHi() {
  return (() => 0)();
}
console.log(typeof sayHi());
```

Your Answer "number"

Correct Answer "number"

Justification

The sayHi function returns the result of immediately invoking an arrow function that always returns 0. This means that the result of calling sayHi will always be 0. The typeof operator is used to determine the type of the value returned by sayHi. Since sayHi returns a number, the output of typeof sayHi() will be "number".

6 What will be the output of the following code?

```
const numbers = [1, 2, 3, 4, 5];

const result = numbers.filter(num => num % 2 === 0)
  .map(num => num * 2)
  .reduce((acc, num) => acc + num, 0);

console.log(result);
```

Your Answer	20
Correct Answer	12

Justification

The given code uses array methods filter, map, and reduce to compute a result from an array of numbers. The filter method is used to create a new array containing only the even numbers from the original array [2, 4]. The map method is used to create a new array containing the doubled values of each number in the filtered array [4, 8]. Finally, the reduce method is used to compute the sum of the numbers in the mapped array, starting from an initial value of 0. Therefore, the correct answer is 12.

7 Which of the following are the characteristics of first class objects?

Your Answer	Be stored in a variable Be passed as arguments to functions Be returned by functions
Correct Answer	Be stored in a variable Be passed as arguments to functions Be returned by functions Be stored in some data structure

Justification

In JavaScript, functions are first-class objects, which means they can be treated like any other value or object. They can be assigned to variables, passed as arguments to functions, returned from functions, and stored in data structures like arrays or objects.

8 What is functional programming?

Your Answer	A programming paradigm designed to handle pure mathematical functions
Correct Answer	A programming paradigm designed to handle pure mathematical functions

Justification

Functional programming is a programming paradigm that uses pure mathematical functions to build software. It avoids changing state and mutable data, and instead focuses on immutable data structures. It emphasizes the use of functions as first-class citizens and aims to write more concise and modular code.

9 Pickout the correct statement

Your Answer	Callback hell is solved by using first class functions.
Correct Answer	Callback hell is solved by using first class functions.

Justification

Callback hell is a problem that arises when dealing with asynchronous operations in JavaScript. It occurs when multiple callbacks are nested within each other, making the code difficult to read and maintain. One way to mitigate this problem is by using first-class functions.

10 Which of the following is/are an example(s) of High order function?

Your Answer	map() reduce() filter()
Correct Answer	map() reduce() filter()

Justification

All of the options 1, 2, 4 are examples of higher-order functions in JavaScript. A higher-order function is a function that takes one or more functions as arguments or returns a function as its result.

Page 1 of 1

Summary

I'm done.

Software by

Version 11.2