

Scope

Question 1: Identify the scope of the variables in the code snippet below:

```
function myFunction() {  
  let x = 10;  
  if (true) {  
    let y = 20;  
    console.log(x);  
    console.log(y);  
  }  
  console.log(x);  
  console.log(y);  
}myFunction();
```

Question 2: Identify the scope of the variable z in the code snippet below:

```
let z = 'global';  
function anotherFunction() {  
  let z = 'local';  
  console.log(z);  
}anotherFunction();  
console.log(z);
```

Question 3: Identify the scope of the variable count and explain the output of the code snippet below:

```
function outerFunction() {  
  let count = 0;  
  function innerFunction() {
```

```
    count++;  
    console.log(count);  
  }  
  return innerFunction;  
}  
  
let counter = outerFunction();  
counter();  
counter();  
counter();
```

Block Scope

Question 1: What will be the output of the code snippet below? Explain why.

```
function exampleFunction() {  
  if (true) {  
    var x = 10;  
    let y = 20;  
  } console.log(x);  
  console.log(y);  
}  
  
exampleFunction();
```

Question 2: What will be the output of the code snippet below? Explain why.

```
let x = 5;  
  
function exampleFunction() {
```

```
let x = 10;

if (true) {
  let x = 20;
  console.log(x);
}

console.log(x);
}

exampleFunction();

console.log(x);
```

Question 3: What will be the output of the code snippet below? Explain why.

```
let x = 10;
```

```
if (true) {
  let x = 20;
  console.log(x);
}console.log(x);
```

Function Scope

Question 1: Write a function called `printNumber` that prints a given number. However, if the number is negative, print an error message instead.

Question 2: Write a function called `calculateSum` that calculates the sum of two numbers and returns the result. Then, create a variable inside a function and try to access it from outside the function. Observe the scope behavior.

Question 3: Write a function called `countEvenNumbers` that takes an array of numbers as a parameter and returns the count of even numbers in the array.

Global Scope

Question 1: Write a function called `updateGlobalVariable` that takes a parameter and updates the value of a global variable.

For example, The `updateGlobalVariable` function takes a parameter `newValue` and updates the value of `globalVar` to the new value passed as an argument.

Question 2: Write a function called `multiplyByGlobal` that takes a number as a parameter and returns the product of that number and a global variable.

For example, The `multiplyByGlobal` function takes a number as a parameter and multiplies it by the global variable `globalVar`. When we call the function with `multiplyByGlobal(2)`, it returns the product of 2 and the current value of `globalVar`.

Question 3: Write a function called `accessGlobal` that tries to access a global variable declared outside its scope.

For example, The `accessGlobal` function is defined inside the global scope, and it tries to access the value of the `globalVar` variable. Since the variable is declared in the global scope, the function can access and print its value.

If-else Conditionals

Question 1: Write a function called `checkAge` that takes a person's age as a parameter and prints different messages based on their age group:

If the age is less than 18, print "You are a minor."

If the age is between 18 and 64 (inclusive), print "You are an adult."

If the age is 65 or older, print "You are a senior citizen."

Question 2: Write a function called `findLargestNumber` that takes three numbers as parameters and returns the largest number among them.

Question 3: Write a function called `checkPasswordStrength` that takes a password as a parameter and checks its strength based on the following criteria:

If the password length is less than 8 characters, print "Weak password."

If the password contains both letters and numbers and is at least 8 characters long, print "Strong password."

Otherwise, print "Moderate password."

Else-If

Question 1: Write a function called `checkGrade` that takes a student's score as a parameter and prints the corresponding grade based on the following criteria:

If the score is greater than or equal to 90, print "A".

If the score is between 80 and 89 (inclusive), print "B".

If the score is between 70 and 79 (inclusive), print "C".

If the score is between 60 and 69 (inclusive), print "D".

Otherwise, print "F".

Question 2: Write a function called `checkTimeOfDay` that takes the current hour (in 24-hour format) as a parameter and prints a greeting based on the time of day:

If the hour is between 5 AM and 11:59 AM, print "Good morning."

If the hour is between 12 PM and 4:59 PM, print "Good afternoon."

If the hour is between 5 PM and 8:59 PM, print "Good evening."

Otherwise, print "Good night."

Question 3: Write a function called `evaluateTemperature` that takes the temperature in Celsius as a parameter and prints a message based on the following conditions:

If the temperature is above 30 degrees, print "It's a hot day!"

If the temperature is between 20 and 30 degrees (inclusive), print "The weather is pleasant."

If the temperature is below 20 degrees, print "It's a bit chilly."

Switch Case

Question 1: Write a function called `checkDay` that takes a day abbreviation (e.g., "Mon", "Tue", "Wed", etc.) as a parameter and prints the full name of the day.

Question 2: Write a function called `getMonthDays` that takes a month's name (e.g., "January", "February", etc.) as a parameter and returns the number of days in that month.

Question 3: Write a function called `printGrade` that takes a letter grade (e.g., "A", "B", "C", etc.) as a parameter and prints a message indicating the grade's description.