PW SKILLS

Assignment Code: FSD-AG-005

JavaScript - Arrays, Functions & More | **Assignment**

Instructions: Carefully read each question. Use Google Docs, Microsoft Word, or a similar tool to create a document where you type out each question along with its answer. Save the document as a PDF, and then upload it to the LMS. Please do not zip or archive the files before uploading them. Each question carries 20 marks.

Total Marks: 220

Question 1 : Create an object named `student` with the following properties:
- `name`: "Rahul"
- `age`: 21
- `courses`: an array containing "Math", "Physics", and "Chemistry"

Then, perform the following operations:
1. Add a new property `grade` with the value "A".
2. Update the `age` to 22.
3. Delete the `courses` property.

Answer:

```
let student = {
    name: "Rahul",
    age: 21,
    courses: ["Math", "Physics", "Chemistry"]
};

// 1. Add a new property
student.grade = "A";

// 2. Update the age
student.age = 22;

// 3. Delete the courses property
delete student.courses;

console.log(student);
```

Question 2: Write a function `checkEligibility` that takes an `age` as a parameter and returns:

- "Eligible" if age is 18 or above
- "Not Eligible" if age is below 18

Use an `if-else` statement.

Answer:

```
function checkEligibility(age) {
   if (age >= 18) {
      return "Eligible";
   } else {
      return "Not Eligible";
   }
}
```

Question 3: Write a function `getDayName` that takes a number (1-7) and returns the corresponding day of the week. Use a `switch` statement.

Answer:

```
function getDayName(dayNumber) {
   switch (dayNumber) {
      case 1:
         return "Monday";
      case 2:
         return "Tuesday";
      case 3:
         return "Wednesday";
      case 4:
         return "Thursday";
      case 5:
         return "Friday";
      case 6:
         return "Saturday";
      case 7:
         return "Sunday";
      default:
         return "Invalid Day Number";
   }
}
```

Question 4: Rewrite the `checkEligibility` function from Question 2 using the ternary operator.

Answer:

```
function checkEligibility(age) {
    return age >= 18 ? "Eligible" : "Not Eligible";
}
```

Question 5: Given an array `numbers = [1, 2, 3, 4, 5]`, perform the following:

1. Use a `for` loop to print each number.
2. Use a `while` loop to print each number.
3. Use a `for-in` loop to print each index.
4. Use a `for-of` loop to print each number.

Answer:

```
1)  For loop

for (let i = 0; i < numbers.length; i++) {
    console.log(numbers[i]);
}
2)  While loop

    let i = 0;
    while (i < numbers.length) {
        console.log(numbers[i]);
        i++;
    }
3)  For-in loop

    for (let index in numbers) {
        console.log(index);
    }


4)   For-off loop

    for (let num of numbers) {
    console.log(num);
}
```

3

Question 6: Explain what functions are in JavaScript and provide an example of a function that adds two numbers.

Answer:

Functions in JavaScript are reusable blocks of code designed to perform a specific task. They allow you to group statements together, execute them when needed, and avoid repeating code.

Functions are usefull because:-

1) Reusability (write once, use many times)

2) Cleaner code

3) Easier to manage and debug

5) Can accept inputs and return outputs

Question 7: Convert the `add` function from Question 6 into an arrow function.

Answer:

```
const addNumbers = (a, b) => {
    return a + b;
};

console.log(addNumbers(5, 7));
```

Question 8: Write a function `greet` that takes a name and a callback function. The `greet` function should call the callback with the name.

Answer:

```
function greet(name, callback) {
    callback(name);
}

function sayHello(name) {
    console.log("Hello, " + name + "!");
}

greet("Rahul", sayHello);

output :-

Hello, Rahul!
```

Question 9: Given the array:

```
const fruits = ["apple", "banana", "cherry"];
```

1. What is the length of the array?
2. Add "date" to the end of the array using the `length` property.

Answer:

```
1)   The length of the array is 3.

2)    fruits[fruits.length] = "date";

console.log(fruits);
```

Question 10: Given the string `text = " Hello World! "`, perform the following:

1. Trim the whitespace.
2. Convert to uppercase.
3. Check if it includes "World".

Answer:

```
let text = " Hello World! ";

1)
let trimmedText = text.trim();
console.log(trimmedText); // Output: "Hello World!"

2)
let upperText = trimmedText.toUpperCase();
console.log(upperText); // Output: "HELLO WORLD!"

3)
let includesWorld = trimmedText.includes("World");
console.log(includesWorld); // Output: true
```

Question 11: Given the array `numbers = [1, 2, 3, 4, 5]`, perform the following:

1. Add 6 to the end.
2. Remove the first element.
3. Find the index of 4.
4. Check if all numbers are greater than 0.

Answer:

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

1)
numbers.push(6);
console.log(numbers); // Output: [1, 2, 3, 4, 5, 6]

2)
numbers.shift();
console.log(numbers); // Output: [2, 3, 4, 5, 6]
```

```
3)
let indexOfFour = numbers.indexOf(4);
console.log(indexOfFour); // Output: 2

4)
let allGreaterThanZero = numbers.every(num => num > 0);
console.log(allGreaterThanZero); // Output: true
```