

Q: What is an object and its writing style? What are the different ways to access object properties?

A: An object is a collection of key-value pairs in JavaScript. Creation styles:

- 1) Object literal: `let obj = {name: "Ehtesham"};`
- 2) `new Object()`: `let obj = new Object();`
- 3) Constructor function
- 4) Class syntax
- 5) `Object.create()`

Access properties:

- Dot notation: `obj.name`
- Bracket notation: `obj["name"]`

Q: How to check how many letters are in a string?

A: `str.length` gives total characters. For only letters: `str.replace(/[^a-zA-Z]/g, "").length`.

Q: What would be the result of `100 == '101'` and `100 != '100'`?

A: `100 == '101' => false`, `100 != '100' => false`.

Q: What is the method to check if any string ends with any specific letter?

A: Use `.endsWith(searchString)`. Example: `"Hello".endsWith("o") => true`.

Q: What is an array and explain with an example by writing down an array of the first 10 positive integers? And access the 5th value in an array.

A: Array is an ordered list of values. Example: `let numbers = [1,2,3,4,5,6,7,8,9,10];` Access 5th: `numbers[4]`.

Q: How to add and remove values from an array? Explain with a code example.

A: Add:

- `push()`: end
- `unshift()`: start
- `splice()`: anywhere

Remove:

- `pop()`: end
- `shift()`: start
- `splice()`: anywhere

Q: What is a boolean and what would be the result of 0 and null in boolean?

A: Boolean is true/false type. `Boolean(0) => false`, `Boolean(null) => false`.

Q: Write a program that prints "Hello, world!" to the console.

A: `console.log("Hello, world!");`

Q: Write a function that takes a number as input and checks if it is a prime number.

A:

```
function isPrime(num) {
```

```
if (num <= 1) return false;
for (let i = 2; i <= Math.sqrt(num); i++) {
  if (num % i === 0) return false;
}
return true;
}
```

Q: Write a function that takes a number as input and checks if it is an even number.

A:

```
function isEven(num) {
  return num % 2 === 0;
}
```

Q: Write a function that takes a number as input and returns its factorial.

A:

```
function factorial(num) {
  if (num < 0) return undefined;
  let result = 1;
  for (let i = 1; i <= num; i++) result *= i;
  return result;
}
```

Q: Write a function that takes a number as input and checks if it is a perfect square.

A:

```
function isPerfectSquare(num) {
  if (num < 0) return false;
  let sqrt = Math.sqrt(num);
  return Number.isInteger(sqrt);
}
```

Q: Write a function that takes two numbers as input and returns the larger of the two.

A:

```
function getLarger(a, b) {
  return a > b ? a : b;
}
```

Q: Write a program that prompts the user for their name and then prints "Hello, [name]!" to the console.

A: Browser:

```
let name = prompt("Enter your name:");
console.log(`Hello, ${name}!`);
```

Node.js: Use readline module.