JavaScript Exercises with Explanations

JavaScript Exercises - Day 4

1. Variables

Exercise:

Declare a variable called `username` and assign your name to it.

Try reassigning it with a different name using `let` and then try with `const`.

Explanation:

- `let` allows reassignment.
- `const` throws an error on reassignment.

Example:

```
let username = "Kishore";
username = "Kumar"; // works
const pi = 3.14;
pi = 3.141; // error
```

2. Functions

Exercise:

Create a function called `greetUser` that takes a name and returns a greeting message.

Explanation:

Functions allow code reuse and modularity.

Example:

```
function greetUser(name) {
  return "Hello, " + name + "!";
}

console.log(greetUser("Kishore")); // "Hello, Kishore!"
```

3. Arrow Functions

Exercise:

Convert the `greetUser` function into an arrow function.

Explanation:

Arrow functions provide a shorter syntax.

Example:

```
const greetUser = (name) => "Hello, " + name;
```

4. Arrays

Exercise:

Create an array of 5 fruits. Print each fruit using `forEach`. Add one more fruit using `push`.

Explanation:

Arrays hold ordered data. Use methods like push, pop, map, filter etc.

Example:

```
let fruits = ["apple", "banana", "cherry", "grapes", "mango"];

fruits.push("kiwi");

fruits.forEach(fruit => console.log(fruit));
```

5. Array Methods

Exercise:

Use `map()` to create a new array of uppercase fruit names.

Explanation:

map() returns a new array after applying a function on every element.

Example:

```
let upperFruits = fruits.map(f => f.toUpperCase());
```

6. Objects

Exercise:

Create an object called `student` with keys: name, age, and skills (array).

Explanation:

Objects use key-value format. Access with dot or bracket notation.

Example:

```
const student = {

  name: "Kishore",
  age: 25,
  skills: ["JS", "HTML", "CSS"]
};

console.log(student.name);
console.log(student.skills[1]);
```

7. Nested Objects

Exercise:

Create an object `user` with a nested `address` object.

Explanation:

Nested objects allow hierarchical data structures.

Example:

```
const user = {
  name: "Ravi",
  address: {
    city: "Chennai",
    pin: 600001
  }
};

console.log(user.address.city);
```

8. Looping an Object

Exercise:

Loop through all properties of the `student` object using `for...in`.

Explanation:

Use `for...in` to iterate object properties.

Example:

```
for (let key in student) {
  console.log(key + ": " + student[key]);
}
```

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