Week 1 & 2: JavaScript Basics (10-Day Plan)

Day 1: Variables & Data Types

Topics to Learn:

- `var`, `let`, `const`
- Primitive data types: Number, String, Boolean, Null, Undefined, Symbol
- Type checking: `typeof`
- Type conversion: `String()`, `Number()`, `Boolean()`

Tasks/Practice:

- Declare variables using `let` and `const`
- Print different data types to console
- Convert number to string and vice versa

Mini Exercise:

```
let age = 20;
const name = "Umesh";
console.log(`Name: ${name}, Age: ${age}`);
```

Day 2: Operators & Loops

Topics to Learn:

- Arithmetic: `+ - * / %`
- Comparison: `==, ===, !=, !==, >, <`
- Logical: `&&, ||, !`
- Assignment: `=, +=, -=, *=, /=`
- Loops: `for`, `while`, `do…while`

Tasks/Practice:

- Write simple arithmetic calculations
- Compare numbers and strings
- Loop through numbers 1–10 using `for` and `while`

Mini Exercise:

```
for(let i=1; i<=10; i++){
    console.log(i);
}
```

Day 3: Functions, Scope, and Hoisting

Topics to Learn:

- Function declaration & expression
- Parameters and return values
- Scope: global vs local
- Hoisting basics

Tasks/Practice:

- Write a function to add two numbers
- Test variable access inside & outside functions
- Observe hoisting behavior with `var`

Mini Exercise:

```
function add(a, b){
    return a + b;
}
console.log(add(5, 7)); // 12
```

Day 4: Arrays

Topics to Learn:

- Array creation: `[]`, `new Array()`
- Accessing elements
- Array methods: `push`, `pop`, `shift`, `unshift`, `length`, `indexOf`

Tasks/Practice:

- Create an array of 5 items
- Add and remove items using array methods
- Loop through array using `for`

Mini Exercise:

```
let fruits = ["apple", "banana", "mango"];
fruits.push("orange");
console.log(fruits);
```

Day 5: Objects

Topics to Learn:

- Object literals `{}`
- Properties & methods
- Accessing values using dot `.` and bracket `[]` notation

Tasks/Practice:

- Create an object for a person (name, age, city)
- Add a method to print full details
- Update properties dynamically

Mini Exercise:

```
let person = {name:"Umesh", age:21};
person.city = "Bengaluru";
console.log(person.name, person.city);
```

Day 6: DOM Basics

Topics to Learn:

- What is DOM
- Selecting elements: `getElementById`, `getElementsByClassName`, `querySelector`
- Changing content: `innerText`, `innerHTML`
- Changing styles

Tasks/Practice:

- Select elements from a sample HTML page
- Change text and color dynamically
- Inspect DOM using browser DevTools

Mini Exercise:

```
document.getElementById("title").innerText = "Hello Umesh!";
```

Day 7: Event Handling

Topics to Learn:

- Adding events: `onclick`, `oninput`, `onsubmit`
- `addEventListener`
- Event object basics (`event.target`)

Tasks/Practice:

- Create a button that changes text on click
- Capture input value on typing
- Form submission alert

Mini Exercise:

```
document.getElementById("btn").addEventListener("click", function(){
    alert("Button Clicked!");
});
```

Day 8: Combining Arrays & DOM

Topics to Learn:

- Display array items dynamically in HTML
- Loop through array and create HTML elements

Tasks/Practice:

- Display a list of tasks dynamically
- Add/remove items using JS

Mini Exercise:

```
let tasks = ["Study", "Workout", "Read"];
let ul = document.getElementById("task-list");
tasks.forEach(task => {
    let li = document.createElement("li");
    li.innerText = task;
```

```
    ul.appendChild(li);
});
```

Day 9: Combining Objects & Events

Topics to Learn:

- Update DOM using object data
- Event-driven updates
- Dynamic object modification

Tasks/Practice:

- Display person info dynamically
- Update age or city on button click

Mini Exercise:

```
let person = {name:"Umesh", age:21};
document.getElementById("updateAge").addEventListener("click", function(){
    person.age += 1;
    document.getElementById("age").innerText = person.age;
});
```

Day 10: Mini-Project: Interactive To-Do List

Features to implement:

- Add new tasks
- Delete tasks
- Mark tasks as completed
- Store tasks in an array (optional: localStorage)

Tasks/Practice:

- Combine everything learned: arrays, objects, DOM, events
- Style using CSS (optional: your earlier CSS knowledge)

Mini Exercise:

- HTML: Input box, Add button, Task list container
- JS: Add tasks dynamically, attach delete buttons, update DOM

✅**Tip:**

- Every day, **write code by hand**, don’t just copy-paste.
- Experiment by changing values, adding features.
- By Day 10, you’ll be confident with **variables, arrays, objects, functions, DOM, and events**.