Chapter 1: JavaScript Basics for React

1 Introduction

Yeh chapter JavaScript ke basics cover karta hai jo React.js ke liye zaroori hain. Humne variables, functions, arrow functions, aur array methods seekhe, jo React mein kaam aayenge. Har topic ke saath code examples, real-world scenarios, common mistakes, aur interview tips bhi hain.

2 1.1 Variables in JavaScript

Variable ek container hota hai jisme data store karte hain, jaise naam, number, ya value. JavaScript mein teen tarah ke variables hote hain: **var**, **let**, aur **const**.

- **var**: Purana tareeka, scoping issues ke wajah se ab avoid karo.
- **let**: Jab value change karni ho.
- **const**: Jab value fixed rakhni ho.

2.1 Code Example: Variables

```
let naam = "Rahul"; // String: Text ya naam
const umar = 25; // Number: Fixed value
var city = "Delhi"; // Old way, avoid karo

console.log(naam); // Output: Rahul
console.log(umar); // Output: 25
console.log(city); // Output: Delhi

naam = "Priya"; // let wali value change
console.log(naam); // Output: Priya
```

2.2 Real-World Example

Socho ek dukaan ke owner ho. Customer ka **naam** aur **bill amount** track karna hai.

```
let customerName = "Amit";
const billAmount = 500;

console.log("Customer:", customerName, "Bill:", billAmount);
// Output: Customer: Amit Bill: 500

customerName = "Sneha"; // Naya customer
console.log("Customer:", customerName, "Bill:", billAmount);
// Output: Customer: Sneha Bill: 500
```

2.3 Common Mistake

- **const** ko change karne ki koshish mat karo, error aayega.

- **var** se bugs aa sakte hain, **let** ya **const** use karo.

2.4 Interview Tip

Difference between **let**, **const**, aur **var**:

- **let**: Reassign kar sakte ho, block-level scope.
- **const**: Reassign nahi kar sakte, lekin object/array ke andar changes possible hain.
- **var**: Function scope, hoisting issues.

3 1.2 Functions in JavaScript

Function ek code block hota hai jo specific kaam karta hai. Do tarah ke functions seekhe: normal aur arrow functions.

3.1 Code Example: Normal Function

```
function calculateBill(items, tax) {
  let total = items + (items * tax) / 100;
  return total;
}

let bill = calculateBill(1000, 10);
console.log("Total Bill:", bill); // Output: Total Bill: 1100
```

3.2 Code Example: Arrow Function

```
const calculateBillArrow = (items, tax) => {
  return items + (items * tax) / 100;
};

console.log("Total Bill (Arrow):", calculateBillArrow(2000, 5));
// Output: Total Bill (Arrow): 2100
```

3.3 Real-World Example

Ek chai wale ke liye bill calculate karna:

```
const chaiBill = (chaiPrice, quantity) => {
  let total = chaiPrice * quantity;
  return total;
};

console.log("2 chai ka bill:", chaiBill(10, 2)); // Output: 2
   chai ka bill: 20
console.log("5 chai ka bill:", chaiBill(10, 5)); // Output: 5
   chai ka bill: 50
```

3.4 Common Mistake

- Arrow function mein **return** bhool jana.
- Normal function mein **this** ka behaviour alag hota hai.

3.5 Interview Tip

Arrow function vs normal function:

- Arrow function ka syntax chhota hota hai.
- Arrow function mein **this** parent scope se aata hai, React mein helpful.

4 1.3 Array Methods for React

Array ek list hoti hai jisme multiple values store hoti hain. React mein **map**, **filter**, aur **forEach** ka use hota hai.

4.1 Code Example: Array Methods

```
let items = ["Chai", "Samosa", "Biscuit", "Coffee"];

// map: Har item ke aage "Delicious " add karo
let newItems = items.map((item) => "Delicious " + item);
console.log(newItems);
// Output: ["Delicious Chai", "Delicious Samosa", "Delicious
   Biscuit", "Delicious Coffee"]

// filter: 5 letters se chhote items
let shortItems = items.filter((item) => item.length < 6);
console.log(shortItems); // Output: ["Chai", "Biscuit"]

// forEach: Har item print karo
items.forEach((item) => {
  console.log("Item:", item);
});
// Output:
// Item: Chai
// Item: Samosa
// Item: Biscuit
// Item: Coffee
```

4.2 Real-World Example

Online food app ke liye veg menu:

```
let menu = [
  { name: "Chai", price: 10, isVeg: true },
  { name: "Samosa", price: 20, isVeg: false },
  { name: "Idli", price: 30, isVeg: true },
];
```

```

let vegMenu = menu.filter((item) => item.isVeg === true);
console.log(vegMenu);
// Output: [{ name: "Chai", price: 10, isVeg: true }, { name:
   "Idli", price: 30, isVeg: true }]

menu.map((item) => console.log(`${item.name}: Rs
   ${item.price}`));
// Output:
// Chai: Rs 10
// Samosa: Rs 20
// Idli: Rs 30
```

4.3 Common Mistake

- **map** aur **forEach** mein confuse na hona.
- Arrow function ka syntax galat likhna.

4.4 Interview Tip

map vs **filter**:

- **map**: Har item pe operation, naya array banata hai.
- **filter**: Condition match karne wale items select karta hai.

5 Assignment: Practice Time

5.1 Task 1: Variable Practice

- Ek dukaan ka naam (**let**), fixed discount (**const**), aur daily sales (**let**) store karo.
- Daily sales update karo.
- Sab print karo.

5.2 Task 2: Function Practice

- Ek arrow function banao jo item price aur quantity le, total bill return kare.
- 2 items ke liye call karo.

5.3 Task 3: Array Practice

- 5 food items ka array banao.
- **map** se "Yummy " add karo.
- **filter** se 6 letters se bade items chuno.
- Results print karo.