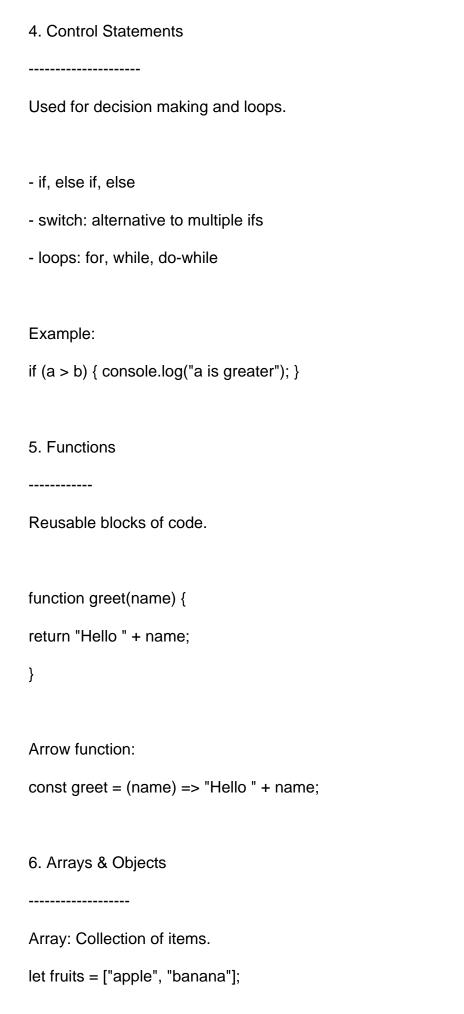
JavaScript Notes

1. Introduction to JavaScript
JavaScript is a lightweight, interpreted programming language used to make web pages interactive. It runs
2. Variables & Data Types
Variables store data values. Declared with var, let, or const.
Data Types:
- String: "Hello"
- Number: 42
- Boolean: true/false
- Object: { key: value }
- Array: [1, 2, 3]
- Null: empty value
- Undefined: no value assigned
3. Operators
Used to perform operations:
- Arithmetic: + - * / % ++
- Assignment: = += -=
- Comparison: == === != !== > < >= <=
- Logical: && !
- Ternary: condition ? true : false



Object: Collection of key-value pairs.
let person = {name: "Raj", age: 22};
7. DOM Manipulation
DOM = Document Object Model.
Used to access and change elements.
document.getElementById("id").innerText = "Hello";
document.querySelector(".class").style.color = "red";
8. Event Handling
Respond to user actions.
<button onclick="greet()">Click</button>
document.getElementById("btn").addEventListener("click", greet);
9. ES6 Features
- let and const: block-scoped variables
- Arrow functions: const add = (a, b) => a + b;
- Template literals: `Hello \${name}`
- Default parameters
- Spread and Rest operators
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10. Promises & Async/Await
Handle asynchronous tasks.
let promise = new Promise((resolve, reject) => {...});
promise.then(...).catch(...);
Async/Await:
async function fetchData() {
let data = await fetch(url);
}
11. JSON (JavaScript Object Notation)
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Used to store and exchange data.
let obj = { name: "Raj" };
let jsonStr = JSON.stringify(obj);
let newObj = JSON.parse(jsonStr);
12. Error Handling
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try {
// code
} catch(error) {
```

```
console.error(error);
} finally {
// always runs
}
13. Browser BOM (Browser Object Model)
Window-based objects:
- alert(), confirm(), prompt()
- window.innerWidth, window.location
14. LocalStorage & SessionStorage
Web storage in key-value pairs.
localStorage.setItem("name", "Raj");
let user = localStorage.getItem("name");
sessionStorage is similar but clears on session end.
15. Mini Projects
- To-Do List: add/delete items using DOM
- Calculator: simple arithmetic UI
- Quiz App: questions with options and scores
- Form Validation: validate user input with JS
```