REFERENSI CEPAT JAVASCRIPT

ES6+, DOM, event, Fetch API, async/await

Dasar

Variabel

```
let name = "Alice";    // reassignable
const PI = 3.14;       // constant
var old = "avoid";     // function-scoped (legacy)
```

Tipe Data

`string`	Teks: `"hello"` atau `'hello'`
`number`	Integer atau float: `42`, `3.14`
`boolean`	`true` / `false`
`null`	Nilai kosong yang disengaja
`undefined`	Dideklarasikan tapi belum diisi
`object`	Pasangan key-value: `{a: 1}`
`array`	List terurut: `[1, 2, 3]`
`symbol`	Identifier unik

Pengecekan & Konversi Tipe

```
typeof "hello"     // "string"
typeof 42          // "number"
Number("42")       // 42
String(100)        // "100"
parseInt("3.9")    // 3
parseFloat("3.14") // 3.14
```

String

Template Literal

```
const name = "Alice";
`Hello, ${name}!`       // Hello, Alice!
`Total: ${2 + 3}`       // Total: 5
`Multi
 line string`
```

Method String

`s.length`	Jumlah karakter
`s.toUpperCase()`	Salinan HURUF BESAR
`s.toLowerCase()`	Salinan huruf kecil
`s.trim()`	Hapus spasi di awal/akhir
`s.split(",")`	Pecah menjadi array
`s.includes("x")`	Cek keberadaan → bool
`s.indexOf("x")`	Index pertama (-1 jika tidak ada)
`s.slice(1, 4)`	Substring berdasarkan index
`s.replace(a, b)`	Ganti kemunculan pertama
`s.replaceAll(a, b)`	Ganti semua kemunculan
`s.startsWith(x)`	Cek awalan → bool
`s.endsWith(x)`	Cek akhiran → bool
`s.padStart(n, c)`	Padding di awal hingga panjang n

Array

Membuat & Mengakses

```
const fruits = ["apple", "banana", "cherry"];
fruits[0]          // "apple"
fruits.length      // 3
fruits.at(-1)      // "cherry"
```

Method Mutasi

`arr.push(x)`	Tambah di akhir
`arr.pop()`	Hapus & kembalikan item terakhir
`arr.unshift(x)`	Tambah di awal
`arr.shift()`	Hapus & kembalikan item pertama
`arr.splice(i, n)`	Hapus n item di index i
`arr.sort()`	Urutkan di tempat (leksikografis)
`arr.reverse()`	Balik urutan di tempat

Method Non-Mutasi

`arr.map(fn)`	Transformasi setiap elemen
`arr.filter(fn)`	Pertahankan elemen jika fn bernilai true
`arr.reduce(fn, init)`	Akumulasi menjadi satu nilai
`arr.find(fn)`	Kemunculan pertama atau undefined
`arr.findIndex(fn)`	Index kemunculan pertama (-1)
`arr.includes(x)`	Cek keberadaan → bool
`arr.slice(a, b)`	Salinan sebagian (shallow)
`arr.join(",")`	Gabung menjadi string
`arr.forEach(fn)`	Iterasi (tanpa return value)
`[...a, ...b]`	Gabung array (spread)

Object

Membuat & Mengakses

```
const user = { name: "Alice", age: 20 };
user.name          // "Alice"
user["age"]        // 20
user.gpa = 3.85;   // tambah/update
```

Destructuring & Spread

```
const { name, age } = user;
const copy = { ...user, age: 21 };
```

Method Object

`Object.keys(o)`	Array key
`Object.values(o)`	Array value
`Object.entries(o)`	Array pasangan [key, value]
`Object.assign(t, s)`	Salin properti s → t
`"k" in obj`	Key ada? → bool
`delete obj.k`	Hapus properti
`Object.freeze(o)`	Buat immutable (shallow)

Alur Kontrol

if / else if / else

```
if (score >= 90) {
  grade = "A";
} else if (score >= 80) {
  grade = "B";
} else {
  grade = "C";
}
```

Ternary & Nullish Coalescing

```
const status = score >= 60 ? "pass" : "fail";
const name = user.name ?? "Anonymous";
```

switch

```
switch (color) {
  case "red":   stop();   break;
  case "green": go();     break;
  default:      wait();
}
```

Loop

for / for...of / for...in

```
for (let i = 0; i < 5; i++) { }

for (const item of ["a", "b"]) { }  // arrays

for (const key in obj) { }  // object keys
```

while / do...while

```
while (count < 10) { count++; }

do { count++; } while (count < 10);
```

break & continue

```
for (let i = 0; i < 10; i++) {
  if (i === 5) break;       // stop loop
  if (i % 2 === 0) continue; // skip
}
```

Fungsi

Deklarasi Fungsi & Arrow

```
function greet(name) {
  return `Hello, ${name}!`;
}
const greet = (name) => `Hello, ${name}!`;
const square = x => x * x; // single param
```

Parameter Default & Rest

```
function greet(name = "World") { }

function sum(...nums) {
  return nums.reduce((a, b) => a + b, 0);
}
```

Callback

```
[1, 2, 3].map(x => x * 2);    // [2, 4, 6]
[1, 2, 3].filter(x => x > 1); // [2, 3]
setTimeout(() => console.log("done"), 1000);
```

Class

```
class Dog {
  constructor(name, breed) {
    this.name = name;
    this.breed = breed;
  }
  bark() { return `${this.name} says Woof!`; }
}

class Puppy extends Dog {
  constructor(name, breed, toy) {
    super(name, breed);
    this.toy = toy;
  }
}
```

Penanganan Error

```
try {
  JSON.parse("bad json");
} catch (err) {
  console.error(err.message);
} finally {
  console.log("always runs");
}
```

Melempar Error

```
throw new Error("Something went wrong");
```

DOM

Memilih Elemen

```
document.querySelector(".cls")    // first match
document.querySelectorAll("li")   // all matches
document.getElementById("main")
```

Memodifikasi Elemen

```
el.textContent = "new text";
el.innerHTML = "<b>bold</b>";
el.style.color = "red";
el.classList.add("active");
el.classList.toggle("hidden");
el.setAttribute("data-id", "42");
```

Event

```
btn.addEventListener("click", (e) => {
  console.log(e.target);
});
```

Membuat Elemen

```
const li = document.createElement("li");
li.textContent = "New item";
ul.appendChild(li);
el.remove(); // remove element
```

Fetch API

GET Request

```
fetch("https://api.example.com/data")
  .then(res => res.json())
  .then(data => console.log(data))
  .catch(err => console.error(err));
```

POST Request

```
fetch(url, {
  method: "POST",
  headers: { "Content-Type": "application/json" },
  body: JSON.stringify({ key: "value" }),
});
```

Async / Await

```
async function loadData() {
  try {
    const res = await fetch(url);
    const data = await res.json();
    return data;
  } catch (err) {
    console.error(err);
  }
}
```

Request Paralel

```
const [users, posts] = await Promise.all([
  fetch("/users").then(r => r.json()),
  fetch("/posts").then(r => r.json()),
]);
```

Modul

Named Export

```
// math.js
export const PI = 3.14;
export function add(a, b) { return a + b; }

// main.js
import { PI, add } from "./math.js";
```

Default Export

```
// logger.js
export default function log(msg) { }

// main.js
import log from "./logger.js";
```