

Coding Subuh #04

Operator

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Agenda kita..

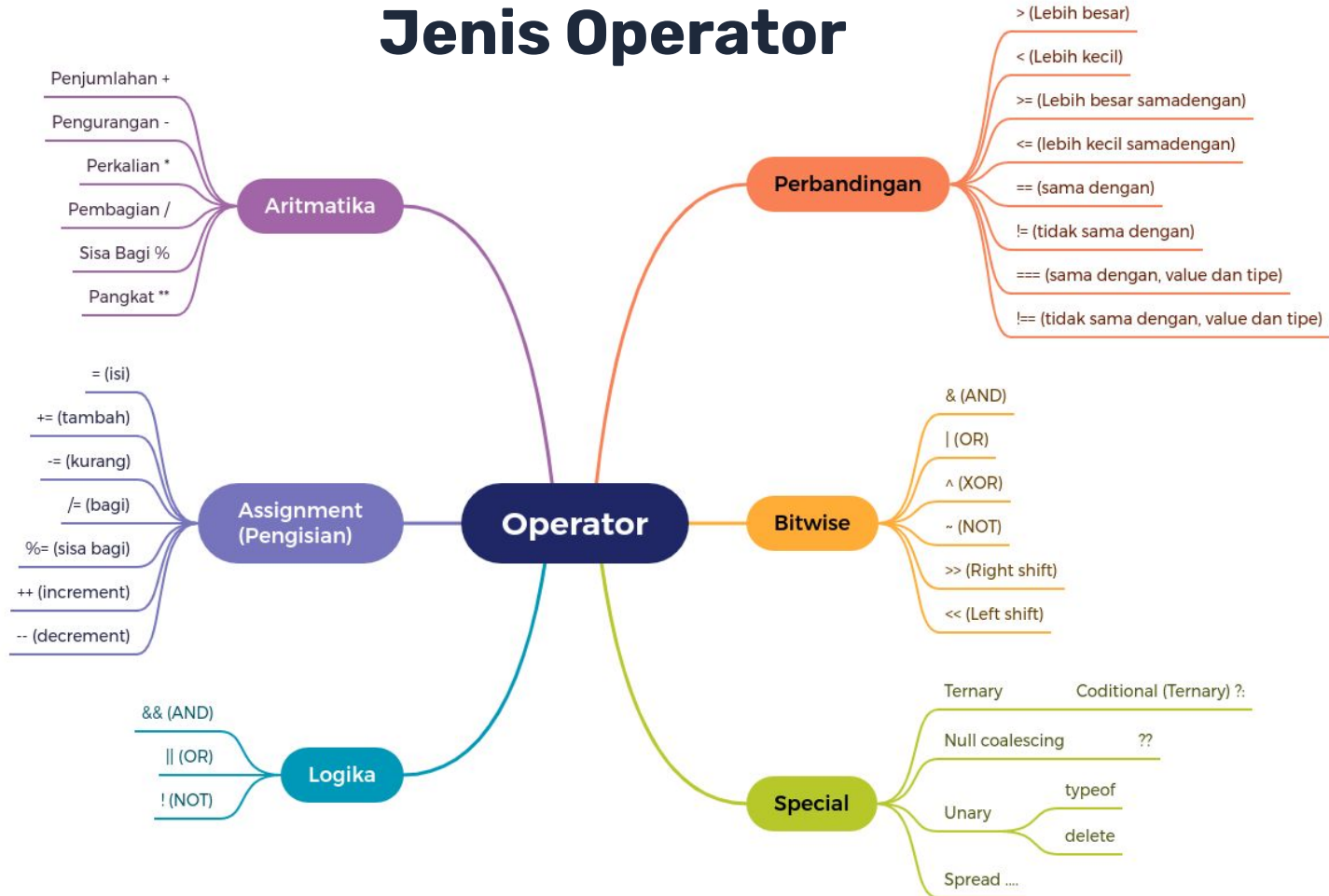
- Mengenal Operator
- Operator Aritmatika
- Operator Assignment
- Operasi pada String
- Template Literals (Template string)
- Latihan

Kenalan dengan Operator

Apa itu Operator?

- Operator adalah **simbol** untuk melakukan operasi seperti penjumlahan, pengurangan, perkalian, dan sebagainya.
- Kita membutuhkan operator untuk memproses data di dalam program seperti melakukan perhitungan.

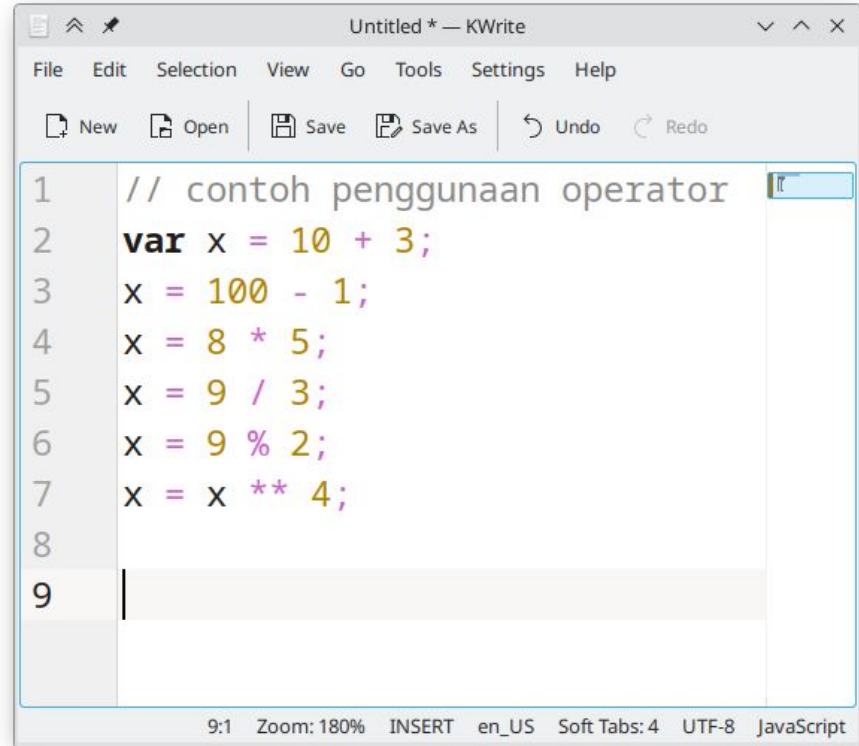
Jenis Operator



Operator Aritmatika

Operator Aritmatika

Nama Operator	Simbol
Penjumlahan	+
Pengurangan	-
Perkalian	*
Pembagian	/
Sisa Bagi	%
Pemangkatan	**



The screenshot shows a KWrite text editor window titled "Untitled * — KWrite". The menu bar includes File, Edit, Selection, View, Go, Tools, Settings, and Help. The toolbar contains icons for New, Open, Save, Save As, Undo, and Redo. The code editor displays the following JavaScript code:

```
1 // contoh penggunaan operator
2 var x = 10 + 3;
3 x = 100 - 1;
4 x = 8 * 5;
5 x = 9 / 3;
6 x = 9 % 2;
7 x = x ** 4;
8
9
```

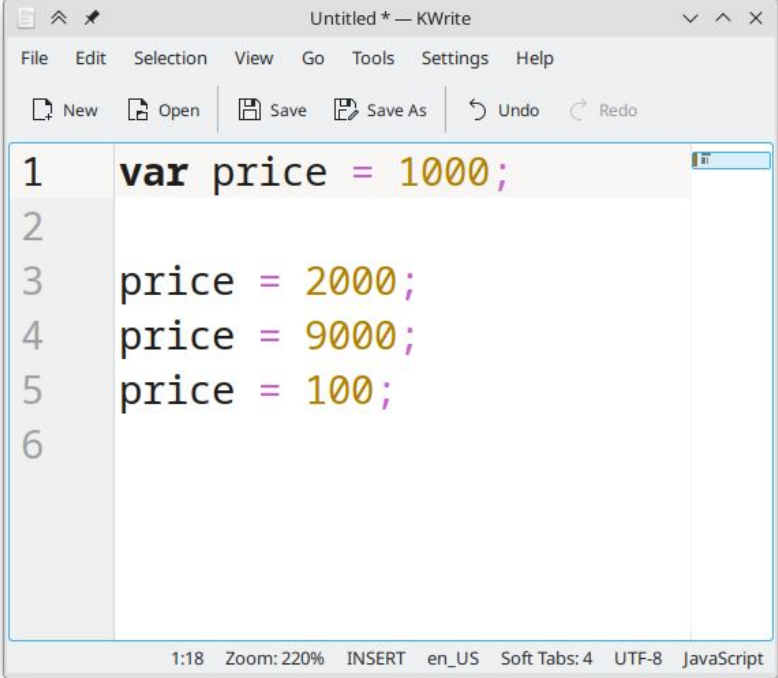
The status bar at the bottom indicates the cursor is at line 9, column 1, with a zoom of 180%, in INSERT mode, using en_US locale, with 4 soft tabs, UTF-8 encoding, and JavaScript syntax highlighting.

Operator Assignment

Operator Assignment (Pengisian)

Nama Operator	Simbol
Assignment (Pengisian)	=

Operator assignment berfungsi untuk mengisi nilai ke variabel



The screenshot shows a text editor window titled "Untitled * — KWrite". The menu bar includes File, Edit, Selection, View, Go, Tools, Settings, and Help. The toolbar contains icons for New, Open, Save, Save As, Undo, and Redo. The code editor displays the following JavaScript code:

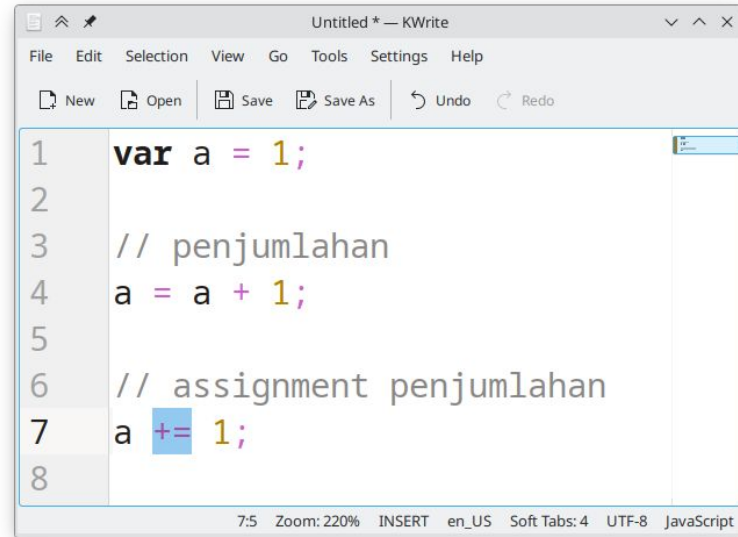
```
1 var price = 1000;  
2  
3 price = 2000;  
4 price = 9000;  
5 price = 100;  
6
```

The status bar at the bottom indicates the cursor position is 1:18, the zoom is 220%, the mode is INSERT, the locale is en_US, there are 4 soft tabs, the encoding is UTF-8, and the language is JavaScript.

Operator Assignment Aritmatika

Nama Operator	Simbol
Pengisian dan Penjumlahan	$+=$
Pengisian dan Pengurangan	$-=$
Pengisian dan Perkalian	$*=$
Pengisian dan Pembagian	$/=$
Pengisian dan sisa bagi	$\%=$
Pengisian dan Pemangkatan	$**=$

Mengisi nilai ke Variabel sekaligus melakukan operasi aritmatika



```
1 var a = 1;
2
3 // penjumlahan
4 a = a + 1;
5
6 // assignment penjumlahan
7 a += 1;
8
```

The screenshot shows a text editor window titled "Untitled * - KWrite". The menu bar includes File, Edit, Selection, View, Go, Tools, Settings, and Help. The toolbar has icons for New, Open, Save, Save As, Undo, and Redo. The code is written in JavaScript and demonstrates the use of the assignment operator (=) and the compound assignment operator (+=). The variable 'a' is initialized to 1, then incremented by 1 using both methods. The status bar at the bottom shows "7:5 Zoom: 220% INSERT en_US Soft Tabs: 4 UTF-8 JavaScript".

Increment & Decrement

Nama Operator

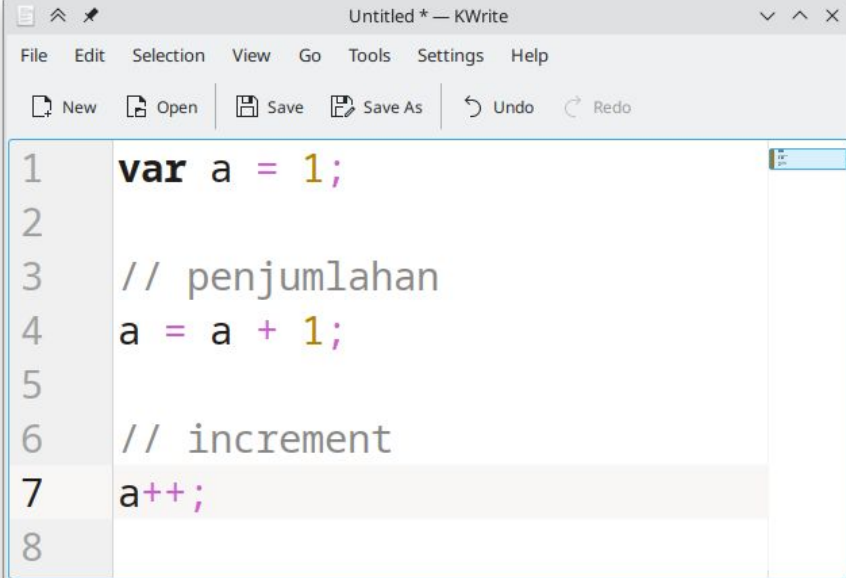
Simbol

Increment
(Penambahan +1)

++

Decrement
(Pengurangan -1)

--



The screenshot shows a KWrite text editor window titled "Untitled * — KWrite". The menu bar includes File, Edit, Selection, View, Go, Tools, Settings, and Help. The toolbar contains icons for New, Open, Save, Save As, Undo, and Redo. The code editor displays the following JavaScript code:

```
1 var a = 1;
2
3 // penjumlahan
4 a = a + 1;
5
6 // increment
7 a++;
8
```

The status bar at the bottom indicates "7:4 Zoom: 220% INSERT en_US Soft Tabs: 4 UTF-8 JavaScript".

Assignment Bitwise

Nama Operator	Simbol
Pengisian dan Bitwise AND	$\&=$
Pengisian dan Bitwise OR	$ =$
Pengisian dan Bitwise XOR	$\wedge=$
Pengisian dan Right Shift	$>>=$
Pengisian dan left shift	$<<=$
Pengisian dan Unsigned Right Shift	$>>>=$

Mengisi nilai ke Variabel sekaligus melakukan operasi bitwise

```
Untitled * — KWrite
File Edit Selection View Go Tools Settings Help
New Open Save Save As Undo Redo

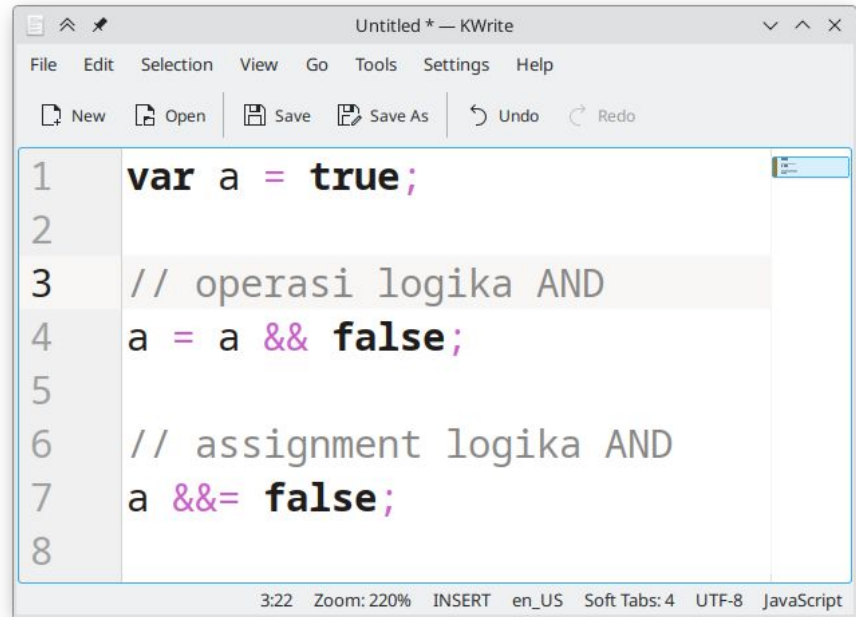
1 var a = 1;
2
3 // right shift
4 a = a >> 1;
5
6 // assignment bitwise
7 a >>= 1;
8

3:9 Zoom: 220% INSERT en_US Soft Tabs: 4 UTF-8 JavaScript
```

Assignment Logic

Nama Operator	Simbol
Pengisian dan Logika AND	&&=
Pengisian dan Logika OR	 =

Mengisi nilai ke Variabel sekaligus melakukan operasi logika



```
1  var a = true;
2
3  // operasi logika AND
4  a = a && false;
5
6  // assignment logika AND
7  a &&= false;
8
```

The screenshot shows a KWrite text editor window titled "Untitled * — KWrite". The editor contains JavaScript code demonstrating variable assignment with logical operators. The code is as follows:

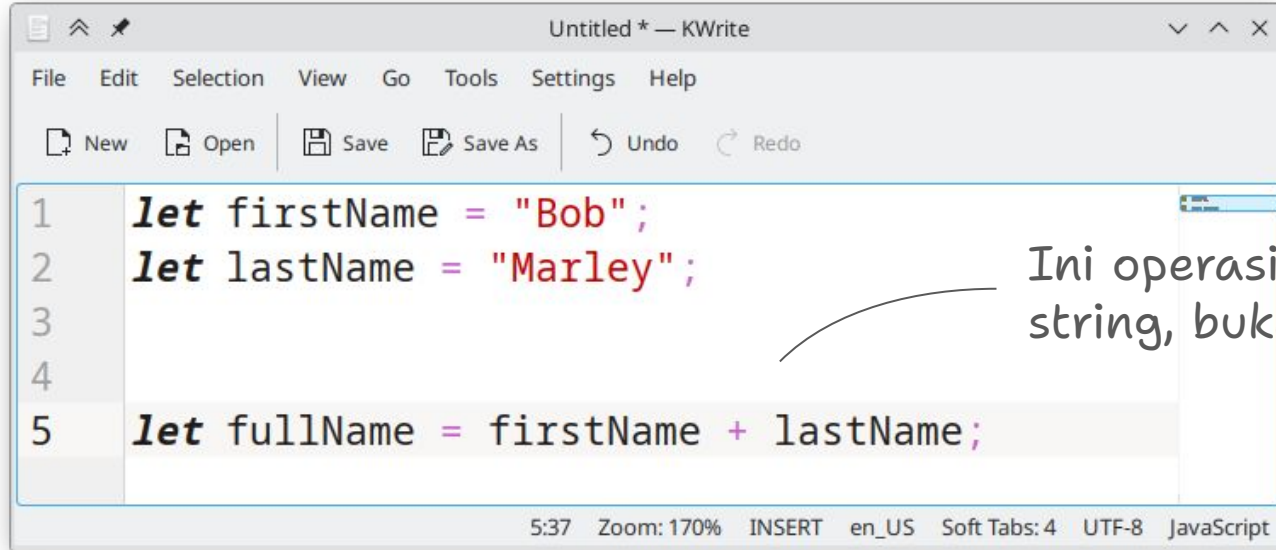
```
1  var a = true;
2
3  // operasi logika AND
4  a = a && false;
5
6  // assignment logika AND
7  a &&= false;
8
```

The status bar at the bottom indicates the current position is 3:22, zoom is 220%, and the file is encoded in UTF-8 using JavaScript.

Operasi pada String

Penjumlahan Penggabungan String

Saat kita menggunakan operator + pada tipe data string, maka yang akan terjadi adalah penggabungan. Bukan penjumlahan.



The screenshot shows a text editor window titled "Untitled * — KWrite". The menu bar includes File, Edit, Selection, View, Go, Tools, Settings, and Help. The toolbar contains icons for New, Open, Save, Save As, Undo, and Redo. The code editor displays the following JavaScript code:

```
1 let firstName = "Bob";  
2 let lastName = "Marley";  
3  
4  
5 let fullName = firstName + lastName;
```

The status bar at the bottom shows "5:37", "Zoom: 170%", "INSERT", "en_US", "Soft Tabs: 4", "UTF-8", and "JavaScript".

Ini operasi penggabungan string, bukan penjumlahan

Operasi String yang berupa angka

```
>> const x = "20";
```

```
← undefined
```

```
>> const y = "24";
```

```
← undefined
```

```
>> x + y
```

```
← "2024"
```

```
>> x * y
```

```
← 480
```

```
>> x / y
```

```
← 0.8333333333333334
```

```
>> x - y
```

```
← -4
```

```
>>
```

Pada operasi +, string akan tetap digabung. Sedangkan operasi lainnya akan dilakukan perhitungan seperti layaknya Number.

Template Literal (Template String)

Apa itu Template Literal?

- **Template Literal** atau **Template String** adalah format template di Javascript untuk menggabungkan string dengan ekspresi atau variabel.
- Template String diapit dengan backtik (```)
- Penyisipan ekspresi dan variabel di **template string** dapat dilakukan dengan `${ ... }`

Backtick



Tanpa String Template

```
let username = 'petanikode';  
let message = 'Hello ' + username + ', mohon verifikasi email anda!';
```

Menggunakan String Template

```
let username = 'petanikode';  
let message = `Hello ${username}, mohon verifikasi email anda!`;
```

Latihan



Latihan 1: Operasi Aritmatika

1. Buat file HTML baru pada folder **pertemuan-4**, dengan nama **aritmatika.html**
2. Buat operasi aritmatika di dalamnya seperti penjumlahan, pengurangan, perkalian, pembagian, sisa bagi, dan pemangkatan

```
<script>
    const a = 9;
    const b = 2;

    // operasi aritmatika
    const hasilTambah = a + b;
    const hasilKurang = a - b;
    const hasilKali = a * b;
    const hasilBagi = a / b;
    const hasilSisabagi = a % b;
    const hasilPangkat = a ** b;

    // menampilkan hasil operasi aritmatika
    document.write(a, "+", b, "=", hasilTambah, "<br/>");
    document.write(a, "-", b, "=", hasilKurang, "<br/>");
    document.write(a, "*", b, "=", hasilKali, "<br/>");
    document.write(a, "/", b, "=", hasilBagi, "<br/>");
    document.write(a, "%", b, "=", hasilSisabagi, "<br/>");
    document.write(a, "**", b, "=", hasilPangkat, "<br/>");
</script>
```



Latihan 2: Operasi Pengisian

1. Buat file HTML baru pada folder **pertemuan-4**, dengan nama **pengisian.html**
2. Tambahkan dua fungsi untuk mengisi dan mengurangi saldo.
3. Panggil masing-masing fungsi saat tombol **top up** dan **withdraw** diklik

Saldo:

Rp 10.000,00



Top up (+)



Withdraw (-)



Latihan 3: Challenge Diskon

```
<script>
  const totalBelanja = prompt("Input total belanja");
  alert("Hore, Anda mendapatkan diskon 25% 🥳");

  // Challenge!
  // persentase diskon
  const discountPercentage = "?????";

  // Total diskon yang didapatkan
  const discountAmount = "????";

  // Total yang harus dibayar setelah diskon
  const totalBayar = "????";

  const outputTemplate = `
    <h1>Ringkasan Transaksi Belanja anda</h1>
    <p>Total Belanja: ${totalBelanja}</p>
    <p>Diskon: <span style="color:green">-${discountAmount} (${discountPercentage}%)</span></p>
    <p>Total bayar: <b>${totalBayar}</b></p>
  `;

  document.write(outputTemplate);
</script>
```

Perbaiki kode ini,
sehingga hasilnya bisa
menghitung diskon dari
total belanja



Selamat

Kita sudah selesai hari ini..

Rekap: Sejauh ini kita sudah belajar..

- Jenis-jenis Operator
- Operator Aritmatika
- Operator Assignment
- Operasi String
- String Template

Resources & Referensi

- Ilustrasi:
<https://www.tldraw.com/r/OM5fAjmZNCxv2H14ysXY4?v=-76,-390,6098,3033&p=page>
- Method toLocaleString()
https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Number/toLocaleString
- Template Literal (Template String)
https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Template_literals#tagged_templates

Recording

- Recording Zoom:
https://telkonsel.zoom.us/rec/share/x5149Skk_mECnoGEMwkA4ojZQwtDKS7TGz0Dga-IUAAuKXY0xCQuSIXS9g5y8WUJ.2I4B7tp1IsPnImXz
- Passcode: v45B7?jQ
- Recording di Youtube: <https://youtu.be/t9JcVgY4CAU>