Operator

- Aritmatika
- Assignment
- Perbandingan
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- Increment/Decrement

Operator Aritmatika

- Operator aritmatika digunakan untuk operasi-operasi dasar perhitungan matematika.
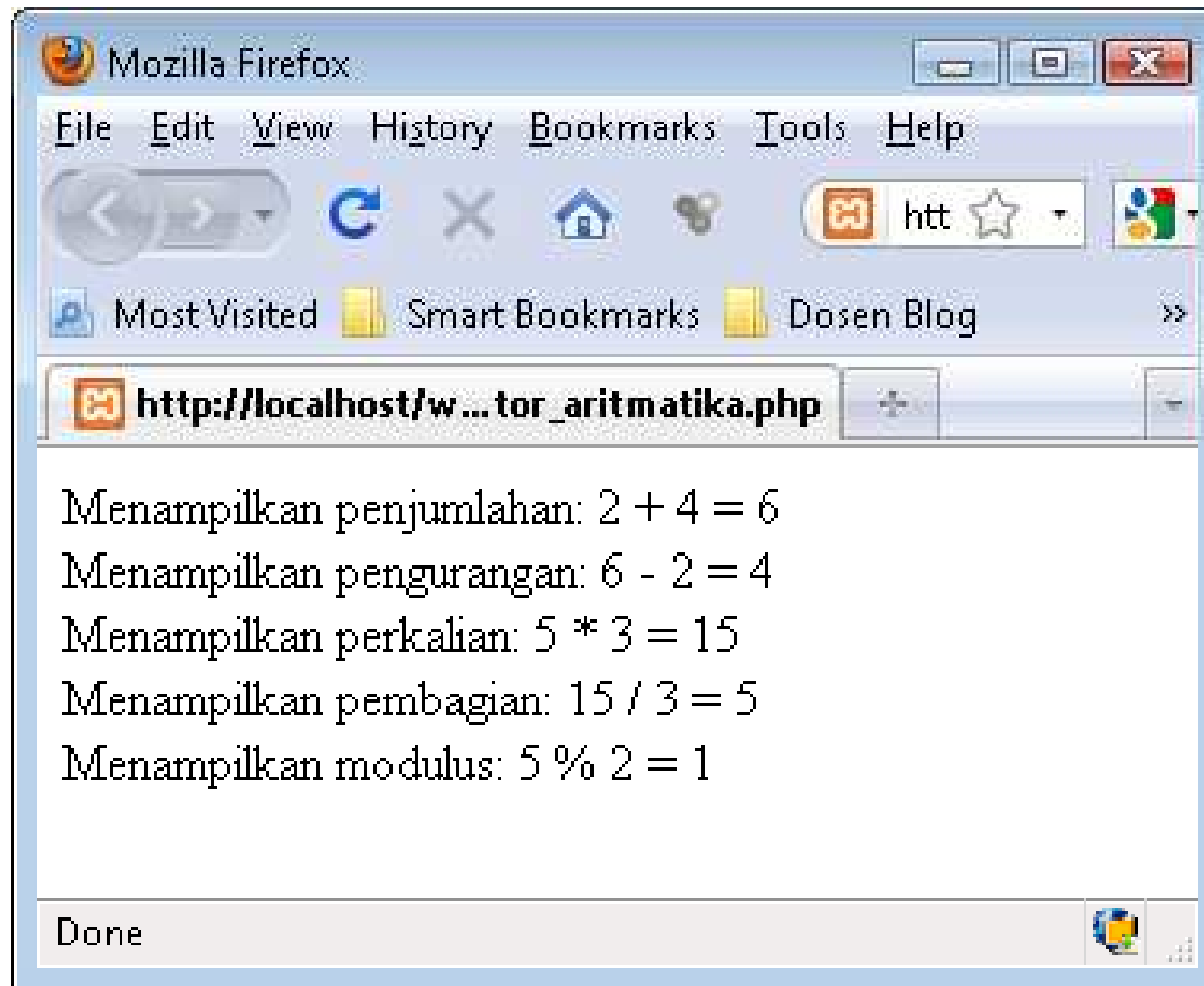
Operator	English	Example
+	Addition	2 + 4
-	Subtraction	6 - 2
*	Multiplication	5 * 3
/	Division	15 / 3
%	Modulus	43 % 10

Contoh : operator_aritmatika.php

```php
<?php
// nama file : operator_aritmatika.php
$penjumlahan = 2 + 4;
$pengurangan = 6 - 2;
$perkalian = 5 * 3;
$pembagian = 15 / 3;
$modulus = 5 % 2;

echo "Menampilkan penjumlahan: 2 + 4 = ".$penjumlahan."<br>";
echo "Menampilkan pengurangan: 6 - 2 = ".$pengurangan."<br>";
echo "Menampilkan perkalian: 5 * 3 = ".$perkalian."<br>";
echo "Menampilkan pembagian: 15 / 3 = ".$pembagian."<br>";
echo "Menampilkan modulus: 5 % 2 = " . $modulus;
?>
```

Hasil : Operator_aritmatika.php

Operator Assignment

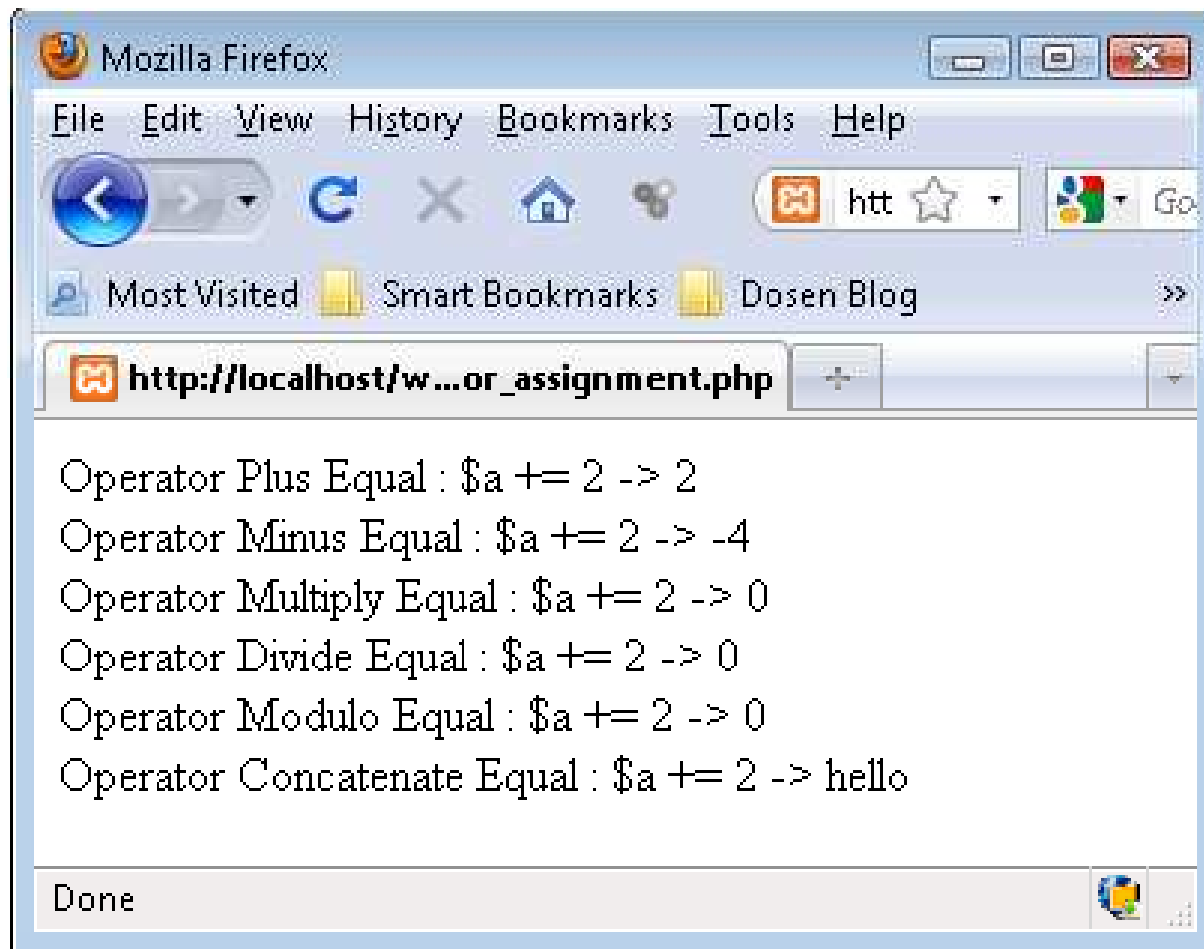- Operator aritmatika digunakan untuk operasi-operasi dasar perhitungan matematika.

Operator	English	Example	Equivalent Operation
+=	Plus Equals	$x += 2;	$x = $x + 2;
-=	Minus Equals	$x -= 4;	$x = $x - 4;
*=	Multiply Equals	$x *= 3;	$x = $x * 3;
/=	Divide Equals	$x /= 2;	$x = $x / 2;
%=	Modulo Equals	$x %= 5;	$x = $x % 5;
.=	Concatenate Equals	$my_str.="hello";	$my_str = $my_str . "hello";

Contoh : operator_assignment.php

```php
<?php
// nama file : operator_assignment.php
$a += 2;
$b -= 4;
$c *= 3;
$d /= 2;
$e %= 5;
$my_str.="hello";

echo "Operator Plus Equal : \$a += 2 -> ".$a;
echo "<br>Operator Minus Equal : \$a += 2 -> ".$b;
echo "<br>Operator Multiply Equal : \$a += 2 -> ".$c;
echo "<br>Operator Divide Equal : \$a += 2 -> ".$d;
echo "<br>Operator Modulo Equal : \$a += 2 -> ".$e;
echo "<br>Operator Concatenate Equal : \$a += 2 -> ".$my_str;
?>
```

Hasil : Operator_assignment.php

Operator Perbandingan

- Operator perbandingan pada struktur control program seperti if, elseif dimana dilakukan perbandingan dua nilai.

Assume: $x = 4 and $y = 5;

Operator	English	Example	Result
==	Equal To	$x == $y	false
!=	Not Equal To	$x != $y	true
<	Less Than	$x < $y	true
>	Greater Than	$x > $y	false
<=	Less Than or Equal To	$x <= $y	true
>=	Greater Than or Equal To	$x >= $y	false

Contoh : operator_perbandingan.php

```php
<?php
// nama file : operator_perbandingan.php
$x = 4;
$y = 5;

echo "<br>Nilai \$x = $x";
echo "<br>Nilai \$y = $y";
$val = ($x == $y) ? "TRUE" : "FALSE";
echo "<br>Operator perbandingan \$x == \$y = $val";

$val = ($x != $y) ? "TRUE" : "FALSE";
echo "<br>Operator perbandingan \$x != \$y = $val";

$val = ($x < $y) ? "TRUE" : "FALSE";
echo "<br>Operator perbandingan \$x < \$y = $val";

$val = ($x > $y) ? "TRUE" : "FALSE";
echo "<br>Operator perbandingan \$x > \$y = $val";

$val = ($x <= $y) ? "TRUE" : "FALSE";
echo "<br>Operator perbandingan \$x <= \$y = $val";

$val = ($x >= $y) ? "TRUE" : "FALSE";
echo "<br>Operator perbandingan \$x >= \$y = $val";
?>
```
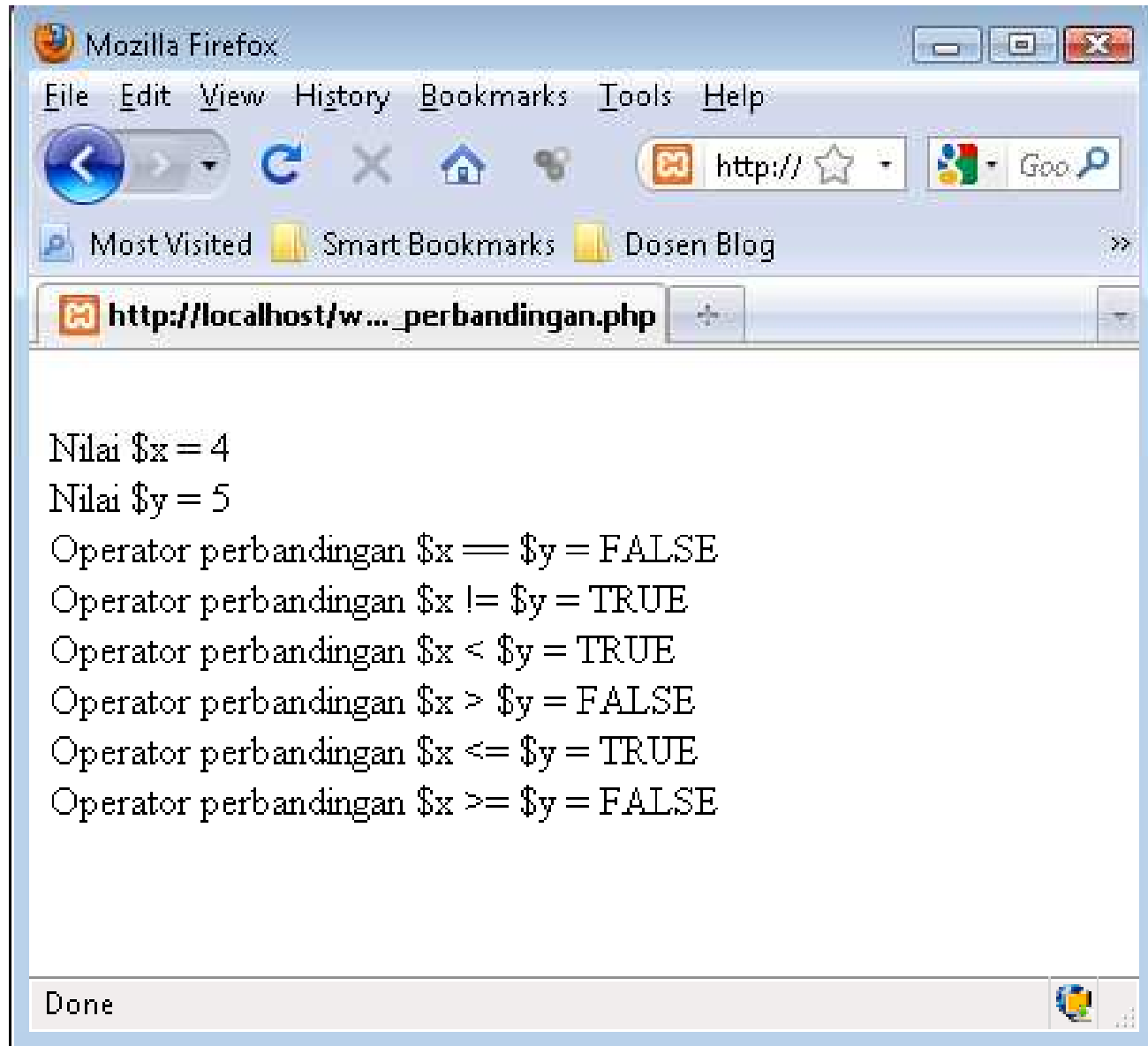
Hasil : operator_pebandingan.php

Operator Logika

- Operator Logika digunakan untuk membandingkan dua operator, nilai yang dihasilkan hanya TRUE dan FALSE.

Operator	English	Example	Result
AND	And	$a and $b	True jika $a dan $b keduanya bernilai True
OR	Or	$a or $b	True jika salah satu atau keduanya $a, $b bernilai True
XOR	Or	$a xor $b	True jika salah satu $a atau $b bernilai True, tetapi False jika keduanya bernilai True.
!	Not	!$a	True jika $a bernilai tidak True

Tabel Logika

Tabel Logika AND

p	q	p && q
T	T	T
T	F	F
F	T	F
F	F	F

Tabel Opertor OR

p	q	p || q
T	T	T
T	F	T
F	T	T
F	F	F

Tabel Logika NOT (Ingkaran)

p	!p
T	F
T	F
F	T
F	T

Contoh : operator_logika.php

```php
<?php
// nama file : operator_logika.php
$x = TRUE;
$y = FALSE;

echo "<br>Nilai \$x = TRUE";
echo "<br>Nilai \$y = FALSE";
$val = ($x and $y) ? "TRUE" : "FALSE";
echo "<br>Operator logika \$x and \$y = $val";

$val = ($x or $y) ? "TRUE" : "FALSE";
echo "<br>Operator logika \$x or \$y = $val";

$val = ($x xor $y) ? "TRUE" : "FALSE";
echo "<br>Operator logika \$x \xor \$y = $val";

$val = (!$y) ? "TRUE" : "FALSE";
echo "<br>Operator logika  !\$y = $val";
?>
```
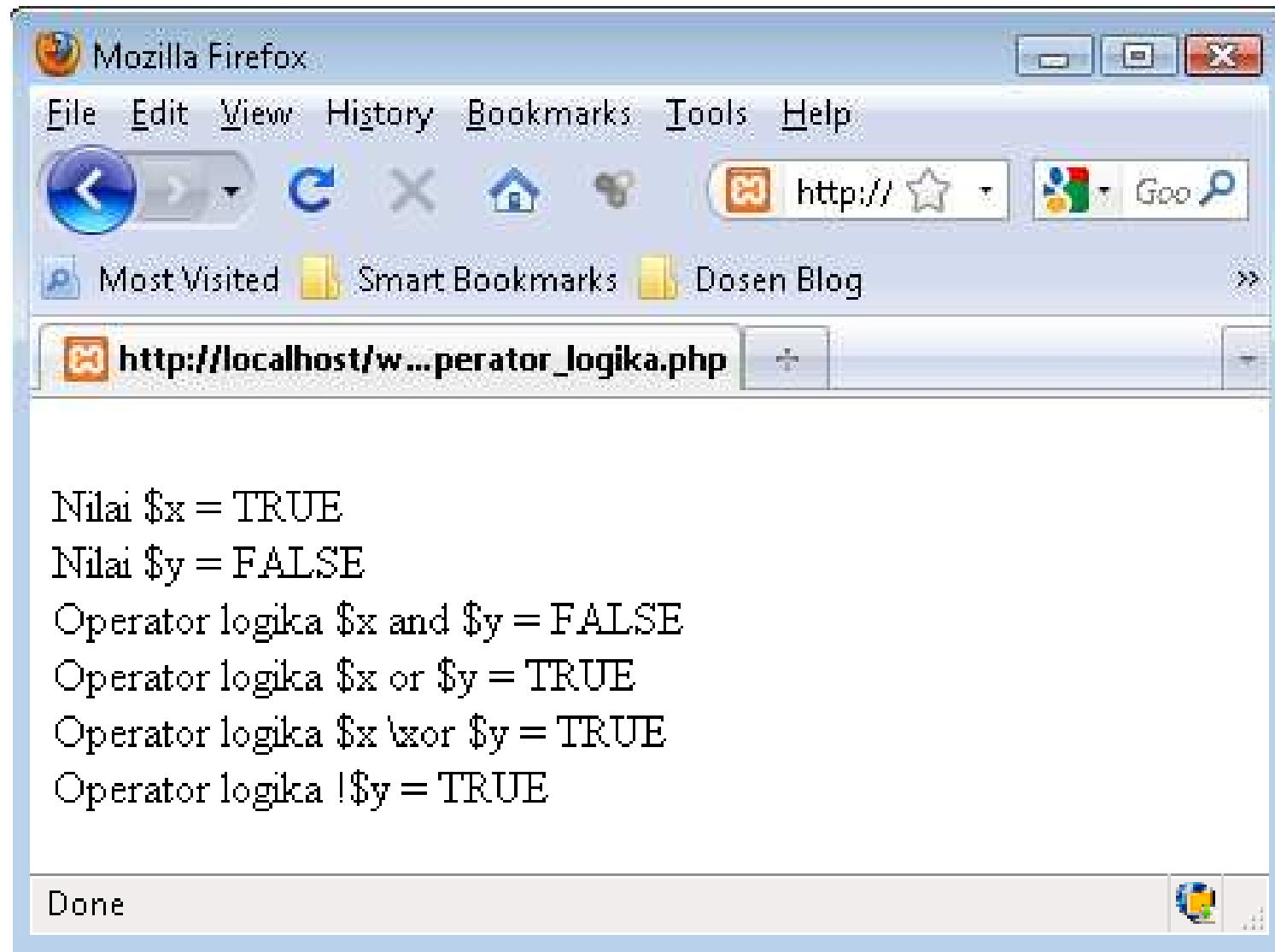
Hasil : operator_logika.php

Nilai $x = TRUE
Nilai $y = FALSE
Operator logika $x and $y = FALSE
Operator logika $x or $y = TRUE
Operator logika $x \xor $y = TRUE
Operator logika !$y = TRUE

Operator Increment/Decrement

- Operator increment digunakan untuk menambah satu nilai pada operator,sedang decrement digunakan untukmengurangi satu nilai pada operator.

Operator	English	Example	Result
++	Pre-increment	++$a	Nilai $a ditambah satu, kemudian operasi dilaksanakan
	Post-increment	$a++	Operasi dilaksanakan, kemudian nilai $a ditambah satu.
--	Pre-decrement	--$a	Nilai $a dikurangi satu, kemudian operasi dilaksanakan
	Post-decrement	$a--	Operasi dilaksanakan, kemudian nilai $a dikurangi satu.

Contoh : operator_incre_decre.php

```php
<?php
$var = 1;

echo "Nilai \$var = $var";
echo "<br>Operasi Pre-Increment ++\$var = ".++$var;
echo "<br>Operasi Post-Increment \$var++ = ".$var++;
echo "<br>Operasi Pre-Increment --\$var = ".--$var;
echo "<br>Operasi Pre-Increment \$var-- = ".$var--;
?>
```

Hasil : operator_incre_decre.php