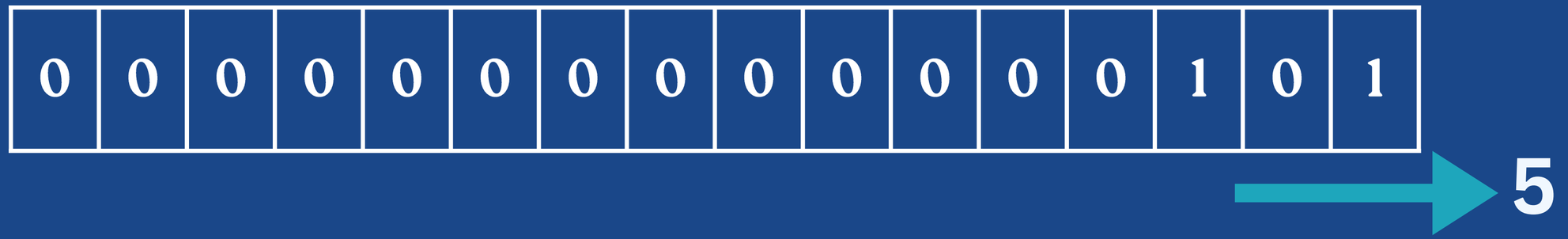
Expressions and Operators

Bitwise Operator

What are Bitwise Operators

These operators perform bit by bit operations on numbers.



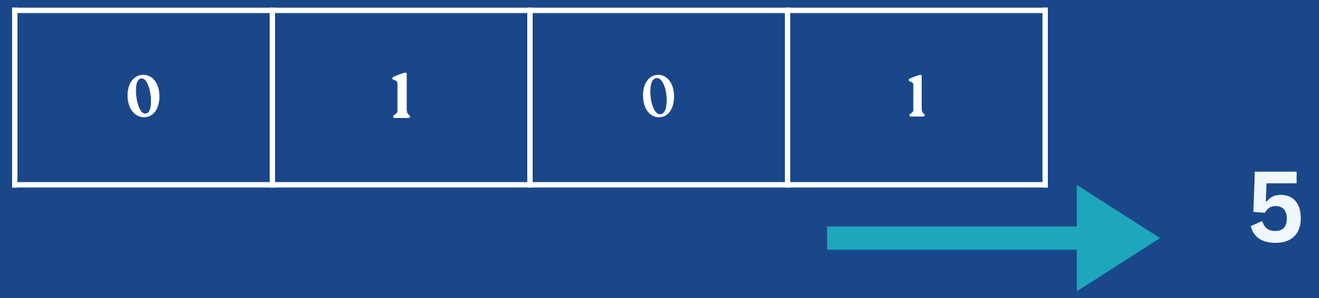
PHP typically uses 32 bits for integers on 32-bit systems and 64 bits on 64-bit systems. However, this can vary depending on the specific PHP build and configuration.

You can use the PHP_INT_SIZE constant to determine the size of integers in bytes at runtime.

- If PHP_INT_SIZE is 4, then integers are represented using 32 bits.
- If PHP_INT_SIZE is 8, then integers are represented using 64 bits.

1 bit each value

8 bits is 1 byte



Find binary value of 5

2	5	1
2	2	0
	1	

5 = 101

In 4 bits we will write like this

5 = 0101

2^10	2^9	2^8	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0

1024	512	256	128	64	32	16	8	4	2	1

Types of Bitwise Operators

&	AND
|	OR
~	NOT
^	XOR
>>	Right Shift
<<	Left Shift

Bitwise AND(&) Operators

0	&	0	=	0
0	&	1	=	0
1	&	0	=	0
1	&	1	=	1

Bitwise OR(|) Operators

0	|	0	=	0
0	|	1	=	1
1	|	0	=	1
1	|	1	=	1

Bitwise XOR(^) Operators

0	^	0	=	0
0	^	1	=	1
1	^	0	=	1
1	^	1	=	0

Bitwise NOT(~) Operators

~	0	=	1
~	1	=	0

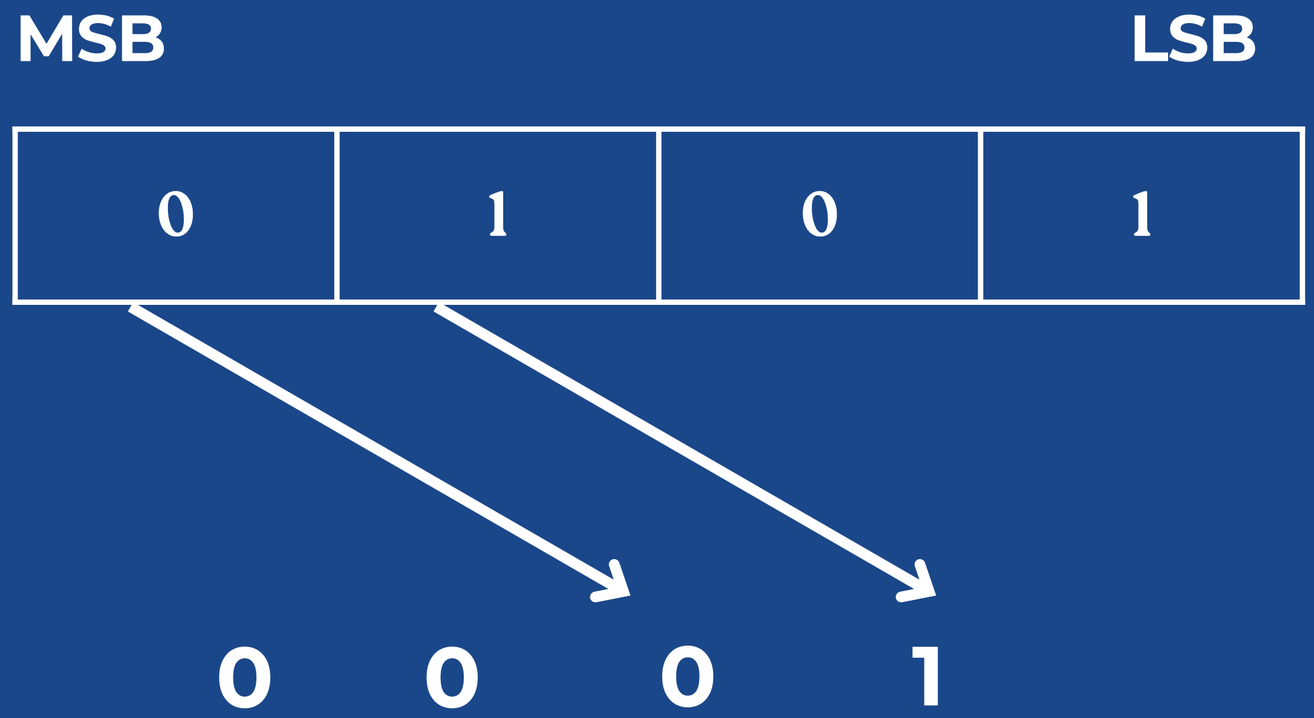
Expressions and Operators

Right Shift >>

Right Shift Operator

- Uses >>
- It shifts bits from left to right

Find 5>>2



Ans = 1

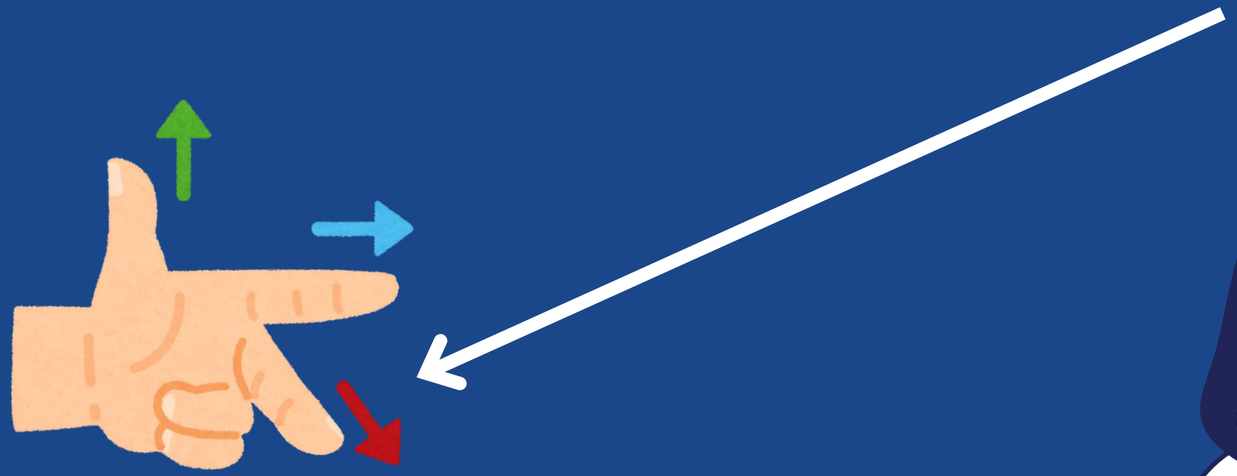
Find 5>>1

Expressions and Operators

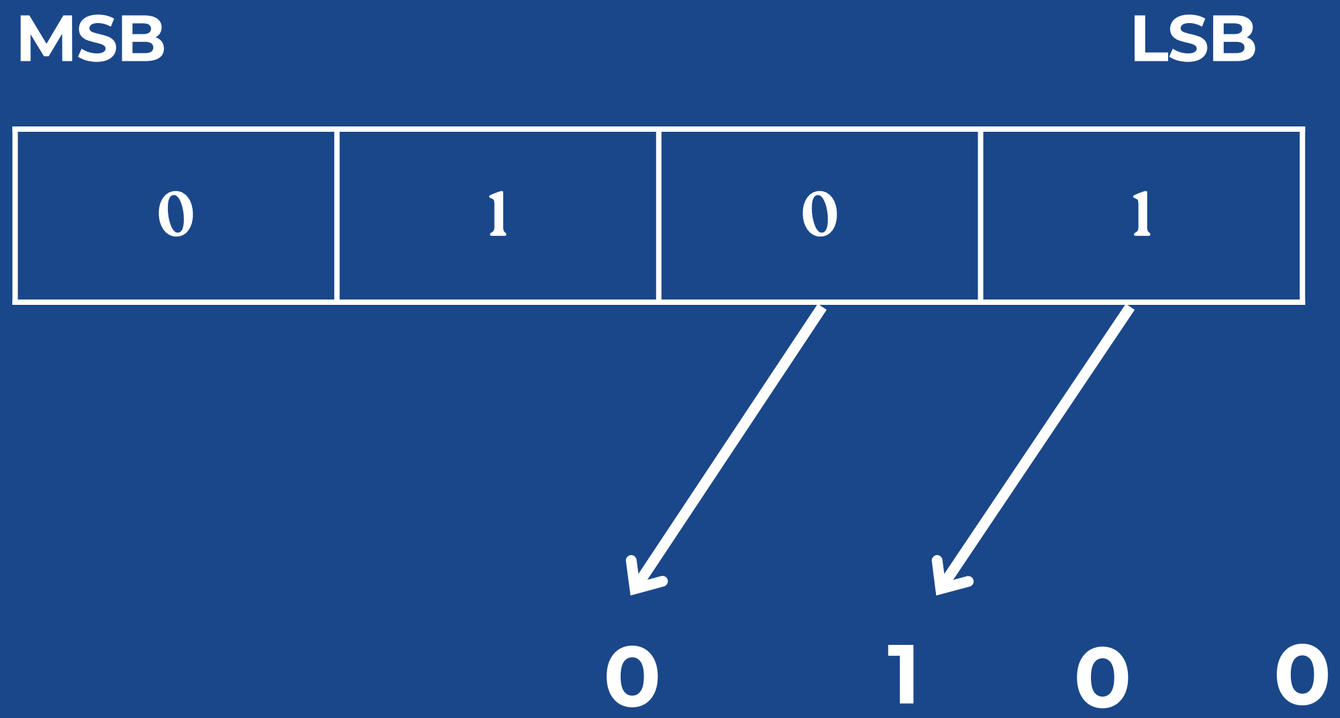
Left Shift <<

Left Shift Operator

- Uses <<
- It shifts bits from right to left



Find 5<<2



Ans = 4

Based on bits you will get answer