

Python Operator Overloading Methods

1. Arithmetic Operators

Operator	Method	Example
+	<code>__add__</code>	<code>a + b</code>
-	<code>__sub__</code>	<code>a - b</code>
*	<code>__mul__</code>	<code>a * b</code>
/	<code>__truediv__</code>	<code>a / b</code>
//	<code>__floordiv__</code>	<code>a // b</code>
%	<code>__mod__</code>	<code>a % b</code>
**	<code>__pow__</code>	<code>a ** b</code>

2. Comparison Operators

Operator	Method	Example
<code>==</code>	<code>__eq__</code>	<code>a == b</code>
<code>!=</code>	<code>__ne__</code>	<code>a != b</code>
<code><</code>	<code>__lt__</code>	<code>a < b</code>
<code><=</code>	<code>__le__</code>	<code>a <= b</code>
<code>></code>	<code>__gt__</code>	<code>a > b</code>
<code>>=</code>	<code>__ge__</code>	<code>a >= b</code>

3. Unary Operators

Operator	Method	Example
-	<code>__neg__</code>	<code>-a</code>
+	<code>__pos__</code>	<code>+a</code>
~	<code>__invert__</code>	<code>~a</code>

4. In-place Arithmetic Operators

Operator	Method	Example
+=	__iadd__	a += b
-=	__isub__	a -= b
*=	__imul__	a *= b
/=	__itruediv__	a /= b
//=	__ifloordiv__	a //= b
%=	__imod__	a %= b
**=	__ipow__	a **= b

5. Type Conversion / Casting

Usage	Method
int(obj)	__int__
float(obj)	__float__
str(obj)	__str__
repr(obj)	__repr__
bool(obj)	__bool__

6. Container / Indexing Behavior

Usage	Method	Description
len(obj)	__len__	Length
obj[i]	__getitem__	Indexing
obj[i] = x	__setitem__	Item assignment
del obj[i]	__delitem__	Delete item
x in obj	__contains__	Membership check
for x in obj	__iter__	Iteration